The Downturn in Life Expectancy and the Development of New Technology to Assess Lifespan

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CFA/CDP Forum

Designing Better Retirement Solutions

Nov 28, 2017

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Aging, longevity, mortality, and forecasting as seen through a different lens.

Not everything is as it seems

Which population subgroup in the U.S. has the highest life expectancy at birth?

White Females

Asian Females

Hispanic Females

Black Females

Which population subgroup experienced one of the most dramatic sustained declines in adult life expectancy in recorded human history?

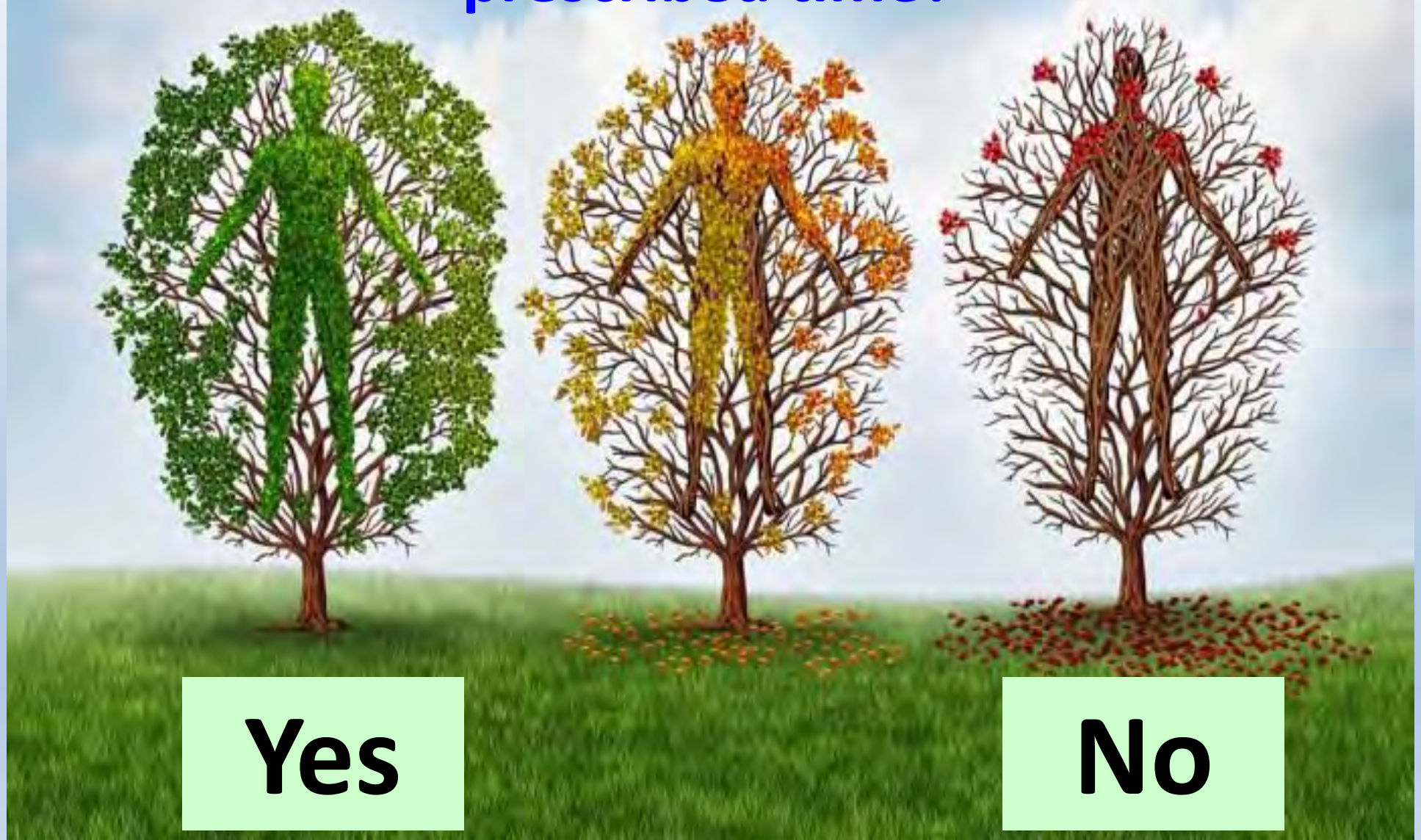
Males in Mozambique at the dawn of the HIV epidemic

