Aging and Long-Term Care

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Study helps: When you scroll over the yellow sticky notes you will receive study helps.

Introduction

We are all getting older. When we were young, many of us could not wait to get older, especially if we had older siblings. They were allowed to, and were capable of, doing so many more things. We continued to grow stronger, increased in understanding, got an education and became professionals. Now, as time goes on, we work toward security—emotional, financial, and social while trying to hold on to some semblance of our physical youth. As we get older, we hope and worry about being able to afford retirement, or whether we even should retire—would we even like it?

At some point, most of us will reach what is considered "Older." Not older like what we wanted when we couldn't wait to drive a car. "Older" as in "Old," "Seasoned" and "Experienced" more than much of the rest of the population.

In reality, age is relative. I used to think 40 was very old. Now I think of 40 as very young. Those who are in their 90's probably think of how young they were when they were 70, or even 80. We all experience age differently, but there are many things the aged have in common. These issues are important to know. It is important for us to understand, have empathy and show compassion for those we serve. This course will seek to provide you with some of that understanding.

Chapter 1 – Profile of Older Americans

In the first chapter we use the publication from the Administration on Aging (AoA) United States Department of Health and Human Services to get a snapshot of the current older population in the United States. This is sourced from:

A Profile of Older Americans: 2017 was developed by the Administration on Aging (AoA), Administration for Community Living, U.S. Department of Health and Human Services.

2017 Profile of Older Americans

April 2018

Administration for Community Living

Administration on Aging

The Administration for Community Living, which includes the Administration on Aging, is an operating division of the U.S. Department of Health and Human Services.

Table of Contents

Highlights[1 2 3]

- Over the past 10 years, the population age 65 and over increased from 37.2 million in 2006 to 49.2 million in 2016 (a 33% increase) and is projected to almost double to 98 million in 2060.
- Between 2006 and 2016 the population age 60 and over increased 36% from 50.7 million to 68.7 million.
- The 85 and over population is projected to more than double from 6.4 million in 2016 to 14.6 million in 2040 (a 129% increase).
- Racial and ethnic minority populations have increased from 6.9 million in 2006 (19% of the older adult population) to 11.1 million in 2016 (23% of older adults) and are projected to increase to 21.1 million in 2030 (28% of older adults).
- The number of Americans aged 45-64 – who will reach age 65 over the next two decades – increased by 12% between 2006 and 2016.
- About one in every seven, or 15.2%, of the population is an older American.
- Persons reaching age 65 have an average life expectancy of an additional 19.4 years (20.6 years for females and 18 years for males).
- There were 81,896 persons age 100 and over in 2016 (0.2% of the total age 65 and over population).
- Older women outnumber older men at 27.5 million older women to 21.8 million older men.
- In 2016, 23% of persons age 65 and over were members of racial or ethnic minority populations--9% were African-Americans (not Hispanic), 4% were Asian or Pacific Islander (not Hispanic), 0.5% were Native American (not Hispanic), 0.1% were Native Hawaiian/Pacific Islander, (not Hispanic), and 0.7% of persons 65+ identified themselves as being of two or more races. Persons of Hispanic origin (who may be of any race) represented 8% of the older population.
- A larger percentage of older men are married as compared with older women---70% of men, 46% of women. In 2017, 33% older women were widows.
- About 28% (13.8 million) of noninstitutionalized older persons lived alone (9.3 million women,
  4.5 million men).
- Almost half of older women (45%) age 75 and over lived alone.
- The median income of older persons in 2016 was $31,618 for males and $18,380 for females. The real median income (after adjusting for inflation) of all households headed

by older people increased by 2.1% (which was not statistically significant) between 2015 and 2016. Households containing families headed by persons age 65 and over reported a median income in 2016 of $58,559.

- The major sources of income as reported by older persons in 2015 were Social Security (reported by 84% of older persons), income from assets (reported by 63%), earnings (reported by 29%), private pensions (reported by 37%), and government employee pensions (reported by 16%).
- Social Security constituted 90% or more of the income received by 34% of beneficiaries in 2015 (23% of married couples and 43% of non-married beneficiaries).
- Over 4.6 million older adults (9.3%) were below the poverty level in 2016. This poverty rate is not statistically different from the poverty rate in 2015 (8.8%). In 2011, the U.S. Census Bureau released a new Supplemental Poverty Measure (SPM) which takes into account regional variations in living costs, non-cash benefits received, and non-discretionary expenditures but does not replace the official poverty measure. In 2016, the SPM showed a poverty level for persons age 65 and over of 14.5% (more than 5 percentage points higher than the official rate of 9.3%). This increase is mainly due to including medical out-of-pocket expenses in the poverty calculations.
- The need for caregiving increases with age. In January-June 2017, the percentage of older adults age 85 and over needing help with personal care (22%) was more than twice the percentage for adults ages 75–84 (9%) and more than six times the percentage for adults ages 65–74 (3%).

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[1] Principal sources of data for the Profile are the U.S. Census Bureau, the National Center for Health Statistics, and the Bureau of Labor Statistics. The Profile incorporates the latest data available but not all items are updated on an annual basis. [2] This report includes data on the 65 and over population unless otherwise noted. The phrases “older adults” or “older persons” refer to the population age 65 and over.

[3] Numbers in this report may not add up due to rounding.

The Older Population

In the United States, the population age 65 and over numbered 49.2 million in 2016 (the most recent year for which data are available). They represented 15.2% of the population, about one in every seven Americans. The number of older Americans increased by 12.1 million or 33% since 2006, compared to an increase of 5% for the under-65 population.

Between 2006 and 2016, the number of Americans aged 45-64 (who will reach age 65 over the next two decades) increased by 12% and the number of Americans age 60 and over increased by 36% from 50.7million to 68.7 million.

In 2016, among the population age 65 and over there were 27.5 million women and 21.8 million men, or a sex ratio of 126 women for every 100 men. At age 85 and over, this ratio increased to 187 women for every 100 men.

Since 1900, the percentage of Americans age 65 and over has more than tripled (from 4.1% in 1900 to 15.2% in 2016), and the number has increased over fifteen times (from 3.1 million to 49.2 million). The older population itself is increasingly older. In 2016, the 65-74 age group (28.6 million) was more than 13 times larger than in 1900 (2,186,767); the 75-84 group (14.2 million) was more than 18 times larger (771,369), and the 85+ group
(6.4 million) was 52 times larger (122,362).

In 2016, persons reaching age 65 had an average life expectancy of an additional 19.4 years (20.6 years for females and 18 years for males). A child born in 2016 could expect to live 78.6 years, more than 30 years longer than a child born in 1900 (47.3 years). Much of this increase occurred because of reduced death rates for children and young adults. However, the period of

1990-2007 also has seen reduced death rates for the population aged 65- 84, especially for men – by 41.6% for men aged 65-74 and by 29.5% for men aged 75-84. Life expectancy at age 65 increased by only 2.5 years between 1900 and 1960, but has increased by 4.2 years from 1960 to 2007.

Nonetheless, some research has raised concerns about future increases in life expectancy in the US compared to other high-income countries, primarily due to past smoking and current obesity levels, especially for women age 50 and over (National Research Council, 2011).

In 2016, 3.5 million persons celebrated their 65th birthday. Census estimates showed an annual net increase between 2015 and 2016 of 1.5 million in the number of persons age 65 and over.

Between 1980 and 2016, the centenarian population experienced a larger percentage increase than did the total population. There were 81,896 persons age 100 and over in 2016 (0.2% of the total age 65 and over population). This is more than double the 1980 figure of 32,194.

Sources: U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2016. Release Date: June 2017; Table 1. Intercensal Estimates of the Resident Population by Sex and Age for the United States: April 1, 2000 to July 1, 2010. Release Date: September 2011; Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2016. Release Date: June 2017; 2010 Census Special Reports, Centenarians: 2010, C2010SR-03, 2012; Hobbs, Frank and Nicole Stoops, Census 2000 Special Reports, Series CENSR-4, Demographic Trends in the 20th Century, Table 5. Population by Age and Sex for the United States: 1900 to 2000, Part A; National Center for Health Statistics, Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS data brief, no 293. Hyattsville, MD: December 2017; and National Research Council, Crimmins EM, Preston SH, Cohen B, editors. Explaining Divergent Levels of Longevity in High-Income Countries. Panel on Understanding Divergent Trends in Longevity in High-Income Countries, 2011.

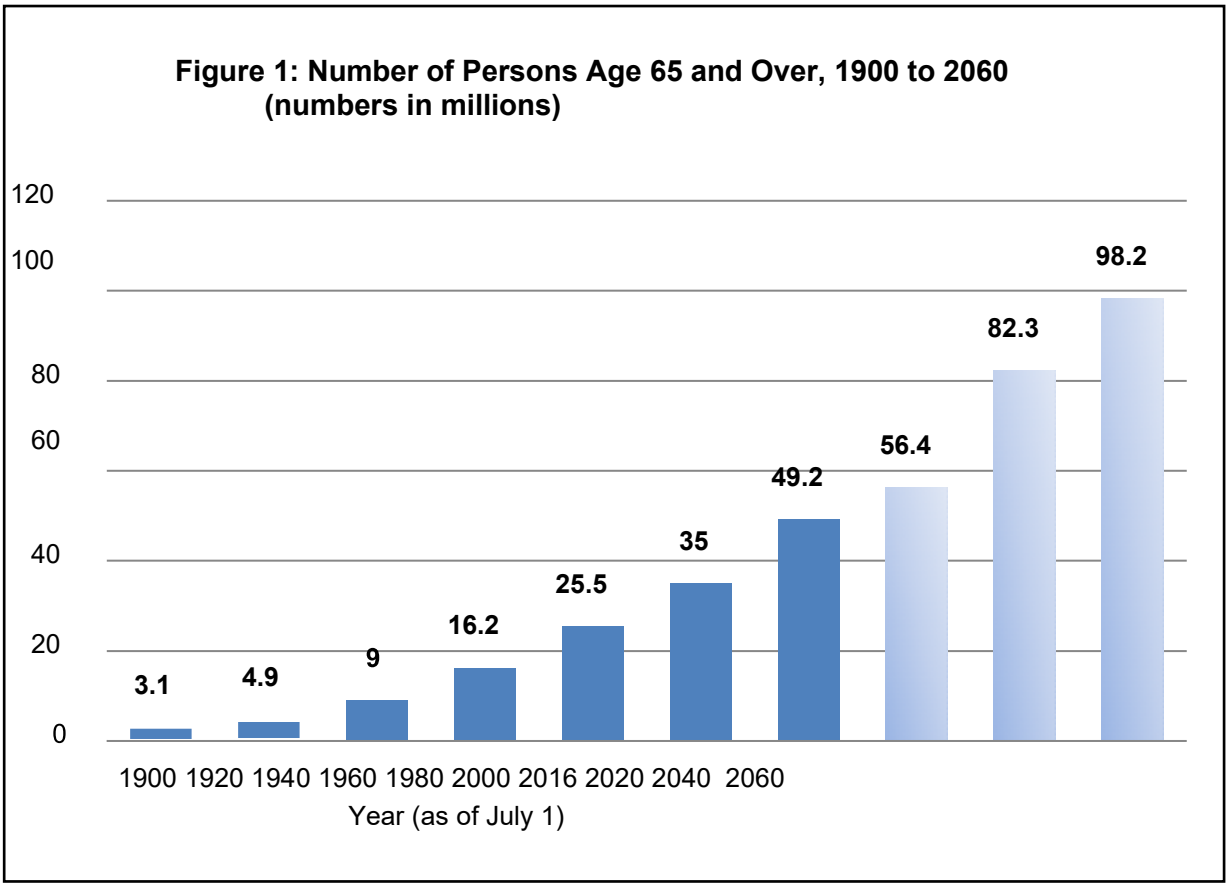
Future Growth

The older population is expected to continue to grow significantly in the future (Figure 1). This growth slowed somewhat during the 1990's because of the relatively small number of babies born during the Great Depression of the 1930's. But the older population is beginning to burgeon as approximately one-third of the "baby boom" generation is now age 65 and over.

The population age 65 and over has increased from 37.2 million in 2006 to 49.2 million in 2016 (a 33% increase) and is projected to almost double to 98 million in 2060. By 2040, there will be about 82.3 million older persons, over twice their number in 2000. People age 65 and over represented 15.2% of the population in the year 2016 but are expected to grow to be 21.7% of the population by 2040. The 85 and over population is projected to more than double from 6.4 million in 2016 to 14.6 million in 2040 (a 129% increase).

Racial and ethnic minority populations have increased from 6.9 million in 2006 (19% of the older adult population) to 11.1 million in 2016 (23% of older adults) and are projected to increase to 21.1 million in 2030 (28% of older adults). Between 2016 and 2030, the white (not Hispanic) population age 65 and over is projected to increase by 39% compared to 89% for older racial and ethnic minority populations, including Hispanics (112%), African-Americans (not Hispanic) (73%), American Indian and Native Alaskans (not Hispanic) (72%), and Asians (not Hispanic) (81%).

Figure 1: Number of Persons Age 65 and Over: 1900-2060 (numbers in millions)



Note: Increments in years are uneven. Lighter bars indicate projections. Source: U.S. Census Bureau, Population Estimates and Projections.

Sources: U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2016, Release Date: June 2017; Intercensal Estimates of the Resident Population by Sex and Age for the United States: April 1, 2000 to July 1, 2010. Release Date: September 2011; Intercensal Estimates of the White Alone Not Hispanic Resident Population by Sex and Age for the United States: April 1, 2000 to July 1, 2010. Release Date: September 2011; 2014 National Population Projections: Summary Tables, Table 3.

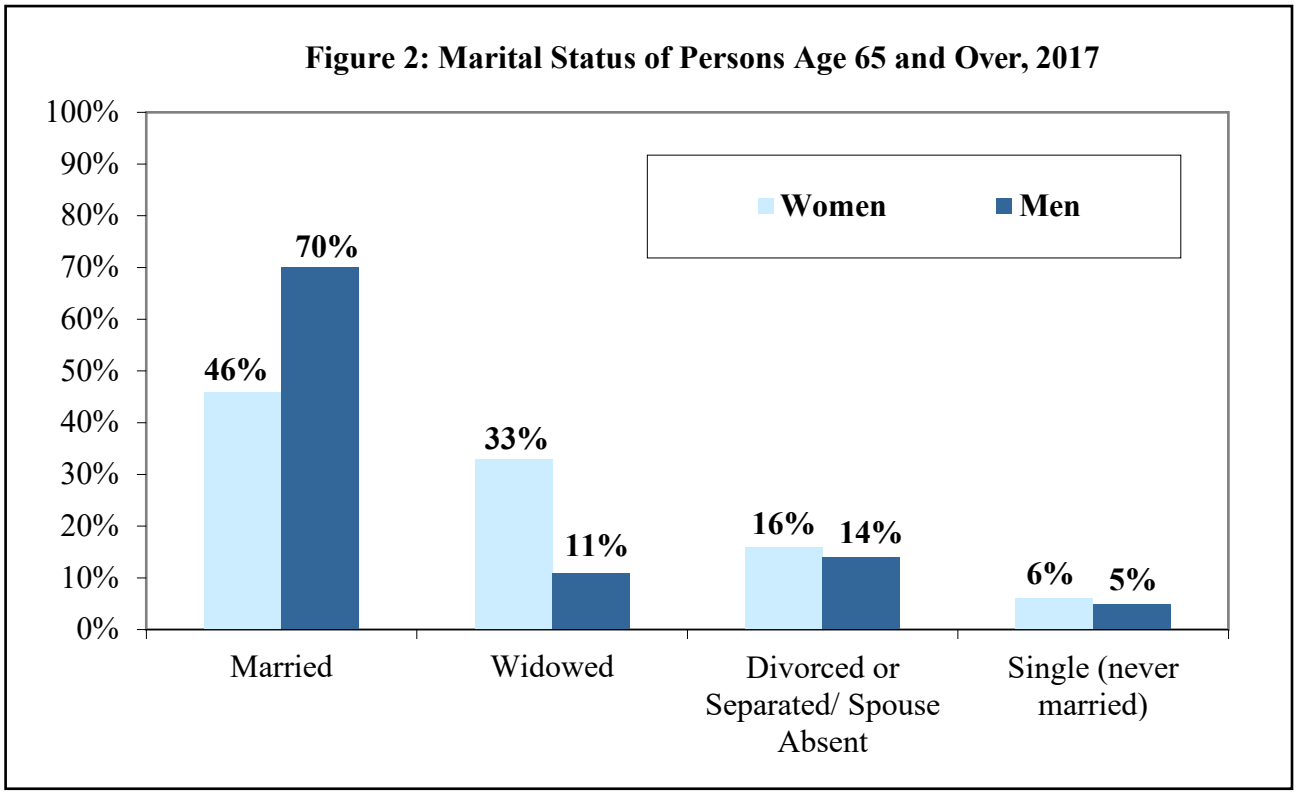
Projections of the Population by Sex and Selected Age Groups for the United States: 2015 to 2060, released December 10, 2014; and NP2014_D1: Projected Population by Single Year of Age, Sex, Race, and Hispanic Origin for the United States: 2014 to 2060. Release date: December 2014.

Marital Status

In 2017, a larger percentage of older men were married as compared with older women--70% of men, 46% of women (Figure 2). Widows accounted for 33% of all older women in 2017. There were more than three times as many widows (8.9 million) as widowers (2.5 million).

Divorced and separated (including married/spouse absent) older persons represented only 15% of all older persons in 2017. However, this percentage has increased since 1980, when approximately 5.3% of the older population were divorced or separated/spouse absent.

Figure 2: Marital Status of Persons Age 65 and over, 2017



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Living Arrangements

Over half (59%) of older noninstitutionalized persons age 65 and over lived with their spouse (including partner) in 2017. Approximately 16 million or 72% of older men, and 12.9 million or 48% of older women, lived with their spouse (Figure 3). The proportion living with their spouse decreased with age, especially for women. Only 34% of women 75 and over years old lived with a spouse.

About 28% (13.8 million) of all noninstitutionalized older persons in 2017 lived alone (9.3 million women, 4.5 million men). They represented 34% of older women and 20% of older men. The proportion living alone increases with advanced age. Among women age 75 and over, for example, almost half (45%) lived alone.

A relatively small number (1.5 million) and percentage (3.1%) of the 65 and over population lived in institutional settings in 2016. Among those who did, 1.2 million lived in nursing homes. However, the percentage increases dramatically with age, ranging from 1% for persons ages 65-74 to 3% for persons ages 75-84 and 9% for persons age 85 and over.

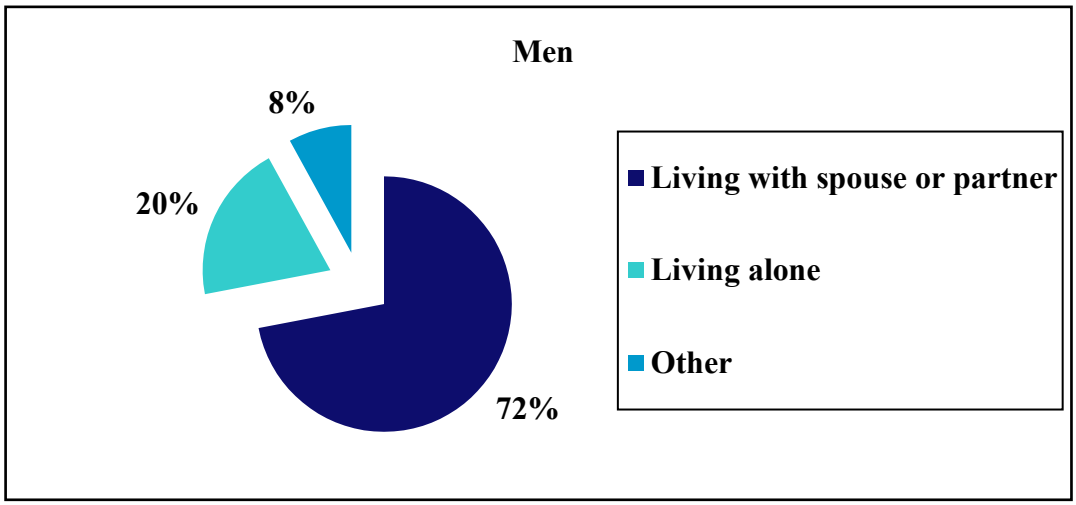
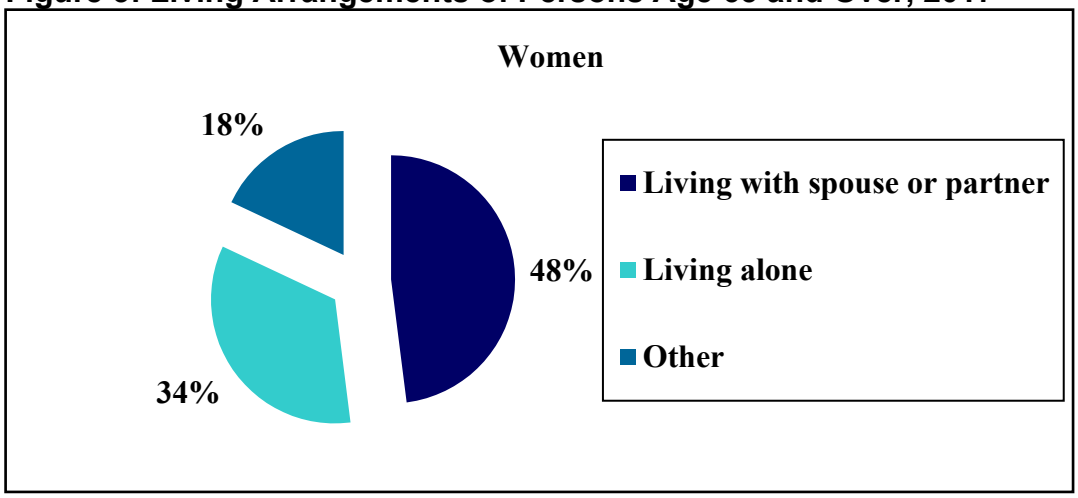


Figure 3: Living Arrangements of Persons Age 65 and Over, 2017



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Sources: U.S. Census Bureau, American Community Survey; Current Population Survey, Annual Social and Economic Supplement 1967 to present; Table AD3. Living arrangements of adults 65 to 74 years old, 1967 to present; Table AD3. Living arrangements of adults 75 and over, 1967 to present.

Racial and Ethnic Composition

In 2016, 23% of persons age 65 and over were members of racial or ethnic minority populations—9% were African-Americans (not Hispanic), 4% were Asian or Pacific Islander (not Hispanic), 0.5% were Native American (not Hispanic), 0.1% were Native Hawaiian/Pacific

Islander, (not Hispanic), and 0.7% of persons age 65+ identified themselves as being of two or more races. Persons of Hispanic origin (who may be of any race) represented 8% of the older population.

Only 9% of all the people who were members of racial and ethnic minority populations were age 65 and over in 2016 compared to 19% of non-Hispanic whites. The percentage of people age 65 and over within each racial and ethnic minority group were as follows: 11% of African-Americans (not Hispanic), 12% of Asians (not Hispanic), 9% of Native Hawaiian and Other Pacific Islanders (not Hispanic), 11% of American Indian and Native Alaskans (not Hispanic), and 7% of Hispanics.

Source: U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2016. Release Date: June 2017.

Geographic Distribution

The proportion of older persons in the population varied considerably by state with some states experiencing much greater growth in their older populations (Figures 4 and 5). In 2016, more than half (54%) of persons age 65 and over lived in 10 states: California (5.3 million); Florida (4.1 million); Texas (3.4 million); New York (3.0 million); Pennsylvania (2.2 million); Ohio (1.9 million); Illinois (1.9 million); Michigan (1.6 million); North Carolina (1.6 million); and New Jersey (1.4 million). Georgia, Virginia, Arizona, Washington, Massachusetts, and Tennessee each had over 1 million people age 65 and over in 2016
(Figure 6).

The five states with the highest percentage of persons age 65 and over in 2016 were Florida (19.9%), Maine (19.4%), West Virginia (18.8%), Vermont (18.1%), and Montana (17.7%).

In four states, the age 65 and over population increased by 50% or more between 2006 and 2016: Alaska (66%); Nevada (57%); Colorado (55%); and Arizona (50%).

The 14 states with poverty rates at or over 10% for older adults during 2016 were: District of Columbia (13.4%); Louisiana (13%); Mississippi (12.3%); New Mexico (11.5%); New York (11.4%); Kentucky (11.1%); South

Dakota (10.9%); Arkansas (10.5%); Texas (10.5%); Florida (10.4%); California (10.3%); Georgia (10.1%);
Alabama (10.0%); and Idaho (10.0%).

A smaller percentage of older adults changed residence as compared with younger age groups. From 2016 to 2017, only 4% of older persons moved as opposed to 12% of the under age 65 population. Most older movers (57%) stayed in the same county and 21% remained in the same state (different county). Only 22% moved out-of- state or abroad.

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Sources: Administration for Community Living agid.acl.gov. Data Source: Population Estimates 2006, accessed January 30, 2018. U.S. Census Bureau, American Community Survey; Current Population Survey, Annual Social and Economic Supplement; Table 1. General Mobility, by Race and Hispanic Origin, Region, Sex, Age, Relationship to Householder, Educational Attainment, Marital Status, Nativity, Tenure, and Poverty Status: 2016 to 2017; Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2016. Release date June 2017.

Figure 4: Persons Age 65 and Over as a Percentage of Total Population, 2016

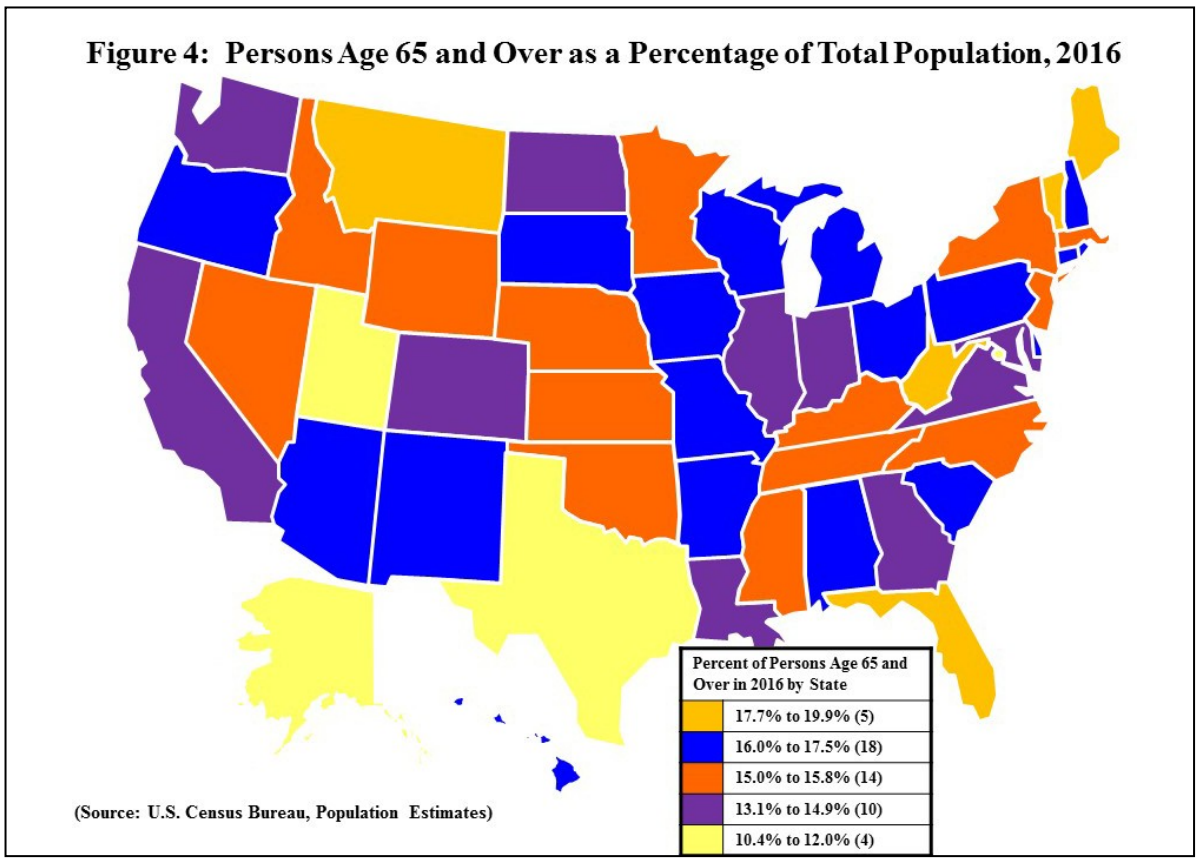

Figure 5: Percent Increase in Population Age 65 and Over, 2006 to 2016

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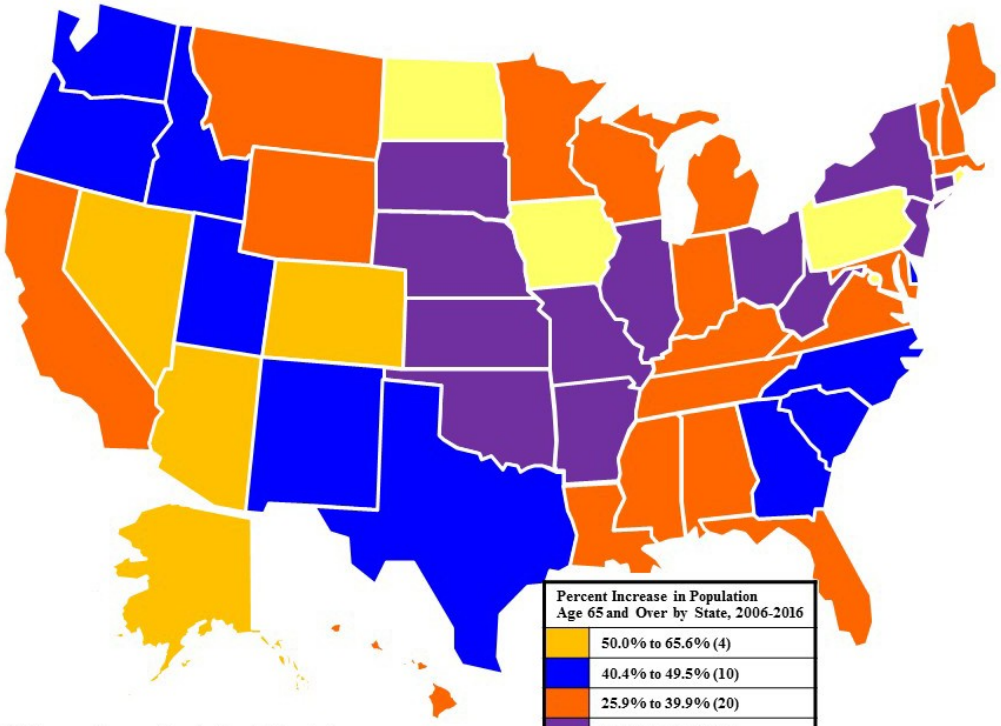


(Source: U.S. Census Bureau, Population Estimates)

Figure 6: The Age 65 and Over Population by State, 2016

State	Number of Persons 65 and Over (1)	Percent of All Ages	Percent Increase from 2006 to 2016	Percent Below Poverty 2016 (2)
US Total (50 States+ DC)	49,244,195	15.20%	32.5	9.30%
Alabama	784,551	16.10%	28.0	10.00%
Alaska	77,206	10.40%	65.6	4.20%
Arizona	1,170,924	16.90%	50.0	9.00%
Arkansas	486,734	16.30%	24.0	10.50%
California	5,346,635	13.60%	38.1	10.30%
Colorado	743,524	13.40%	55.0	7.60%
Connecticut	577,403	16.10%	21.2	6.50%
Delaware	166,950	17.50%	44.2	6.90%
District of Columbia	78,691	11.60%	19.4	13.40%
Florida	4,094,917	19.90%	36.3	10.40%
Georgia	1,354,662	13.10%	49.4	10.10%
Hawaii	243,962	17.10%	37.3	8.90%
Idaho	254,989	15.10%	48.7	10.00%
Illinois	1,871,264	14.60%	22.8	9.20%
Indiana	991,563	14.90%	25.9	7.70%
Iowa	514,215	16.40%	17.1	6.90%
Kansas	436,993	15.00%	21.7	8.00%
Kentucky	690,717	15.60%	28.3	11.10%
Louisiana	674,443	14.40%	30.9	13.00%
Maine	257,683	19.40%	32.4	9.10%
Maryland	876,210	14.60%	35.6	8.20%
Massachusetts	1,073,964	15.80%	26.3	8.50%
Michigan	1,611,755	16.20%	27.0	8.10%
Minnesota	832,228	15.10%	31.8	7.20%
Mississippi	450,941	15.10%	26.0	12.30%

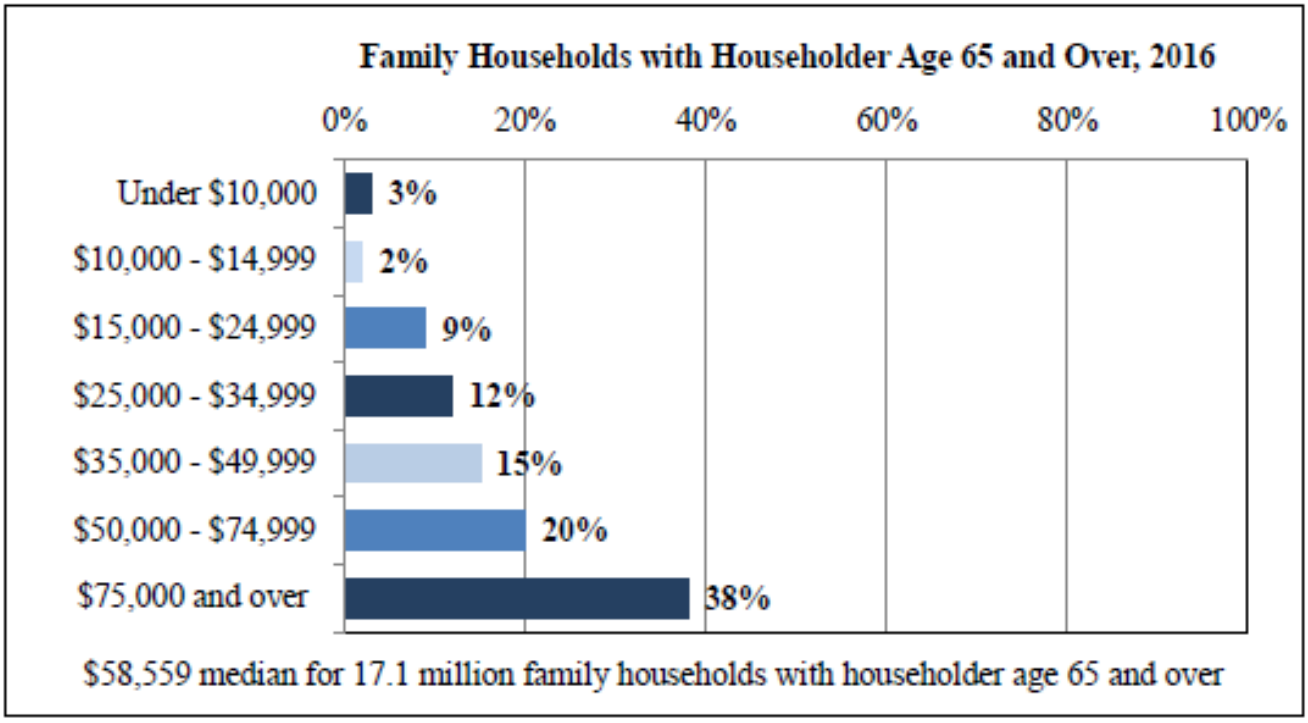
Missouri	978,021	16.10%	24.8	8.20%
Montana	185,040	17.70%	39.5	8.90%
Nebraska	286,744	15.00%	21.6	7.80%
Nevada	441,142	15.00%	57.3	8.70%
New Hampshire	226,804	17.00%	39.9	4.60%
New Jersey	1,372,612	15.30%	22.1	8.30%
New Mexico	342,426	16.50%	40.4	11.50%
New York	3,032,509	15.40%	21.8	11.40%
North Carolina	1,569,465	15.50%	43.1	9.40%
North Dakota	109,999	14.50%	16.0	7.90%
Ohio	1,886,629	16.20%	22.4	8.10%
Oklahoma	590,138	15.00%	24.2	8.60%
Oregon	688,878	16.80%	42.8	7.50%
Pennsylvania	2,223,721	17.40%	17.5	7.80%
Rhode Island	173,964	16.50%	17.4	9.10%
South Carolina	830,232	16.70%	49.5	8.60%
South Dakota	138,805	16.00%	25.1	10.90%
Tennessee	1,047,052	15.70%	35.3	8.90%
Texas	3,353,240	12.00%	44.0	10.50%
Utah	321,164	10.50%	44.8	6.70%
Vermont	112,932	18.10%	35.2	8.70%
Virginia	1,228,744	14.60%	39.7	7.80%
Washington	1,081,063	14.80%	47.2	7.60%
West Virginia	343,517	18.80%	21.0	9.50%
Wisconsin	928,418	16.10%	26.7	7.60%
Wyoming	87,812	15.00%	38.0	8.50%
Puerto Rico	645,887	18.90%	26.3	38.10%

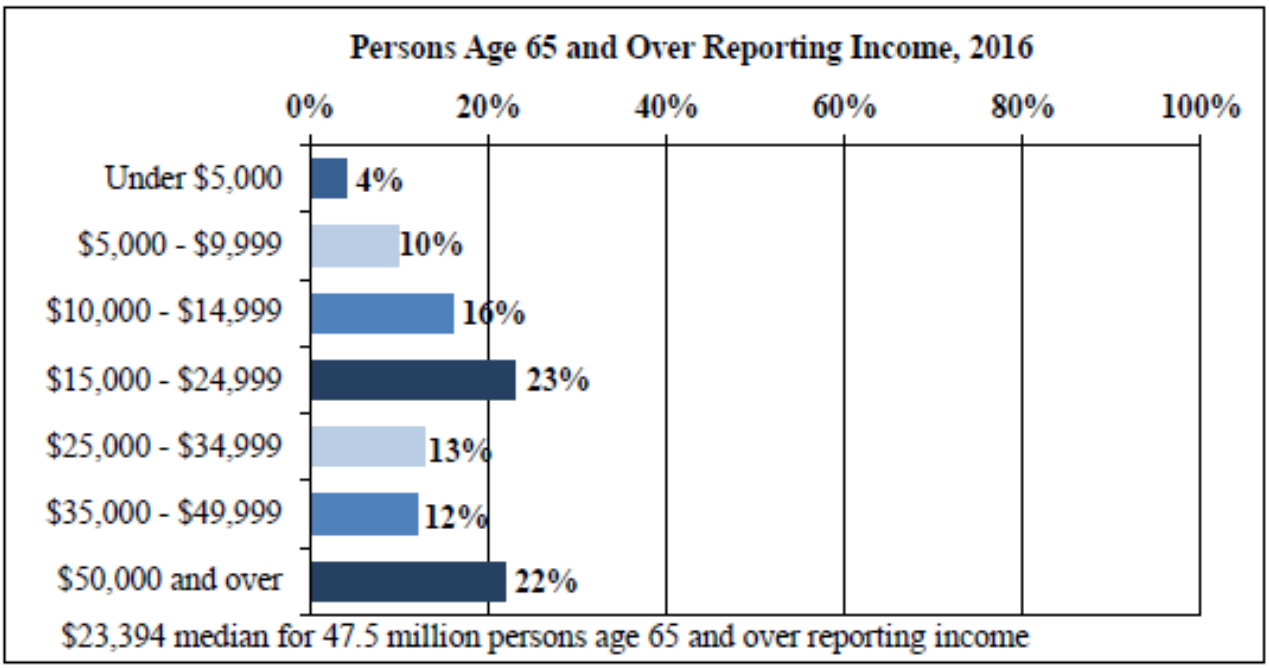
Notes: (1) Population Estimates (2) Poverty data for the US total are from the Current Population Survey, Poverty data for States and Puerto Rico are from the American Community Survey.
Data Sources: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement; Population Estimates; and American Community Survey.

Income

The median income of older persons in 2016 was $31,618 for males and $18,380 for females. From 2015 to 2016, the real median income (after adjusting for inflation) of all households headed by older people increased by 2.1% which was not statistically significant. Households containing families headed by persons age 65 and over reported a median income in 2016 of $58,559 ($61,458 for non-Hispanic Whites, $44,986 for Hispanics, $43,554 for African-Americans, and $66,116 for Asians). About 5% of family households with an older adult householder had incomes less than $15,000 and 73% had incomes of $35,000 or more (Figure 7).

Figure 7: Percent Distribution by Income: 2016





Note: Percentages may not add to 100 due to rounding.
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

For all older persons reporting income in 2016 (47.5 million), 14% reported less than $10,000 and 47% reported
$25,000 or more. The median income reported was $23,394.

The major sources of income as reported by older persons in 2015 were Social Security (reported by 84% of older persons), income from assets (reported by 63%), earnings (reported by 29%), private pensions (reported by 37%), and government employee pensions (reported by 16%). In 2015, Social Security benefits accounted for 33% of the aggregate income[4] of the older population. The bulk of the remainder consisted of earnings (34%), asset income (9%), pensions (20%) and other (4%). Social Security constituted 90% or more of the income received by 34% of beneficiaries (23% of married couples and 43% of non-married beneficiaries).

Sources: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, FINC-01. Selected Characteristics of Families by Total Money Income in 2016; PINC-01. Selected Characteristics of People 15 Years Old and Over by Total Money Income in 2016, Work Experience in 2016, Race, Hispanic Origin, and Sex; and U.S. Census Bureau,

Income and Poverty in the United States: 2016, Current Population Reports, P60-259, issued September 2017. Social Security Administration, “Fast Facts and Figures About Social Security, 2017.”

Poverty

Over 4.6 million people age 65 and over (9.3%) were below the poverty level in 2016.[5] This poverty rate is not statistically different from the poverty rate in 2015 (8.8%). Another 2.4 million or 4.9% of older adults were classified as "near-poor" (income between the poverty level and 125% of this level).

In 2016, 2.7 million older Whites (alone, not Hispanic) (7.1%) were poor in 2016, compared to 18.7% of older African-Americans (alone), 11.8% of older Asians (alone), and 17.4% of older Hispanics (any race).

Older women had a higher poverty rate (10.6%) than older men (7.6%) in 2016. A higher percentage of older persons living alone were poor (17.3%) as compared with older persons living with families (5.3%). The highest poverty rates were experienced among older Hispanic women who lived alone (39.5%).

In 2011, the U.S. Census Bureau released a new Supplemental Poverty Measure (SPM). The SPM methodology shows a significantly higher number of older persons below poverty than is shown by the official poverty measure. For persons age 65 and over, this poverty measure showed a poverty level of 14.5% in 2016 (more than 5 percentage points higher than the official rate of 9.3%). Unlike the official poverty rate, the SPM takes into account regional variations in the cost of housing etc. and, even more significantly, the impact of both non-cash benefits received (e.g., SNAP/food stamps, low income tax credits, and WIC) and non-discretionary expenditures including medical out-of-pocket (MOOP) expenses. For persons 65 and over,

MOOP was the major source of the significant differences between these measures. The SPM does not replace the official poverty measure.

Sources: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement; POV01: Age and Sex of All People, Family Members and Unrelated Individuals Iterated by Income-to-Poverty Ratio and Race: 2016; "Income and Poverty in the United States: 2016," P60-259, issued September, 2017; Poverty Thresholds for 2016 by Size of Family and Number of Related Children Under 18 Years; and “The Supplemental Poverty Measure: 2016,” P60-261(RV), revised September 2017.

[4] Aggregate income refers to the total income of couples and nonmarried persons aged 65 or older.

[5] The poverty threshold in 2016 was $11,511 for householders age 65 and over living alone.

Housing

Of the 11.9 million households headed by persons age 75 and over in 2015, 76% were owners and 24% were renters. The median family income of older homeowners was $31,000. The median family income of older renterswas $17,400. In 2015, almost 44% of older householders spent more than one-third of their income on housing costs - 36% for owners and 78% for renters.

For older homeowners age 75 and over in 2015, the median construction year was 1969 compared to 1978 for all homeowners. Among the homes owned by people age 75 and over, 3.5% had moderate to severe problems with plumbing, heating, electric, wiring, and/or upkeep. In 2015, the median value of homes owned by older persons was $150,000 (with a median purchase price of $53,000). In comparison, the median home value all homeowners was $180,000 (with a median purchase price of $127,000). About 78% of older homeowners in 2015 owned their homes free and clear.

Source: Department of Housing and Urban Development, American Housing Survey, National Tables: 2015.

Employment

In 2017, 9.6 million (19.3%) Americans age 65 and over were in the labor force (working or actively seeking work), including 5.3 million men (23.9%) and 4.3 million women (15.7%). They constituted 6% of the U.S. labor force. About 3.6% were unemployed. Labor force participation of men age 65 and over decreased steadily from 63.1% in 1900 to 15.8% in 1985; then stayed at 16%-18% until 2002; and has been increasing since then to over 20%. The participation rate for women age 65 and over rose slightly from 8.3% in 1900 to 10.9% in 1956, fell to 7.3% in 1985, and then stayed at 8%-9% during the 1990s. Beginning in 2000, labor force participation of older women started to gradually rise from 9.7% to the 2017 level of 15.7%. This increase is especially noticeable among the population ages 65-69.

Source: Bureau of Labor Statistics, Current Population Survey, Labor Force Statistics, Household Data, Annual Averages, Table 3. Employment status of the civilian noninstitutional population by age, sex, and race.

Education

The educational level of the older population is increasing. Between 1970 and 2017, the percentage of older persons who had completed high school rose from 28% to 86%. About 30% in 2017 had a bachelor's degree or higher. The percentage who had completed high school varied considerably by race and ethnic origin in 2017: 91% of Whites (not Hispanic), 79% of Asians (not Hispanic), 75% of African-Americans (not Hispanic), 79% of American Indian/Alaska Natives (not Hispanic), and 58% of Hispanics. The increase in educational levels is also evident within these groups. In 1970, only 30% of older Whites and 9% of older African-Americans were high school graduates.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Health and Health Care

In June-July 2017, 45% of noninstitutionalized people age 65 and over assessed their health as excellent or very good (compared to 64% for persons ages 18-64 years). Most older persons have at least one chronic condition and many have multiple conditions. In 2015, among persons age 65 and over, the top five chronic conditions were hypertension (58%), hyperlipidemia (48%),

arthritis (31%), ischemic heart disease (29%), and diabetes (27%).

In January-June 2017, 71% of people age 65 and over reported that they received an influenza vaccination during the past 12 months and 69% reported that they had ever received a pneumococcal vaccination. About 31% (of persons age 60 and over) reported height/weight combinations that placed them among the obese. Slightly under half (44%) of persons ages 65-74 and 29% of persons age 75 and over reported that they engaged in regular leisure-time physical activity. Only 9% of persons age 65 and over reported that they were current smokers and 8% reported excessive alcohol consumption. Less than 3% of persons age 65 and over reported that they had experienced serious psychological distress during the past 30 days.

In 2015, 7.1 million people age 65 and over stayed in a hospital overnight at least one night during the year. Among this group of older adults, 10% stayed overnight 1 time, 3% stayed overnight 2 times, and 2% stayed overnight 3 or more times. This is approximately double the number of overnight hospital stays for the population ages 45 to 64; 6% had stayed overnight 1 time, 1% stayed overnight 2 times, and 1% stayed overnight 3 or more times. Older persons averaged more office visits with doctors than younger persons in 2016. Among people age 75 and over, 19% had 10 or more visits to a doctor or other health care professional in the past 12 months compared to 17% among people ages 65 to 74,15% among people ages 45 to 64, and 11% among people ages 18
to 44.

In January-June 2017, 97% of persons age 65 and over reported that they did have a usual place to go for medical care and only 3% said that they failed to obtain needed medical care during the previous 12 months due to cost.

In 2016, consumers age 65 and over averaged out-of-pocket health care expenditures of $5.994, an increase of 38% since 2006 ($4,331). In contrast, the total population spent considerably less, averaging $4,612 in out-of- pocket costs. Older Americans spent 13.1% of their total expenditures on health, as compared to 8% among all consumers. Health costs incurred on average by older consumers in 2016 consisted of $4,159 (69%) for insurance,
$913 (15%) for medical services, $715 (12%) for drugs, and $207 (3%) for medical supplies.

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Sources: National Center for Health Statistics, National Health Interview Survey, Early Release

of Selected Estimates Based on Data from the January-June 2017; Tables of Summary Health Statistics for U.S. Adults: 2015 and 2016; Centers for Medicare and Medicaid Services, Medicare claims data. Bureau of Labor Statistics, Consumer Expenditure Survey, Table 1300. Age of Reference Person: Annual Expenditures Means, Shares, Standard Errors, and Coefficient of Variation, 2016. Table 3. Age of reference person: Average annual expenditures and characteristics, Consumer Expenditure Survey, 2006.

