



DaVinci®

*Laboratories
of Vermont*

Innovative by nature

TELOMERE HEALTH

with Astragaloside IV
and TeloMore™ 25



How Researchers Proved the Value of Telomeres and Found the Heart of Aging

Discovering A New Age

In 2009, Elizabeth Blackburn and Jack Szostak were awarded the Nobel Prize in Physiology/Medicine. Through their work beginning in the early 1980s, they had discovered that the tips at the end of our chromosomes, telomeres, are home to a unique DNA sequence that protects the chromosomes from degradation. Blackburn and Carol Greider also received the prize for their identification of telomerase, an enzyme that makes that DNA.¹

These discoveries have revolutionized our collective perspective on how our bodies age.

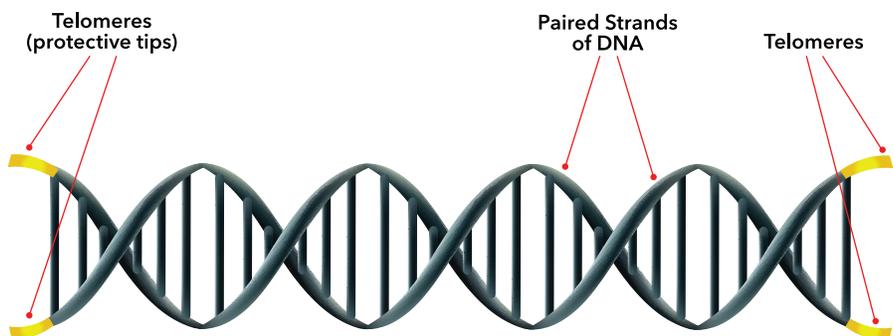
Previous genetic research had failed to fully understand the value of the ends of our DNA strands, mistaking them for non-functioning materials. We now know that in fact these ends, the compound structures of the repeated TTAGGG sequence, act as a barrier to cell degradation, in that their shortening leaves our other DNA vulnerable.

TELOMERES

Specialized structures at each end of the DNA strand that protect chromosomes from degradation

Telomeres:

- Allow full replication of the DNA through telomerase activity
- Protect the chromosome from degradation during replication
- Shorten with replication and lack of telomerase
- Composed of TTAGGG repeating sequence
- Do not fully replicate themselves, resulting in continual shortening through loss of sequence repeats



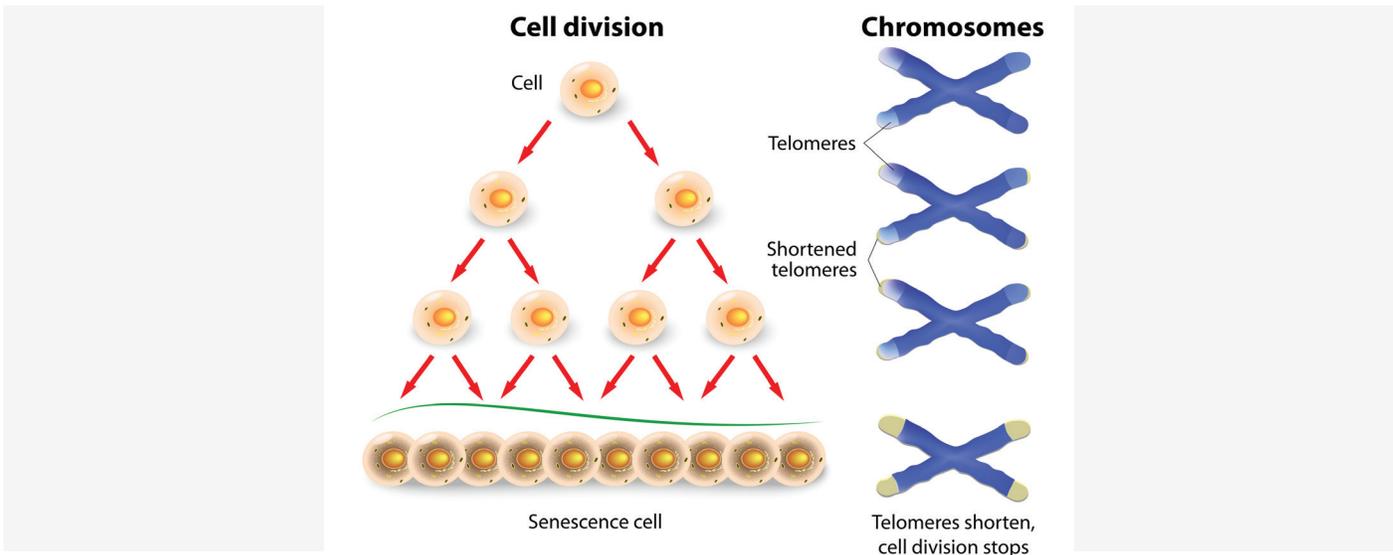
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The Hayflick Limit, Cell Death and Telomeres

Szostak, Blackburn and Greider’s discoveries explained the Hayflick limit better than any that had come before.