Cuban males after the fall of the Soviet Union

U.S. White Females with less than 12 years of education

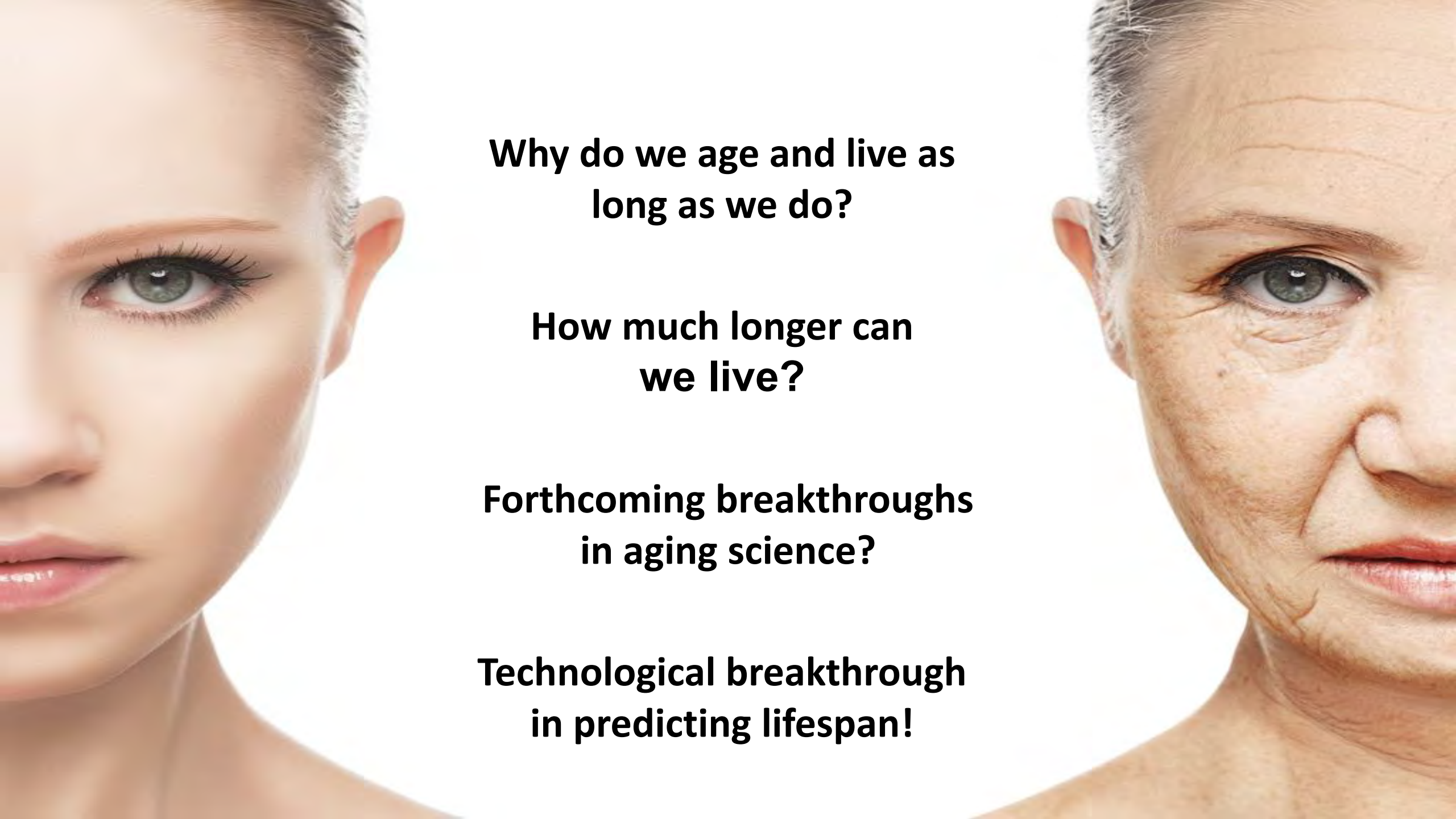
The U.S. during the 1918 influenza pandemic

Is there a genetically driven program that causes us to age, grow old and die at a prescribed time?



