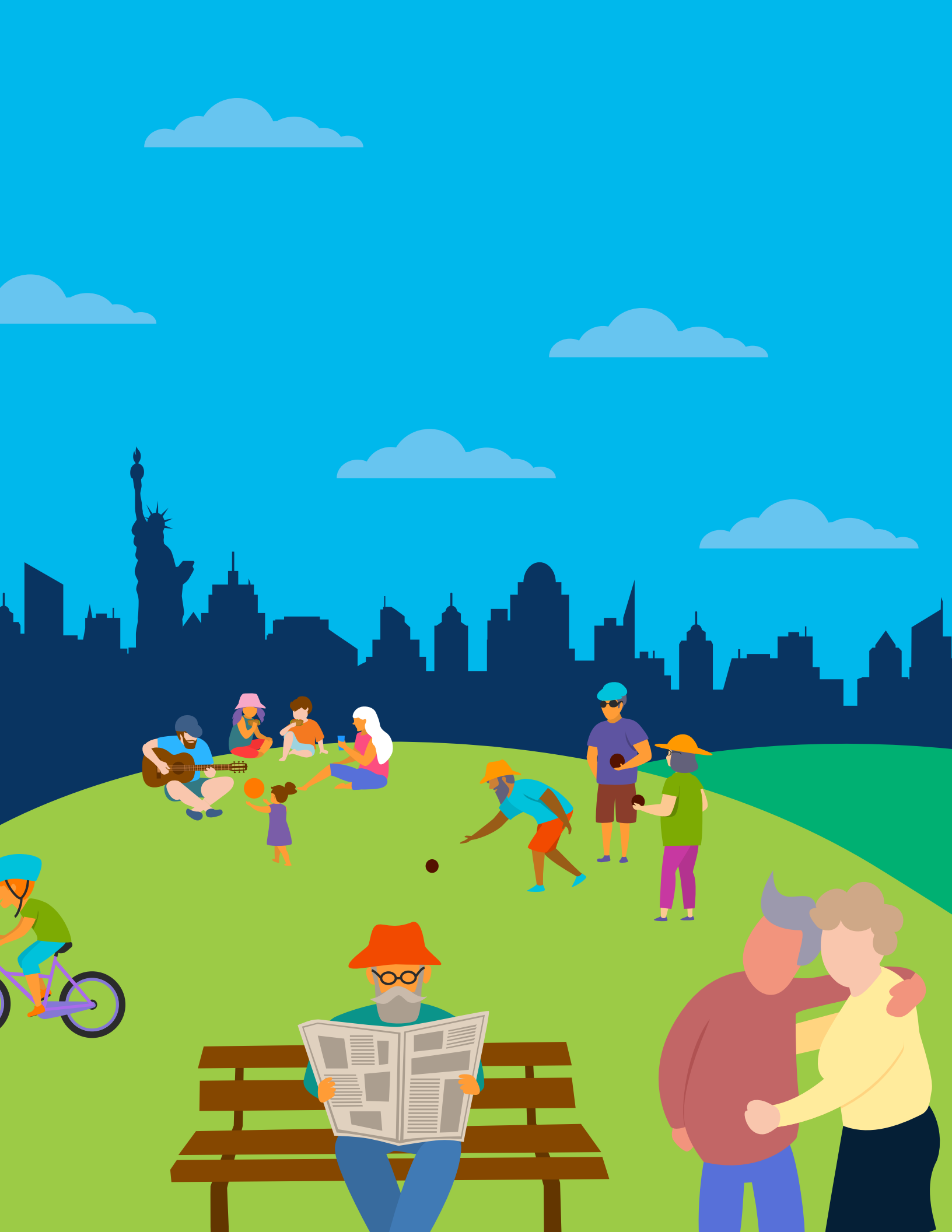


Health of Older Adults in New York City







Letter from the Commissioner

Dear New Yorker,

We are pleased to present “Health of Older Adults in New York City,” the New York City Health Department’s comprehensive summary of the health of our city’s older adults.

Older New Yorkers — those ages 65 and older — currently make up about 13% of our city’s residents. New Yorkers are living longer than ever, with an impressive life expectancy of 81.2 years, 2.5 years longer than the national average. The number of older New Yorkers is projected to grow by over 41%, from 1,002,000 in 2010 to 1,410,000 by 2040.

All New Yorkers deserve a fair chance to live not only a long life but also a healthy and vibrant one. Unfortunately, not all New Yorkers reach old age, and for those who do, opportunities to live the healthiest life possible are frequently lacking. This results in deeply rooted health inequities, or avoidable and unjust differences in health outcomes. Additionally, many older New Yorkers live in environments that harm rather than protect their safety, and promote social isolation rather than social connection.

The Health Department, together with many partners and City agencies, is committed to making New York a city that supports healthy aging for all individuals in all communities. We hope the data in this report support work across the city to fill unmet needs, reduce disparities and create a healthier city for older adults.

A handwritten signature in black ink that reads "Oxiris Barbot MD". The signature is fluid and cursive.

Oxiris Barbot, MD

What is healthy aging?

Healthy aging is more than growing older without having chronic health problems or diseases. For older adults, healthy aging includes being able to meet basic needs, to learn, to be mobile, to build and maintain relationships, and to contribute to society.¹ For most people, this means being able to remain independent and choose where and how they age. Every New Yorker deserves a healthy aging experience.

This report defines older adults as New Yorkers ages 65 and older; this marks the time when many working adults retire and become eligible for benefits such as Medicare. Although this threshold is used throughout the report, it is important to remember that health outcomes reported reflect cumulative circumstances and experiences throughout a person's life. Racism, discrimination, gender oppression, ageism and other injustices can negatively affect health and lead to early death or poor quality of life. Understanding what promotes and harms health before age 65 is especially important for communities who have been marginalized, including communities of color, LGBTQ communities, people who have been incarcerated or justice-involved, people who have experienced homelessness, people living with HIV, and people with disabilities. Individuals from these groups often experience serious health challenges at ages younger than 65.

For people who live to older ages, the cumulative effects of oppression result in differences in health by race and ethnicity. In New York City (NYC), a long history of residential segregation and disinvestment in neighborhoods of color has left many older New Yorkers of color without the supports needed for a healthy aging experience, including economic security, affordable housing, social support, safety, accessible public transportation and health care. Similarly, adults born outside the United States are more likely to live in neighborhoods with high poverty, and less likely to have access to medical care. However, some age-related challenges impact all older adults, including higher risk of social isolation, limitations in routine daily activities and economic challenges.²

Older New Yorkers are a vibrant part of the city, contributing wisdom, experience and civic engagement that strengthen our communities. Given the specific contributions and needs of older adults, it is important to understand the unique health characteristics of this population. This report shares data on the health and well-being of older New Yorkers and supports efforts to make NYC a place where everyone has the opportunity to age with health and dignity.



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About this report

Unless otherwise noted, all data in this report describe New Yorkers ages 65 and older. Indicators presented were chosen to reflect well-being or factors that affect well-being, the burden of short- and long-term health conditions, and access to health care among older adults. This report also identifies disparities within the older adult population by presenting data by race and ethnicity, country of birth (U.S.-born vs. born outside the U.S.), age group, sex and household poverty level. For select indicators, we also examine differences by household type, borough or neighborhood poverty level. In the text, we prioritize differences by race and ethnicity and country of birth given the magnitude of these inequities.

Note: For the purpose of this publication, Latino includes people of Hispanic, Latino or Spanish origin regardless of reported race. White, Black and Asian/Pacific Islander exclude those who identify as Latino. Not all indicators in this report present all of the data by each of the different strata (e.g., race and ethnicity, country of birth). The text highlights statistically significant findings ($p < 0.05$), but does not include all results. Appendix tables contain additional data that are not included in the main report. See appendix tables with technical notes for data source descriptions and report limitations. Data in this report may differ from other published sources.



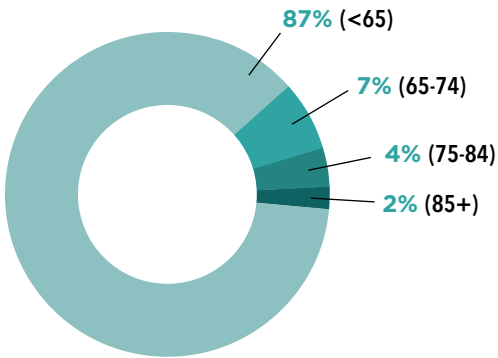
Appendix



Older Adults in New York City

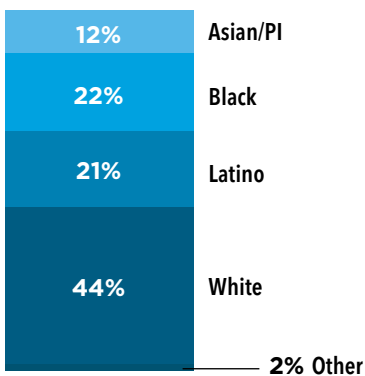
There are 1.1 million older adults in NYC, making up 13% of the population.

NYC residents by age group (years)



Race and ethnicity

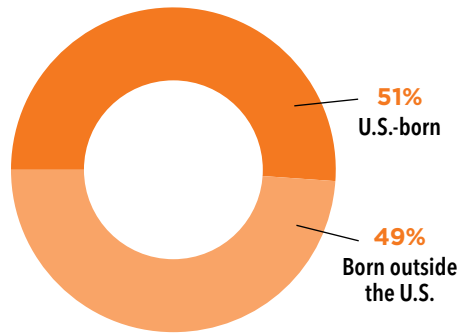
Forty-four percent of older New Yorkers identify as White, 22% as Black, 21% as Latino and 12% as Asian/Pacific Islander. Two percent identify as mixed race or another race or ethnicity, which is referred to as Other.



