

A message from *Life* co-author, Helen Stephenson

Tortoises are among the record-breakers when it comes to life span. They can often live for 200 years. I'm pretty sure I don't want to live that long, but, these days, we are all living longer. This article about long life has made me think a lot about old age. How would I feel about living beyond 100? What about you?

A long and healthy life?

How long will a baby born today live? 100 years? 120 years? Scientists are studying genes that could mean long life for us all.

There are already many, many people who have passed the landmark age of 100. In fact, there are now so many healthy, elderly people that there's a new term for them: the *welllderly*. These are people over the age of 80 who have no diseases such as high blood pressure, heart disease or diabetes and have never taken medicines for these conditions.

There have been many scientific studies of communities where a healthy old age is typical. These include places like Calabria in southern Italy and the island of Okinawa in Japan.

The small village of Molochio in Calabria has about 2,000 inhabitants. And of these, there are at least eight centenarians. When researchers ask people like this the secret of their long life, the answer is almost always to do with diet and is almost always the same: 'I eat a lot of fruit and vegetables.' 'A little bit, but of everything.' 'No smoking, no drinking.'

While in the past scientists have looked at things such as diet and lifestyle for an explanation of long life, these days they are investigating genetics. One such researcher is Eric Topol, who says, 'There must be genes that explain why these individuals are protected from the aging process.'

The new research into long life looks at groups of people who have a genetic connection. For example, one group of interest lives in Ecuador. In one area of the country there are a number of people with the same genetic condition. It's called Laron syndrome. The condition means that they don't grow to more than about one metre, but it also seems to give them protection against cancer and diabetes. As a result, they live longer than other people in their families. Meanwhile, on the Hawaiian island of Oahu, there's another group of long-lived men, Japanese-Americans. They have a similar gene to the Laron syndrome group.

Back in Calabria, scientists are trying to work out exactly how much of the longevity is due to genetics and how much to environment. By checking public records going back to the 19th century, researchers have reconstructed the family trees of 202 nonagenarians and centenarians. They concluded that there were genetic factors involved. And they seemed to

benefit the men more than the women – a surprising result because generally in Europe, there are five times more women centenarians than men.

So what really makes people live longer? It seems likely that it is an interaction of genes, the environment and probably a third factor – luck.

Glossary

centenarian (n) – someone who is older than 100 years old

nonagenarian (n) – someone who is between 90 and 100 years old

Key Words

condition (n) – the state of your health; a physical problem

disease (n) – a serious problem that affects someone's body and health

elderly (adj) – quite old, or very old

factor (n) – a cause of something or an influence on a result

family tree (n) – a diagram that shows all the members of a family and the relationship between them

healthy (adj) – strong and not ill

inhabitant (n) – the inhabitants of a place or region are the people who live there

lifestyle (n) – the way that a person lives and the activities they do

medicine (n) – a substance that you take when have an illness to make it better

research (n) – the careful study of something in order to learn facts about it