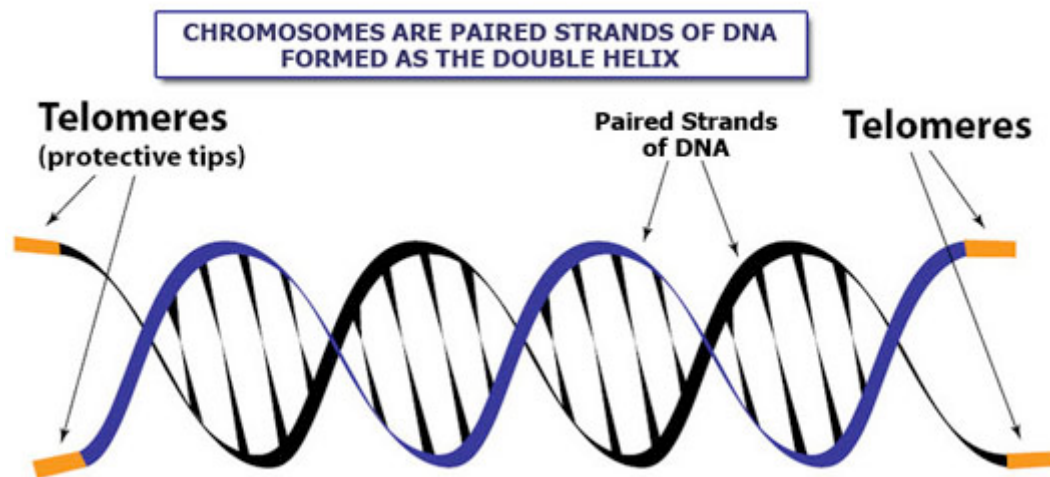


Break Through in Telomere/Telomerase Science

The ticking clock within the human body

What is a Telomere

There are trillions of cells in our body and at any given time a great number are dividing furiously to keep us alive and well. The process is directed by genes sitting on the 23 pairs of chromosomes found in the nucleus of each and every cell. The chromosomes are long sequences of DNA that contain all our genetic material. Each pair of chromosomes consists of one from your mother and one from your father and they are twisted around each other to form a structure called the double helix.



Telomeres have no genetic function; they are simply stretches of DNA (repeats of base pairs) that protect the rest of the chromosome. These little bits of DNA are critical to healthy cell function and have been likened to the plastic tips on shoelaces because they prevent the chromosome from “fraying.”

However, telomeres become progressively shorter each time the cell divides. When they get too short, cells reach replicative senescence and can no longer divide. The result can be the various conditions associated with old age. You start out with 10,000 bases when you are born and will essentially die of old age when those bases reach 5,000.

Research has shown that people over sixty who have long telomeres experience greater heart and immune system health than their age-matched counterparts with shorter telomeres. Thus, it is becoming well-understood that maintaining telomere length is preventing age-related decline.

The phenomenon of cellular aging was first noted by Professor Lenhard Hayflick in 1961. He discovered that cells cannot divide beyond a specific number of times. This is called the Hayflick Limit. Cells reaching this limit become old. Although Professor Hayflick discovered this important scientific principle, he had no idea what caused it.

It took almost thirty more years before the role telomeres play in cellular aging was finally understood. In 1990, Calvin Harley at McMaster University in Canada and Carol Greider at Cold Spring Harbor Laboratory in the USA discovered that telomere shortening goes hand-in-hand with the aging process and is the direct cause of cells reaching the Hayflick Limit.

It was discovered in 1997 by molecular biologist and PhD Bill Andrews that in the reproductive system of males and females, telomere shortening does not take place due to a gene that is present called telomerase. Telomerase manufactures new bases to the telomeres each time they are lost during cell replication leaving the cell “immortal” because no DNA information is ever lost. Because no DNA information is ever lost, aging does not occur in these reproductive cells.

All of our cells contain the telomerase gene, however, the gene is suppressed in all our other cells due to the lack of an enzyme. The work of Dr Andrews has been to discover a way to “turn on” as it were the telomerase gene in all our cells. He succeeded!

A new study on mice published in [*Nature*](#) has added validation to research that is being performed by Bill Andrews, Ph.D., who has partnered with nutritional formulator John Anderson to “turn back the clock” on aging.

In this latest study, Harvard Medical School researchers found that mice lacking telomerase aged much more rapidly, and died earlier, as an abundance of critically short telomeres developed. But when the enzyme was reawakened in the mice by a compound that was discovered after over 300,000 test by Andrews and his research team, the age-related symptoms disappeared and rejuvenation was seen in several organs including their brains.

The study, which was led by geneticist Dr. Ronald Depinho, presents a strong case for advancing research for turning on telomerase in humans as a potential anti-aging therapy.

In addition, Dr. Depinho explained that the study helps put concerns to rest that turning on telomerase was potentially cancerous.

“Just as telomerase activation reversed degeneration in the organs of these mice, we expect that it can do the same for humans,” said Dr. Andrews. “Telomerase activation technology promises to be the most significant advance in human health since germ theory.”

Dr. Andrews and Anderson have announced that they expect to launch a nutraceutical in August 2011 that will turn on telomerase exclusively through Isagenix Product B.

When people talk of “turning back the clock” or living in perpetual youth, it’s all too easy to write them off as quacks or having watched a little too much science fiction—but that’s not so when talking with molecular biologist Bill Andrews, Ph.D., who has studied aging at the molecular level for more than 15 years.

Dr. Andrews is one of the world’s authorities on the biology of telomeres.

His own breakthrough finding was the detection of an enzyme called *telomerase*, which acts directly on telomeres to replace DNA bases that have been lost to cell division. It’s a key finding because telomerase can be produced by all types of human cells if they are given an appropriate signal, a signal that could “reverse aging” and increase the lifespan in humans.

Who wouldn’t want to live a longer, healthier life past 125? The potential to increase healthy lifespan is the reason that Dr. Andrews has screened thousands of compounds searching for ones that stimulate telomerase activity. (Popular Science August 2011, “*The Man Who Would Stop Time*”)

Changing the World of Health

From the lab to the consumer

If you happened to miss our [2011 “Ignite Your Future: Stay Young Forever” Celebration](#) in San Diego, then you missed an exciting new product being formally launched—Product B™ with Antioxidants and Telomere Support.

Isagenix Master Formulator and Founder John Anderson, along with molecular scientist and leading researcher in the field of telomere’s Bill Andrews, Ph.D., and other premier telomere scientists, released the ground-breaking product at the August Celebration.

“I’ve been working with Isagenix Founder and Master Formulator John Anderson for nearly a year to help identify natural, non-drug substances that can help provide incremental support to our telomeres.”

We have proven that certain natural ingredients in Product B induce telomerase by actually putting bases back on the telomeres in human skin cells in-vitro.

“As Product B launches into the general public and the results start coming in, it will probably be the most world worthy news of our time.”

-John Anderson

Isagenix and Product B will change the world of health as we know it.”

-Bill Andrews