Note: Percentages may not sum to 100% due to rounding. For the purpose of this publication, Latino includes people of Hispanic, Latino or Spanish origin regardless of reported race. White, Black and Asian/Pacific Islander (PI) exclude those who identify as Latino.

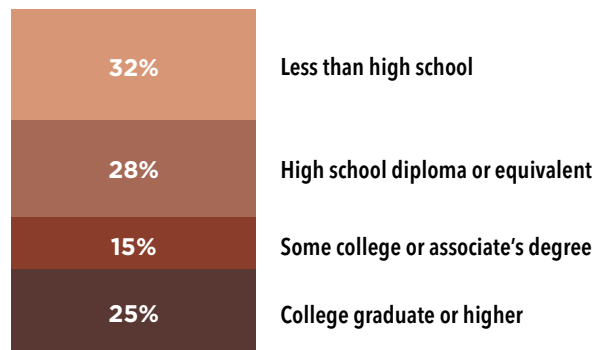
Country of birth (percent of adults 65 and older)

Nearly half of older New Yorkers were born outside the U.S. These individuals come from 130 different countries and speak over 90 languages. Among older adults born outside the U.S., the most common countries of birth are China (12%) and the Dominican Republic (11%).



Highest level of education achieved

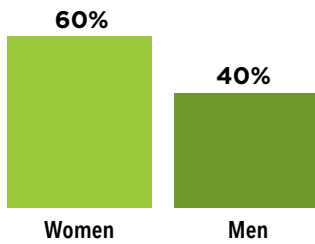
Higher education levels are linked to better health outcomes. Almost 30% of older adults in NYC have completed high school or earned a general equivalency diploma (GED) as the highest level of educational attainment. One-quarter of older New Yorkers have completed bachelor's or advanced degrees.



Integrated Public Use Microdata Series, U.S. Census American Community Survey, 2012-2016

Gender identity

Forty percent of older New Yorkers identify as men and 60% as women. Less than 1%* of older New Yorkers identify as transgender men or women, an estimated 1,000 older adults.



Sexual orientation

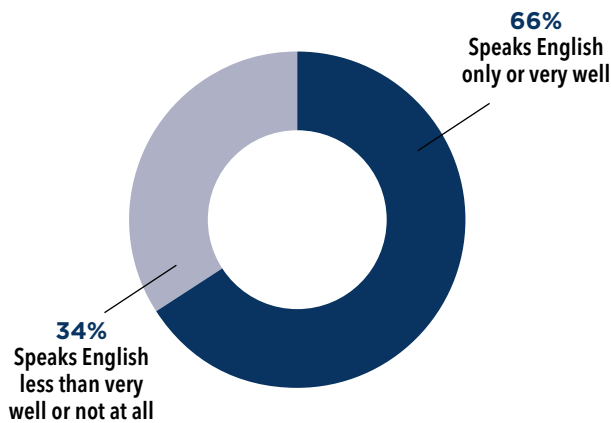


of older adults in NYC identify as gay, lesbian or bisexual.

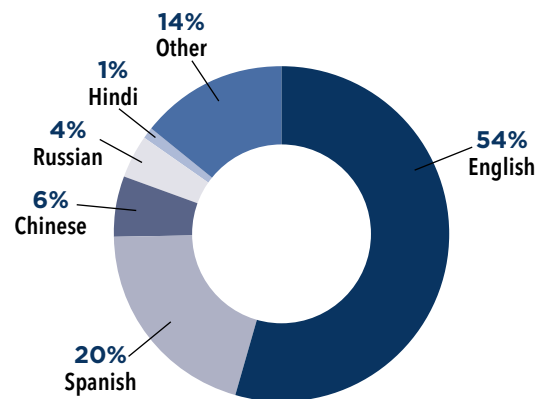
English proficiency and language spoken at home (percent of adults 65 and older)

Two-thirds of older adults speak English very well. Fifty-four percent of older adults in NYC speak English at home, 20% speak Spanish and 6% speak Chinese.

English proficiency among older adults



Language spoken at home among older adults

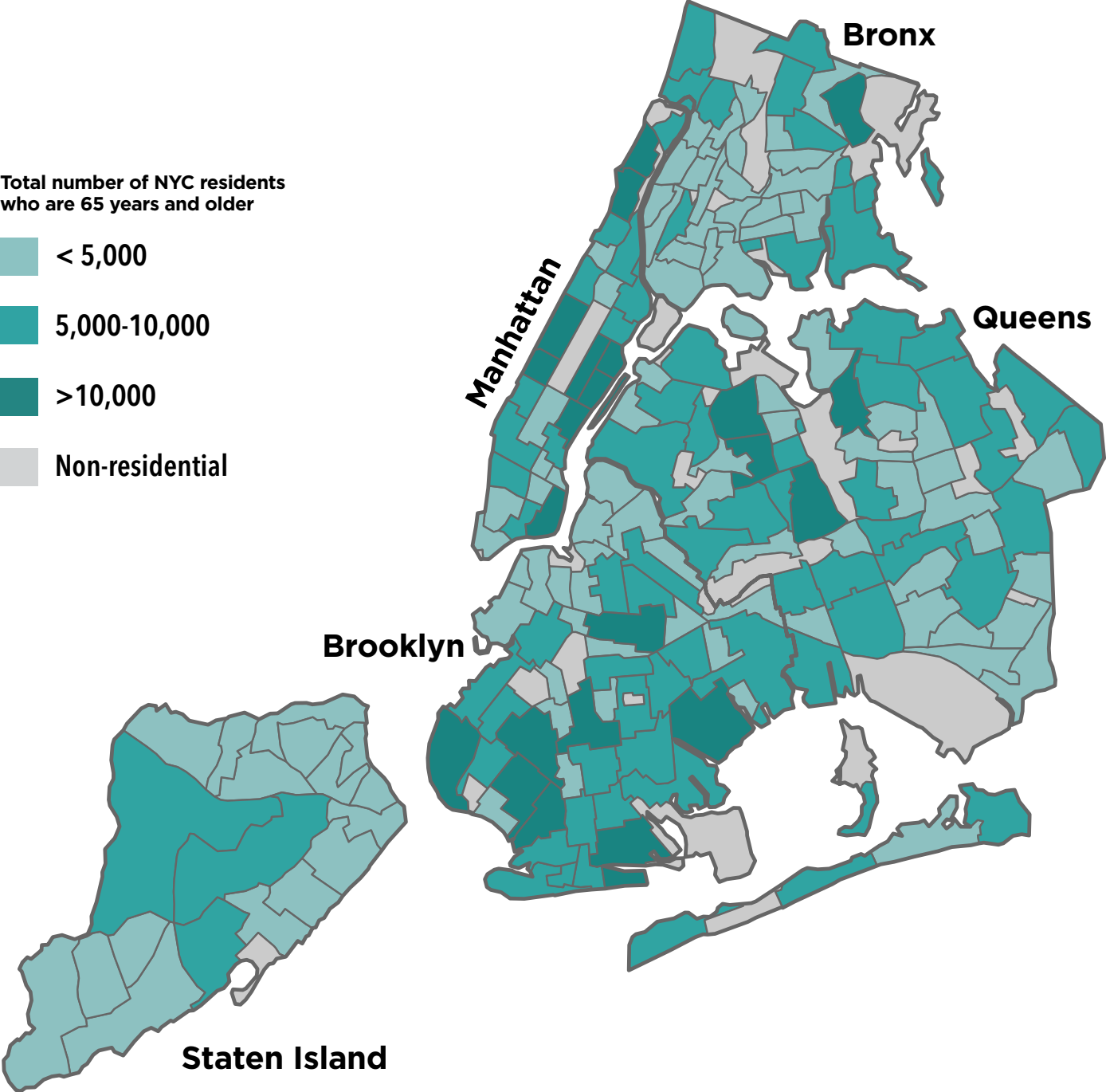


Additional data on the demographics of older adults in New York City can be found in the NYC Department for the Aging (DFTA) [Profile of Older New Yorkers](#) (note: the definition of older adults is 60 and older in the DFTA report), [New York Academy of Medicine IMAGE: NYC Interactive Map of Aging](#) and [NYC Department of City Planning's data portal](#).

*Interpret estimate with caution due to small number of events.
Note: Percentages may not sum to 100% due to rounding.

NYC DOHMH Community Health Survey, 2017 (Gender identity; Sexual orientation) Integrated Public Use Microdata Series, U.S. Census American Community Survey, 2012-2016 (English proficiency; Language spoken at home)

Older adults by neighborhood[†]



[†] Neighborhood tabulation areas are aggregations of census tracts that represent a minimum population of 15,000 residents and were created to project populations at a small area level for PlaNYC. For more information, visit nyc.gov/planning and search "neighborhood tabulation areas."

