

# LIVING TO 100:

## What's the secret?

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FROM  
HARVARD MEDICAL SCHOOL

*Trusted advice for healthier life*

Starting in the year 2012, 10,000 people a day will start turning 65. We are aging differently than previous generations, however. Physically and mentally, the health of today's 70-year-old now equals that of a 65-year-old in the 1970s. In that period, deaths from heart disease and many cancers have dipped. And while most older adults have at least one chronic health problem, disability has slowly but significantly declined.

Our life expectancy continues to inch upward, a happy trend, although some wonder if we could be doing better, since the United States has been slipping downward in longevity rankings compared with many other countries. Infectious disease and acute illnesses, once the leading causes of death, have given way to chronic ailments and degenerative illnesses — like heart disease and Alzheimer's disease — that people often live with for decades.

How long are you likely to live? Will your later years be blessed by healthy aging or marred by a host of illnesses? Certainly, the answers to those questions rest partly with the genes you've inherited. Yet at the turn of the millennium, more than a third of deaths in America were tied to smoking, poor dietary choices, and inactivity.

This report attests that the actions you take today matter. Simple lifestyle choices have an enormous impact on your longevity and quality of life.

What is essential for healthy aging? Full engagement with life. People who are curious, open, and eager to make connections with the world most enjoy the last decades of their lives. Even in the face of disabilities, these people seem to thrive and find joy despite their challenges. Depressed, anxious, or grumpy people in good health can also live long lives, but take far less pleasure in them. No magic pill, no secret potion can make us long-lived and healthy. But if you bring to your life appreciation and respect, and embrace aging with good humor, grace, vigor,

and flexibility, you will — at the very least — be happy to grow old.

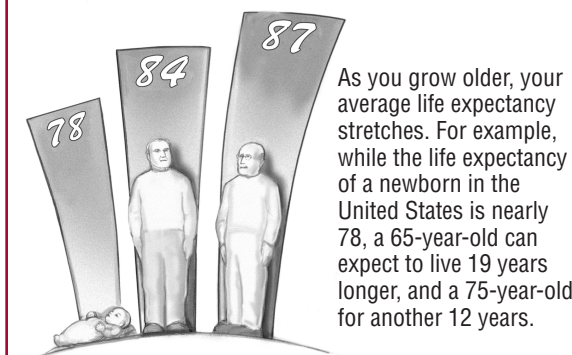
### *How long do we live?*

Nowadays, life expectancy at birth is nearly 78 years in the United States. This is a great leap forward from 1900, when the average newborn couldn't expect to reach age 50. Indeed, in the 20th century the life span of the human species — in developed nations — expanded more than it had in any century since the birth of mankind.

When the numbers are crunched more carefully, though, there are obvious differences between men and women and people of different races. A newborn boy born in 2004 or after can expect to live a bit more than 75 years, while his sister can expect to live to slightly more than 80. Life expectancy measured from birth is more than five years shorter for a black person than a white one, although the gap narrows to less than two years for those who survive to age 65.

If you live to celebrate certain milestones of age, your life expectancy stretches (see Fig. 1). In other words, the longer you live, the longer you're likely to live. Because many people who have chronic ailments or engage in behaviors that raise the risk of accidents or illness get cut from the herd much earlier, the oldest old are often remarkably healthy.

**Figure 1: Increasing life span**



Why did life expectancy increase so much in the 20th century in developed nations? Whether individuals develop a particular disease is usually determined by three things: their lifestyle (including diet and exercise), their environment (such as exposure to infectious microbes or toxins), and their genes. Increased life span surely has nothing to do with genes: our genes today are the same as they were a century ago. Instead, changes in lifestyle and environment are responsible.

Changes in the environment — such as better sanitation, the use of antibiotics, and many other improvements in medical care — can claim much of the credit. As for lifestyle, in developed nations, nutritional deficiency diseases largely were eliminated in the last century. Still, not all nutritional changes have been entirely for the better. In the United States, at the turn of the 20th century, most Americans lived on farms or in rural communities. We ate fresh, unprocessed food every day, and we worked hard physically. Today, our diets are less healthful in many ways, and we exercise less.

## The secrets of centenarians

Each year more Americans drift into the upper age brackets on census forms.

According to the 2000 census, there are more than 330,000 people ages 95 and over in the United States, while 85- to 94-year-olds number 3.9 million. Studies of people who reach the century mark note that their health is surprisingly robust despite advanced age. Once decline does set in for these centenarians, death follows fairly quickly. That's an attractive prospect for those who fear a drawn-out loss of health and independence in their waning years.