Yes

No

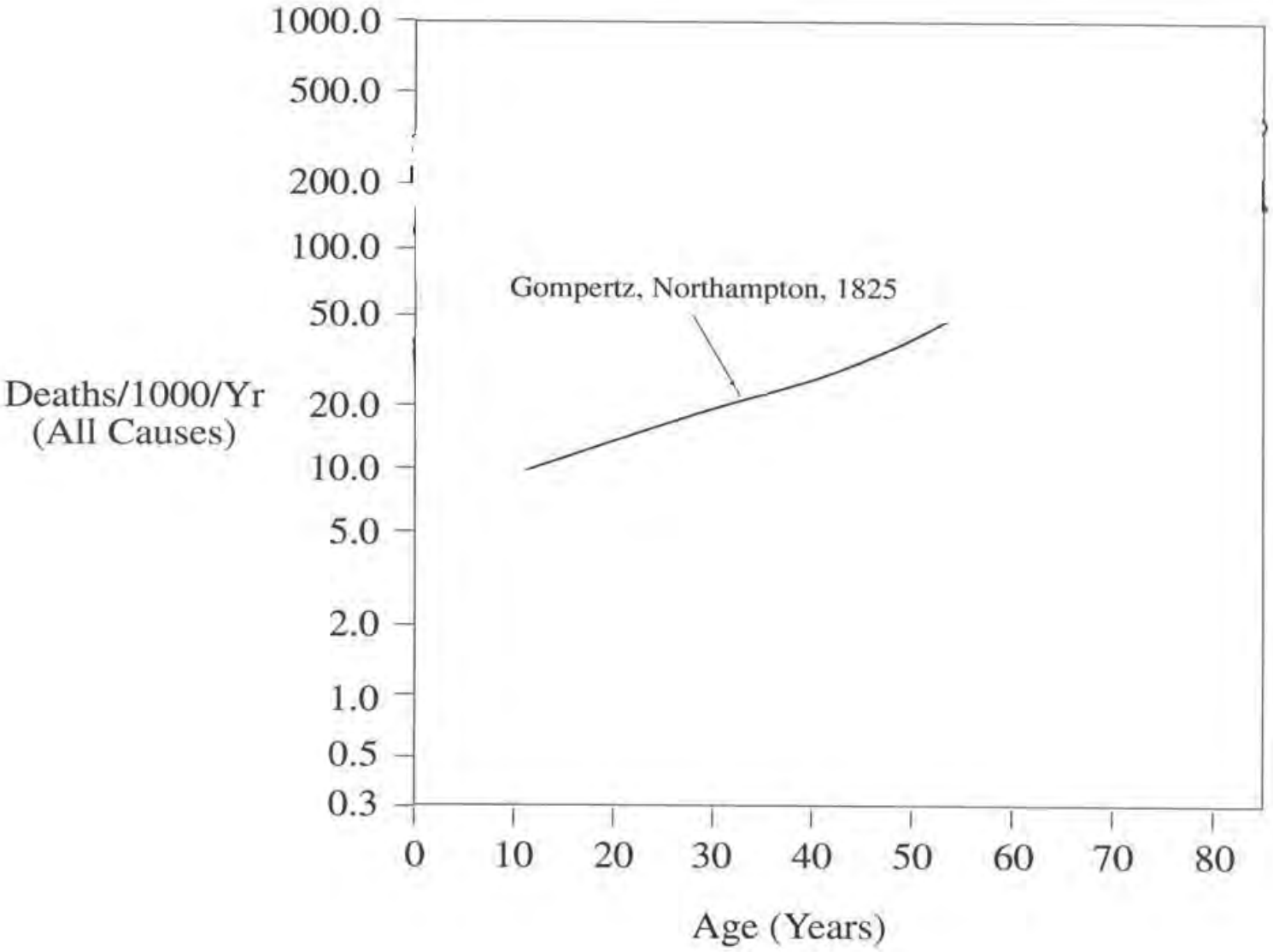


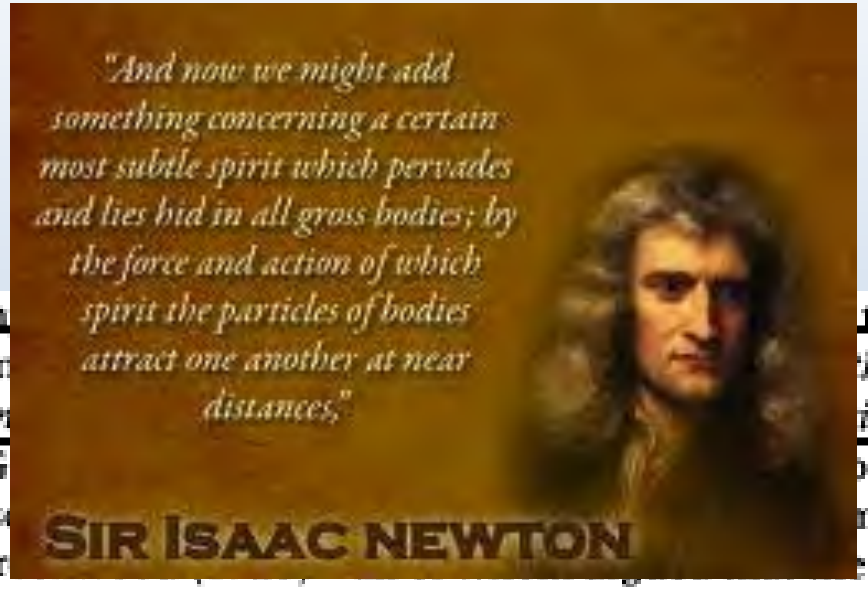
Why do we age and live as long as we do?

