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Short Communication

Biological Aging and Aging Gene

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Abstract

Given that time is not a phenomenon, chronological aging does not result from an aging gene; what about biological aging?

Keywords: *Equivalent Age; Biological Aging*

Introduction

The non-phenomenology of time puts an end to the idea of time gene, but it raises questionings about the possible existence of a biological aging gene; a gene over which we could take control, to slow down the rate of biological aging. Hutchinson-Gilford syndrome provides further clarification on this issue. In preamble, the difference between chronological aging and biological aging will be reminded.

Definition of chronological aging

The age is how many years, months and days are between the birth and today.

Chronological aging is the age increase. It increases at the same rate for everyone… as well as everything.

Chronological aging is not a phenomenon; instead, it's a concept of temporality that has been invented from observing Nature's repetitions, in order to improve the organization of life. As an invention of thought, chronological aging has no physical effect.

NATURE'S REPETITIONS ---> CONCEPTS OF TEMPORALITY.

Definition of biological aging

Biological aging, that we have introduced in 2017 [1], is not directly related to time, because it is related to the state of physical and mental health; but it's convenient to translate it into "equivalent age" that we call "estimated biological age". The idea is tested through a simulation (Figure 1).

The bisector represents the chronological aging.

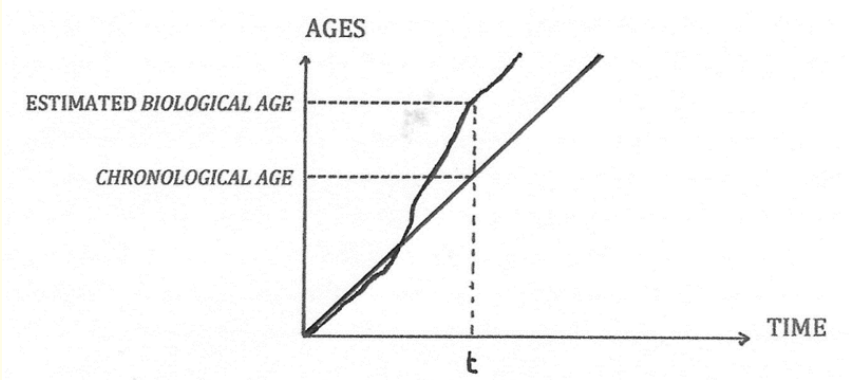

Figure 1: *At time "t", the patient looks older than his age.*

The erratic curve is simulating the biological aging of someone who looks younger than his chronological age during the first part of his life, and who looks older during the rest of his life.

Contrary to chronological aging, biological aging is not depending on time.

Causes of biological aging

The biological aging of a living thing differs according to its genetic heritage (the innate) and its conditions of existence (the acquired). Of course, the choice and the number of criteria remain inevitably arbitrary; therefore, we talk about estimates.

Demographic data, including those dating back to antiquity, proves that it's possible to slow down the rate of biological aging, through the acquired, thanks to an appropriate way of life with regard to hygiene, medicalization, food, smoke, alcohol, etc.

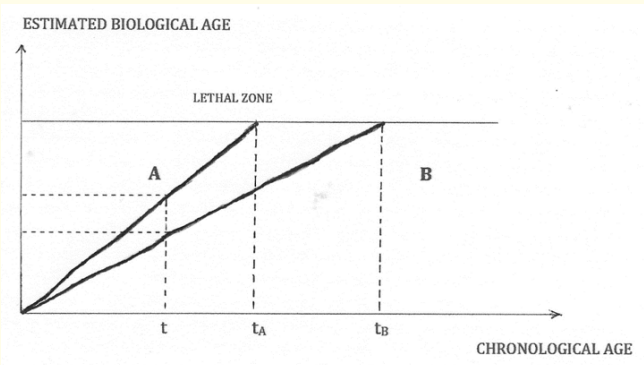

Figure 2: *Simulation with two individuals "A" and "B".*

Comparison of biological aging of two persons

The simulation figure 2 is to compare the biological aging of two persons: "A", born and living in a poor country, and "B", born at the same time and living in a wealthy country.

- At time "t", the biological age of "A" is higher than that of "B": "A" looks older than "B", whereas they have the same chronological age "t".
- During his whole life, "A" will look older than "B" because his biological aging is increasing faster. Of course, they'll have the same chronological age all their life long.
- "A" reaches the lethal zone before "B": "A" dies at time t_A, before "B" who dies at time t_B. The lethal zone is established by heart stoppage and (or) when the electroencephalogram is flat.

Hutchinson-Gilford syndrome

The HG syndrome results from a genetic abnormality which is caused by a toxic protein, called progeria, that shortens lifetime of cells and prevents their renewal.

It leads to a premature biological aging at the infant stage [2].

The phenomenon has no effect on the chronological aging, and it encourages extensive researches in this field.

A crypto gene of aging

The HG syndrome raises two questions about:

a. The possible existence of a crypto gene of biological aging (from the Greek "kruptos": hidden).

b. The possibility of stimulating this crypto gene in order to increase cells lifetime, either by reducing the fission rate, or by increasing the number of cell divisions.

Conclusion

The fact that chronological aging is not controllable does not matter, because chronological aging is a concept. Contrarywise, biological aging is crucial, and the acquired has a determining action on it. Obviously, the discovery of one or several genes of biological aging would be an upheaval, subject to being able to handle it without danger. Of course, immeasurable ethical problems would arise.

In order to avoid the risk of confusion, such a gene should not be called "time gene" or "aging gene"; instead, it should be called "biological aging gene".

Bibliography

1. Dassonville P. "The Invention of Time & Space". Springer (2017).

2. Wikimedia Commons.

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