

Mr Phil Micans MS PharmB



AACL 2013



Why do we age?

What governs longevity?

How do we assess the efficacy of anti-ageing medicine?

Presented by

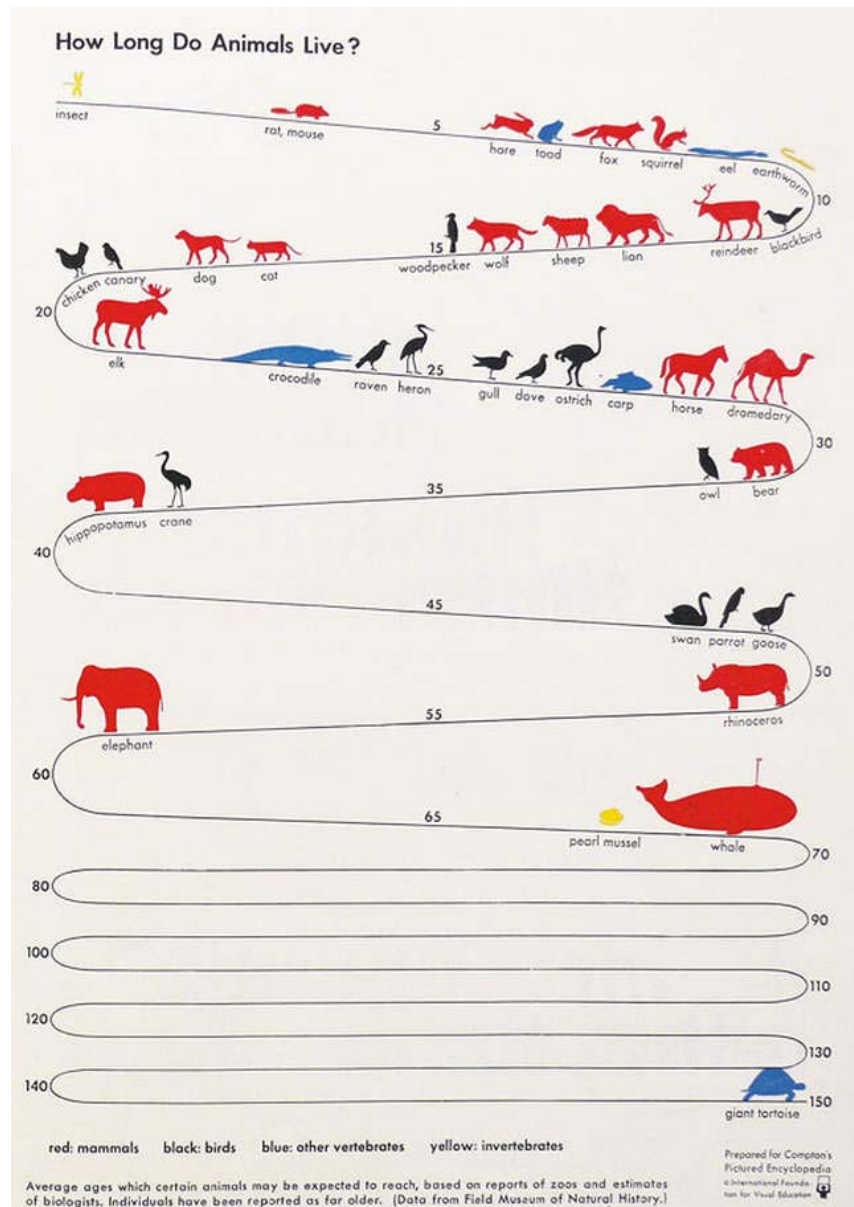
Phil Micans, MS, PharmB (VP)

International Antiaging Systems

Great Britain

www.antiaging-systems.com

Animal longevity



Animal record breakers

SCIENTIFIC AMERICAN™

July 13, 2013

200-Year-Old Fish Caught Off Alaska

A centuries-old Shortraker Rock-fish may be the oldest of its species ever landed



Bowhead whales typically live 130-190 years



NATIONAL
GEOGRAPHIC



A 405 Year-old Clam plucked from Icelandic waters in October 2007

And the animal winner is...



2000 year brain coral off the coast of Tobago

Flora



Source: www.rachelsussman.com

And the flora winner is...



80,000 year-old quaking Aspens, Fish Lake, Utah

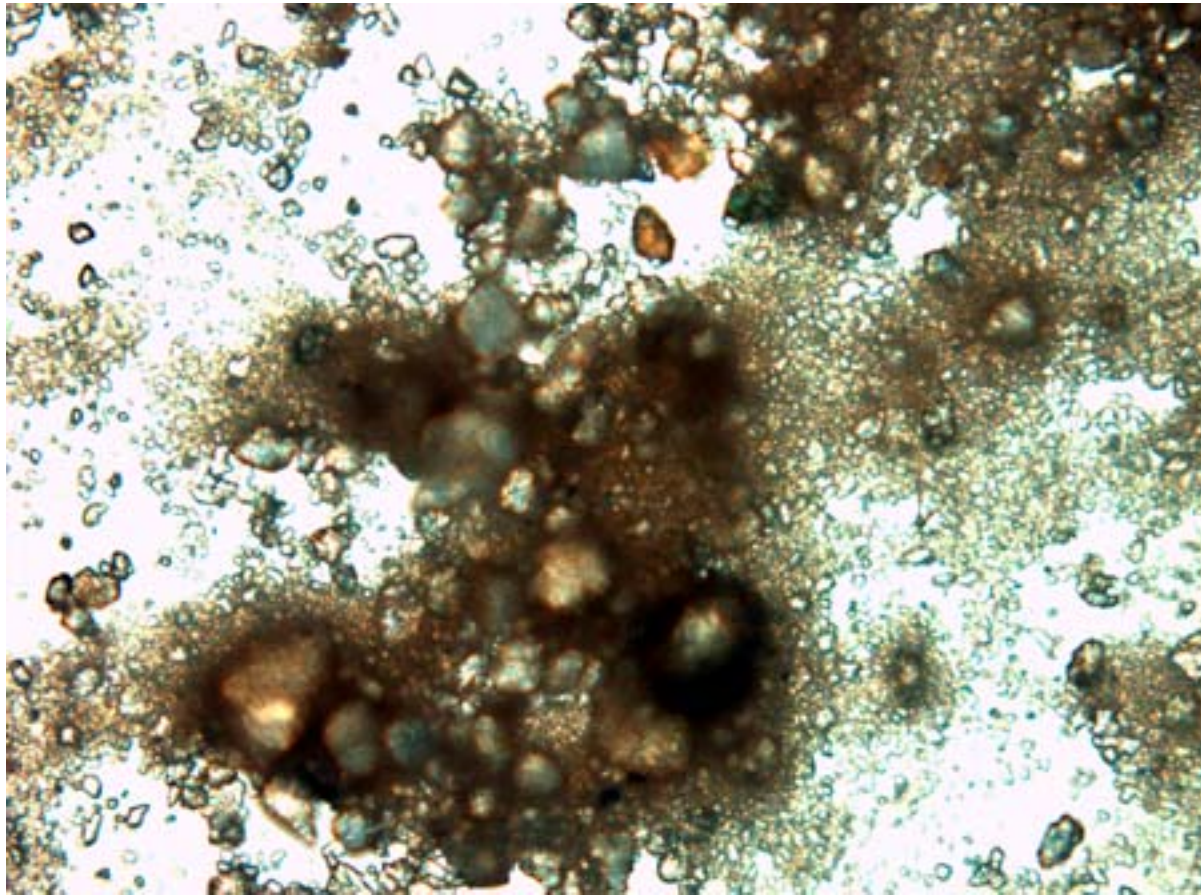
Seeds

31,800 year-old seeds from Siberian permafrost germinate!



