

Turning Back the Clock on Aging
By Bobbie Katz

Ever dream of living to 125 and beyond while being healthy, vital, and feeling and looking like you were in your twenties again?

No, we're not talking *Twilight Zone* here, but rather real science that could prove to be the most world-worthy news of our time – a breakthrough product called Isagenix Product B that could change the entire global health picture as we know it. It's all thanks to molecular biologist and researcher Bill Andrews, Ph.D., and Isagenix Master Formulator and Founder John Anderson, who are bringing to the fore the long and short of the situation surrounding human longevity -- telomeres.

“Telomere length is the nearest measure that science has ever found to determine lifespan in humans, horses, dogs and cats—it acts as an internal ‘hourglass’ or ‘biological clock’ for aging,” explains Dr. Andrews, the founder, president and CEO of Sierra Sciences in Reno, Nevada, and one of the world’s leading authorities on telomerase biology. “Almost every known disease can be attributed to the shortening of telomeres. We are all born with long telomeres but they start to shorten from the day we are conceived. Product B has been formulated to address premature or normal telomere shortening. And what’s amazing is that because of John Anderson, we’ve been able to do it with all natural ingredients as opposed to chemicals. Product B is a nutritional supplement, not a drug.”

Telomeres have been likened to the plastic tips on shoelaces because they prevent our chromosomes from “fraying.” These little stretches of DNA on the ends of our 23 pairs of chromosomes are critical for healthy cell function, allowing our trillions of cells to keep furiously dividing, thereby keeping us alive and well and able to get new skin, blood, bone and other cells when needed. Without telomeres, our genetic data would be lost because our chromosomes -- twisted double-stranded molecules of DNA containing our genes that are located inside the nucleus of each of our cells – would scramble or stick together, causing disorder inside the body.

“Telomere length affects every internal organ and every disease – cancer, heart disease, Alzheimer’s and so on,” reveals Dr. Andrews, who, in 1997, made a major breakthrough when he discovered an enzyme specifically in humans called telomerase, which acts directly on telomeres to replace DNA cell bases that have been lost to cell replication and maintains telomere length in cells. “When telomeres get short, the chromosomes become rearranged and transmutations occur.”

At the heart of the matter is the fact that telomeres become progressively shorter each time a cell divides and when they get too short, the cell can no longer divide and replicate itself – that triggers a mechanism called senescence, which causes the cell to become inactive or die. That’s when “bad” things happen to the body. We start out with 10,000 base pairs of telomeres when we are born but we will essentially begin dying of old age when those bases reach 5,000, which usually occurs around the age of 60. It is now

becoming a well-studied topic in the scientific community that age-related decline may be able to be slowed or theoretically prevented by maintaining telomere length.

It was back in 1961 that the phenomenon of cellular aging was first noted by Professor Leonard Hayflick. He discovered that cells cannot divide beyond a certain number of times but he did not know why. It wasn't until nearly 30 years later, in 1990, that 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 what had come to be known as the "Hayflick Limit."

While three of Dr. Andrews' colleagues – Drs. Elizabeth Blackburn, Carol Greider, and Jack Szostak -- received the 2009 Nobel Prize for their discoveries in telomere biology (their research involved telomerase in the cells of a certain pond scum organism but the discovery did not contribute to the discovery of human telomerase), it was Dr. Andrews who confirmed in 1997 that telomere shortening does not take place in the reproductive system of males and females because of a gene that is present called the telomerase gene. Hence, those cells are immortal because no DNA information is ever lost. Although all of our other cells contain the telomerase gene, as we age it becomes suppressed due to the lack of an enzyme. Dr. Andrews' discovery of the telomerase enzyme was a key finding because telomerase can be reproduced by all types of human cells if given an appropriate signal, one that could "turn it on" and hopefully reverse aging and increase lifespan.

