



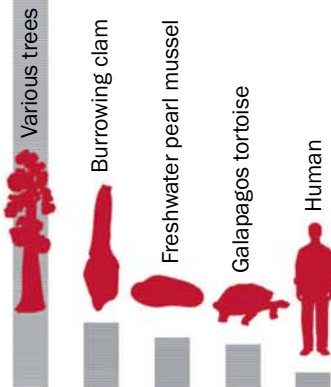
## How Long Can You Live?

**W**HEN Harriet died in 2006, she was about 175 years old. Of course, Harriet was not a human. She was a Galapagos tortoise, and she lived at a zoo in Australia. Compared with us, Harriet had a very long life. But in comparison with other living things, her life span was not extraordinary. Consider some examples.

- The freshwater pearl mussel, say researchers in Finland, may live for 200 years.
- The burrowing clam (ocean quahog) often lives beyond 100 years and has even been reported to live more than 400 years.
- Various trees, such as the bristlecone pine, the giant sequoia, and some species of cypress and spruce, live for thousands of years.

Yet humans, who are generally considered to be at the apex of terrestrial life, do well to live for 80 or 90 years—despite our sometimes extraordinary efforts to extend life!

What do you think—is eight decades or so the best we can hope for? Or is there the possibility that we can live much longer? Many people hope that science and medical technology hold the key.



## Can Science Help?

Science has contributed much to the fields of health and medical technology. “Fewer people [in the United States] die from infectious diseases or the complications of childbirth,” says *Scientific American* magazine. “Infant mortality is down by 75 percent since 1960.” But science has met with limited success in extending adult longevity. “Even after decades of

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research, aging largely remains a mystery,” says another edition of *Scientific American*. However, “evidence suggests that aging may occur when genetic programs for development go awry.” The article continues: “If aging is primarily a genetic process, conceivably it could one day be preventable.”

In their search for the underlying causes of aging, including age-related diseases, some scientists are exploring recent developments in a field of genetics called *epigenetics*. What is *epigenetics*?

Living cells contain genetic information, which is needed for the production of new cells. Much of this information is found in the genome, a term that refers to all the DNA in a cell. In recent times, however, scientists have delved deeper into another array of mechanisms within the cell—the *epigenome*, a word that can mean “above the genome.” Epigenetics is the study of this amazing group of mechanisms and their chemical reactions.

The molecules that make up the epigenome look nothing like DNA. Whereas

DNA resembles a twisted ladder, or double helix, the epigenome is essentially a system of chemical marks, or tags, that attach to DNA. What is the role of the epigenome? Like a conductor directing an orchestra, the epigenome directs the way genetic information in the DNA is expressed. The molecular tags turn sets of genes on or off in response to both the needs of the cell and environmental factors, such as diet, stress, and toxins. Recent discoveries involving the epigenome have caused a revolution in the biological sciences, one that links epigenetics with specific diseases and even aging.

“[Epigenetics is] implicated in diseases from schizophrenia to rheumatoid arthritis, and from cancer to chronic pain,” says epigenetics researcher Nessa Carey. And it “definitely has a role to play in aging.” Thus, research into epigenetics may lead to effective therapies for improving health, fighting disease—including cancer—and therefore extending life. At present, however, no major breakthroughs are on the horizon. “We’re still stuck with our old routine [for combating ageing],” says Carey, “lots of vegetables” and “plenty of exercise.”

Why, though, do humans go to so much trouble to extend life? Why do we want to live indefinitely? The British newspaper *The Times* asked: “Why this universal human obsession with cheating death, whether through immortality, resurrection, afterlife or reincarnation?” The answer, as we shall now see, sheds light on the real underlying cause of aging.

## Why Do We Want to Live Forever?

For thousands of years, thinking people have wrestled with that question. Is there a logical, satisfying explanation—one that



## Can You Live Healthier and Longer Even Now?

In a landmark study involving more than 1,500 people who were born about the year 1910, health scientists Howard S. Friedman and Leslie R. Martin claim that good indicators of longevity are conscientiousness and having a large number of social ties. “Conscientious people do more things to protect their health and engage in fewer activities that are risky,” say Friedman and Martin. “They are less likely to smoke, drink to excess, abuse drugs, or drive too fast. They are more likely to wear seat belts and follow doctors’ orders. They are not necessarily risk averse but they tend to be sensible in evaluating how far to push the envelope.”

