

May 13, 2009

Dear Patients and Supporters,

Periodically I come across an outstanding scientific achievement or publication in the field of longevity medicine. To this end, I always feel that I should share the excitement and information with you. Last year, scientists at the University of British Columbia in Vancouver made telomere measurement in our DNA commercially feasible. This was an important achievement because having the ability to measure the difference of the length of your telomeres *before* you joined our program and two years *after* you joined our program can serve as *proof* that our program prolonged lifespan. If it is shown that the rate of decrease in telomere length slowed down during our program, it is also *proof* that we delayed the aging process.

To review the science, telomeres are protein-DNA complexes localized at the ends of our chromosomes. The length of the telomeres shorten with each cell division as we age and correlate *inversely* with age. It has been demonstrated that the length can be changed or modified (longer or shorter) by hormones and inflammatory factors. (This is why chronic infection is dangerous.) As we age, immunity deteriorates because of the progressive decline of the number of T and B lymphocytes. Scientists have found that most of the centenarians' lymphocytes are well preserved in numbers and function ("Telomere Shortening and Ageing of the Immune System," Kaszubowska, Department of Histology, Medical University of Gdansk, Poland, *Journal of Physiology and Pharmacology*, December 2008, vol. 9, 169-186).

I wish I could have measured the length of my telomeres back in the early 1990s. I measured the telomeres of my lymphocytes recently at the University of British Columbia and found my telomeres to be as long (young) as those in the 40-year-old range! (I am now 60).

At the time of my discovery of Total Hormone Gene Therapy in the 1990s (U.S. Patent 5,855,920), I believed that the reason growth hormone can reverse biological age, improve one's quality of life, and eventually extend human lifespan is because growth hormone must be acting on the telomeres to make them longer, or prevent their shortening. Now, ten years later, my belief has been proven in laboratories everywhere. In one study, a scientist at La Paz University Hospital in Madrid, Spain, showed that growth hormone activates through the direct action of transcription inside the cell nucleus ("Direct Activation of Telomere by Growth Hormone," Gomez-Garcia et al., La Paz University Hospital Madrid Spain, *Journal of Endocrinology*, June 2005, 185, 421-428).

I hope this news will give you confidence in your daily efforts to improve your health, quality of life, and longevity.

Yours sincerely,

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