Health Insurance Coverage

In 2016, almost all (93%) non-institutionalized persons age 65 and over were covered by Medicare. Medicare covers mostly acute care services and requires beneficiaries to pay part of the cost, leaving about half of health spending to be covered by other sources. About half of older adults (53%) had some type of private health insurance, 8% had military-based health insurance,7% were covered by Medicaid, and 1% had no coverage (Figure 8).

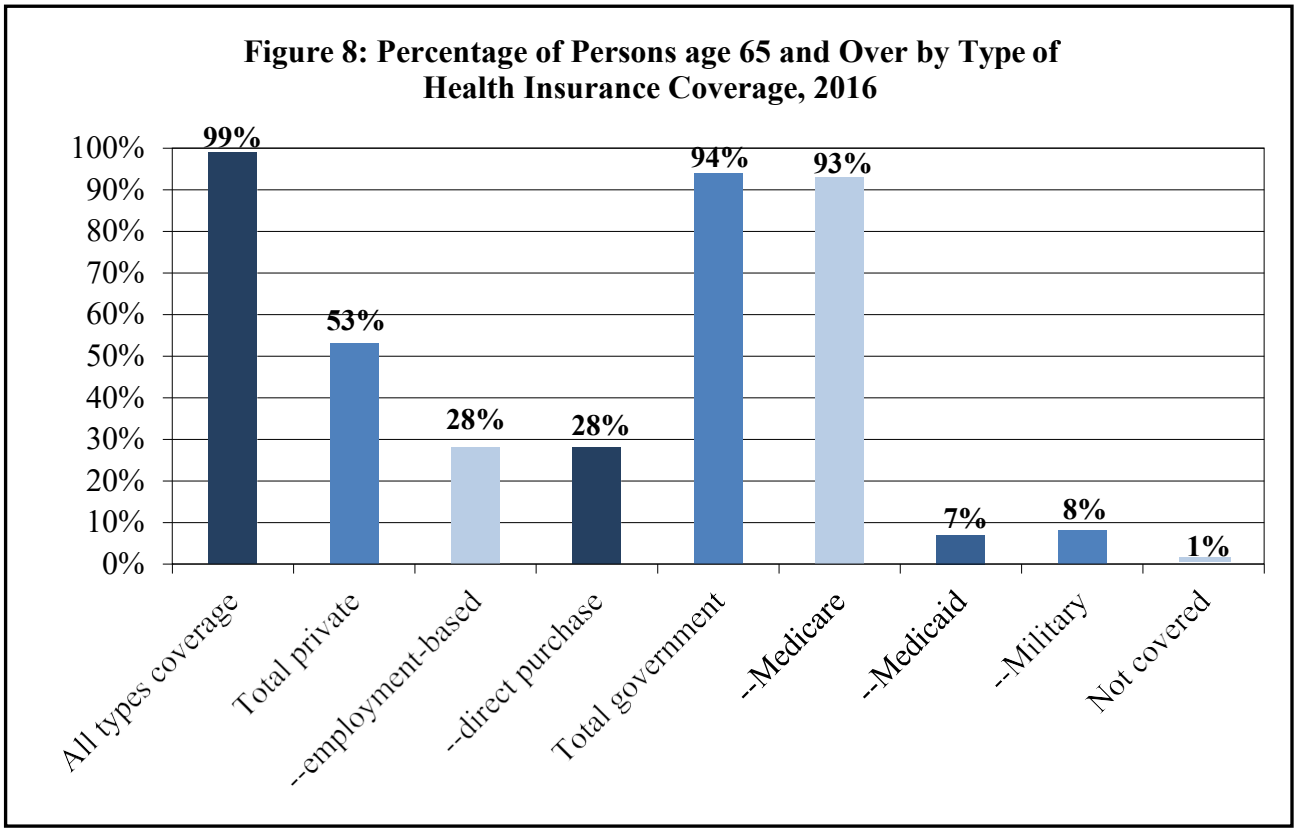


Figure 8: Percentage of Persons Age 65 and Over by type of Health Insurance Coverage, 2016

Note: A person can be represented in more than one category.

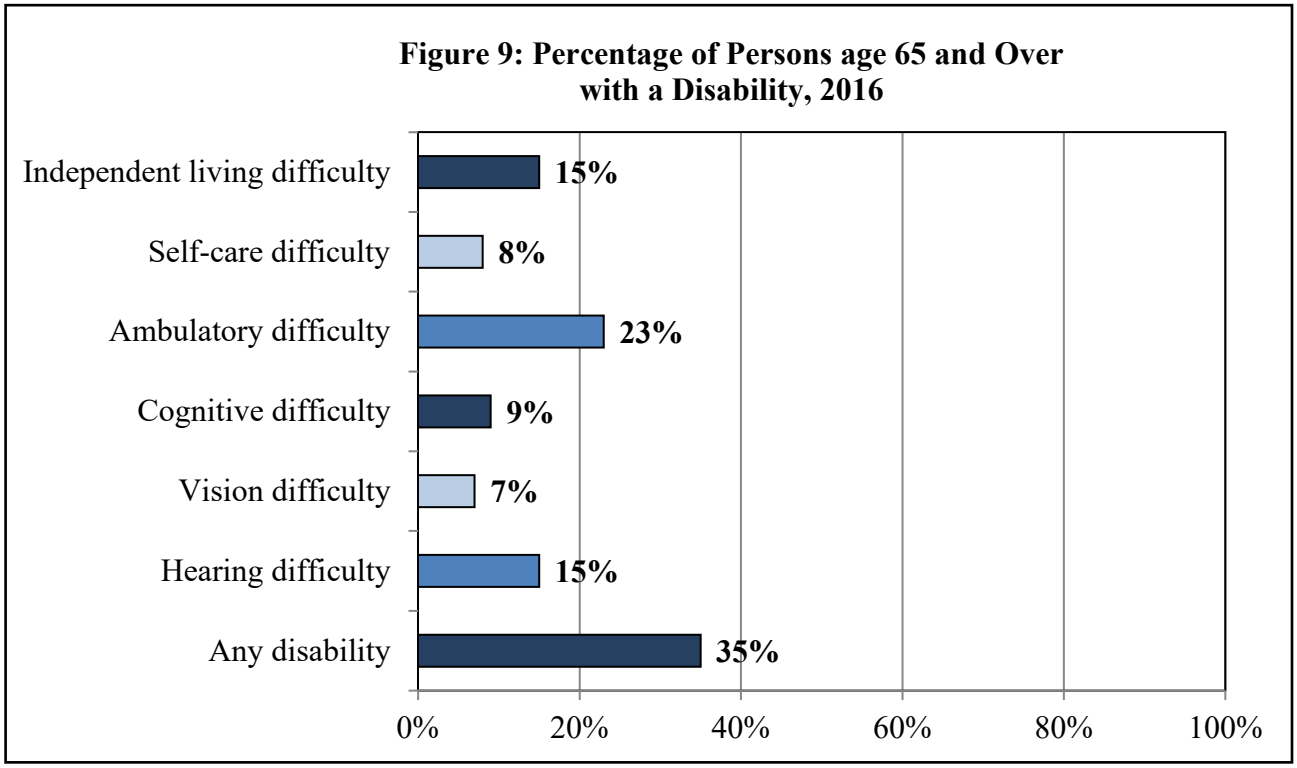
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Sources: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement; Table HI01. Health Insurance Coverage Status and Type of Coverage by Selected Characteristics: 2016.

Disability and Physical Functioning

According to the U.S. Census Bureau's American Community Survey, some type of disability (i.e., difficulty in hearing, vision, cognition, ambulation, self-care, or independent living) was reported by 35% of people age 65 and over in 2016. The percentages for individual disabilities ranged from almost one quarter (23%) having an ambulatory disability to 7% having a vision difficulty (Figure 9).

Figure 9: Percentage of persons age 65 and over with a disability, 2016



Source: U.S. Census Bureau, American Community Survey.

In 2016, 44.3% of people age 75 and over reported having a difficulties in physical functioning. This percentage is more than twice as large as for the age group 45 to 64 (19.7%). The percentage of people age 75 and over reporting difficulties in physical functioning ranged from 4.9% reporting it was very difficult to (or cannot) sit for 2 hours to 29.2% reporting it was very difficult to (or cannot) stand for 2 hours.

Sources: U.S. Census Bureau, American Community Survey. National Center for Health

Statistics, National Health Interview Survey.

Caregiving

The need for caregiving increases with age. In January-June 2017, the percentage of older adults age 85 and over needing help with personal care (22%) was more than twice the percentage for adults ages 75–84 (9%) and more than six times the percentage for adults ages 65–74 (3%).

Older adults not only need care, but often also provide care to younger family members. For example, approximately 1 million grandparents age 60 and over were responsible for the basic needs of one or more grandchildren under age 18 living with them in 2016. Of these caregivers, 58% were grandmothers and 42% were grandfathers.

In addition, in 2015, among the 3.6 million people with Intellectual and Developmental Disabilities (I/DD)[6] living with a family caregiver, 24% had caregivers who were age 60 and over (872,042). The percentage of people with I/DD living with older caregivers ranged from 11% in Alaska to 25% in Florida.

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Sources: National Center for Health Statistics, National Health Interview Survey, Early Release

of Selected Estimates Based on Data from the January-June 2017. U.S. Census Bureau, American Community Survey. Braddock, D., Hemp, R., Tanis, E.S. Wu, J. & Haffer, L. (2017). State of the States in Developmental Disabilities. American Association on Intellectual and Developmental Disabilities.

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[6] The total number of people with Intellectual and Developmental Disabilities (I/DD) is estimated to be 5 million.

Notes

Principal sources of data for the Profile are the U.S. Census Bureau, the National Center for Health Statistics, and the Bureau of Labor Statistics. The Profile incorporates the latest data available but not all items are updated on an annual basis.

Numbers in this report may not add up due to rounding. Age-adjusted estimates are used when available.
The data presented in this report refer to the noninstitutionalized population except where noted.

A Profile of Older Americans: 2017 was developed by the Administration on Aging (AoA), Administration for Community Living, U.S. Department of Health and Human Services.

AoA serves as an advocate for older adults within the federal government and is working to encourage and coordinate a responsive system of family and community based services throughout the nation. AoA helps states develop comprehensive service systems which are administered by 56 State Units on Aging, 629 Area Agencies on Aging, 263 Tribal organizations, and 1 Native Hawaiian organization.

Chapter 2: Challenges to Elderly Care in the United States

This article is sourced from: Western Pennsylvania. (2019). *Elderly Care Issues: 10 Challenges to Elderly Care in the US.* Retrieved from: April 1, 2021

Time passes faster than we like most of the time. One day you look up, and you or someone you love are part of the US geriatric population. Being old comes with its own set of challenges.

Some elderly care issues are ones you may be aware of. Some of these issues you may be surprised to hear about. The elderly care issues listed below are part of an informational guide for when you run into some of the challenges they face in today's world.

Key Elderly Care Statistics and Challenges

Some of the US elderly population statistics may surprise you. By 2035 in the United States there will be 78 million people age 65 and older. That statistic is a first in the U.S.

For the first time since the founding of America; the elderly population will outnumber the 18 and younger population.

Elderly Research Studies

Research studies have proposed the challenges in dealing with the growing number of elderlies are in four overall generic areas. They are:

1. Long-term care that works better than anything we have in place today.
2. Use the advances in medicine and behavioral health to keep the elderly active and healthy.
3. Community services need to be available to older adults so their active care needs and activities are uninterrupted.
4. Cultural biases towards the elderly need to be redefined and altered so they can integrate more easily into their communities.

To better meet the needs of this growing elderly statistical number and begin planning how to meet their challenges is not an easy task to accomplish. We must start the process. We need to learn more if we want to have a chance of moving forward in a positive manner with the elderly populations.

Elderly Care Issues

Under the umbrella of the four generic areas which affect the US elderly population, there are ten challenges we need to be aware. Each one of the elderly issues listed below has significant gaps in services which are needed. All of the issues below also represent excellent market opportunities.

1. Financial Wellness

Because people are living longer, the financial cushion of pensions, retirement, and social security aren't enough. Financial wellness requires that the elderly take new jobs later in life that keep them active and alert. There are new financial planning models needed.

Financial models that take into account the elderly's projected life expectancy. No one lives forever but with the longer life spans comes more financial need. The elderly's financial wellness depends on taking care of the financial gaps they may encounter.

2. *Mobility*

You may notice as you age, it becomes increasingly difficult to move around as you once did. Most homes, as they are designed today are not meant for the elderly. There are too many steps, window heights, and other physical obstacles.

It's important the elderly stay cautious and not put themselves at risk in unsafe homes or environments. Another challenge for the elderly needs more programs and services which allow them to stay fit, active, and independent as long as possible.

3. *Mental Stimulation*

Scientists now think there are brain activities which help protect the brain's health. In other words, the brain has a 'reserve,' and you can keep it loaded and ready to use, if you participate in mental stimulation activities and events.

Cognitive training can improve participants mental skills even ten years after the training occurred. Activities also keep your mind active. You can sign up for a cooking class, read books, learn a new hobby, but keep doing something as it helps stimulate your brain.

4. *Caregiving and Care Coordination*

You may not want to think about it, but you may need help with your care as you age. Or you may be dealing with someone who needs care right now. Two-thirds of the elderly have at least two chronic conditions requiring treatment.

It is these chronic diseases that take 75% of the nation's healthcare money. But the government hasn't caught up with what may be needed to improve the current system. The government spends only 1% on efforts to improve healthcare.

5. *Mental Health and Substance Abuse*

We already know the brain needs to stay active and stimulated as we age. But many in the elderly population don't take care of their mental health and have substance abuse issues. Some elderly abuse their prescription medicine or doctor shop for new medications.

Currently, 25% of the elderly have a mental disorder like depression, anxiety, dementia, PTSD, and more.

6. *Physical Accidents*

Every 13 seconds an older adult is treated in an emergency room for a fall. Every 20 minutes, an older adult dies from a fall. Accidents abound with the elderly population.

$50 billion is spent each year in our nation, treating the elderly who fall or have an accident. Medicare and Medicaid pay 75% of the $50 billion. But that rate of payment cannot sustain itself.

The challenge is creating a fiscal health care plan that is sustainable.

7. Elderly Abuse

There are times when the elderly will explain away bruises or gashes on their body by saying they fell. But many times, if an investigation is launched caregivers or family members will discover their loved one has been abused. Sometimes this abuse is in their nursing home, assisted living facility, or with a caregiver.

It is vital this challenge be understood and prevented.

8. Social Isolation

Many elderlies have lost their significant other, and their kids are grown, out of the house, or miles away. Social isolation occurs with many elderlies, yet they will rarely tell anyone about their isolation nor do they know how to end it. This is an ongoing challenge that needs to be addressed.

9. Advance Directives in Writing

The elderly need to have a living will and advance directives in writing, letting their loved ones know about the medical choices. These medical choices need to be activated should the elderly patient become completely incapacitated.

10. Age Discrimination

Many elderlies in the US elderly can work and may want to work. But will employers hire them? If employers will hire them, what kind of jobs will they give them? Many employers in the US job market, don't consider the resumes of elderly applicants.

This cuts off one lifeline the elderly need. The lifeline is vital for the accumulation of financial savings through their late in life jobs and careers.

Aging in Place

Many times elderly care issues begin and end with aging in place. Society needs to try to keep the elderly in communities that facilitate choices. Service efforts which promote aging in place are beneficial to a senior's quality of life.

The result is significant cost savings and dividends in society. But many elderlies are never given an option to age in place. They are living in unkempt conditions or may be at risk in their living quarters.

Chapter 3: The Biopsychosocial Aspects of Aging

A. *Biological (Physical) Aspects of Aging*

Age-Related Diseases and Clinical and Public Health Implications for the 85 Years Old and Over Population

The following is sourced from the US National Library of Medicine

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5732407/

Written by Efraim Jaul and Jeremy Barron

By 2050, the American 85 years old and over population will triple. Clinicians and the public health community need to develop a culture of sensitivity to the needs of this population and its subgroups. Sensory changes, cognitive changes, and weakness may be subtle or may be severe in the heterogeneous population of people over age 85. Falls, cardiovascular disease, and difficulty with activities of daily living are common but not universal. This paper reviews relevant changes of normal aging, diseases, and syndromes common in people over age 85, cognitive and psychological changes, social and environmental changes, and then reviews common discussions which clinicians routinely have with these patients and their families. Some hearing and vision loss are a part of normal aging as is decline in immune function. Cardiovascular disease and osteoporosis and dementia are common chronic conditions at age 85. Osteoarthritis, diabetes, and related mobility disability will increase in prevalence as the population ages and becomes more overweight. These population changes have considerable public health importance. Caregiver support, services in the home, assistive technologies, and promotion of home exercise programs as well as consideration of transportation and housing policies are recommended. For clinicians, judicious prescribing and ordering of tests includes a consideration of life expectancy, lag time to benefit, and patient goals. Furthermore, healthy behaviors starting in early childhood can optimize quality of life among the oldest-old.

The percentage of national populations over age 65 has been increasing in the last 10 years and will continue to rise for another 20 years due to improved life expectancies and a post-World War 2 baby boom. Beginning in 2030, the numbers of adults over age 85 will rise quickly. By 2050, the number of adults over age 80 around the globe will triple from 2015 numbers (1). Some nations

are aging even faster. Now is the time for the public health community to plan for the “older-older age wave.” Many cities have begun to explore how to make themselves more “elder-friendly.” As the baby boom-generation ages from 65 to 85, there will be a more intense need for services in the home and in community and institutional settings.

The aging process currently encompasses more than a generation and exceeds three decades. The common framework for describing different older adult populations is “young-old” (2), “old” (3), and “old-old.” The “young-old” are people in their 60s and early 70s who are active and healthy. The “old” are people in their 70s and 80s who have chronic illnesses and are slowing down with some bothersome symptoms. The “old-old” or “oldest-old” (4) are often sick, disabled, and perhaps even nearing death.

When caring for older adults as a clinician or as a caregiver, predicting the future and then planning for the most likely aging trajectories are key steps. This paper presents a model for the clinical and public health needs of adults over age 85.

The changes associated with a chronologic age of 85 can be divided into a few domains: normal aging, common diseases, and functional, cognitive/psychiatric, and social changes.

Normal Aging

Although changes can be described in every organ system, this review will address changes with public health and clinical decision-making implications.

Sensory Changes

Hearing Loss

Hearing loss (presbycusis) and increased cerumen production with aging contribute to difficulty hearing. The prevalence of hearing loss increases as a function of age and accumulating risk factors and has a high association with reduced quality of life (5). Approximately one-half of adults over age 85 have hearing impairment (6). **Mild hearing loss can impair speech processing, particularly if speech is rapid or if multiple talkers in large rooms generate reverberant noise. Therefore, verbal communication difficulties are most prominent in settings where people gather. Increased social isolation mediates the observed associations between hearing loss and depression, cognitive decline, and reduced quality of life.**

The use of hearing aids could reverse adverse effects on the quality of life, and cognitive function in elderly adults (7). Unfortunately, among individuals with hearing loss in one study, only 14.6% reported currently using a hearing aid (8). Often, health insurance does not offer coverage for these devices.

Visual Acuity

Visual acuity decreases normally with age (presbyopia). Older adults will often have problems with glare, making night driving riskier. A (strike in) longitudinal survey conducted in the UK on the population aged 75 and older found that prevalence of severe visual impairment was 23% at ages 85–89 and increased to 37% at age over 90 (9). Visual acuity deteriorates faster at higher ages. Cataract surgery is typically safe and sometimes helps function.

Vestibular Function

Dizziness is a common multifactorial geriatric syndrome contributing to falls. Vestibular function declines subtly with age. Vestibular rehabilitation can be an effective treatment (10).

Muscle Strength and Fat Changes

Muscle mass and strength decline starting in the fourth decade of life. **By age 85, approximately 20% of people meet criteria for sarcopenia (meaningful loss of muscle mass and strength) (11).** Chronic inflammation, declining hormone levels, impaired muscle mitochondrial function, and impaired muscle stem cell function all probably contribute to sarcopenia (12). This decline in muscle mass and increase in fat mass contributes to important changes in pharmacokinetics. Older adults may need lower medication doses than younger adults. Muscle weakness (13) and rapid rate of strength decline (14) both predict future mortality.

Immunosenescence

There are a wide variety of age-related changes in the immune system, some mediated by chronic inflammation and a chronic pro-inflammatory state. There is a decline in B cell function, a decline in T cell generation, altered T cell activation, and dysfunction of innate immunity (including impaired neutrophil function and chemotaxis and a dysregulated proinflammatory monocyte response). These changes (15) weaken the body's capacity to fight infection. For example, influenza infections are more common and more serious in older adults while the vaccine is less effective. Cellular immune dysfunction also contributes to the prevalence of herpes zoster among older adults. Vaccines are generally not as effective for older adults. High doses of the influenza vaccine may be more helpful than standard doses (16). Chronically slowed inflammatory processes also contribute to slow wound healing in older adults (17).

Urologic Changes

The urinary bladder is often not sterile in older adults but rather is colonized with bacteria not causing infection. Asymptomatic bacteriuria is more common in women than men and is most frequent among hospitalized patients and residents of long-term care facilities (up to 50% of women in these high risk groups) (18). Use of antibiotics in this situation is inappropriate (19) and may contribute to antimicrobial resistance.

Somatic Disease and Multiple Chronic Conditions

Cardiovascular Disease

Cardiovascular disease remains the most common cause of death of older adults, although death rates have dropped in the last 20 years. This category includes chronic ischemic heart disease, congestive heart failure, and arrhythmia. Ischemic heart disease may be underdiagnosed in the oldest-old (20). Normal aging includes vascular remodeling and vascular stiffness (21). Atherosclerosis causes inflammation and further vascular changes (22) increasing risk for cardiac events, cerebrovascular events, peripheral vascular disease, cognitive impairment, and other organ damage.

Hypertension

Hypertension, a major contributor to atherosclerosis, is the most common chronic disease of older adults (23). Isolated systolic hypertension is particularly common among older adults and is associated with mortality even at advanced ages. The value of intensive pharmacotherapy for hypertension in people over age 75 remains controversial. Evidence seems to suggest that aggressive treatment should be offered (24) and continued as long as it is well-tolerated and consistent with the patient's goals.

Cancer

Cancer is the second leading cause of death in older adults. However, by age 85, the death rate from cancer begins to fall (25). Slow-growing tumors seem to be common in this population.

Response to cancer treatment depends on functional status rather than age. Individuals in their ninth or tenth decade should not be denied aggressive cancer treatment simply due to age.

Screening is not recommended for breast cancer after age 75, due to insufficient evidence for benefit, although there may be benefit for women with a long life expectancy (26, 27). Similarly, for people over age 75 in the US, colon cancer screening is only recommended in cases where there is a long predicted life expectancy and a perceived strong capacity to tolerate cancer treatment, if needed (27, 28). At any age, life expectancy is quite variable in older adults, based on comorbidities and other factors (29).

Screening for prostate cancer is not recommended due to frequent false positives, which are burdensome, and to identification of slow-growing tumors (30).

Osteoarthritis

Osteoarthritis is the second most common chronic condition (23) among American older adults and a common cause of chronic pain and disability. Fifty-two percent of 85-year olds had a diagnosis of osteoarthritis in one study (20). The prevalence of osteoarthritis seems to be higher among women than men. Obesity is a risk factor for osteoarthritis and as the population ages (and particularly as the overweight population ages), the rate of severe hip, and knee arthritis will increase. Pain management will continue to be a vexing clinical and health policy problem as virtually all analgesics have remarkable risks in older adults. Osteoarthritis treatments also include costly joint replacement surgery, which is often accompanied by intensive rehabilitative therapies. Low back pain is itself a common symptom particularly in older women and the cause is often multifactorial. Non-pharmacologic treatments can help.

Diabetes Mellitus

Diabetes rates have been increasing as populations age and become more overweight. The prevalence of diabetes among American older adults may increase more than 400% by 2050 (31). Diabetes remains a strong risk factor for cardiovascular disease at age 85 (32). Diabetes is also associated with peripheral arterial disease and peripheral neuropathy, contributing to diabetic foot ulcers and amputations. Diabetic foot ulcers occur in 6% of diabetic patients annually and amputations in about 0.5%. **Management approaches in diabetes should be individualized.** Sulfonylureas and insulin carry a substantial risk of hypoglycemia and use should be weighed carefully in vulnerable older adults. Transitions from hospital to home or post-acute care are risky times for patients treated with hypoglycemic agents as dosing needs may fluctuate (31). **Regular foot examinations are critical for people with diabetes to prevent amputations. Regular walking can improve circulation in the legs.**

Osteoporosis

Osteopenia is normal loss of bone density with aging. Many 85-year-old adults have osteoporosis, a more severe weakening of bone density. Osteoporosis is associated with an increased rate of bone fractures, while osteopenia is not. Bone density screening is recommended for women over age 65 (33). Although the prevalence of fractures in men increases by age 85, the value of osteoporosis screening for men has not been clearly demonstrated. The effectiveness and safety of calcium and vitamin D supplementation in order to prevent fractures remains controversial.

Multiple Chronic Conditions

Sixty two percent of Americans over 65 have more than one chronic condition (34) and the prevalence of multiple chronic conditions is increasing (35), due to aging of populations and to increasing diabetes rates. Older adults with multiple chronic conditions account for a large percentage of health spending (36). Targeting this population for research and for quality improvement should improve care and reduce costs.

Physical Function

Normal age-related changes and accumulated pathology contribute to functional changes seen with aging.

Walking Speed

Walking speed declines with normal aging but will decline additionally due to disease. **Walking speed measurements can be used to predict future community ambulation, falls, disability (37), and risk of mortality (38). Measurement of walking speed is quick, safe, requires no special equipment, and adds no significant cost to clinical care**. In one study, the average

walking speed for the age group of 85–89 is 1.1 m/s for men and 0.8 m/s for women. After age 90 years, mean walking speed decreased to 0.9 m/s for men and 0.8 m/s for women (39). Physical activity interventions can improve walking speed.

Mobility Disability

Seventy-three percent of Americans over age 85 have some difficulty with walking according to a US Census study. Mobility disability is associated with social isolation, falls, and depression. One-third of people over age 85 with a disability live alone (40).

Disability in Activities of Daily Living

Disability rates are relatively high among adults over age 85. Rates of disability in activities like dressing and bathing, and disability in instrumental activities of daily living such as cooking, all rise with age over 80. Difficulty with bathing typically precedes difficulty with dressing or difficulty with using the toilet. In one study, 75% of people aged 85 had difficulty or disability with bathing and 25% had difficulty or disability with using the toilet (41). People with disabilities often also struggle with chronic pain, depression, and complex medication regimens (42). The percentage of older adults with disabilities has modestly decreased in recent decades.

Falls

Falls are a major cause of morbidity and disability among older adults. 30–40% of adults over age 70 fall each year and rates are particularly high for older adults in long-term care facilities. Falls account for more than half of injuries among older adults. **Fall-related death rates are higher for adults over age 85 than for other age groups (43). Physical activity, vitamin D supplementation, balance exercise, and home safety assessment as a part of a multifactorial fall prevention program have been shown to reduce the incidence of falls (44).** Individuals with balance problems or falls should have a multifactorial falls risk assessment (45).

Frailty

Frailty is defined as special vulnerability to stressors and is suggested by weakness, slowness, exhaustion, and weight loss (46). In one study, 38% of people aged 85–89 were frail (47). Frailty status can be assessed easily and the frail state predicts future disability, falls, hospitalizations, and poor surgical outcomes. Targeted interventions for frail populations would likely include physical activity and nutritional components (48) as well as medication reviews.

Continence

Thirty percent of women over age 65 and 50% of older adults in nursing facilities have urinary incontinence (49). Common causes for incontinence among women include overactive bladder, stress incontinence, and functional incontinence. Urinary incontinence reduces well-being and quality of life (50). However, common incontinence medications cause burdensome side effects.

Social/Environmental

Being married and being wealthy predict longer survival. The benefit of marriage seems stronger for men than women. Alternatively, social isolation predicts mortality and other adverse outcomes in older adults (58). Five percent of older adults are home bound, rarely leaving the home except for important medical appointments (59). Most of these older adults are >80. These older adults who live alone and are in poor health are vulnerable during a natural disaster (60).

Most older adults, even at advanced ages, live in the community. By 2035, the number of American households with someone over age 80 will double (61).

Approximately 13% of women and 8% of men over age 85 live in nursing facilities or other institutional settings (62). These rates have fallen in recent decades presumably due to less disability and better care options in the home. Support for home caregivers and promotion of home medical and social work services can further minimize institutionalization. More than 17 million Americans served as family caregivers to an older adult in 2011 (63). Being a caregiver is typically a prolonged responsibility although the number of hours of work involved markedly varies based on the needs of the care recipient. Older adults with dementia have the highest needs for caregiver time. Opportunities to support family caregivers can include formal training, peer counseling, stress management, legal advice, and employment-flexibility (64).

Go to:

Medical Decisions

Starting or stopping medications, ordering screening tests, sending people to the hospital, and advising families about placement or end of life care are complex discussions which health providers have with people over age 85. Often, family members play a central role in these complex discussions. The patient may have hearing impairment, cognitive impairment, or communication

impairment. Life expectancy is often a major consideration; however, many patients are skeptical of life expectancy estimates and don't like to talk about it (65).

Polypharmacy

Polypharmacy is defined as the use of concomitant use of five or more medications by a single patient. When taking five medications, the risk of an adverse drug event or drug-drug interaction is very high. Polypharmacy increases the risk of falls, disability (66), and other negative outcomes. Providers must weigh time to benefit, burden, risks of adverse effects, and goals of care when choosing to start or stop medications in people over age 85 (67).

Hospitalization

Hospitalizations are common among people over age 85 (68) and associated with functional decline (69). Providing more acute care in the home could help to prevent hospital complications such as functional decline and iatrogenic infection. Attention to transitional care and rapid post-hospital medical follow-up visits can minimize medication errors and rehospitalization.

Institutional Placement

Many older adults value their ability to continue living in their own homes as they age. Home-based interventions may slow the progression of disability and prevent the need for institutionalization (70). Discussions with families review all of the options for living arrangements and then assess safety and preferences.

Advance Directives and End of Life Care

Many 85-year olds with multiple chronic conditions will die within a few years. Advance directives on life-sustaining therapies such as cardiopulmonary resuscitation, mechanical ventilation, and tube feeding enable patients to exert some control over their end of life care. Every 85-year-old adult should appoint a health-care agent who can make complicated decisions in an emergency. As people approach the end of life, medical discussions tend to focus more on quality of life and symptom management. However, these "palliative" conversations are not only appropriate near the end of life. Clinicians should routinely assess symptoms and evaluate which problems affect a person's quality of life.

Conclusion

The aging process is universal but not uniform. Awareness of age-related physiological changes, such as reduced acuity of vision and hearing, slow reaction time, and impaired balance, will prepare patients and caregivers to manage risks, make informed decisions, and perhaps prevent falls and medication adverse effects.

Functional deterioration in an elderly person can also arise from social and mental health problems. Awareness of these problems may prevent age-related deterioration, such as attention to depression and suicide risk in men during the first year following the death of a spouse or depression after hip fracture or stroke.

Optimizing vision and hearing can prevent isolation, depression, and cognitive impairment. Lower extremity strength especially of the quadriceps muscle is critical for basic activities of daily living, especially bathing, walking, and performing transfers. People over age 85 need these muscles for stability and preventing falls. Walking speed is a helpful measure. Resistance exercise such as regular walking is recommended to help maintain strength and prevent cardiovascular disease. Maintaining a healthy body weight throughout the life span likewise can prevent diabetes, osteoarthritis, and other chronic diseases.

Decisions to prescribe medications or order screening tests should take into account goals of care, burden, risks, and lag time to benefit. In the future, more adults over age 85 will benefit from home-based services and technologies and will benefit from creative transportation and housing services opportunities for social participation, as well as programs to support family caregivers. (***Jaul and Barron, 2017)***

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B. Psychological Aspects of Aging

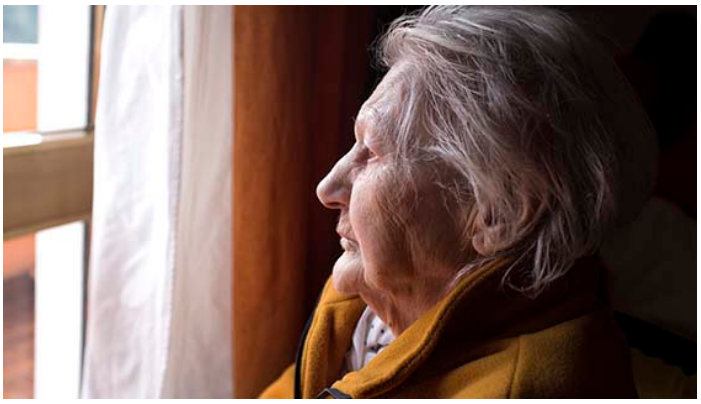
Aging and Depression

Sourced from the following NIH Link:
https://www.nia.nih.gov/health/depression-and-older-adults

Depression and Older Adults

Depression is more than just feeling sad or blue. It is a common but serious mood disorder that needs treatment. It causes severe symptoms that affect how you feel, think, and handle daily activities, such as sleeping, eating, and working.

When you have depression, you have trouble with daily life for weeks at a time. Doctors call this condition “depressive disorder” or “clinical depression.”



Depression is a real illness. It is not a sign of a person’s weakness or a character flaw. You can’t “snap out of” clinical depression. Most people who experience depression need treatment to get better.

Depression Is Not a Normal Part of Aging

Depression is a common problem among older adults, but it is NOT a normal part of aging. In fact, studies show that most older adults feel satisfied with their lives, despite having more illnesses or physical problems. However, important life changes that happen as we get older may cause feelings of uneasiness, stress, and sadness.

For instance, the death of a loved one, moving from work into retirement, or dealing with a serious illness can leave people feeling sad or anxious. After a period of adjustment, many older adults can regain their emotional balance, but others do not and may develop depression.

Get Immediate Help

If you are thinking about harming yourself, tell someone who can help immediately.

- Do not isolate yourself.
- Call your doctor.
- Call 911 or go to a hospital emergency room to get immediate help, or ask a friend or family member to help you.

Call the toll-free, 24-hour National Suicide Prevention Lifeline: **1-800-273-TALK (1-800-273-8255)** or **1-800-799-4TTY (1-800-799-4889)**.

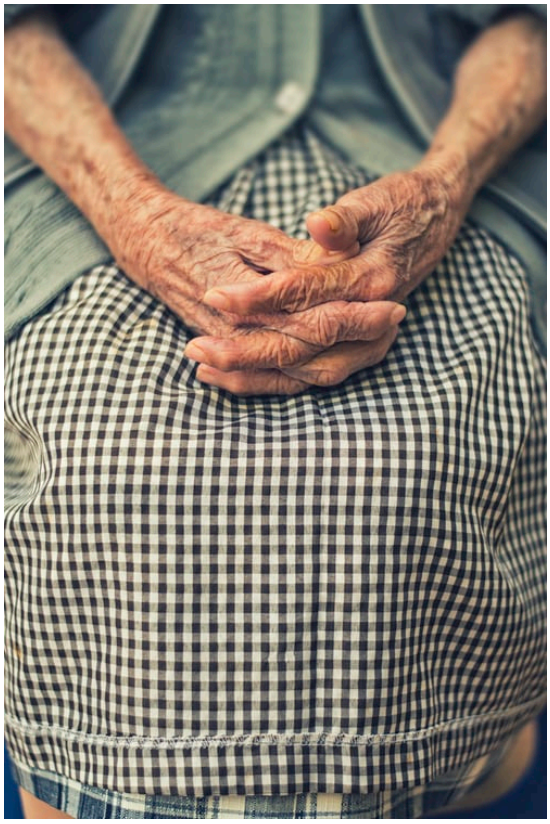
Recognizing Symptoms of Depression in Older Adults

Depression in older adults may be difficult to recognize because they may show different symptoms than younger people. For some older adults with depression, sadness is not their main symptom. They may have other, less obvious symptoms of depression, or they may not be willing to talk about their feelings. Therefore, doctors may be less likely to recognize that their patient has depression.

Sometimes older people who are depressed appear to feel tired, have trouble sleeping, or seem grumpy and irritable. Confusion or attention problems caused by depression can sometimes look like Alzheimer's disease or other brain disorders. Older adults also may have more medical conditions, such as heart disease, stroke, or cancer, which may cause depressive symptoms. Or they may be taking medications with side effects that contribute to depression.

Types of Depression

There are several types of depressive disorders.



Major depression involves severe symptoms that interfere with the ability to work, sleep, study, eat, and enjoy life. An episode can occur only once in a person's lifetime, but more often, a person has several episodes.

Persistent depressive disorder is a depressed mood that lasts for at least 2 years. A person diagnosed with persistent depressive disorder may have episodes of major depression along with periods of less severe symptoms, but symptoms must last for 2 years to be considered persistent depressive disorder.

Other forms of depression include psychotic depression, postpartum depression, and seasonal affective disorder.

Causes and Risk Factors for Depression

Several factors, or a combination of factors, may contribute to depression.

- **Genes—**People with a family history of depression may be more likely to develop it than those whose families do not have the illness.
- **Personal history—**Older adults who had depression when they were younger are more at risk for developing depression in late life than those who did not have the illness earlier in life.
- **Brain chemistry—**People with depression may have different brain chemistry than those without the illness.

- **Stress—**Loss of a loved one, a difficult relationship, or any stressful situation may trigger depression.

Vascular Depression

For older adults who experience depression for the first time later in life, the depression may be related to changes that occur in the brain and body as a person ages. For example, older adults may suffer from restricted blood flow, a condition called ischemia. Over time, blood vessels may stiffen and prevent blood from flowing normally to the body's organs, including the brain.

If this happens, an older adult with no family history of depression may develop what is sometimes called "vascular depression." Those with vascular depression also may be at risk for heart disease, stroke, or other vascular illness.

Depression Can Co-Occur with Other Illnesses

Depression, especially in middle-aged or older adults, can co-occur with other serious medical illnesses such as diabetes, cancer, heart disease, and Parkinson's disease. Depression can make these conditions worse and vice versa. Sometimes medications taken for these physical illnesses may cause side effects that contribute to depression. A doctor experienced in treating these complicated illnesses can help work out the best treatment strategy.

All these factors can cause depression to go undiagnosed or untreated in older people. Yet, treating the depression will help an older adult better manage other conditions he or she may have.

Common Symptoms of Depression

There are many symptoms associated with depression, and some will vary depending on the individual. However, some of the most common symptoms are listed below. If you have several of these symptoms for more than 2 weeks, you may have depression.

- Persistent sad, anxious, or "empty" mood
- Feelings of hopelessness, guilt, worthlessness, or helplessness
- Irritability, restlessness, or having trouble sitting still
- Loss of interest in once pleasurable activities, including sex
- Decreased energy or fatigue
- Moving or talking more slowly
- Difficulty concentrating, remembering, making decisions
- Difficulty sleeping, early-morning awakening, or oversleeping
- Eating more or less than usual, usually with unplanned weight gain or loss
- Thoughts of death or suicide, or suicide attempts

- Aches or pains, headaches, cramps, or digestive problems without a clear physical cause and/or that do not ease with treatment
- Frequent crying

Treatments for Depression

Depression, even severe depression, can be treated. If you think you may have depression, start by making an appointment to see your doctor or healthcare provider. This could be your primary doctor or a provider who specializes in diagnosing and treating mental health conditions (a psychologist or psychiatrist). Certain medications and some medical conditions can cause the same symptoms as depression. A doctor can rule out these possibilities by doing a physical exam, interview, and lab tests. If the doctor can find no medical condition that may be causing the depression, the next step is a psychological evaluation.

Learn about talking with your doctor about sensitive subjects, including depression and mental health.

Treatment choices differ for each person, and sometimes multiple treatments must be tried to find one that works. It is important to keep trying until you find something that works for you.

The most common forms of treatment for depression are medication and psychotherapy.

Therapy for Depression

Psychotherapy, also called "talk therapy," can help people with depression. Some treatments are short-term, lasting 10 to 20 weeks; others are longer, depending on the person's needs.

Cognitive behavioral therapy is one type of talk therapy used to treat depression. It focuses on helping people change negative thinking and any behaviors that may be making depression worse. Interpersonal therapy can help an individual understand and work through troubled relationships that may cause the depression or make it worse. Other types of talk therapy, like problem-solving therapy, can be helpful for people with depression.

Medications for Depression

Antidepressants are medicines that treat depression. There are many different types of antidepressants. They may help improve the way your brain uses certain chemicals that control mood or stress. You may need to try several different antidepressant medicines before finding one that improves your symptoms and has manageable side effects.

Antidepressants take time, usually 2 to 4 weeks, to work. Often symptoms such as sleep, appetite, and concentration problems improve before mood lifts, so it is important to give the medication a chance to work before deciding whether it works for you.

If you begin taking antidepressants, do not stop taking them without the help of a doctor. Sometimes people taking antidepressants feel better and then stop taking the medication on their own, but then the depression returns. When you and your doctor have decided it is time to stop the medication, usually after 6 to 12 months, the doctor will help you slowly and safely decrease your dose. Stopping antidepressants abruptly can cause withdrawal symptoms.

Most antidepressants are generally safe, but the U.S. Food and Drug Administration requires that all antidepressants carry black box warnings, the strictest warnings for prescriptions. The warning says that patients of all ages taking antidepressants should be watched closely, especially during the first few weeks of treatment. Talk to your doctor about any side effects of your medication that you should watch for.

For older adults who are already taking several medications for other conditions, it is important to talk with a doctor about any adverse drug interactions that may occur while taking antidepressants.

Do not use herbal medicines such as St. John's wort before talking with your healthcare provider. It should never be combined with a prescription antidepressant, and you should not use it to replace conventional care or to postpone seeing a healthcare provider.

Preventing Depression

What can be done to lower the risk of depression? How can people cope? There are a few steps you can take. Try to prepare for major changes in life, such as retirement or moving from your home of many years. Stay in touch with family. Let them know when you feel sad.

Regular exercise may also help prevent depression or lift your mood if you are depressed. Pick something you like to do. Being physically fit and eating a balanced diet may help avoid illnesses that can bring on disability or depression.

Further information on Depression and Treatment from the National Institute of Mental Health: https://www.nimh.nih.gov/health/topics/depression/index.shtml

Depression

Overview

Depression (major depressive disorder or clinical depression) is a common but serious mood disorder. It causes severe symptoms that affect how you feel, think, and handle daily activities, such as sleeping, eating, or working. To be diagnosed with depression, the symptoms must be present for at least two weeks.

Some forms of depression are slightly different, or they may develop under unique circumstances, such as:

- Persistent depressive disorder **(also called dysthymia) is a depressed mood that lasts for at least two years.** A person diagnosed with persistent depressive disorder may have episodes of major depression along with periods of less severe symptoms, but symptoms must last for two years to be considered persistent depressive disorder.
- **Postpartum depression** is much more serious than the “baby blues” (relatively mild depressive and anxiety symptoms that typically clear within two weeks after delivery) that many women experience after giving birth. Women with postpartum depression experience full-blown major depression during pregnancy or after delivery (postpartum depression). The feelings of extreme sadness, anxiety, and exhaustion that accompany postpartum depression may make it difficult for these new mothers to complete daily care activities for themselves and/or for their babies.
- **Psychotic depression** occurs when a person has severe depression plus some form of psychosis, such as having disturbing false fixed beliefs (delusions) or hearing or seeing upsetting things that others cannot hear or see (hallucinations). The psychotic symptoms typically have a depressive “theme,” such as delusions of guilt, poverty, or illness.

- **Seasonal affective disorder** is characterized by the onset of depression during the winter months, when there is less natural sunlight. This depression generally lifts during spring and summer. Winter depression, typically accompanied by social withdrawal, increased sleep, and weight gain, predictably returns every year in seasonal affective disorder.
- **Bipolar disorder** is different from depression, but it is included in this list is because someone with bipolar disorder experiences episodes of extremely low moods that meet the criteria for major depression (called "bipolar depression"). But a person with bipolar disorder also experiences extreme high – euphoric or irritable – moods called "mania" or a less severe form called "hypomania."

Examples of other types of depressive disorders newly added to the diagnostic classification of DSM-5 include disruptive mood dysregulation disorder (diagnosed in children and adolescents) and premenstrual dysphoric disorder (PMDD).

Signs and Symtpoms

If you have been experiencing some of the following signs and symptoms most of the day, nearly every day, for at least two weeks, you may be suffering from depression:

- Persistent sad, anxious, or "empty" mood
- Feelings of hopelessness, or pessimism
- Irritability
- Feelings of guilt, worthlessness, or helplessness
- Loss of interest or pleasure in hobbies and activities
- Decreased energy or fatigue
- Moving or talking more slowly
- Feeling restless or having trouble sitting still
- Difficulty concentrating, remembering, or making decisions
- Difficulty sleeping, early-morning awakening, or oversleeping
- Appetite and/or weight changes
- Thoughts of death or suicide, or suicide attempts
- Aches or pains, headaches, cramps, or digestive problems without a clear physical cause and/or that do not ease even with treatment

Not everyone who is depressed experiences every symptom. Some people experience only a few symptoms while others may experience many. Several persistent symptoms in addition to low

mood are required for a diagnosis of major depression, but people with only a few – but distressing – symptoms may benefit from treatment of their “subsyndromal” depression. The severity and frequency of symptoms and how long they last will vary depending on the individual and his or her particular illness. Symptoms may also vary depending on the stage of the illness.

Risk Factors

Depression is one of the most common mental disorders in the U.S. Current research suggests that depression is caused by a combination of genetic, biological, environmental, and psychological factors.

Depression can happen at any age, but often begins in adulthood. Depression is now recognized as occurring in children and adolescents, although it sometimes presents with more prominent irritability than low mood. Many chronic mood and anxiety disorders in adults begin as high levels of anxiety in children.

Depression, especially in midlife or older adults, can co-occur with other serious medical illnesses, such as diabetes, cancer, heart disease, and Parkinson’s disease. These conditions are often worse when depression is present. Sometimes medications taken for these physical illnesses may cause side effects that contribute to depression. A doctor experienced in treating these complicated illnesses can help work out the best treatment strategy.

Risk factors include:

- Personal or family history of depression
- Major life changes, trauma, or stress
- Certain physical illnesses and medications

Treatment and Therapies

Depression, even the most severe cases, can be treated. The earlier that treatment can begin, the more effective it is. Depression is usually treated with medications, psychotherapy, or a combination of the two. If these treatments do not reduce symptoms, electroconvulsive therapy (ECT) and other brain stimulation therapies may be options to explore.

Quick Tip: No two people are affected the same way by depression and there is no "one-size-fits-all" for treatment. It may take some trial and error to find the treatment that works best for you.

Medications

Antidepressants are medicines that treat depression. They may help improve the way your brain uses certain chemicals that control mood or stress. You may need to try several different antidepressant medicines before finding the one that improves your symptoms and has manageable side effects. A medication that has helped you or a close family member in the past will often be considered.

Antidepressants take time – usually 2 to 4 weeks – to work, and often, symptoms such as sleep, appetite, and concentration problems improve before mood lifts, so it is important to give medication a chance before reaching a conclusion about its effectiveness. If you begin taking antidepressants, do not stop taking them without the help of a doctor. Sometimes people taking antidepressants feel better and then stop taking the medication on their own, and the depression returns. When you and your doctor have decided it is time to stop the medication, usually after a course of 6 to 12 months, the doctor will help you slowly and safely decrease your dose. Stopping them abruptly can cause withdrawal symptoms.

Please Note: In some cases, children, teenagers, and young adults under 25 may experience an increase in suicidal thoughts or behavior when taking antidepressants, especially in the first few weeks after starting or when the dose is changed. This warning from the U.S. Food and Drug Administration (FDA) also says that patients of all ages taking antidepressants should be watched closely, especially during the first few weeks of treatment.

If you are considering taking an antidepressant and you are pregnant, planning to become pregnant, or breastfeeding, talk to your doctor about any increased health risks to you or your unborn or nursing child.

To find the latest information about antidepressants, talk to your doctor and visit www.fda.gov.

You may have heard about an herbal medicine called St. John's wort. Although it is a top-selling botanical product, the FDA has not approved its use as an over-the-counter or prescription medicine for depression, and there are serious concerns about its safety (it should never be combined with a prescription antidepressant) and effectiveness. Do not use St. John’s wort before talking to your health care provider. Other natural products sold as dietary supplements, including omega-3 fatty acids and S-adenosylmethionine (SAMe), remain under study but have not yet been proven safe and effective for routine use. For more information on herbal and other complementary

approaches and current research, please visit the National Center for Complementary and Integrative Health website.

Psychotherapies

Several types of psychotherapy (also called "talk therapy" or, in a less specific form, counseling) can help people with depression. Examples of evidence-based approaches specific to the treatment of depression include cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), and problem-solving therapy. More information on psychotherapy is available on the NIMH website and in the NIMH publication *Depression: What You Need to Know*.