NYC Department of City Planning, American Community Survey, 2012- 2016



Social Environment and Support

Older adults live in different settings, including in their own residence, with family or in independent living communities, nursing homes or assisted living facilities. For older adults, their living situation, including the makeup of their household and their financial burdens, can affect their well-being and physical, mental and cognitive health.^{3,4}

Economic stress

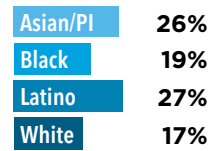
Structural barriers such as lack of access to education, good jobs and the ability to build wealth create income inequality and affect the economic security of some older adults. As a result, some older adults struggle to pay for basic needs such as food, transportation and medicine. Increasing reliance on income from work and government assistance programs (e.g., social security) instead of on retirement savings also contributes to economic insecurity.⁵ One in five older New Yorkers lives below the poverty level. Older adults who identify as Latino (27%) or Asian/Pacific Islander (26%) are more likely to live below the poverty level compared with those who identify as Black (19%) or White (17%).

Older adults who live below the federal poverty level (percent of adults 65 and older)

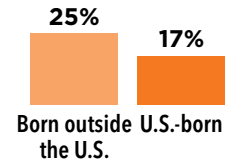
65+ overall

21%

By race and ethnicity



By country of birth



Living alone

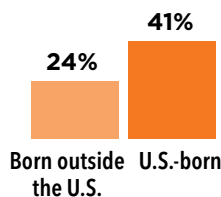
Living alone can increase the likelihood of social isolation, which has been associated with increased risk of mortality and cognitive decline.⁶ About one in three older adults in NYC lives alone. The likelihood of living alone increases with age. Asian/Pacific Islander older adults (14%) are the least likely to live alone compared with Latino (30%), Black (34%) and White older adults (38%). Black and Latino older adults are less likely than White older adults to live alone. Older adults born outside the U.S. (24%) are less likely to live alone than those born in the U.S. (41%).

Older adults who live alone (percent of adults 65 and older)

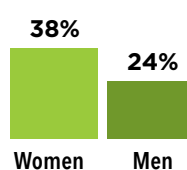
65+ overall

32%

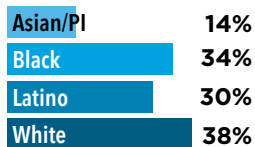
By country of birth



By sex

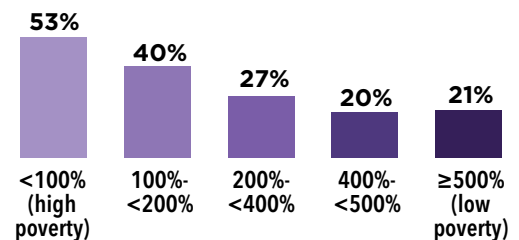


By race and ethnicity



By household poverty

Note: Household poverty is defined as income as a percentage of the federal poverty level.



Living in a nursing home

Three percent of older adults in NYC live in a nursing home.

American Community Survey as augmented by NYC Opportunity, 2016 (Economic stress) Integrated Public Use Microdata Series, U.S. Census American Community Survey, 2012-2016 (Living alone); U.S. Census Summary File 1, 2010 (Living in nursing home)

Living in a multigenerational household

A multigenerational household has two or more generations, such as an adult child or grandchild, living together. One in three older adults in NYC lives in a multigenerational household. Asian/Pacific Islander (50%), Black (44%) and Latino older adults (43%) are more likely to live in multigenerational households than White older adults (19%).

Older adults who live in a household with two or more generations (percent of adults 65 and older)

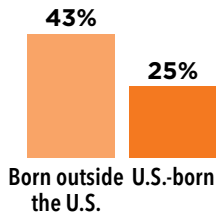
65+ overall

33%

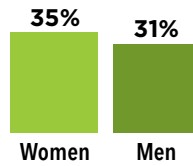
By race and ethnicity

Asian/PI	50%
Black	44%
Latino	43%
White	19%

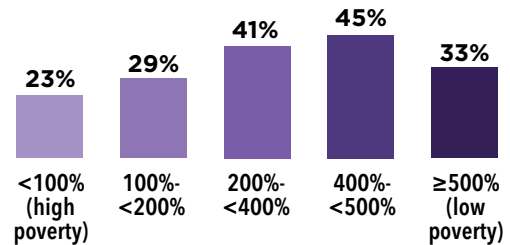
By country of birth



By sex



By household poverty



Note: Household poverty is defined as income as a percentage of the federal poverty level.

Responsibility for grandchildren under 18 years

The increase in life expectancy of older adults has allowed for more interaction with younger generations.⁷ Twenty percent of older New Yorkers who have grandchildren living in the same home report being responsible for most of the basic needs of those under the age of 18. Black (23%) and Latino older adults (22%) are more likely to be responsible for grandchildren than White older adults (16%). Older adults born in the U.S. (25%) are more likely than those who are born outside the U.S. to be responsible for grandchildren (18%).

Older adults who take care of their grandchild's basic needs (percent of adults 65 and older who live with a grandchild)

65+ overall

20%

By age group (years)



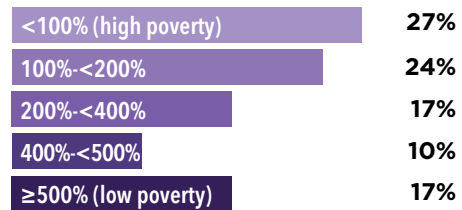
By race and ethnicity



By country of birth



By household poverty



Note: Household poverty is defined as income as a percentage of the federal poverty level.

Caregiving

Caregiving is the act of providing assistance to those who need help with daily activities, such as meal preparation, bathing, dressing and keeping track of medications. In many cases, long-term caregiving can be stressful and affect the health and well-being of the caregiver.⁸ Seventeen percent of older adults in NYC report that they provided regular care or assistance in the past month to a friend or family member who has a health problem, long-term illness or disability. In a 2017 survey, the NYC Department for the Aging (DFTA) reported that caregivers of older adults served by DFTA and AARP were mostly White or Black women, ages 55 or older.⁸

17%
of older adults in NYC report being a caregiver.

Integrated Public Use Microdata Series, U.S. Census American Community Survey, 2012-2016 (Living in a multigenerational household; Responsibility for grandchildren under 18 years); New York State Department of Health, Behavioral Risk Factor Surveillance System, 2014-2016 (Caregiving)

Social support

Having emotional support and close social ties are associated with better overall health among older adults.⁹ Over half (54%) of older adults report getting together with at least one friend or family member in the past week.



Over half of older adults report getting together with at least one friend or family member in the past week.

History of incarceration or community supervision

Being incarcerated is associated with early aging.¹⁰ Adults with a history of incarceration experience chronic diseases and disability at earlier ages and at higher rates than adults without a history of incarceration. Eight percent of NYC adults 50 and older have ever spent time in a correctional facility, jail, prison or detention center, or have ever been under probation or parole supervision. Black New Yorkers experience disproportionately high rates of policing (i.e., are more often investigated, questioned or arrested by police) compared with White New Yorkers.¹¹ In NYC, Black adults ages 50 and older (13%) are more likely to have ever been involved in the criminal justice system than White adults ages 50 and older (6%). Adults ages 50 and older who were born in the U.S. (11%) are more likely to have ever been involved in the criminal justice system than those born outside the U.S. (4%). Men ages 50 and older (14%) are more likely to have a history of criminal justice involvement than women (3%).

Adults ages 50 and older with criminal justice involvement (percent of adults 50 and older)

50+ overall

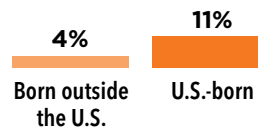
8%

By race and ethnicity



*Interpret estimate with caution due to small sample size.

By country of birth



By sex



Older adults among the incarcerated population

In NYC in 2018, adults ages 50 years and older represented 17% of the average daily jail incarcerated population.

Food security

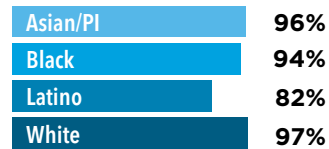
Ninety-three percent of older New Yorkers report having enough food to eat. White older adults (97%) are more likely than Black (94%) and Latino older adults (82%) to report having enough food to eat. Older adults born in the U.S. (95%) are more likely than older adults born outside the U.S. (90%) to report having enough food to eat.

Older adults who report having enough food (percent of adults 65 and older)

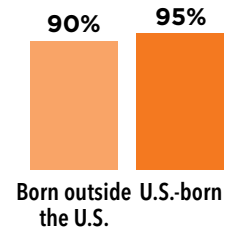
65+ overall

93%

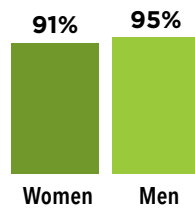
By race and ethnicity



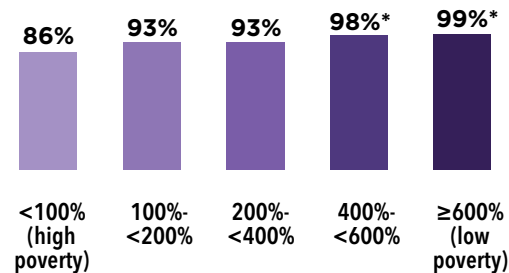
By country of birth



By sex



By household poverty



*Interpret estimate with caution due to small sample size.

Note: Household poverty is defined as income as a percentage of the federal poverty level.