Added validation to Dr. Andrews's research has come from a recent study published in the journal *Nature* in which Harvard medical researchers, led by cancer geneticist Ronald DePinho, discovered that mice lacking telomerase aged much quicker and died earlier as an abundance of critically short telomeres developed. Dr. DePinho and his team engineered the mice to lack the telomerase enzyme, allowing them to grow to adulthood without it, and then activated the enzyme for one month with a chemical called 4-OHT.

After another month, the mice were re-evaluated and to the amazement of all, the age-related symptoms had disappeared and rejuvenation was seen in several organs, including their brains. Old obese gray-haired mice that couldn't get around became young again both in energy and physical appearance. The study proved the case for turning on telomerase in humans as a potential anti-aging therapy.

Where Product B is concerned, it was Dr. Andrews' hooking up with John Anderson via a top Isagenix associate, Peter Greenlaw, in 2010 that proved to be the icing on the cake. Where Dr. Andrews had been focusing almost entirely on drugs and chemicals to stimulate telomerase, it was Anderson who looked at the effect of oxidative stress and free radicals on telomeres and sought to provide telomere support with botanicals, bacteria, and other natural products he scoured the world to find. With Dr. Andrews having developed the technology to test, verify, and authenticate the effectiveness of the natural ingredients, Anderson went to work.

On September 23, 2010, he presented the first 15 ingredients to Dr. Andrews and, with the 11th one, Anderson had a “hit.” Anderson then went back and began looking at the properties from botanicals indigenous to the U.S., India, China, and Europe. Eventually, that research and testing led to the development of Product B, a combination of all-natural ingredients that have been shown to protect the cell against oxidative stress and support telomeres-

“The hit from my first natural ingredient was strong, but Dr. Andrews and I concur that we expect to find even stronger, faster-working natural ingredients over the next 12, 24, 36 months,” Anderson, who has 32 years of experience working in the nutraceutical industry, notes. “As I make new discoveries of ingredients, they will be added to Product B to enhance it, thereby increasing the product’s efficiency, absorption, potency and strength. The product has already been enhanced three times since it was released in August 2011 – it is now 6 times the strength of the original 2010 hit -- and I know that there are a lot of opportunities for further discoveries.”

“Every ingredient in Product B has a long history of safety,” he adds. “Each ingredient has been consumed during the history of the world – most can be traced back 1,000 years. They all exist on the market but it’s not just a matter of going to a health food store and buying them. They are included in a proprietary blend that promotes absorption by the body.”

As for some of the noted benefits of taking Product B, Dr. Andrews, who has had a passion for finding a cure for aging since he was 12 years old, responds. “I’m 60 and I’m an ultra-marathon runner, doing 50-100 kilometer runs once a month. Since taking Product B, I have had better results than ever. The last 100 km I ran just a few weeks ago, I finished third overall and no one in the Top 10 was over 40.

“I have an identical twin brother,” he continues. “I started doing telomere therapy five years ago, even before John and I began work on Product B, and I hadn’t seen my brother since then. We got together for the first time a few weeks ago and we were shocked. We don’t look alike anymore – I look amazingly younger than he does. His wife and my girlfriend, who is also on Product B and is the only female to have completed the 130 km run through the Himalayas, were shocked as well.”

Anderson cites that, at this writing, there are already more than 100,000 people using Product B in the six months since its introduction (at the end of August 2011) and the results are literally life-changing. People are definitely reporting looking and feeling younger and experiencing gains in energy, performance, overall health, and endurance.

“Of course, in addition to antioxidants and dietary supplements like Product B, exercise, reducing stress, proper nutrition, and not smoking are contributing factors in keeping telomeres long and healthy,” says Anderson, noting that he and Andrews are pleased with the result of their collaboration but by no means are finished. “Product B is a significant piece of the puzzle to help people live long and healthy lives. And, in addition to its being effective, Product B has been made very affordable for the public.”

So then, what is the bottom line on aging and telomeres?

“As a molecular biologist, I can definitively say that everything about our longevity and health revolves around our telomeres,” Dr. Andrews sums up.

It’s a statement that’s been a long time coming.