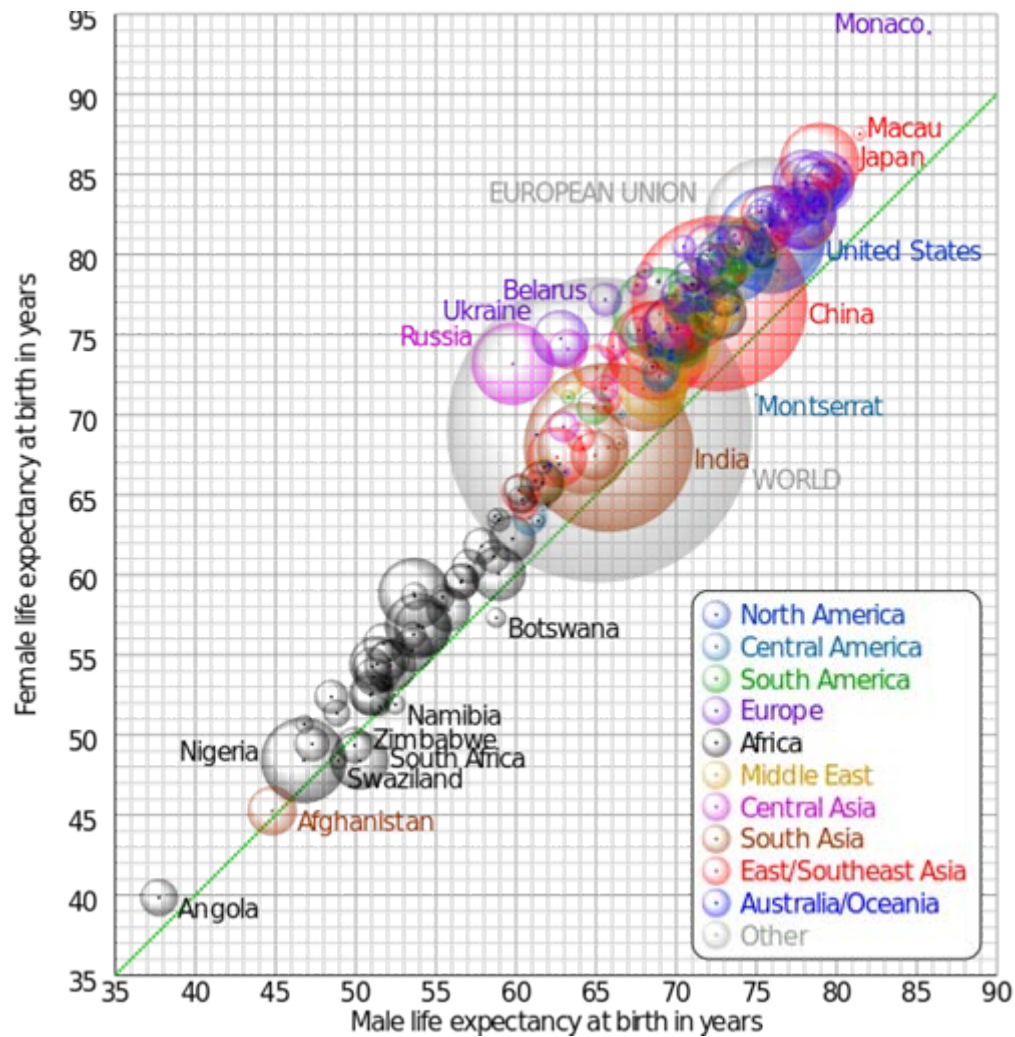
2000 year-old date seed germinates in Israel

But the longest lived thing is...



Siberian Actino-bacteria 400-600,000 years old!

Human longevity



Central Intelligence Agency Fact Book 2011

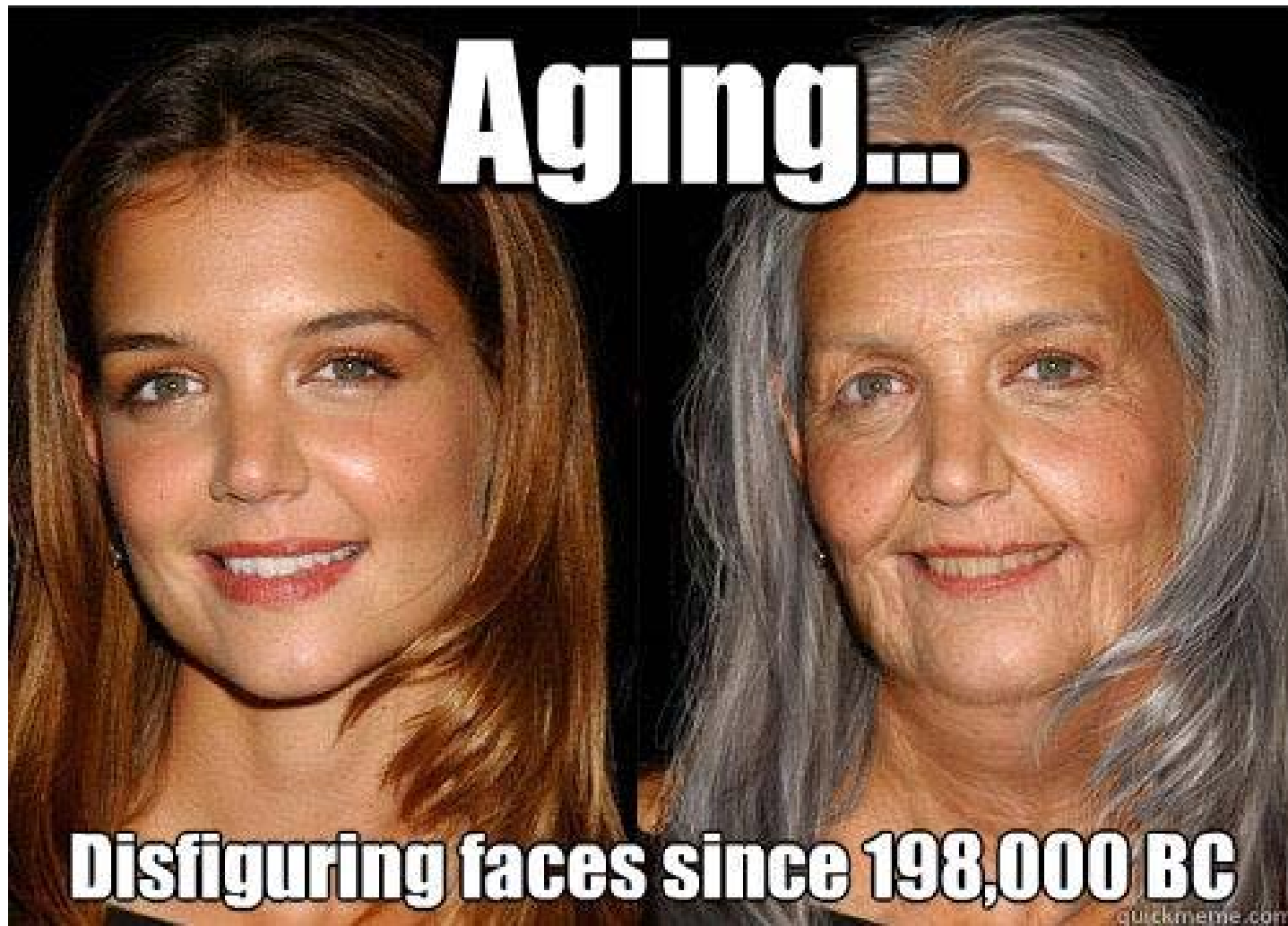
125-year old Bolivian?