Elder abuse

Abuse of older adults can take many forms, including physical, sexual, emotional or financial abuse and neglect. In all forms, a person in a trusted relationship with the older adult — including a partner, family member or caregiver — intends to harm an older adult through both action and inaction.¹² Abuse often goes unreported; data from a recent survey conducted with older New Yorkers statewide found that in NYC, 92.2 per 1,000 surveyed adults ages 60 and older experienced elder abuse in the past year.¹³



Housing and Neighborhoods

Where we live affects our ability to lead healthy lives. All New Yorkers, including older adults, should have the opportunity to live in environments that support health through physical activity and participation in community activities. In addition, communities can support the health of older adults by providing safe, stable housing and pedestrian-friendly streets.^{4,14}

Home ownership

Fewer than half of older New Yorkers live in homes owned by someone in the household. Latino (26%), Black (45%) and Asian/Pacific Islander older adults (52%) are less likely to live in a residence that is owned compared with White older adults (60%). An estimated 110,000 older New Yorkers live in public housing.¹⁵

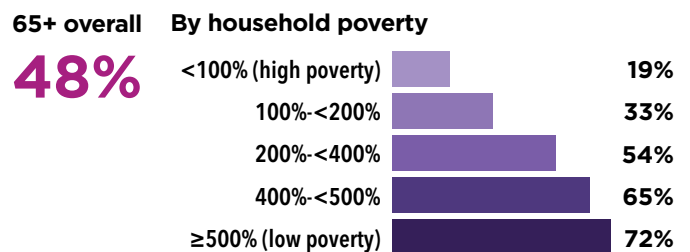
Households without functioning AC

Extreme heat kills an average of more than 100 New Yorkers each year.¹⁶ Most heat-related deaths occur when people are inside homes without air-conditioning (AC). AC use is the most effective way to prevent heat illness. However, not all older adults have a functioning AC. Almost one quarter of public housing households with older New Yorkers do not have AC, compared with 9% of privately owned households with older adults.

Households using supplemental heat

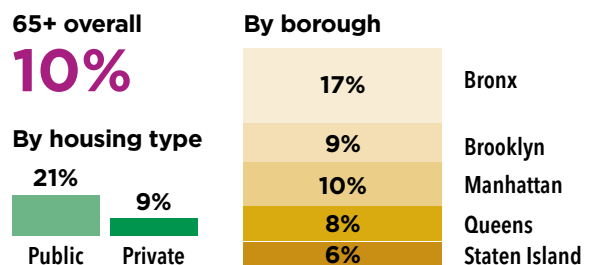
New Yorkers whose building heating systems do not provide enough heat may use other heat sources to stay warm. Using additional heat sources such as kitchen stoves, charcoal grills or portable heaters increases the risk of fire and carbon monoxide poisoning.^{17,18} More than a quarter of public housing households with older New Yorkers (28%) report that they need to use other heat sources to stay warm compared with privately owned households with older adults (12%).

Older adults who live in a residence owned by someone in the household (percent of adults 65 and older)

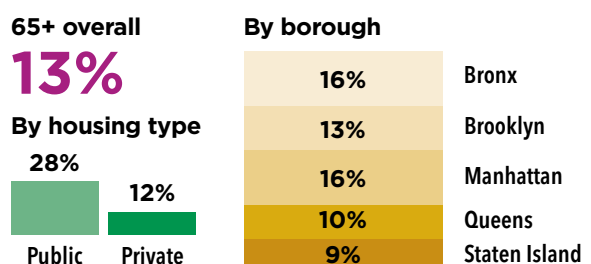


Note: Household poverty is defined as income as a percentage of the federal poverty level.

Households with older adult residents without a functioning AC (percent of households with a resident 65 and older)



Households with older adult residents who use supplemental heat (percent of households with a resident 65 and older)



Integrated Public Use Microdata Series, U.S. Census American Community Survey, 2012-2016 (Home ownership); NYC Housing and Vacancy Survey, 2017 (Households without functioning AC; Households using supplemental heat)

Fall-related injuries and deaths

Falls are a major threat to older adults' health and independence.¹⁹ In NYC in 2016, falls among older adults led to 289 deaths, 30,492 emergency department visits and 16,661 hospital stays. Older women are more likely than older men to visit the emergency department or be hospitalized due to a fall. However, men are more likely than women to die because of a fall.

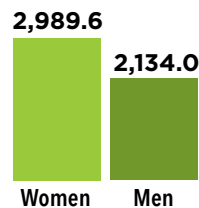
Fall-related emergency department visits among older adults

(rate per 100,000 adults ages 65 and older)

65+ overall

2,639.8
per 100,000

By sex



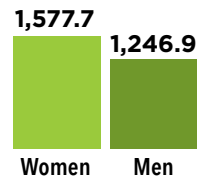
Fall-related hospitalizations among older adults

(rate per 100,000 adults ages 65 and older)

65+ overall

1,442.4
per 100,000

By sex



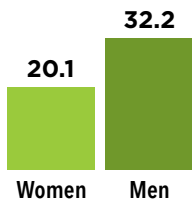
Fall-related deaths among older adults

(rate per 100,000 adults ages 65 and older)

65+ overall

25.0
per 100,000

By sex



By race and ethnicity



Pedestrian injuries and deaths

Pedestrian injuries are those sustained from a crash with a motorized vehicle. Older adults are more likely to die from pedestrian injuries than any other age group in NYC.²⁰ In 2016, older men (55.3 per 100,000 population) were more likely to visit the emergency department due to a pedestrian injury than older women (43.8 per 100,000 population). Older men and women were equally likely to be hospitalized due to a pedestrian injury (20.7 per 100,000 population).

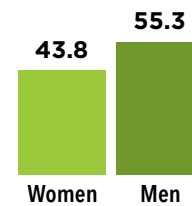
Pedestrian injury emergency department visits among older adults

(rate per 100,000 adults ages 65 and older)

65+ overall

48.5
per 100,000

By sex



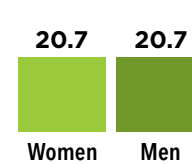
Pedestrian injury hospitalizations among older adults

(rate per 100,000 adults ages 65 and older)

65+ overall

20.7
per 100,000

By sex



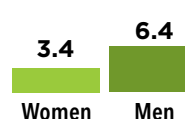
Pedestrian deaths among older adults

(rate per 100,000 adults ages 65 and older)

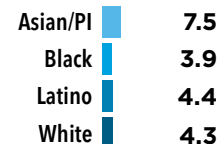
65+ overall

4.6
per 100,000

By sex



By race and ethnicity



New York State Department of Health, Statewide Planning and Research Cooperative System, 2016 (Fall-related emergency department visits; Fall-related hospitalizations; Pedestrian emergency department visits; Pedestrian hospitalizations); NYC DOHMH Bureau of Vital Statistics, 2016 (Fall-related deaths; Pedestrian deaths)



Health Behaviors and Risks

As people age, they may need support to maintain a consistently healthy lifestyle. The City of New York, in partnership with New York Academy of Medicine and City Council, started the **Age-Friendly NYC** initiative to promote healthy lifestyles, including safe and accessible public spaces, transportation options and health and supportive services.

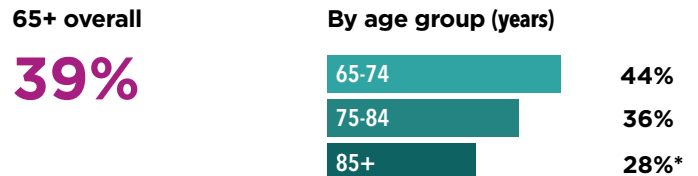
Physical activity

Adults are encouraged to engage in at least 150 minutes of moderate exercise per week or at least 75 minutes of vigorous exercise per week or some combination of these. Exercise may include aerobic activities, muscle-strengthening exercise, balance training or a combination thereof. The benefits are many, including reduced risk of injury from falls and the preservation of bone, joint and muscle health.²¹ Two in five older adults report they get the recommended 150 minutes of physical activity per week and almost half get at least 90 minutes of moderate physical activity per week, which has been shown to be beneficial for people with high blood pressure. Frequency of physical activity decreases with age.



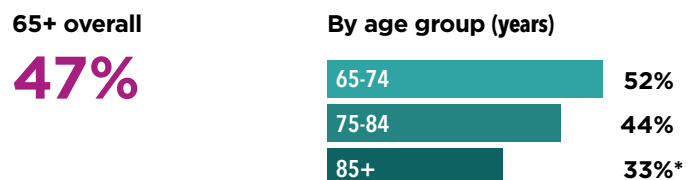
Two in five older adults report they get the recommended 150 minutes of physical activity per week.

Older adults reporting 150 minutes or more of moderate exercise per week (percent of adults 65 and older)



*Interpret estimate with caution due to small sample size.

Older adults reporting 90 minutes or more of moderate exercise per week (percent of adults 65 and older)



*Interpret estimate with caution due to small sample size.

Alcohol use

Older adults who use alcohol are at increased risk for falls, car crashes, worsening of chronic conditions or medication interactions.²² Binge drinking is defined as five or more drinks on one occasion for men and four or more drinks on one occasion for women. Heavy drinking is defined as consuming an average of more than two drinks per day for men and more than one drink per day for women. Among older adults in NYC, Black older adults (2%*) are less likely to binge drink compared with White older adults (4%). Five percent of older adults either binge drink or drink heavily.

Older adults who binge drink (percent of adults 65 and older)

65+ overall

3%

By race and ethnicity

Black		2%*
Latino		6%
White		4%

By sex

2%	5%
Women	Men

*Interpret estimate with caution due to small sample size.