How much longer can we live?

Forthcoming breakthroughs in aging science?

Technological breakthrough in predicting lifespan!

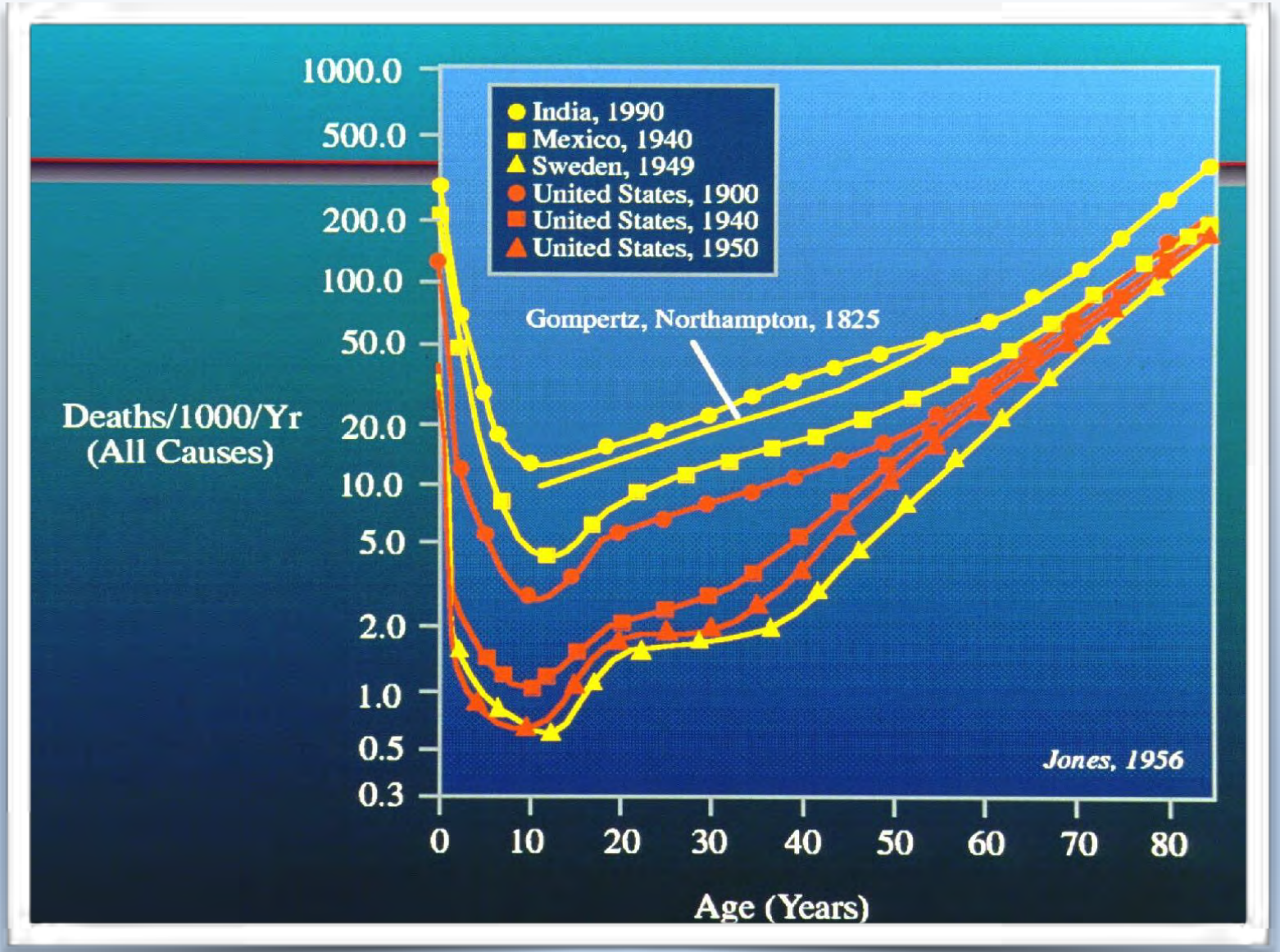

1000.0
500.0
200.0
100.0
50.0
20.0
10.0
5.0
2.0
1.0
0.5
0.3
Deaths/1000/Yr
(All Causes)
Gompertz, Northampton, 1825
0
10
20
30
40
50
60
70
80
Age (Years)



separated Gom… to provide a biologi-
cal explanation… *this law of mortality, I*
endeavored to en… istence" (1825: 333).
The work of G… l of thought within
the actuarial s… m (1867), Brownlee
(1919), and Gr… e life table embodied
biological principles in addition to its traditional role as a working tool for actuar-
ies. The "law of mortality" was originally developed as an actuarial tool with a
focus exclusively on human mortality, but enhanced by modest speculation about
the biology of aging.

