

People in their nineties reveal the secrets to ageing well

February 25 2016, by Irene Maeve Rea, Jennifer Rea And Ken Mills



Credit: AI-generated image ([disclaimer](#))

There are many reasons why some people live long healthy lives while others don't, but one of them is undoubtedly genes. That doesn't mean we should be negative about our chances of ageing in good health. Although our genes are handed down from our parents, the hand that we are dealt seems to be influenced by our lifestyle, too. Food, physical

activity and stress can change how genes function by adding "chemical tags" that act as [on/off or dimmer switches](#), influencing our health and lifespan. The study of this process is known as epigenetics.

In a series of research studies with nonagenarians who were in robust health (the BELFAST studies), we found that participants carried fewer of the [genes](#) that are implicated in [cardiovascular disease](#) and showed some gene types which may have helped [boost their immunity](#).

In the most recent [BELFAST nonagenarians' study](#), we built on these findings and asked active nonagenarians why they thought they had lived for so long and in such [good health](#). [Family history and personal stories](#) are powerful tools when used in parallel with [genomic analyses](#). They can help us to understand how our beliefs, behaviour and [lifestyle choices](#) subtly fine-tune how our genes [function in daily life](#).

By talking to nonagenarians about their lives, we identified how important they considered their genes to be, but they also told us about several other factors that they thought supported their long and healthy lives.

Genes and good health

Nonagenarian siblings recognised genes as important. Ellie, 99, said: "I suppose it was the family I was born into – my mother's female relatives all seemed to live into their 90s. I can remember cousins and aunts, all were over 90."



Credit: AI-generated image ([disclaimer](#))

She added: "The men didn't live so long."

In fact, Ellie had observed something scientists still don't understand: why [women live longer than men](#). Evidence suggests that it may relate to [male hormones in the womb](#) leading to increased age-related disease.

Train body and mind

All of the people in our study spoke about the importance of keeping mentally and physically active. Robert, a shopkeeper, said: "Hard work all my life. I think that is the secret."

Norman, 95, one of two nonagenarian brothers, both railwaymen, said: "I

left school at 16 and, yes, we had to go to work then. It wasn't like today when you can keep your education going until you are 23 or 24." His brother, Joyce, 96, agreed: "Yes we worked hard. There is no doubt about it."

Samuel, 95, but "going on 25", keeps mentally busy and told us that he had just finished writing his tenth book.

The health benefits of [physical activity](#) are [hard to ignore](#). Regular exercise changes our epigenome, activating genes that [improve muscle function](#). Exercise not only protects our muscles but also our brains with a possible [dose-related effect](#) – the more we do, the greater the effect. Exercise is good for everyone and it's [never too late to start](#).

Eat well

Many of the study participants mentioned the importance of food in ageing well. Norman said: "I have always led a quiet life. Didn't smoke or drink to any extent and was always fed on good solid food. No junk food." His brother, Joyce, added: "We always had sensible food. Never smoked, except for a couple of months."

Eileen, 92, gave details of "good food, good healthy meals. Mama would have a big pot of broth for us."

There is truth in the saying: you are what you eat. Scientists have provided evidence that fruit and vegetablea may [dampen cancer-causing genes](#), or may protect us from cancer by [altering epigenetic markers](#).

Few participants smoked, avoiding the known epigenetic effects of cigarette smoke including [lung damage, increased risk of dementia and cancer](#).

Be positive, stay social

Many of the participants described "being happy", "always cheerful", "never melancholy" and being content with a "rich life" and family relationships. Typical examples from siblings include Samuel, 95, who said he is "interested in people, interested in life". His sister Ethel, 93, added: "[I am] interested in things, and everything that's going on." Whilst Sarah, 95, one of two sisters, told us: "Oh, I am always happy" and her sister Mariah, 94, said: "I have just a happy disposition".

The ability or willingness to cope with difficulties was another common attitude we observed. As Eileen, 96, told us: "*just take things as they come.*"

Successful ageing is considered to be more than the [absence of disease and being able to live independently](#) but involves being [socially active](#). Friends and family are important factors in ageing well, making for good mental health, reduced risk of [premature death](#) and can help people deal with [stressful events in their lives](#).

The epigenetic modification of our genes – and the life stories of healthy nonagenarians – offer explanations about how diet, [physical activity](#), stress and exposure to toxins and infections can subtly alter our genes and our predisposition to disease.

The key to ageing well may not depend on choosing our parents wisely (even if we could), but making good lifestyle choices.

This article was originally published on [The Conversation](#). Read the [original article](#).

Source: The Conversation

Citation: People in their nineties reveal the secrets to ageing well (2016, February 25) retrieved 1 May 2024 from <https://medicalxpress.com/news/2016-02-people-nineties-reveal-secrets-ageing.html>

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