

Editorial about reverse aging

The fact of matter is our few dozen co-evolution partners known as Mitochondria within each of our cells are the efficient ATP power engineering houses. Given their communicating, we will be energetic appearing younger. Such a “reverse aging” should be God given inalienable right of all mankind.

Recently, we have major venture capitals invested in reverse aging Science & Technology: e.g. (1) Calico (California long Life Co) established by Bill Maris and Arthur Levinson; (2) Life Biosciences (Cambridge, MA) by David Sinclair and Tristan Edwards; culminated to (3) Altos Labs, founded by Rick Klausner and Hans Bishop for aging research with \$3 billion in initial investment from backers including tech investor Yuri Milner and Amazon founder Jeff Bezos. On the one hand, large scale labs investigation is good thing; on the other hand, commercial product for limited distribution will be a bad thing. Imaging that jointly Dr. Katalin Kariko, an Hungarian immigrant and Dr. Drew Weismann, Prof. of Univ. Penn developed a visionary research and persistence in unlocking the power of mRNA as a therapeutic platform for free Corv-19 vaccines. *If were limited, mankind will ever have difficulty reach herd immunity.* Similarly, “Reverse aging should be inalienable right of all mankind,” not just for affluent & wealthy peoples.

World War II Baby Boomers about hundred million or so are over 3 quarters of centennial year old. In order to survive under severe competitions with peer competitors, they have conceivably traded off their sleeps that are needed to by Slow-wave activity during dreamless slumber helps wash out neural detritus clean up brain waste byproducts causing the mental decline, as Nedergaard et al. at Stockholm.¹ Also they may have worked hard and tend to over eat and become overweight during retirement slowdown. German has a Proverb: “The longer, the belt is, the shorter, the life will be”. “What if aging is a disease—and that disease is treatable,” Dr. Sinclair at Harvard.² We likewise believe those seniors have inalienable right to keep their healthy lifespan. To say the least, their experience and wisdom are terrible things to be wasted. A healthy habit is given in a reader’s digest by Szu & Moon³ (1) exercise daily, (2) eat less, (3) sleep tight. (4) social often, (5) stimulate brains, (6) relax minds.³

Aging also implies that our co-evolution partner mitochondria cells with its own circular DNA which is different from our double helix DNA having 23 pairs of chromosomes, un-wrapped into 3 meter long, as discovered by James Watson and Francis Crick, based on Rosaline Franklin crystalline X-ray imaging. These digital information A-T& C-G will be invariant, but the analogous information, namely winding up neatly in so-called Telomere knots about Leonard Hayflick (1959) 50 turns might be changed inside the nucleus of cell. These DNA molecules are wrapped analogously along numerous Histones spooling and furthermore tagged with Methylation NH₃ for easy retrieval. Clearly, aging is not due to the digital but the analog information that may be lost.² Furthermore, we know that life begins at a single cell, about a quarter-million to million years ago. Our ancestor of Homo sapiens has inherited mitochondria cells as co-evolution partners. When we take care of food I/O, Mitochondria produces energy Adenosine TriPhosphate (ATP) molecules with a minimum waste. Physician Steven Gundry and others did offer experiments on “hungry” known as Intermittent Fasting (12 hrs–24 hrs) to trigger the Apoptosis as cell programming deaths, so-to-speak to make room for new cells to grow for “reducing the waist belt line, and that might lead to graceful aging.” When the co-evolving communicator NAD (Nicotinamide adenine nucleotide) level is decreasing for aging seniors, and NAD precursor is an NMN (Nicotinamide mononucleotide) a kind of vitamin B food supplement, affecting (a) our co-evolution partners “Mitochondria” together with (b) Metformin (N₅H₃) according to FDA protocol: TAME (Target Aging Metformin).⁴⁻⁶ When we become less energetic or

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senescence; we become old and slow down. There are successful direct experiments on mice, and recently on humans on the slow down aging toward reversal aging (e.g. senescence is both good (retard tumorigenesis) & bad (aging) according to Academician Judith Campisi. So far, TAME protocol helps (a) bone regeneration (Osteogenesis) (b) improves intestine bacteria composition and (c) Hayflick telomere length. Furthermore, NMN supports mitochondria producing more heat energy tested by means of thermo-genesis biomarker (winter cold hands and feet). The recent pandemic quarantine seclusion produced the stress effect, that will ruin the analog wrapping as conjectured by Nobel Laureate Karen Blackburnet. al.⁷ Recently Shinya Yamanaka⁸ discovered 4 longevity genes related to epigenome and has won the Nobel Prize for Stem Cell Research Oct. 8, 2012.

In order to help the public to influence the congressional representatives, the general public needs to be educated about the current reverse aging phenomenology. Herewith, we called for, besides private, Federal Government NIH/Nat. Inst. Aging should invest beyond average \$B budge per Institute on this reverse aging to reduce the aging society burden, so that equal right is maintained to all mankind. We already learned the science of (1) besides us³ we need to support our a few dozen small co-evolution partners “mitochondria” per cell served efficiently the energy production, weak energy could imply aging; (2) intermittent fasting for wakening the apoptosis to let weak old cells pass away to make the room for new young cells, (3) Clearly, we need to develop more sciences beside Shinya Yamanaka⁸ 4 Genes: induced Pluripotent Stem cells of “reverse aging besides mice”. Beside FDA approval target aging Metformin (TAME) Led by Am. Fed. Aging Res. (AFAR) Dr. Nir Barzilai (<https://www.afar.org/tame-trial>).

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