1687 Newton's Law of Universal Gravitation

Gompertz (1825) – summarized in Olshansky and Carnes (1997) Ever Since Gompertz

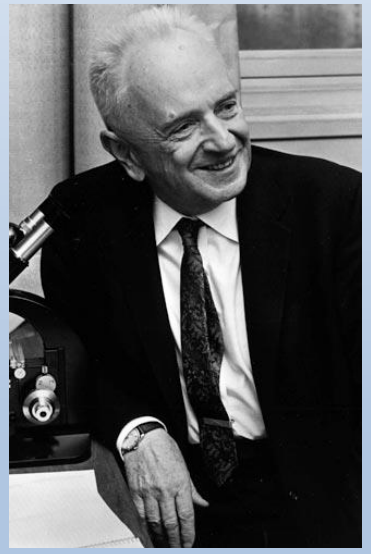

India, 1990
Mexico, 1940
Sweden, 1949
United States, 1900
United States, 1940
United States, 1950
Gompertz, Northampton, 1825
Jones, 1956
Deaths/1000/Yr
(All Causes)
1000.0
500.0
200.0
100.0
50.0
20.0
10.0
5.0
2.0
1.0
0.5
0.3
0
10
20
30
40
50
60
70
80
Age (Years)

The Bridge of Life

The Chances of Death by Karl Pearson (1897)

Why does death occur with such regularity?

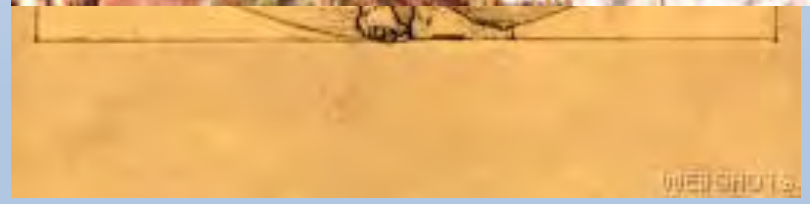
"Nothing in biology makes sense except in the light of evolution."