Smoking

Quitting smoking at any age can improve health and lower the risk of cancer and heart and lung diseases. About four in 10 older adults have ever smoked cigarettes in their life, with older men (57%) being more likely to have ever smoked than older women (35%). While 8% of older adults currently smoke, it is still important to support quit attempts and to refer adults who are eligible for lung cancer screening.²³

Older adults who have ever smoked
(percent of adults 65 and older)

65+ overall
44%

By sex

35%	57%
Women	Men

Older adults who currently smoke
(percent of adults 65 and older)

65+ overall
8%

By sex

7%	9%
Women	Men



General Health and Functional Abilities

Self-reported general health questions measure how people rate their own physical and mental health. Low self-reported health and limited functional abilities are associated with poor health outcomes, lower quality of life and early death.^{24,25} Functional abilities, or the ability to perform daily activities such as bathing, dressing and moving around in and outside of the home without assistance, are important indicators of whether a person can safely live independently and participate in the community.

Self-reported health

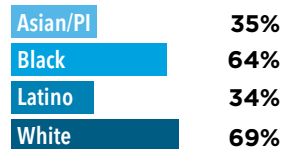
More than half of older New Yorkers rate their own health as “excellent,” “very good” or “good.” One-third of Latino and Asian/Pacific Islander older adults rate their health as “good” to “excellent.” About two-thirds of White and Black older adults rate their health as “good” to “excellent.”

Older adults who report general health as “excellent,” “very good” or “good” (percent of adults 65 and older)

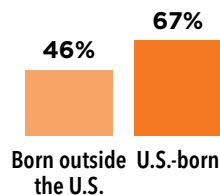
65+ overall

57%

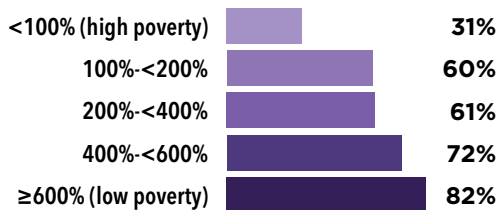
By race and ethnicity



By country of birth



By household poverty



Note: Household poverty is defined as income as a percentage of the federal poverty level.



Nearly **three-quarters** of older New Yorkers are able to walk and climb stairs without a struggle.

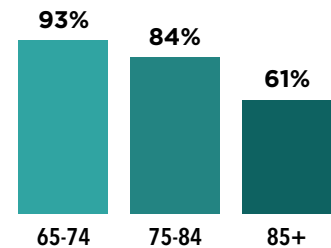
Activities of daily living

Almost nine in 10 older adult New Yorkers are able to bathe and dress themselves without difficulty. Only six in 10 adults ages 85 and older can bathe and dress themselves without difficulty. Nearly three-quarters of older New Yorkers are able to walk and climb stairs without a struggle. Ability decreases with increasing age – adults ages 85 and older are half as likely as those ages 65 to 74 to be able to walk and climb stairs.

Older adults who bathe and dress themselves without difficulty (percent of adults by age group)

65+ overall
86%

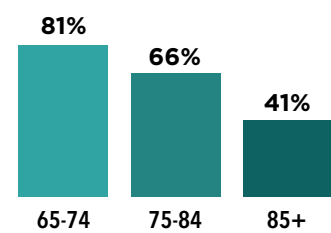
By age group (years)



Older adults who walk and climb stairs without a struggle (percent of adults by age group)

65+ overall
71%

By age group (years)



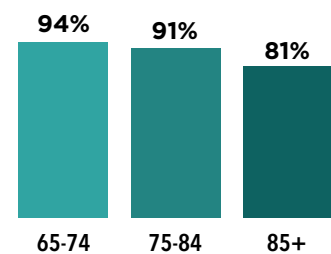
Vision and hearing

Nine in 10 older adults, including those who wear glasses, are able to see without serious difficulty. Similarly, nine in 10 older adults are able to hear without difficulty. The ability to see or hear without difficulty decreases with age.

Older adults who can see without difficulty (percent of adults by age group)

65+ overall
92%

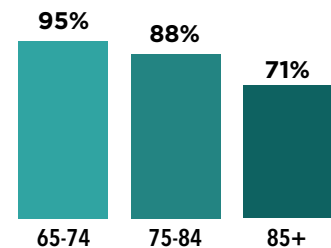
By age group (years)



Older adults who can hear without difficulty (percent of adults by age group)

65+ overall
89%

By age group (years)





Dental Health

Older adults are at increased risk for caries (tooth decay) and periodontal (gum) disease because of decreased saliva production and other age-related changes in the teeth and gums.²⁶ In turn, unhealthy teeth and gums can make it difficult or painful to eat or talk and can increase the risk of serious infections and poor nutrition. In the U.S., 96% of older adults have experienced tooth decay in their lifetime and 19% of older adults have untreated tooth decay.²⁷ Sixty percent of older adults in the U.S. have gum disease.²⁸ Regular dental examinations are important to prevent and address problems with the teeth and gums.

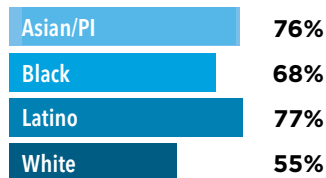
Dental insurance coverage

Older adults may have trouble paying for dental services because traditional Medicare coverage does not include routine dental care. Sixty-four percent of older New Yorkers have dental insurance. White older adults (55%) are less likely than Black (68%), Latino (77%) and Asian/Pacific Islander older adults (76%) to have dental insurance. Older adults are less likely to have dental insurance if they are U.S.-born (58%) than born outside the U.S. (72%).

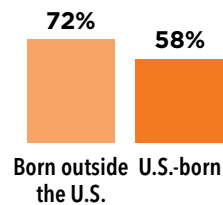
Older adults with dental insurance (percent of adults 65 and older)

65+ overall
64%

By race and ethnicity



By country of birth



Edentulism

Edentulism, or having lost six or more teeth, occurs among four in 10 older New Yorkers. Edentulism can affect the ability to speak and chew and can damage a person's self-image. More than half of Black older adults have lost six or more teeth. Approximately, one-third of White and Latino older adults have lost six or more teeth.

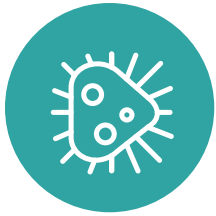
Older adults who lost six or more teeth (percent of adults 65 and older)

65+ overall
42%

By race and ethnicity



NYC DOHMH Community Health Survey, 2015 (Dental insurance coverage); New York State Department of Health, Behavioral Risk Factor Surveillance System, 2012, 2014, 2016 (Edentulism)



Communicable Diseases

Communicable diseases are illnesses spread from one person to another, most often through contact with blood and bodily fluids, breathing in germs or being bitten by an insect. Older adults are at higher risk for some communicable diseases partly because of age-related changes in the immune system and the effects of chronic diseases like chronic obstructive pulmonary disease, diabetes and heart disease.²⁹

Influenza and pneumonia

Older adults have a higher risk of getting influenza (flu) and pneumonia than adults under the age of 65, and they are more likely to suffer serious complications or die from these diseases. In 2016, 1,650 older adults died from flu or pneumonia (142.8 per 100,000 adults ages 65 and older). Vaccines are the best way to prevent flu and pneumonia. Older adults should receive pneumococcal vaccines when they reach age 65 with a series of two shots one year apart.³⁰ Sixty-one percent of older New Yorkers have received the pneumococcal vaccine. White older adults (65%) are more likely than Black older adults (55%) to have been vaccinated for pneumonia.

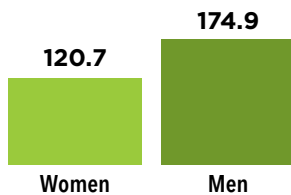
All adults should get a flu shot every year. Two-thirds of older New Yorkers received a flu shot in 2017 with Latino older adults (75%) having a higher flu vaccination rate than White (66%) and Black older adults (55%).

Deaths due to flu or pneumonia (rate per 100,000 adults ages 65 and older)

65+ overall

142.8 per 100,000

By sex



Older adults who received a flu shot in the past 12 months (percent of adults 65 and older)

65+ overall

66%

By race and ethnicity



Older adults who ever received a pneumococcal vaccine (percent of adults 65 and older)

65+ overall

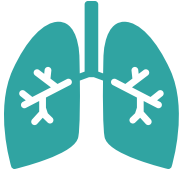
61%

By race and ethnicity



*Interpret estimate with caution due to small sample size.

NYC DOHMH Community Health Survey, 2017 (Flu shot; Pneumonia shot); NYC DOHMH Bureau of Vital Statistics, 2016 (Influenza and pneumonia deaths)



More than half of Legionnaires' disease cases in New York City occur among older adults.

Legionnaires' disease

Legionnaires' disease is a serious form of pneumonia caused by *Legionella* bacteria. *Legionella* grows naturally in freshwater environments like lakes. It can become a health concern when it grows in human-made water systems like spas, fountains and cooling towers.³¹ More than half of Legionnaires' disease cases in NYC occur among older adults.

Older adults diagnosed with Legionnaires' disease (number of adults 65 and older)

65+ overall
223

By race and ethnicity



Note: Among adults 65 and older, 16 were classified as other or unknown race or ethnicity.

24% of tuberculosis cases diagnosed in 2017 occurred among older New Yorkers.

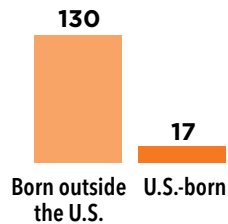
Tuberculosis

Tuberculosis (TB) is a disease caused by the bacterium *Mycobacterium tuberculosis*. TB is spread from person-to-person through the air. With proper diagnosis and treatment, TB can be prevented and cured. In 2017, there were 147 TB cases among New Yorkers ages 65 and older. The most common countries of birth among these cases are China, the U.S. and India.