What's the centenarians' secret? Not surprisingly, genes play a role. A study of Swedish twins ages 80 and older attributed about half of the changes in mental function to genes. Other twin studies suggest genes are responsible for up to 35% of the physiological changes of age and that longevity itself is 25% to 35% inheritable.

But don't start viewing your genetic inheritance with rue or glee. Genetics is only part of the equation. Simple math tells you there's plenty of room left for the role that other factors — such as your diet, exercise routine and regular exams for illnesses — play in how you age.

## Extending your life

It's all very well to pile up statistics on average life span and speculate about factors in the aging process and the biological limits of life. Yet what does this tell you about your own life? Not enough. Clearly, more work needs to be done to crack the code of aging. But you don't have to wait until the final answers are in to take steps that may extend and enhance your life right now.

How well you age will help dictate how long you stay alive and how happy you are to do so. Whether or not your family is long-lived, the answers lie less in your genes than in your actions. Do you smoke? Do you eat well or poorly? Do you stay active? Are you a healthy weight? What ailments do you have now and, judging from family back-ground and your current lifestyle, which ones are you likely to get?

If your answers seem discouraging, take heart. It's not too late to make changes. A 2007 study in the American Journal of Medicine focused on adults who adopted a healthier lifestyle during middle age. The researchers followed 15,700 adults (ages 45 to 64) for a decade and noted that 970 of these people embraced a healthier lifestyle by the sixth year of the study. These individuals ate five or more daily servings of fruits and vegetables, worked out at least two and a half hours per week, didn't smoke, and avoided obesity. Benefits appeared quickly. Just four years later, the group of individuals who made these four changes had a 40% lower rate of death for any reason and 35% fewer cases of heart disease compared with the participants who made fewer of these changes.

No matter what your age or stage of life, you have the power to change many of the variables

that influence disability and longevity. With these 10 steps outlined below, you can learn how.

## 10 steps toward a longer healthier life

1. Don't smoke.
2. Build physical and mental activities into every day.
3. Eat a healthy diet rich in whole grains, vegetables, and fruits, and substitute healthier monounsaturated and polyunsaturated fats for unhealthy saturated fats and trans fats.
4. Take a daily multivitamin, and be sure to get enough calcium and vitamin D.
5. Maintain a healthy weight and body shape.
6. Challenge your mind.
7. Build a strong social network.
8. Protect your sight, hearing, and general health by following preventive care guidelines.
9. Floss, brush, and see a dentist regularly. Poor oral health may have many repercussions, including poor nutrition, unnecessary pain, and possibly even a higher risk of heart disease and stroke.
10. Discuss with your doctor whether you need any medication—perhaps to control high blood pressure, treat osteoporosis, or lower cholesterol—to help you stay healthy.

## Optimism and survival

It's obvious that healthy people live longer than sick people. If optimism actually improves health, it should also boost longevity — and according to two studies from the U.S. and two from the Netherlands, it does.

The first American study evaluated 839 people in the early 1960s, performing a psychological test for optimism–pessimism as well as a complete medical evaluation. When the people were rechecked 30 years later, optimism was linked to longevity; for every 10-point increase in pessimism on the optimism–pessimism test, the mortality rate rose 19%.

A more recent U.S. study looked at 6,959 students who took a comprehensive personality test when they entered the University of North Carolina in the mid-1960s. During the next 40 years, 476 of the people died from a variety of causes, with cancer being the most common. All in all, pessimism took a substantial toll; the most pessimistic individuals had a 42% higher rate of death than the most optimistic.

The two Dutch studies reported similar results. In one, researchers tracked 545 men who were free of cardiovascular disease and cancer when they were evaluated for dispositional optimism in 1985. Over the next 15 years, the optimists were 55% less likely to die from cardiovascular disease than the pessimists, even after traditional cardiovascular risk factors and depression were taken into account.

The other study from Holland evaluated 941 men and women between the ages of 65 and 85. People who demonstrated dispositional optimism at the start of the study enjoyed a 45% lower risk of death during a nine-year follow-up period.

## Blue skies

More study is needed to clarify the link between optimism and good health. It's likely that multiple mechanisms are involved. Personality is complex, and doctors don't know if optimism is hard-wired into an individual or if a sunny disposition can be nurtured in some way. It's doubtful that McLandburgh Wilson was pondering such weighty questions when he explained optimism in 1915:

*“Twixt the optimist and pessimist  
The difference is droll  
The optimist sees the doughnut  
But the pessimist sees the hole.”*

Today's doctors don't think much of doughnuts, but they are accumulating evidence that optimism is good for health. As you await the results of new research, do your best to seek silver linings, if not doughnuts.