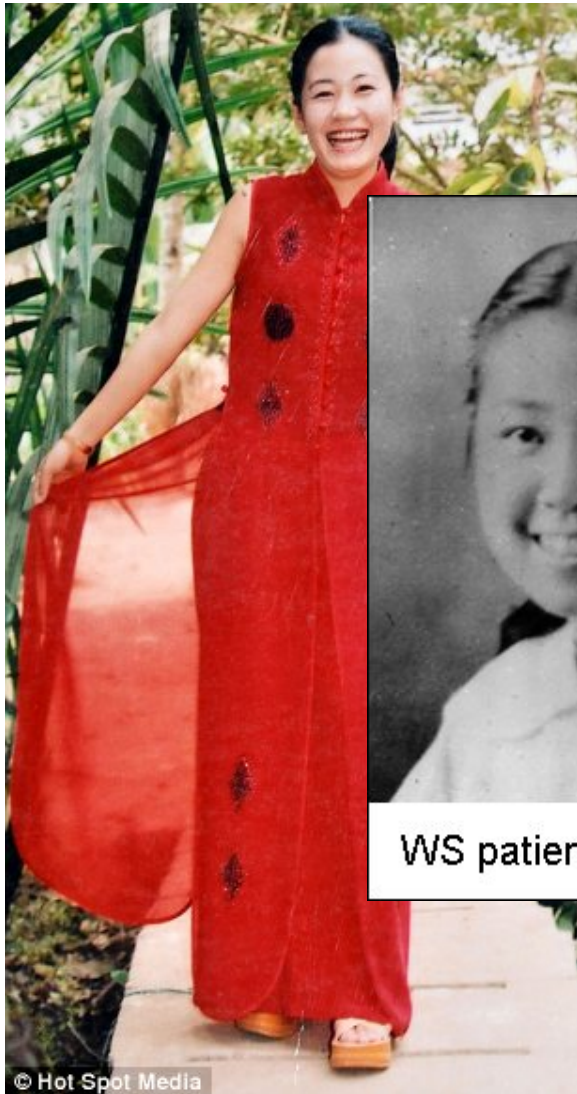


Top 10 Oldest People Ever (Verified)

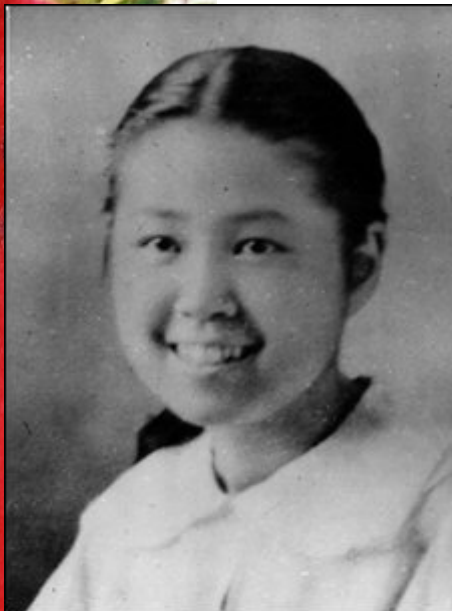
So what is it?



