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Research reveals secrets to longer, healthier life

By

The secret to a longer, healthier life is:

a. Be born to an older dad.

b. Be born in September through November.

c. Take a bacterial product first found in the soil of Easter Island.

d. Have more social connections.

e. Take a space voyage. f. All of the above.

If you answered “all of the above,” you win the Ponce de Leon prize for keeping up with research news on what may contribute to longevity in assorted test animals — and humans.

Explorers and scientists have been looking for ways to “beat” aging for hundreds of years. The challenge in research today lies in untangling which of the many threads of our lives can be stretched out even longer, but also healthier. While it might be great to live to be 100, many folks would settle for making it to 90 with a healthy mind and body.

Much of the time, researchers study animals because things move along faster. They can watch a biological process unfold in a matter of weeks or months, rather than decades.

Consider C. elegans, a microscopic species of primitive flatworm that, after spending extended time on the International Space Station, was found to have slowed down muscle aging and thus lived longer. Dutch and English scientists figured out that a group of seven genes in the worms were expressed at lower levels while in space, and that led to fewer toxic proteins released into muscle.

Back on Earth, scientists also figured out how to inhibit those same genes in other worms. Now, they plan to work with Dutch astronaut Andre Kuipers, who just returned from a six-month stay on the ISS, to see if the same genes affected aging in his muscles.

Then there are the forgetful bees studied by researchers at Arizona State University.

They’ve found that as the insects mature in a 30-day life span, they spend more time out of a hive foraging alone. By losing their social connections, their bee brains become less organized, with symptoms resembling dementia. Left alone, they’ll die early. But if those same bees are restricted inside the hive, their brains recover function and they live out their full month. So if you want to keep the brain sharp, maintain social connections.

Researchers at the University of Texas Health Science Center in San Antonio recently reported some remarkable outcomes for mice treated with rapamycin, a bacterial product first isolated from soil on Easter Island in the Pacific and currently used as a transplant drug.

Given to young mice, the drug enhanced their learning and memory and reduced anxiety; given to older mice, declining brain function actually improved. The drug has effects similar to an antidepressant and increases levels of several “feel good” neurotransmitters in the brain.

At the University of Chicago, husband-and-wife researchers Leonid Gavrilov and Natalia Gavrilova looked at records for nearly 1,600 Americans born between 1880 and 1895 who achieved age 100, as well as more than 10,000 shorter-lived siblings and more than 1,000 spouses.

They found that those born in the fall, September through November, had 40 percent higher odds of reaching the century mark than did those born in March. The researchers wrote online in the Journal of Aging Research in November that three factors were probably most important for babies born before 1900: mild temperatures in the first months of life; a seasonal lull in cycles of infectious diseases; and better maternal nutrition being available during the harvest season.

All three factors helped avoid a buildup of damage to the infants’ systems early in life, the researchers argue, and support the theory that “early life programming” helps determine the course of aging and longevity.

Finally, a recent study by researchers at Northwestern University found that children and even grandchildren born to older men may live longer because they inherit longer telomeres — protective caps on the ends of chromosomes — that protect against aging degeneration and disease.

The researchers used a collection of nearly 1,800 blood samples from young Filipino adults and their mothers to measure telomere length and birth records to determine the ages of the children’s fathers and grandfathers.

They found that a person’s telomeres are likely to become longer not only due to their father’s age when the person was born, but also with the paternal grandfather’s age at their father’s birth, amplifying the effect over multiple generations.

The study was published in the Proceedings of the National Academy of Sciences.