

## “I want LONGER Telomeres”

Oprah Winfrey -November 1<sup>st</sup>, 2007



## Telomere Biology: The Emerging Paradigm Shift

Presentation by:

Noel Thomas Patton

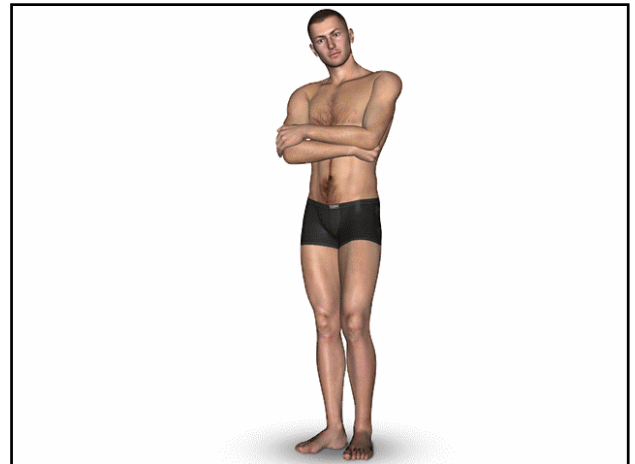
Founder and Chairman

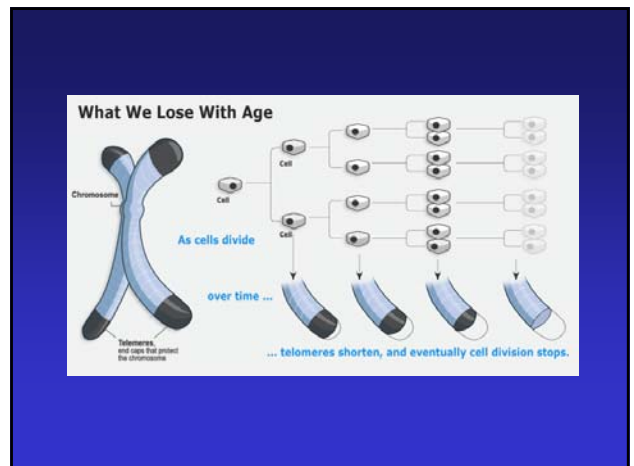
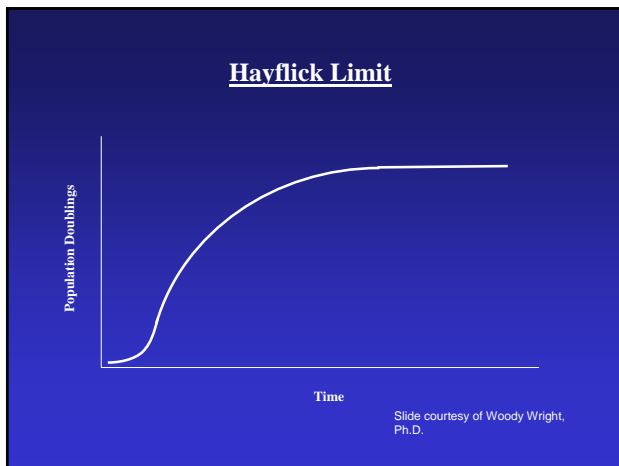
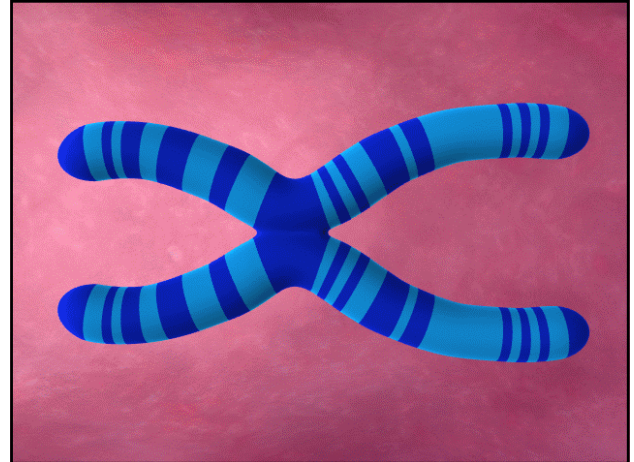
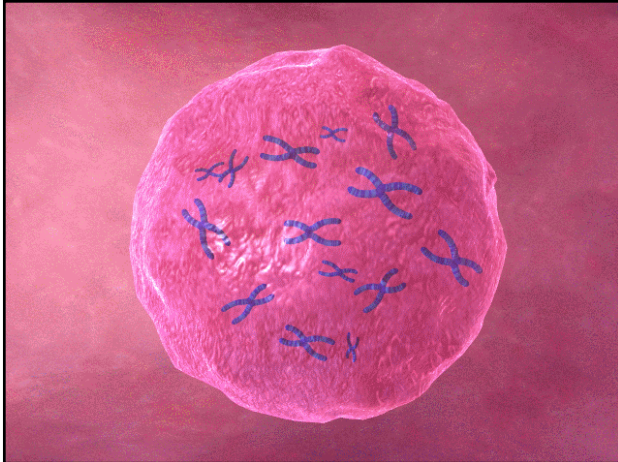
Telomerase Activation Sciences, Inc.