Brain Stimulation Therapies

If medications do not reduce the symptoms of depression, electroconvulsive therapy (ECT) may be an option to explore. Based on the latest research:

- ECT can provide relief for people with severe depression who have not been able to feel better with other treatments.
- Electroconvulsive therapy can be an effective treatment for depression. In some severe cases where a rapid response is necessary or medications cannot be used safely, ECT can even be a first-line intervention.
- Once strictly an inpatient procedure, today ECT is often performed on an outpatient basis. The treatment consists of a series of sessions, typically three times a week, for two to four weeks.
- ECT may cause some side effects, including confusion, disorientation, and memory loss. Usually these side effects are short-term, but sometimes memory problems can linger, especially for the months around the time of the treatment course. Advances in ECT devices and methods have made modern ECT safe and effective for the vast majority of patients. Talk to your doctor and make sure you understand the potential benefits and risks of the treatment before giving your informed consent to undergoing ECT.
- ECT is not painful, and you cannot feel the electrical impulses. Before ECT begins, a patient is put under brief anesthesia and given a muscle relaxant. Within one hour after the treatment session, which takes only a few minutes, the patient is awake and alert.

Other more recently introduced types of brain stimulation therapies used to treat medicine-resistant depression include repetitive transcranial magnetic stimulation (rTMS) and vagus nerve stimulation (VNS). Other types of brain stimulation treatments are under study. You can learn more about these therapies on the NIMH Brain Stimulation Therapies webpage.

If you think you may have depression, start by making an appointment to see your doctor or health care provider. This could be your primary care practitioner or a health provider who specializes in diagnosing and treating mental health conditions. Visit the NIMH Find Help for Mental Illnesses if you are unsure of where to start.

Beyond Treatment: Things You Can Do

Here are other tips that may help you or a loved one during treatment for depression:

- Try to be active and exercise.
- Set realistic goals for yourself.
- Try to spend time with other people and confide in a trusted friend or relative.
- Try not to isolate yourself, and let others help you.
- Expect your mood to improve gradually, not immediately.
- Postpone important decisions, such as getting married or divorced, or changing jobs until you feel better. Discuss decisions with others who know you well and have a more objective view of your situation.
- Continue to educate yourself about depression.

Memory Impairment

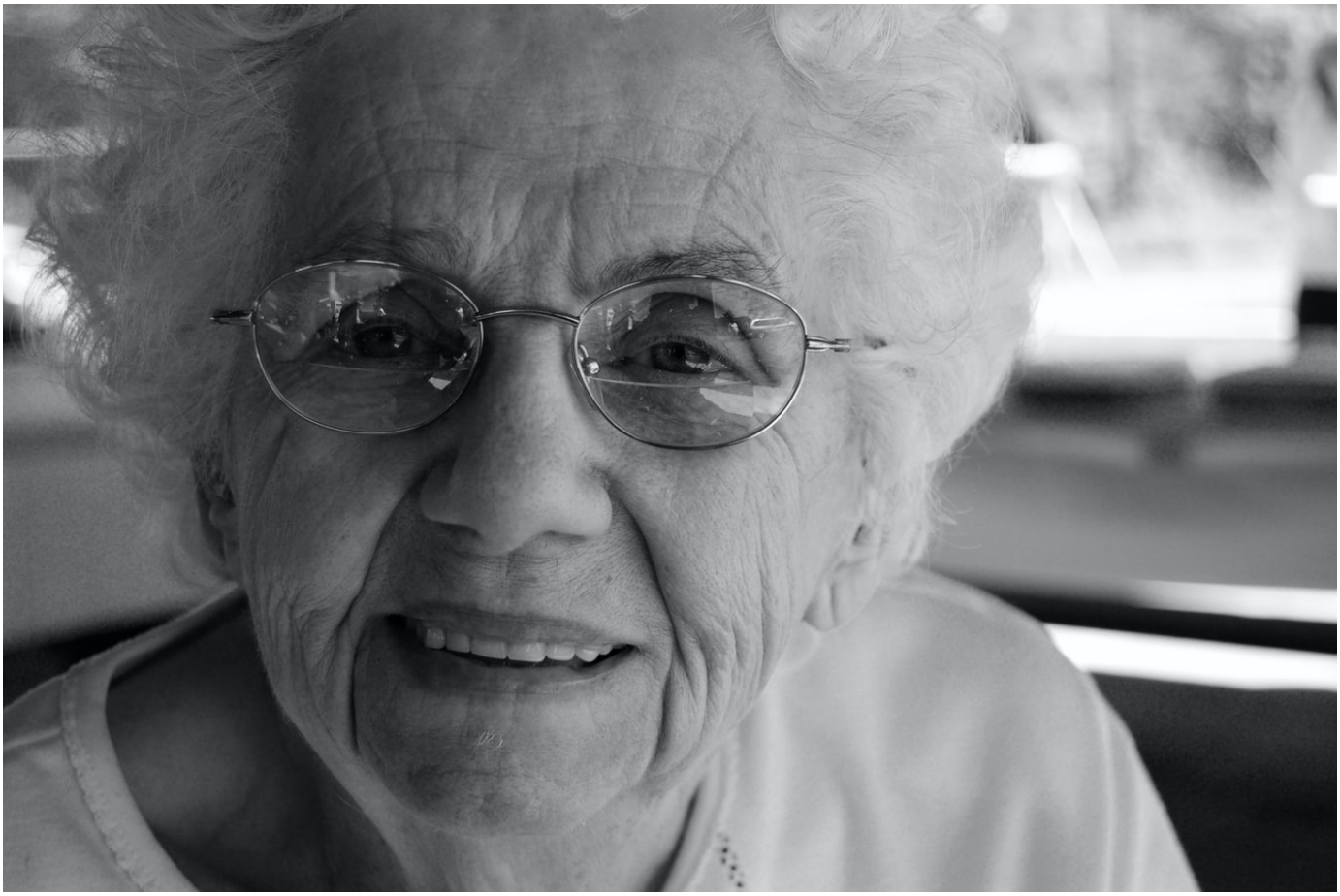
Alzheimer's Disease & Related Dementias

Sourced from the following NIH Link:
https://www.nia.nih.gov/health/alzheimers

Basics of Alzheimer's Disease and Dementia

Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks. It is the most common cause of dementia in older adults. While dementia is more common as people grow older, it is not a normal part of aging. In most people with Alzheimer's, symptoms first appear in their mid-60s. Estimates vary, but experts suggest that more than 5.5 million Americans, most of them age 65 or older, may have dementia caused by Alzheimer's.

Alzheimer's disease is currently ranked as the sixth leading cause of death in the United States, but recent estimates indicate that the disorder may rank third, just behind heart disease and cancer, as a cause of death for older people.



Alzheimer's is the most common cause of dementia among older adults. Dementia is the loss of cognitive functioning—thinking, remembering, and reasoning—and behavioral abilities to such an extent that it interferes with a person's daily life and activities. Dementia ranges in severity from the mildest stage, when it is just beginning to affect a person's functioning, to the most severe stage, when the person must depend completely on others for basic activities of daily living.

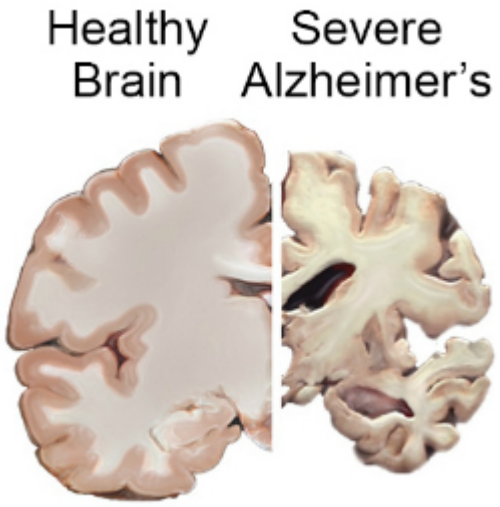
The causes of dementia can vary, depending on the types of brain changes that may be taking place. Other dementias include Lewy body dementia, frontotemporal disorders, and vascular dementia. It is common for people to have mixed dementia—a combination of two or more types of dementia. For example, some people have both Alzheimer's disease and vascular dementia.

Alzheimer's disease is named after Dr. Alois Alzheimer. In 1906, Dr. Alzheimer noticed changes in the brain tissue of a woman who had died of an unusual mental illness. Her symptoms included memory loss, language problems, and unpredictable behavior. After she died, he examined her

brain and found many abnormal clumps (now called amyloid plaques) and tangled bundles of fibers (now called neurofibrillary, or tau, tangles).

These plaques and tangles in the brain are still considered some of the main features of Alzheimer's disease. Another feature is the loss of connections between nerve cells (neurons) in the brain. Neurons transmit messages between different parts of the brain, and from the brain to muscles and organs in the body.

Changes in the Brain



Scientists continue to unravel the complex brain changes involved in the onset and progression of Alzheimer's disease. It seems likely that changes in the brain may begin a decade or more before memory and other cognitive problems appear. During this preclinical stage of Alzheimer's disease, people seem to be symptom-free, but toxic changes are taking place in the brain. Abnormal deposits of proteins form amyloid plaques and tau tangles throughout the brain. Once-healthy neurons stop functioning, lose connections with other neurons, and die. Many other complex brain changes are thought to play a role in Alzheimer's, too.

The damage initially appears to take place in the hippocampus and the entorhinal cortex, parts of the brain essential in forming memories. As more neurons die, additional parts of the brain are affected and begin to shrink. By the final stage of Alzheimer's, damage is widespread, and brain tissue has shrunk significantly.

Signs and Symptoms

Memory problems are typically one of the first signs of cognitive impairment related to Alzheimer's disease. Some people with memory problems have a condition called mild cognitive impairment (MCI). In MCI, people have more memory problems than normal for their age, but their

symptoms do not interfere with their everyday lives. Movement difficulties and problems with the sense of smell have also been linked to MCI. Older people with MCI are at greater risk for developing Alzheimer's, but not all of them do. Some may even go back to normal cognition.

The first symptoms of Alzheimer's vary from person to person. For many, decline in non-memory aspects of cognition, such as word-finding, vision/spatial issues, and impaired reasoning or judgment, may signal the very early stages of Alzheimer's disease. Researchers are studying biomarkers (biological signs of disease found in brain images, cerebrospinal fluid, and blood) to detect early changes in the brains of people with MCI and in cognitively normal people who may be at greater risk for Alzheimer's. Studies indicate that such early detection is possible, but more research is needed before these techniques can be used routinely to diagnose Alzheimer's disease in everyday medical practice.

Mild Alzheimer's Disease

As Alzheimer's disease progresses, people experience greater memory loss and other cognitive difficulties. Problems can include wandering and getting lost, trouble handling money and paying bills, repeating questions, taking longer to complete normal daily tasks, and personality and behavior changes. People are often diagnosed in this stage.

Moderate Alzheimer's Disease

In this stage, damage occurs in areas of the brain that control language, reasoning, sensory processing, and conscious thought. Memory loss and confusion grow worse, and people begin to have problems recognizing family and friends. They may be unable to learn new things, carry out multistep tasks such as getting dressed, or cope with new situations. In addition, people at this stage may have hallucinations, delusions, and paranoia and may behave impulsively.

Severe Alzheimer's Disease

Ultimately, plaques and tangles spread throughout the brain, and brain tissue shrinks significantly. People with severe Alzheimer's cannot communicate and are completely dependent on others for their care. Near the end, the person may be in bed most or all of the time as the body shuts down.

What Causes Alzheimer's?

Scientists don't yet fully understand what causes Alzheimer's disease in most people. In people with early-onset Alzheimer's, a genetic mutation may be the cause. Late-onset Alzheimer's arises from a complex series of brain changes that occur over decades. The causes probably include a combination of genetic, environmental, and lifestyle factors. The importance of any one of these

factors in increasing or decreasing the risk of developing Alzheimer's may differ from person to person.

The Basics of Alzheimer's

Scientists are conducting studies to learn more about plaques, tangles, and other biological features of Alzheimer's disease. Advances in brain imaging techniques allow researchers to see the development and spread of abnormal amyloid and tau proteins in the living brain, as well as changes in brain structure and function. Scientists are also exploring the very earliest steps in the disease process by studying changes in the brain and body fluids that can be detected years before Alzheimer's symptoms appear. Findings from these studies will help in understanding the causes of Alzheimer's and make diagnosis easier.

One of the great mysteries of Alzheimer's disease is why it largely strikes older adults. Research on normal brain aging is exploring this question. For example, scientists are learning how age-related changes in the brain may harm neurons and affect other types of brain cells to contribute to Alzheimer's damage. These age-related changes include atrophy (shrinking) of certain parts of the brain, inflammation, vascular damage, production of unstable molecules called free radicals, and mitochondrial dysfunction (a breakdown of energy production within a cell).

Genetics

Most people with Alzheimer's have the late-onset form of the disease, in which symptoms become apparent in their mid-60s. Researchers have not found a specific gene that directly causes late-onset Alzheimer's. However, having one form of the apolipoprotein E (APOE) gene does increase a person's risk. This gene has several forms. One of them, APOE ε4, increases a person's risk of developing the disease and is also associated with an earlier age of disease onset. However, carrying the APOE ε4 form of the gene does not mean that a person will definitely develop Alzheimer's disease, and some people with no APOE ε4 may also develop the disease.

Also, scientists have identified a number of regions of interest in the genome (an organism's complete set of DNA) that may increase or decrease a person's risk for late-onset Alzheimer's to varying degrees.

Early-onset Alzheimer's disease occurs between a person's 30s and mid-60s and represents less than 10 percent of all people with Alzheimer's. Some cases are caused by an inherited change in one of three genes. For others, research shows that other genetic components are involved.

Most people with Down syndrome develop Alzheimer's. This may be because people with Down syndrome have an extra copy of chromosome 21, which contains the gene that generates harmful amyloid.

For more about Alzheimer's genetics research, see NIA's Alzheimer's Disease Genetics Fact Sheet.

Health, Environmental, and Lifestyle Factors

Research suggests that a host of factors beyond genetics may play a role in the development and course of Alzheimer's disease. There is a great deal of interest, for example, in the relationship between cognitive decline and vascular conditions such as heart disease, stroke, and high blood pressure, as well as metabolic conditions such as diabetes and obesity. Ongoing research will help us understand whether and how reducing risk factors for these conditions may also reduce the risk of Alzheimer's.

A nutritious diet, physical activity, social engagement, and mentally stimulating pursuits have all been associated with helping people stay healthy as they age. These factors might also help reduce the risk of cognitive decline and Alzheimer's disease. Clinical trials are testing some of these possibilities.

Diagnosis of Alzheimer's Disease

Doctors use several methods and tools to help determine whether a person who is having memory problems has "possible Alzheimer's dementia" (dementia may be due to another cause) or "probable Alzheimer's dementia" (no other cause for dementia can be found).

To diagnose Alzheimer's, doctors may:

- Ask the person and a family member or friend questions about overall health, use of prescription and over-the-counter medicines, diet, past medical problems, ability to carry out daily activities, and changes in behavior and personality
- Conduct tests of memory, problem solving, attention, counting, and language
- Carry out standard medical tests, such as blood and urine tests, to identify other possible causes of the problem
- Perform brain scans, such as computed tomography (CT), magnetic resonance imaging (MRI), or positron emission tomography (PET), to rule out other possible causes for symptoms

These tests may be repeated to give doctors information about how the person's memory and other cognitive functions are changing over time.

Alzheimer's disease can be *definitely* diagnosed only after death, by linking clinical measures with an examination of brain tissue in an autopsy.

People with memory and thinking concerns should talk to their doctor to find out whether their symptoms are due to Alzheimer's or another cause, such as stroke, tumor, Parkinson's disease, sleep disturbances, side effects of medication, an infection, or a non-Alzheimer's dementia. Some of these conditions may be treatable and possibly reversible.

If the diagnosis is Alzheimer's, beginning treatment early in the disease process may help preserve daily functioning for some time, even though the underlying disease process cannot be stopped or reversed. An early diagnosis also helps families plan for the future. They can take care of financial and legal matters, address potential safety issues, learn about living arrangements, and develop support networks.

In addition, an early diagnosis gives people greater opportunities to participate in clinical trials that are testing possible new treatments for Alzheimer's disease or other research studies.

Treatment of Alzheimer's Disease

Alzheimer's disease is complex, and it is unlikely that any one drug or other intervention can successfully treat it. Current approaches focus on helping people maintain mental function, manage behavioral symptoms, and slow down certain problems, such as memory loss. Researchers hope to develop therapies targeting specific genetic, molecular, and cellular mechanisms so that the actual underlying cause of the disease can be stopped or prevented.

Maintaining Mental Function

Several medications are approved by the U.S. Food and Drug Administration (FDA) to treat symptoms of Alzheimer's. Donepezil (Aricept®), rivastigmine (Exelon®), and galantamine (Razadyne®) are used to treat mild to moderate Alzheimer's (donepezil can be used for severe Alzheimer's as well). Memantine (Namenda®), the Exelon® patch, and Namzaric® (a combination of memantine and donepezil) are used to treat moderate to severe Alzheimer's. These drugs work by regulating neurotransmitters, the chemicals that transmit messages between neurons. They may help reduce symptoms and help with certain behavioral problems. However, these drugs don't change the underlying disease process. They are effective for some but not all people, and may help only for a limited time.

Managing Behavior

Common behavioral symptoms of Alzheimer's include sleeplessness, wandering, agitation, anxiety, and aggression. Scientists are learning why these symptoms occur and are studying new treatments—drug and non-drug—to manage them. Research has shown that treating behavioral symptoms can make people with Alzheimer's more comfortable and makes things easier for caregivers.

Looking for New Treatments

Alzheimer's research has developed to a point where scientists are exploring ways to delay or prevent the disease as well as treat its symptoms. In ongoing clinical trials supported by NIA, scientists are developing and testing several possible interventions. Under study are drug therapies aimed at a variety of targets, including the beta-amyloid protein, cerebrovascular function, loss of synapses, and specific neurotransmitters, as well as nondrug interventions, such as physical activity, diet, cognitive training, and combinations of these approaches.

Support for Families and Caregivers

Caring for a person with Alzheimer's disease can have high physical, emotional, and financial costs. The demands of day-to-day care, changes in family roles, and decisions about placement in a care facility can be difficult. There are several evidence-based approaches and programs that can help, and researchers are continuing to look for new and better ways to support caregivers.

Becoming well-informed about the disease is one important long-term strategy. Programs that teach families about the various stages of Alzheimer's and about ways to deal with difficult behaviors and other caregiving challenges can help.

Good coping skills, a strong support network, and respite care are other ways that help caregivers handle the stress of caring for a loved one with Alzheimer's disease. For example, staying physically active provides physical and emotional benefits.

Some caregivers have found that joining a support group is a critical lifeline. These support groups allow caregivers to find respite, express concerns, share experiences, get tips, and receive emotional comfort. Many organizations sponsor in-person and online support groups, including groups for people with early-stage Alzheimer's and their families.

What Is Dementia? Symptoms, Types, and Diagnosis

Alzheimer's is one of the types of Dementias. In this section other types are discussed.

Dementia is the loss of cognitive functioning—thinking, remembering, and reasoning—and behavioral abilities to such an extent that it interferes with a person's daily life and activities. These functions include memory, language skills, visual perception, problem solving, self-management, and the ability to focus and pay attention. Some people with dementia cannot control their emotions, and their personalities may change. Dementia ranges in severity from the mildest stage, when it is just beginning to affect a person's functioning, to the most severe stage, when the person must depend completely on others for basic activities of living.

Signs and symptoms of dementia result when once-healthy neurons (nerve cells) in the brain stop working, lose connections with other brain cells, and die. While everyone loses some neurons as they age, people with dementia experience far greater loss.

While dementia is more common as people grow older (up to half of all people age 85 or older may have some form of dementia), it is **not** a normal part of aging. Many people live into their 90s and beyond without any signs of dementia. One type of dementia, frontotemporal disorders, is more common in middle-aged than older adults.

The causes of dementia can vary, depending on the types of brain changes that may be taking place. Alzheimer's disease is the most common cause of dementia in older adults. Other dementias include Lewy body dementia, frontotemporal disorders, and vascular dementia. It is common for people to have mixed dementia—a combination of two or more types of dementia. For example, some people have both Alzheimer's disease and vascular dementia.

What are the Different Types of Dementia?

Various disorders and factors contribute to the development of dementia. Neurodegenerative disorders result in a progressive and irreversible loss of neurons and brain functioning. Currently, there are no cures for these types of disorders. They include:

- Alzheimer's disease
- Frontotemporal disorders
- Lewy body dementia

Other types of progressive brain disease include:

- Vascular contributions to cognitive impairment and dementia
- Mixed dementia, a combination of two or more types of dementia

Other conditions that cause dementia-like symptoms can be halted or even reversed with treatment. For example, normal pressure hydrocephalus, an abnormal buildup of cerebrospinal fluid in the brain, often resolves with treatment.

In addition, certain medical conditions can cause serious memory problems that resemble dementia. These problems should go away once the conditions are treated. These conditions include:

- Side effects of certain medicines

- Emotional problems, such as stress, anxiety, or depression
- Certain vitamin deficiencies
- Drinking too much alcohol
- Blood clots, tumors, or infections in the brain
- Delirium
- Head injury, such as a concussion from a fall or accident
- Thyroid, kidney, or liver problems

Doctors have identified many other conditions that can cause dementia or dementia-like symptoms. These conditions include:

- Argyrophilic grain disease, a common, late-onset degenerative disease
- Creutzfeldt-Jakob disease, a rare brain disorder
- Huntington's disease, an inherited, progressive brain disease
- Chronic traumatic encephalopathy (CTE), caused by repeated traumatic brain injury
- HIV-associated dementia (HAD)

The overlap in symptoms of various dementias can make it hard to get an accurate diagnosis. But a proper diagnosis is important to get the right treatment. Seek help from a neurologist—a doctor who specializes in disorders of the brain and nervous system—or other medical specialist who knows about dementia.

How is Dementia Diagnosed?

To diagnose dementia, doctors first assess whether a person has an underlying treatable condition such as abnormal thyroid function, normal pressure hydrocephalus, or a vitamin deficiency that

may relate to cognitive difficulties. Early detection of symptoms is important, as some causes can be treated. In many cases, the specific type of dementia a person has may not be confirmed until after the person has died and the brain is examined.

A medical assessment for dementia generally includes:

- **Medical history.** Typical questions about a person's medical and family history might include asking about whether dementia runs in the family, how and when symptoms began, changes in behavior and personality, and if the person is taking certain medications that might cause or worsen symptoms.
- **Physical exam.** Measuring blood pressure and other vital signs may help physicians detect conditions that might cause or occur with dementia. Some conditions may be treatable.
- **Neurological tests.** Assessing balance, sensory response, reflexes, and other cognitive functions helps identify conditions that may affect the diagnosis or are treatable with drugs.

What Tests are Used to Diagnose Dementia?

The following procedures also may be used to diagnose dementia:

- **Cognitive and neuropsychological tests.** These tests are used to assess memory, problem solving, language skills, math skills, and other abilities related to mental functioning.
- **Laboratory tests.** Testing a person's blood and other fluids , as well as checking levels of various chemicals, hormones, and vitamins, can help find or rule out possible causes of symptoms.
- **Brain scans.** These tests can identify strokes, tumors, and other problems that can cause dementia. Scans also identify changes in the brain's structure and function. The most common scans are:
    - Computed tomography (CT), which uses x rays to produce images of the brain and other organs
    - Magnetic resonance imaging (MRI), which uses magnetic fields and radio waves to produce detailed images of body structures, including tissues, organs, bones, and nerves
    - Positron emission tomography (PET), which uses radiation to provide pictures of brain activity

- **Psychiatric evaluation.** This evaluation will help determine if depression or another mental health condition is causing or contributing to a person's symptoms.
- **Genetic tests.** Some dementias are caused by a known gene defect. In these cases, a genetic test can help people know if they are at risk for dementia. It is important to talk with a genetic counselor before and after getting tested, along with family members and the doctor.

Who Can Diagnose Dementia?

Visiting a family doctor is often the first step for people who are experiencing changes in thinking, movement, or behavior. However, neurologists—doctors who specialize in disorders of the brain and nervous system—generally have the expertise needed to diagnose dementia. Geriatric psychiatrists, neuropsychologists, and geriatricians may also be skilled in diagnosing the condition.

If a specialist cannot be found in your community, ask the neurology department of the nearest medical school for a referral. A hospital affiliated with a medical school may also have a dementia or movement disorders clinic that provides expert evaluation.

Subjective Cognitive Decline — A Public Health Issue

As you read below you will come to understand, if you were not aware already, how pervasive cognitive decline is in the Elderly. Also, because many do not interact as much socially, and the complications this can have with many other co-existing issues, it is important as a healthcare profession to be able to identify this in those you treat.

The following is sourced from the Center for Disease Control (CDC)
https://www.cdc.gov/aging/data/subjective-cognitive-decline-brief.html

Subjective Cognitive Decline (SCD) is the self-reported experience of worsening or more frequent confusion or memory loss.[1,2] It is a form of cognitive impairment and one of the earliest noticeable symptoms of Alzheimer's disease and related dementias.[2,3] SCD can have implications for living with and managing chronic disease, or performing everyday activities like cooking or cleaning.[2] Because SCD is self-reported, it does not imply a diagnosis of cognitive decline by a health care professional.[1,2]

Cognition is a combination of processes in the brain that includes the ability to learn, remember, and make judgments.[1] When cognition is impaired, it can have a profound impact on an individual's overall health and well-being.[1] Cognitive decline can range from mild cognitive impairment to dementia, a form of decline in abilities severe enough to interfere with daily life.[1] Alzheimer's disease is the most common form of dementia.[1-3]

Some cognitive decline can occur as adults age, but frequently forgetting how to perform routine tasks, for example, is not a normal part of aging and can affect a person's ability to live and function independently. Some people with cognitive decline may be unable to care for themselves or perform activities of daily living, such as meal preparation, managing medical appointments, or managing their personal finances. Limitations in cognitive ability may impact a person's ability to effectively manage medication regimens which can result in poor health outcomes of comorbid chronic diseases like heart disease or diabetes. By educating people about modifiable risk factors, encouraging early assessment and intervention, and understanding its impact on adults and their families, the health and well-being of many older adults may be improved.[1,2]

With the growing older adult population and the related increase in the need for health and social services, the public health community is challenged to be proactive. By acting quickly and strategically to stimulate needed changes to systems and environments, public health professionals can work to mitigate future impacts of SCD as well as Alzheimer's disease and related dementias on the health and wellness of the public. This is particularly important as these issues can impact not only older adults but also their family and friends who act as caregivers.

- The prevalence of subjective cognitive decline (SCD) is 11.1%, or 1 in 9 adults.
- The prevalence of SCD among adults aged 65 years and older is 11.7% compared to 10.8% among adults 45-64 years of age.
- The prevalence of SCD is 11.3% among men compared to 10.6% among women.
- The prevalence of SCD differs among racial/ethnic groups, 10.9% of Whites report SCD compared to 12.8% of Blacks/African Americans, 11.0% of Hispanics, and 6.7% of Asians and Pacific Islanders.
- Lower prevalence of SCD is reported in adults with more years of formal education.

Older adults who live alone can be at risk for poor health outcomes, are less likely to use health services, and are more vulnerable to self-neglect and fall-related injuries than those living with others.[6,7] Older adults who live alone report more unmet needs such as managing money, medications, mobility, and some activities of daily living.[6,7]

- Of adults with SCD, 29.3% live alone.
- Among persons reporting SCD aged 45-64 years, 24.7% live alone compared to 36.2% of those aged 65 years and older.
- 30.3% of women with SCD live alone compared to 28.1% of men.
- The prevalence of living alone among adults with SCD differs among racial/ethnic groups. Of those with SCD, 30.4% of Whites live alone compared to 35.5% of Blacks/African Americans, 18.3% of Hispanics, and 15.3% of Asians and Pacific Islanders.

Researchers have found that few adults with SCD discussed their confusion or memory loss with a health care professional.[Bold Added] [7-9] In fact, the prevalence of cognitive decline identified in community surveys is over twice that reported in medical records of general practitioners.[8,9] Opportunities for improvement exist for increased screening, diagnosis, and identification of treatable cause(s).[9]

- Less than half of adults with SCD (45.3% of adults aged 45 years and older) reported discussing symptoms of confusion or memory loss with a health care professional.
- Among persons reporting SCD, 48.8% of those aged 45 to 64 years reported discussing their memory loss or confusion with a health care professional compared to 39.8% of persons aged 65 years and older.
- Half (50.5%) of women reported discussing SCD with a health care professional compared to 39.2% of men.
- The percentage of those who discussed SCD with a health care professional varies by race and ethnicity. Among Whites, 46.0% reported discussing SCD with a health care professional compared to 45.3% of Blacks/African Americans, 40.2% of Hispanics and 34.1% of Asians and Pacific Islanders.

Coronary heart disease can lead to decreased cognitive function that can impact effective chronic disease self-management.[10-13] Cognitive impairment in areas of learning, memory, and decision-making can increase the need for assistance in self-management, such as help with medication management or scheduling medical appointments.[10-13]

- More than 1 in 4 (28.6%) adults with SCD reported having coronary heart disease or stroke.
- Among adults with SCD, 23.9% of adults aged 45-64 years report having coronary heart disease or stroke, compared to 35.9% of adults aged 65 years and older.
- One in four (26.3%) women with SCD reported having coronary heart disease or stroke, compared to nearly one-third (31.3%) of men.

- The prevalence of CHD among adults with SCD is 25.7% in adults who completed at least some post high school education or higher compared to 31.7% among adults with a high school degree and 31.0% among adults with less than a high school degree.

SCD and Frequent Mental Distress

Mental distress includes stress, depression and problems with emotions.[15] Frequent mental distress (FMD) is defined as experiencing mental distress or having mentally unhealthy days for at least 14 days in a 30 day period.[15]

About how many days during the past 30 days was your mental health not good? (14 or more days = frequent mental distress)

- One third (33.7%) of adults with SCD report FMD.
- One in five (20.9%) adults 65 years of age and older with SCD reported FMD compared to 42.0% of adults 45-64 years of age.
- 37.6% of women with SCD reported FMD compared to 29.4% of men.

(CDC, 2020)

Dementia Increases the Risk of Severity of COVID-19, study finds

This article is sourced from: National Institute on Aging. (2021). *Dementia Increases the Risk of Severity of COVID-19, study finds*. Retrieved from: https://www.nia.nih.gov/news/dementia-increases-risk-and-severity-covid-19-study-finds April 7, 2021

People with dementia have a higher risk of getting COVID-19, are more likely to require hospitalization, and are more likely to have severe or fatal cases of this disease compared with people without dementia. This risk is even higher in Black patients with dementia, according to a new study funded in part by NIA and published in *Alzheimer's & Dementia*.

A person's age and preexisting health conditions such as asthma, diabetes, heart disease, and

obesity are significant risk factors for serious illness from COVID-19. Interestingly, these factors are also linked to dementia. However, scientists and doctors have little information about how COVID-19 affects people who have dementia. The new study, led by researchers at Case Western Reserve University, used information from the electronic health records of about 61.9 million U.S. adults from all 50 states to explore the link between dementia and COVID-19. The data was collected as part of the IBM Watson Health Explorys database. In this dataset, more than 1 million patients had dementia, 15,770 had COVID-19, and 810 had both.

The study found that people with dementia were twice as likely to get COVID-19 compared with people without dementia, even after adjusting for age, sex, living in a nursing home, and having similar preexisting conditions. The researchers suggest that the memory problems associated with dementia might make it difficult for patients to stick to safety measures such as wearing masks, washing hands frequently, and social distancing.

Results showed that 73% of Black patients with dementia and 54% of White patients with dementia were hospitalized within 6 months of their COVID-19 diagnosis, compared with 25% of patients without dementia. Only 20% of Black patients with dementia but not COVID-19 and 12% of White patients with dementia but not COVID-19 were hospitalized within the same time frame. Patients of either race with dementia were almost four times more likely to die from COVID-19 than patients without dementia. The researchers also found that vascular dementia, which is caused by damage to the vessels that supply blood to the brain, led to the highest risk of COVID-19, suggesting that damaged blood vessels might make it easier for disease-causing bacteria and viruses to get from a person’s blood into the brain.

Although their findings need to be replicated using other databases and registries, the researchers note that the study lays the foundation for future research into the interactions between COVID-19 and brain diseases, including whether COVID-19’s effects on the brain increase the risk of or worsen dementia. The study demonstrates the need for innovative and effective measures to protect older adults with dementia from COVID-19 as part of controlling the pandemic and highlights the pressing need to address health disparities.

Reference: Wang Q, et al. COVID-19 and dementia: Analyses of risk, disparity, and outcomes from electronic health records in the US. Alzheimer’s & Dementia. 2021, Feb 9. doi: 10.1002/alz.12296. E-published ahead of print.

C. Social Aspects of Aging

Social isolation, loneliness in older people pose health risks

https://www.nia.nih.gov/news/social-isolation-loneliness-older-people-pose-health-risks

Human beings are social creatures. Our connection to others enables us to survive and thrive. Yet, as we age, many of us are alone more often than when we were younger, leaving us vulnerable to social isolation and loneliness—and related health problems such as cognitive decline, depression, and heart disease. Fortunately, there are ways to counteract these negative effects.

NIA-supported researchers are studying the differences between social isolation and loneliness, their mechanisms and risk factors, and how to help people affected by these conditions. “NIA is interested in exploring potential interventions to address social isolation and loneliness, which are both risk factors for poor aging outcomes,” said Lisbeth Nielsen, Ph.D., of NIA’s Division of Behavioral and Social Research.

Social isolation and loneliness do not always go together. About 28 percent of older adults in the United States, or 13.8 million people, live alone, according to a report by the Administration for Community Living’s Administration on Aging of the U.S. Department of Health and Human Services, but many of them are not lonely or socially isolated. At the same time, some people feel lonely despite being surrounded by family and friends.

“A key scientific question is whether social isolation and loneliness are two independent processes affecting health differently, or whether loneliness provides a pathway for social isolation to affect health,” Dr. Nielsen noted.

Health effects of social isolation, loneliness

Research has linked social isolation and loneliness to higher risks for a variety of physical and mental conditions: high blood pressure, heart disease, obesity, a weakened immune system, anxiety, depression, cognitive decline, Alzheimer’s disease, and even death.

People who find themselves unexpectedly alone due to the death of a spouse or partner, separation from friends or family, retirement, loss of mobility, and lack of transportation are at particular risk.

Conversely, people who engage in meaningful, productive activities with others tend to live longer, boost their mood, and have a sense of purpose. These activities seem to help maintain their well-being and may improve their cognitive function, studies show.

Breaking ground in loneliness research

Much of what we know about the causes and effects of social isolation and loneliness comes from the groundbreaking research of the late John T. Cacioppo, Ph.D., former director of the Center for Cognitive and Social Neuroscience at the University of Chicago and an NIA grantee.

Dr. Cacioppo's research found that being alone and loneliness are different but related. Social isolation is the **objective** physical separation from other people (living alone), while loneliness is the **subjective** distressed feeling of being alone or separated. It's possible to feel lonely while among other people, and you can be alone yet not feeling lonely.

A pioneer in the field of social neuroscience, Dr. Cacioppo passed away in March 2018. His wife and collaborator, Stephanie Cacioppo, Ph.D., continues this work as assistant professor of psychiatry and behavioral neuroscience at the University of Chicago and director of the university's NIA-supported Brain Dynamics Laboratory.

"The misery and suffering caused by chronic loneliness are very real and warrant attention," she said. "As a social species, we are accountable to help our lonely children, parents, neighbors, and even strangers in the same way we would treat ourselves. Treating loneliness is our collective responsibility."

Although there is more to learn, the understanding of the mechanisms of action of loneliness and its treatment has increased dramatically since scientific investigation began more than two decades ago, according to Dr. Stephanie Cacioppo. Among the novel predictions from the Cacioppo Evolutionary Theory of Loneliness is that loneliness automatically triggers a set of related behavioral and biological processes that contribute to the association between loneliness and premature death in people of all ages. Research is headed toward the systematic study of these processes across generations, Dr. Cacioppo explained.

Understanding the biology of loneliness

Losing a sense of connection and community changes a person's perception of the world. Someone experiencing chronic loneliness feels threatened and mistrustful of others, which activates a biological defense mechanism, according to Steve Cole, Ph.D., director of the Social Genomics Core Laboratory at the University of California, Los Angeles. His NIA-funded research focuses on understanding the physiological pathways of loneliness (the different ways that loneliness affects how your mind and body function) and developing social and psychological interventions to combat it.

For example, loneliness may alter the tendency of cells in the immune system to promote inflammation, which is necessary to help our bodies heal from injury, Dr. Cole said. But inflammation that lasts too long increases the risk of chronic diseases.

Loneliness acts as a fertilizer for other diseases," Dr. Cole said. "The biology of loneliness can accelerate the buildup of plaque in arteries, help cancer cells grow and spread, and promote inflammation in the brain leading to Alzheimer's disease. Loneliness promotes several different types of wear and tear on the body.

People who feel lonely may also have weakened immune cells that have trouble fighting off viruses, which makes them more vulnerable to some infectious diseases, he added.

NIA-supported research by Dr. Cole and others shows that having a sense of mission and purpose in life is linked to healthier immune cells. Helping others through caregiving or volunteering also helps people feel less lonely.

"Working for a social cause or purpose with others who share your values and are trusted partners puts you in contact with others and helps develop a greater sense of community," he noted.

Researching genetic and social determinants of loneliness

In another NIA-funded study, researchers are trying to understand the differences between social isolation and loneliness and how they may influence health. They are also trying to identify potential interactions between genes and the environment of older adults affected by social isolation and loneliness.

Previous studies have estimated the heritability of loneliness between 37 percent and 55 percent using twins and family-based approaches. "Individuals who are not prone genetically to feeling lonely may, for example, suffer much less from social isolation, while others feel lonely even though they are surrounded and part of a rich social life," according to Nancy Pedersen, Ph.D., a professor

of genetic epidemiology at the Karolinska Institutet in Stockholm, Sweden. “We are also interested in understanding what role socioeconomic status plays in such associations.”

Using data from twin studies, Dr. Pedersen and researchers found that both social isolation and loneliness are independent risk factors, and that genetic risk for loneliness significantly predicted the presentation of cardiovascular, psychiatric (major depressive disorder), and metabolic traits. Family history does not strongly influence this effect.

“We need to identify people who are most prone to suffer from social isolation and loneliness and those who would benefit most from interventions,” said Dr. Pedersen. “Interventions for social isolation may look very different from interventions for those who feel lonely.”

Beyond genetics, understanding social determinants of health, and the role of social and interpersonal processes in healthy aging and longevity, is another research direction at NIH. Scientists are beginning to apply this framework to research on social isolation and loneliness.

“Future research will need to clarify the extent to which loneliness and social isolation are malleable, and if so, what are the most effective approaches? Demonstrating that we can move the needle on these risk factors is a critical first step toward developing effective interventions,” said Dr. Nielsen. Research is also needed to clarify how great a change in loneliness or social isolation is required to achieve a meaningful change in health, she added.

End-of-Life Care for People with Dementia

This article is sourced from: National Institute on Aging. (n.d). *End-of-Life Care for People with Dementia.* Retrieved from: https://www.nia.nih.gov/health/end-life-care-people-dementia April 7, 2021

As they reach the end of life, people suffering from dementia can present special challenges for caregivers. People can live with diseases such as Alzheimer’s or Parkinson’s dementia for years, so it can be hard to think of these as terminal diseases. But, they do cause death.

Making Difficult End-of-Life Decisions for a Person with Dementia

Dementia causes the gradual loss of thinking, remembering, and reasoning abilities, making it difficult for those who want to provide supportive care at the end of life to know what is needed. Because people with advanced dementia can no longer communicate clearly, they cannot share their concerns. Is Uncle Bert refusing food because he’s not hungry or because he’s confused?

Why does Grandma Sakura seem agitated? Is she in pain and needs medication to relieve it, but can't tell you?

As these conditions progress, caregivers may find it hard to provide emotional or spiritual comfort. How can you let Grandpa know how much his life has meant to you? How do you make peace with your mother if she no longer knows who you are? Someone who has severe memory loss might not take spiritual comfort from sharing family memories or understand when others express what an important part of their life this person has been. Palliative care or hospice can be helpful in many ways to families of people with dementia.

Sensory connections—targeting someone's senses, like hearing, touch, or sight—can bring comfort. Being touched or massaged can be soothing. Listening to music, white noise, or sounds from nature seem to relax some people and lessen their agitation.

When a dementia like Alzheimer's disease is first diagnosed, if everyone understands that there is no cure, then plans for the end of life can be made before thinking and speaking abilities fail and the person with Alzheimer's can no longer legally complete documents like advance directives.

Learn more about legal and financial planning for people with Alzheimer's disease.

End-of-life care decisions are more complicated for caregivers if the dying person has not expressed the kind of care he or she would prefer. Someone newly diagnosed with Alzheimer's disease might not be able to imagine the later stages of the disease.

Alma and Silvia's Story

Alma had been forgetful for years, but even after her family knew that Alzheimer's disease was the cause of her forgetfulness, they never talked about what the future would bring. As time passed and the disease eroded Alma's memory and ability to think and speak, she became less and less able to share her concerns and wishes with those close to her.

This made it hard for her daughter Silvia to know what Alma needed or wanted. When the doctors asked about feeding tubes or antibiotics to treat, pneumonia, Silvia didn't know how to best reflect her mother's wishes. Her decisions had to be based on what she knew about her mom's values, rather than on what Alma actually said she wanted.

Quality of life is an important issue when making healthcare decisions for people with dementia. For example, medicines are available that may delay or keep symptoms from becoming worse for a little while. Medicines also may help control some behavioral symptoms in people with mild-to-moderate Alzheimer's disease.

However, some caregivers might not want drugs prescribed for people in the later stages of Alzheimer's. They may believe that the person's quality of life is already so poor that the medicine is unlikely to make a difference. If the drug has serious side effects, they may be even more likely to decide against it.

When making care decisions for someone else near the end of life, consider the goals of care and weigh the benefits, risks, and side effects of the treatment. You may have to make a treatment decision based on the person's comfort at one end of the spectrum and extending life or maintaining abilities for a little longer at the other.

With dementia, a person's body may continue to be physically healthy while his or her thinking and memory are deteriorating. This means that caregivers and family members may be faced with very difficult decisions about how treatments that maintain physical health, such as installing a pacemaker, fit within the care goals.

Dementia's Unpredictable Progression

Dementia often progresses slowly and unpredictably. Experts suggest that signs of the final stage of Alzheimer's disease include some of the following:

- Being unable to move around on one's own
- Being unable to speak or make oneself understood
- Needing help with most, if not all, daily activities, such as eating and self-care
- Eating problems such as difficulty swallowing

Because of their unique experience with what happens at the end of life, hospice and palliative care experts might be able to help identify when someone in the final stage of Alzheimer's disease is in the last days or weeks of life.

Support for Dementia Caregivers at the End of Life

Caring for people with Alzheimer's or other dementias at home can be demanding and stressful for the family caregiver. Depression is a problem for some family caregivers, as is fatigue, because many feels they are always on call. Family caregivers may have to cut back on work hours or leave work altogether because of their caregiving responsibilities.

Many family members taking care of a person with advanced dementia at home feel relief when death happens—for themselves and for the person who died. It is important to realize such feelings are normal. Hospice—whether used at home or in a facility (such as a nursing home)—gives family caregivers needed support near the end of life, as well as help with their grief, both before and after their family member dies.

Questions to Ask About End-of-Life Care for a Person with Dementia

You will want to understand how the available medical options presented by the health care team fit into your family's particular needs. You might want to ask questions such as:

- How will the approach the approach the doctor is suggesting affect your relative's quality of life? Will it make a difference in comfort and well-being?
- If considering home hospice for your relative with dementia, what will be needed to care for him or her? Does the facility have special experience with people with dementia?
- What can I expect as the disease get worse?

Additional COVID-19 Guidance for Caregivers of People Living with Dementia in Community Settings

This article is sourced from: Centers for Disease Control and Prevention. (2020). *Additional COVID-19 Guidance for Caregivers of People Living with Dementia in Community Settings.* Retrieved from: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/caregivers-dementia.html April 7, 2021

Older adults and people with serious underlying medical conditions are at higher risk for severe illness from COVID-19, according to public health and clinical experts.[1–2] Among adults with confirmed COVID-19, those aged 65 years and older are more likely to be hospitalized, to be admitted for intensive care, and to die. In fact, 8 out of 10 deaths associated with COVID-19 in the United States have been among adults aged 65 years and older.[1–2]

Older adults also have the highest rates of dementia. An estimated six million adults have some form of dementia, including Alzheimer's disease, the most common type of dementia.[3]

Given the risks that older adults face from both COVID-19 and dementia, CDC is providing this additional guidance to caregivers of adults with Alzheimer's disease and other types of dementia

to reduce the spread of COVID-19 and to help them manage their patients' physical and mental wellbeing as well as their own wellbeing. Not all people living with dementia require caregivers. Therefore, the degree of assistance a person needs will depend on the extent that their dementia has progressed. For people living with dementia, changes in behavior or worsening symptoms of dementia should be evaluated because they can be an indication of worsening stress and anxiety as well as COVID-19 or other infections.

- If you care for someone living with dementia, it's important that you know what you can do to protect yourself and others during the COVID-19 pandemic and what additional steps you can take to protect your loved one:

    - Know when you need to seek medical attention for your loved one.
        - ✓ Call a healthcare provider if your loved one has symptoms of COVID-19.[4]
        - ✓ Be aware that older adults with COVID-19 may not always have typical symptoms[5] such as a fever or cough.
        - ✓ Use CDC's Self-Checker[1] guide to help make decisions about your loved one and know when to seek appropriate medical care.

- If your loved one has advanced dementia and needs to be hospitalized for COVID-19, make sure hospital staff know that your in-person assistance might be required to communicate important health information and emergency support. Here are several important issues to consider:
    - Be prepared to be in a healthcare setting with your loved one. Be prepared to use personal protective measures as recommended by the hospital staff if you are in the room with your loved one.
    - Be aware that you and healthcare providers may face difficulties caring for your loved one because he or she:
        - ✓ May not cooperate with care and may not follow personal protective measures such as wearing a mask or practicing social distancing
        - ✓ May refuse diagnostic procedures

In this case, do as much as you can, or as much as you are allowed to, to help the person living with advanced dementia to follow CDC guidance.[6]

- If you get sick, follow CDC guidance[7] and have a backup caregiver for your loved one.

- Incorporate CDC guidance into your daily routine and the daily routine of your loved one:
  - Wear masks[8] and make sure that others wear them.

✓ Do NOT place a mask on anyone who has trouble breathing, is unconscious, is incapacitated, or is unable to remove the mask without assistance.

  - Wash hands often.
  - Cover coughs and sneezes with a tissue.
  - Avoid touching eyes, nose, and mouth with unwashed hands.
  - Clean and disinfect frequently touched surfaces.

Caregivers: Be Aware of the Symptoms for COVID-19

The first step in caring for people living with dementia in any setting is to understand that changes in behavior or worsening symptoms of dementia should be evaluated because they can be an indication of COVID-19 infection or worsening stress and anxiety. Not everyone with COVID-19 has symptoms, but when people with dementia do have COVID-19 symptoms,[4] they can include the following:

- Increased agitation
- Increased confusion
- Sudden sadness
- Coughing
- Difficulty breathing
- Fever
- Chills

- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell

Caregivers Can Be First Responders Under Stress: Know How to Take Care of Yourself

As a caregiver,[9] you provide care to people who need some degree of ongoing assistance with everyday tasks on a regular basis. During this pandemic, you may also be a first responder, providing the first line of response and defense to your loved one living with dementia. First responders often experience stress due to heavy workloads, fatigue, and other situations that come with an emergency. There are important steps you should take during and after an emergency event to help manage and cope with stress.[10] To take care of others, you must be feeling well and thinking clearly. Here are some tips on how to take care of yourself:

- **Eat a healthy diet, avoid using drugs and alcohol, and get plenty of sleep and regular exercise to help reduce stress and anxiety**. Activities as simple as taking a walk, stretching, and deep breathing can help relieve stress.
- **Establish and maintain a routine**. Try to eat meals at regular times, and put yourself on a sleep schedule to ensure you get enough rest. Include a positive or fun activity in your schedule that you can look forward to each day or week. If possible, schedule exercise into your daily routine.
- **Take breaks from watching, reading, or listening to news stories**, including social media. Hearing about the pandemic repeatedly can be upsetting. If you want to stay up-to-date on the pandemic, visit CDC's website for the latest recommendations on what you can do to protect yourself and those you care for.
- **Make time to unwind**. Try to do activities you enjoy.
- **Connect with others**. Reach out to family and friends. Talking to someone you trust about your concerns and feelings can help.
- **Call your healthcare provider if stress gets in the way** of your daily activities for several days in a row**.**

- **Find a local support group**. Support groups provide a safe place for you to find comfort in knowing you are not alone.
- **Have a backup caregiver.** In case you become sick with COVID-19, a backup caregiver will ensure that your loved one continues to receive care. You can focus on caring for yourself.[7]

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Living alone with cognitive impairment

Older adults living alone with cognitive impairment—a growing and vulnerable population—face unique challenges. Elena Portacolone, Ph.D., assistant professor of sociology at the University of California, San Francisco, leads an NIA-funded study to understand their daily experiences, social networks, and decision-making ability, with the aim of designing culturally sensitive interventions to improve their health, well-being, and social integration.

