

SCIENCE • HEALTHY AGEING

Can Aging Be Delayed?

Preventing premature aging — the science of telomeres, free radicals, and how a healthy lifestyle can turn back your biological clock

A DAILY MIRROR INTERVIEW WITH DR. N. KUMARANAYAKE

Clinical Psychiatrist, Kiribathgoda Base Hospital • Mediscene Newspaper

Aging has long been associated with disability and illness. But while aging itself is inevitable, Dr. N. Kumaranayake, Clinical Psychiatrist at the Kiribathgoda Base Hospital, explains that the elderly can lead healthy, active lives — and, more surprisingly, that even the young can ‘age’ prematurely if the science is ignored.

“Scientists have pointed out that chronological age is not accurate. A person can have a psychological age that exceeds their chronological age. They can feel mature or younger than they really are.”

— Dr. N. Kumaranayake, Clinical Psychiatrist

Chronological age is simply the number of years a person has lived. Psychological age, on the other hand, refers to how old a person feels, acts, and behaves — and the two are not necessarily equal. When a person ages psychologically faster than their years, Dr. Kumaranayake notes, they become more susceptible to falling ill.

Modern Discoveries: Two Leading Theories

1. The Free Radical Theory

Oxygen, Dr. Kumaranayake explains, is both a blessing and a curse. Human beings need it to live, yet the simple act of breathing produces a highly reactive molecule called a free radical.

As free radicals interact with other molecules in the body, they cause oxidative damage. This damages organs and contributes to a wide range of illnesses and diseases. Free radical formation is especially high among people living in polluted environments, smokers, and those who eat unhealthy food — which is why antioxidants are often recommended to counter the damage.

2. The Telomere Theory

The second, more recent theory centres on telomeres — protective caps found at the end of each chromosome, much like the plastic tips at the end of a shoelace. Just as a shoelace frays once its tip wears away, a chromosome becomes vulnerable once its telomere is damaged. This research area was pioneered by Nobel Laureate Prof. Elizabeth Blackburn.

Our genetic material, hidden within the chromosomes, determines susceptibility to conditions such as diabetes, heart disease, and rheumatoid arthritis. Telomeres keep this genetic material safely contained. But when telomeres are

damaged, that genetic material is exposed prematurely, triggering illnesses earlier than they might otherwise occur — the essence of premature aging.

“Suppose your genetics inflict a particular disease when you’re 60 years old. But as your telomeres are damaged, you would contract it at 30.”

— Dr. N. Kumaranayake

Telomeres shorten naturally with time, but environmental factors can accelerate the process — chief among them, chronic stress.

A CASE IN POINT

A 45-year-old company manager complained of constant headaches, backaches, irritability, and anger. A hard worker also pursuing a postgraduate degree, he was recently found to have diabetic levels bordering on impairment — despite no family history of cardiovascular disease or diabetes. Applying the telomere concept, Dr. Kumaranayake identified this as a case of premature aging driven by chronic stress.

“Scientists have found that chronic stress increases the risk of contracting cardiovascular diseases and can even shorten one’s lifespan,” Dr. Kumaranayake stressed, noting that psychological aging has been linked with higher oxidative stress and shorter telomere length.

10 yrs

A stressful lifestyle can add a decade to your biological age

20%

Reduction in telomere loss with high blood Omega-3 levels

1000–2500mg

Daily Omega-3 intake shown to prevent premature aging

Preventing Premature Aging

Dr. Kumaranayake's roadmap for slowing the biological clock:

1

Exercise Daily

Regular physical activity neutralizes stress-induced rapid aging, easing pressure on the body's cells.

2

Restore Vitamin D

Studies show restoring low vitamin D to normal levels slows genetic-related aging; high serum vitamin D is linked with longer telomeres, equal to years of additional lifespan. Low levels are tied to cancer, diabetes, high blood pressure, osteoporosis, and stroke.

3

Take Omega-3

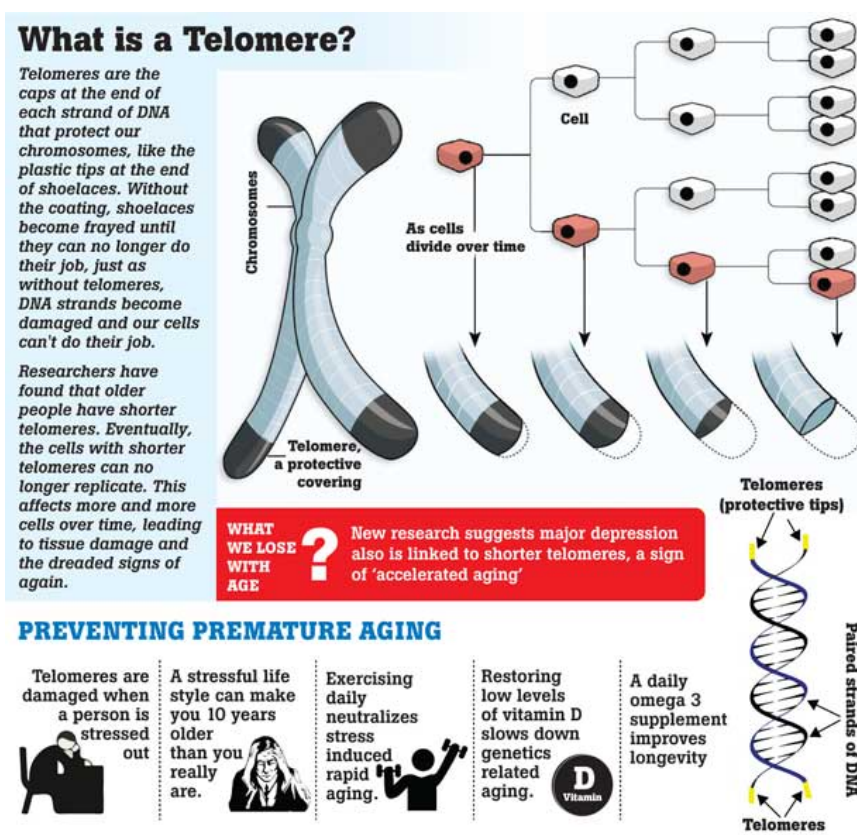
Prof. Blackburn's research found that individuals with abundant blood Omega-3 had a 20% reduction in telomere loss. A daily intake of 1000–2500mg is enough to help prevent premature aging, improve longevity, and guard against age-related diseases like Alzheimer's — in line with the American Heart Association's guidance of 1000mg/day for heart attack and stroke prevention.

4

Manage Chronic Stress

Since stress is a primary driver of telomere damage, consciously reducing life stress protects genetic material and slows psychological aging.

At a Glance: What Is a Telomere?



Source: WSJ research/ Internet ©DM GraphicDesk

How telomeres protect chromosomes, and five evidence-based ways to slow premature aging. Source: WSJ Research / DM GraphicDesk

Life Expectancy in Sri Lanka

According to the Department of Census and Statistics, life expectancy has been rising for both men and women in Sri Lanka. World Health Organization figures published in 2015 place male life expectancy at 71.6 years and female life expectancy at 78.3 years — ranking Sri Lanka 67th in the world for life expectancy.

Category

Life Expectancy (WHO, 2015)

Male	71.6 years
Female	78.3 years
Sri Lanka — Global Rank	67th in the world

“A stressful lifestyle can make you 10 years older than you really are.”

YOUR BIOLOGICAL AGE IS NOT FIXED — IT CAN BE SLOWED, TOO.

Mediscene Newspaper • Daily Mirror Interview