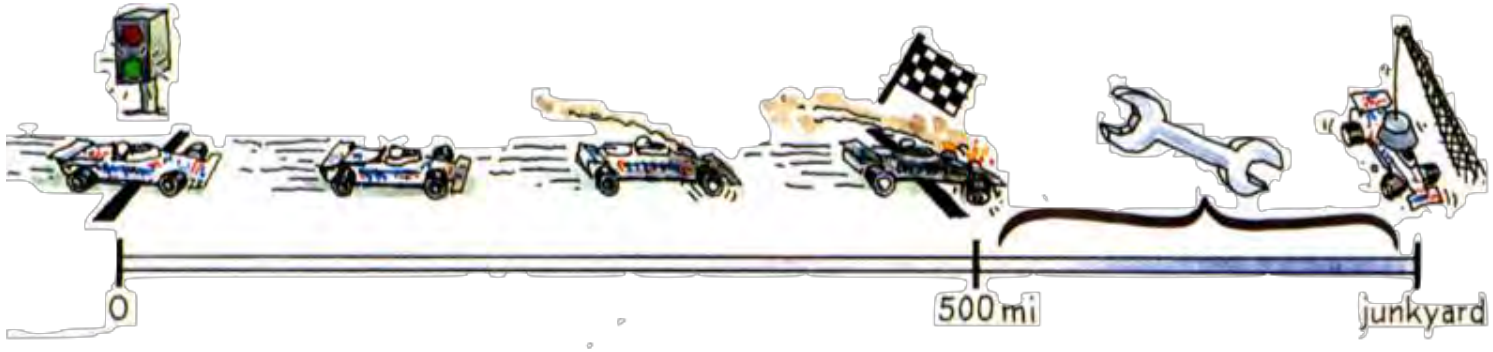
Theodosius Dobzhansky

The American Biology Teacher, March 1973

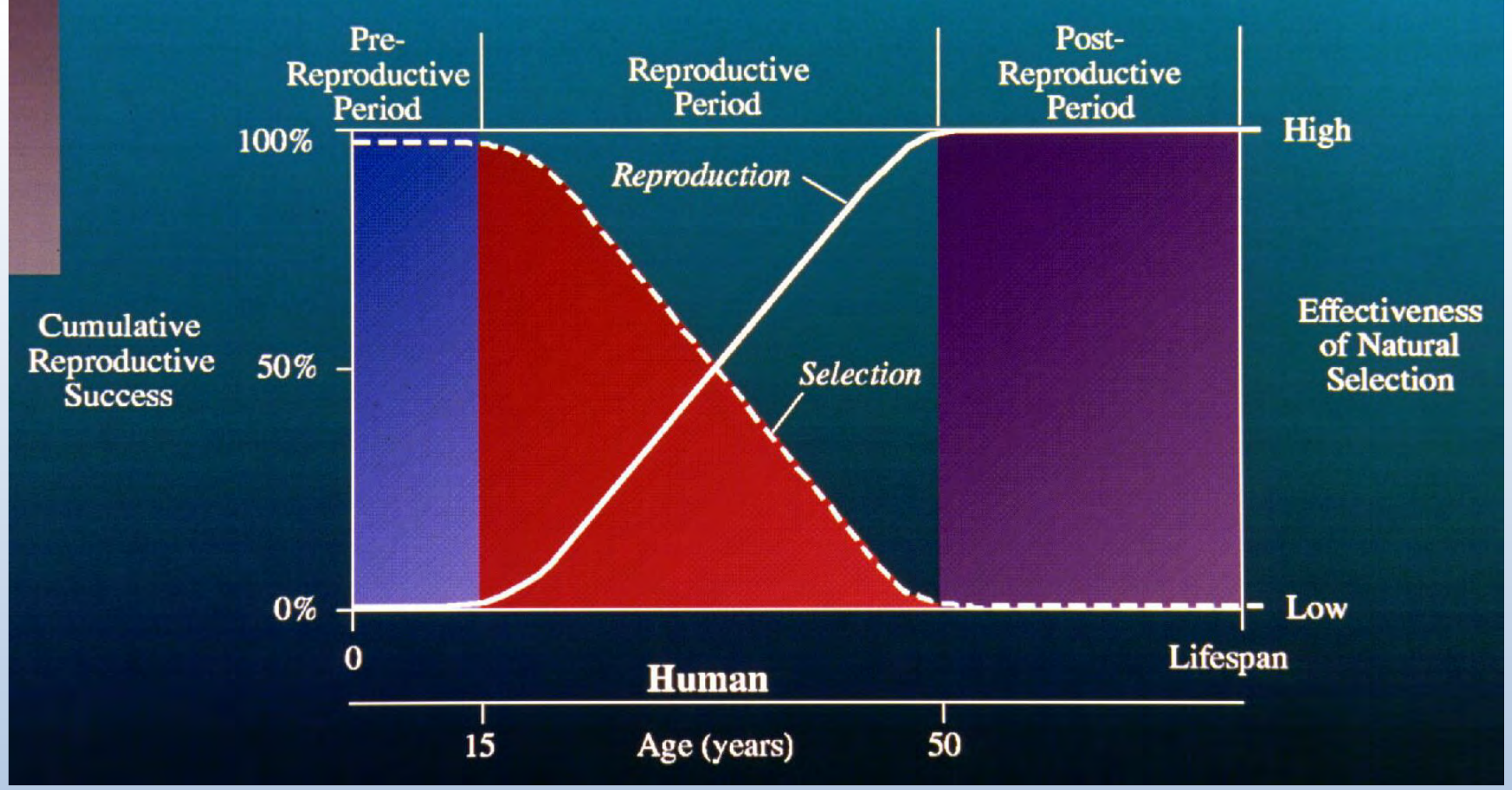
WHY Do We Age and Live as Long as We Do?




BENTLEY


0
500 mi
junkyard


Rx
R.I.P.
0
reproductive success
death



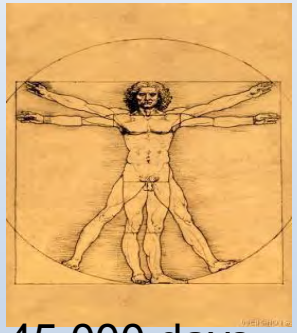
There is a remarkable consistency to the timing of death across species.

Duration of life is calibrated to the onset and length of a species' reproductive window.