Older adults diagnosed with Tuberculosis (number of TB cases 65 and older)

65+ overall
147

By country of birth

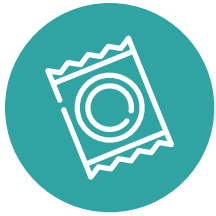


19% of people reported with hepatitis C are older adults.

Hepatitis C

Hepatitis C is caused by a virus that is transmitted through blood. The virus infects the liver and can cause severe liver damage if untreated. Most people with hepatitis C can be cured by taking antiviral medication. New York State mandates that health care providers offer one-time testing for hepatitis C to all people born from 1945 to 1965.³² About one in five people reported with hepatitis C are older adults.

NYC DOHMH Bureau of Communicable Disease, 2017 (Legionnaires' disease; Hepatitis C); NYC DOHMH Bureau of Tuberculosis Control, 2017 (Tuberculosis)



Sexual Health

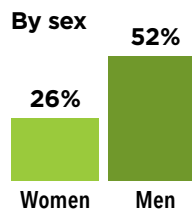
Intimacy and sexual expression are part of healthy aging. Sexually active older adults remain at risk for sexually transmitted infections and should practice safer sex. Health care providers and others who provide services to older adults should assume that older patients are sexually active and should ask all patients, including older adults, about their sexual health.³³

Sexual activity

About one-third of older New Yorkers report having sex (oral, anal or vaginal) with one or more people in the past year; older men (52%) are twice as likely as older women (26%) to report being sexually active.

Older adults who report one or more sexual partners in the past year (percent of adults 65 and older)

65+ overall
37%

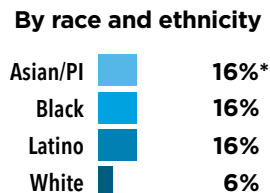


Condom use

Ten percent of sexually active older adults report using a condom the last time they had sex. White older adults (6%) are less likely to report using a condom than Black (16%) or Latino older adults (16%).

Older adults who report using a condom the last time they had sex (percent of adults 65 and older)

65+ overall
10%



*Interpret estimate with caution due to small sample size.

HIV testing

One-third of older New Yorkers report having been tested for HIV at least once in their lives. Latino (64%) and Black older adults (44%) are more likely and Asian/Pacific Islander older adults (13%) are less likely than White older adults (21%) to have ever had an HIV test.

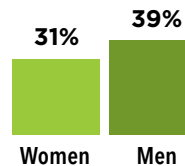
Older adults who report being tested for HIV at least once in their lives (percent of adults 65 and older)

65+ overall
34%

By age group (years)



By sex



By race and ethnicity



People living with HIV/AIDS

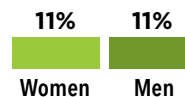
Among people living with HIV/AIDS in NYC, one in 10 are older adults.

People living with HIV/AIDS who are older adults (percent of people living with HIV/AIDS who are 65 and older)

65+ overall

11%

By sex



By race and ethnicity



NYC DOHMH Community Health Survey, 2017 (Sexual activity; Condom use; HIV testing); NYC DOHMH HIV/AIDS Surveillance Registry, 2016 (People living with HIV/AIDS)



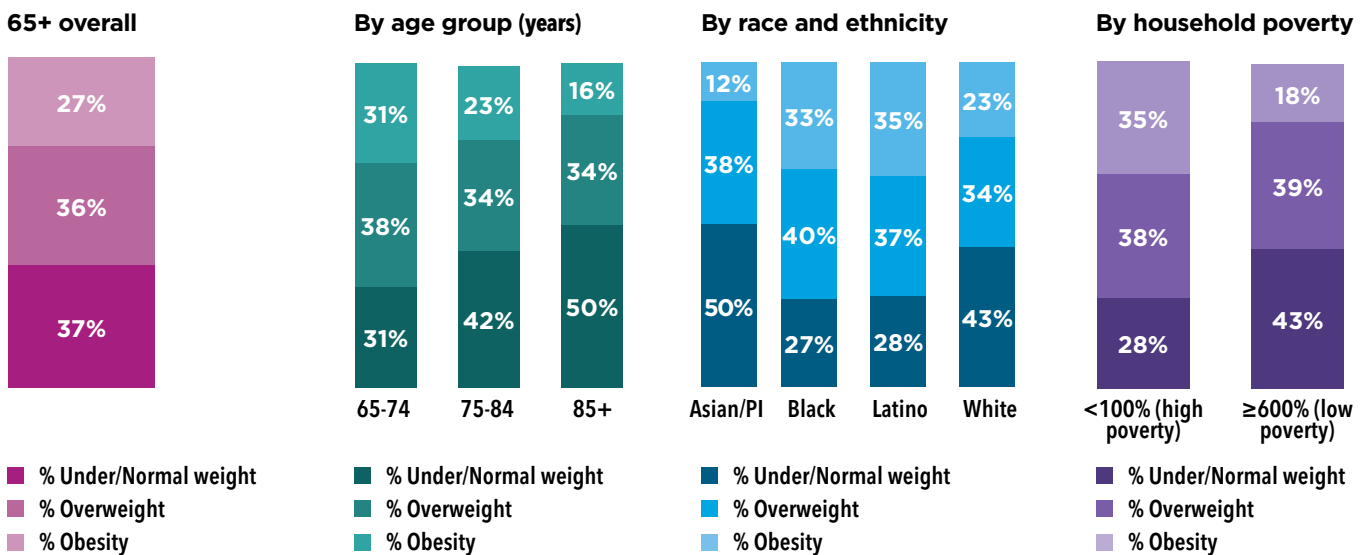
Chronic Disease

Older adults may have multiple chronic diseases such as diabetes, high blood pressure and chronic obstructive pulmonary disease (COPD). As a result, in addition to making lifestyle changes, many older adults may take multiple medications to manage these conditions. In fact, it has been estimated that over 40% of older adults report taking five or more prescription medications.³⁴ Routine assessment of medications and intervention, where possible, by providers is important to decrease the chance of severe side effects and unnecessary complications. Communities can support healthy aging by making sure older adults have access to health care and affordable, appealing and nutritious food, as well as opportunities to be physically active in a safe environment.

Body mass index

Body mass index (BMI) is a proxy for the amount of body fat a person has and is calculated using a person's weight and height. A BMI that is too low or too high can be harmful. For example, too much weight increases the risk of developing diabetes, high blood pressure, arthritis or painful joints and heart disease. For older adults, in addition to BMI, general nutritional status and overall muscle mass are also important for health and physical functioning. Two percent of older adults in NYC have too little weight, 36% have overweight, 27% have obesity and 35% have a normal weight.

Older adults who have under/normal weight, overweight or obesity (percent of adults 65 and older)



Note: Percentages may not sum to 100% due to rounding. Household poverty is defined as income as a percentage of the federal poverty level.

NYC DOHMH Community Health Survey, 2017

Diabetes

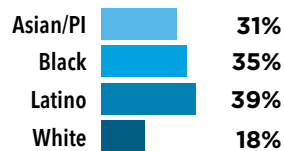
More than one quarter of older adults in NYC have diabetes. Diabetes is more common among Latino (39%), Black (35%) and Asian/Pacific Islander older adults (31%) than among White older adults (18%). The prevalence of diabetes is higher among older adults living below the federal poverty level (41%) compared with those with the highest income (14%).

Older adults with diabetes (percent of adults 65 and older)

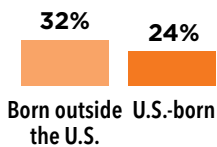
65+ overall

28%

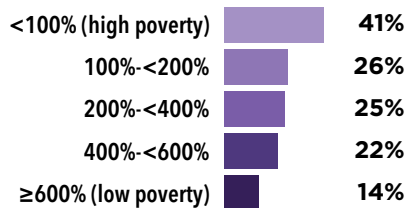
By race and ethnicity



By country of birth



By household poverty



Note: Household poverty is defined as income as a percentage of the federal poverty level.

High blood pressure

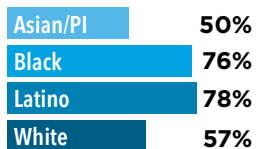
High blood pressure, also known as hypertension, increases the risk of heart disease and stroke. Two-thirds of older adults in NYC have high blood pressure. High blood pressure is more likely among Latino (78%) and Black older adults (76%) compared with White older adults (57%). In 2017, data from select primary care practices in NYC showed that only 69% of adults ages 60 and older with hypertension had their blood pressure under control.[†]

Older adults with high blood pressure (percent of adults 65 and older)

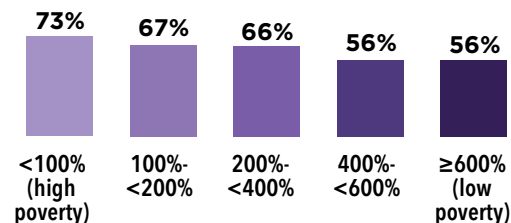
65+ overall

65%

By race and ethnicity



By household poverty



Note: Household poverty is defined as income as a percentage of the federal poverty level.

Heart attack and stroke

Heart attacks and strokes are common causes of death among older adults. Ten percent of older New Yorkers report that they have ever had a heart attack and 5% report having had a stroke.

Older adults who report having a heart attack or stroke (percent of adults 65 and older)

65+ overall

10%

Heart attack

5%

Stroke

Asthma and chronic obstructive pulmonary disease (COPD)

Three percent of older adults in NYC have asthma and 12% have COPD.