In 1961, Leonard Hayflick determined that human cells can replicate only a finite number of times before division halts. With each division, telomeres grow ever shorter until reaching a critical length. At this length, cells can either die (apoptosis) or become senescent. Senescence is a state where the cell will not replicate. A senescent cell, still living, can then damage other living cells with inflammatory cytokines.

While apoptosis is generally preferable to senescence, both states leave the body’s health in question due to undesirable cell function.



Imagine a cap (like the end of a shoestring) that grows shorter and shorter with each cell replication. This is the telomere. Underneath that cap sits our other DNA. Maintaining cell health is not as simple as never allowing the cap to fully disappear.

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Indeed, cells do not simply remain fully healthy until the moment of apoptosis. Instead their function becomes impaired long before that. That’s why we can picture a telomere’s shortening process as a countdown to cellular death, or a bomb fuse, wherein each tick, or the slow burn, signals to the body that its DNA is actually older.

In every cell in our body, 92 telomere caps act as sentinels. If even one of those caps is weak or critically short, the cell’s function can be compromised.

Now imagine we could address the shortening process through supporting the healthy production of telomerase, the enzyme which builds our telomere DNA. With Astragaloside IV’s unique supportive properties, we can.

What is the True Mark of Wellness?

When we think about what it means to be well, the correlation between telomere length and disease is hardly the first thing that comes to mind. When we think of being well, we think about how we move through our daily lives, and what that feels like.

How do your patients feel each day? The support of Astragaloside IV provides a sense of total wellness.

Telomeres and Your Patients: How Length Correlates with Health

Numerous studies have found that telomere length can be a solid indicator of general wellness. Today, multiple businesses offer telomere testing, as telomeres’ status as markers of health is generally accepted. There are now more than 10,000 published studies on telomeres in our scientific literature.

Intuitively, the shortening of telomeres relating to our age makes sense. Biologic statistics don’t argue: newborns’ white blood cell telomere length may be 8,000 base pairs while an elderly person may exhibit as low as 1500. At some point in the fetal cycle, our telomere count is likely at its highest.²

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Knowing this simple relationship to age, researchers have dug still deeper, showing correlation between leukocyte telomere length (LTL) and disease. LTL “is short in diseases associated with increased oxidative stress, such as coronary artery disease³, diabetes mellitus⁴, heart failure^{5,6}, and osteoporosis^{7,8}.”⁸ Pain in women with fibromyalgia is associated with short LTL.⁹ So is fatigue in older adults.¹⁰

Further, researchers have time and again shown the activity of telomerase as a necessary enzymatic component to our DNA’s protection, with results indicating its invaluable contribution to brain function and other health factors. Importantly, the factor that allows us to glean these protective results is generally not expressed in adult cells, save the immune and reproductive (sperm and egg) cells.¹¹

Astragaloside IV and Telomere Health

We’re all searching for that anti-aging miracle. But what TeloMore™25 offers in the way of healthy aging support for your patients is as practical as supplements come.

In anecdotal reports, AG-IV supports memory vitality, muscular strength, energy levels and much more. In other reports, astragaloside IV, an extract of the popular *Astragalus membranaceus* plant, supports the activity of telomerase and is referred to as a “small molecule telomerase activator,” a name that suits its level of support for the enzyme’s production.

Astragalus:
An herbaceous perennial

Member of the pea family

Used in Chinese traditional medicine for thousands of years



The Chinese name for *Astragalus* root, *huang qi*, means “yellow leader.” Its root is considered one of the most important facets of Chinese medicine.

There arises a problem in developing the right AG-IV formula: this extract is present in minute amounts in the plant, thereby limiting the ability to gather substantial stock.

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We've found a better way. Through our unique, proprietary process, there is no need to use prohibitively large or expensive quantities of astragalus root to produce the natural AG-IV extract. We are not using a molecular cleaving process to create it - instead, we are harnessing the natural plant component astragaloside IV only.

Because of this emerging technology, we have successfully created a telomere support supplement whose cost is not prohibitive to your practice or your patients. Where other supplement regimens cost an estimated \$8000 annually, DaVinci's formula will provide your patients a reasonably priced healthy aging solution.

TeloMore™25 supports:

- Telomerase activation
- Memory vitality
- Recovery and repair processes
- Stamina
- Stress management¹²
- Immune system health
- Cardiovascular health
- Energy metabolism

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