1,000 days
mouse

5,000 days dog

26,000 days
elephant



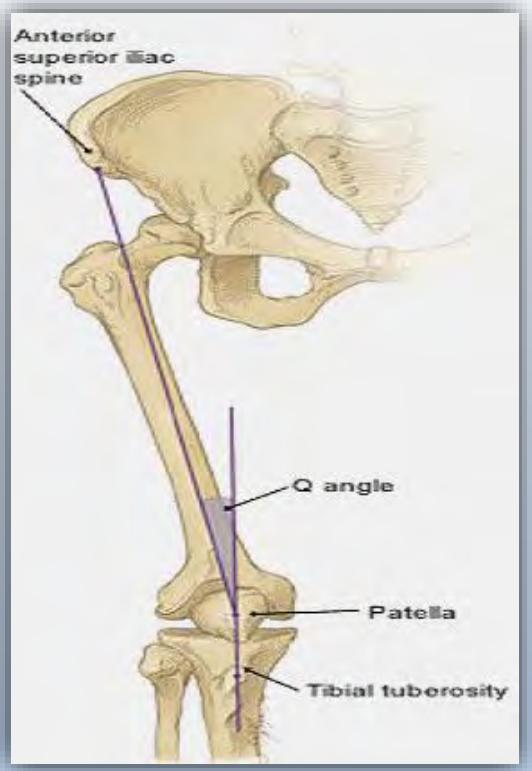
45,000 days
Human (max)
29,000 (avg)

55,000 days
sea turtle

77,000 days
bowhead whale

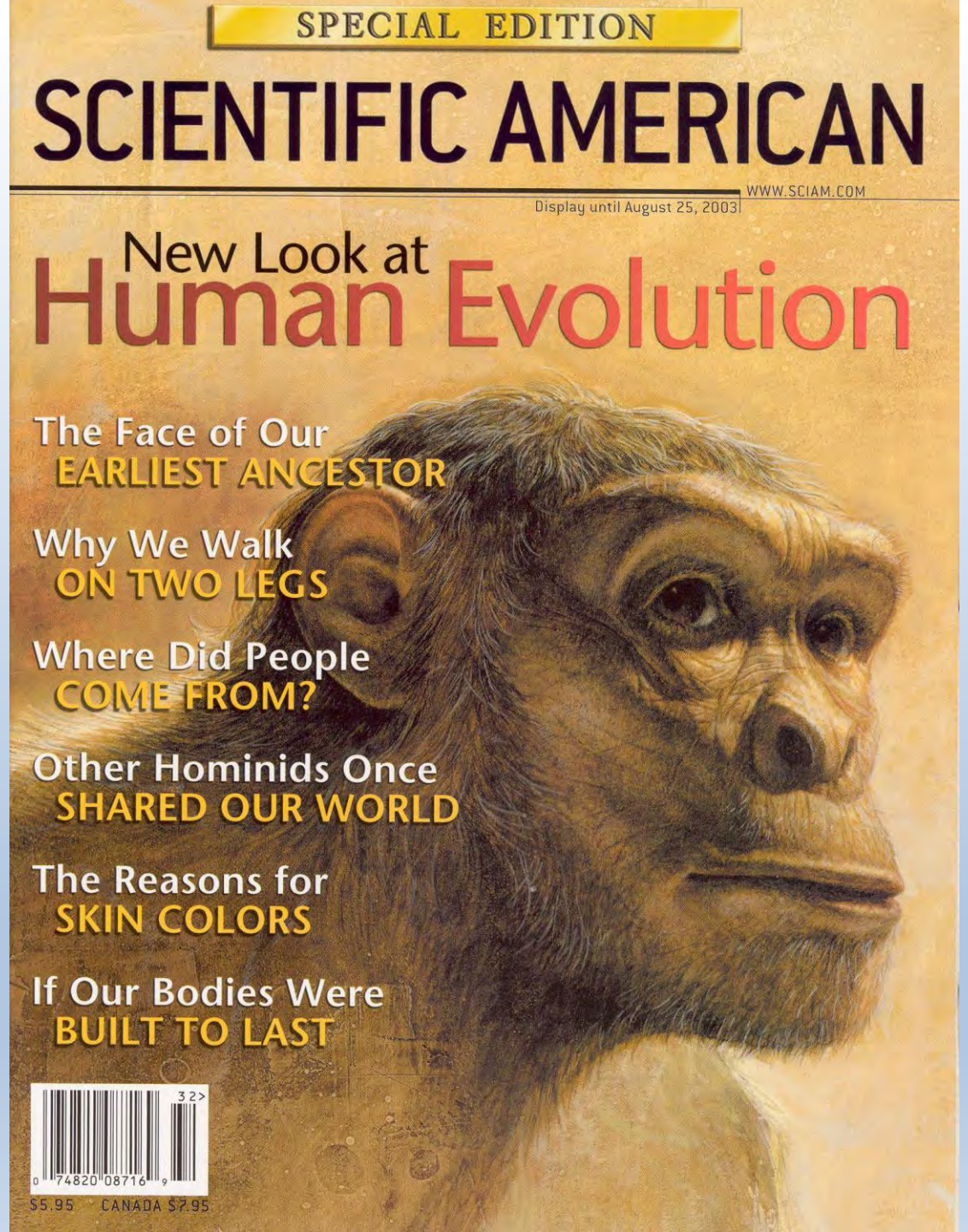
146,000 days
Greenland shark

Although there is no genetic program that limits how fast humans are capable of running, there are nevertheless biomechanical constraints on running speed.



