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Centenarian

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Centenarian

Abstract
A centenarian is an individual who has survived to the age of 100, approximately 20 years longer than the average life expectancy. The number of centenarians in the United States has increased and will continue to increase. According to census data, 53,364 centenarians were alive in the United States in 2010, an increase of 65.8% over the last 30 years. More supercentenarians (those who have attained the age of 110 years or older) are also found around the world. Jeanne Louise Calment of France is known to have attained the oldest age ever, 122 years and 164 days. It is common that female centenarians outnumber male centenarians. According to census data, women make up 82.8% of all centenarians.

Disciplines
Family, Life Course, and Society | Genetic Processes | Genetic Structures | Human and Clinical Nutrition | Medical Humanities | Place and Environment | Theory, Knowledge and Science

Comments
A centenarian is an individual who has survived to the age of 100, approximately 20 years longer than the average life expectancy. The number of centenarians in the United States has increased and will continue to increase. According to census data, 53,364 centenarians were alive in the United States in 2010, an increase of 65.8% over the last 30 years. More supercentenarians (those who have attained the age of 110 years or older) are also found around the world. Jeanne Louise Calment of France is known to have attained the oldest age ever, 122 years and 164 days. It is common that female centenarians outnumber male centenarians. According to census data, women make up 82.8% of all centenarians.

Even though there have been major increases in the number of centenarians in the United States, reaching this very old age is still very unlikely. Eileen Crimmins reports in her article “Lifespan and Healthspan,” that Social Security Administration life tables for 2010 indicate that only 1% of all newborns survive to 100 years. For 2100, it is estimated that about 8% of this cohort will reach the second century of life. This entry discusses factors that contribute to long life and the quality of life and functioning to be expected at the age of 100 years.

Predictors of Living to 100

The Georgia Centenarian Study, one of the oldest and most comprehensive centenarian studies in the United States, introduced a conceptual model outlining important factors contributing to survivorship and adaptation in very late life: family longevity, environmental support, individual characteristics, behavioral skills, nutrition, physical and mental health, and life satisfaction. In addition, “distal experiences” that reach back even to centenarians’ childhood may play an important role in survivorship and adaptation. Most centenarian research has concluded that not just one factor is responsible for longevity but that many factors play a role (e.g., social support, a resilient personality, good physical and mental health).

Genetic studies have demonstrated that certain gene variants, such as the FOX O3 genotype or certain alleles of the apolipoprotein E (APOE) gene, are associated with better or worse chances of survivorship and functioning in very late life. In addition, family longevity research has noted that centenarian siblings have a much better chance to live longer compared with those from the same birth year cohort who did not have centenarian siblings. Centenarians may carry genes that control or slow down the aging process.

In addition to possible genetic factors, early life influences may also play an important role in survivorship and adaptation. For example, childhood health, having more children, and negative events accumulated over the lifespan are associated with well-being in very late life. Very old individuals who have more children also score higher on daily activities. Adult children perhaps encourage their older parents to stay active and involved. Having fewer children and poor childhood health are associated with loneliness in later life. These are examples of lifelong influences on adaptation.

Quality of Life and Functioning at Age 100

One of the most important questions concerning the quality of life of centenarians relates to health and general functioning. Perhaps surprisingly, several centenarian studies reported that most centenarians evaluate their own health as good or excellent. Taking a more “objective viewpoint,” some researchers have argued that healthy centenarians do not exist, although this may depend on the definition of health.

Prevalence rates for diabetes, cancer, and cardiovascular disease are quite low among centenarians. Several studies have distinguished different patterns of health among centenarians. One group of centenarians seems to have escaped diseases altogether (“escapers”), a second group delayed the onset of disease until very late in life (“delayers”), and a third group experienced major diseases at some point in their lives but survived and overcame the disease (“survivors”).
Centenarians continue to be physically active and follow good nutritional health habits. They tend to avoid consumption of excessive alcohol or tobacco, have breakfast on a regular basis, and tend to be nonobese. A Japanese centenarian study found evidence that centenarians abide by a low caloric, nutritious diet and they have learned to stop eating before they feel full. Centenarians also show a high consumption of vegetables and dairy products and less consumption of fat, although centenarians’ dietary preferences display different patterns according to their culture and cohort characteristics.