Older adults with current asthma (percent of adults 65 and older)

65+ overall

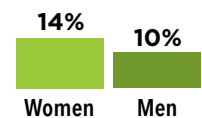
3%

Older adults with chronic obstructive pulmonary disease (percent of adults 65 and older)

65+ overall

12%

By sex



NYC DOHMH Community Health Survey, 2017 (Diabetes); New York State Department of Health, Behavioral Risk Factor Surveillance System, 2012-2016 (Heart attack; Stroke; Chronic obstructive pulmonary disease); NYC DOHMH Community Health Survey, 2017 (High blood pressure; Asthma)

[†] NYC DOHMH Hub Population Health System, 2017

Arthritis

Arthritis refers to a group of diseases that affects the body's joints, causing pain and stiffness that can interfere with a person's ability to work or take part in enjoyable activities. Half of older New Yorkers have arthritis.

65+ overall

51%

Leading causes of cancer death

Cancer incidence increases with age. Among older women in NYC, the leading causes of cancer death are lung, breast and colorectal cancers. Among older men in NYC, the leading causes of cancer death are lung, prostate and lymphoid and hematopoietic (blood-related) cancers.

Leading causes of cancer death among older adults by sex

WOMEN	
CANCER	RATE (per 100,000 adults 65 and older)
Lung	115.0
Breast	86.4
Colorectal	64.0
Lymphoid and blood-related	59.3
Pancreatic	52.6

MEN	
CANCER	RATE (per 100,000 adults 65 and older)
Lung	189.7
Prostate	126.4
Lymphoid and blood-related	89.8
Colorectal	80.5
Pancreatic	66.9



Brain Health and Cognition

Cognitive decline can range from cognitive impairment to dementia and affects well-being and everyday life for older adults.³⁵

Subjective cognitive decline

Subjective cognitive decline is a term that describes when a person notices that they are experiencing worsening or more frequent problems with memory or thinking. In some cases it can be an early sign of a more serious condition such as Alzheimer’s disease. Thirteen percent of older New Yorkers report experiencing confusion or memory loss that is happening more often or getting worse.

13%

of older New Yorkers report experiencing confusion or memory loss.



Alzheimer’s disease and dementia hospitalizations

Dementia refers to a group of disorders where memory and thinking ability are impaired.^{36,37} Dementia has many causes, including Alzheimer’s disease and vascular dementia.³⁸ Dementia symptoms generally worsen over time and can become so severe that people can no longer care for themselves. People with dementia are at higher risk for hospitalization than those without dementia.³⁹ Older adults living in high poverty neighborhoods (5,273.9 per 100,000 population) are more likely to be hospitalized with Alzheimer’s disease or other dementias than older adults in low poverty neighborhoods (2,974.9 per 100,000 population).

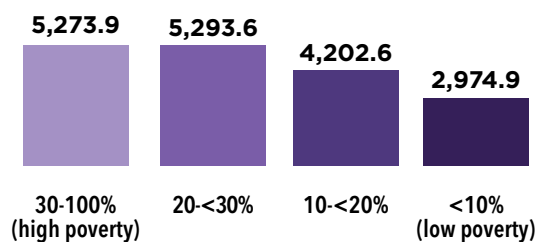
Alzheimer’s disease and dementia hospitalizations among older adults (rate per 100,000 adults ages 65 and older)

65+ overall

4,356.4

per 100,000

By neighborhood poverty[†]



Note: The rate of Alzheimer’s disease and dementia hospitalizations includes all hospitalizations with an Alzheimer’s disease or dementia diagnosis code in the hospitalization record, whether a primary or contributing diagnosis. For a more detailed definition, please see appendix tables.

[†]Neighborhood poverty (ZIP code tabulation area) is defined as the percentage of the population living below the federal poverty level.

New York State Department of Health, Behavioral Risk Factor Surveillance System, 2013-2016 (Subjective cognitive decline); New York State Department of Health, Statewide Planning and Research Cooperative System, 2016 (Alzheimer’s disease and dementia hospitalizations)



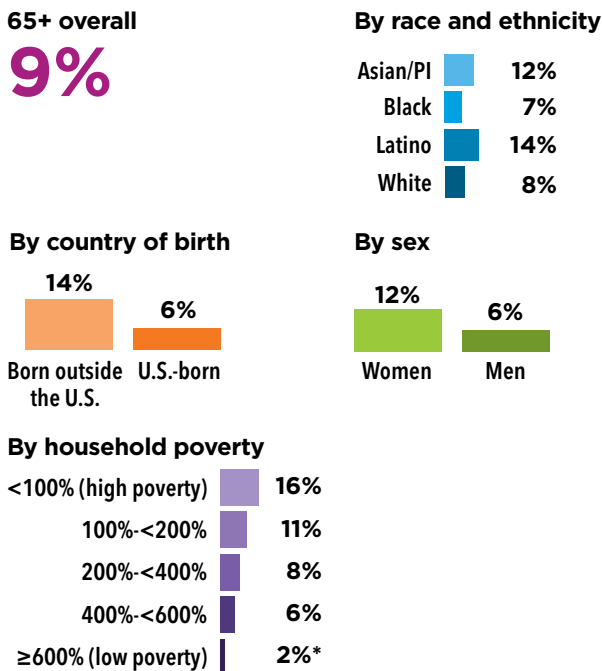
Mental Health

Mental health is essential to overall health and well-being across all age groups. Some older adults experience mental health conditions such as depression and anxiety.

Depression

Depression can interfere with daily life and among older adults can be associated with symptoms like feeling tired, having trouble sleeping, being irritable or having confusion or attention problems.⁴⁰ Nine percent of older New Yorkers have depression as measured by a validated screening tool.⁴¹ Depression is more common among older women (12%) than older men (6%). Depression is more likely among Latino (14%) than White older adults (8%). Older adults in low-income households (16%) are more likely to have depression than are older adults in high-income households (2%*).

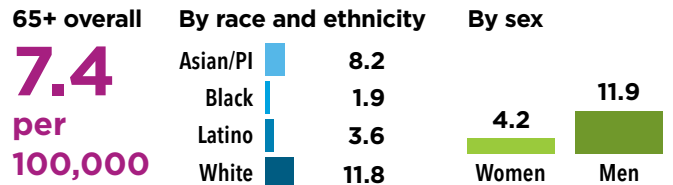
Older adults with depression (percent of adults 65 and older)



Suicide

Risk factors for suicide in older adults include mental illness, substance use, cognitive deficits, physical pain, chronic health conditions, and loss of social connectedness and functional capacity.⁴² In 2016, the rate of suicide among older adults was 7.4 per 100,000 population. The rate of suicide among older men (11.9 per 100,000 men 65 and older) is higher than among older women (4.2 per 100,000 women 65 and older). The rate of death due to suicide is higher among White older adults (11.8 per 100,000) compared with Asian/Pacific Islander (8.2 per 100,000), Latino (3.6 per 100,000) and Black older adults (1.9 per 100,000).

Suicide among older adults (rate per 100,000 adults 65 and older)



Drug overdose deaths

The most common substances associated with overdose deaths among older adults include opioids, cocaine and alcohol. The rate of drug overdose deaths among adults ages 65 to 84 years has more than doubled from 2014 to 2017 (3.5 to 7.7 per 100,000 population).[‡]

[‡]Data are provisional for 2017. NYC DOHMH Bureau of Vital Statistics/NYC Office of the Chief Medical Examiner, analysis by NYC DOHMH Bureau of Alcohol and Drug Use Prevention, Care and Treatment, 2015

* Interpret estimate with caution due to small sample size.
Note: Household poverty is defined as income as a percentage of the federal poverty level.

NYC DOHMH Community Health Survey, 2017 (Depression); NYC DOHMH Bureau of Vital Statistics, 2016 (Suicide)



Health Care and Access

Most older New Yorkers qualify to receive Medicare coverage when they reach 65 years of age. Medicare was established in 1965 by the federal government to provide health insurance to older adults. In 2010, the Affordable Care Act increased Medicare’s preventive services benefits. Low-income older New Yorkers may also qualify for Medicaid.

Health insurance and access to care

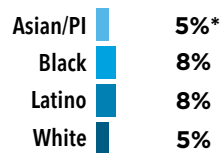
Nearly all older New Yorkers (97%) are covered by some form of health insurance but some still have to skip or postpone health services because of out-of-pocket health care costs like premiums, copayments and deductibles.⁴³ Six percent of older New Yorkers sometimes go without needed health care.

Older adults who went without needed medical care in the past 12 months (percent of adults 65 and older)

65+ overall

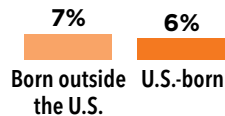
6%

By race and ethnicity



* Interpret estimate with caution due to small sample size.

By country of birth



Medication costs

While almost all older adults have health insurance, some may have trouble paying for medication due to type of insurance. Twelve percent of older adults are sometimes unable to afford the medicines they need.

12%

of older adults report not filling a prescription due to cost.



Medicare typically covers screening for medical and mental health issues as well as vaccinations. For a full list of recommended preventive care services, see [U.S. Preventive Services Task Force](#) and the [Advisory Committee on Immunization Practices](#).

NYC DOHMH Community Health Survey, 2017 (Health insurance; Access to care); NYC DOHMH Community Health Survey, 2016 (Medication costs)

Analyses

Indicators were selected for this report based on feedback from the New York City Health Department and external content experts. The final list of indicators reflects those considered high priority and most relevant for older adults.