“Whereas most researchers of isolation study the personal traits and behaviors of isolated individuals, my research focuses on the role that *structural* factors (i.e., institutions, social policies, ideologies) play in exacerbating the social isolation of vulnerable individuals,” said Dr. Portacolone. “For example, in my prior investigation of older residents of high-crime neighborhoods, who were mostly African-American older adults, a tension emerged between participants’ longing to participate in society and obstacles that made this participation difficult to attain.”

These structural obstacles included fear of being robbed, distrust of neighbors, limited availability of appropriate services, dilapidated surroundings, and limited meaningful and positive relationships. Having few friends or family members attuned to their concerns was another factor exacerbating social isolation. Study participants expressed a desire to be socially integrated, an idea that runs against the prevailing assumption that isolated older adults are alone by choice.

Similar patterns emerge in Dr. Portacolone’s ongoing investigation of older adults with cognitive impairment living alone. “One African-American study participant told me of her tendency to lock herself in the bathroom during family gatherings to cry and ‘let the tension out’ because her family members realize how concerned she is about her memory loss,” recalled Dr. Portacolone. “Other participants with Alzheimer’s disease noted that their friends were less eager to see them after they shared their diagnosis.”

Another structural obstacle is limited affordable services that address the specific needs of cognitively impaired people living alone. Home care aides are seldom trained to support older adults with cognitive impairment, and their fees are often too high for most older adults on a long-term basis, explained Dr. Portacolone. In addition, some older adults with cognitive impairment have had their driver’s license revoked, but they do not get help with replacement transportation, which dramatically increases their isolation.

As a result, older adults with cognitive impairment living alone spend much of their time managing their household and their health, Dr. Portacolone said. They are often reluctant to show they need help because they fear being forced to move from their homes.

“The primary takeaway from this research is that interventions to increase older adults’ social integration should address not only their behaviors, but their overall surroundings. We need to concentrate our attention on the influence of social policies, institutions, and ideologies in the everyday experience of isolated older adults,” Dr. Portacolone said.

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https://www.nia.nih.gov/news/social-isolation-loneliness-older-people-pose-health-risks

Chapter 4: Long-Term Care

A. Caregiving

The following information is sourced from the National Institute on Aging
https://www.nia.nih.gov/health/caregiving/long-term-care

Long-term care services help people live as independently and safely as possible when they can no longer perform everyday activities on their own. Find out about different types of long-term care and how to pay for them.

What is Long-Term Care

Long-term care involves a variety of services designed to meet a person's health or personal care needs during a short or long period of time. These services help people live as independently and safely as possible when they can no longer perform everyday activities on their own.

Long-term care is provided in different places by different caregivers, depending on a person's needs. Most long-term care is provided at home by unpaid family members and friends. It can also be given in a facility such as a nursing home or in the community, for example, in an adult day care center.

The most common type of long-term care is personal care—help with everyday activities, also called "activities of daily living." These activities include bathing, dressing, grooming, using the toilet, eating, and moving around—for example, getting out of bed and into a chair.

Long-term care also includes community services such as meals, adult day care, and transportation services. These services may be provided free or for a fee.

People often need long-term care when they have a serious, ongoing health condition or disability. The need for long-term care can arise suddenly, such as after a heart attack or stroke. Most often, however, it develops gradually, as people get older and frailer or as an illness or disability gets worse.

Who Needs Long-Term Care?

It is difficult to predict how much or what type of long-term care a person might need. Several things increase the risk of needing long-term care.

- **Age.** The risk generally increases as people get older.
- **Gender.** Women are at higher risk than men, primarily because they often live longer.
- **Marital status.** Single people are more likely than married people to need care from a paid provider.
- **Lifestyle.** Poor diet and exercise habits can increase a person's risk.
- **Health and family history.** These factors also affect risk.

What Are the Different Types of Home-Based Long-Term Care Services?

Home-based long-term care includes health, personal, and support services to help people stay at home and live as independently as possible. Most long-term care is provided either in the home of the person receiving services or at a family member's home. In-home services may be short-term—for someone who is recovering from an operation, for example—or long-term, for people who need ongoing help.

Most home-based services involve personal care, such as help with bathing, dressing, and taking medications, and supervision to make sure a person is safe. Unpaid family members, partners, friends, and neighbors provide most of this type of care.

Home-based long-term care services can also be provided by paid caregivers, including caregivers found informally, and healthcare professionals such as nurses, home health care aides, therapists, and homemakers, who are hired through home health care agencies. These services include: home health care, homemaker services, friendly visitor/companion services, and emergency response systems.

Home Health Care

Home health care involves part-time medical services ordered by a physician for a specific condition. These services may include nursing care to help a person recover from surgery, an accident, or illness. Home health care may also include physical, occupational, or speech therapy and temporary home health aide services. These services are provided by home health care agencies approved by Medicare, a government insurance program for people over age 65.

Homemaker and Personal Care Services

Home health agencies offer homemaker and personal care services that can be purchased without a physician's order. Homemaker services include help with meal preparation and household

chores. Personal care includes help with bathing and dressing. Agencies do not have to be approved by Medicare to provide these kinds of services.

Friendly Visitor and Senior Companion Services

Friendly visitor/companion services are usually staffed by volunteers who regularly pay short visits (less than 2 hours) to someone who is frail or living alone. You can also purchase these services from home health agencies.

Senior Transportation Services

Transportation services help people get to and from medical appointments, shopping centers, and other places in the community. Some senior housing complexes and community groups offer transportation services. Many public transit agencies have services for people with disabilities. Some services are free. Others charge a fee.

Learn more about transportation services from Eldercare Locator.

Emergency Medical Alert Systems

Emergency response systems automatically respond to medical and other emergencies via electronic monitors. The user wears a necklace or bracelet with a button to push in an emergency. Pushing the button summons emergency help to the home. This type of service is especially useful for people who live alone or are at risk of falling. A monthly fee is charged.

Long-Term Care Planning

You can never know for sure if you will need long-term care. Maybe you will never need it. But an unexpected accident, illness, or injury can change your needs, sometimes suddenly. **The best time to think about long-term care is before you need it.**

Planning for the possibility of long-term care gives you time to learn about services in your community and what they cost. It also allows you to make important decisions while you are still able.

People with Alzheimer's disease or other cognitive impairment should begin planning for long-term care as soon as possible.

Making Decisions About Long-Term Care

Begin by thinking about what would happen if you became seriously ill or disabled. Talk with your family, friends, and lawyer about who would provide care if you needed help for a long time. Read about how to prepare healthcare advance directives.

You might delay or prevent the need for long-term care by staying healthy and independent. Talk to your doctor about your medical and family history and lifestyle. He or she may suggest actions you can take to improve your health.

Healthy eating, regular physical activity, not smoking, and limited drinking of alcohol can help you stay healthy. So can an active social life, a safe home, and regular health care.

Making Housing Decisions: Aging in Place

In thinking about long-term care, it is important to consider where you will live as you age and how your place of residence can best support your needs if you can no longer fully care for yourself.

Most people prefer to stay in their own home for as long as possible. Learn about services, products, and resources that can help older adults stay in their homes.

Talking with Your Parents About Long-Term Care

It can be difficult to make the decision about whether you or a loved one needs to leave home. Sometimes, decisions about where to care for a family member need to be made quickly, for example, when a sudden injury requires a new care plan. Other times, a family has a while to look for the best place to care for an elderly relative.

You may have had a conversation with a loved one where they asked you not to “put them” in a nursing home. Many of us want to stay in our own homes. Agreeing that you will not put someone in a nursing home may close the door to the right care option for your family. The fact is that for some illnesses and for some people, professional health care in a long-term care facility is the only reasonable choice.

Making Financial Decisions for Long-Term Care

Long-term care can be expensive. Americans spend billions of dollars a year on various services. How people pay for long-term care depends on their financial situation and the kinds of services they use. Often, they rely on a variety of payment sources, including:

- Personal funds, including pensions, savings, and income from stocks
- Government health insurance programs, such as Medicaid (Medicare does not cover long-term care but may cover some costs of short-term care in a nursing home after a hospital stay.)
- Private financing options, such as long-term care insurance
- Veterans’ benefits
- Services through the Older Americans Act

Residential Facilities, Assisted Living, and Nursing Homes

At some point, support from family, friends, and local programs may not be enough. People who require help full-time might move to a residential facility that provides many or all of the long-term care services they need.

Facility-based long-term care services include: board and care homes, assisted living facilities, nursing homes, and continuing care retirement communities.

Some facilities have only housing and housekeeping, but many also provide personal care and medical services. Many facilities offer special programs for people with Alzheimer's disease and other types of dementia.

What Are Board and Care Homes?

Board and care homes, also called residential care facilities or group homes, are small private facilities, usually with 20 or fewer residents. Rooms may be private or shared. Residents receive personal care and meals and have staff available around the clock. Nursing and medical care usually are not provided on site.

What Is Assisted Living?

Assisted living is for people who need help with daily care, but not as much help as a nursing home provides. Assisted living facilities range in size from as few as 25 residents to 120 or more. Typically, a few "levels of care" are offered, with residents paying more for higher levels of care.

Assisted living residents usually live in their own apartments or rooms and share common areas. They have access to many services, including up to three meals a day; assistance with personal care; help with medications, housekeeping, and laundry; 24-hour supervision, security, and on-site staff; and social and recreational activities. Exact arrangements vary from state to state.

What Are Nursing Homes?

Nursing homes, also called skilled nursing facilities, provide a wide range of health and personal care services. Their services focus on medical care more than most assisted living facilities. These services typically include nursing care, 24-hour supervision, three meals a day, and assistance with everyday activities. Rehabilitation services, such as physical, occupational, and speech therapy, are also available.

Some people stay at a nursing home for a short time after being in the hospital. After they recover, they go home. However, most nursing home residents live there permanently because they have ongoing physical or mental conditions that require constant care and supervision.

To look for and compare nursing homes in your area, see Medicare's Nursing Home Compare. Also get tips for choosing a nursing home.

What Are Continuing Care Retirement Communities (CCRCs)?

Continuing care retirement communities (CCRCs), also called life care communities, offer different levels of service in one location. Many of them offer independent housing (houses or apartments), assisted living, and skilled nursing care all on one campus. Healthcare services and recreation programs are also provided.

In a CCRC, where you live depends on the level of service you need. People who can no longer live independently move to the assisted living facility or sometimes receive home care in their independent living unit. If necessary, they can enter the CCRC's nursing home.

Creating a Safe Space for the Elderlies to Live in

This is sourced from: U.S. Consumer Product Safety Commission. (n.d.). *Safety for Older Consumers-Home Safety Checklist.* Retrieved from: https://mhcc.maryland.gov/consumerinfo/longtermcare/documents/CPSC-home-safety-checklist-for-seniors.pdf April 2,2020

Many Older Americans are injured in and around their homes every year. The U.S. Consumer Product Safety Commission (CPSC) estimates that on average **1.4 million people** aged 65 and older are treated in hospital emergency rooms each year for injuries associated with consumer products. Within this age group, the rate of injury is the highest for people 75 years of age and older.

Falls in and around the home are a top cause of injuries to older adults. Older adults also are at a greater risk than others of dying in a house fire. Many of these and other injuries result from hazards that are easy to overlook, but also easy to fix. By spotting these hazards and taking simple steps to correct them, you can prevent injuries to yourself or visitors to your home.

Use this checklist to prepare for an emergency and to spot possible safety problems in your home.

Top Ten Safety Checklist for Older Consumers

PREPARE FOR AN EMERGENCY

- ✓ Install smoke and carbon monoxide alarms throughout your home.
- ✓ Have an emergency escape plan and pre-arrange for a family member or caregiver to help you escape the home in a fire, if needed.

Smoke and Carbon Monoxide (CO) Alarms

- **Smoke alarms are installed on every level of my home, outside sleeping areas and inside bedrooms. Carbon Monoxide (CO) alarms are installed on every level of my home and outside sleeping areas.**

  Smoke alarms are critical for the early detection of a fire and could mean the difference between life and death. About two-thirds of home fire deaths occur in homes without working smoke alarms.

  All homes should also have a carbon monoxide (CO) alarms installed. CO is an invisible and odorless gas that can kill you in minutes. Any fuel-burning appliance in your home is a potential CO source, but even all-electric homes could have sources of CO such as a car running in an attached garage or a portable generator operating outside. CO alarms should not be installed in basements, attics, or garages unless they contain sleeping areas.

- **I have tested my smoke and CO alarms within the last month, and they are working properly.**

  Alarms that use voice warnings may help you to distinguish smoke alarms from CO alarms. If you are hearing-impaired and are unable to hear the sound from a smoke or CO alarm, install alarms with strobe lights to notify you during the day and use an assistive device that vibrates the bed and pillow to awaken you when the alarms sound at night.
- **I have replaced the batteries in all of my alarms within the last year.**

Emergency Escape Plan

- **I have an emergency escape plan.**

  Once a fire starts, it spreads rapidly. An escape plan can reduce the amount of time required for you and your family to get out safely, and can improve your chances of surviving a fire or similar emergency. To the extent possible, identify two ways to escape from every room and avoid escape routes that require the use of escape ladders or similar items that could put you at risk of all. If there is a fire in your home, do not waste time trying to save property. Get out as fast as possible, and remember: **ONCE OUT-STAY OUT!**
- **I have practiced my fire escape plan with my family within the last 6 months, during both the day and night.**

- **Be sure windows can be unlocked and opened, and security bars can be released from within the home to allow for escape.**

Emergency Contact Information

- **Emergency numbers are posted on or near all telephones**

  Make certain that telephone numbers are readily available for the Police, Fire Department, and local Poison Control Center, along with numbers for your doctor(s) and a trusted neighbor or family member. If you have impaired vision or difficulty seeing the numbers on a regular telephone, choose a phone that has large, lighted number keys.

- **Telephones are positioned low enough so I can reach them if I have an accident that leaves me unable to stand.**

Keeping telephones at a low height is helpful in the event that you have an accident that leaves you unable to stand. As an alternative, consider obtaining a wearable medical alert device that provides a “Call for Help” push button.

- **A telephone is located in my bedroom in case a fire trap me there.**

CHECK THROUGHOUT THE HOME

- ✓ Make sure walking surfaces are flat, slip resistant, free of objects, and in good condition to avoid falls.
- ✓ Install ground fault circuit interrupters, or GFCIs, in potentially damp locations such as the kitchen, bathroom, garage, near utility tubs or sinks, and on the exterior of the house to protect against electrocution.

Walking Surfaces

- **All walking surfaces are free of electrical cords, boxes, furniture, appliances, and other objects that could pose a tripping hazard especially in the event of an emergency or fire.**

  Falls are associated with more than half of all product-related visits to the emergency room among adults aged 65 to 74, and with more than three-quarters of visits among adults 75 years and older. Tripping over loose carpets, cords, or other obstacles on the floor is a common fall scenario.

- **All flooring is in good condition, is flat and uniform, and is slip-resistant or is covered with slip-resistant carpeting, rugs, mats, or similar materials.**

  Slip-resistant surfaces are especially important in potentially wet locations such as bathrooms, kitchens, and entryways. There should be no loose floorboards, missing tiles, or similar problems that could pose a tripping hazard. Carpeting should be low pile and free of tears, holes, or wear that could cause slips or trips.

Steps and Stairways

- All steps are in good condition, have flat, even surfaces and are free of objects that could pose a tripping hazard.

- All stair treads are in good condition, and have a slip-resistant surfaces such as dense low-pile carpeting or slip-resistant strips that are securely attached to the steps.
- **Light switches are located at both the top and bottom of the stairs.**
  If no other light is available, keep an operating flashlight in a convenient location.
- **All stairs have solidly mounted handrails that run continuously along the full length of the stairs on both sides. Handrails are easily graspable.**

LIGHTING

- **Walkways and rooms in which I am likely to be reading—for example, the bedroom, bathrooms, and the kitchen—are especially well-lit or have additional lighting available.**
  Lighting is an important factor in preventing falls since areas that are poorly lit or in shadow can hide slipping and tripping hazards. Indirect lighting or frosted bulbs can be used to reduce glare.

- **All light bulbs are of the appropriate wattage and type for the lamp or light fixture in which they are installed.**
  For those fixture that do not identify the correct wattage, installed bulbs should not exceed 60 watts or 25 watts for bulbs with a miniature base (candelabra). Consider using compact-fluorescent or similar energy-efficient bulbs, which produce more light per watt than incandescent bulbs.

Electrical Outlets and Switches

- **All electrical outlets that are located in potentially damp locations, such as the kitchen, bathroom, garage, near the utility tub or sink, and on the exterior of the house, have ground-fault circuit interrupters, or GFCIs, installed to protect against electrical shock.**
- **I have tested all GFCI receptacles within the last month and have found them to be working properly,**
  GFCI receptacles can provide power even when they are no longer providing shock protection. Test a GFCI receptacle monthly by plugging a night-light or lamp into the receptacle and switching it on. When you press the TEST button on the GFCI receptacle, the RESET button should pop forward and the light should go out. Pressing the RESET button should restore the power to the outlet.

- **No electrical outlets or switches are unusually warm or hot to the touch.**

  Hot or unusually warm electrical outlets or switches may indicate an unsafe wiring condition. Stop using these electrical outlets and have an electrician check them as soon as possible.
- **All electrical outlets and switches have cover plates installed so no wiring is exposed.**
- **Unused receptacles have safety covers installed to prevent access by young children.**

Electrical Cords

- **All electrical, extension, and telephone cords are out of the flow of foot traffic since they pose a tripping hazard.**
- **Electrical cords are not beneath furniture, rugs, or carpeting. Cords are not pinched against the wall by furniture and are not wrapped tightly around objects.**
- **All electrical cords are in good condition and are free of damage such as fraying, cracking, and staple or nail holes.**
- **Extension cords are not overloaded. In other words, the total wattage of all appliances plugged into an extension cord does not exceed the rated capacity of the extension cord.**

  If the cord rating is exceeded, switch to a higher-rated cord or unplug some of the appliances. Standard 16-gauge extension cords can carry 1625 watts. Discard older extension cords that use small 18-gauge wires.
- **All extension cords have polarized-plug receptacles; that is, receptacles with one wide plug slot and one narrow plug slot.**

CHECK KITCHENS

- ✓ **Keep a fire extinguisher handy in the kitchen in case of fire.**

- **A fire extinguisher is in the kitchen in case of fire.** To operate the fire extinguisher, the National Fire Protection Association (NFPA) recommends you remember the word PASS:
  - **P**ull the pin. Hold the extinguisher with the nozzle pointing away from you and release the locking mechanism.
  - Aim low. Point the extinguisher at the base of the fire.
  - Squeeze the level slowly and evenly.
  - Sweep the nozzle from side to side.

  Extinguishers should be less than 10 years old, and free of dust and grease.
- **The are found the range should be free of grease build-up and clutter, including towels, curtains, potholders, and other objects that might catch fire. Avoid wearing loose-fitting clothes with flowing or oversized sleeves while cooking.**
- **Kitchen ventilation systems or range exhausts are functioning properly.**
  Indoor air pollutants and CO may accumulate to unhealthy levels in a kitchen with a gas or kerosene-fired appliances. Use ventilation systems or open windows to clear the air of vapors and smoke. Never use your range or stove to heat your home.
- **Always stay within view of food cooking on the stovetop.**
  Cooking is the number one cause of home fires and home injuries. The leading contributor to these fires is unattended cooking.

- **Electrical appliance and extension cords are away from the sink and other water sources and are away from hot surfaces such as the range.**
- **Electrical receptacles that supply counter-top appliances, such as coffeemakers and toasters, are protected by ground-fault circuit interrupters, or GFCIs.**
  Test all GFCI receptacles monthly to make sure they are working properly.
- **Kitchen lighting is bright and even, especially near the stove, sink, and countertop work areas.**
- **A stable step stool with a handrail is easily accessible for reaching high items.**

Standing on chairs, boxes, or other make-shift items to reach high shelves can result in falls. Buy a step stool if you don't have one. Choose a sturdy one with a handrail that you can grasp while standing on the top step. Before climbing on any step stool, make sure it is fully opened and stable on a flat surface. Discard step stools that are not stable or have broken parts.

CHECK LIVING ROOMS AND FAMILY ROOMS

- ✓ **Have fuel burning appliances, including furnaces and chimneys, inspected by a professional every tear to make sure they are working properly and not leaking poisonous carbon monoxide.**
  - **All chimneys have been professionally inspected and cleaned within the last year, and chimney openings are clear of leaves and other debris that could clog them.**

    A clogged chimney can cause poisonous carbon monoxide (CO) to enter your home. Burning wood in a fireplace can cause creosote, a high flammable substance, to build-up inside the chimney. This material can ignite and result in a serious chimney fire.
  - **All portable space heaters and wood-burning heating equipment are at least 3 feet from walls, furniture, curtains, rugs, newspapers, and other flammable or combustible materials.**
  - **All portable space heaters are stable and located away from walkways.**
  - **The surface of each fireplace is fireproof, and all wood-burning heating equipment is installed on fireproof flooring or on an approved non-combustible floor protector.**

    Burning material can be ejected from an open fireplace. Fire resistant hearthrugs, made of woold, fiberglass, or other synthetics, are readily available to protect the are in front of a fireplace.
  - **Keep ashtrays, smoking materials, candles, hot plates and other potential fire, sources away from curtains, furniture, blankets and other combustibles. Never leave them unattended.**

CHECK BATHROOMS

- ✓ **Make sure all medications are stored in child-resistant enclosures and are clearly marked to prevent children from accessing the medications and being poisoned.**
  - **All medications are stored in child-resistant enclosures and are clearly marked.**

If grandchildren or other youngsters are visitors, purchase medicines in containers with child-resistant caps, and close the caps properly after each use. Store all medicines out of the reach of children. Many poisonings occur when children visiting grandparents go through the medicine cabinet or their grandmother's purse. Only request non-child-resistant enclosures if you are physically unable to use child-resistant enclosures. Medications that are not clearly and accurately labeled can be easily mixed up, causing you to take the wrong medicine or to miss a required dosage of medicine. Be sure that all containers are clearly marked with contents, doctor's instructions, expiration date, and patient's name. Dispose of outdated medicines properly. Because of their environmental impact, disposing expired medication in the toilet may not be an acceptable method. Your doctor or pharmacist can advise you on the best method of disposal.

- **All bathtubs and showers are equipped with non-skid mats, abrasive strips, or surfaces what are not slippery and have at lease one secure and easily graspable grab bar.**
- **The bathroom floor is slip-resistant or is covered with secure slip-resistant materials.**
- **All hair dryers, shavers, curling irons, and other small electrical appliances not currently in use are unplugged.**
- **All small electrical appliances are away from sinks, tubs, and other sources of water.**

Never reach into water to retrieve a fallen appliance without being sure that the appliance is unplugged.

- **Electrical receptables in the bathroom are protected by ground-fault circuit interrupters, or GFCIs.**

  Test all GFCI receptables monthly to make sure they are working properly.

CHECK BEDROOMS

- ✓ **Keep ashtrays, smoking materials, candles, hot plates, and other potential fire sources away from curtains, furniture, blankets and other combustibles.**

  - **Ashtrays, smoking materials, candles, hot plates, and other potential fire sources are located away from curtains, furniture, beds and bedding.**Burns are associated with personal use products where the most frequently reported cause of accidental death among seniors. Smoking is one of the major contributors to this problem. Never smoke in bed, remove sources of heat or flame. From areas around the beds, do not leave the room or fall asleep while a candle is burning.

    Use large, deep ashtrays for smoking debris and let the contents cool before disposal.

  - **A flashlight is within reach of the bed in case of a power outage.**
  - **A telephone is within reach of the bed in case of an emergency.**
  - **My mattress meets the new federal flammability standard.**

    Newer mattresses are more resistant to fires from open flames such as candles, lighters, and matches, and have tags indicating that they meet the federal standard.

  - **Electrically-heated blankets are not folded, covered by other objects or "tucked in," when in use. The power cord is not pinched or crushed by the bed, between a wall or the floor.**

Objects that cover the blanket's heating elements or controls can cause overheating. Do not allow anything, including other blankets, comforters, and even sleeping pets, on top of the electric blanket while it is in use. "Tucking in" electric blankets also can cause excessive heat buildup and start a fire. The edges of your electric blanket should hang freely over the sides and end of the bed. Always turn off your heating pad before you go to sleep. It can cause serious burns even at relatively low settings.

- **As recommended by the fire safety community, smoke alarms are placed inside and just outside bedrooms and they have been tested within the last month and are working. CO alarms are located outside sleeping areas, have been tested within the last month and are working properly. The batteries have been replaced within the last year.**

CHECK BASEMENT, GARAGES, WORKSHOPS, AND STORAGE AREAS

- ✓ **Set your hot water heater to no more than 120 degrees Fahrenheit to help prevent burns.**

- **The water heater is set to no more than 120 degrees Fahrenheit.**
  Water above 120 degrees can burn skin. Lower the setting to 120 degrees or "low". If you are unfamiliar with the setting, ask a qualified person to adjust it for you; if your hot water system is controlled by the landlord, ask the landlord to consider lowering the temperature.
- **Work areas, especially those where power are used, are well-lit.**
  Basement, garages, and storage areas can contain many tripping hazards. Sharp or pointed tools can make a fall even more hazardous. Power tools and workshop equipment have been associated with many emergency room-treated injuries to people 65 older.

- **For electrical panels with fuses, the fuses are the correct size (amperage) for the circuit.**

  If you do not know the correct electrical rating, have an electrician label the fuse box with the sizes you should use or replace the fuse panel with a circuit breaker panel. Fuses rated 15 and 20 amperes are typical in homes. If you find that all or most of the fuses in your fuse box are rated higher than 20 amperes, there is a good chance that some of the fuses are rated too high for residential circuits and can present a serious fire hazard.

- **All power tools are either equipped with a 3-prong plug or marked to show that they are double-insulated. All space heaters with 3-prog plugs are plugged into 3-hole receptacles or are connected with a properly attached and certified adapter.**

  Three-prong plugs and double insulation reduce the risk of an electric shock. Consider replacing old tools that lack a 1-prong plug and are not double-insulated. Improperly grounded tools and appliances can lead to electrical shock. Never defeat the grounding prong on the plug. Check with your service person or an electrician if you are in doubt.

- **Electrical receptacles in garages, unfinished basements, and workshops are protected by ground-fault circuit interrupters, or GFCIs.**

  Test all GFCIs monthly to make sure they are working properly.

- **All fuel-burning appliances, including furnaces, boilers, fireplaces, wood stoves, and water heaters, as well as chimneys, flues, and vents have been inspected professionally within the last year.**

  A heater operating without proper ventilation and air supply produces carbon monoxide (CO), and older consumers may be more susceptible to CO exposure. CO is an invisible killer. It’s a colorless, odorless, poisonous gas. The firs line of defense against CO poisoning is to have a qualified professional inspect all fuel-burning heating systems, including furnaces, boilers, fireplaces, wood stoves, water heaters, chimneys, flues, and vents.

- **All kerosene, natural gas, and similar space-heating equipment has adequate ventilation.**

  Always use the correct fuel, as recommended by the manufacturer. Never pour gasoline into a kerosene heater. Review the installation and operating

instructions. Call the manufacturer or your local fire department if you have additional questions.

- **No containers of flammable and combustible liquids are stored inside the house.**

  The vapors that can escape from damaged or loosely closed containers of flammable or combustible liquids may be toxic when inhaled and may cause fires. Do not store gasoline or other highly flammable liquids in the house, utility room, garage or near the water heater. Portable gasoline containers intended for use by consumers are required to have child-resistant closures effective January 2009.

- **Portable generators are not operating in the basement, garage or anywhere near the house.**

  People have been killed by operating a portable generator in their basement or garage. Generators quickly produce high levels of poisonous CO and should never be used indoors, including inside a home, basement, shed, or garage, even if doors or windows are open. CO from generator used indoors can kill you and your family in minutes. Consumers should use portable generators outside only and far from windows, doors, and vents to their homes.

CHECK ENTRYWAYS AND THE HOME EXTERIOR

- **The porch, entryway, and approach, to the entryway are all well-illuminated.**
- **The light switch is located near the entryway.**
- **Outside steps, entryways, and approaches to the entryway are in good condition and are slip resistant.**
- **Outside steps have handrails that are easily graspable.**
- **All outside electrical outlets are GFCI-protected an in weatherproof covers or enclosures.**
- **Portable generators are located far from windows, doors, and vents to the home.**
- **All outdoor electrical tools and equipment have 3-prong cords and have not been modified to plug into 2-prong outlets.**

REMEMBER TO RE-CHECK YOUR HOME PERIODICALLY.

CHAPTER 5: EXAMINING THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND HEALTH

This article is sourced from: Physical Activity Guidelines. (2019). *Chapter 5: Active Older Adults.* Retrieved from: https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf **(pg. 29-43, 45)**

In many studies coverings a wide range of issues, researchershave focused on exercise as well as on the more broadlydefined concept of physical activity.

Studies have examined the role of physical activity in manygroups—men and women, children, adolescents, adults, olderadults, people with chronic conditions and disabilities, andwomen during pregnancy and the postpartum period. Thesestudies have focused on the role that physical activity plays in many health outcomes, including:

- All-cause mortality;
- Diseases such as coronary heart disease, stroke,cancer at multiple sites, type 2 diabetes, obesity, hypertension, and osteoporosis;
- Risk factors for disease, such as overweight or obesity, hypertension, and high blood cholesterol;
- Physical fitness, such as aerobic capacity and musclestrength and endurance;
- Functional capacity, or the ability to engage inactivities needed for daily living;
- Brain health and conditions that affect cognition, such as depression and anxiety, and Alzheimer's disease; and
- Falls or injuries from falls.

These studies have also prompted questions as to what type of physical activity and how much is needed for varioushealth benefits. To answer this question, investigators have studied three main kinds of physical activity—aerobic, muscle strengthening, and bone strengthening. Investigators have also studied balance and flexibility activities.

Aerobic Activity

In this kind of physical activity (also called an *endurance activity* or *cardio activity*), the body's large muscles move in a rhythmic manner for a sustained period of time. Brisk walking,running, bicycling, jumping rope, and swimming are all examples. Aerobic activity causes a person's heart to beat

faster, and they will breathe harder than normal.

Aerobic physical activity has three components:

- **Intensity,** or how hard a person works to do the activity. The intensities most often studied are moderate (equivalent in effort to brisk walking) and vigorous (equivalent in effort to running or jogging);
- **Frequency,** or how often a person does aerobic activity; and
- **Duration,** or how long a person does an activity in any one session.

Although these components make up an aerobic physical activity profile, research has shown that the total amount of physical activity (minutes of moderate-intensity physical activity in a week, for example) is more important for achieving health benefits than is any one component (frequency, intensity, or duration). All time spent in moderate- or vigorous-intensity physical activity counts toward meeting the key guidelines.

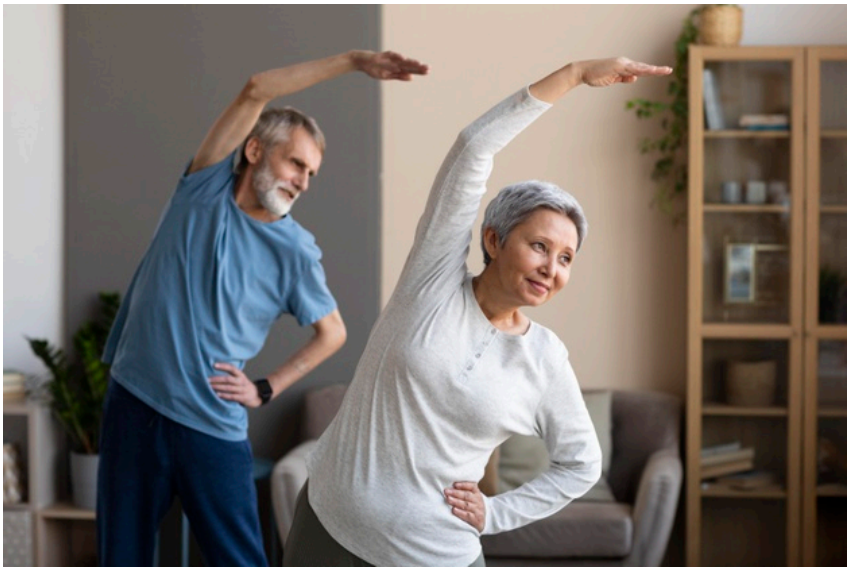
Muscle-Strengthening Activity

This kind of activity, which includes resistance training and weight lifting, causes the body's muscles to work or hold against an applied force or weight. These activities often involve lifting relatively heavy objects, such as weights, multiple times to strengthen various muscle groups. Muscle-strengthening activity can also be done by using elastic bands or body weight for resistance (climbing a tree or doing push-ups, for example).

Muscle-strengthening activity has three components:

- **Intensity,** or how much weight or force is used relative to how much a person is able to lift;
- **Frequency,** or how often a person does muscle-strengthening activity; and
- **Sets and repetitions,** or how many times a person does the muscle-strengthening activity, like lifting a weight or doing a push-up (comparable to duration for aerobic activity).

The effects of muscle-strengthening activity are limited to the muscles doing the work. It is important towork all the major muscle groups of the body—the legs, hips, back, abdomen, chest, shoulders, and arms.



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Bone-Strengthening Activity

This kind of activity (sometimes called *weight-bearing* or *weight-loading activity*) produces a force on the bones of the body that promotes bone growth and strength. This force is commonly produced by impactwith the ground. Examples of bone-strengthening activity include jumping jacks, running, brisk walking, and weight-lifting exercises. As these examples illustrate, bone-strengthening activities can also be aerobic and muscle strengthening.

Balance Activities

These kinds of activities can improve the ability to resist forces within or outside of the body that cause falls while a person is stationary or moving. Walking backward, standing on one leg, or using a wobble board are examples of balance activities. Strengthening muscles of the back, abdomen, and legs also improves balance.

Flexibility Activities

These kinds of activities enhance the ability of a joint to move through the full range of motion. Stretching exercises are effective in increasing flexibility, and thereby can allow people to more easily do activities that require greater flexibility.

The Health Benefits of Physical Activity

Research demonstrates that participating in regular moderate-to-vigorous physical activity provides many health benefits. Some benefits of physical activity can be achieved immediately, such as reduced feelings of anxiety, reduced blood pressure, and improvements in sleep, someaspects of cognitive function, and insulin sensitivity. Other benefits, such as increased cardiorespiratory fitness,increased muscular strength, decreases in depressive symptoms, and sustained reduction in blood pressure, require a few weeks or months of participation in physical activity. Physical activity can also slow or delay the progression of chronic diseases,

such as hypertension and type 2 diabetes. Benefits persist with continued physical activity.

The health benefits of physical activity are seen in children and adolescents, young and middle-aged adults, older adults, women and men, people of different races and ethnicities, and people with chronic conditionsor disabilities. The health benefits of physical activity are generally independent of body weight. Adults of all sizes and shapes gain health and fitness benefits by being habitually physically active. The benefits of physical activity also outweigh the risk of injury and heart attacks, two concerns that may prevent people from becoming physically active.

Table 4.1 Health Benefits Associated with Regular Physical Activity

Adults and Older adults
• Lower risk of all-cause mortality • Lower risk of cardiovascular disease mortality • **Lower risk of cardiovascular disease (including heart disease and stroke)** • **Lower risk of hypertension** • **Lower risk of type 2 diabetes** • Lower risk of adverse blood lipid profile • Lower risk of cancers of the bladder, breast, colon, endometrium, esophagus, kidney, lung, and stomach • Improved cognition* • Reduced risk of dementia (including Alzheimer's disease) • Improved quality of life • Reduced anxiety • Reduced risk of depression • Improved sleep • Slowed or reduced weight gain • Weight loss, particularly when combined with reduced calorie intake • Prevention of weight regain following initial weight loss • Improved bone health • Improved physical function • Lower risk of falls (older adults) • Lower risk of fall-related injuries (older adults)

Note: The Advisory Committee rated the evidence of health benefits of physical activity as strong, moderate, limited, or grade not assignable. Only outcomes with strong or moderate evidence of effect are included in this table.

The Role of Fitness in Health

Physical fitness is an important factor in the ability of people to perform routine daily activities and an important issue from a public health perspective. *Physical fitness* has been defined as "the ability to carryout daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-timepursuits and respond to emergencies."

Physical fitness has multiple components, including cardiorespiratory fitness (endurance or aerobic power), musculoskeletal fitness, flexibility, balance, and speed of movement

Table 4.2 Components of Physical Fitness

Cardiorespiratory Fitness	The ability to perform large-muscle, whole body exercise at moderate-to-vigorous intensities for extended periods of time.
Musculoskeletal Fitness	The integrated function of muscle strength, muscle endurance, and muscle power to enable performance of work.
Flexibility	The range of motion available at a joint group of joints
Balance	The ability to maintain equilibrium while moving or while stationary.
Speed	The ability to move the body quickly.

A substantial body of research has examined the relationship between physical fitness—cardiorespiratory fitness and, in some cases, musculoskeletal fitness—and health outcomes. The findings show that greater physical fitness is associated with reduced all-cause mortality and cardiovascular disease mortality and reduced risk of developing a wide range of chronic diseases, such as type 2 diabetes and hypertension. To date, most studies were done in men, but new data indicate these relationships also exist in women.

Physical activity and physical fitness are related to each other, and both provide important health benefits. Increases in the amount and intensity of physical activity typically produce increases in physical fitness, particularly in those who are less physically active. The available evidence suggests that physical activity and physical fitness interact in their effects on a variety of health outcomes.

Some possible ways that fitness and health outcomes may relate to physical activity are:

- Physical activity leads to improvements in physical fitness, and physical fitness causes improvements in health outcomes;
- Physical fitness may modify the amount of the effect that physical activity has on health outcomes; or
- Physical activity can lead to improved physical fitness as a health outcome.

The Beneficial Effects of Increasing Physical Activity: It is About Overload, Progression, and Specificity

Overload is the physical stress placed on the body when physical activity is greater in amount or intensity than usual. The body's structures and functions respond and adapt to these stresses. For example, aerobic physical activity places a stress on the cardiorespiratory system and muscles, requiringthe lungs to move more air and the heart to pump more blood and deliver it to the working muscles. Thisincrease in demand increases the efficiency and capacity of the lungs, heart, circulatory system, and exercising muscles. In the same way, muscle-strengthening and bone-strengthening activities overloadmuscles and bones, making them stronger.

Progression is closely tied to overload. Once a person reaches a certain fitness level, he or she is able to progress to higher levels of physical activity by continued overload and adaptation. Small, progressive changes in overload help the body adapt to the additional stresses while minimizing the risk of injury.

Specificity means that the benefits of physical activity are specific to the body systems that are doing the work. For example, the physiologic benefits of walking are largely specific to the lower body and the cardiovascular system. Push-ups primarily benefit the muscles of the chest, shoulders, and upper arms.

The following sections provide more detail on what is known from research studies about the specific health benefits of physical activity.

All-Cause Mortality

Strong scientific evidence shows that physical activity delays death from all causes. This includes the leading causes of death, such as heart disease and some cancers, as well as other causes of death. This effect is remarkable in two ways:

- First, only a few lifestyle choices have as large an effect on mortality as physical activity. It has been

estimated that people who are physically active for approximately 150 minutes a week have a 33 percent lower risk of all-cause mortality than those who are not physically active.

- Second, it is not necessary to do large amounts of activity or vigorous-intensity activity to reduce the risk of all-cause mortality. Benefits start to accumulate with any amount of moderate- or vigorous-intensity physical activity.

Research clearly demonstrates the importance of avoiding inactivity. Even low amounts of moderate-to-vigorousintensity physical activity reduce the risk of all-cause mortality. As Figure 2-1 shows, a large benefit occurs when a person moves from being inactive to being insufficiently active. The relative risk of all-cause mortality continuesto decline as people become even more physically active. Even at very high levels of physical activity (3 to 5 timesthe key guidelines), there is no evidence of increased risk.

All adults can gain this health benefit of physical activity, no matter their age, sex, race, or ethnicity. Physically active people with all body weights (normal weight, overweight, obesity) also have lower risk of all-cause mortality than do inactive people.

Cardiorespiratory Health

The benefits of physical activity on cardiorespiratory health are some of the most extensively documented ofall the health benefits. Cardiorespiratory health involves the health of the heart, lungs, and blood vessels.

Heart disease and stroke are two of the leading causes of death in the United States. Risk factors that increase the likelihood of cardiovascular diseases include smoking, hypertension, type 2 diabetes, and high levels of certain blood lipids (such as low-density lipoprotein [LDL] cholesterol). Low cardiorespiratory fitness also is a risk factor for heart disease.

Physical activity strongly reduces both the risk of dying from cardiovascular disease and the risk of developing cardiovascular disease, including heart attack, stroke, and heart failure. Regularly active adults have lower rates of heart disease and stroke and have lower blood pressure, better blood lipid profiles, and better physical fitness. Significant reductions in risk of cardiovascular disease occur at activity levels equivalent to 150 minutes a week of moderate-intensity physical activity. As with all-cause mortality, benefits begin with less than 150 minutes a week, and strong evidence shows that greater amounts of physical activity result in even further reductions in risk of cardiovascular disease.

Regular physical activity can greatly affect blood pressure, and effects can be immediate. People who have normal bloodpressure benefit because the risk of developing hypertensionis reduced. People who have hypertension also benefit because systolic and diastolic blood pressure are lowered.

Both **aerobic and muscle-strengthening physical activity** are recommended to improve blood pressure. Even physicalactivity at levels below the key guidelines tends to benefit blood pressure, and engaging in more physical activity canhave even greater benefits.

Everyone, including children and adolescents, can gain the cardiovascular health benefits of physical activity. The amountof physical activity that provides favorable cardiorespiratory health and fitness outcomes is similar for men and women of all ages, including older people, as well as for adults of various races and ethnicities. Aerobic exercise also improvescardiorespiratory fitness in people with disabilities, includingpeople who have lost the use of one or both legs and those with multiple sclerosis, stroke, and spinal cord injury.

Cardiometabolic Health and Weight Management

Cardiometabolic health is a term that encompasses cardiovascular diseases and metabolic diseases, such astype 2 diabetes. Cardiovascular disease and metabolic disease share a number of risk factors, and reducing risk of one can reduce risk for the other. Cardiometabolic health and weight status are also closely related issues and are often considered together.

Type 2 Diabetes and Cardiometabolic Health

Regular physical activity strongly reduces the risk of developing type 2 diabetes in people of all body sizes. Physical activity can have an additive benefit for reducing risk of type 2 diabetes because physical activity reduces the risk of excessive weight gain, an independent risk factor for type 2 diabetes. Adults who regularly engage in aerobic activity of at least moderate intensity have a significantly lower risk of developing type 2 diabetes than do inactive adults. These benefits begin to accrue at levels of physical activity below the key guideline of 150 to 300 minutes a week, and additional amounts of moderate- or vigorous-intensity physical activity seem to lower risk even further. Insulin sensitivity can be improved with just a single bout of physical activity. In addition, physical activity helps control blood glucose in people who already have type 2 diabetes.

Physical activity improves cardiometabolic health in children and adolescents, as well as in adults. Specifically, regular physical activity contributes to lower plasma triglycerides and insulin levels and may also play a role in improving high-density lipoprotein (HDL) cholesterol and blood pressure.

Can High-Intensity Interval Training be Helpful for Cardiovascular Health

Most of the benefits of physical activity have been studied with moderate- or vigorous-intensity aerobic activity. Recent research has examined high-intensity interval training (HIIT), which may provide similar reductions in cardiovascular disease risk factors as those observes with continuous moderate-intensity physical activity. HIIT is a form of interval training that consists of alternating short periods of maximal-effort exercise with less intense recovery periods. This type of exercise can improve insulin sensitivity, blood pressure and body composition in adults. Interestingly, adults with overweight or obesity and those at higher cardiovascular disease and type 2 diabetes tend to have greater cardiovascular disease benefits when doing HIIT compared to normal-weight or healthy adults.

WEIGHT MANAGEMENT

Physical activity and caloric intake both must be considered when trying to control body weight. Because of its role in energy balance, physical activity is a critical factor in determining whether a person can maintain a healthy body weight, lose excess body weight, or maintain successful weight loss.

Strong scientific evidence shows that physical activity helps people maintain a stable weight over time and can reduce the risk of excessive weight gain and the incidence of obesity. People vary a great deal in how much physical activity they need to achieve and maintain a healthy weight. Some need more physical activity than others to maintain a healthy body weight, to lose weight, or to keep weight off once it has been lost. Many peopleneed more than the equivalent of 150 minutes of moderate-intensity activity a week to maintain their weight. The relationship between physical activity and prevention of weight gain is most often observed with moderate- orvigorous-intensity aerobic physical activity. Muscle-strengthening activities help promote weight maintenance,although not to the same degree as aerobic activity.

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People who want to lose a substantial amount of weight (more than 5 percent of body weight) and people who are trying to keep a significant amount of weight off once it has been lost may need to do more than 300 minutes of moderate-intensity activity a week to meet weight-control goals. Muscle-strengthening activities can also help maintain lean body mass during weight loss. Combining both caloric restriction and physical activity tend to be most beneficial for weight loss rather than just caloric restriction or just physical activity.

People with overweight or obesity tend to experience the same benefits of physical activity as those with normal weight. However, there are specific exceptions. Compared to women with normal weight, women with overweight or obesity see a greater risk reduction for developing endometrial cancer and a greater risk reduction of breast cancer-specific mortality as a result of being more physically active.

Regular physical activity also helps control body weight or reduce body fat in children and adolescents ages 3through 17 years. Throughout childhood and adolescence, higher levels of physical activity are associated with smaller increases in body weight and adiposity.

BONE AND MUSCULOSKELETAL HEALTH

Bones, muscles, and joints support the body and help it move. Healthy bones, joints, and muscles are critical to the ability to do daily activities without physical limitations such as climbing stairs, working in the garden, or carrying a small child.

Progressive muscle-strengthening activities preserve or increase muscle mass, strength, and power. Greater amounts (through higher frequency, heavier weights, or more resistance) improve muscle function to a greater degree. Improvements occur in children and adolescents as well as in younger and older adults. Resistance exercises also improve muscular strength in persons with conditions such as stroke, multiple sclerosis, cerebral palsy, and spinal cord injury. Through aerobic activity does not increase muscle mass in the same way that muscle-strengthening activities do, it may also help slow the loss of muscle with aging.

Preserving bone, joint muscle health is essential with increasing age, Studies show that the frequent decline in bone density that happens during aging can be slowed with regular physical activity. These effects are seen in people who participate in aerobic, muscle-strengthening, and bone-strengthening physical activity programs of moderate or vigorous intensity. The range of total physical activity for these benefits varies widely. Important changes seem to begin at 90 minutes a week.

Building a strong, healthy bones is also important for children and adolescent. Along with having a healthy diet that includes adequate calcium and vitamin D, physical activity is critical for bone development in youth. Children and adolescents ages 3 through 17 years who are physically active (such as by running, jumping, and doing other bone-strengthening activities) have higher bone mass, improved bone structure, and greater bone strength.

Regular physical activity also helps people with osteoarthritis or other rheumatic conditions affecting the joints. Participation in 150 minutes a week of moderate-intensity aerobic physical activity plus muscle-strengthening activity improves pain management, function, and quality of life. Up to 10, 000 steps per day does not appear to worsen the progression of osteoarthritis. Very high levels of physical activity, however may have extra risks. People who participate in very high levels of high-impact physical activity—such as elite or professional athletes—have a higher risk of hip and knee osteoarthritis, mostly due to the risk of injury involved in competing in some sports.

FUNCTIONAL ABILITY AND FALL PREVENTION

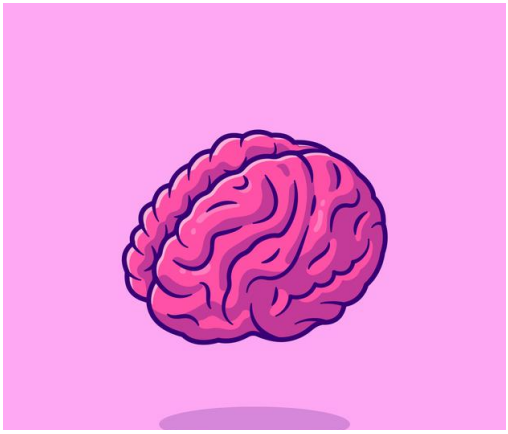
Physical function, or *functional ability,* is the capacity of a person to perform tasks or behavior that enable him or her to carry out everyday activities, such as climbing the stairs, or to fulfill basic life roles, such as personal care, grocery shopping, or playing with grandchildren. Loss of functional ability is referred to as *functional limitation*. Middle-aged and older adults who are physically active have lower risk of functional limitations than do inactive adults. Physical activity can prevent or delay the onset of substantial functional or role limitations. Older adults who are already have functional limitations also benefit from regular physical activity.