More severe problems appear to show in functional health, which may limit the autonomy of centenarians. This group of survivors is often impaired in vision, hearing, and mobility, and these restrictions compromise centenarians’ engagement in regular activities. When assessing activities of daily living, such as taking care of household tasks, managing finances, or remembering to take medication, centenarians often show limitations. At least two centenarian studies (in Denmark and the United States) reported that more recent centenarian cohorts have higher functioning scores compared with earlier cohorts, but these positive cohort changes could not be found in Japan.

Centenarians’ performance in cognitive tasks is generally poorer compared with younger cohort groups, but it does not mean that all centenarians are cognitively impaired. Studies of the prevalence rate for dementia among centenarians have shown wide ranges, from about 25% to 75%. These differences are probably due to different measures and different regions where dementia assessments were undertaken. Many centenarians are able to maintain their cognitive ability and have healthy-appearing brains. Centenarian researchers posited that many centenarians are still relatively independent in their cognitive functioning. Education has a lifelong protective effect on the level of cognitive performance of centenarians.

Depressive symptoms and loneliness appear to be the most common mental health problems among centenarians. For some centenarians, depression can be explained through higher levels of fatigue, which is quite common among centenarians. The level of mental health is typically not characterized by negative emotions but, rather, lower scores in positive emotions. Centenarians often report that they do not have a lot of positive experiences in their current life and therefore report lower levels of positive emotions.

Stress and coping behaviors are often associated with mental health of centenarians. Excessive stress and inadequate coping behavior may cause centenarians to experience high levels of depression and anxiety. Centenarians are more likely to rely on active cognitive coping behavior (i.e., “trying to step back from the situation and be more objective” or “telling oneself things that help one feel better”) for their problems than active behavioral coping (e.g., “finding out more about situation” or “making a plan of action”). Centenarians are also more likely to engage in religious coping and acceptance as a way to adapt to stressful situations.

Even though centenarians experience a number of functional limitations and cope with personal and family losses, they typically indicate that they perceive being a centenarian as positive. Participants in the Iowa Centenarian Study viewed their old age as meaningful, challenging, and exciting. Over half believe they had no influence on becoming a centenarian, and only a very few thought they would ever reach this age.

To compensate for limitations, centenarians use individual and social resources. Centenarians are known to have robust or resilient personalities—that is, low levels of neuroticism and relatively high levels of extraversion, openness, conscientiousness, and agreeableness. Studies on personality suggest that centenarians’ personality traits affect their health outcomes and mortality. For instance, low levels in neuroticism help reduce the possibility of depression. Centenarians high in conscientiousness tend to regularly practice healthy behaviors (e.g., engaging in physical exercise) and to avoid risky health behaviors (e.g., excessive consumption of alcohol or smoking). This indicates that particular characteristics of personality traits may have significant implications for centenarians’ longevity.

Another important resource includes high levels of social support. As reported by the Iowa and Georgia Centenarian Studies, nearly all centenarians indicate that they could depend on help when they needed it, and
most centenarians have close relationships with other people. Economic resources are generally quite low for centenarians, but this stands in contrast to perceptions by centenarians that they have financial resources sufficient to pay for expenses.

Given that life expectancy continues to increase and the population of old and very old adults is increasing worldwide, centenarian studies are becoming more important than ever, especially in understanding development in very late life. By living more than a century, centenarians have experienced historical, social, economic, educational, and many other changes, and they are considered to be models of aging well. Because changes in the life of centenarians have formed their entire lifespan trajectory, studying centenarians is meaningful for describing and explaining the developmental process across the maximum possible lifespan with the result of achieving exceptional longevity.

**See also** Aging; Gerontology; Life Expectancy; Longevity; Successful Aging; Supercentenarian

- centenarians
- longevity
- cohorts
- very old age
- neuroticism
- life expectancy
- quality of life

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**Further Readings**