For most data, t-tests were conducted to determine if each estimate was statistically different from the reference group. Occasionally, non-overlapping 95% confidence intervals were used to assess statistical significance. Unless otherwise indicated, reference groups include: Non-Latino White, U.S.-born, men, ages 65 to 74, and household income <100% of the federal poverty level.

Most estimates were evaluated for statistical stability. Estimates with a relative standard error (RSE) >30% or with a small sample size or small numbers of events (≤ 10) are flagged as follows: “Interpret estimate with caution due to small sample size.” All estimates in this report are crude (i.e., not age-standardized). Estimates were also weighted to represent the NYC population and compensate for unequal probability of selection and non-response bias.

Acknowledgments

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New York City Department of Health and Mental Hygiene

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References

1. World Health Organization. Ageing and life-course: What is Healthy Ageing? <https://www.who.int/ageing/healthy-ageing/en/>. Accessed January 2019.
2. Rote S, Markides K. Aging, Social Relationships, and Health among Older Immigrants. <https://www.asaging.org/blog/aging-social-relationships-and-health-among-older-immigrants>. Accessed January 2019.
3. Everard KM, Lach HW, Fisher EB, Baum MC. Relationship of activity and social support to the functional health of older adults. *J Gerontol B Psychol Sci Soc Sci*. 2000;55(4):S208-212.
4. National Prevention Council. Healthy Aging in Action. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General;2016. <https://www.surgeongeneral.gov/priorities/prevention/about/healthy-aging-in-action-final.pdf>. Accessed January 2019.
5. AARP New York. Disrupting Racial and Ethnic Disparities: Solutions for New Yorkers Age 50+. 2018; https://s18672.pcdn.co/wp-content/uploads/2018/01/AARP_DisparitiesPaperSummary_Booklet_FINAL.pdf. Accessed January 2019.
6. Valtorta N, Hanratty B. Loneliness, isolation and the health of older adults: do we need a new research agenda? *J R Soc Med*. 2012;105(12):518-522.
7. Seltzer JA, Yahirun JJ. Diversity in Old Age: The Elderly in Changing Economic and Family Contexts. 2014; <http://papers.ccpr.ucla.edu/index.php/pwp/article/view/PWP-CCPR-2013-012>. Accessed January 2019.
8. New York City Department for the Aging. A Survey of Informal Caregivers in New York City. 2017; <https://www1.nyc.gov/assets/dfta/downloads/pdf/reports/UnpaidCaregivers2017.pdf>. Accessed January 2019.
9. White AM, Philogene GS, Fine L, Sinha S. Social support and self-reported health status of older adults in the United States. *Am J Public Health*. 2009;99(10):1872-1878.
10. Greene M, Ahalt C, Stijacic-Cenzer I, Metzger L, Williams B. Older adults in jail: high rates and early onset of geriatric conditions. *Health Justice*. 2018;6(1):3-3.
11. New York Civil Liberties Union. Stop-and-Frisk Data. 2018; <https://www.nyclu.org/en/stop-and-frisk-data>. Accessed January 2019.
12. Hall JE K, DL, Crosby, AE. Elder Abuse Surveillance: Uniform Definitions and Recommended Core Data Elements For Use in Elder Abuse Surveillance, Version 1.0. 2016; https://www.cdc.gov/violenceprevention/pdf/EA_Book_Revised_2016.pdf. Accessed January 2019.
13. Lifespan of Greater Rochester I, Weill Cornell Medical Center of Cornell University, and New York City Department for the Aging. Under the Radar: New York State Elder Abuse Prevalence Study, Final Report. May 2011; <https://ocfs.ny.gov/main/reports/Under%20the%20Radar%2005%2012%2011%20final%20report.pdf>. Accessed January 2019.
14. Guzman S VJ, Saloman E. Housing Policy Solutions to Support Aging with Options 2017; <https://www.aarp.org/ppi/info-2017/housing-policy-solutions-to-support-aging-with-options.html>. Accessed January 2019.
15. New York City Department of Health and Mental Hygiene. Epiquery: NYC Interactive Health Data System - Community Health Survey 2017. <https://nyc.gov/health/epiquery>. Accessed January 2019.
16. Matte TD, Lane K, Ito K. Excess mortality attributable to extreme heat in New York City, 1997-2013. *Health Secur*. 2016;14(2):64-70.
17. U.S. Fire Administration. Heating Fires in Residential Buildings (2013-2015). October 2017; <https://www.usfa.fema.gov/downloads/pdf/statistics/v18i7.pdf>. Accessed January 2019.
18. Centers for Disease Control and Prevention: National Center for Environmental Health. What is Carbon Monoxide? 2016; <https://www.cdc.gov/co/pdfs/faqs.pdf>. Accessed January 2019.
19. Marcum J CA, Seil K. Falls among Older Adults in New York City. *NYC Vital Signs* 2014; 1-4. Available at: <https://www1.nyc.gov/assets/doh/downloads/pdf/survey/survey-2014fallsamongolderadults.pdf>. Accessed January 2019.
20. Fung L CS. Pedestrian Fatalities in New York City. New York City Department of Health and Mental Hygiene: Epi Data Brief (86). March 2017; <https://www1.nyc.gov/assets/doh/downloads/pdf/epi/databrief86.pdf>. Accessed January 2019.
21. 2018 Physical Activity Guidelines Advisory Committee. 2018 Physical Activity Guidelines Advisory Committee Scientific Report. 2018; https://health.gov/paguidelines/second-edition/report/pdf/PAG_Advisory_Committee_Report.pdf. Accessed January 2019.
22. National Institute on Alcohol Abuse and Alcoholism. Older Adults. <https://www.niaaa.nih.gov/alcohol-health/special-populations-co-occurring-disorders/older-adults>. Accessed January 2019.
23. U.S. Preventive Services Task Force. Final Update Summary: Lung Cancer: Screening. 2015; <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/lung-cancer-screening>. Accessed January 2019.
24. Stineman MG, Xie D, Pan Q, et al. All-cause 1-, 5-, and 10-year mortality in elderly people according to activities of daily living stage. *J Am Geriatr Soc*. 2012;60(3):485-492.
25. Lee Y. The predictive value of self assessed general, physical, and mental health on functional decline and mortality in older adults. *J Epidemiol Community Health*. 2000;54(2):123-129.
26. Razak PA, Richard KM, Thankachan RP, Hafiz KA, Kumar KN, Sameer KM. Geriatric oral health: a review article. *J Int Oral Health*. 2014;6(6):110-116.
27. Dye B, Thornton-Evans G, Li X, Iafolla T. Dental caries and tooth loss in adults in the United States, 2011-2012. Hyattsville, MD: National Center for Health Statistics;2015. Accessed January 2019.
28. Eke PI, Thornton-Evans GO, Wei L, Borgnakke WS, Dye BA, Genco RJ. Periodontitis in US Adults: National Health and Nutrition Examination Survey 2009-2014. *J Am Dent Assoc*. 2018;149(7):576-588.

29. Yoshikawa TT. Epidemiology and unique aspects of aging and infectious diseases. *Clin Infect Dis*. 2000;30(6):931-933.
30. Centers for Disease Control and Prevention: National Center for Immunization and Respiratory Diseases. Pneumococcal Vaccine Recommendations. December 2018; <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/recommendations.html>. Accessed January 2019.
31. Centers for Disease Control and Prevention. Legionella (Legionnaires' Disease and Pontiac Fever). 2018; <https://www.cdc.gov/legionella/about/causes-transmission.html>. Accessed January 2019.
32. New York State. Hepatitis C testing law. https://www.health.ny.gov/diseases/communicable/hepatitis/hepatitis_c/providers/testing_law.htm. Accessed January 2019.
33. New York City Department of Health and Mental Hygiene. Making the Sexual History a Routine Part of Primary Care. 2017; 17-24. Available at: <https://www1.nyc.gov/assets/doh/downloads/pdf/chi/chi-36-3.pdf>. Accessed January 2019.
34. Kantor ED, Rehm CD, Haas JS, Chan AT, Giovannucci EL. Trends in prescription drug use among adults in the United States from 1999-2012. *JAMA*. 2015;314(17):1818-1831.
35. Centers for Disease Control and Prevention. Alzheimer's Disease and Healthy Aging: Healthy Brain Initiative. 2017; <https://www.cdc.gov/aging/healthybrain/index.htm>. Accessed January 2019.
36. National Institute on Aging. What is Dementia? <https://www.nia.nih.gov/health/what-dementia>. Accessed January 2019.
37. National Institute on Aging. Alzheimer's Disease and Related Dementias. <https://www.nia.nih.gov/health/alzheimers>. Accessed January 2019.
38. Mayo Clinic. Dementia. <https://www.mayoclinic.org/diseases-conditions/dementia/symptoms-causes/syc-20352013>. Accessed January 2019.
39. Phelan EA, Borson S, Grothaus L, Balch S, Larson EB. Association of incident dementia with hospitalizations. *JAMA*. 2012;307(2):165-172.
40. National Institute on Aging. Depression and Older Adults. May 2017; <https://www.nia.nih.gov/health/depression-and-older-adults>. Accessed January 2019.
41. Kroenke K, Strine TW, Spitzer RL, Williams JB, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord*. 2009;114(1-3):163-173.
42. Conwell Y, Van Orden K, Caine ED. Suicide in older adults. *The Psychiatric clinics of North America*. 2011;34(2):451-ix.
43. Osborn R, Doty MM, Moulds D, Sarnak DO, Shah A. Older Americans were sicker and faced more financial barriers to health care than counterparts in other countries. *Health Aff (Millwood)*. 2017;36(12):2123-2132.

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