Hip fracture is a serious health condition that can have life-changing negative effects for many older people. Physical active people, especially women, appear to have lower risk of hip fracture than do inactive people. Among older adults, physical activity reduces the risk of falling and injuries from falls. Research demonstrates that multicomponent physical activity programs are most successful at reducing falls and injuries. These programs commonly include muscle-strengthening activities and balance training and may also include gait and coordination training, physical function training, and moderate-intensity activities, such as walking. It is important to note that doing only low-intensity walking does note seem to reduce the risk of fall-related injuries and fractures. Older adults, including those with a variety of health conditions such as Parkinson's disease, stroke, and hip fracture, and those with frailty obtain benefits from multicomponent physical activities.

BRAIN HEALTH

Brain health can be defined in many ways, but the Guidelines focuses on the following areas:

- Youth- brain maturation and development and academic achievement.
- Older Adults- dementia and cognitive impairment; and
- Across the lifespan-cognition, anxiety, and depression, quality of life, and sleep.



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Some of the benefits of physical activity on brain health occur immediately after a session of moderate-to-vigorous physical activity (acute effect), such as reduced feelings of state anxiety (short-term anxiety), improved sleep, and improved aspects of cognitive function. With regular physical activity (habitual effect), improvements are seen in trait anxiety (long-term anxiety),

deep sleep, and components of executive function (including the ability to plan and organize; monitor, inhibit, or facilitate behaviors; initiate tasks; and control emotions).

Table 4.3. The Benefits of Physical Activity for Brain Health

OUTCOME	POPULATION	BENEFIT	ACUTE	HABITUAL
Cognition	Children ages 6 to 13	Improved cognition (performance on academic achievement tests, executive function, processing speed, memory)	●	●
	Adults	Reduced risk of dementia (including Alzheimer's disease)		●
	Adults older than age 50 years	Improved cognition (executive function, attention, memory, crystallized intelligence, *processing speed		●
Quality of life	Adults	Improved quality of life		●
Depressed mood and depression	Children ages 6 to 17 years and adults	Reduced risk of depression Reduced depressed mood		●
Anxiety	Adults	Reduced short-term feelings of anxiety (state of anxiety)	●	
	Adults	Reduced long-term feelings and signs of anxiety (trait anxiety) for people with and without anxiety disorders		●
Sleep	adults	Improved sleep outcomes (increased sleep efficiency, sleep quality, deep sleep; reduced daytime sleepiness, frequency of use of medication to aid sleep)		●
	Adults	Improved sleep outcomes that increase with duration of acute episodes	●	

Note: The Advisory Committee rated the evidence of health benefits of physical activity as strong, moderate, limited, or grade not assignable. Only outcomes with strong or moderate evidence of effect are included in this table.

*Crystallized intelligence is the ability to retrieve and use information that has been acquired over time. It is different from fluid intelligence,which is the ability to store and manipulate new information.

COGNITION

Compared to inactive people, people who do greater amounts of moderate- or vigorous-intensity physical activity may experience improvements in cognition, including performance on academic achievement tests, and performance on neuropsychological tests, such as those involving mental processing speed, memory, and executive function.

Physical activity also lowers the risk of developing cognitive impairment, such as dementia, including Alzheimer's disease. These improvements from physical activity are present for people who have normal as well as impaired cognitive health, including conditions such as attention deficit hyperactivity disorder (ADHD), schizophrenia, multiple sclerosis, Parkinson's disease, and stroke.

QUALITY OF LIFE

Physically active adults and older adults are likely to report having a better quality of life. Being physically active also improves the sense of a better quality of life among people who have schizophrenia and related disorders.

ANXETY

Anxiety and anxiety disorders are the most prevalent mental disorders. Participating in moderate-to-vigorous physical activity over longer durations (weeks or months of regular physical activity) Reduces symptoms of anxiety in adults and older adults.

Major depression is one of the most common mental disorders in the United States and is a leading cause of disability for middle-aged adults in the United States. The prevalence of depressive episodes is higher among females, both adolescents and adults, than among males. Engaging in regular physical activity reduces the risk of developing depression in children and adults and can improve many of the symptoms experienced by people with depression.

SLEEP

In addition of feeling better, adults who are more physically active sleep better. Greater volumes of moderate-to-vigorous physical activity are associated with reduced sleep latency (taking less time to fall asleep), improved sleep efficiency (higher percentage of time in bed actually sleeping), improved sleep quality, and more deep sleep. Greater volumes of moderate-to-vigorous physical activity are also associated with significantly less daytime sleepiness, better sleep quality, and

reduced frequency of use of sleep-aid medications. The improvements in sleep with regular physical activity are also reported by people with insomnia and obstructive sleep apnea.

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The evidence that habitual moderate-to-vigorous physical activity reduces the risk of excessive weight gain, an important risk factor for obstructive sleep apnea, suggests that physical activity could have a favorable impact on the incidence of obstructive sleep apnea.

The number of hours before bedtime at which the activity is performed does not matter. Benefits are similar for physical activity performed more than 8 hours before bedtime, 3 to 8 hours before, and less than 3 hours before bedtime.

CANCER

Physically active adults have a significantly lower risk of developing several commonly occurring cancers, as well as lower risk of several other cancers. Research shows that adults who participate in greater amounts of physical activity have reduced risk of developing cancers of the:

- Bladder
- Breast
- Colon (proximal and distal)
- Endometrium
- Esophagus (adenocarcinoma)
- Kidney
- Lung
- Stomach (cardia and non-cardia adenocarcinoma)

These effects appear to apply to both men and women, regardless of weight status. Benefits for cancer survivors are shown in Table 4.4.

PEOPLE WITH CHRONIC HEALTH CONDITIONS AND DISABILITIES

Regular physical activity provides important health benefits for adults with chronic health conditions. As seen in table 4.4, benefits exist for cancer survivors and people with osteoarthritis, hypertension, type 2 diabetes, dementia, multiple sclerosis, spinal cord injury, and other cognitive disorders.

TABLE 4.4 Health Benefits Associated with Regular Physical Activity for People with Chronic Health Conditions and Disabilities

Cancer survivors
▪ Improved health-related quality life ▪ Improved fitness
Breast Cancer survivors
▪ Lower risk of dying from breast cancer ▪ Lower risk of all-cause mortality
Colorectal cancer survivors
▪ Lower risk of dying from colorectal cancer ▪ Lower risk of all-cause mortality
Prostate Cancer Survivors
▪ Lower risk of dying from prostate cancer
People with Osteoarthritis (knee and hip)
▪ Decreased pain ▪ Improved physical function ▪ Improved health-related quality of life ▪ No effect on disease progression at recommended physical activity levels
People with Hypertension
▪ **lower risk of cardiovascular disease mortality** ▪ reduced cardiovascular disease progression ▪ lower risk of increased blood pressure over time
People with Type 2 Diabetes
▪ lower risk of cardiovascular disease mortality ▪ reduced progression of disease indicators; hemoglobin A1c, blood pressure, body mass index, and lipids
People with Dementia
▪ improved cognition
People with Multiple Sclerosis

▪ improved physical function, including walking, speed and endurance ▪ improved cognition
People with Spinal Cord Injury
▪ improved walking function, muscular strength, and upper extremity function
People with diseases or disorders that impair cognitive function (including ADHD, schizophrenia, Parkinson's disease, and stroke)
▪ improved cognition

Note: The Advisory Committee rated the evidence of health benefits of physical activity as strong, moderate, limited, or grade notassignable. Only outcomes with strong or moderate evidence of effect are included in this table.

RISK OF SEDENTARY BEHAVIOR

In general, *sedentary behavior* refers to any waking behavior characterized by a low level of energy expenditure (less than or equal to 1.5 METs) while sitting, reclining, or lying. The Guidelines operationalizes the definition, of sedentary behavior to include self-reported sitting (leisure-time, occupational, and total), television (TV) viewing or screen time, and low levels of movement measured by devices that assess movement or posture.

More time spent in sedentary behavior increases risk of:

- all-cause mortality;
- cardiovascular disease mortality;
- cardiovascular disease;
- type 2 diabetes; and
- cancer of the colon, endometrium, and lung.

For inactive adults, replacing sedentary behavior with light-intensity physical activity is likely to produce some health benefits. Among all adults, replacing sedentary behavior with moderate- or vigorous-intensity physical activity may produce even greater benefits.

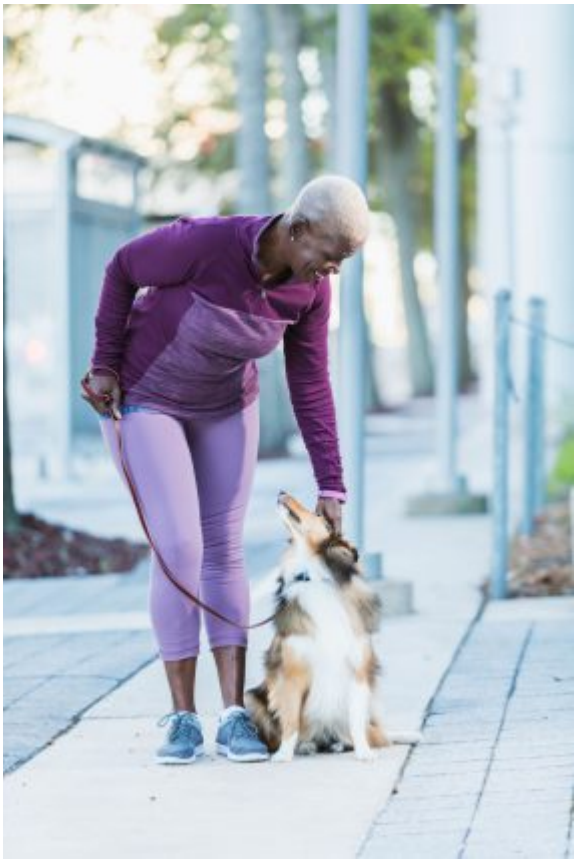
CHAPTER 6: Making Physical Activity A Part of An Older Adult's Life

This article is sourced from: Center for Disease Control. (2021). *Making Physical Activity a Part*

of an Older Adult's Life. Retrieved from: April 3, 2021
https://www.cdc.gov/physicalactivity/basics/adding-pa/activities-olderadults.htm

When it comes to getting the physical activity you need each week, it's important to pick activities you enjoy and that match your abilities. This will help ensure that you stick with them.

Things to Keep in Mind



- Physical activity has including better sleep and less anxiety. It can also help you feel better, improve your balance, and boost your brain health. Additional health benefits include a reduced risk of serious illnesses such as heart disease, type II diabetes, and depression.
- Try to do a variety of activities. This can make physical activity more enjoyable and reduce your risk of injury.
- Regular physical activity is still safe and good for you even if you have problems doing normal daily activities, such as climbing stairs or walking.
- Lots of things count. And, it all adds up. Find what works for you.
- If you have to take a break from your regular activity routine due to an illness, be sure to start again at a lower level and slowly work back up to your usual level of activity.
- To get to and stay at a healthy weight, work your way up to doing the equivalent of 150 minutes (for example, 30 minutes a day, 5 days a week) of moderate-intensity aerobic activity each week. Keep in mind that you may need to do more activity or reduce the number of calories you eat to get to your desired weight.

As part of their weekly physical activity, older adults should do multicomponent physical activity to improve physical function and decrease the risk of falls or injury from a fall. This includes balance training, aerobic activity, and muscle-strengthening activities. An example of a multicomponent

physical activity program could include walking (aerobic activity), lifting weights (muscle strengthening), and incorporating balance by walking backwards or sideways or by standing on one foot. These activities can be done at home or in a structured group setting.

Improving Your Balance

Older adults should do activities that help them with balance can improve the ability to resist forces within or outside of the body that cause falls. Fall prevention programs that include balance training and other exercises to improve activities of daily living can also significantly reduce the risk of injury, such as bone fractures, if a fall does occur. These activities might include backward walking, sideways walking, heel walking, toe walking, heel to toe walking, practicing standing from a sitting position, and alternating balancing on one leg and then the other with a counter or wall nearby. Strengthening muscles of the back, abdomen, and legs also improves balance.

What if you have a chronic condition?

If you have a health condition such as arthritis, diabetes, or heart disease, it doesn't mean you can't be active. In fact, it's just the opposite. Regular physical activity can improve your quality of life and even reduce your risk of developing other conditions.

Talk with your doctor to find out if your health condition limits, in any way, your ability to be active. Then, work with your doctor to come up with a physical activity plan that matches your abilities. If your condition stops you from meeting the minimum recommended activity levels, try to do as much as you can. What's important is that you avoid being inactive.

What if you have a disability?

If you are an older adult with a disability, regular physical activity can provide you with important health benefits, like a stronger heart, lungs, and muscles; improved brain health; and a better ability to do everyday tasks. It's best to talk with your doctor before you begin a physical activity routine. Try to get advice from a professional with experience in physical activity and disability. They can tell you more about the amounts and types of physical activity that are appropriate for you and your abilities.

When to Check with Your Doctor

Doing physical activity that requires moderate effort is safe for most people, but if you have a health condition such as heart disease, arthritis, or diabetes, be sure to talk with your doctor about the types and amounts of physical activity that are right for you. Also, if you have been inactive, are

not too fit, or are overweight, and want to do vigorous-intensity physical activity, such as jogging, it is safest to discuss this with your doctor.

ACTIVE OLDER ADULTS

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The benefits of regular activity occur throughout life and are essential for healthy aging. Adults ages 65 years and older gain substantial health benefits from regular physical activity. However, it is never too late to start being physically active. Being physically active makes it easier to perform activities of daily living, including eating, bathing, toileting, dressing, getting into or out of bed or chair, and moving around the house or neighborhood. Physical activity can also preserve physical function and mobility, which may help maintain independence longer and delay the onset of major disability. Research shows that physically activity can improve physical function in adults of any age, adults with overweight or obesity, and even those who are frail. Promoting physical activity and reducing sedentary behavior for older adults is especially important because this population is the least physically active of any age group, and most older adults spend a significant proportion of their day being sedentary.

Older adults are a varied group. Most but not all, have one or more chronic conditions, such as type 2 diabetes, cardiovascular disease, osteoarthritis, or cancer, and these conditions vary in type and severity. Nevertheless, being physically active has

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significant benefits for all older adults. Physical activity is key to preventing and managing chronic disease. Other benefits include a lower risk of dementia, better perceived quality of life, and reduced symptoms of anxiety and depression. Additionally, doing physical activity with others can provide opportunities for social engagement and interaction. All older adults experience a loss of physical fitness and functions with age, but some experience this more than others. This diversity means that some older adults can run several miles, while other struggles to walk a few blocks.

This chapter provides guidance about physical activity for adults age 65 years and older. The guidelines seek to help older adults select the type and amounts of physical activity appropriate for their own abilities.

Table 4.1

KEY GUIDELINES FOR OLDER ADULTS

These guidelines are the same for adults and older adults.

- ✓ Adults should move more and sit less throughout the day. Some physical activity is better than none. Adults who sit less and do any amount of moderate-to-go-vigorous physical activity gain some health benefits.
- ✓ For substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate-and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week.
- ✓ Additional benefits are gained by engaging in physical activity beyond the equivalent of 300 minutes (5 hours) of moderate-intensity physical activity a week.
- ✓ Adults should also do muscle-strengthening activities of moderate or great intensity and that involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

Guidelines just for older adults:

- ✓ As part of their weekly physical activity, older adults should do multicomponent physical activity that includes balance training as well as aerobic and muscle-strengthening activities.
- ✓ Older adults should determine their level of effort for physical activity relative to their level of fitness.

- ✓ Older adults with chronic conditions should understand whether and how their conditions affect their ability to do regular physical activity safely.
- ✓ When older adults cannot do 150 minutes of moderate-intensity aerobic activity a week because of chronic conditions, they should be as physically active as their abilities and conditions allow.

(CDC, 2019)

EXPLAINING THE KEY GUIDELINES

As with other adults, the key guidelines for older adults focus mainly on two types of activity—aerobic and muscle-strengthening. In addition, these key guidelines discuss the importance of multicomponent physical activity, which includes balance training along with aerobic and muscle-strengthening activity. Each provides important health benefits, especially to improve physical function.

Aerobic Activity

Aerobic activities, also called *endurance* or *cardio activities*, are physical activities in which people move their large muscles in a rhythmic manner for a sustained period of time. Brisk walking, jogging, biking dancing, and swimming are examples of aerobic activities. Aerobic activity makes a person' heart beat more rapidly and breathing rate increase to meet the demands of the body's movement. Over time, regular aerobic activity makes, the cardiorespiratory system stronger and more fit.

No matter what the purpose—from walking the dog, to taking a dance or exercise class, to bicycling to the store—all types of aerobic activity count toward meeting the key guidelines. When putting the key guidelines into action, it is important to consider the total amount of activity, how often, and at what intensity. For health benefits, the total amount of moderate-to-vigorous physical activity is more important than the length of each physical activity episode. In general, muscle-strengthening activities do not count toward meeting the aerobic key guidelines.

How Much Total Activity a Week?

Older adults should aim to do at least **150 to 300 minutes** of moderate-intense physical activity a week, or an equivalent amount (75 to 150 minutes) of vigorous-intense activity. They can also do an equivalent amount of activity by doing moderate- and vigorous-intensity activity. As is true for people of all other ages, greater amounts of physical activity provide additional and more extensive health benefits. Older adults who do more aerobic physical activity have reduced a risk of age-related loss of function and reduced risk of physical function limitations compared to the general aging population.

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Older adults should strongly consider walking as one good way to get aerobic activity. Walking has many health benefits, and it has a low risk of injury. It can be done year-round and in many settings.

Table 4.2

Aerobic Activities	Muscle-Strengthening Activities
▪ Walking or hiking ▪ Dancing ▪ Swimming ▪ Water aerobics ▪ Jogging or running ▪ Aerobic exercise classes ▪ Some forms of yoga ▪ Bicycle riding (stationary or outdoors) ▪ Some yard work, such as raking and pushing a lawn mower ▪ Sports like tennis or basketball ▪ Walking as part of golf	▪ Strengthening exercises using exercise bands, weight machines, or hand-held weights ▪ Body-weigh exercises (push-ups, pull-ups, planks, squats, lunges) ▪ Digging, lifting, and carrying as part of gardening ▪ **Carrying groceries** ▪ Some yoga postures ▪ Some forms of tai chi

Note: *The intensity of these activities can be either relatively moderate or relatively vigorous,*

depending upon an older adult's level of fitness.

YOGA AND TAI CHI

Yoga and tai chi are increasingly popular forms of physical activity.

Many different forms of yoga exist, and they range in intensity level from more meditative Hatha yoga to power yoga. For this reason, yoga may include time that can be characterized as light-intensity physical activity or as moderate-intensity physical activity. Yoga may also be considered both aerobic and muscle strengthening, depending on the type and postures practiced.

Tai chi is typically classified as light-intensity physical activity but may be relatively moderate intensity for older adults. Some forms of tai-chi may be muscle strengthening. Research is currently exploring the effects that tai chi may have on balance and physical function in older adults.

How Many Days a Week and for How long?

Aerobic physical activity preferably should be spread throughout the week. Research studies consistently show that activity performed on at least 3 days a week produces health benefits. Spreading physical activity across at least 3 days a week may help to reduce the risk of injury and prevent excessive fatigue.

All amounts of aerobic activity count toward meeting the key guidelines if they are performed at moderate or vigorous intensity. Episodes of physical activity can be divided throughout the day or week, depending on personal preference.

How Intense?

The intensity of aerobic activity can be tracked in two ways absolutely intensity and relative intensity. Most studies on older adults use relative intensity to track aerobic physical activity.

- **Absolute intensity** is the amount of energy expended during the activity without considering a person's cardiorespiratory fitness. The energy expenditure of light-intensity activity, for example, is 1.6 to 2.9 times the amount of energy expended when a person is at rest. Moderate-intensity expend 3.0 to 5.9 times the amount of energy expended at rest. The energy expenditure of vigorous-intensity activities is 6.0 or more times the energy

expended at rest.

- **Relative intensity** is the level of effort required to do an activity. Less fit people generally require a higher level of effort than more fit people to do the same activity. Relative intensity can be estimated using a scale of 0 to 10, where sitting is 0 and the highest level of effort possible is 10.

  When using relative intensity, people pay attention to how physical activity affects their heart rate and breathing. As a rule of thumb, a person doing a moderate-intensity aerobic activity can talk, but not sing, during the activity. A person doing vigorous-intensity activity cannot say more than a few words without pausing for a breath.

  Either absolute or relative intensity can be used to monitor progress in meeting the key guidelines. Because older adults expend more energy than younger adults for the same task such as walking and because aerobic capacity declines with age, relative intensity is a better guide for older adults than absolute intensity. Certain activities, such as some types of yoga or tai chi, that are considered light-intensity on an absolute scale for younger adults may be perceived as moderate or vigorous intensity for older adults. People who have been very inactive and are working to increase the physical activity level can also use relative intensity to help determine their level of effort.

  Older adults can meet the key guidelines by doing relatively moderate-intensity activity, relatively vigorous-intensity activity, or a combination of both. The relative intensity of aerobic activity is related to a person's level of cardiorespiratory fitness.

- **Moderate-intensity activity** requires a medium level of effort. On a scale of 0 to 10, where sitting is 0 and the greatest effort possible is 10, moderate-intensity activity is a 5 or 6 and produces noticeable increases in breathing rate and heart rate.
- **Vigorous-intensity activity** begins at a level of 7 or 8 on this scale and produces large increases in a person's breathing and heart rate.

  A general rule of thumb is that 2 minutes of moderate-intensity activity counts the same as 1 minute of vigorous-intensity activity. For example, 30 minutes of moderate-intensity activity is roughly the same as 15 minutes of vigorous-intensity activity.

MUSCLE-STRENGTHENING ACTIVITIES

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At least 2 days a week, older adults should do muscle-strengthening activities that involve all major muscle groups. These are the muscles of the legs, hips, chest, back, abdomen, shoulders, and arms. The improvements in, or maintenance of, muscular strength is specific to the muscles used during the activity, so a variety of activities is necessary to achieve balanced muscle strength.

Muscle-strengthening activities make muscles do more work than they are accustomed to during activities of daily life. Examples of muscle-strengthening activities include lifting weights, working with resistance bands, doing calisthenics that use body weight for resistance (such as push-ups, pull-ups and planks), climbing stairs, shoveling snow, and carrying heavy loads (such as groceries and heavy gardening).

Muscle-strengthening activities count if they involve a moderate or greater level of intensity or effort and work the muscle groups of the body. Whatever the reason for doing it, any muscle-strengthening activity counts toward meeting the key guidelines. For example, muscle-strengthening activity done as part of a therapy or rehabilitation program can count.

No specific amount of time is recommended for muscle strengthening, but muscle-strengthening exercises should be performed to the point at which it would be difficult to do another repetition. When resistance training is used to enhance muscle strength, one set of 8 to 12 repetitions of each exercise is effective, although 2 or 3 sets may be more effective. Development of muscle strength and endurance is progressive over time. That means that gradual increases in the amount of

weight, number of sets or repetitions, or the number of days a week of exercise will result in stronger muscles.

BALANCE ACTIVITIES

These kinds of activities can improve the ability to resist forces within or outside of the body that cause falls. Fall prevention programs that include balance training and other exercises to improve activities of daily living can also significantly reduce the risk of injury, such as bone fractures, if a fall does occur. Studies of fall prevention programs generally include about three sessions a week. Balance training examples include walking heel-to-toe, practicing standing from a sitting position, and using a wobble board. Strengthening muscles of the back, abdomen, and legs also improve balance.

MULTICOMPONENT PHYSICAL ACTIVITY

Doing multicomponent physical activities can help reduce the risk of injury from falls and improve physical function. *Multicomponent* refers to physical activity that includes more than one type of physical activity that includes more than one type of physical activity, such as aerobic, muscle strengthening, and balance training. Multicomponent physical activity can be done at home or in a community setting as part of a structured program that includes a combination of balance, muscle-strengthening, and balance training. Multicomponent physical activity can be done at home or in a community setting as part of a structured program that includes a combination of balance, muscle-strengthening, and aerobic physical activity, and may include a gait, coordination, and physical function training. Recreational activities such as dancing, yoga, tai chi, gardening, or sports can also be considered multicomponent because they often incorporate multiple types of physical activity. It is appropriate

What is Multicomponent Physical Activity?

For older adults, multicomponent physical activity is important to improve physical function and decrease the risk of fall or injury from a fall. These activities can be done at home or in a structured group setting. Many studied interventions combine all types of exercise (aerobic, muscle strengthening, and balance) into one session, and this has been shown to be effective.

An example of a multicomponent physical activity program could include walking (aerobic activity), lifting weights (muscle-strengthening), and could incorporate balance by walking backwards or sideways or by standing on one foot while doing an upper body muscle-strengthening activity such as bicep curls. Ballroom dancing also combines aerobic and balance components.

and recommended that all older adults do multicomponent physical activities.

FLEXIBILITY, WARM-UP, AND COOL-DOWN

Older adults should maintain flexibility necessary for regular physical activity and activities of daily life. Flexibility activities enhance the ability of a joint to move through the full range of motion. Stretching exercises are effective in increasing flexibility, and thereby can allow people to more easily do activities that require greater flexibility. Although the health benefits of these activities alone are not known and they have not been demonstrated to reduce risk of activity-related injuries, they are an appropriate component of a physical activity program. However, time spent doing flexibility activities by themselves does not count toward meeting the aerobic or muscle-strengthening key guidelines.

Research studies of effective exercise programs typically include warm-up and cool-down activities, a warm-up before moderate- or vigorous-intensity activity allows a gradual increase in heart rate and breathing at the start of the episode of activity. A cool-down after activity allows a gradual heart rate decrease at the end of the session. Time spent doing warm-up and cool-down activities may count toward meeting the aerobic activity guidelines if the activity is at least moderate intensity (for example, walking briskly to warm up for a jog). A warm-up for muscle-strengthening activity commonly involves doing exercises with less weight.

MEETING THE KEY GUIDELINES

Older adults have many options for how to live an active lifestyle that meets the key guideline. Many factors influence decisions to be active, such as personal goals, current physical activity habits, and health and safety considerations. In all cases, older adults should try to move more and sit less each day. In working toward meeting the key guidelines, older adults are encouraged to do a variety of activities. This approach can make activity more enjoyable an may reduce the risk of overuse injury.

Healthy older adults who plan gradual increases in their weekly amount of physical activity generally do not need to consult a health care professional before becoming physically active. However, health care professionals and physical activity specialists can help people attain and maintain regular physical activity by providing advice on appropriate types of activities and ways to progress at a safe and steady pace.

Older adults with chronic conditions should talk with their health care professional to determine

whether conditions limit, in any way, their ability to do regular physical activity. Such a conversation should also help people learn about appropriate types of physical activity.

INACTIVE AND INSUFFICIENTLY ACTIVE OLDER ADULTS

Some physical activity is better than none. Older adults who do not yet do the equivalent of 150 minutes of moderate-intensity physical activity a week can gain health benefits by doing small amounts of physical activity. In addition, swapping out sedentary behavior, such as sitting, for light-intensity physical activity. As shown in Figure 4.1 which plots the benefits of increasing physical activity on all-cause mortality, the biggest gain in benefits occurs when going from no physical activity to being active for just 60 minutes a week.

Older adults should increase their amount of physical activity gradually. It can take months for those with low fitness to gradually meet their activity goals. To reduce risk of injury, it is important to increase the amount of physical activity gradually over a period of weeks to months. For example, an inactive person could start with a walking program consisting of 5 minutes of slow walking several times each day, 5 to 6 days a week. The length of time could then gradually be increased to 10 minutes per session, 3 times a day, and the walking speed could increase slowly.

Muscle-strengthening activities should also be gradually increased over time. Initially, these activities can be done just 1 day a week starting at a light or moderate intensity. Over time, the number of days a week can be increased to 2, and then possibly more than 2. Each week, the intensity can be increased slightly until it becomes moderate or greater.

ACTIVE OLDER ADULTS

Older adults who are already active and meet more or exceed the key guidelines range- 150 to 300 minutes a week-can gain additional and more extensive health benefits by reducing sedentary behavior and increasing relatively moderate-intensity aerobic activity to 300 or more minutes a week. Muscle-

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strengthening activities should also be done at least 2 days a week.

SPECIAL CONSIDERATIONS

Maintaining a Healthy Body Weight

The amount of physical activity necessary to successfully maintain a healthy body weight depends upon caloric intake and varies considerably among older adults. To help achieve and maintain a healthy body weight, older adults should do the equivalent of 150 minutes of moderate-intensity aerobic activity each week. If necessary, they should increase their weekly minutes or aerobic physical activity gradually over time and decrease caloric intake to a point where they can achieve energy balance and a healthy weight.

Some older adults will need a higher level of physical activity to maintain a healthy body weight or prevent weight regain. Some may need more than the equivalent of 300 minutes a week of moderate-intensity activity. It is possible to achieve this level of activity by gradually increasing activity over time.

Older adults who are capable of relatively vigorous-intensity activity and need a high level of physical activity to maintain a healthy weight should consider some relatively vigorous-intensity activity as means of weight control. This approach is more time-efficient than doing only moderate-intensity activity. However, high levels of activity are not feasible for many older adults. These adults should achieve a level of physical activity that is sustainable and safe. If further weight loss is needed, these older adults should achieve energy balance by reducing caloric intake.

It is important to remember that all activities, whether light, moderate, or vigorous intensity, “count” for energy balance. Active choices, such as taking the stairs rather than the elevator or adding short episodes of walking to the day, are example of activities that can be helpful in maintaining healthy body weight.

BEING ACTIVE IN THE PRESENCE OF HEALTH CHALLENGES

Older adults who have chronic conditions or other health challenges that prevent them from doing the equivalent of 150 to 300 minutes of moderate-intensity aerobic activity a week should set physical activity goals that meet their abilities. They should talk with their health care professional about setting physical activity goals. They should avoid an inactive lifestyle. Physical inactivity is among the strongest predictors of physical disability in older people. Even small amounts of

moderate-intensity aerobic activity provide some health benefits. Older adults with frailty and those who have had a hip fracture are discussed below.

Frailty

In frail older adults, strong evidence demonstrates that physical function can be improved with regular physical activity. Physical activity can contribute to improved walking and gait, balance, strength, self-reported measures of activities of daily living, and quality of life. Multicomponent physical activity of at least moderate intensity that is performed 3 or more times a week for a duration of 30 to 45 minutes per session, over at least 3 to 5 months, appears most effective to increase functional ability in frail older adults. Multicomponent physical activity programs are more effective than doing just a single type of physical activity.

After a Hip Fracture

Regular physical activity can reduce the risk of falls and the extent of an injury from a fall. Physical activity is also important to improve physical function following a hip fracture. Much of the research has been on extended exercise programs beginning after the fracture and has documented improved walking and performance-based measures of gait, balance, strength, and activities of daily living, or self-reported mobility.

BEING ACTIVE WITH FUNCTIONAL LIMITATION

When a person has lost some ability to do a task of everyday life, such as climbing stairs, the person has a functional limitation. In older adults with existing functional limitations, scientific evidence indicates that regular physical activity is safe and has a beneficial effect on functional ability, thus making it easier to do activities of daily living.

RESUMING ACTIVITY AFTER AN ILLNESS

An older adult may have to take a break from regular physical activity because of an illness, such as the flu. If these interruptions occur, older adults should resume activity at a lower level and gradually work back up to their usual level of activity.

These examples show how different people with different living circumstances and levels of fitness can meet the key guidelines for older adults.

Barbara: An Active, 65-Year-Old Woman

Barbara is recently retired and enjoys spending time being active with friends and family and at the local recreation center. Barbara does the equivalent of approximately 220 minutes of moderate-intensity aerobic activity each week, plus muscle-strengthening activities 2 days a week. Some of her active time is spent doing multicomponent activities 2 days a week.

- Twice a week, Barbara takes a 45-minute aqua aerobics class at the local recreation center with her husband. The class incorporates aerobic and muscle-strengthening activities, and it helps her work on her balance.
- Many of Barbara's friends have begun to take dance classes at the local recreation center in the afternoons. Barbara now joins the she dances for 45 minutes and typically goes twice a week.
- In addition to her traditional activities, Barbara makes sure to park farther away when running errands, and she tries to take the stairs whenever possible. These shorter bouts contribute to an average of 40-minutes of relatively moderate-intensity activity to her total weekly amount.

Rumi: A 79-Year-Old Woman in an Assisted-Living Community

Rumi struggles to stay active. She lives in an assisted-living communityand no longer drives. She is worried about falling and heard from her doctor that staying active can improve her physical function and reduceher risk of falls and fall-related injuries.

Her goals and current activity pattern: Currently, Rumi walks 5 times aweek in a loop around her assisted-living complex; this takes her about 10minutes (50 minutes of moderate-intensity activity each week). Her goal isto increase the number of walks each week and also increase the length of some of her walks. In addition to her walks, Rumi goes with a friend to do bird watching with a group oncea week at the local park. These outings usually involve at least 20 minutes of walking.

Starting out: Rumi slowly adds to her walks by taking a slightly longer route. After a few weeks, she is able towalk about 15 minutes 3 times a week. She continues to go to the bird-watching group.

Reaching her goal: Within a few months, Rumi is consistently walking the 10-minute loop around her assisted-living complex every day. She extends to a longer 15-minute loop at least 4 times a week. She continues

to attend the bird-watching group, and she feels more comfortable walking on uneven terrain; she has extended these walks to about 40 minutes a week. Rumi has also started going to an exercise class for older adults twice a week. The leader teaches different exercises that focus on aerobic activity, muscle-strengthening activity, and balance training. Rumi is now meeting the key guideline of 150 minutes of moderate-intensity aerobic activity. This class has helped Rumi to meet the twice-weekly guideline for muscle-strengthening activities and adds multicomponent activities to her routine.

ADDITIONAL CONSIDERATIONS FOR SOME ADULTS

All Americans should be physically active to improve overall health and fitness and to prevent many adverse health outcomes. However, some people have conditions that raise special issues about recommended types and amounts of physical activity. These people include healthy women during pregnancy and the postpartum period (first year after delivery), people with chronic health conditions, and people with disabilities. Often, these people avoid physical activity because of concern that the risks outweigh the benefits. However, for most people, the benefits of being physically active outweigh any potential risks.

This chapter provides guidance on physical activity for healthy women who are pregnant or postpartum. This chapter also provides guidance on physical activity for adults with selected chronic conditions or disabilities, including the following:

- Adults with osteoarthritis;
- Adults with type 2 diabetes;
- Adults with hypertension;

- Adults who are cancer survivors; and
- Adults with physical disabilities.

KEY GUIDELINES FOR ADULTS WITH CHRONIC HEALTH CONDITIONS AND ADULTS WITH DISABILITIES

- ✓ Adults with chronic conditions or disabilities, who are able, should do at least 150 minutes a week (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week.

- ✓ Adults with chronic conditions or disabilities, who are able, should also do muscle-strengthening activities of moderate or greater intensity and that involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

- ✓ When adults with chronic conditions or disabilities are not able to meet the above key guidelines, they should engage in regular physical activity according to their abilities and should avoid inactivity.

- ✓ Adults with chronic conditions should be under the care of a health care provider. People with chronic conditions can consult a health care professional or physical activity specialist about the types and amounts of activity appropriate for their abilities and chronic conditions.

Explaining the Key Guidelines

The key guidelines affirm that adults with chronic conditionsor disabilities should be physically active on a regular basis.In consultation with a health care professional or physical activity specialist, people with chronic conditions or disabilities should understand how their disease or disability affects theirability to do physical activity. Some may be capable of doing substantial amounts of physical activity, and they should essentially follow the Guidelines for adults.

Some people with chronic conditions or disabilities are not able to follow the key guidelines for adults. These people should adapt their physical activity program to match their abilities, in consultation with a health care professional or physical activity specialist. Studies show that physical activity can be done safely when the program is matched to their ability.

Meeting the Key Guidelines

People with chronic conditions or disabilities are encouraged to create an individualized physical activity plan.It is a good idea to get advice from professionals with experience in physical activity and disability becausematching activity to abilities can require modifying physical activity in many different ways. For example, aperson with a disability or condition affecting leg function may get aerobic activity from an arm ergometer or from wheelchair walking.

Some people with disabilities also need supervised activity to help with an exercise program. For example,some people may need assistance when performing muscle-strengthening activities, such as lifting weights.

Special Considerations for Specific Chronic Conditions and Disabilities

Physical Activity in Adults with Osteoarthritis

Osteoarthritis is a common condition in older adults, and people can live many years with osteoarthritis. People with osteoarthritis are commonly concerned that physical activitycan make their condition worse. Osteoarthritis can be painfuland cause fatigue, making it hard to begin or maintain regularphysical activity. Yet, people with this condition should get regular physical activity to lower their risk of getting other chronic diseases, such as heart disease or type 2 diabetes, and to help maintain a healthy body weight.

"A Navy doctor embarked aboard USNS Comfort (T-AH 20) shows a patient an x-ray of arthritis in his knee." by Official U.S. Navy Imagery is licensed under CC BY 2.0

Physical activity has both preventive health benefits and therapeutic benefits among people with osteoarthritis. Strongscientific evidence indicates that both aerobic activity and muscle-strengthening activity provide therapeutic benefits. Adults with osteoarthritis can expect improvements in pain, physical function, quality of life, and mental health with regular physical activity. When done safely, physical activity does not make the disease or the pain worse. And evidence shows that the benefits of physical activity can continue even after stopping a physical activity program.

People with osteoarthritis should match the type and amount of physical activity to their abilities

and the severity of their condition. Most people can usually tolerate doing moderate-intensity activity for 150 minutesa week or more, such as being active 3 to 5 days a week for 30 to 60 minutes per episode. Walking up to 10,000 steps per day does not appear to worsen osteoarthritis of the knee. Some people with osteoarthritiscan safely do more than 150 minutes of moderate-intensity activity each week and may be able to tolerate vigorous-intensity activity. Health care professionals typically counsel people with osteoarthritis to do activities that are low impact, not painful, and have low risk of joint injury. Swimming, walking, tai chi, and many muscle-strengthening exercises are good examples of this type of activity.

Physical Activity in Adults with Type 2 Diabetes

Physical activity in adults with type 2 diabetes shows how important it can be for people with a chronic disease to be active. Physical activity has therapeutic effects, can reduce comorbidities, and can prevent risk factors that contribute to the progression of type 2 diabetes. Therefore, in addition to benefits specific to type 2diabetes, physical activity is routinely recommended to reduce risk of other diseases and help promote a healthy body weight. Physical activity may also benefit adults with type 1 diabetes, but this condition was not addressedfor the development of the Guidelines.

Strong scientific evidence shows that physical activity protects against heart disease, the leading cause of death in people with type 2 diabetes, and can reduce risk of death by 30 to 40 percent. Physical activity helpsprotect against heart disease and factors related to the progression of type 2 diabetes by helping to reduce the risk factors of high blood pressure, body weight, blood lipids (cholesterol), and elevated hemoglobin A1c in people with type 2 diabetes. The beneficial effects on blood glucose (indicated by hemoglobin A1c) may also reduce other complications of type 2 diabetes. Moderate-intensity activity for at least 150 minutes a week plus2 days a week of muscle-strengthening activities help to substantially lower the risk of heart disease. A person who moves toward 300 minutes or more of moderate-intensity activity a week gets even greater benefit.

Adults with a chronic condition should work with a health care professional or physical activity specialist to adapt physical activity so it is appropriate for their condition. For example, people with diabetes must beespecially careful about monitoring their blood glucose, choosing appropriate

footwear, and avoiding injuryto their feet.

Physical Activity in Adults with Hypertension

Hypertension is one of the most common, costly, and preventable cardiovascular disease risk factors. It is the most prevalent chronic condition among adults. Physical activity has therapeutic benefits for people withhypertension by helping to reduce blood pressure. It also lowers their risk of cardiovascular disease mortality.

Both aerobic and muscle-strengthening activities are beneficial for people with hypertension. Because the benefits of physical activity are actually greater in people with hypertension than in those with normal blood pressure, moderate-intensity activity for about 90 minutes a week or the equivalent amount of vigorous-intensity activity helps to substantially lower the risk of heart disease. A person who moves toward greater amounts ofphysical activity a week gets even greater benefit. People with hypertension should work with their health careprovider as they increase their physical activity, as adjustments to medication may be needed.

Physical Activity in Adult Cancer Survivors

Earlier detection of cancer and modern improved treatments mean that more than 15.5 million cancer survivors are living in the United States today. This growing population faces unique challenges, including risk of recurrent cancer, death from their cancer or other causes, development of other chronic diseases, worsening of physical functioning and quality of life, and other adverse effects from their disease and treatments.

Cancer survivors should engage in regular physical activity for its many health benefits.

For adults with breast, colorectal, or prostate cancer, greater amounts of physical activity after diagnosis help to substantially lower the risk of dying from their cancer. For adults with breast and colorectal cancer, greater amounts of physical activity after diagnosis also help to substantially lower the risk of dying from any cause. Cancer survivors who are physically active have a better quality of life, improved fitness and physical function, and less fatigue.Physical activity also plays a role in reducing the adverse effects of cancer treatment. As a result of cancerand its treatment, some cancer survivors are at increased risk of heart disease, and physical activity can help reduce this risk.

As with other adults with chronic conditions, cancer survivors can consult with a health care professional or physical activity specialist to match a physical activity plan to their abilities, health status, and any treatment toxicities.

Physical Activity in Adults with Selected Physical Disabilities

For many types of physical disabilities, physical activity reduces pain, improves fitness, improves physical function, and improves quality of life. People with disabilities that affect their ability to walk or move about benefit from physical activity. Physically active people who have Parkinson′s disease, multiple sclerosis, a spinalcord injury, or a stroke have better physical function, including walking ability, than less active adults with the same condition. These improvements have been shown with multicomponent physical activity programs thatincluded aerobic activity (commonly walking), muscle-strengthening, and balance-training activities.

Potential specific benefits include:

- Parkinson′s disease—Improved physical function, including walking, balance, muscle strength, anddisease-specific motor scores.
- Multiple sclerosis—Improved physical function, including walking speed and endurance, and fitness.Physical activity does not appear to exacerbate multiple sclerosis.
- Spinal cord injury—Improved walking function, wheelchair skills, muscular strength, and upper extremityfunction. Benefits can be seen with recent or older

injuries and across severities of spinal cord injury.

- Stroke—Improved walking function, such as walking velocity or endurance.

Adults with physical disabilities can consult with a health care professional or physical activity specialist to match a physical activity plan to their abilities

CHAPTER 7: Moving Ahead: Strategies and Tools to Plan, Conduct, and Maintain Effective Community-Based Physical Activity Programs for Older Adults: A Brief Guide

This is sourced from: Belza B. and the PRC-HAN Physical Activity Conference Planning Workgroup (2007). Moving Ahead: Strategies and Tools to Plan, Conduct, and Maintain Effective Community-Based Physical Activity Programs for Older Adults. Centers for Disease Control and Prevention: Atlanta, Georgia.

TIME TO GET MOVING, KEEP MOVING

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Encouraging older adults to become and stay active has developed into an important public health priority. While the physical and emotional benefits of exercise are increasingly well known, just 40 percent of older adults are engaged in regular leisure-time physical activity. In recent years, researchers and research institutions have begun to develop and test a variety of new evidence-based programs in physical activity, several of which have produced significant measurable health benefits and other positive outcomes for older participants. In turn, with support from the federal government and private funders, public health systems and providers of aging services have sought to adapt these research models for application in the “real world” in the hope that similar outcomes will be achieved by older adults in senior centers, housing sites, Y’s, and other community settings.

The Healthy Aging Research Network of CDC’s Prevention Research Centers program

(PRC-HAN) has actively participated in this evolution. Its members have served as evaluators, consultants, and in some cases program developers for these physical activity interventions. PRC-HAN members understand that helping older adults benefit from powerful new programs (several of which are highlighted in this document) will require taking what we know from research and making that knowledge usable and available to the broader community of providers in public health and aging services.

To that end, the PRC-HAN held a symposium in Seattle, Washington, in February 2007. This meeting gathered more 160 professionals—both researchers and service providers—to highlight some of the best evidence-based programs in physical activity now available and provide a forum to explore challenges and successful strategies associated with creating flourishing programs in communities across the country. The PRC-HAN organized the meeting around the RE-AIM framework, a comprehensive approach to interventions in health behavior that was developed by Russ Glasgow, PhD, and colleagues; it includes planning, dissemination, and evaluation (for a fuller description, please see page 2).

The resulting two days of high-quality presentations, spirited question-and-answer sessions, and highly interactive small-group discussions deepened researchers' awareness of the practical concerns involved in starting and running evidence-based programs. Just as importantly, the symposium provided service providers with new tools and insights that presenters at the symposium hope are being used in places from Portland, Maine, to Honolulu, Hawaii. While a brief publication cannot capture the full flavor and excitement of these two days, we offer this monograph to make some of the conference's key learnings more broadly accessible. We hope it will increase your knowledge of evidence-based physical activity programs and the value of the RE-AIM framework for planning and delivering these programs. We also hope that it will suggest new strategies, practical ideas, and helpful tools that you can use wherever you work on behalf of older adults.

The discussion begins with an overview of RE-AIM and its essential components,

followed by sections devoted to each of those components. The sections include explanations and suggestions for using the component under discussion, a practical example from a real-world implementation, and a list of online and print tools that can help you in your own implementation of each component. The final section offers more general tools to help you through each step of the RE-AIM process. While heartened by the positive response and the energy generated by the symposium, we also understand that this is just the beginning of what is needed. It is time for all of us to get moving and keep moving to ensure that these exciting evidence-based programs in physical activity become more broadly available for the growing number of older adults who need them in communities everywhere.

RE-AIM: A Comprehensive Framework for Program Planning and Evaluation

Effective, practical, evidenced-based interventions for health promotion and self-management of chronic disease offer advantages for both older adults and program planners. As program participants, older adults can look forward to improvements in their health. Program planners can proceed confidently with the knowledge that these programs will yield demonstrable, measurable outcomes that both healthcare partners and funders seek and increasingly support. Successful implementation, however, requires careful attention and effort-from recruiting participants to ensuring that the program is run in a high-quality, consistent manner.

To help program planners, evaluators, funders, and policymakers plan, evaluate, and implemented health programs in real world settings, psychologist Russel E. Glasgow, PhD, and his colleagues developed a conceptual framework called, RE-AIM. Initially created to evaluate interventions in health behavior, RE-AIM also serves as a helpful planning tool for a whole range of programs and policies in health promotion.

The acronym RE-AIM stands for Reach, Effectiveness, Adoption, Implementation, and Maintenance, which are the five critical elements in the program development process:

REACH describes the absolute number, proportion, and representativeness of the persons who participate in a given program. Representativeness refers to the extent to which participants' characteristics are the same as or different from those who are eligible but do not participate. For example, if you intended to increase physical activity among sedentary but relatively healthy people between the ages of 65 and 85, you would compare information on demographics, health, and physical activity of those who participated with those who met your recruitment criteria but declined to join. If there are no significant differences between the two groups, your participants are likely representative of the entire population you hoped to reach. If that is the case, you can then more confidently advocate expanding the program further.

EFFECTIVENESS describes the impact of a program on important outcomes. These outcomes may include quality of life, health status, functioning in daily life, healthcare costs, and potential negative consequences. (See box "A Presumption of Effectiveness" below.)

ADOPTION is defined as the absolute number, proportion, and representativeness of settings that are willing to offer a program. If you intended to initiate a physical activity program in hospitals, clinics, and senior centers, for example, but could locate funding only for larger hospitals, you would find it more difficult to generalize or apply your outcomes to smaller settings because those settings would represent a different set of characteristics (e.g., in terms of staff, space, and resources).

IMPLEMENTATION is the degree to which staff members follow the program as it was originally designed. Implementation also addresses consistency of delivery and cost, using the original model as the standard. Rigorous documentation, often by a third party, is essential to measuring the success of implementation. We know, for example, that relying on lay leaders to assess the progress of an exercise class might render a far more optimistic picture than relying on reports from master trainers who periodically observe the class.

MAINTENANCE describes the extent to which a program becomes part of the routine in both the setting of interest and at the level of the individual man or woman. In settings, "maintenance" refers to organizational practices and policies. At the personal level, it refers to monitoring the long-term effects (six or more months) of a program on the man or woman's health and functioning. For example, one intervention in physical activity/cardiorespiratory capacity, Project ACTIVE[1] showed that although activity increased from the program's beginning to six months it decreased from six to twenty-four months, supporting the need for multiple assessments of behavior over time. For a program to be truly successful, it must perform well in all five areas described above. If your REACH is strong and you are using an EFFECTIVE program, you are well on your way. But if staff deliver the program inconsistently (IMPLEMENTATION) or the program isn't continued after its first year (MAINTENANCE), the absolute impact of your work will be limited. To provide a deeper understanding of the RE-AIM framework, the remainder of this monograph offers further details and real-world examples of four RE-AIM components: reach, adoption, implementation, and maintenance

EFFECTIVE RECRUITMENT

At the beginning of project planning, you need to specify the characteristics of your target population (e.g., sedentary older adults 75+ in West Philadelphia) and then to estimate as closely as possible the number of people in that population. (Is it 300, 3000, 30,000?) With that number in mind, you can estimate the number of people in the population whom you can feasibly recruit into your program. REACH is then calculated as the percentage of people in the potential target population you believe you can recruit. The degree to which you actually attract that percentage of the population provides one measure of your program's success.