Rapid ageing



Ng Thi Phuong
aged 21

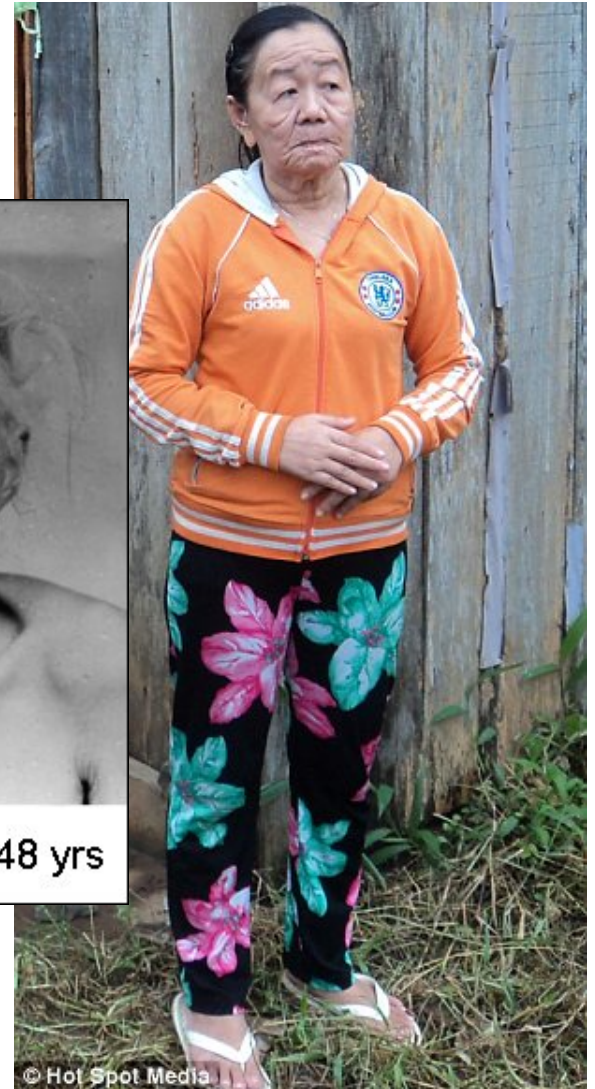


WS patient age 15 yrs

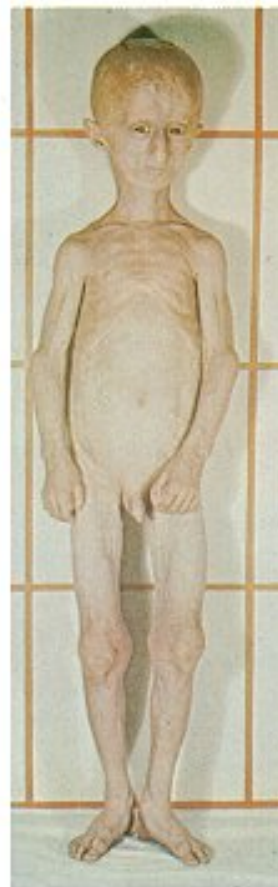


WS patient age 48 yrs

Ng Thi Phuong
aged 26



Progeria



Progeria: Premature aging. Usually die at 10-15 yrs. of heart failure.
SS Gellis, M Feingold. Atlas of Mental Retardation Syndromes. 1968.

Syndrome 'X'

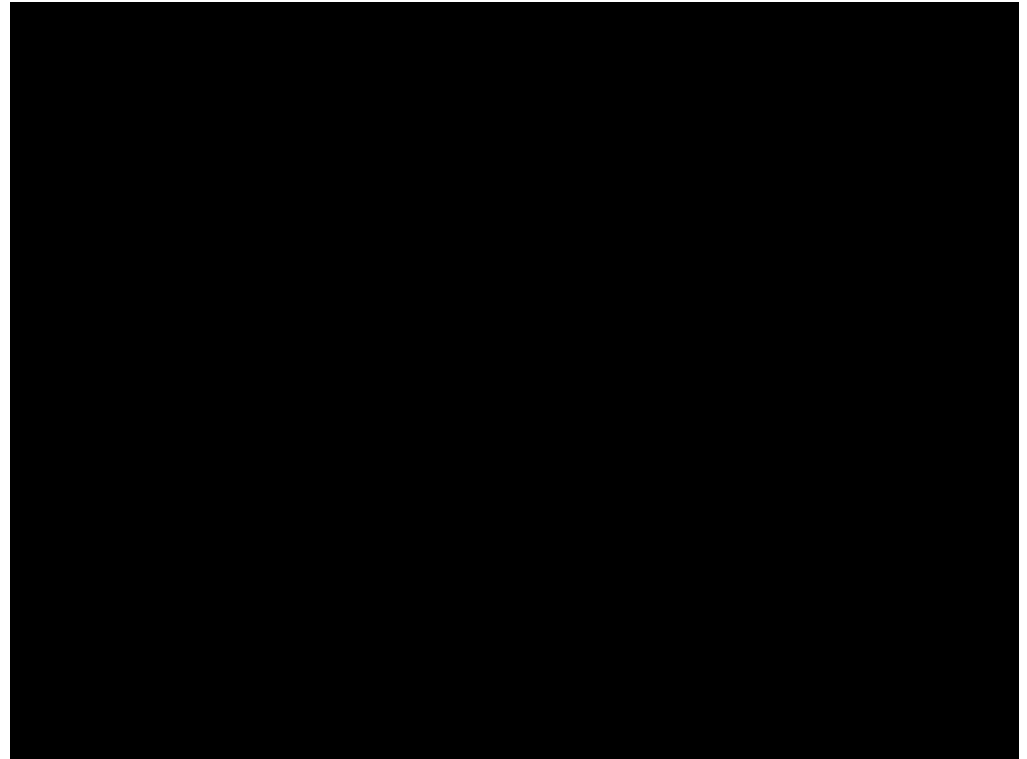


Brooke Greenberg- LEFT- born January 8, 1993, (shown here with her 17 year old sister) is an American from Reisterstown, Maryland, who has remained physically and cognitively similar to a toddler, despite her increasing age. She is about 30 inches (76 cm) tall, weighs about 16 pounds (7.3 kg), and has an estimated mental age of nine months to one year. Brooke's doctors have termed her condition 'Syndrome X'.

Glycation (cross linking)