EuroMediCom April 10, 2010

### Telomere Biology: A Remarkable Breakthrough in Medicine

- 2009 Nobel Prize in medicine awarded for discovery of telomerase
- Telomeres are the single most important sequences of DNA because they protect all the other DNA on our chromosomes
- Short telomeres are associated with almost every affliction of old age
- Long Telomeres are associated with healthy aging and longevity





## Telomere Length vs. Cellular Age

- **Somatic Cells\*** generally have little or no telomerase and telomeres shorten as we get older  
**Conception:** Our telomeres start out **15,000** base pairs long
- By **Birth** the embryo has divided so many times that telomere length is down to **10,000** base pairs
- Over the rest of our lifetime we lose another 5,000 base pairs and when they get down to roughly **3-5,000 most of us will be dead!**

\* Somatic Cells are all the cells in the body except for reproductive cells.

## Bottom Line:

### Short Telomeres = the “Kiss of Death”

- People with shorter telomeres in their immune cells had twice the risk of death from heart failure as patients with the longest telomeres. From A study sponsored by the American Heart Association (2008) Farzaneh-Fai et al. “Prognostic Value of Leukocyte Telomere Length in Patients With Stable Coronary Artery Disease: Data From the Heart and Soul Study.” *Arteriosclerosis, Thrombosis & Vascular Biology*, 2008; 28(7):1379-1384.
- 100 year olds in good health had “significantly longer” telomeres than those with health problems. Study reported in *Journals of Gerontology* (2008) Delara et al. “Association of Longer Telomeres With Better Health in Centenarians.” *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*. 208. 63.809-812.

## What can be done to keep telomeres long?

- Lead a healthy lifestyle
- Activate Telomerase

## What is Telomerase?

- **TELOMERASE** is an enzyme that confers longevity to cells
- It does this by lengthening telomeres
- Activating Telomerase will extend the life of cells beyond the Hayflick Limit

## Telomerase can be turned on with a nutraceutical

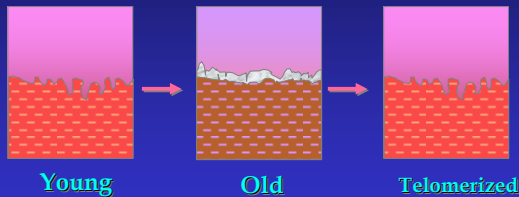
- **2000:** The **geron** Corporation discovered TA-65 a single molecule that turns on Telomerase
- **2002:** T.A. Sciences exclusively licensed TA-65 from Geron
- **2007:** TA-65 commercialized as a nutraceutical capsule through licensee doctors

## Is TA-65® the “Fountain of Youth”?



- No, not in the case of a *total* human being: TA-65® activates telomerase in selected biological systems, not in every cell of the entire organism
- But, TA-65® users have seen *statistically significant improvements* in their immune system, bone density, sexual performance, and several other key areas

## Skin Reconstitution: Old Cells Become Young



Slide courtesy of Bill Andrews  
Funk et al, Exp Cell Res, 2000

## Safety

- 5 years of development and safety testing before introducing TA-65®
- Hundreds of clients taking TA-65®
- Some for as long as 3 years
- Not a single adverse reaction reported by our licensed physicians
- Not a single diagnosis of new cancer
- Not a single report of increased cancer load for clients who already had cancer

People currently taking TA-65®  
have seen the following results\*

- Lengthening of the **Shortest Telomeres**. (These are the ones that really matter; it only takes one short Telomere out of the 92 in every cell to send a cell into crisis)
- Improved Immune system: In particular the % and absolute number of senescent CD8+/28- cells has significantly decreased. This is a reversal of what normally happens with age
- Improved bone density
- Enhanced male sexual function (compared against placebo)
- Improved cardiovascular and hormonal biomarkers that normally show decline with age
- There are also anecdotal results, such as improved energy and athletic performance, but these effects are not universal and vary among individuals

\*Human trial results substantiating these claims to be published in a peer reviewed scientific journal

## TA-65®

The Only Proven Telomerase Activating Product!

Available through licensed doctors

Thanks to:

*Calvin Harley*

*Bill Andrews*

*Woody Wright*

*Maria Blasco*

for their contributions to  
Telomere Biology and this presentation