The RE-AIM Web site (www.re-aim.org) has a REACH calculator that can help you do the math (www.re-aim. org/2003/calculate-reach.html). You may also want to assess the degree to which the population you recruited represents the target population as a whole,

[1] 1 Dunn AL, Marcus BH, Kampert JB, Garcia ME, Kohl HW, Blair SN. (1999). Comparison of lifestyle and structured interventions to increase physical activity and cardiorespiratory fitness: a randomized trial, JAMA 1999; 281(4), 327-34.

or whether you were more successful at reaching one segment of the group than others (e.g., men and women from one senior center or community or from one ethnic community or another).

FIRST THINGS FIRST How do you effectively REACH desired populations? The first steps are internal to the provider organization. For example, before you begin your recruitment efforts, you will want to take the following steps:

• Assess the other programs your organization offers, your staff, and the attitudes of your organization and evaluate how well positioned you are to reach your target population(s).

• Educate your project staff and partners about the characteristics and needs of the older adult group you intend to reach.

• Identify staff and partners who already have contact with your target population and ensure that they have the messages and materials necessary to talk about and build enthusiasm for your program.

• Encourage staff to create relationships and build credibility in target communities. This may mean spending time there before you actually begin recruitment. As one participant in the PRC-HAN symposium said, “[You] need to come sit on the porch...and build [the] relationships [you need].”

• Commit to holding your program accountable for following your recruitment plan and achieving successful results.

GETTING THE WORD OUT, PEOPLE IN

With your “own house” in order, you can develop a plan to recruit participants. As in traditional marketing efforts, effective recruitment begins with a keen knowledge of your market and its needs. This may mean conducting informal interviews, one-on-one or group conversations, and focus groups or surveys to get to know how your target

population views physical activity and the program you are offering. You want to learn who influences them (and ultimately seek and get the support of those influencers), discover where they get their information, and determine how they make decisions to act on the information. You want to ensure the program is easily accessible and doesn't compete with other popular activities. You also want to make sure that the benefits of the program (as understood by your target group—not you) outweigh the personal, financial, time, and other costs associated with participating.

With this knowledge in hand, you can develop messages and an associated recruitment plan. Broadcast advertising and flyers may help to build general awareness for your program but are generally not viewed as cost-effective. More successful methods noted at the PRC-HAN symposium include:

- Group presentations where people can get a "taste" of the program, particularly in settings where the target population naturally convenes (e.g., faith organizations, senior centers);
- Using elder "champions" who use their personal networks and word of mouth to bring people in;
- Piggybacking on existing activities (like a congregate meal) to provide information and recruit face-to-face; and
- Working with local media to develop stories about the benefits of physical activity and, once implemented, your program.

OVERCOMING COMMON CHALLENGES

With the right strategies, you can achieve effective REACH, even with communities that may have geographical, cultural, or other barriers. If you intend to recruit participants from ethnic groups or faith-based communities beyond your own or those of your center's, you will want to identify partner agencies/religious groups who have standing in those communities and who can carry your message with credibility. In addition, it is critical that the recruitment materials and program activities be culturally appropriate and welcoming to everyone.

For many activity programs, men are particularly difficult to reach. Participants at the PRC-HAN symposium suggested several ideas to recruit men, including using exercises with weights, building competition into the program, and offering separate orientations or classes for men. One participant said she found that messaging that addressed men's sense of athleticism and teamwork and referred to their past participation in sports (even their participation as a student or young men) was particularly effective.

POLICY MATTERS

Your organization may also want to begin working with local and state agencies to create opportunities that extend REACH. Forming government partnerships at all levels can be very helpful. The planning processes of your local Area Agency on Aging (AAA) may provide an opening to advocate for funds to support and expand activity programs. You may want to approach departments of parks and recreation to see how existing programs might be modified to accommodate older adults. Finally, you can work with public-private physical activity coalitions in your area to expand their work to include older men and women as well as younger people.

FIT AND STRONG!

Fit and Strong! is an evidence-based physical activity/behavior change program developed at the Center for Research on Health and Aging at the University of Illinois at Chicago. It targets older adults (60+) with osteoarthritis (OA) of the lower extremities. Studies have shown that OA is the most common and most disabling of all chronic conditions affecting older adults. It can lead to decreased muscle strength, reduced aerobic capacity, and impaired activity due to pain—a combination that can ultimately lead to disability and loss of independence. Therefore, Fit and Strong! includes flexibility exercises, aerobic conditioning, strength training, and an educational component on lifestyle change and arthritis disease management.

To help expand its REACH, Fit and Strong! collaborates with multiple agencies, such as the Chicago Department on Aging, to maximize recruitment. It provides programs at

five sites across Chicago, all of them accessible to the targeted population, which includes older adult minorities. The program is also being offered at three sites in North Carolina and one in West Virginia. The program incorporates elements that facilitate wider distribution, such as low costs and minimal use of health professionals. It has also broadened its population of enrollees, which initially was largely white, to include greater numbers of African Americans. In 2007, Fit and Strong's REACH calculations in Chicago were as follows:

Older adults in Chicago=286,912 • Assuming 60 percent have OA=172,147 • Assuming 50 percent of those have OA of the lower extremities=46,440 • 700 participants recruited to date • 700/46,440= 1.5 percent REACH This REACH may seem modest, but Fit and Strong! is a new program that is just beginning to collaborate with the national Arthritis Foundation on dissemination. If the program can continue to reach similar numbers over time, it will ultimately reach a much more significant percentage of older adults with OA.

ADOPTION: FINDING, SUPPORTING NEW SITES

Delivering a physical activity program that requires significant organizational support. The ADOPTION piece of the RE-AIM model describes the extent to which community-based organizations, clinics, worksites, and other settings in your area actually put your program into action.

WHAT'S YOUR TARGET?

As with REACH, the first step in ADOPTION is to estimate the size of the target group of organizations and settings that might implement your physical activity program. Four essential questions include:

- What are the criteria that identify an "appropriate" setting? If you keep them broad, you're more likely to reach a diverse population. For example, does a setting have the space to accommodate your program? Is it accessible to all potential participants? Is it located in an area that participants will consider safe?

- How many settings or organizations in your targeted group meet your defined criteria?
- What are the differences between those groups and settings that are included and those that are excluded?
- If your criteria would exclude a large percentage of settings, do you need to consider revising your criteria?

Once you have answered these questions, you will want to develop a list of potential sites, particularly noting those that have contact with (or have the potential to recruit) large numbers of representative participants you wish your program to REACH.

ASSESSING READINESS

To begin your ADOPTION work, you will want to consider first whether the local community service provider organizations you have identified as possible targets are ready to implement an evidence-based intervention. To do this, it is helpful to discuss the following key questions:

- Is the agency willing to conduct evidence-based health programs and stay true to the model(s) being implemented?
- Does the agency have funding for the program (new funds or a reallocation of current resources)?
- Is there access to both expert/appropriate personnel and to the target population?
- How is buy-in from senior leadership and other key partners reflected (programmatic and/or financial support)? If the organization you are approaching and its partners cannot yet respond positively to all four of these questions, you first need to work with the group and its staff to address areas needing attention.

DEVELOPING ORGANIZATIONAL SUPPORT

Having a clear idea of the organizations that are ready to participate allows you to develop strategies for building their buy-in. Even if they meet the readiness criteria, you will likely still need to:

- Meet with leadership and staff at potential sites to determine how your program

can fit within their organizations and existing offerings. Look for overlapping goals, and be patient. Trust takes time to develop, and so do collaborations. As a practical issue, if there are a series of meetings (e.g., in the development of a partnership to run a program), rotate the facilitators and the location of each meeting to foster a greater sense of equality and shared responsibility.

- Help organizations to see the need for your program and the critical role they can play in reaching people with the greatest need. You will want to help them understand the advantage of your program over similar existing programs.
- Provide technical assistance and resources for planning and implementation.
- Develop different cost options and ways to customize the program, always keeping in mind that funding may be an issue.

HOW SUCCESSFUL WERE YOU IN GETTING PARTNERS ON BOARD?

Given the size of your initial target group of sites, you can count the number of sites that implement your program and ultimately chart the success of your ADOPTION efforts over time. As with recruitment, the RE-AIM group offers a Web-based calculator that can help at: www.re-aim.org/2003/calculate-adoption.html

A MATTER OF BALANCE

A Matter of Balance (MOB): Managing Concerns about Falls is an evidence-based program developed at the Roybal Center for Late-Life Function at Boston University. This program helps reduce the fear of falling among older adults and encourages them to increase their activity levels. The state of Maine, where falls are the leading cause of hospitalization and injury among older adults, first implemented the program in 1999. In 2003, The Partnership for Healthy Aging received an Administration on Aging grant to translate MOB from one taught by healthcare providers to a volunteer lay leader model (MOB/VLL). In the program, master trainers train volunteer lay leaders, called “coaches,” to lead the MOB sessions.

These sessions involve low-to-moderate level exercises to increase flexibility, balance, strength, and endurance. The program also teaches participants how to view falls and

fear of falling as controllable, to set realistic goals for increasing activity, and to change their environment to reduce risk factors for falls.

MOB's most important ADOPTION strategy was a request for partners, which was distributed widely throughout the state to AAAs, community hospitals, Y's, Healthy Maine Partnership Communities, and others. This strategy identified qualified organizations that wished to become master trainer sites. The request for partners required potential master trainer sites to address the core components of the MOB model and identify which community groups were available to assist with implementation. In general, master trainer sites are responsible for a great deal of program implementation—recruiting volunteer lay leaders, teaching the curriculum to volunteer lay leaders, providing guidance and support, sponsoring classes, recruiting participants, and measuring outcomes. This intensive request-for-partners process and related requirements, therefore, enabled MOB to find the sites most willing, able, and committed to adapting the program locally.

IMPLEMENTATION: GETTING RESULTS

For an evidence-based program in physical activity to deliver successful results, its IMPLEMENTATION must be faithful to the original program in all of its core elements (and thus the term "intervention fidelity" is often used). Beyond that, it should remain consistent with the intention of the developers over time and regardless of who delivers it. Although some modifications may be necessary to adapt a program to local needs, changes to the essential elements in a program can result in unexpected (and undesirable) outcomes in terms of health, cost, and other variables, even though the original intervention was evidence-based.

CORE ELEMENTS

An essential first step toward effective IMPLEMENTATION is understanding which aspects of the program are absolutely critical to its success. These may include the specific components of the training curriculum and its requirements (for example, including physical activity plus a health education component plus a socialization

component), the conduct of the actual classes or curriculum as specified (for example, two, two-hour sessions a week for eight weeks), and the number of times a participant must attend to derive benefits from the program. Most good program manuals will specify core elements. If you are not sure what is essential, it is important to review the original program and if necessary, contact the program developers to discuss any modifications you plan for your IMPLEMENTATION.

GETTING IT RIGHT

To be confident that your program, once implemented, will effectively deliver optimal results, you will want to ensure that:

- Your version of the program maintains the tested the program's core elements;
- High-quality training prepares instructors or leaders to deliver the program as intended;
- The program is delivered consistently across sites and by all instructors or leaders; and
- Instructors or leaders encourage participants to use relevant strategies consistently for changing attitudes and behaviors, both during the program and then in real-life settings after the program ends.

BUILDING STAFF AND VOLUNTARY CAPACITY

For IMPLEMENTATION to be successful, it is essential that the people who lead the program, whether paid or volunteer (if involved), be qualified and dedicated. Ultimately, much of the programs' success lies in their hands, and thus it is crucial to invest in their recruitment, training, development, and evaluation over time. Here are some tips gleaned from the PRC-HAN meeting for helping program leaders reach their full potential:

- *Train and train again.* After intensive orientation and initial training, regular contact with master instructors will help program leaders/instructors/coaches sharpen their skills. Master instructors can help resolve any issues with participants that a leader does not feel sufficiently competent to handle.
- *Clarify What is Essential.* Ensure the program leaders understand the core elements of the program and establish very clear and simple guidelines for them

to follow. The clearer the guidelines, the more likely it is that leaders will remain faithful to the intent of the program.

- *Meet and meet again.* Holding regular meetings for everyone involved in your program will keep them involved. Note the program's collective progress and remind staff and volunteers about the importance continuing to deliver high-quality, consistent programming.
- *Provide feedback.* Have master instructors or other staff sit in on classes and offer suggestions to class leaders that can ensure that the program is delivered as intended and that leaders are following the guidelines for program delivery. You may also want to use surveys of participants to gauge how well a leader is conducting the program.
- *Build a network.* Especially in rural areas, where distance may be an issue, it can be helpful to build a network of leaders to encourage communication and to facilitate ways they can provide support to one another.
- *Show appreciation.* Be sure to let staff know when they're doing a good job; recognize their achievements and those of the program, and show appreciation and note milestones in their service.
- *Be consistent.* Seek ways in which you can make essential components of the programs and its IMPLEMENTATION part of the regular, day-to-day operations and budget of your organization or center. Over time, this will help make your IMPLEMENTATION more efficient, ensure consistent program delivery, and promote MAINTENANCE.

PAYING ATTENTION TO FUNDING

Finding ongoing funding for an evidence-based program in physical activity is of course critical to program IMPLEMENTATION. In several sessions at the PRC-HAN symposium, participants discussed relevant strategies such as charging participants a nominal fee per class, finding partners (e.g., a local church or YMCA) to help defray the cost of equipment or space, redirecting funding from existing programs to make an evidence-based offering possible, and particularly, seeking out new, and generally local, sources of support from government, foundations, healthcare entities, and corporations. Helpful tactics here

include:

- Gathering evidence. Many funders are now beginning to require data that demonstrate a program can actually achieve the outcomes it promises.
- Building on personal relationships. You should know potential funders well enough to understand the types of programs they would want to be involved in. Even if they can't fund you immediately, keep them apprised of your program's successes. They may be able to offer funding in the future.
- Using existing organizational structures. For example, if you want to implement your program at a local corner Baptist church, you might go to the Baptist Union for funding.
- Finding a champion. Locate a champion group or foundation that will help you with the transition period from start-up to a more sustained and expanded program. Many agencies that fund in aging say they are very open to partnering with the big names in funding, such as the Centers for Disease Control and Prevention, in transitioning programs to the next funding stage.
- Spreading the word. Keep local agencies well informed of the impact of your programs. After you build relationships with them over time, they may come to you and ask how they can help fund your programs.

EnhanceFitness®

EnhanceFitness (EF) is an evidence-based physical activity program based on a program first implemented at the Northshore Senior Center in a suburb of Seattle. The program was developed by the University of Washington Health Promotion Research Center in 1994, in partnership with Senior Services and Group Health Cooperative. The program focuses on stretching, flexibility, balance, low-impact aerobics, and strength training to help maintain or improve functional abilities and help people lead independent lives. Certified, trained fitness instructors lead the classes, which are held three times a week on an ongoing basis.

To support IMPLEMENTATION in new sites, EF provides a complete package, which

includes training, training manuals, data collection forms, annual reports describing its sites and its national program reports, a link to its Web site (www.projectenhance.org), marketing materials, program updates, subscription to a listserv, and a required annual workshop for instructors.

In addition to this package, which supports the ability of new sites to maintain the program's core elements, EF emphasizes educating of instructor to maintain these essential program components. Training sessions include instruction on the entire EF protocol, which includes how to lead a class; conduct fitness checks; collect data on demographic characteristics, attendance, and health history; and engage in motivational interviewing. EF also offers continuing support for the sites and the instructors through its Web site, listserv, class DVD, E-newsletter, sample budget worksheet, technical assistance staff, site visits, phone calls, grant-writing materials, and annual workshop.

FOR THE LONG HAUL

MAINTAINING GAINS

In the RE-AIM framework, successful MAINTENANCE for participants means that a physical activity program produces beneficial effects for participants that last—generally at least a year or longer. Several strategies were identified at the PRC-HAN meeting to help programs support this objective:

• As one participant recommended, "Be clear from the beginning what your program is and what it isn't." That way you don't lose people along the way who don't get what they initially expected.
• Address the particular needs of your participants and adapt nonessential elements of the program to be more attractive to them. For example, some groups may prefer salsa dancing to a walking program for aerobic exercise. Appropriate adaptations will improve attendance initially and make it more likely that participants will sustain their activity levels over time.
• Help break down barriers to continued activity, whether they are concerns about safety,

transportation, or something else. If participants feel unsafe walking alone, for example, help them to form a walking group that exercises after the program officially ends.

• Encourage self-monitoring. Provide tools, such as pedometers and exercise log books that help people chart their progress over time.

• Ask local businesses to provide incentives for physical activity. Members of a walking group, for example, might receive discounts on bottled water or coffee at some place along their exercise route, making their daily walks a more attractive experience that they are less likely to abandon over time.

STAYING IN TOUCH

Ongoing, personal engagement with participants is critical. For example, you and your program should:

• Talk with participants when you see them, and send cards reminding them to stay active, if possible. Frequent communication will help them feel more connected to the program and to their fitness goals over time.

• If your program is not ongoing, hold booster sessions from time to time. Similarly, you can do follow-up coaching on an individual level, even if only by phone. “Treat people as if they are still ‘in’ the program,” said one meeting participant.

• Follow up with people who have had a major event such as a hospitalization. If you don’t stay in touch, they may give up on physical activity and relapse into a sedentary lifestyle.

• Conduct long-term follow-up assessments. Feedback from participants is essential as you adapt and improve your program. You can learn why changes in behavior last for some people but not for others. And in the process, you can continue your connection to participants, further encouraging them to stay

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active.

THINKING "PARTNERSHIP"

On the organizational level, maintaining a program means that the sponsoring and partnering organizations and their staff must support it even after the early rush of enthusiasm has faded and the initial funding is gone. Effective MAINTENANCE is often related to effective ADOPTION. On the front end, it is important first of all to seek adopting organizations whose mission and programs fit well with your program. This will help promote a sense of shared ownership and make it more likely that your physical activity program can be sustained. Similarly, forming a community coalition, partnership, or advisory group with broad representation at the start of your REACH and ADOPTION efforts can provide you with access not only to a broad range of participants, but to funders and service providers that can support your work over the long haul.

Several ideas for promoting organizational MAINTENANCE emerged at the PRC-HAN symposium. Physical activity programs can, for example:

- Keep local agencies and funders well informed of your program's impact. They're more likely to provide continued or new support if you can demonstrate a strong track record. Nothing succeeds like success.
- Identify champions from your programs who can serve as spokespeople and advocates and communicate their enthusiasm and support to various community stakeholders.
- Investigate what makes some organizations continue with the program and what makes others leave it. Use that knowledge to improve your program's IMPLEMENTATION and subsequent ADOPTION activities as well.

TAKING CARE OF YOUR PEOPLE

Finally, strong program MAINTENANCE depends on continuing to engage and inspire staff and volunteers who will deliver your program with energy and fidelity. Some helpful ideas raised at the PRC-HAN symposium included:

- When recruiting staff or volunteers to lead your program or classes, listen carefully while screening people. Try to identify those who seem genuinely committed to your efforts and who care about physical activity and older adults. This will help reduce turnover.
- Regularly meet with organizational staff, program leaders and volunteers, and participants. Develop routinized mechanisms for getting their feedback about the program.
- Keep training. Periodic refresher courses that keep staff and volunteers up-to-date are important and can help ensure that they are continuing to deliver the program as directed.
- Give volunteers or staff leaders a "sabbatical." Allowing them a break from your program can refresh their enthusiasm, especially if they can take on an enhanced role when they return.

ACTIVE FOR LIFE®

The Active for Life program delivers two research-based programs in physical activity to midlife and older adults and sustains those programs through community institutions such as community or senior centers, recreation centers, public health departments, housing authorities, and faith-based institutions. The programs are Active Choices and Active Living Every Day, which promote physical activity among midlife and older adults who are at risk for health problems because of their sedentary lifestyles. Active Choices is a six-month, telephone-based counseling program. Active Living Every Day is a behavior-change program delivered in small groups. Both programs employ self-monitoring through the use of a pedometer and tracking tools. The National Program Office at the Texas A&M Health Science Center School of Rural Public Health oversees a grants program (supported by the Robert Wood Johnson Foundation) that tests the effectiveness, reach, and sustainability of these two established behavioral interventions.

The Active for Life program assesses participant MAINTENANCE through pre- and post- (years 1, 3, and 4) selfreport surveys of participants' physical activity levels,

health-related issues, and quality-of-life considerations such as stress, depression, and satisfaction with body function and appearance. It has also used follow-up testing in functional fitness.

At the organizational level, the Active for Life program builds alliances with other groups and integrates efforts with existing community groups and systems to MAINTAIN programs, specifically by doing the following:

- Forming a steering committee with the community in which Active for Life is delivered;
- Establishing partnerships with community organizations; and
- Working with community leaders and residents who can be "program champions," including community leaders, senior housing staff, social workers, and church liaisons.

All of these efforts help to build a strong base of support that enhances the sustainability of programs over time. An independent evaluation of the program is being conducted by University of South Carolina.

NEXT STEPS

PRACTICAL RESOURCES FOR EVIDENCE-BASED PHYSICAL ACTIVITY PROGRAMS: The following Web sites contain practical tools to help you implement your program through all five steps of the RE-AIM framework.

Prevention Research Centers-Healthy Aging Research Network (PRC-HAN) *depts.washington.edu/harn*

Includes publications, presentations, tools, a research agenda, links, and resources related to its mission, which is to understand better the determinants of healthy aging in older adult populations; to identify interventions that promote healthy aging; and to assist in the translation of such research into sustainable community-based programs throughout the nation.

RE-AIM *www.re-aim.org*

Provides resources and tools, including calculators for assessing REACH and ADOPTION, for community leaders and researchers interested in using the RE-AIM framework. Other tools include links, figures, tables, presentations, measures, and publications.

National Council on Aging (NCOA) Center for Healthy Aging *www.healthyagingprograms.org*

Encourages and assists community-based organizations serving older adults to develop and implement evidence-based programs on health promotion, disease prevention, and self-management of chronic disease. Resources include manuals, toolkits, research, examples of model health programs, and links to Web sites on related health topics.

Community Tool Box Community Tool Box *ctb.ku.edu ctb.ku.edu*

Provides over 6,000 pages of practical information to support your work in promoting community health and development. The Web site was created and is maintained by the Work Group on Health Promotion and Community Development at the University of Kansas in Lawrence, Kansas.

Retirement Research Foundation (RRF) *www.rrf.org*

The nation's largest private foundation devoted solely to serving the needs of older persons in the U.S. and enhancing their quality of life. We're working to make sure that today's seniors remain vibrant, vital participants of our society.

MEASUREMENTS AND STATISTICS:

Demographics and other health/population statistics can be essential when calculating

your target population and evaluating your REACH efforts. The following sites are excellent sources:

CDC Behavioral Risk Factor Surveillance System (BRFSS) *www.cdc.gov/brfss/index.htm*

This is the world's largest, ongoing, telephone health survey system. Conducted by the 50 state health departments as well as those in the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands, BRFSS provides state-specific information about asthma, diabetes, access to healthcare, use of alcohol, hypertension, obesity, cancer screening, nutrition and physical activity, tobacco use, and more. This information can be used to track health risks, identify emerging problems, design disease programs to prevent disease, and target interventions.

CDC National Center for Health Statistics (NCHS) *www.cdc.gov/nchs/default.htm*

This center provides comprehensive statistical information to guide health-improvement actions and policies.

Fedstats *www.fedstats.gov*

Fedstats provides a full range of official statistical information available to the public from the federal government.

National Association for Public Health Statistics and Information Systems (NAPHSIS) *www.naphsis.org*

This is the national association of state vital records and public health statistics offices.

SPECIAL POPULATIONS: For help in working with rural elders or faith-based communities, the following resources may be useful.

Rural Assistance Center (RAC) www.raconline.org

This is the national informational resource on rural health and human services.

Information specialists are available to provide customized assistance for rural topics and funding resources, link users to organizations, and furnish relevant publications from the RAC resource library.

US Department of Health and Human Services: Center for Faith-Based and Community Initiatives (CFBCI) www.hhs.gov/fbci

This center provides comprehensive information for faith-based organizations seeking to partner with community initiatives. It includes instructions on applying for federal funding as well as links to various relevant government agencies and programs.

GENERAL INFORMATION ABOUT PHYSICAL ACTIVITY AND PROGRAMS FOR OLDER ADULTS:

For general information on government programs, funding, and policy regarding programs in physical activity for older adults, the following sites may be helpful.

CDC Healthy Aging Program www.cdc.gov/aging

Offers information on a variety of topics related to the promotion of healthy aging for older adults; provides a searchable online version of The State of Aging and Health in America 2007 report with national and state level data.

CDC Division of Nutrition and Physical Activity www.cdc.gov/nccdphp/dnpa

Provides information on the science behind the benefits of physical activity and a variety of resources and publications related to physical activity and interventions to promote such activity

National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older dults Age 50 and Older www.agingblueprint.org

Outlines broad strategies that will lead to increasing physical activity among older Americans. The plan was developed with input from more than 60 persons representing 46 organizations with expertise in health, medicine, social and behavioral sciences, epidemiology, gerontology/geriatrics, clinical science, public policy, marketing, medical systems, community organization, and environmental issues.

The US Administration on Aging (AoA) www.aoa.gov

Offers a comprehensive list of resources for older adults and their families as well as professionals in the aging field. Also included is a list of grant programs and funding opportunities.

CHAPTER 8: WHAT IS ELDER ABUSE?

Elder abuse is the mistreatment or harming of an older person. It can include physical, emotional, or sexual abuse, along with neglect and financial exploitation. Many social factors—for example, a lack of support services and community resources—can make conditions ripe for elder abuse. Ageism (biases against or stereotypes about older people that keep them from being fully a part of their community) also play a role in enabling elder abuse. By changing these contributing factors, we can prevent elder abuse and make sure everyone has the opportunity to thrive as we age.

TYPES OF ELDER ABUSE

Physical abuse: Use of force to threaten or physically injure an older person

Emotional abuse: Verbal attacks, threats, rejection, isolation, or belittling acts that cause or could cause mental anguish, pain, or distress to an older person

Sexual abuse: Sexual contact that is forced, tricked, threatened, or otherwise coerced upon an older person, including anyone who is unable to grant consent

Exploitation: Theft, fraud, misuse or neglect of authority, and use of undue influence as a lever to gain control over an older person's money or property

Neglect: failure or refusal to provide for an older person's safety, physical, or emotional needs

HOW CAN WE PREVENT AND ADDRESS ELDER ABUSE?

We can lessen the risk of elder abuse by putting supports and foundations in place that make abuse difficult. If we think of society as a building that supports our wellbeing, then it makes sense to design the sturdiest building we can—one with the beams and load-bearing walls necessary to keep everyone safe and healthy as we age. For example, constructing community supports and human services for caregivers and older adults can alleviate risk factors tied to elder abuse. Increased funding can support efforts to train practitioners in aging-related care. Identifying ways to empower older adults will reduce the harmful effects of ageism. And leveraging expert knowledge can provide the tools needed to identify, address, and ultimately prevent abuse.

HOW CAN WE REPORT SUSPECTED ABUSE?

No matter how old we are, justice requires that we be treated as full members of our communities. If we notice some of these signs of abuse, it is our duty to report it to the proper authorities.

Programs such as **Adult Protective Services (APS)** and the **Long-Term Care Ombudsmen** are here to help. For reporting numbers, contact **Eldercare Locator** at 1-800-677-1116 (eldercare.gov).

If you or someone you know is in a life threatening situation or immediate danger, call **911** *or the local police or sheriff.*

The National Center on Elder Abuse (NCEA) directed by the U.S. Administration on Aging, helps communities, agencies and organizations ensure that older people and adults with disabilities can live with dignity, and without abuse, neglect, and exploitation.

We are based out of Keck School of Medicine of USC. NCEA is the place to turn for education, research, and promising practices in preventing abuse.

Visit us online for more resources! **ncea.acl.gov**

This material was completed for the National Center on Elder Abuse situated at Keck School of Medicine at the University of Southern California and is supported in part by a grant (No. 90ABRC000101-02) from the Administration for Community Living, U.S. Department of Health and Human Services (DHHS). Grantees carrying out projects under government sponsorship are encouraged to express freely their findings and conclusions. Therefore, points of view or opinions do not necessarily represent official ACL or DHHS policy. LAST DOCUMENT REVISION: DECEMBER 2017 (NCEA, 2017)

Types of Abuse

Elder abuse is a growing problem. While we don't know all of the details about why abuse occurs or how to stop its spread, we do know that help is available for victims. Concerned people, like you, can spot the warning signs of a possible problem, and make a call for help if an elder is in need of assistance.

- Physical Abuse
- Sexual Abuse
- Emotional or Psychological Abuse
- Neglect
- Abandonment
- Financial or Material Exploitation
- Self-neglect

Physical Abuse

Physical abuse is defined as the use of physical force that may result in bodily injury, physical pain, or impairment. Physical abuse may include but is not limited

to such acts of violence as striking (with or without an object), hitting, beating, pushing, shoving, shaking, slapping, kicking, pinching, and burning. In addition, inappropriate use of drugs and physical restraints, force-feeding, and physical punishment of any kind also are examples of physical abuse.

Signs and symptoms of physical abuse include but are not limited to:

- bruises, black eyes, welts, lacerations, and rope marks
- bone fractures, broken bones, and skull fractures
- open wounds, cuts, punctures, untreated injuries in various stages of healing
- sprains, dislocations, and internal injuries/bleeding
- broken eyeglasses/frames, physical signs of being subjected to punishment, and signs of being restrained
- laboratory findings of medication overdose or underutilization of prescribed drugs
- an elder's report of being hit, slapped, kicked, or mistreated
- **an elder's sudden change in behavior**
- the caregiver's refusal to allow visitors to see an elder alone

Sexual Abuse

Sexual abuse is defined as non-consensual sexual contact of any kind with an elderly person. Sexual contact with any person incapable of giving consent is also considered sexual abuse. It includes, but is not limited to, unwanted touching, all types of sexual assault or battery, such as rape, sodomy, coerced nudity, and sexually explicit photographing.

Signs and symptoms of sexual abuse include but are not limited to:

- bruises around the breasts or genital area
- unexplained venereal disease or genital infections
- unexplained vaginal or anal bleeding
- torn, stained, or bloody underclothing
- an elder's report of being sexually assaulted or raped

Emotional or Psychological Abuse

Emotional or psychological abuse is defined as the infliction of anguish, pain, or distress through verbal or nonverbal acts. Emotional/psychological abuse includes but is not limited to verbal assaults, insults, threats, intimidation, humiliation, and harassment. In addition, treating an older person like an infant; isolating an elderly person from his/her family, friends, or regular activities; giving an older person the "silent treatment;" and enforced social isolation are examples of emotional/psychological abuse.

Signs and symptoms of emotional/psychological abuse include but are not limited to:

- being emotionally upset or agitated
- being extremely withdrawn and non communicative or non responsive
- unusual behavior usually attributed to dementia (e.g., sucking, biting, rocking)
- an elder's report of being verbally or emotionally mistreated

Neglect

Neglect is defined as the refusal or failure to fulfill any part of a person's obligations or duties to an elder. Neglect may also include failure of a person who has fiduciary responsibilities to provide care for an

elder (e.g., pay for necessary home care services) or the failure on the part of an in-home service provider to provide necessary care.

Neglect typically means the refusal or failure to provide an elderly person with such life necessities as food, water, clothing, shelter, personal hygiene, medicine, comfort, personal safety, and other essentials included in an implied or agreed-upon responsibility to an elder.

Signs and symptoms of neglect include but are not limited to:

- dehydration, malnutrition, untreated bed sores, and poor personal hygiene;
- unattended or untreated health problems
- hazardous or unsafe living condition/arrangements (e.g., improper wiring, no heat, or no running water)
- unsanitary and unclean living conditions (e.g. dirt, fleas, lice on person, soiled bedding, fecal/urine smell, inadequate clothing)
- an elder's report of being mistreated

Abandonment

Abandonment is defined as the desertion of an elderly person by an individual who has assumed responsibility for providing care for an elder, or by a person with physical custody of an elder.

Signs and symptoms of abandonment include but are not limited to:

- the desertion of an elder at a hospital, a nursing facility, or other similar institution
- the desertion of an elder at a shopping center or other public location
- an elder's own report of being abandoned

Financial or Material Exploitation

Financial or material exploitation is defined as the illegal or improper use of an elder's funds, property, or assets. Examples include, but are not limited to, cashing an elderly person's checks without authorization or permission; forging an older person's signature; misusing or stealing an older person's money or possessions; coercing or deceiving an older person into signing any document (e.g., contracts or will); and the improper use of conservatorship, guardianship, or power of attorney.

Signs and symptoms of financial or material exploitation include but are not limited to:

- sudden changes in bank account or banking practice, including an unexplained withdrawal of large sums of money by a person accompanying the elder
- the inclusion of additional names on an elder's bank signature card
- unauthorized withdrawal of the elder's funds using the elder's ATM card
- abrupt changes in a will or other financial documents
- unexplained disappearance of funds or valuable possessions
- substandard care being provided or bills unpaid despite the availability of adequate financial resources
- discovery of an elder's signature being forged for financial transactions or for the titles of his/her possessions

- sudden appearance of previously uninvolved relatives claiming their rights to an elder's affairs and possessions
- unexplained sudden transfer of assets to a family member or someone outside the family;
- the provision of services that are not necessary
- an elder's report of financial exploitation

Self-neglect

Self-neglect is characterized as the behavior of an elderly person that threatens his/her own health or safety. Self-neglect generally manifests itself in an older person as a refusal or failure to provide himself/herself with adequate food, water, clothing, shelter, personal hygiene, medication (when indicated), and safety precautions.

The definition of self-neglect excludes a situation in which a mentally competent older person, who understands the consequences of his/her decisions, makes a conscious and voluntary decision to engage in acts that threaten his/her health or safety as a matter of personal choice.

Signs and symptoms of self-neglect include but are not limited to:

- dehydration, malnutrition, untreated or improperly attended medical conditions, and poor personal hygiene
- hazardous or unsafe living conditions/arrangements (e.g., improper wiring, no indoor plumbing, no heat, no running water)
- unsanitary or unclean living quarters (e.g., animal/insect infestation, no functioning toilet, fecal/urine smell)
- inappropriate and/or inadequate clothing, lack of the necessary medical aids (e.g., eyeglasses, hearing aids, dentures)
- grossly inadequate housing or homelessness

Table 3.1 A Cross-Section of Prominent Definitions on Elder Abuse and Related Constructs

Author/Source/Origin	Included Constructs	Specified Definitions
Old American Act of 1965	**Older Individual**	An individual who is 60 years of age or older
As Amended in 2006 (Public Law 109-365) 	**Abuse**	The willful infliction of injury, unreasonable confinement, intimidation, or cruel punishment with resulting harm, pain or mental anguish, or deprivation by a person including a caregiver, of goods or services that are necessary to avoid physical harm, mental anguish, or mental illness.
	Neglect	The failure of a caregiver or fiduciary to provide the goods or services that are necessary to maintain the health or safety of an older individual; or self-neglect
	Self-neglect	An adult's inability. Due to physical or mental impairment or diminished capacity, to perform essential self-care tasks including-obtaining essential food, clothing, shelter, and medical care; obtaining goods and services necessary to maintain physical health, mental health, or general safety; or managing one's own financial affairs.
	Exploitation	The fraudulent or otherwise illegal, unauthorized, or improper act or process of an individual, including a caregiver or fiduciary that uses the

		resources of an older individual for monetary or personal benefit, profit or gain, or that results in depriving an older individual of rightful access to, or use of, benefits, resources, belongings, or assets.
	Elder abuse	The term “elder abuse” means abuse of an older individual
	Elder abuse, neglect, and exploitation	The term “elder abuse, neglect, and exploitation” means abuse, neglect, and exploitation, of an older individual.
The American Medical Association (1997)	**Elder Abuse**	An act or omission which results in harm or threatened harm to the health or welfare of an elderly person. Abuse includes intentional infliction of physical or mental injury; sexual abuse; or withholding of necessary food, clothing, and medical care to meet the physical and mental needs of an elderly person by one having the care, custody, or responsibility of an elderly person.
Committee on National Statistics, National Research Council of the National Academes of the Sciences, Engineering, and Medicine (also	**Mistreatment**	Intentional actions that cause harm or create a serious risk of harm, whether or not intended, to a vulnerable elder by a caregiver or other person who stands in a trust relationship to the elder or failure by a caregiver to satisfy the elder’s basic needs to protect the elder from harm.

embraced by the National Institute on Justice of the U.S. Department on Justice and the National Institute on Aging of the National Institutes of Health (2003)		
	Abuse	Conduct by responsible caregivers or other individuals that constitutes "abuse" under applicable state or federal law.
	Neglect	An omission by responsible caregivers that constitutes "neglect" under applicable federal or state law.
	Harm	Injuries or unmet basic needs attributable to acts or omissions by others.
	Caregiver	A person who bears or has assumed responsibility for providing care or living assistance to an adult in need of such care or assistance.
	True Relationship	A care giving relationship or other familial, social or professional relationship where a person bears or has assumed responsibility for protecting the interests of the older person or where expectations of care or protection arise by law or social convention.

	Vulnerability	Financial, physical or emotional dependence on others or impaired capacity for self-care or self-protection.
Department of Justice, Office of Victims of Crime	**Elder Abuse/Elder Mistreatment**	Any knowing, intentional, or negligent act that causes harm or creates a serious risk of harm to an older person by a family member, caregiver, or other person in a trust relationship. Elder abuse may include abuse that is physical, emotional/psychological (including threats), or sexual; neglect (including abandonment); and financial exploitation.
Department of Justice, Office of Justice Programs	**Elder Abuse**	Intentional actions by a caregiver or other trusted individual that causes harm to an older adult. Elder abuse can also include the failure of a caregiver or other responsible party to provide for the basic needs of an elder. The comprehensive definition of elder abuse includes financial exploitation of older people as well, as physical abuse, neglect, emotional abuse, and sexual abuse.
Administration on Aging National Center on Elder Abuse	**Elder Abuse**	Intentional or neglectful acts by a caregiver or "trusted" individual that leads to, or may lead to, harm of a vulnerable elder. Use of physical force that may result in bodily injury, physical pain, or impairment.

	Physical Abuse	Physical abuse may include but is not limited to such acts of violence as striking (with or without an object), hitting, beating, pushing, shoving, shaking, slapping, kicking, pinching, and burning. In addition, inappropriate use of drugs and physical restraints, force-feeding, and physical punishment of any kind also are examples of physical abuse.
	Sexual Abuse	Non-consensual sexual contact of any kind with an elderly person. Sexual contact with any person incapable of giving consent is also considered sexual abuse. It includes, but is not limited to, unwanted touching, all types of sexual assault or battery, such as rape, sodomy, coerced nudity, and sexually explicit photographing.
	Emotional or psychological abuse	The infliction of anguish, pain, or distress through verbal or nonverbal acts. Emotional/psychological abuse includes but is not limited to verbal assaults, insults, threats, intimidation, humiliation, and harassment. In addition, treating an older person like an infant; isolating an elderly person from his/her family, friends, or regular activities; giving an older person the “silent treatment”, and enforced social

		isolation are examples of emotional/psychological abuse.
	Neglect	The refusal or failure to fulfill any part of a person's obligations or duties to an elder. Neglect may also include failure of a person who has fiduciary responsibilities to provide care for an elder (e.g. pay for necessary home care services) or the failure on the part of an in-home service provider to provide necessary care.
	Abandonment	The desertion of an elderly person by an individual who has assumed responsibility for providing care for an elder, or by a person with physical custody of an elder.
	Financial or material exploitation	The illegal or improper use of an elder's funds, property, or assets. Examples include, but are not limited to, cashing an elderly person's checks without authorization or permission; forging an older person's signature; misusing or stealing an older person's money or possessions; coercing or deceiving an older person into signing any document (e.g. contracts or will); and the improper use of conservatorship, guardianship, or power of attorney.
	Self-neglect	The behavior of an elderly person that threatens his/her own health or

		safety. Self-neglect generally manifests itself in an older person as a refusal or failure to provide himself/ herself with adequate food, water, clothing, shelter, personal hygiene, medication (when indicated), and safety precautions. The definition of self-neglect excludes a situation in which a mentally competent older person, who understands the consequences of his/her decisions, makes a conscious and voluntary decision to engage in acts that threaten his/her health or safety as a matter of personal choice.

(CDC, 2016)

Preventing Elder Abuse

Source: Center for Disease Control and Prevention (n.d.) Preventing Elder Abuse:
Retrieved from: April 1, 2021
https://www.cdc.gov/violenceprevention/elderabuse/fastfact.html

Elder abuse is associated with several risk and protective factors. However, having these risk factors does not always mean violence will occur. By using a public health approach that addresses risk and protective factors for multiple types of violence, elder abuse can be prevented.

Risk Factors

Source: Center for Disease Control and Prevention (n.d.) Risk and Protective Factors:
Retrieved from: April 1, 2021
https://www.cdc.gov/violenceprevention/elderabuse/riskprotectivefactors.html

A combination of individual, relational, community, and societal factors contribute to the risk of becoming a perpetrator of elder abuse. They are contributing factors and may or may not be direct causes. Understanding these factors can help identify various opportunities for prevention.

Risk Factors for Perpetration

Individual Level

- Current diagnosis of mental illness
- Current abuse of alcohol
- High levels of hostility
- Poor or inadequate preparation or training for care giving responsibilities
- Assumption of caregiving responsibilities at an early age
- Inadequate coping skills
- Exposure to abuse as a child

Relationship Level

- High financial and emotional dependence upon a vulnerable elder
- Past experience of disruptive behavior
- Lack of social support
- Lack of formal support

Community Level

- Formal services, such as respite care for those providing care to elders, are limited, inaccessible, or unavailable

Societal Level

A culture where:

- There is high tolerance and acceptance of aggressive behavior
- Health care personnel, guardians, and other agents are given greater freedom in routine care and decision making

- Family members are expected to care for elders without seeking help from others
- Persons are encouraged to endure suffering or remain silent regarding their pains
- There are negative beliefs about aging and elders

In addition to the above factors, there are also specific characteristics of institutional settings that can increase the risk for perpetration of vulnerable elders, including:

- Unsympathetic or negative attitudes toward residents
- Chronic staffing problems
- Lack of administrative oversight, staff burnout, and stressful working conditions

Protective Factors for Elder Abuse

Protective factors reduce risk for perpetrating abuse and neglect. Protective factors have not been studied as extensively or rigorously as risk factors. However, identifying and understanding protective factors are equally as important as researching risk factors. Research is needed to determine whether these factors do indeed buffer elders from abuse.

Protective Factors for Perpetration

Relationship Level

- Having numerous, strong relationships with people of varying social status

Community Level

- Coordination of resources and services among community agencies and organizations that serve the elderly population and their caregivers.
- Higher levels of community cohesion and a strong sense of community or community identity
- Higher levels of community functionality and greater collective efficacy

Protective factors within institutional settings can include the following:

- Effective monitoring systems

- Solid institutional policies and procedures regarding patient care
- Regular training on elder abuse and neglect for employees
- Education and clear guidance on durable power of attorney and how it is to be used
- Regular visits by family members, volunteers, and social workers

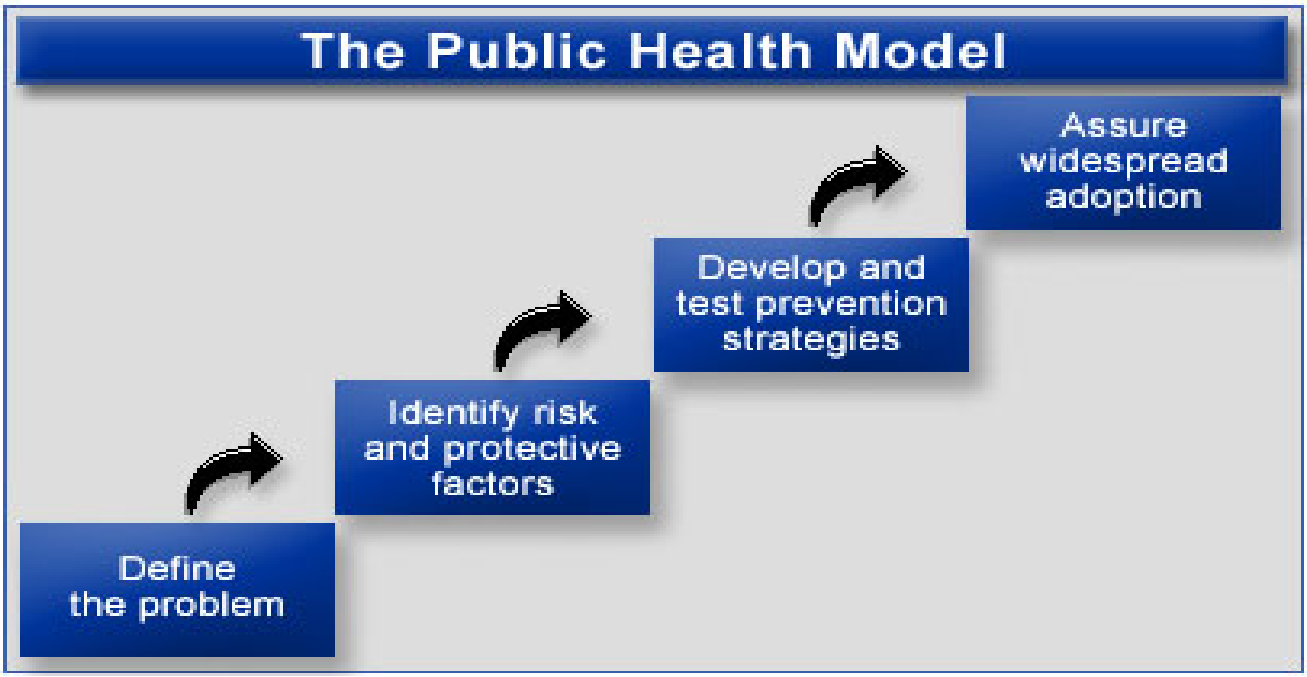
The Public Health Approach to Violence Prevention

The focus of public health is on the health, safety and well-being of entire populations. A unique aspect of the approach is that it strives to provide the maximum benefit for the largest number of people.

Public health draws on a science base that is multi-disciplinary. It relies on knowledge from a broad range of disciplines including medicine, epidemiology, sociology, psychology, criminology, education, and economics.[1] This broad knowledge base has allowed the field of public health to respond successfully to a range of health conditions across the globe.

The public health approach also emphasizes input from diverse sectors including health, education, social services, justice, policy and the private sector.[1] Collective action on the part of these stakeholders can help in addressing problems like violence.

The public health approach is a four-step process that is rooted in the scientific method. It can be applied to violence and other health problems that affect populations.



Center for Disease Control and Prevention. (n.d.)

Step 1: ***Define and Monitor the Problem***

The first step in preventing violence is to understand the "who", "what", "when", "where" and "how" associated with it. Grasping the magnitude of the problem involves analyzing data such as the number of violence-related behaviors, injuries, and deaths. Data can demonstrate how frequently violence occurs, where it is occurs, trends, and who the victims and perpetrators are. These data can be obtained from police reports, medical examiner files, vital records, hospital charts, registries, population-based surveys, and other sources.

Step 2: Identify Risk and Protective Factors

It is not enough to know the magnitude of a public health problem. It is important to understand what factors protect people or put them at risk for experiencing or perpetrating violence. Why are risk and protective factors useful? They help identify where prevention efforts need to be focused.

Risk factors do not cause violence. The presence of a risk factor does not mean that a

person will always experience violence. Victims are never responsible for the harm inflicted upon them.

- **Risk Factor** – Characteristic that increases the likelihood of a person becoming a victim or perpetrator of violence.
- Protective Factor – Characteristic that decreases the likelihood of a person becoming a victim or perpetrator of violence or provides a buffer against risk.

Step 3: Develop and Test Prevention Strategies

Findings from the research literature and data from needs assessments, community surveys, stakeholder interviews, and focus groups are useful for designing prevention strategies. Using these data and findings is known as an evidence-based approach to program planning. Once prevention strategies are developed or existing strategies are identified, they are then evaluated rigorously to determine their effectiveness.

Step 4: Assure Widespread Adoption

The strategies shown to be effective in Step 3 are then implemented and adopted more broadly. Communities are encouraged to implement strategies based on the best available evidence and to continuously assess whether the strategy is a good fit with the community context and achieving its goal of preventing violence. Dissemination techniques to promote widespread adoption include training, networking, technical assistance, and evaluation.