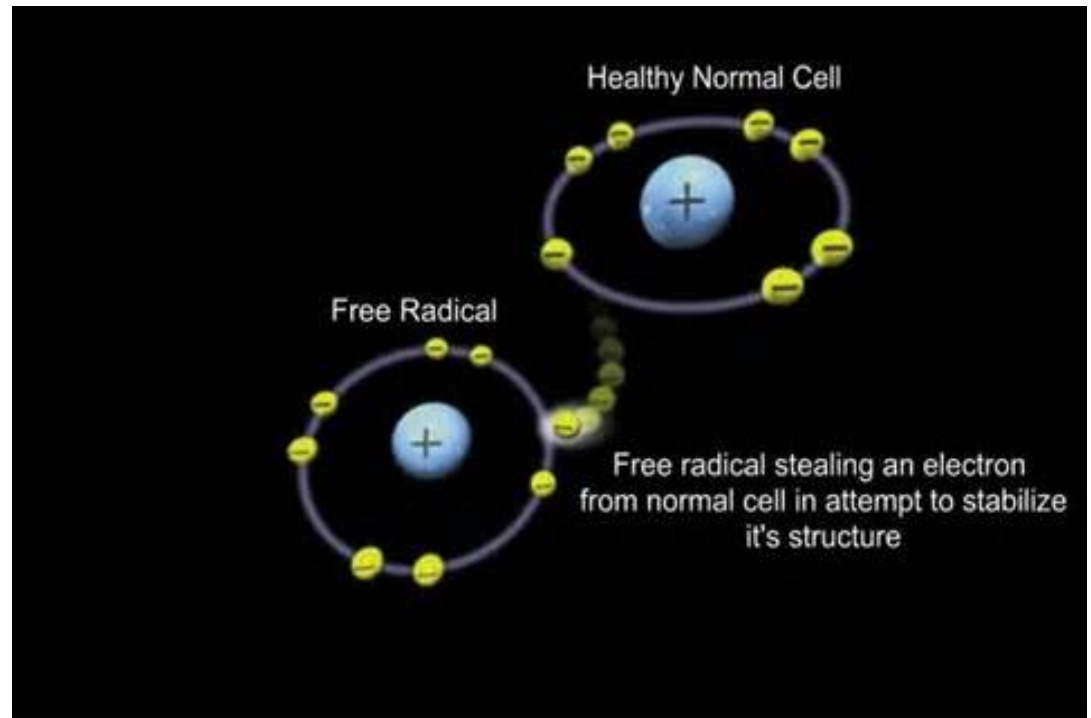
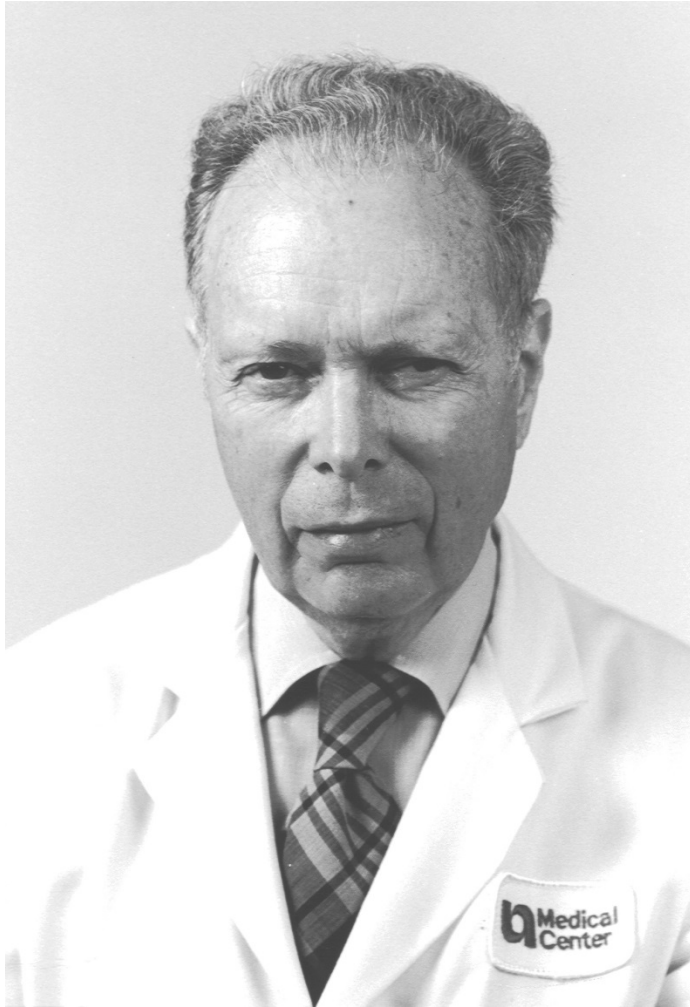
Fig. 1. Bjorksten illustrated the effect of inter- and intra-molecular crosslinks with his drawing of factory workers (cells) hampered by handcuffs (crosslinks).



A cut apple exposed to air starts to harden and discolour due to glycation. 30 minutes time shown here within 3 seconds.

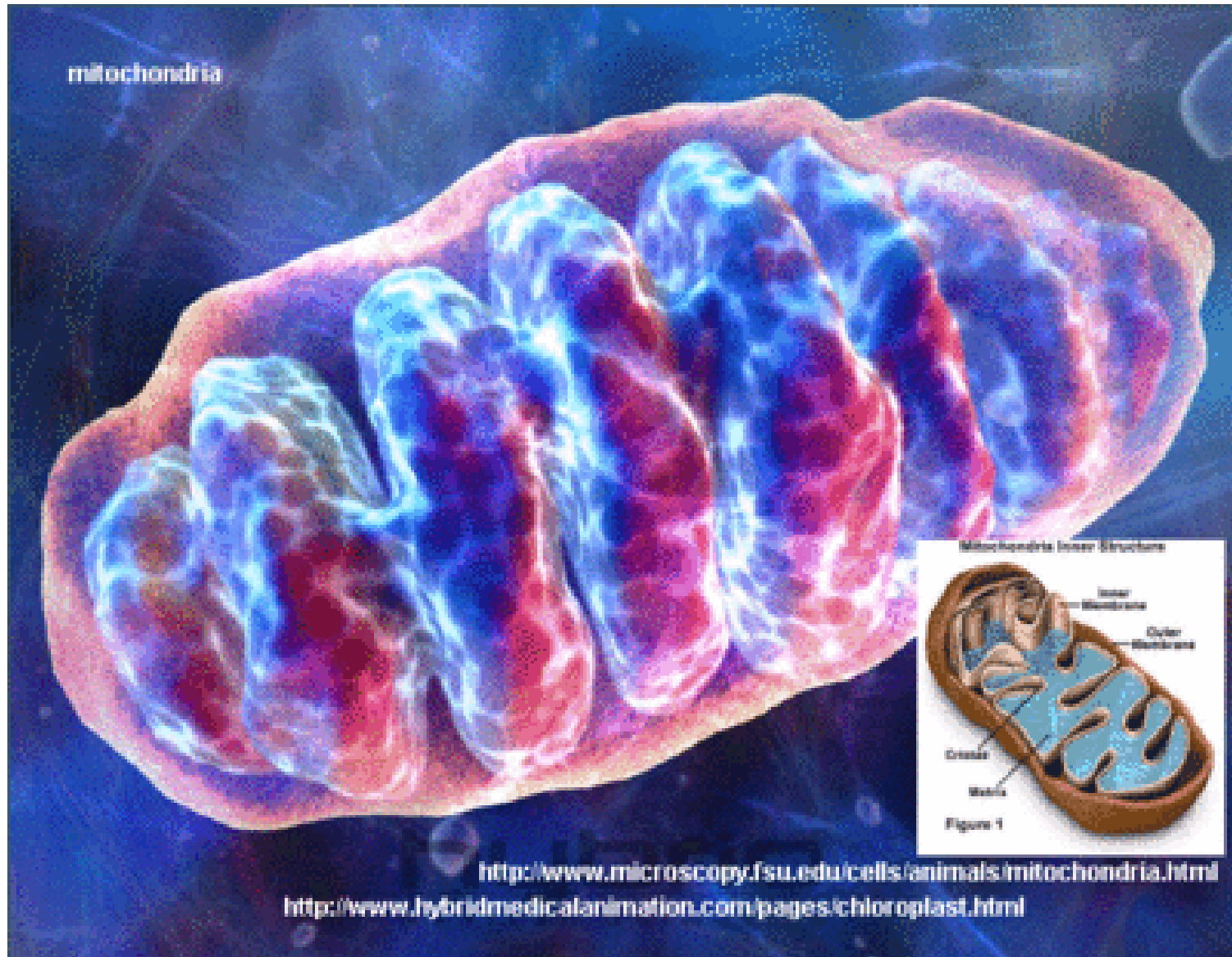
Johan Bjorksten, the cross-linking theory of ageing, 1942