In regard to social ties, those who lived longer “had large [social] networks and . . . helped others.” The adage “The good die early, and the bad die late,” crumbles under scientific scrutiny, say the authors. “Generally speaking . . . the bad die early, and the good do great.”

harmonizes with both our physical make-up and our natural desire to live forever? Millions of people would answer with a resounding yes! Why? In the Bible, they have found the most satisfying answers about human nature.

From the outset, the Bible plainly states that humans, while having some things in common with other creatures, are fundamentally different. For example, at Genesis 1:27, we read that God created humans in his image. How so? He gave us the capacity to display love, justice, and wisdom. And as the One who lives forever, God implanted in us the desire to live for

ever. He “planted eternity in men’s hearts and minds,” says Ecclesiastes 3:11.—*The Amplified Bible*.

Physical evidence that humans were originally designed to live much longer than we do can be seen in the power of the brain, especially in its potential to learn. *The Encyclopedia of the Brain and Brain Disorders* states that the long-term memory capacity of the human brain “is virtually unlimited.” Why have this capacity if it were not meant to be used? Yes, in fundamental ways, humans reflect God’s original purpose for mankind. Then why do we grow old, suffer, and die?



## Why We Grow Old and Die

The first man and woman had perfect bodies along with free will. Sadly, they misused that free will by rebelling against their Maker.\* (Genesis 2:16, 17; 3:6-11) Their disobedience, or sin, caused them to have profound guilt and shame. It also resulted in damage to their bodies, triggering a slow, inexorable descent toward death. “The sting producing death is sin,” states 1 Corinthians 15:56.

In line with the physical laws of inheritance, all of Adam and Eve’s descendants acquired imperfection and the inclination to sin, or do what is wrong. Says Romans 5:12: “Through one man sin entered into the world and death through sin, and thus death spread to all men because they had all sinned.”

What can we conclude from the foregoing? This: The secret to endless life will never be found in a laboratory. Only God can undo the damage caused by sin. But will he? The Bible answers with another resounding yes!

### “He Will . . . Swallow Up Death Forever”

God has already taken a major step toward removing sin and death. He sent Jesus Christ to give his life in our behalf. How can Jesus’ death help us? Jesus was born perfect and “committed no sin.” (1 Peter 2:22) Hence, he was entitled to endless, perfect life as a human. What did he do with his perfect life? He willingly gave it up to pay for our sins. Yes, Jesus gave his life “a ransom in exchange for many.” (Matthew 20:28) Soon,

that ransom will be fully applied in our behalf. What can that mean for you? Consider these scriptures:

- “God loved the world so much that he gave his only-begotten Son, in order that everyone exercising faith in him might not be destroyed but *have everlasting life*.”—John 3:16.
- “He will actually *swallow up death forever*, and the Sovereign Lord Jehovah will certainly wipe the tears from all faces.”—Isaiah 25:8.
- “As the last enemy, *death is to be brought to nothing*.”—1 Corinthians 15:26.
- “The tent of God is with mankind . . . And he will wipe out every tear from their eyes, and *death will be no more*.”—Revelation 21:3, 4.

How long can you live? The Bible’s answer is clear: *Humans can have the hope of living forever*—a hope that will be fulfilled after God cleanses the earth of all badness. (Psalm 37:28, 29) Jesus had that precious hope in mind when he said to a man impaled next to him: “You will be with me in Paradise.”—Luke 23:43.

Yes, the human desire to live forever is both reasonable and natural. God made us that way! Moreover, he will satisfy that desire. (Psalm 145:16) We must do our part, however. For instance, we need to build faith in God. “Without faith it is impossible to please [God] well, for he that approaches God must believe that he is and that he becomes the rewarder of those earnestly seeking him,” says Hebrews 11:6. Such faith is not credulity but is an intelligent conviction based on accurate Bible knowledge. (Hebrews 11:1) If you would like to gain that faith, please speak to Jehovah’s Witnesses locally or visit our Web site at [www.jw.org](http://www.jw.org). ■

\* Adam and Eve’s rebellion raised serious moral issues that involve God. These issues, which explain God’s temporary toleration of wickedness, are discussed in the Bible study aid *What Does the Bible Really Teach?* Read it online at [www.jw.org](http://www.jw.org).