Reporting Abuse

Each one of us has a responsibility to keep older adults safe from harm. The laws in most states require helping professions in the front lines—such as doctors and home health providers—to report suspected abuse or neglect. These professionals are called mandated reporters. Under the laws of eight states, "any person" is required to report a suspicion of mistreatment.

Call the police or 911 immediately if someone you know is in immediate, life-threatening danger.

If you have been the victim of abuse, exploitation, or neglect, you are not alone. Many people care and can help. Please tell your doctor, a friend, or a family member you trust, or call the Adult Protective Services program in your area at this link: (https://ncea.acl.gov/Resources/State.aspx). Relay your concerns to the local Adult Protective Services, Long-term Care Ombudsman, or police. If the danger is not immediate, but you suspect that abuse has occurred or is occurring, please tell someone.

You can reach the Eldercare Locator by telephone at **1-800-677-1116**. Specially trained operators will refer you to a local agency that can help. The Eldercare Locator is open Monday through Friday, 9 a.m. to 8 p.m. Eastern Time.

You do not need to prove that abuse is occurring; it is up to the professionals to investigate the suspicions.

When making the call, be ready to give the name, address, and contact information of the person you suspect is abused or neglected, and details about why you are concerned.

You may be asked a series of questions to gain more insight into the nature of the situation.

- Are there any known medical problems (including confusion or memory loss)?
- What kinds of family or social supports are there?

- Have you seen or heard incidents of yelling, hitting, or other abusive behavior?

  You will be asked for your name, address, telephone number, etc., but most states will take the report even if you do not identify yourself.

  The professionals receiving your report are prohibited from releasing your information as reporter. They may not disclose your identity to the alleged abuser or victim.

CHAPTER 9: RESPITE CARE: CREATE A PLAN TO GIVE YOURSELF A CAREGIVING BREAK

This article is sourced from: American Association of Retired Persons. (2020). *Respite Care: Create a Plan to Give Yourself a Caregiving Break.* Retrieved from: April 3, 2021 https://www.aarp.org/caregiving/life-balance/info-2017/respite-care-plan.html?fbclid=IwAR0UaGcSx3VEPQlB0C-kBCKkpqVARyVwCvdwzOH1wcFZhBZiuto4J7A5a2g

Exhaustion, both emotional and physical, can put a caregiver in the danger zone.

Taking care of an aging or ill family member can be enormously rewarding but also exhausting and emotionally draining.

More than a third of family caregivers rate their job as highly stressful emotionally, and nearly 1 in 5 reports a high level of physical strain, according to the "Caregiving in the U.S. 2020" report from AARP Public Policy Institute and the National Alliance for Caregiving (NAC).

Plowing through might feel doable in the short term, but too much time without a break can lead to caregiver burnout, depression and health problems. Every caregiver needs a caregiver — someone who will tend to your loved one for a few hours, days or weeks so you can take care of yourself.

Respite care can help you make it through the long haul, and that's good for both you and your loved one. But only 14 percent of family caregivers avail themselves of respite services, even though 38 percent believe doing so would help them, the AARP/NAC study found.

Respite can come in many forms: from family and friends; volunteer groups; faith-based organizations; local, state and federal agencies; or paid respite workers. It can take place in the home, or at an outside facility such as an adult day care center.

Some long-term care insurance plans cover part of the cost of respite care.

Design a family respite care plan

The first step in developing a family plan is thinking through your needs and who's available to help fill them.

• **What do you need?** Three hours off, twice a week? Twenty-four hours away from the house? A regular day (or night) out with your spouse or friends? A combination of the above?

• **What does your loved one need?** Meals? Laundry? Light housekeeping? Personal care? Daily walks? Medical help? List every job, large and small.

• **Who can pinch-hit?** Cast a wide net. List family near and far, your friends and your loved one's friends.

Call a family meeting

Include out-of-town siblings, adult children and extended family via video chat. Explain that you need regular and as-needed time away from caring for the loved one you share.

A few elements are key to a successful family caregiving meeting.

• **Be specific.** Don't expect your family to automatically know your needs.

Tell them about what you and the care recipient require. Will they need to make meals? Administer prescriptions? Simply offer comfort and conversation?

• **Be flexible.** Offer options — that makes it easier for family to pitch in.

If family members beg off because work and kids eat up weekdays, ask if they can cover Friday nights or an early morning run to adult day care.

A sibling who can't contribute time may be able to contribute money to cover a car service or a once-a-week professional caregiver. Your out-of-town sister and her family can come to stay for a week while you take a vacation.

• **Answer questions.** Many people expect caregiving to be overwhelming, or they fear making a mistake. Ask about concerns and address them as best you can.

For example, if anyone is uneasy about bathing, dressing or helping a loved one go to the bathroom, consider arranging to have a home health worker come during their respite shift.

If the person receiving the care has mobility issues, demonstrate how to assist. Let your substitutes know you'll leave written instructions about meals and medicine, and phone numbers for backup care providers and your loved one's medical team.

• **Consider using** a free online scheduler such as Lotsa Helping Hands or CareCalendar that lets you specify what you need and allows others to sign up to provide services and get updates on how your loved one is doing. Email the link and login to your family and friends and to your loved one's friends and neighbors.

Longtime friends and neighbors often are glad to spend a few hours a month helping someone with whom they share a history.

Finding outside respite care

Numerous local and national organizations offer information and contacts for paid and volunteer respite-care services. In some cases, federal agencies such as the Department of Veterans Affairs and Medicare offer help covering the cost.

A good place to start your search is the National Association of Area Agencies on Aging. You'll find contacts for local agencies that can connect you with visiting companions, hourly in-home respite care, adult day care and overnight respite providers.

The association also can tell you about no- or low-cost respite programs in your area and whether financial assistance is available from government programs or other sources.

Several government and nonprofit agencies offer free respite help, among them:

- **Faith-based caregiving organizations**, including local branches of Faith in Action or Interfaith Caregivers. Many have programs that will set up regular two- or three-hour social visits with your loved one, giving you time to spend on yourself.

- **Elder Helpers**, a nonprofit online service that prescreens and posts pictures and bios of local volunteers who want to visit older people and help them by doing basic chores. The visits or services come at no charge.

- **Senior Corps**, a branch of the federal Corporation for National & Community Service. Its Senior Companions program matches volunteers older than 55 with seniors living independently to provide companionship, help with daily tasks and a break for family caregivers.

Another option is adult day care. There are more than 4,000 such programs in the United States, offering supervised activities, social interaction, meals and limited health services. Most centers are open five days a week and some have evening and weekend activities.

Costs for adult day care can range from $25 to more than $100 a day, according to the federal Administration for Community Living. Rates and regulations vary depending on where you live, the type of services offered and whether you're eligible for government financial assistance (for example, through Medicaid, the Veterans Health Administration or the Older Americans Act).

Chapter 4: Medicare, Medication and Healthcare Costs

Medical costs are often then number one cost for the Elderly. Many live in poverty as a result of overwhelming costs. As we get older we tend to be more ill, and to see medical personnel and take more, and very expensive medication. It will be a benefit to those you work with if you are familiar with Medicare and can share important resources.

The following is from the website Medicare Interactive
https://www.medicareinteractive.org/get-answers/medicare-basics/medicare-overview/introduction-to-medicare

Introduction to Medicare

Medicare is the federal government program that provides health care coverage (health insurance) if you are 65+, under 65 and receiving Social Security Disability Insurance (SSDI) for a certain amount of time, or under 65 and with End-Stage Renal Disease (ESRD). The Centers for Medicare & Medicaid Services (CMS) is the federal agency that runs Medicare. The program is funded in part by Social

Security and Medicare taxes you pay on your income, in part through premiums that people with Medicare pay, and in part by the federal budget.

Once you have become Medicare-eligible and enroll, you can choose to get your Medicare benefits from Original Medicare, the traditional fee-for-service program offered directly through the federal government, or from a Medicare Advantage Plan, a type of private insurance offered by companies that contract with Medicare (the federal government). Original Medicare includes:

- Part A (Inpatient/hospital coverage)
- Part B (Outpatient/medical coverage)

If you want Medicare prescription drug coverage (Part D) with Original Medicare, in most cases you will need to actively choose and join a stand-alone Medicare private drug plan (PDP).

You still have Medicare if you enroll in a Medicare Advantage Plan. This means that you will still owe a monthly Part B premium (and your Part A premium, if you have one). Each Medicare Advantage Plan must provide all Part A and Part B services covered by Original Medicare, but can do so with different rules, costs, and restrictions that can affect how and when you receive care. Medicare Advantage Plans can also provide Part D coverage. Note that if you have health coverage from a union or current or former employer when you become eligible for Medicare, you may automatically be enrolled in a Medicare Advantage Plan that they sponsor. You have the choice to stay with this plan, switch to Original Medicare, or enroll in a different Medicare Advantage Plan, but you should speak with your employer/union before making any change.

It is important to understand your Medicare coverage choices and to pick your coverage carefully. How you choose to get your benefits and who you get them from can affect your out-of-pocket costs and where you can get your care. For instance, in Original Medicare, you are covered to go to nearly all doctors and hospitals in the country. Medicare Advantage Plans, on the other hand, usually have network restrictions,

meaning that you will be more limited in your access to doctors and hospitals. However, Medicare Advantage Plans can also provide additional benefits that Original Medicare does not cover, such as routine vision or dental care.

Medicare is different from Medicaid, which is another government program that provides health insurance. Medicaid is funded and run by the federal government in partnership with states to cover people with limited incomes. Depending on the state, Medicaid can be available to people below a certain income level who meet other criteria (e.g., age, disability status, pregnancy) or be available to all people below a certain income level. Remember, unlike Medicaid, Medicare eligibility does not depend on income. Also, eligible individuals can have both Medicare and Medicaid and are known as dual-eligibles.

Everyone who has Medicare receives a red, white, and blue Original Medicare card. If you choose to receive your coverage through Original Medicare, you will show this card when you get services. If you choose to receive your Medicare benefits through a Medicare Advantage Plan, you will still get an Original Medicare card but you will show your Medicare Advantage Plan card when you get services. No matter how you get your Medicare health benefits, only give your Medicare number to your doctors and health care providers.

There are four parts of Medicare: Part A, Part B, Part C, and Part D.

Medicare Part A—covered services

- **Inpatient hospital care:** This is care received after you are formally admitted into a hospital by a physician. You are covered for up to 90 days each benefit period in a general hospital, plus 60 lifetime reserve days. Medicare also covers up to 190 lifetime days in a Medicare-certified psychiatric hospital.
- **Skilled nursing facility (SNF) care:** Medicare covers room, board, and a range of services provided in a SNF, including administration of medications, tube feedings, and wound care. You are covered for up to 100 days each benefit period if you qualify for

coverage. To qualify, you must have spent at least three consecutive days as a hospital inpatient within 30 days of admission to the SNF, and need skilled nursing or therapy services.

- **Home health care:** Medicare covers services in your home if you are homebound and need skilled care. You are covered for up to 100 days of daily care or an unlimited amount of intermittent care. To qualify for Part A coverage, you must have spent at least three consecutive days as a hospital inpatient within 14 days of receiving home health care. (Note: You can get home health care through Medicare Part B if you do not meet all the requirements for Part A coverage.)
- **Hospice care:** This is care you may elect to receive if a provider determines you are terminally ill. You are covered for as long as your provider certifies you need care.

Keep in mind that Medicare does not usually pay the full cost of your care, and you will likely be responsible for some portion of the cost-sharing (deductibles, coinsurances, copayments) for Medicare-covered services.

Medicare Part B—covered services

Medicare Part B provides outpatient/medical coverage. The list below provides a summary of Part B-covered services and coverage rules:

- **Provider services:** Medically necessary services you receive from a licensed health professional.
- **Durable medical equipment (DME):** This is equipment that serves a medical purpose, is able to withstand repeated use, and is appropriate for use in the home. Examples include walkers, wheelchairs, and oxygen tanks. You may purchase or rent DME from a Medicare-approved supplier after your provider certifies you need it.
- **Home health services:** Services covered if you are homebound and need skilled nursing or therapy care.
- **Ambulance services:** This is emergency transportation, typically to and from hospitals. Coverage for non-emergency ambulance/ambulette transportation is limited to situations

in which there is no safe alternative transportation available, and where the transportation is medically necessary.

- **Preventive services:** These are screenings and counseling intended to prevent illness, detect conditions, and keep you healthy. In most cases, preventive care is covered by Medicare with no coinsurance.
- **Therapy services:** These are outpatient physical, speech, and occupational therapy services provided by a Medicare-certified therapist.
- **Mental health services.**
- **X-rays and lab tests.**
- **Chiropractic care** when manipulation of the spine is medically necessary to fix a subluxation of the spine (when one or more of the bones of the spine move out of position).
- **Select prescription drugs**, including immunosuppressant drugs, some anti-cancer drugs, some anti-emetic drugs, some dialysis drugs, and drugs that are typically administered by a physician.

This list includes commonly covered services and items, but it is not a complete list. Keep in mind that Medicare does not usually pay the full cost of your care, and you will likely be responsible for some portion of the cost-sharing (deductibles, coinsurances, copayments) for Medicare-covered services.

Medicare Part C—covered services

Medicare Advantage basics

While the majority of people with Medicare get their health coverage from Original Medicare, some choose to get their benefits from a Medicare Advantage Plan, also known as a Medicare private health plan or Part C. MA Plans contract with the federal government and are paid a fixed amount per person to provide Medicare benefits.

The most common types of MA Plan are:

- Health Maintenance Organizations (HMOs)
- Preferred Provider Organizations (PPOs)
- Private Fee-For-Service (PFFS)

You may also see:

- Special Needs Plans (SNPs)
- Provider Sponsored Organizations (PSOs)
- Medical Savings Accounts (MSAs)

Remember, you still have Medicare if you enroll in an MA Plan. This means that you likely pay a monthly premium for Part B (and a Part A premium, if you have one). If you are enrolled in an MA Plan, you should receive the same benefits offered by Original Medicare. Keep in mind that your MA Plan may apply different rules, costs, and restrictions, which can affect how and when you receive care. They may also offer certain benefits that Medicare does not cover, such as dental and vision care, caregiver counseling and training, and certain in-home support like housekeeping. Not all MA Plans cover additional benefits, so check with a plan directly to learn what benefits it covers.

All Medicare Advantage Plans must include a limit on your out-of-pocket expenses for Part A and B services. For example, the maximum out-of-pocket cost for HMO plans in 2020 is $6,700. These limits tend to be high. In addition, while plans cannot charge higher copayments or coinsurances than Original Medicare for certain services, like chemotherapy and dialysis, they can charge higher cost-sharing for other services.

Remember: MA Plans may have different:

- Networks of providers
- Coverage rules
- Premiums (in addition to the Part B premium)
- Cost-sharing for covered services

Even plans of the same type offered by different companies may have different rules, so you should always check with a plan directly to find out how its coverage works.

You can join an MA Plan if:

1. You have Medicare Parts A and B
2. You live in the plan's service area
3. And, you do not have End-Stage Renal Disease (ESRD), except in limited circumstances
    - Note: If you have ESRD and need dialysis or a kidney transplant, you may enroll in an MA Plan if you join a Special Needs Plan that specifically accepts people with ESRD, or if other special circumstances apply.

Many Medicare Advantage Plans also offer prescription drug coverage (Part D). If you join an MSA plan or a PFFS plan without drug coverage, you can enroll in a stand-alone Part D plan. Remember that people with Original Medicare who want Part D coverage also enroll in a stand-alone Part D plan.

If you have health coverage from your union or employer (current or former) when you become eligible for Medicare, you may automatically be enrolled in an MA Plan that they sponsor. You have the choice to stay with this plan, switch to Original Medicare, or enroll in a different MA Plan. Be aware that if you switch to Original Medicare or enroll in a different MA Plan, your employer or union could terminate or reduce your health benefits, the health benefits of your dependents, and any other benefits you get from your company. Talk to your employer/union and your plan before making changes to find out how your health benefits and other benefits may be affected.

Medicare Part D—covered services

Part D basics

Medicare Part D, the prescription drug benefit, is the part of Medicare that covers most outpatient prescription drugs. Part D is offered through private companies either as a stand-alone plan, for those enrolled in Original Medicare, or as a set of benefits included with your Medicare Advantage Plan.

Unless you have creditable drug coverage and will have a Special Enrollment Period, you should enroll in Part D when you first get Medicare. If you delay enrollment, you may face gaps in coverage and enrollment penalties.

Each Part D plan has a list of covered drugs, called its formulary. If your drug is not on the formulary, you may have to request an exception, pay out of pocket, or file an appeal.

A drug category is a group of drugs that treat the same symptoms or have similar effects on the body. All Part D plans must include at least two drugs from most categories and must cover all drugs available in the following categories:

- HIV/AIDS treatments
- Antidepressants
- Antipsychotic medications
- Anticonvulsive treatments for seizure disorders
- Immunosuppressant drugs
- Anticancer drugs (unless covered by Part B)

Part D plans must also cover most vaccines, except for vaccines covered by Part B.

Some drugs are explicitly excluded from Medicare coverage by law, including drugs used to treat weight loss or gain, and over-the-counter drugs.

Note: For certain drugs or under specific circumstances, your drugs may be covered by Part A or Part B.

Conclusion

With Aging and Long Term Care the services needs runs through every part of life. It can become very overwhelming to navigate all the person changes in life (Physical, Social, Mental Financial), not to mention the medical aspects which can feel like a Merry Go Round. All of these changes come at a time when we as people are more vulnerable, and sometime less capable, than we have been years. We do not move as fast, think as fast, organize as well, and forget a lot. For many, it is crucial to have somebody, or a lot of people, there to help them manage, and hopefully thrive, through the golden years. The more knowledge you have, the greater service you can provide, and some day, you will be happy you know.

Resources

For Pension Assistance: Pension Help America: https://www.pensionhelp.org/

Retirement Resource for Women: Women's Institute For A Secure Retirement (WISER) https://www.wiserwomen.org/index.php?id=38

To find home-based services, contact Eldercare Locator at **1-800-677-1116** or visit https://eldercare.acl.gov. You can also call your local Area Agency on Aging, Aging and Disability Resource Center, department of human services or aging, or a social service agency.

LongTermCare.gov

1-202-619-0724

aclinfo@acl.hhs.gov

https://longtermcare.acl.gov/

Eldercare Locator

1-800-677-1116 (toll-free)

eldercarelocator@n4a.org

https://eldercare.acl.gov

National Association of Area Agencies on Aging

1-202-872-0888

info@n4a.org

www.n4a.org

Medicare.GOV: Nursing Home Compare

https://www.medicare.gov/nursinghomecompare/search.html

Medicare.gov

Chapter 10: Why Resilience in Older Adults Matter During the COVID-19 Pandemic

This article is sourced from: Chen, L. (2020). *Older Adults and COVID-19 Pandemic: Resilience Matters.* Retrieved from: March 31, 2021

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7247489/

The coronavirus disease 2019 (COVID-19) pandemic has become a global public health crisis that results in a great variety of challenges to the world, and the rapidly escalating case load overwhelmed health care systems. The mortality rate of COVID-19 varied greatly between countries, but it may reach approximately 10 % in European countries.

Yet, the case fatality rate may reach 20 % among people aged over 80 years, or with multimorbidity. Until now, no effective therapeutics is available, so public health approach remained to be the most important strategy for COVID-19 control, including lockdown of communities or even cities, face mask ordinances, quarantine, and cordon sanitaire, and so on. However, these public health actions may disproportionately impact vulnerable older adults in health, social, and economic dimensions. Despite that the COVID-19 pandemic remains to be a public health threat, many countries are trying to restore social and economic activities gradually. In the process of recovering from COVID-19 pandemic, resilience of older adults, communities or a country may lead to different outcomes that deserves further attentions.

Resilience is described as the capacity to cope with difficult situations, which usually fluctuates across the lifespan and is often interrelated with some psychological conditions. A similar but different term, “coping”, defined as the behavior to protect oneself by avoiding psychological harms from bad experiences, is also an important characteristic when older adults are experiencing stressful life events. In the life course approach, aging, health, stress and coping heavily interact with each other and further change health outcomes of an individual. The salutogenic theory suggested that stressors violating one’s sense of cohesion may comprise his/her comprehensiveness, manageability, and meaningfulness of a person if no appropriate coping strategy was developed. The control belief, or the sense of mastery, has been recognized as an indicator of resilience, and people may demonstrate better abilities to manage unexpected situations and related adversity if they possess greater controls of themselves. For older adults, resilience represents the ability to return to the equilibrium when difficulties occur, and has been found as a predictor for health status, especially mental health. With better resilience, older adults may compensate their loss of functional capacity and physical health. Moreover, older adults with better resilience tend to attain better health outcomes, such as successful aging, less depressive mood, and longevity. It has been reported that strong social ties were the key feature of resilience, which may be improved by appropriate intervention activities. The COVID-19 pandemic has caused widespread fear and stress, which extensively challenges the resilience of older adults.

The fear, stress, loneliness, and social isolation of older adults during COVID-19 pandemic may undermine their resilience and further jeopardize their health and well-beings as the consequence. Older people used to receive various home or community services and were encouraged to interact with their relatives, friends, or neighbors in the daily living, but the COVID-19 pandemic suspended most of these activities due to lockdowns and social distancing. Preventing functional declines, frailty, anxiety, depressive moods, and social isolation has become important but challenging tasks during COVID-19 pandemic. Older people with multiple comorbid health conditions are the most vulnerable populations during the COVID-19 pandemic, so the heavy psychological burden may result in excessive health risk for older adults. Older persons with cognitive impairment or dementia may have difficulties to comprehend information

related to COVID-19, to conduct self-protection, and their mood, behavioral and psychotic symptoms may aggravate when their usual care services are absent. As the lockdown, social distancing, and holdup of community activities continue, older adults are of greater risk of frailty, sarcopenia, anxiety, depression, and cognitive declines that challenges their capacity of returning to normal daily living.

Although resilience has strong impacts on the recovery of physical, cognitive, and mental health during the COVID-19 pandemic, resilience was usually worse among older adults with chronic conditions or functional limitations. Lower resilience in older adults with multiple comorbid conditions make them even more vulnerable. However, recovery of an individual needs more than one's own resilience, which also requires strong resilience of communities, health care system resilience, economic systems, or even the whole country. To respond further challenges, mobile technology and web-based services may become the fundamental component and may re-shape our definitions of care for older adults. The health and social care sectors should modify their service delivery with more assistance from the internet and mobile technology. The World Health Organization proposed "mobile aging" (mAging) to facilitate the implementation of integrated care for older people (ICOPE), but it also inspires health and social care service reforms after the COVID-19 pandemic. To employ more mobile and internet technology in the new health and social care scheme, the digital divide of older persons should be bridged as soon as possible.

Natural disasters, infectious diseases, or extreme climate substantially increase the burden of care for older adults with multiple complex comorbid conditions. This "double-burden" model may become common scenarios in the future, so the health care systems need corresponding modifications to cope with these challenges. Traditionally, health care professionals are used to provide home-based programs specifically for older people with frailty, disability, or dementia, but now we need to develop home programs for relatively healthy older adults when outdoor activities are restricted. Older people receiving any forms of long-term care services were all strongly influenced by the COVID-19 pandemic because home and community-based services are suspended, and nursing homes have become the hotspots of COVID-19 infections. The above-mentioned disease

control measures were accompanied by loneliness, social isolation, functional declines, and cognitive declines. Although the human remains as the core of senior care, incorporating more internet and mobile technology may become the fundamental component in the visible future. With these modifications, we may be able to maintain or even enhance the social ties, and resilience of older persons facing difficulties like COVID-19 pandemic or other conditions.

To conclude, the COVID-19 pandemic may have declared the opening of a new era of care for older people that applications of tele-communication technology, more home-based programs, and enhancing the resilience of older adults to cope with stresses may become the key features. Painful experiences of COVID-19 pandemic will drive the world to re-think for the future, and resilience should play an essential role in the scheme of healthy aging for well-being of older persons.

Chapter 11: Challenges facing the Care Sector

This article is sourced from: Fleming, S. (2020). *How COVID-19 Has Exposed the Challenges Facing the Care Sector*. Retrieved from: March 31, 2021 https://www.weforum.org/agenda/2020/08/care-sector-challenges-covid-19-oecd-report/

- There are five long-term care workers per 100 people aged over 65, and the sector urgently needs to retain and recruit more staff, according to a new report.
- But by 2050 there will be 1.2 billion people aged over 80 in the OECD nations.
- As populations across much of the developed world continue to age, the provision of sustainable, effective long-term care will become more pressing.

By 2050, there will be 1.2 billion people older than 80 living in the 37 OECD nations. That's up from 57 million in 2016.

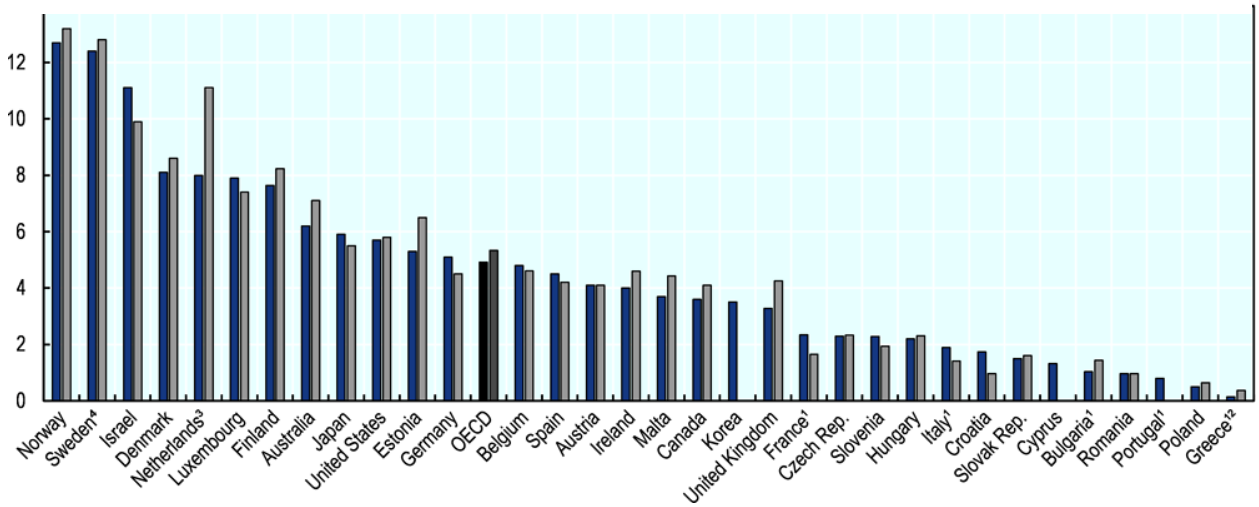
Formulating plans that will meet the long-term care (LTC) needs of this growing section of the population is set to be one of the biggest challenges facing governments.

Currently, there is a ratio of five long-term care (LTC) workers per 100 people aged over 65. Unless there is a significant attempt to retain and recruit more staff into the sector,

there will not be enough carers to look after everyone who needs help.

That's the stark conclusion of an OECD report titled Who Cares? Attracting and Retaining Care Workers for the Elderly. In it, the OECD warns there needs to be a rethink of LTC, to protect both the people who work in the sector and those they look after.

Figure 4.1 In over three quarters of OECD countries growth in LTC workers per 100 elderly people has stagnated or decreased



OECD (2017)

Care during a pandemic

As COVID-19 has swept through the world's care homes it has laid bare many of the challenges the sector faces.

Older adults needing LTC often have compromised immune systems or chronic conditions that put them at a higher risk of severe complications from the disease. The report says that it’s estimated up to 50% of deaths related to the virus have been in LTC facilities.

Some of the safety failures that led to this situation, it adds, could have been prevented with more investment in staff training, working conditions and prioritizing care quality and safety.

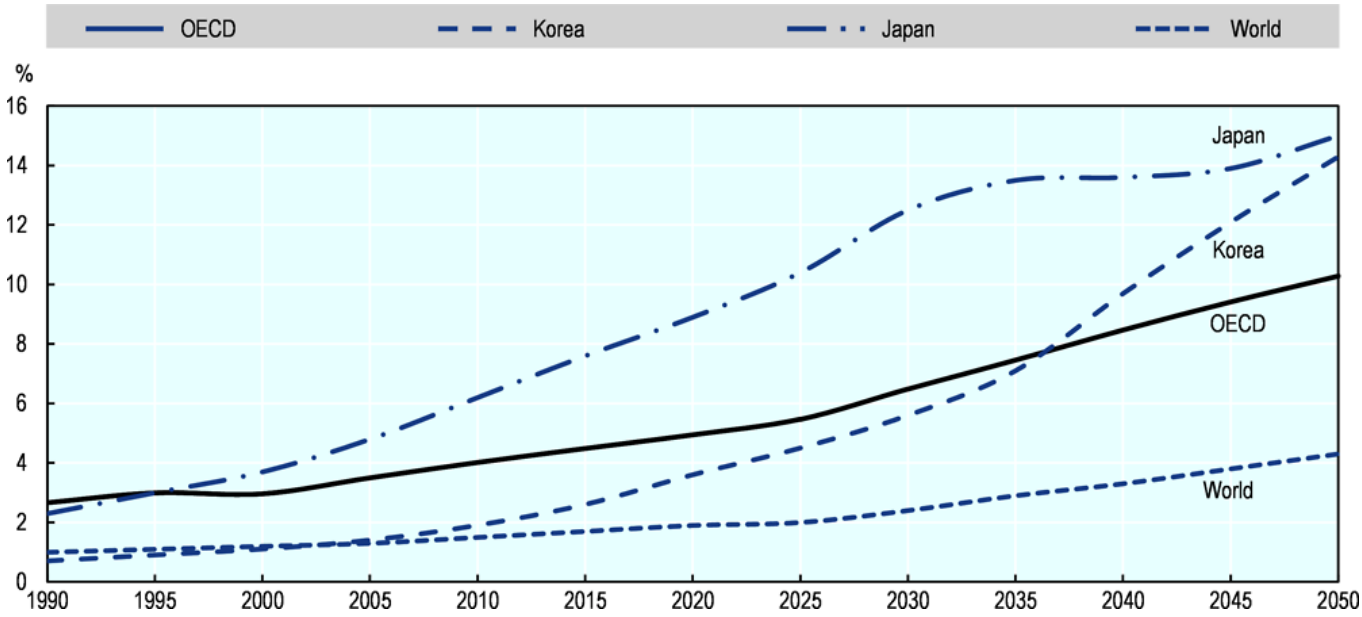
“The poor record in protecting care workers from COVID-19 is likely to make more people question whether working in the sector is for them,” the report states.

Retain and recruit

The report also finds LTC work to be poorly paid and lacking in career development opportunities. While the median wage for LTC workers is just over $10 per hour, equivalent roles within the hospital sector pay almost $16 per hour. Combined with the need to work unsociable hours, the prevalence of temporary contracts and the perception of the job as being low-status, the LTC sector faces a challenge attracting and retaining staff.

Japan, home to the world’s oldest population, arguably has a greater incentive than most to focus on LTC. It increased the size of its LTC workforce by 20% between 2011 and 2015. But since 2011, just half of the OECD member countries have developed strategies to boost recruitment into the sector, according to the report.

Figure 4.2 **Trends in the share of the population aged over 80 years, 1990- 2050**



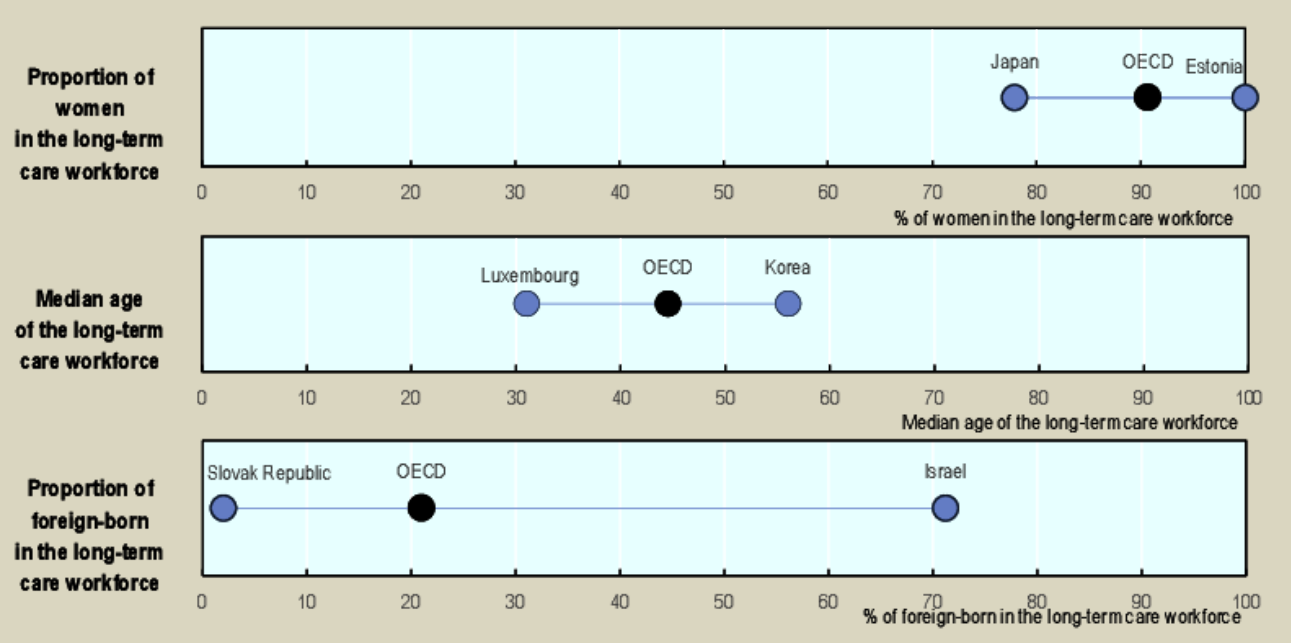
OECD (2017)

The report highlights work done in Norway and the UK to attempt to widen the appeal of work in the LTC sector to men, while other countries have been more focused on training programs. The US and France are two countries that have increased rates of pay.

Perhaps unsurprisingly, the report finds that increased pay leads to improvements in recruitment and retention. But it cautions against simply raising wages in the hope that will make things better. Unless care centers are adequately staffed and resourced with the funds to do so, increased pay could be offset by reduced headcount. This would in turn put more pressure on staff.

Figure 1.4. **LTC workers are mostly middle-aged women with a high share of**
Image: OECD (2016)

Creating healthier working environments is cited as another important goal for the LTC



sector, along with the prevention of workplace accidents and taking steps to protect staff from illness.

Technology and value-for-money

From monitoring patients to recording data, there is an important role for technology in the care sector. The OECD report highlights the use of assistive technology like alarms and sensors in Estonia, Norway and the Netherlands.

There are examples elsewhere among OECD countries of more ambitious uses of elder-care tech, particularly in Japan. The Shin-Tomi nursing home in Tokyo has around 20 different types of robot, according to a Reuters report from 2018. Some are humanoid in shape, while others are designed to resemble small animals and act as companions.

Robots won't always be the most appropriate course of action, however. Other countries favor bringing together teams of people with complementary skills to improve overall LTC

outcomes. In the US and Portugal, for example, “multidisciplinary teams help co-design and co-decide care plans to support the elderly,” the OECD report says. While in Australia, the families providing their own informal LTC services have been given access to tools and platforms to keep them connected to external agencies.

As populations across much of the developed world continue to age, the provision of sustainable, effective LTC will become more pressing. The report also notes that few countries have made it a priority to help those receiving care to maintain their independence for longer. But with more people living longer, that may have to become a more widespread approach.

Chapter 12: Improving the Care of Older Patients During COVID-19 Pandemic

This research is sourced from: Belleli, G.,Bianchetti, A., Guerini, F., Marengoni, A., Padovani, A., Rozzini, R., & et al. (2020). *Improving the Care of Older Patients during the COVID-19 pandemic.* Retrieved from: March 31, 2021 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7352085/

Introduction

Up to day, Italy is the third country for confirmed cases of Corona Virus Disease 19 (COVID-19) after the United States and Spain and the leading country in terms of deaths related to the virus. By May 14th reported cases and deaths reached 222,140 and 31,106, respectively. The Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) pandemic led to a dramatic crisis of the Italian Health Care System, either in primary, long term, and acute hospital care. The National Government and the different Regional Health Systems tried to mitigate the spreading of the outbreak by prompting various initiatives, sometimes driven by dissimilar perspectives on healthcare policies and by the different availability of local resources. The current pandemic revealed that a patient-centred care model is inadequate and needs to be replaced by a community-centred care model where responses to crisis do not just burden on healthcare systems but affect society as a whole.

Much effort has been devoted to face the acute phase of the disease and its complications. In the Lombardy Region, about 50% of hospital beds have been repurposed to treat patients with COVID-19 related pneumonia, mainly in acute medical units, and Intensive Care Unit (ICU) capacity significantly increased in one month, almost doubling the number of ICU beds for critically ill patients which were active in the pre-COVID-19 era.

The highest lethality of COVID 19 has been reported among older people. However, it is unclear which role is played by the conditions afflicting older people, such as frailty, multimorbidity, disability, dementia in determining this outcome.

Specific recommendations have been released both at the International and National level, regarding the diagnosis and the management of SARS-CoV-2 disease in the

elderly. However, little has been proposed for the appropriate care for older, frail and multimorbid patients in different settings of care (acute care units, long term care, nursing home, and primary care) and for the management of geriatric syndromes (i.e., delirium, sarcopenia, falls).

The COVID-19 Pandemic Scenario

Age	Number of Admitted Patients	Mortality, number (percentage)	Mortality in the Non-COVID-19 era (percentage %)
<55	273	12 (4%)	1
65-74	506	119 (24%)	4
75-84	517	222 (43%)	5
85 and more	188	104 (55%)	9
Global	1780	486 (27%)	4

Table 5.1: Mortality rates in hospital patients admitted for COVID-19 in the medium acute care unit

The current scenario of COVID19 pandemic and its effects on social, clinical and health care organization levels are presented and discussed in the following points especially in relation to the Italian experience. We are nonetheless confident that most indications could be important for other countries.

- Most people affected by severe COVID-19 are old and are at high risk of developing acute complications. A recent institutional report showed that the

median age of patients dying of COVID-19 is 80 [IQR 73–85], which is more than 15 years higher than the median age of patients diagnosed with COVID-19 in Italy. Current data suggest that people of age 70 and older represented about 85% of deaths in Italy. Data collected in hospitals show a clear correlation between age and mortality rates, which reaches 55% among very old patients (> 85 years). Moreover, 92% of hospital deaths occur among people aged 65 and over. Table Table11 shows mortality rates by different age groups in COVID-19 patients admitted to Covid Towers—acute medical units specifically devoted to patients with respiratory failure due to COVID-19 related pneumonia—of the Sant'Anna Hospital, Fondazione Poliambulanza-Istituto Ospedaliero, and Geriatric Medicine, University of Brescia, Italy from February, 22 to April, 7, compared with the mortality in the same hospitals' wards within the previous year.

- A large number of reports on the clinical characteristics of patients affected by COVID-19 have highlighted the relevance of cardiovascular and metabolic comorbidities in explaining the excess of mortality among older people. However, to our knowledge, there are no studies assessing the impact of frailty, disability dementia or other geriatric syndromes, on patients' outcomes. Recent data suggest that the mortality rate in hospitalized subjects with severe dementia (i.e., with a Clinical Dementia Rating Scale ≥ 3) reached 65% in patients with an average age of 80 years.
- It is now widely accepted that one of the common presenting symptoms of older people affected by COVID-19 is delirium. In frail patients, delirium is commonly hypoactive or mixed. Without an active screening hypoactive delirium can go undetected. Delirium is a strong predictor of mortality and its incidence in elderly patients hospitalized because of COVID-19 is urgently needed. We suggest to adopt screening protocols, such as 4AT, for the early diagnosis of delirium and to monitor psychological, behavioral, and physical functions and to implement non-pharmacological and pharmacological treatments for delirium patients.
- No guidelines are available to improve the clinical approach to elderly people affected by COVID-19 along with disability and dementia.

- The risk of ageism is tremendously high. Likewise, the risk of not offering comfort care to patients with poor prognosis is just as high.
- One of the major pitfalls of the current healthcare system that has been revealed by the pandemic is the risk of ageism. In the current COVID-19 tragedy, ageism can be summarized as the exclusion of persons from interventions just because they were “old”. Geriatric medicine has produced substantial evidence showing that chronological age needs to be placed side by side by concepts like frailty and disability which better define the health status and future prognosis of older persons. Unfortunately, the emergency has brought everyone back to the disease-era forgetting the patient-era, forgetting the importance of the biology of ageing, leading to dramatic medical care decisions mostly based on chronological age.
- The impact of COVID-19 has been devastating on long term care (LTC) facilities, with both high prevalence and mortality among residents. Data about nursing homes recently collected by the Italian N.I.H. through a survey in the Lombardy Region demonstrated a mortality rate fourfold higher than expected in LTC, even if in only half of the cases a relation with COVID-19 can be demonstrated. These data can be explained by the initial scarcity of diagnostic tests performed in these facilities, mainly for economic and structural reasons. This led to a delay in the isolation procedures for infected residents. Other factors that could explain the spread of the disease in LTC settings are the initial scarcity of personal protective equipment (PPE) and the lack of early and clear emergency management procedures (the first operational indications were released one month after the outbreak began).
- There are still insufficient data about the lethality of COVID-19 in community-dwelling older people. Often, older subjects who died at home have not been tested either before or after death. Indeed, some Regions in Italy did not adopt policies of early contact tracing, limiting the use of diagnostic testing. This is probably one of the reasons for the rapid spread of COVID-19 in Lombardy compared to other Italian Regions [22]. Furthermore, COVID-19 has shown to often spread in specific “social” and “family” clusters. This has determined the loss

of entire groups of older people, with a psychological and social impact very difficult to quantify. Italy is a decentralized country, and the organization of home care and the role of General Practitioners (GPs) are quite different among different Regions. In some areas, GPs could not carry out or prescribe diagnostic swabs for the identification of SARS-CoV-2. Some GPs lacked an adequate training, a sufficient supply of PPE and a clear coordination with health departments and institutions.

- The lockdown established by the Italian Government as well as the spread of COVID-19 among healthcare workers led to a reduction, and in some cases to the suppression, of home care services usually provided to frail older people (day-care, home care assistance, Alzheimer services). Additionally, the isolation from their relatives may have had, though it was not fully examined, consequences on the psychological, cognitive, behavioral and physical status of older and frail people.

Table 5.2 Key principles for the care of older people in the COVID-19 pandemic

Older living at home
• Proactive assessment by a general physician or family nurses to evaluate • Development of typical COVID-19 symptoms and of a typical symptom, such as sudden changes in cognitive status, on set of behavioral disturbances or decline in functional status which may lead to suspect infection • Caregiving • Treatment of chronic diseases • If COVID-19 is suspected provide visit at home • Performing rapid swab test • Start pharmacological treatment and evaluate oxygen need

• Evaluate frailty, multimorbidity, geriatric syndromes, and side effects of treatments • Educate family members to manage isolation and protect the patients • Assess the need of hospitalization
Older patients in hospital
• Establish patients' prognosis on admission and define the need of low, medium, or high intensive care • Implement protocols for the prevention and treatment of delirium, manage behavioral and functional complication, provide supportive and palliative care. • Plan the care after discharge
Older Living in long-term care facilities
• If typical or atypical symptoms of COVID-19 • Perform confirmatory tests • Isolate positive cases • Provide specific and supportive treatment • Evaluate the need of hospitalization for the (by assessing the life-expectancy, the general health status, the cognitive and functional status, and the severity of symptoms) as well as the LTC ability to accomplish the goals of the care • Involve patient family in therapeutic choices

- Provide PPEs and monitor the COVID-19 presence among care professionals

Older person living at home

Proactive assessment and remote care systems of older people living at home can improve the diagnosis of COVID-19 and can help allocate resources for care and medications. For instance, symptoms typically related to COVID-19 as well as nonspecific symptoms and signs which may lead to suspect a new infection in an old individual—i.e., delirium, behavioral disturbances, falls and changes in functional status could be daily monitored by General Practitioners and family Nurses.

The presence of caregivers and their need for further support, particularly if they are caring for demented and disabled patients, should be periodically evaluated. This might also help to identify burnout in formal and informal caregivers. Caregivers' burnout is a known risk factor for negative outcomes and may worsen the well-being of the patient. Older people living at home in self-isolation, in particular those affected by chronic conditions, need surveillance to ensure adherence to pharmacological treatments, and access to nutritious food, social and mental health support and information to maintain their emotional well-being.

Specific questionnaires administered by phone were recently developed to identify and monitor symptoms, to evaluate living conditions, and to assess the impact of the social

distancing rules. Social isolation and loneliness have long term negative health outcomes in the elderly. The current pandemic and the resulting social distancing rules have exacerbated these challenges in older adults by worsening social isolation and loneliness among those who live alone or are frail, even affecting the well-being of older adults with previously active and healthy social lives. The identification of the elderly at risk and the implementation of specific strategies could reduce the effects of sustained social distancing.

Immediately after COVID-19 is suspected medical and nursing support must be provided at home. This should include a swab test, pharmacological treatment and if needed, oxygen therapy. The main objective of this approach is to limit the hospitalization of patients. To guarantee the provision of medical and nursing support at home, it is important to ensure the continuity of assistance as well as the availability of drugs and devices. GPs and other professionals must be enabled to work safely and share standardized protocols of assessment and clinical management for COVID-19 patients.

The clinical course of the disease and eventual side effects of medications should be regularly evaluated. Family members should be instructed to protect themselves from the risk of infection. GPs should consider hospitalization in case of worsening symptoms (i.e., fever, fatigue, dyspnea, change of consciousness) or whenever the family is unable to provide adequate support.

Older patients needing hospitalization

For older patients who need hospitalization, we suggest the creation of specific areas within the hospitals, to guarantee treatments tailored for frail patients. For instance, it is well known that non-pharmacological approaches are more effective than pharmacological ones in the prevention and treatment of hyperactive delirium.

Within geriatric COVID-19 hospital wards, protocols should be made available to establish the patient’s prognosis on admission, to manage the behavioral and functional complications as well as to proactively define post-discharge care. Low-intensity hospital wards, with high capacity for supportive and palliative care should also be arranged, with attention to comfort and end-of-life issues. The rapid conversion of most hospital beds

during the epidemic did not take these needs into adequate consideration, resulting in an insufficient differentiation in the levels of care and the lack of specific services for the frail elderly.

Older living in long term care facilities

Older residents in LTC facilities showing symptoms related to COVID-19 should be systematically and timely tested to isolate positive cases and to implement specific pharmacological treatment and supportive care, along with oxygen treatment if needed. Asymptomatic residents who had contacts with confirmed cases should be tested and, if positive, isolated and periodically checked for specific and nonspecific symptoms. Hospitalization should be limited to cases that cannot be managed in LTC facilities, and should be considered only after an assessment of the patient's general health, cognitive and functional status and after an evaluation of patient’s priorities and wills. Family involvement in choices regarding the treatment is recommended. Monitoring of possible contagion among health care professionals should be systematically carried out, and the availability and correct use of PPE should be periodically assessed.

Conclusion

Despite the most severe consequences of the COVID-19 pandemic impact the elderly, geriatricians were not involved in health-policy decision-making, in the drafting of guidelines and in deciding the allocation of resources. Here, we provide some practical indications to care for older patients affected by COVID-19 in different care settings. We are aware of the difficulty in applying these recommendations, mainly because of the fragmentation of the Italian social and healthcare system in terms of organization and resources. COVID-19 has resulted in a surge of ageism by the public. The fact that the majority of those who die from the virus are older adults has been regarded with a kind of relief by the general population; this pushes us to recall the fact that, as the elderly are at a higher risk from COVID-19, we must all act to support and protect the elderly people who live alone in the community, the frailer and those living in LTC. Older patients are known to have an increased risk of severe SARS-CoV-2 infection, but it is unclear whether age per se is the main cause of this concurrence. Furthermore, the role of living

conditions, comorbidity, frailty and specific biological modifications related to aging have not been fully understood.

In the first phase of this pandemic actions of clinicians and institutions have often been driven by the need of the management of a dramatic crisis with too little time and too few resources to be allocated to the care of elderly and frail patients. We strongly believe that now the principles of geriatric medicine should be at the hearth of the care of COVID-19 patients since they are of the utmost importance to provide the best possible care for elderly patients.

Chapter 12: Guidance on CoVID-19 for the Care of Older People and People Living in Long-Term Care Facilities, other non-acute care facilities and home care

This guide is sourced from: World Health Organization: Western Pacific Region. (23 July 2020). *Guidance on CoVID-19 for the Care of Older People and People Living in Long-Term Care Facilities, other non-acute care facilities and home care.* Retrieved from March 31, 2021 https://iris.wpro.who.int/bitstream/handle/10665.1/14500/COVID-19-emergency-guidance-ageing-eng.pdf

Introduction

1.1. Background

With coronavirus disease 2019 (COVID-19) being prevalent globally, the World Health Organization (WHO) Regional Office for the Western Pacific has prepared guidance on how best to provide care for older people during the COVID-19 pandemic and to prepare for the “new normal”.