Free radicals

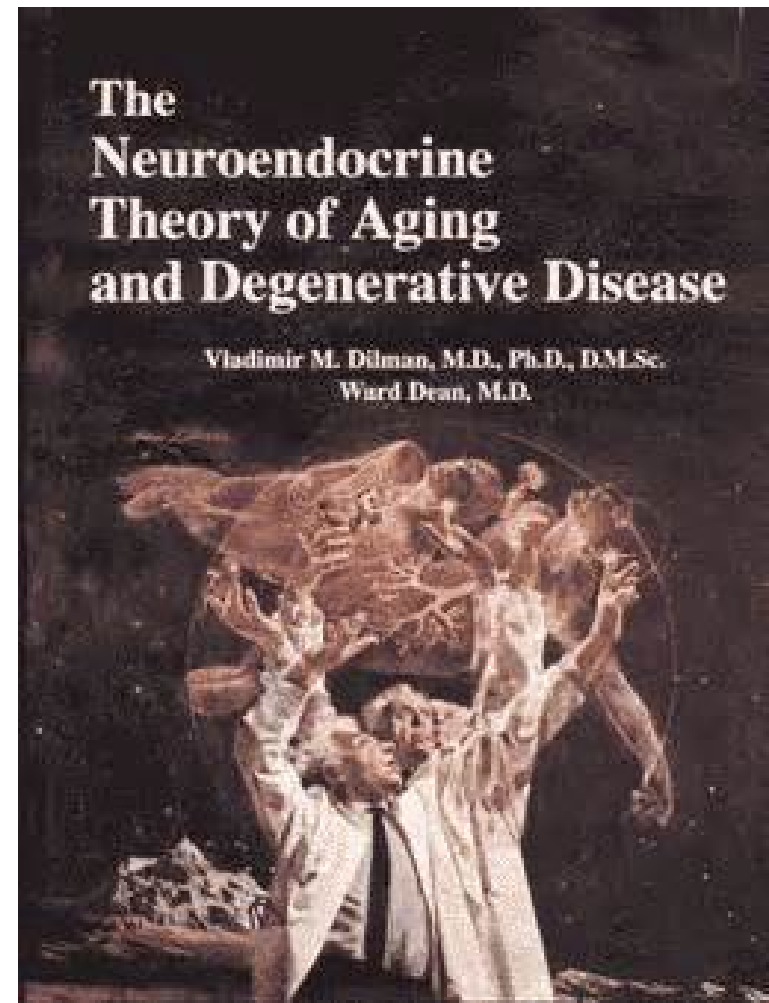
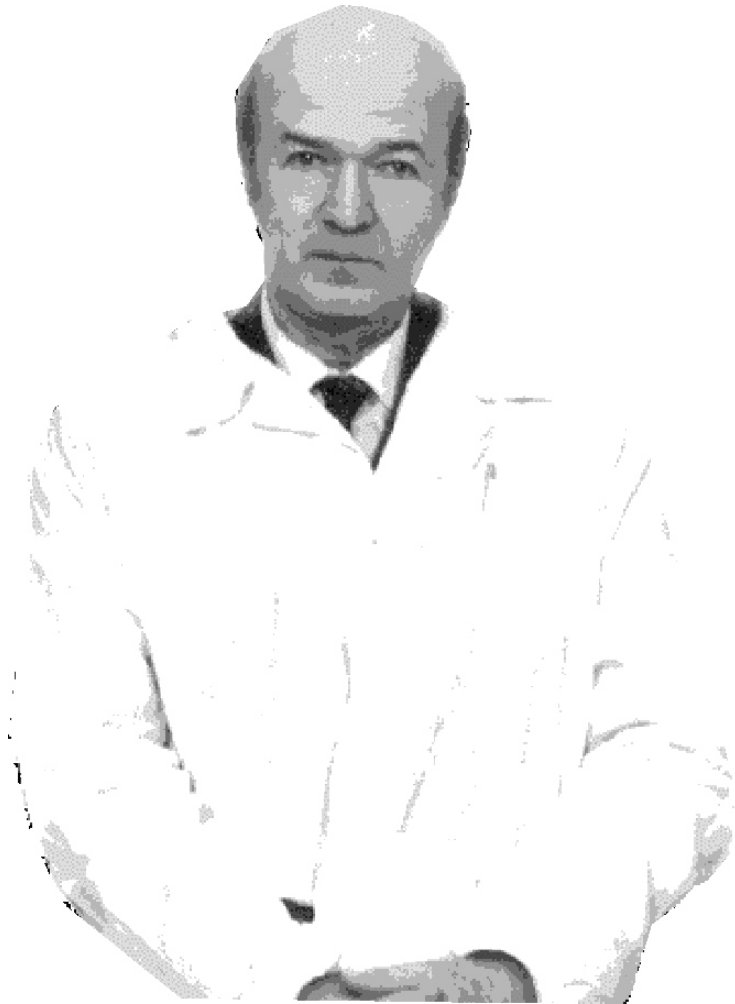


