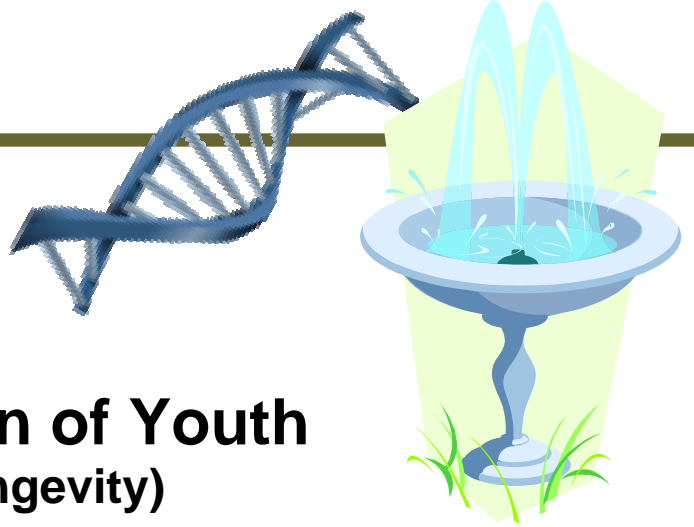


# science FRONTIERS



## Fountain of Youth (Longevity)

What if you could live to be 100? Would you want to? How about 1000? Longevity refers to someone or something having a long life, especially living longer than expected. Most people want to live a long time. Aging—getting old—means that an individual is less and less able to survive and reproduce.

Due to inaccurate birth statistics, today it may be difficult to know how long some people have lived. The average worldwide life expectancy is 64.3 (according to about.com). But the Bible mentions many people who lived much, much longer than people live today. God planned for humans to live forever. The brain's capacity to learn and grow indefinitely illustrates this. But sin introduced decay and death.

All the information about any living thing—plant, animal or human—is coded in the organism's DNA. Scientists can watch aging happen as **telomeres** (*repeating pieces of DNA at the tail end of chromosomes*) get shorter. Telomeres protect the important end pieces of the DNA. Every time a cell makes a copy of itself, telomeres lose length. Finally, the cell cannot replicate itself any longer and it dies. Many scientists believe that ultraviolet (UV) rays and radiation may speed up the process that shortens telomeres.

For example, in science laboratories researchers have studied the **genetics** (*how genes carry traits from one generation to the next*) of fruit flies. By experimenting with different strategies, such as having them mate later in their life cycle, they have doubled their life span. Scientists have also discovered that certain animals, such as sea anemones, hydra, and sea urchins, don't appear to age. By studying them to find out how their DNA is different from ours they have learned many things. For example, some creatures produce large quantities of certain **enzymes** (*proteins that make chemical reactions happen*) that gobble up **free radicals** (*unstable molecules that cause damage to cells, like rust damages iron*). Scientists are wondering whether injecting people with those enzymes would let them live longer. They hope that someday doctors will be able to prescribe enzymes that scavenge destructive free radicals in the blood stream to slow down or reverse the aging process.

### Questions for Research

- What does the Bible say about the years of human life?
- Why would God be interested in how long humans live?
- Are there any reasons why it might not be good for people to live longer?
- What may be some unwanted results from giving people those enzymes?

### Research Ideas

Free radicals, aging, telomere