Previous outbreaks such as 2009 H1N1 influenza, severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) suggest that older people are more vulnerable to new and emerging infectious diseases. With COVID-19, people over 60 years of age potentially have a much higher fatality rate. The fatality rate for those over 80 years of age is over 20% in Australia, Japan and the Republic of Korea.[1,2,3]

In Europe, 30–60% of COVID-19-related deaths were residents of long-term care (LTC) facilities, including older age groups.[4] Enhanced precautions among older people and early preparation in LTC facilities are important to protect older people and vulnerable populations. In Asia, approximately 2.2%, 4.1% and 5.9% of older people above 65 in China, the Republic of Korea and Japan live in LTC facilities, respectively. The proportions are comparatively smaller in Malaysia (0.4%) and Viet Nam (0.6%).[5] In Fiji, as in many other Pacific islands, it is assumed that most older people are cared for by their family members, communities and religious groups.[6] The number of older people staying in LTC facilities is expected to grow with increasing life expectancy, smaller family size and cultural changes in many countries.[6] Special attention should be paid to older adults with noncommunicable diseases (NCDs) as their prognosis is more likely to be worse if infected with COVID-

19.[7] The risk of becoming severely ill increases for those above 60 years old. People with pre-existing conditions are also more likely to become severely ill with COVID-19 infection, including those with cardiovascular disease (e.g., hypertension, people who have had or are at risk of a heart attack or stroke), chronic respiratory disease (e.g., chronic obstructive pulmonary disease, or COPD), diabetes and cancer.[7]

While physical distancing is useful in terms of infection prevention and control, social isolation as a result of limited interactions may negatively affect the cognitive, mental and physical functions of older adults.[8] Non-pharmaceutical interventions (NPIs) such as physical confinements and lockdowns may decrease physical activity levels of affected individuals.[9] Closures of sports facilities, together with limited access to outdoor space and free movement, will inevitably reduce opportunities to exercise. Regular exercise is essential for preventing muscle loss, falls and fall- related injuries.[10]

Long-lasting NPIs may also have an impact on mental health. Reduced social networks, isolation and loneliness may worsen generalized anxiety and major depressive disorders among older people.[11]

The COVID-19 pandemic has given rise to interest in health at the individual and community level and a growing awareness of the need to better support vulnerable populations, including older people. Different sectors need to work together to improve health and livelihoods so that people can protect themselves and each other. Since it will take time to develop an effective vaccine, everyone is encouraged in the meantime to adopt behaviors and practices to shift to a “new normal” with COVID-19.

1.2 Target Audience

Older people both at home and LTC facilities; their caregivers, friends, and family; managers, staff, caregivers and health-care professionals at LTC facilities; home-care service providers; and policy-makers to utilize in preparation for and response to the CoVid-19 pandemic, as well as strategies to maintain community health and well-being.

2. Advice on COVID-19 for Older People and Caregivers

2.1 Advice for older people

(Adapted from Q & A; older people and COVID-19)

2.1.1 Basic Protective Measures

To prevent infection, there are a few things that you can do.

a. **Wash your hands frequently and thoroughly with soap and water and dry them thoroughly.**

You can also use alcohol-based hand rub if your hands are not visibly dirty. If an alcohol-based hand rub or soap is not available, use local materials such as coffee grounds, ash, salt, sand, coconut husk, bark, leaves and berries.[12]

b. **Cover your mouth and nose with a flexed elbow or tissue when coughing and sneezing.**

Remember to throw away the used tissue immediately in a bin with a lid and to wash your hands. This way you protect others from any virus released through coughs and sneezes.

c. **Avoid touching your eyes, nose and mouth.**

Hands touch many surfaces that could be contaminated with different viruses and other pathogens. If you touch your eyes, nose or mouth with unclean hands, you can transfer them from the surface to yourself.

d. **Keep physical distance from others.**

When you go out, avoid crowded spaces and maintain a distance of at least 1 metre (3 feet or arm's-length) from others. Restrict unnecessary visitors to your residence. If visits are necessary (e.g. caregiver to support with activities of daily living), ask your visitors to regularly check for symptoms to ensure they are symptom free when visiting you. Ask them to also follow these six key actions, including washing their hands when they first enter your home. People with symptoms must not visit and should follow instructions from local authorities for testing and management.

e. Clean and disinfect frequently touched surfaces every day.

These include tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, taps and sinks. Use detergent or soap and water to clean surfaces prior to disinfection.

f. Wear a mask if you are in a risk group.

If you are aged 60 years or older, you are encouraged to use a medical mask when you are in areas of widespread transmission and cannot guarantee a distance of at least 1 metre from others. Always follow local guidance on the use of masks.

For more advice on mask use, please also refer to Q&A: Masks and COVID-19.

2.1.2 Advice to Prepare for COVID-19 in your Community

Based on local context, older people should consider the following additional measures:

a. Inform yourself of the special measures taken in your community as well as the services offered (e.g. home delivery, psychosocial support, alternative access to your pension or social welfare support) and the sources of reliable information (e.g. health ministry website).

b. Create a list of the basic supplies that you will need for at least two weeks and have these delivered, if possible.

c. Make a list of the emergency contact numbers (e.g. COVID-19 local helpline, nearby hospitals and health facilities, domestic abuse helpline, psychosocial support helpline) and contact information of your support network (e.g. family members and friends, main caregiver, community care worker, associations of older persons).

d. Discuss with your health-care provider, health-care worker or caregiver how

your health needs can be addressed during the COVID-19 outbreak.

e. If you rely on the support provided by a caregiver, identify with him/her another person that you trust to support your daily living and care needs in case your caregiver is unable to continue to provide care.

f. If you are the primary caregiver of another person who is care dependent, identify a person that you and the person that you care for trust to take on your caregiving responsibilities in case you fall sick.

g. If multiple people live in your home, if possible, prepare a separate room or space in your home so that anyone showing COVID-19 symptoms can be isolated from others.

h. Think about what matters most to you regarding care and support, including medical treatment, in case something happens to you and you are unable to make your own decisions.

2.1.3 Advice for those with symptoms related to COVID-19

a. If you have common symptoms related to COVID-19, such as fever, cough, fatigue, anorexia, shortness of breath and myalgia, seek medical advice. Other non-specific symptoms include nasal congestion, headache, diarrhea, nausea and vomiting, loss of smell and loss of taste.

b. If you have difficulty breathing, contact emergency medical services immediately as this may be due to a respiratory infection.

c. If you live with others, make sure that you isolate yourself as soon as you suspect infection by using the space that you identified in advance.

If you live with others and home care for COVID-19 is advised by your health or social worker, other household members should follow available WHO guidance on home care for patients with COVID-19 presenting with mild symptoms and management of their contacts.

If you live with others in a setting where physical distancing is difficult, please refer to

the WHO guidance on actions to be taken for the care and protection of vulnerable groups for additional information.

2.2 Advice for Caregivers

a. Develop in advance, and together with the older person and the household, an alternative plan in case the primary caregiver is unavailable, and identify an alternative caregiver or alternative facility, or both.

   For more information, please refer to *Maintaining Essential Health Services: Operational Guidance for the COVID-19 Context*.

b. Caregivers (unless the caregivers are older people themselves or have underlying conditions) are at lower risk of becoming seriously ill compared to older people. However, they could unknowingly transmit the virus to older people from possible contact with other people (i.e. from commuting or shopping). It is thus necessary for caregivers to take standard precautions when with older people and to take preventive measures such as self-isolation

   if they have any symptoms.

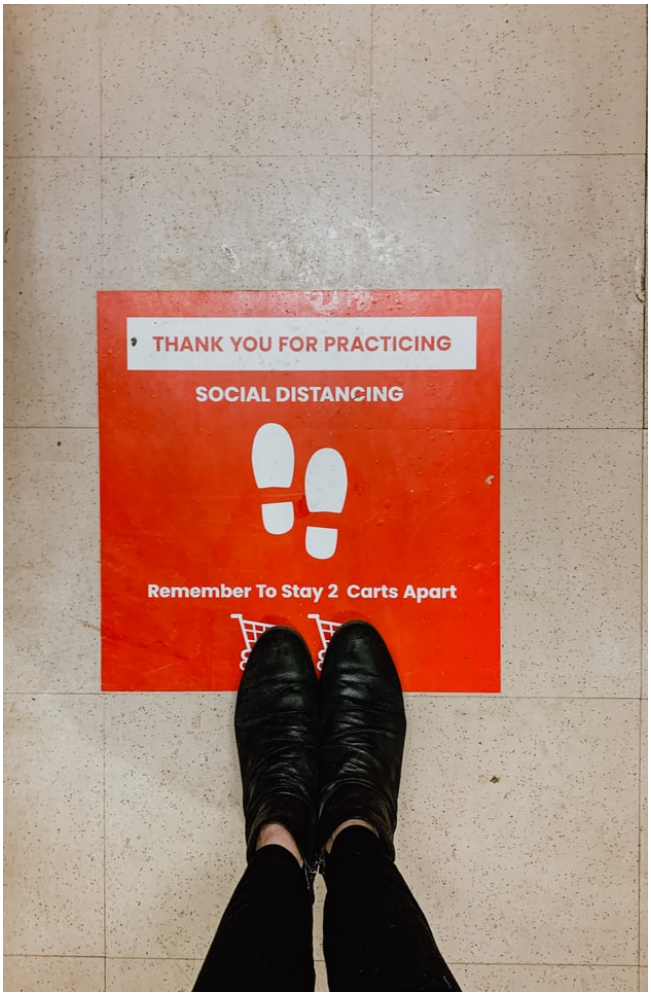
2.3 Self-care for the General Well-Being for Older People

2.3.1. Health Promotion

There is a concern that the public health measures (e.g. physical distancing, staying at home, refraining from visiting friends/family members) could have an indirect, negative impact on older people's health and well-being.

You can follow these 10 steps to keep healthy during the COVID-19 pandemic

(adapted from Q&A: Older people and COVID-19):



a. Keep to your regular routines as much as possible and maintain a daily schedule for yourself including sleeping, meals and activities.

b. Stay socially connected. Speak to loved ones and people you trust every day or as much as possible, through telephone or video calls, messaging, writing letters, and other means of communication.

c. Be physically active every day. Reduce long periods of sitting and set up a daily routine that includes at least 30 minutes of exercise.

d. Drink water and eat healthy and well-balanced meals.

e. Avoid smoking and drinking alcohol.

f. Take breaks from news coverage about COVID-19 as prolonged exposure can cause feelings of anxiety and despair.

g. Engage in hobbies and activities that you enjoy or learn something new.

h. If you have ongoing health conditions, take your prescribed medicines and follow the advice of your health-care worker regarding any health visits or phone consultations.

i. If you have an emergency medical condition that is not related to COVID-19, contact emergency health services immediately and ask what you should do

next.

j. If stress, worry, fear or sadness gets in the way of your daily activities for several days in a row, seek psychosocial support from available services in your community.

In addition to physical and mental health, oral health is another concern. Evidence from Spain shows that high levels of perceived vulnerability to COVID-19 infection increased dental care avoidance.[13] Due to fear of high-risk procedures and limited access to oral health care, oral health may be neglected.[14]

Older people are encouraged to assess their well-being and practise self-care to maintain physical and mental capacity. More information on self- care for older people is provided in the Annex.

Caregivers and volunteers are encouraged to call older persons (especially those who are feeling depressed and those who live alone) to assist in dealing with psychological stress during the COVID-19 pandemic.

2.2.1 Use of information and communications technology

Using information and communications technology (ICT) is one way of staying connected with friends and family. Numerous user-friendly services are available to maintain social connections. People frequently use audio or video calls (telephone, mobile phone or messaging applications) or host online group sessions (e.g. book, movie review, music therapy and exercise clubs).

Content for education, entertainment and health promotion that older people can access and benefit from is available online.

A friend, family member, caregiver or social worker could assist an older person, so he/she can stay connected using ICT devices and services. For those facing difficulty accessing ICT, alternative social funding or benefit options should be explored, such as free provision of devices and subsidies for purchasing devices and services.

2.3. Advice for home care

Home care for older people and other vulnerable populations, such as people with disabilities or mental health concerns, is common in the Western Pacific Region. It is important to carry out safe home care to prevent transmission of COVID-19.

For the home care for older adults and other vulnerable people, basic protective measures (outlined in section 2.1) are the primary method of prevention of COVID-19 infection. In addition, practise the following:

2.4.1. Advice for home care for older people

a. Visitors

- No one with signs or symptoms of COVID-19 should be allowed to visit older people. People with no signs or symptoms of COVID-19 should be allowed to visit for compassionate reasons only, especially if the older person is ill. If possible, limit the number of visitors at a time and meet in a well-ventilated room.
- Ensure basic preventive measures including hand hygiene and physical distancing are observed.

b. Unwell caregiver/resident

Provide information to older people on how to self-isolate at home. This should include: staying in a well-ventilated room, limiting movement at home, staying in different rooms from other family members or maintaining a distance of at least 1 meter from other family members, and not sharing bedding, towels, cutlery and kitchen utensils. If there is no separate room available, put up a sheet to create a barrier between the unwell person and other members of the family.[15]

- If the caregiver is unwell, arrange for another person to care for the older person. If the older person is unwell, consider restricting visitors, unless for compassionate reasons.

c. Caregiver/resident without any symptoms

- Given the possibility of asymptomatic cases, especially in areas of widespread transmission, ensure sufficient space (e.g. **1 metre** from other family members).
- Caregivers/residents should wear a medical mask when they are in the same room as the patient, whether symptomatic or not. Follow basic precautionary measures such as hand hygiene.

For additional details, please refer to the WHO guidance on home care of patients with suspected COVID-19 infection presenting with mild symptoms.

2.4.2. Advice to caregivers of older people with dementia

For a person with dementia, it can be challenging to understand what is happening and to follow precautionary measures such as regular handwashing and mask wearing. Bear in mind that people with dementia might not be able to recognize you when you wear a mask. Pay special attention to individuals in this group so that their health conditions do not deteriorate further.

a. Caring for someone with dementia can be very challenging. If you feel alone, ask someone you can trust personally, a healthcare professional or a support group for help. Describe your problem and what kind of help you need.
b. Take care of yourself. Having social support is important – stay connected as much as possible. Talk regularly to someone you trust and who understands your situation and feelings.

   Plan in advance if you are no longer able to provide care for the older person with dementia. Ask the person you care for about his or her care preferences, including by whom and where he or she would like the care to be continued. Identify people who can provide support if you can no longer provide care. Plan for costs of future care and discuss preferences for more advanced care and end-of-life decisions, if necessary.

For more details, please refer to the Q&A for people caring for someone with dementia.

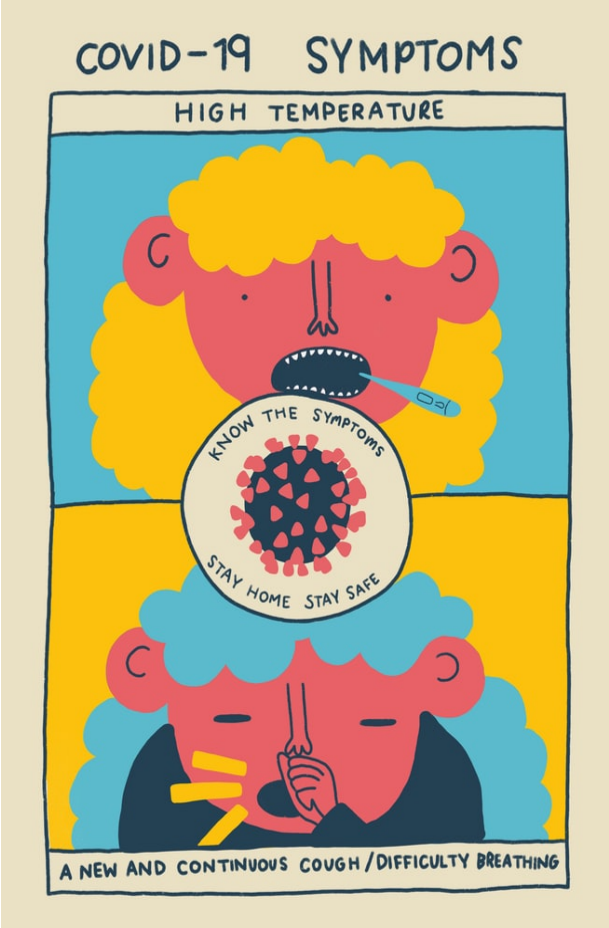
2.4.3. Advice for self-management post COVID-19 infection

If you have been severely unwell and have been admitted to a hospital with COVID-19, consider the following to support your recovery and address residual COVID-19 symptoms:

a. **Manage breathlessness.** Breathlessness is a common symptom for those who are admitted to hospital. The feeling of breathlessness should improve as you slowly increase your activities and exercise. Breathing techniques (including positions to ease breathlessness) can also help manage this.

b. **Exercise after being discharged from a hospital.** Exercising is an important part of recovery after severe illness. Exercising can help improve fitness and thoughts, reduce breathlessness and stress, and enhance moods.

c. **Manage difficulties using voice.** People may have difficulties using their voice after being ventilated. If your voice is raspy or weak, it is important to: 1) keep talking, when comfortable, 2) not strain your voice, 3) rest,
4) try humming to yourself, 5) use other ways of communication, and 6) sip water throughout the day.



d. **Manage eating, drinking and swallowing.** If you were ventilated with a breathing tube while hospitalized, you may notice some difficulty with swallowing food and drinks. Eating well and drinking lots of water are important to your recovery. Paying attention to swallowing is important to avoid choking and lung infections.

Manage problems with attention, memory and thinking clearly. It is very common for people who have been severely unwell to experience difficulties with attention, memory and thinking clearly. It is important for you and your family to recognize these difficulties, as they can impact your relationships, daily activities and return to school or work.

e. **Manage activities of daily living.** It is important to become active again when you are recovering, but this can be hard if you feel very tired, out of breath and weak. The following strategies may be helpful: 1) adjust your expectations for

what you can do in a day, 2) save your energy by doing tasks sitting down when you can, 3) pace yourself and try to do light tasks between heavier ones, 4) let others help you with tasks that you may be struggling with, and 5) ease back into activities.

f. **Manage stress and problems with mood.** Being extremely unwell in a hospital can be a highly stressful experience. Managing stress and feelings of anxiety and depression are therefore an important part of your overall recovery.

For more details, please refer to *Support for Rehabilitation Self-Management after COVID-19-Related Illness*.

Please share this information with older people, especially those who might require assistance (e.g. an older adult who lives alone or is housebound) or share it with someone who has a chronic lung, heart, immunological or neurological condition.

3. Guidance for long-term care facilities, other non-acute carefacilities and home care

This section is based on various national recommendations and relevant WHO guidance.[16–20]

Long-term care facilities and other non-acute care facilities, including mental health and disability services, should implement strong infection prevention and control practices to prevent transmission between staff, residents and visitors.

The three principles of controlling infectious disease in all health-care facilities, including at long-term care and other non-acute care facilities and for care at home (Fig. 1), are as follows:

a. Do not bring in infection

Prevent staff/caregiver and family members from carrying infectious disease into a facility.

b. Do not take infection out

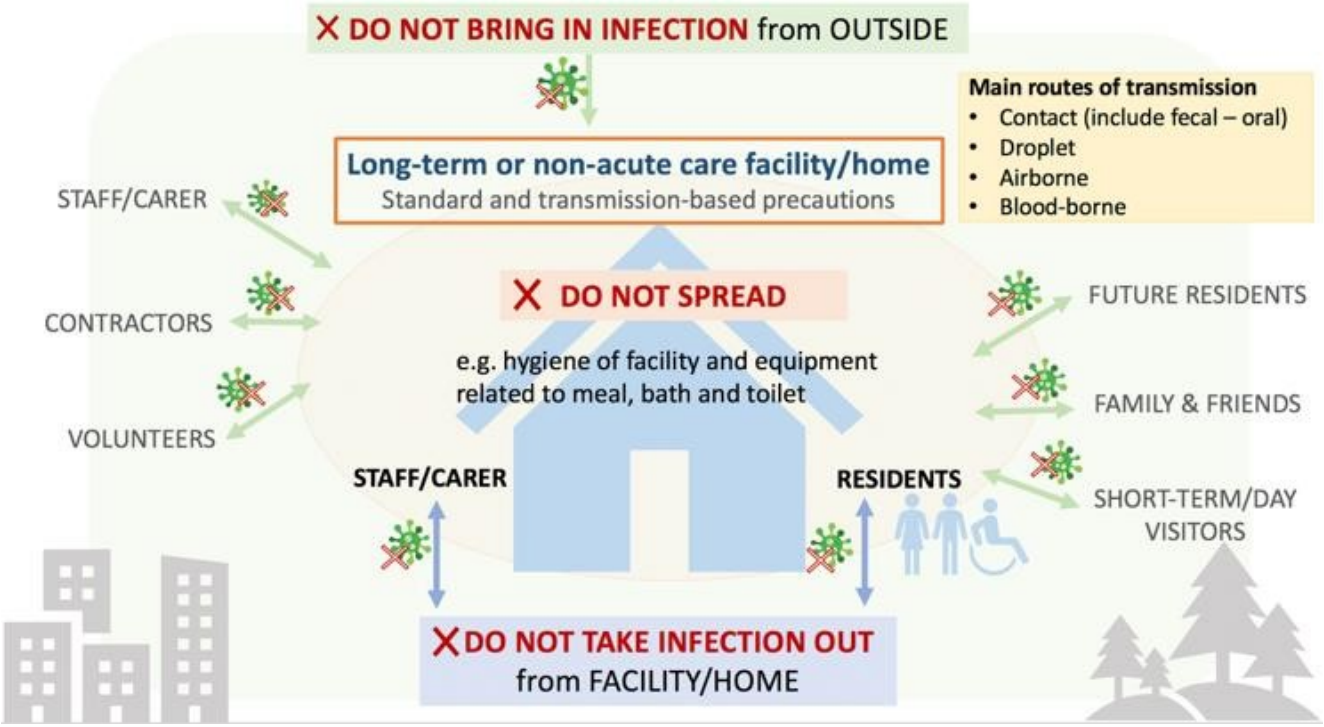
Prevent staff/caregiver and family members from carrying infectious disease out

of a facility to local communities.

c. Do not spread

Prevent spreading of infectious disease both within and outside a facility.

Figure 1. Preventing transmission of infection (for COVID-19 and non-COVID-19) in long-term care facilities, non-acute care facilities and home care



Adapted from: Key principles of infection control and prevention in nursing homes for older people [in Japanese]. Tokyo: Ministry of Health, Labor and Welfare; 2019.[21]

3.1. Long-term care and other non-acute care facilities

General principles for the prevention of infectious disease transmission in long-term care and other non-acute care facilities focus on preparation and response.

3.1.1. Preparation

Ensure that there is an infection prevention and control (IPC) committee/team within the facility that is multidisciplinary with designated responsibilities.

The IPC committee/team should utilize evidence-based guidelines to maintain a high standard of hygiene and sanitation.

a. Establish and implement routine IPC policies and procedures including:
   - standard precautions (hand hygiene, respiratory etiquette, environmental cleaning, reprocessing of equipment, etc.)
   - transmission-based precautions (primarily droplet and contact precautions for COVID-19)
b. Provide sufficient supplies and equipment (e.g. hand hygiene products and personal protective equipment) and place them at points of care.
c. Provide one or more dedicated people as IPC leaders.
d. Train caregivers and employees on IPC.
e. Place reminders in the facility (posters, reminders) to assist compliance with IPC.
f. Audit IPC practices and give feedback to caregivers and all employees.
g. Develop a response manual for when cases of COVID-19 occur.
h. Train key personnel on how to isolate confirmed cases of COVID-19.

Dedicate medical and residential care equipment (e.g. thermometer, blood pressure cuff and pulse oximeter) to the use of one resident where possible. All equipment should be cleaned and disinfected per routine practices before reuse with another resident, or a single-use device should be used and discarded in an appropriate waste receptacle after use. Personal items such as electronic gadgets should not be shared by residents.

A safe facility environment should be established, including general maintenance, plumbing, ventilation, food preparation/storage, laundry collection/cleaning and waste collection/disposal.

Facility employees should always follow local jurisdictional guidelines when

available. In areas with high community transmission rates, they are encouraged to wear medical masks during all routine activities throughout their entire shift, especially in clinical areas, except when eating, drinking and changing masks. Facility employees, residents and other facility users should make sure all their immunizations are current
(e.g. seasonal influenza, pertussis, chickenpox, measles, rubella, mumps, and hepatitis B) and undergo regular health check-ups.

3.1.2. Response

The facility should respond to infection with triage, early recognition, source control and resident management.

Triage and early recognition

Prospective surveillance should be established for residents, caregivers and employees:

a. Assess the health status of residents prior to admission as well as daily monitoring at a facility.
   - Identify signs of any infection and report to a physician/nurse (e.g. fever*, vomiting, diarrhea, and respiratory illness).

b. Assess the health status of caregivers and employees.
   - For employees, identify signs of any infection and report to occupational health at the facility or their own care provider (e.g. fever*, vomiting, diarrhea, respiratory illness).

     For caregivers, identify signs of any infection and encourage them to seek medical care (e.g. fever*, vomiting, diarrhea, respiratory illness).
   - Conduct active temperature and symptom checks for all caregivers and employees at the facility entrance.

c. Establish and implement a protocol for testing residents with symptoms.
   - For residents, caregivers and employees, consider alternative causes of

acute respiratory infection (e.g. influenza, respiratory syncytial virus).

** In people 65 years and above, fever may not be prominent.*

Resident management

Medical care includes regular and increased monitoring for clinical deterioration, with advanced care planning and discussion with the resident/representative about escalation and referral to health-care facilities.

Source control

a. Reinforce preventive measures by emphasizing respiratory and hand hygiene to residents, caregivers and employees.

b. Control potential sources by encouraging residents and accompanying individuals who have signs and symptoms of illness to practice respiratory and hand hygiene and provide medical masks. For areas of widespread transmission, with limited capacity for implementing control measures and especially in settings where physical distancing of at least 1 meter is not possible, visitors should wear masks.[22]

Spatial separation of residents with acute respiratory symptoms may be required and can be achieved through:

- providing care in single rooms;
- creating dedicated care areas (cohorting) for residents with acute respiratory symptoms;
- leaving 1 meter between residents who have signs and symptoms and those who do not; and
- using temporary barriers made of cloth or room dividers.

c. If providing single rooms or cohorting is not possible, consider using a cubicle or designated bed space in a shared room, with privacy curtains drawn between beds.

d. Put up IPC signs indicating contact and droplet precautions at the entrance.

Care for suspected or confirmed COVID-19 cases

When caring for older people with suspected or confirmed COVID-19 infection, practise contact and droplet precautions. For details, refer to WHO guidance on IPC precautions.

a. Personal protective equipment (PPE)

- Perform hand hygiene before putting on PPE.
- When caring for any patient with suspected or confirmed COVID-19 infection, practise standard, contact and droplet precautions (by wearing medical masks, gloves, gowns and eye protection such as goggles or face shields).
- During aerosol-generating procedures, practise standard, contact and airborne precautions (by wearing N95 masks or equivalent, gloves, gowns and eye protection such as goggles or face shields).
- Carefully, and appropriately, remove all PPE just before leaving a patient's room and discard in a hands-free (e.g. opening operated by motion sensor or foot pedal) waste receptacle with a cover.
- Perform hand hygiene after removing gloves and gowns, before removing face protection, and after leaving the room.

b. Resident movement/transport and activities

- Restrict residents to their room:
  - Symptomatic patients: **10 days after symptom onset, plus at least 3 days without symptoms**, including without fever and respiratory symptoms
  - For asymptomatic patients: 10 days after positive test for SARS-CoV-2, the virus causing COVID-19.
- Restrict participation in group activities for all symptomatic residents.
- Restrict movement/transport of residents with suspected or confirmed infection to essential diagnostic and therapeutic tests.
- Avoid transfer within facilities (unless medically indicated).

- If transport is necessary, advise transport services and personnel in the receiving area of the required precautions for the resident being transported.
- Ensure residents who leave their room for medical reasons (e.g. essential diagnostic and therapeutic tests) wear a mask and adhere to respiratory hygiene.

c. Cleaning

Hospital-grade cleaning and disinfecting agents are recommended with all horizontal and frequently touched surfaces being cleaned at least twice daily and when soiled.

d. Reporting suspected cases

Any suspected cases should be reported to relevant authorities such as the local government and local public health centre as per public health requirements.

Visitors

Symptomatic visitors should be restricted from visiting the facility. If visitors must visit for compassionate reasons, they should be instructed to practise respiratory hygiene, wear a mask, perform hand hygiene, and visit the resident directly and exit directly after the visit. They should limit their movement within the facility and come during non-visiting hours when they are less likely to transmit their illness and be provided with necessary PPE.

Technical guidance on COVID-19 is regularly updated as the situation evolves. Please refer to the latest documents published online at: https://www.who.int/emergencies/diseases/novel- coronavirus-2019/technical-guidance

For more information on IPC and long-term care, please refer to the following WHO guidance:

- IPC for health workers of people suspected or confirmed with COVID-19
- IPC for long-term care facilities

- WHO Preventing and managing COVID-19 across long-term care services: policy brief

- Criteria for releasing COVID-19 patients from isolation.

3.1.3 Daily life

It may be difficult to continue group meals and activities within facilities. Even at such times, it is necessary to consider how social interactions (or social connections) can be maintained while lowering the risk of infection in the facilities.

Since family members' visits are often restricted during the pandemic, it is necessary to use ICT and other means to maintain the relationships between residents and their families.

4. Advice to policy-makers for the "new normal" and the "new future"

The heightened interest in the health of ageing populations provides an opportunity for policy- makers to adopt innovative approaches to address the needs of older people during the COVID-19 pandemic. This includes encouraging people to practice self-care, with more frequent health communication, using technologies to improve access to care and enhancing community-based care. These changes will lay the foundation for a "new future", beyond the "new normal", where health is recognized as an investment and supportive communities enable older people to stay healthy, thrive and age in place,[23] contributing to achieving the Sustainable Development Goals and WHO's vision for its work in the Western Pacific Region, as laid out in *For the Future: Towards the Healthiest and Safest Region*.

4.1 Encourage self-care and general well-being

4.1.1 Promote self-care among older people In areas with widespread transmission, access to essential health care could be limited due to the COVID-19 response and movement restrictions.

Therefore, it is important that older people take better care of themselves. WHO has developed a set of self-assessment questions and recommendations for older

people to practice self-care and general well-being (Annex). Policy- makers are encouraged to disseminate it through health-care providers, the media, community volunteers, social workers and other channels.

4.1.2 Use communication to encourage behavior change

National and local governments should encourage behavior changes to prevent the spread of COVID-19 and promote general well-being during the outbreak. In addition to conventional health communication, insights from behavioral science such as **"nudges"** can be implemented. These "nudges" provide positive reinforcement and indirectly influence individual behaviors and decisions.

Examples of "nudges" during the COVID-19 pandemic

Footprint markers encouraging physicaldistancing at a supermarket (Amagasaki, Japan)

These nudge-based approaches have been used worldwide to promote healthy behaviors such as quitting smoking, decreasing the consumption of alcohol and increasing the uptake of vaccinations.[24]

1. Encourage the use of ICT

4.1.3 Continuing social support networks

Older people experiencing social isolation are at a higher risk of depression and cognitive impairment, and may require long-term care sooner.[25] Therefore, public health measures that could lead to social isolation will disproportionately affect older people, especially those relying on voluntary services or social care.[26] To mitigate the impact of social isolation, setting up a sort of buddy system for lonely or socially isolated older individuals could help them stay connected. Community members can seek out an older "buddy" to regularly check in on (while adhering to physical distancing).[27]

Online technologies could supplement existing social support networks and continue to provide a sense of belonging. Interventions could be as simple as calling significant others, close family and friends, volunteers, health-care professionals or social workers more frequently,[28] especially if the person has not been seen in the neighborhood or been in contact for a few days. Beyond simply reaching out, online cognitive behavioral therapy for loneliness has shown promise.[29]

Communities should consider forming group social and support activities (such as online courses explaining new technologies and group reminiscence therapy) in which older people can actively participate to reduce social isolation.[30]

4.1.4 Improving self-care

ICT can assist in monitoring the health status of older people and improve self-care and self- management options.

The WHO Integrated Care for Older People (ICOPE) reflects a community-based approach that will help reorient health and social services towards a more person-centered and coordinated model of care to optimize physical and mental capacity and functional ability for older people and prevent care dependence. A package of evidence-based tools is available, including mobile applications.

In France, an ongoing pilot study in Occitania screens older people for mobility, cognition, mood, hearing, vision and nutritional status every 4 to 6 months using an adapted ICOPE mobile application.[31] If a potential issue is detected with the physical and mental capacity of an individual, a general practitioner or a nurse trained in geriatrics will perform a more thorough assessment and develop a personalized care plan.[31]

Delivery of health information, advice and reminders through mobile phones could encourage healthy behaviors and assist older people with improving and maintaining their intrinsic capacity. The WHO Mobile Health for Ageing (mAgeing) programme supports the routine care offered by health-care

professionals with an emphasis on self-care.[32]

VicHealth, Australia, encourages the general public, including older people, to make use of online videos and classes to stay physically active at home.[33]

4.1.5 Closing the digital divide

When designing policies and interventions, bear in mind the existing inequalities in accessing ICT infrastructure and devices. Those at higher risk for social isolation often have lower levels of access (people with disabilities, informal migrant workers, people of low socioeconomic status).

Build a case for closing the digital divide as part of a health-care accessibility issue, and, if possible, work with service providers to create age-friendly ICT environments for older people.

4.2 Strengthen community-based support

4.2.1 Community-based integrated care

Though COVID-19 has brought many challenges both to the community and older people themselves, there is an ever-increasing sense of mutual aid and support in the community. This will allow for policies to introduce and improve community-integrated care systems to enhance coordinated support within the community.

In areas where COVID-19 is prevalent, access to services is limited, including access to medical and long-term care facilities,[34] and older people should practice self-care. To ensure the quality of health care and long-term care provided within the community is adequate, even during the
COVID-19 pandemic, the following actions are recommended:

a. Prepare in advance a sector-wide plan for the continuous provision of community-based integrated care during the COVID-19 pandemic within the community. This plan includes home visits by physicians, nurses and

caregivers, including for rehabilitation, as well as daily shopping and transportation.

b. Discuss how to continue the essential services for older people (e.g. social activities, visits by community volunteers) using alternative ways.

4.2.2 Age-friendly environment

National and local governments play an important role in creating an age-friendly environment where older people can maintain their functional ability to the maximum extent possible.

a. Identify older people at risk

Through local associations or local registries, communities should identify older people experiencing severe outcomes from COVID-19 (e.g. those with underlying health conditions) or at risk of negative consequences from COVID-19 public health measures (e.g. those living alone or who may be at greater risk of loneliness and social isolation) or those at heightened risk due to their home environments (e.g. care homes, settlements). Communities should also consider a system of community sentinels/wardens (such as 1 per 50 households) to help identify and support older people at risk.

b. **Improve access to information** Communities should consider a mechanism to reach out to high-risk individuals (e.g. helpline, outreach by community volunteers). Disseminate customized messages to explain the risks of COVID-19 for older people and actionable recommendations, based on their health status. Also, identify accessible mechanisms (e.g. peers, community leaders, forums) and formats (e.g. pictures, plain language, sign language, demonstrations) based on cognitive, visual and hearing capacity, as well as technology literacy.

c. Support older people to meet their basic needs

During the COVID-19 pandemic and restrictions on their movement, some older people will need additional support to meet their basic needs, including:

- **accessing money**: Community agencies responsible for pension, social welfare or cash payments may identify safe mechanisms to ensure timely

payments, while reducing waiting times and limiting physical contact (e.g. separate queues or specific times for older people). The new payment process (e.g. cash cards, mobile phone-based e-wallets or payments collected at retail merchants) should not create additional barriers for older people. Governments may consider income support schemes for older people who lost income during the COVID-19 pandemic.

- **shopping for groceries/food, medicines, personal and household items**: Retail stores should consider safe privileged access for older people. Local administrations and community organizations can identify older people in need of support for shopping and request delivery of food and products with clean packaging. Local transportation initiatives such as mobility as a service, or MaaS, could support transportation for daily needs.
- **accessing water, sanitation and hygiene facilities**: Local governments or those managing settlements should make water and sanitation services accessible to older people (e.g. install rails, provide smaller water containers).

d. Combat ageism and prevent and respond to violence

Older people are diverse, in their socioeconomic backgrounds, personal experiences, and physical and mental capacity. Therefore, the policy and support for older people should be based on individual needs, rather than chronological age only. Avoid stereotyping older people as uniformly frail and vulnerable. At the same time, it is important to prevent and respond to violence towards vulnerable older people whose movement is restricted to their home or within institutions. Raise awareness using public campaigns and provide support to caregivers and reporting mechanisms (e.g. helplines, collaboration with accessible essential services and community workers).

For more information on preventing violence against older people during the COVID-19 pandemic, please refer to:

- COVID-19 and violence against older people
- Addressing violence against children, women and older people during the COVID-19 pandemic: key actions.

Appropriate community action to prepare and respond to COVID–19 requires developing local plans with older people, including those most at risk. Older people can be engaged directly, through influential leaders (e.g. community leaders, faith-based leaders, traditional leaders and healers) and existing networks (e.g. older people's groups, women's and men's groups, primary care workers, community health volunteers). Policy-makers both at national and community levels are also encouraged to collaborate with health, social welfare, finance, security and other sectors. Community networks, organizations of older people and businesses should be involved to ensure effectiveness, avoid duplication and help strengthen the local community's prevention and response capacity to conduct early and continuous assessments of older people's knowledge, attitudes and practices, as well as existing barriers to meet their basic needs. Reflect the assessment results using risk communication and community engagement action plans or other emergency planning mechanisms in place.[35]

Please refer to the WHO guide for general advice on creating age-friendly environments.

1. Guidance development

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1.2. Guidance development methods

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1.3. Declaration of interests

No conflicts of interest were reported by any ofthe contributors.

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Annex: Screening tests for physical and mental capacity [1, 2]

Priority Conditions Associated with declines in intrinsic capacity	Tests
Cognitive capacity	1. Remember three words; flower, door, rice (example words) 2. What is the full date today? Where are you now (home, clinic, etc.)? Did you get either of the answers wrong? 3. How many words could you recall (e.g., flower, door, rice)? Fewer than three words?
Mobility	Chair raise test: Rise from chair five times without using your arms. Does it take more than 14 seconds?
Nutrition	1. Have you unintentionally lost more than 3 kilograms over the last three months? 2. Have you experienced loss of appetite?
Vision	Do you have any problems with your eyes: difficulties in seeing far, reading, eye diseases or currently under medical treatment (e.g., diabetes, high blood pressure)?
Hearing	You can check your hearing with three tests: whisper test, screening with audiometry and automated app-based digits-in-noise test. Did you fail any of these tests? (You couldn't hear the whispering, audiometry result is 35 decibels or less, app-based result advises you to seek professional help. If you have a smartphone or tablet, test your hearing using hearWHO (https://www.who.int/health-topics/hearing-loss/hearwho).
Psychological Well-being	Over the past two weeks, have you been bothered by: 1. Feeling down, depressed or hopeless? 2. Little interest or pleasure in doing things?

Oral health	1. Do you have difficulty chewing? 2. Do you have pain in your oral cavity*?
Social care and support	1. Do you have difficulty with any of the following daily activities? a) Getting around indoors b) Using the toilet (or commode) c) Dressing yourself d) Using the bath or shower e) Keeping up your personal appearances? f) Feeding yourself? 2. Do you have problems pursuing leisure interests, hobbies, work, volunteering, supporting your family, educational or spiritual activities that are important to you? 3. Do you feel lonely?

If you answered "yes" to any of the screening questions (above), you should seek help from a health-care professional or a social worker.

Suggested messages to older people for self-care

Mobility	**Keep to your regular routines and schedule** as much as possible including sleep, meals and activities. Be physically active everyday.
	Be active in daily life (gardening, tidying up, cooking in a standing position, farming, etc.) and reduce the amount of time you spend sitting.
	Do 30 minutes of exercises each day, including four types of training, aerobic exercise, balance and flexibility (stretch). • **Strength:** Two days a week, use weights, your body weight or resistance bands to make your muscles stronger. Try squats, lunges and sit-to-stand exercises. • **Aerobic exercises.** Try cycling, walking or online Zumba sessions. Walk for 30 minutes at least five days a week to stay healthy. • **Balance:** Try walking up one or two flights of stairs, standing on one leg at a time, walking heel to toe in a straight line, radio calisthenics and local government calisthenics. • **Flexibility:** stretch your muscles before and after each exercise. Warm up your muscles first with slow movements. Stretch and

	stay in the same position for at least 10 seconds. Try yoga or Pilates exercises. If possible, ask a professional to help you design an exercise programme. Exercise can be done at home or in your garden. Choose your favorite music and dance to that. Remember to avoid crowding.
	Consider exercises from your bed or chair if walking is hard for you. Talk to your health-care professional to find out more.
	Stop, rest and talk to your doctor for advice if you feel dizzy, have chest pain, or feel out of breath during or after exercise.
Nutrition	**Go outside in the sun for 30 minutes a day** to get your vitamin D, which helps with balance and moving well.
	Drink sufficient water: 8-10 cups of water everyday.
	Eat healthy: 2 cups of fruit (4 servings), 2.5 cups of vegetables (5 servings), 180 grams of grams, and 160 grams of meat and beans everyday (red meat can be eaten 1-2 times a week and poultry 2-3 times a week).
	Limit your salt intake to 5 grams (equivalent to a teaspoon) a day and limit salt and high-sodium condiments (e.g., soy sauce and fish sauce) when cooking/preparing food.
	Eat a mix of wholegrains such as wheat, maize and rice, legumes such as lentils and beans, plenty of fresh fruit and from animal sources (e.g., meat, fish, eggs, and milk).
	Consume unsaturated fats (e.g., found in fish, avocado, nuts, olive oil, soy, canola, sunflower and corn oils) rather than saturated fats (e.g., found in fatty meat, butter, palm and coconut oils, cream, cheese, ghee and lard). **Avoid industrially produced trans fats** (e.g., found in processed food, fast food, snack food, fried food, frozen pizza, pies, cookies, margarines and spreads). Try steaming or boiling instead of frying food when cooking.
	Eat raw vegetables, fresh fruit and unsalted nuts as snacks, instead of soda, fruit juices, fruit concentrates, flavored, milk, yogurt drinks, cookies, cakes and chocolate.

	Write down in a food diary the foods you eat each day. It will help you look back to see if you met your goals in your care plan. Eat well-balanced diet without missing three meals a day.
	Take nutritional supplements such as vitamin pills or drinks. They can help you meet your daily needs for certain foods. Ask your health-care professional for advice.
	If you lose weight quickly, have a hard time chewing or swallowing, or have stomach pain or swelling, consult your doctor. Illness should not be ignored.
Vision	**Consider simple changes** if your vision causes problems with your daily life. Keep your surroundings bright. Keep things in their right place, such as your keys on a hook or your glasses next to the bed. Good lighting and contrast can help/
	Ask a friend/family member/caregiver to help you move safely and travel in unfamiliar places if you have problems with your vision.
	Talk to your health-care professional about a vision check if you have vision problems. If you have trouble seeing to read, glasses may help. Stay up to date with regular visits to get the treatment you need.
Hearing	**Get regular check-ups and use hearing aids to improve your hearing.** Many things can affect your hearing, including some medications. Seek a health-care professional advice.
	If you find it hard to hear, ask others to repeat what they are saying or speak slower. Find a quiet place to talk. Moving away from the radio, television or other people talking can help you hear better.
	If you feel dizzy, your face feels numb or your ears feel full, you may have a problem in your ear. See your health-care professional.
Cognitive capacity **Psychological well-being**	**Exercise your mind.** Try playing chess or other games and doing puzzles. Read a newspaper, listen to the radio, do a crossword, or look through photo albums or favorite items to keep your brain active.
	When you forget a word, try to describe it. Ask your family and friends for support and patience if you are forgetful. Be open to help. Keep a list of important daily tasks or names of people you see often to

	jog your memory. It may help you feel less nervous when you are on your own.
	Be around others for a healthy mind. Try to social or group activities such as playing cards, attending an exercise class or eating meals with others.
	If you have trouble doing your regular activities, or are forgetting things more often, see your doctor. It can be frustrating to forget things.
	Take breaks from news coverage about COVID-19. Seek updates at specific times of the day from a reliable source such as the WHO website or national or local channels in order to help you distinguish facts from rumors or scams. It is normal to feel, sad, stressed, confused, scared, or angry during an outbreak.
	Be aware of negative or unhealthy thoughts. Try thinking three happy thoughts every day. Try repeating a word such as “relax” or “calm” while breathing in and out deeply.
	Stay socially connected. Speak to loved ones and people you trust every day or as much as possible, using the telephone, video calls or messaging, writing letters, etc.
	Engage in hobbies and activities that you enjoy or learn something new. Cognitive exercise such as reading a book or doing crosswords/sudoku will keep your mind active and distract you from worrying. A fun activity can get rid of low moods or stressful feelings. You can also use the time at home to keep a well-being diary.
	Get moving. Exercises like yoga, tai chi, swimming or walking can help you cheer you up. Try it if you feel low.
	If you are feeling down, trying helping someone else. Helping others can make you feel good.
	Avoid using alcohol and drugs as a way of dealing with fear, anxiety, boredom and social isolation. Drinking alcohol not only disturbs your sleep but may also increase your risk of falls, weaken your immune system, and interact with any prescription medicines that you are taking. There is no safe level of alcohol consumption.

	Seek psychosocial support from available services in your community if stress, worry, fear or sadness get in the way of your daily activities for several days in a row, or if there is a big change in your weight.
	If you have suicidal thoughts, consult your doctor and talk to others you can trust. Everyone can feel low at times.
Urinary incontinence**	**If you have signs of urinary incontinence, talk to your doctor** to help identify things you can do to help control your bladder.
	Ask your physiotherapist about pelvic floor muscle training. It can strengthen muscles to support your bladder. Exercises can be done 2–3 times a week. Start with three sets of 10 contractions. Make sure to relax between each set.
Risk of falls	**Get rid of loose rugs and clutter, clean spills, and install brighter lights and railings in your bathroom and around the home**. Changes to your home can lower your risk of falls.
	Make sure you have form-fitting shoes that do not slip. The right shoes can help lower your risk of falls.
	If your medication makes you dizzy or sleepy, consult your doctor for possible alternatives.
Oral health	**Practice daily oral hygiene** using a toothbrush and fluoride-containing toothpaste if you have teeth. Brush your teeth twice a day. Make sure you brush your teeth before going to bed. If you do not have teeth, use a sponge swab or gauze to clean the oral cavity. If you wear dentures, clean them once a day.
	Clean your tongue as part of your daily oral hygiene. Lightly brush your tongue or use a tongue scraper (twice a day).
	Maintain a clean environment in the oral cavity. Improve saliva secretion using proper hydration, increasing the humidity at night, avoiding oral care products that cause irritation, avoiding crunchy/hard foods and eating sugar-free chewing gums/candy.
	Maintain a healthy diet and avoid sugar- added food (e.g. fizzy drinks, fruit juices and juice drinks, liquid and powder concentrates, flavored water, energy and sports drinks, ready-to-drink tea and coffee and flavored milk drinks).

	Maintain the muscles around your mouth by chewing, practicing songs alone or saying fast words.
	Quit smoking. Smoking increases your risk of gum disease. Smokers are also likely to be more vulnerable to COVID-19 because smoking can affect lung capacity. The act of smoking also increases the possibility of transmission of virus from hand to mouth.
Social care and support	**Try rehabilitation (or life support) programmes** if you have difficulty dressing, feeding, bathing and grooming, and other activities of daily living. Join online rehabilitation programmes or explore ways to connect with other people online. In addition to a one-way recorded videos, join an interactive online rehabilitation system that allows for conversations with physiotherapists and occupational therapists.
	Find out what kinds of social support is available in your community. Social support includes support for your living condition, financial security, loneliness, access to community facilities and public services, and support against elder abuse. Talk to your health-care professional or social worker.
	Talk to your family, friends, social workers, caregivers, health-care professionals about what is important to you by explaining your life, priorities and preferences. Find possible ways to increase your social participation.
	Think about what matters most to you regarding care and support, including medical treatment, in case something happens to you and you are unable to make your own decisions. If you want to develop an advanced care plan to record your treatment and care wishes, you can talk about it with your health-care worker or someone that you trust. You can write down your wishes and share them with people you trust.
	If you are a victim of elder abuse, please contact a social work, adult protection or law enforcement systems. Tell someone you trust and report this to the relevant authorities. You can also seek support from dedicated helplines that may be available in your country (including how to access emergency services), or seek out local services for victims.

End of the Course. Way to Go!!