Denham Harman, the free radical theory of ageing, 1954

Mitochondrial



Neuroendocrine



Vladimir Dilman, the neuroendocrine theory of aging, 1954

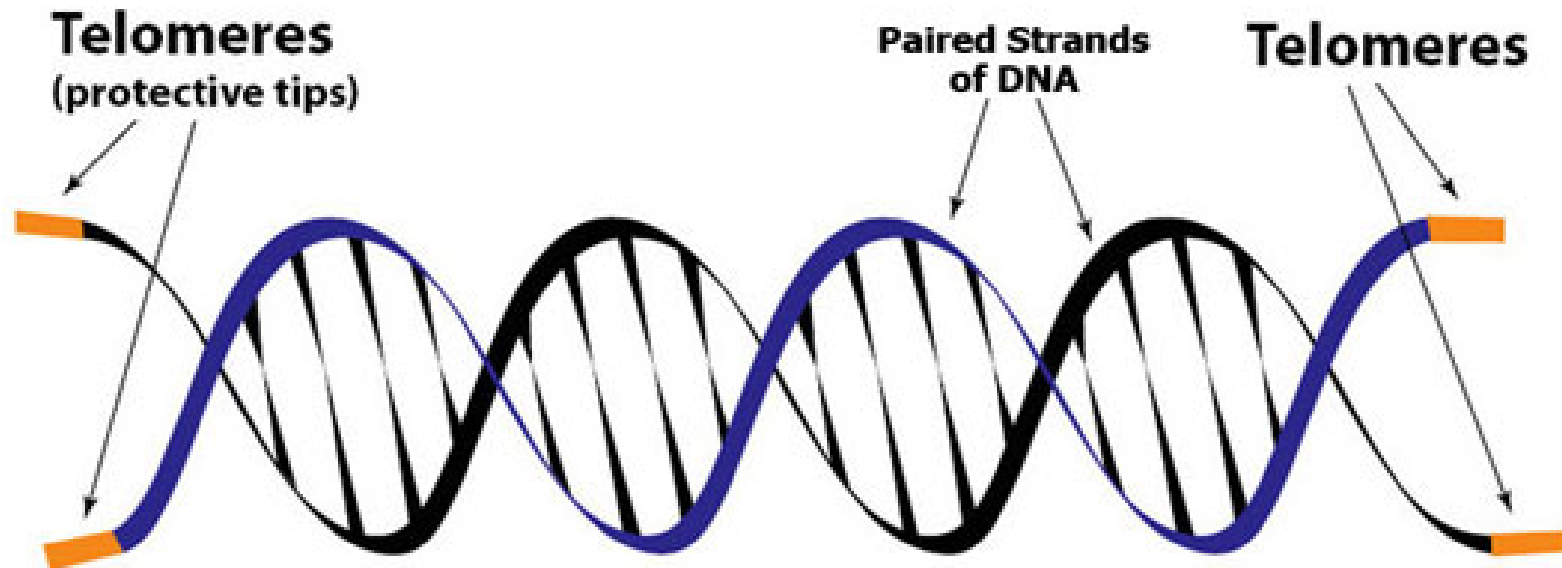
Hayflick limit



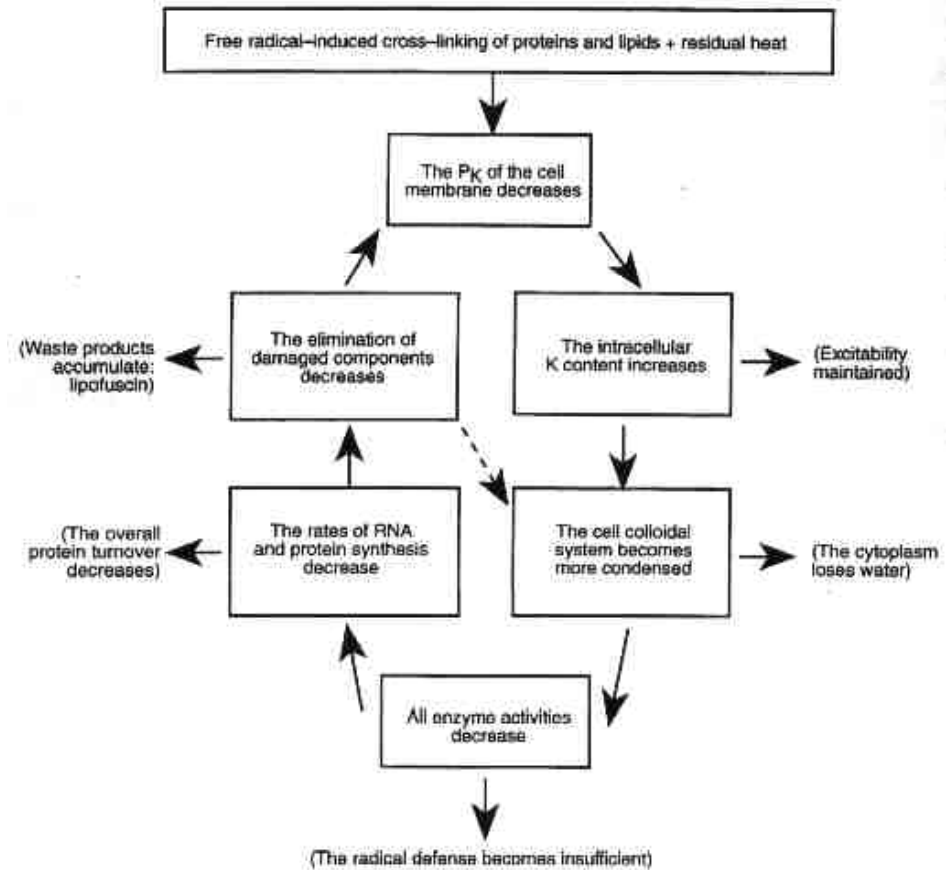
Leonard Hayflick, the cell division limit, 1961

Telomeres

CHROMOSOMES ARE PAIRED STRANDS OF DNA
FORMED AS THE DOUBLE HELIX

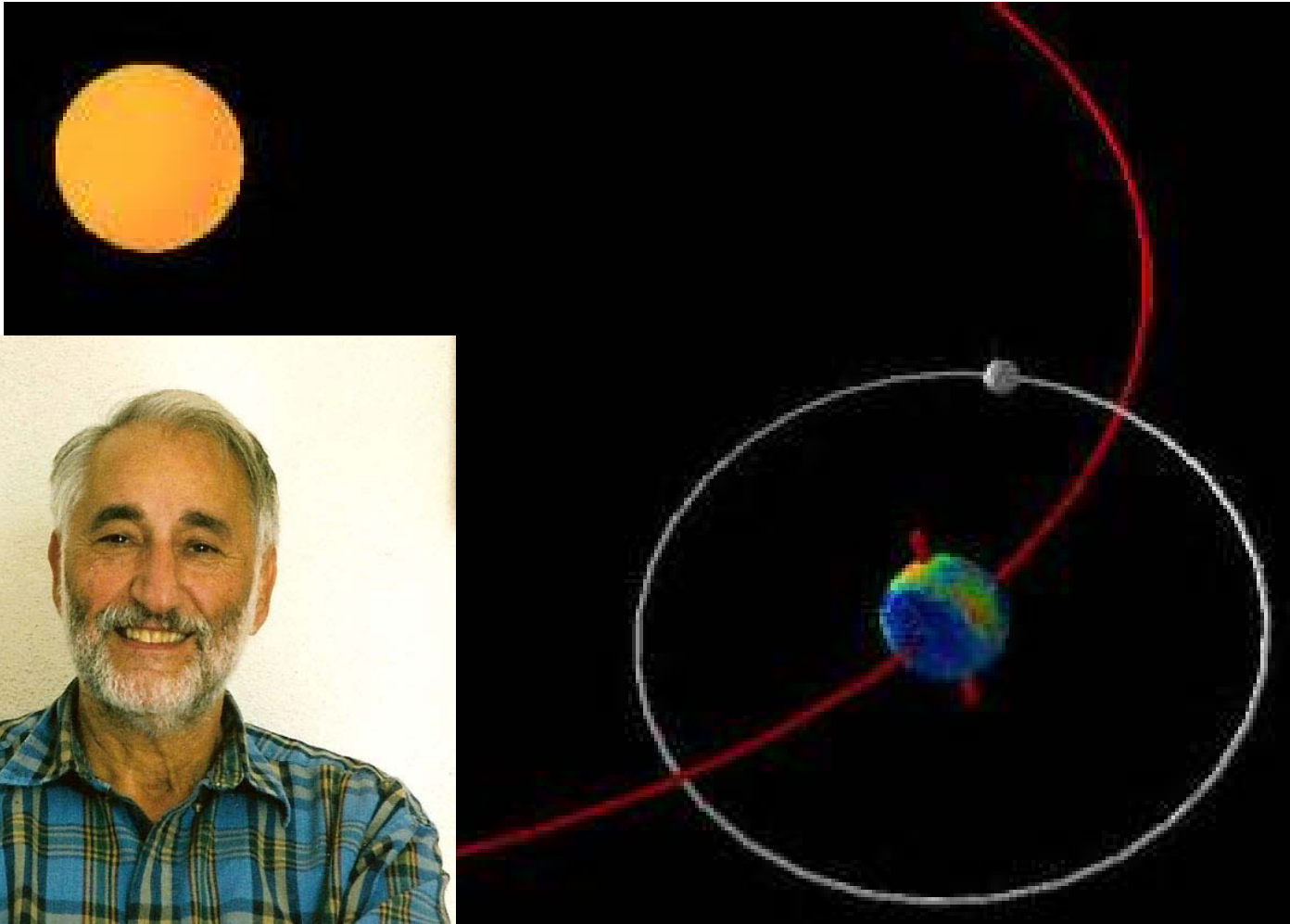


Membrane



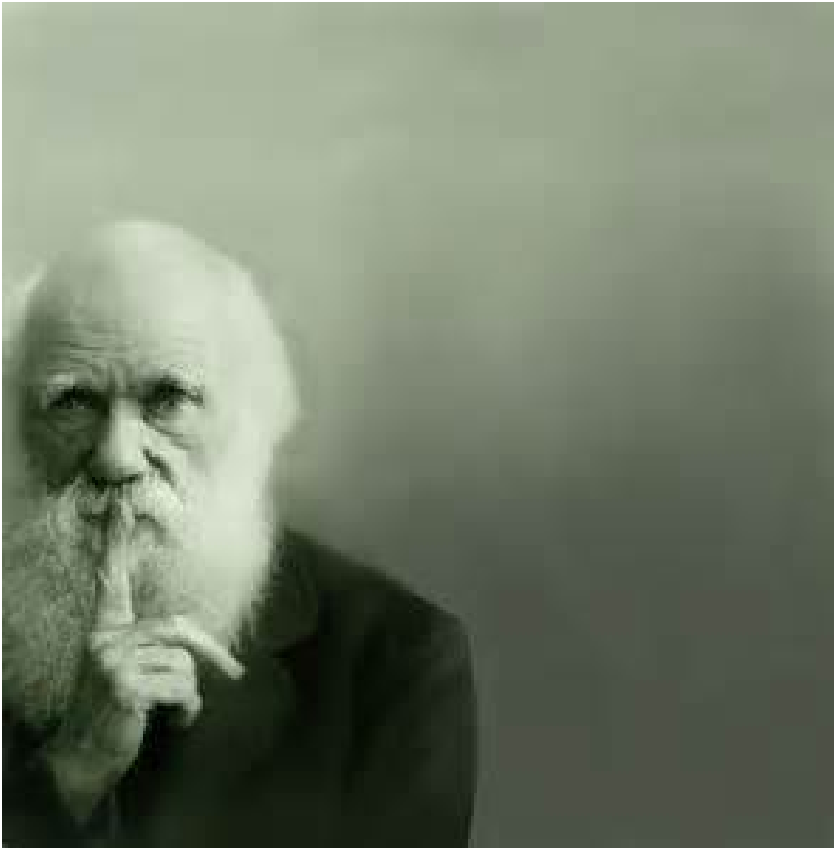
Imre Zs-Nagy, the membrane hypothesis of ageing, 1993

Rotational



Walter Pierpaoli, the rotational theory of ageing, 2003

Or is there nothing at all?!



Is ageing exempt from Charles Darwin's evolution of the species?



Is nothing planned after growth to attain puberty- is it just chaotic sensequence afterward?

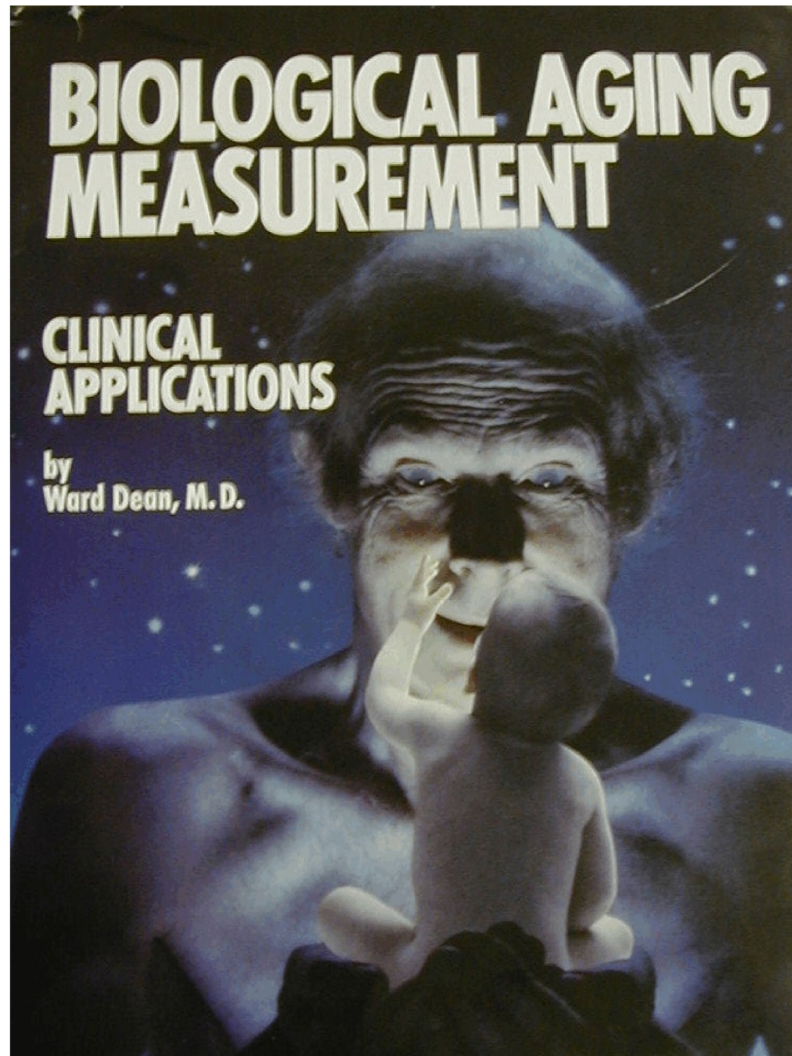
Slow, stop & reverse ageing



Cause = Cure



Biomarkers



Greek mythology



Tithonus the immortal



phil@antiaging-systems.com



AACL 2013