Although there is no genetic program that limits the duration of life, there are nevertheless biomechanical constraints on the functioning of body parts that influence how long we live.

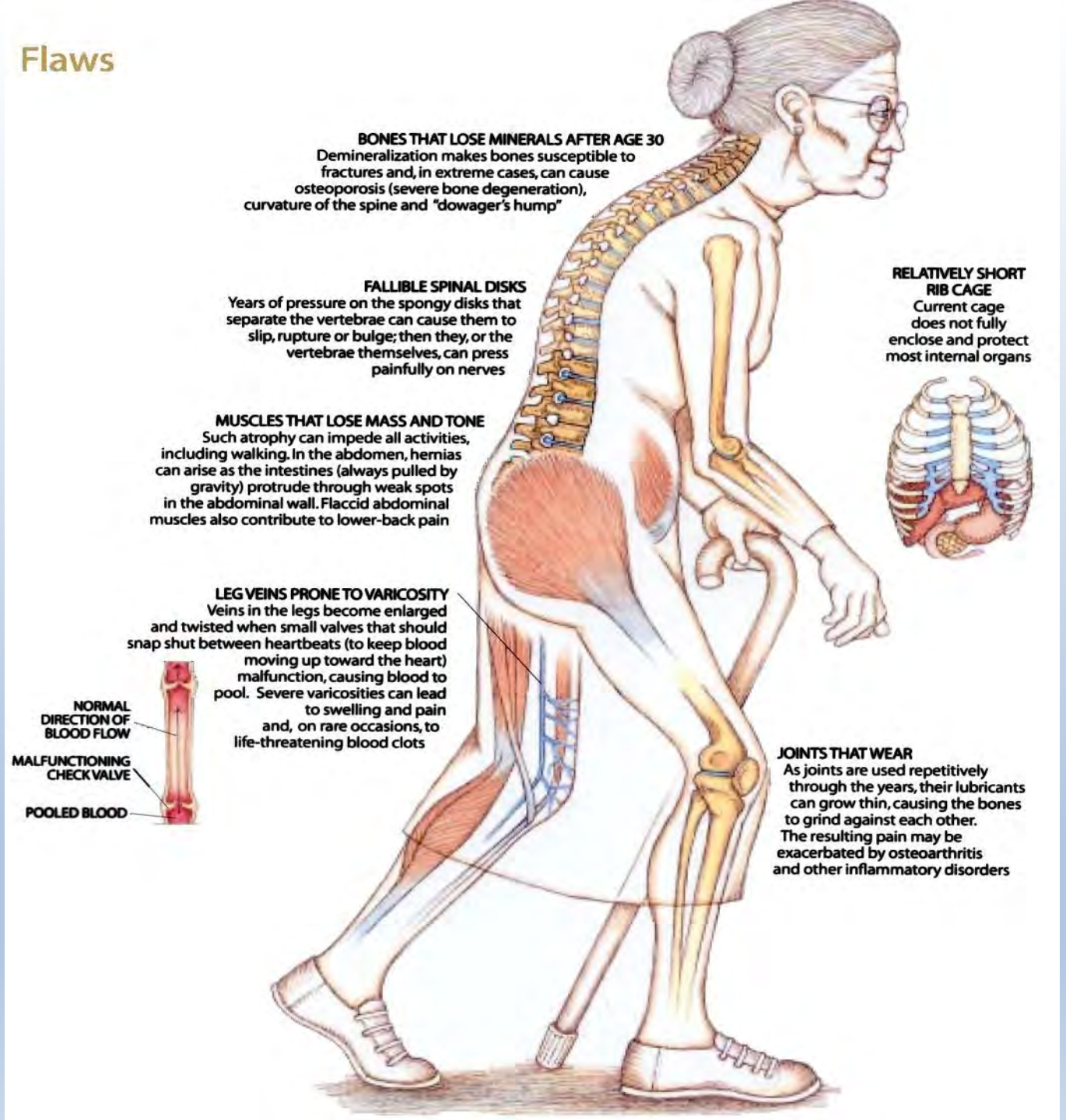
Aging or senescence
is an accident of surviving
beyond the biological warranty
period for living machines



If Humans Were Built To Last

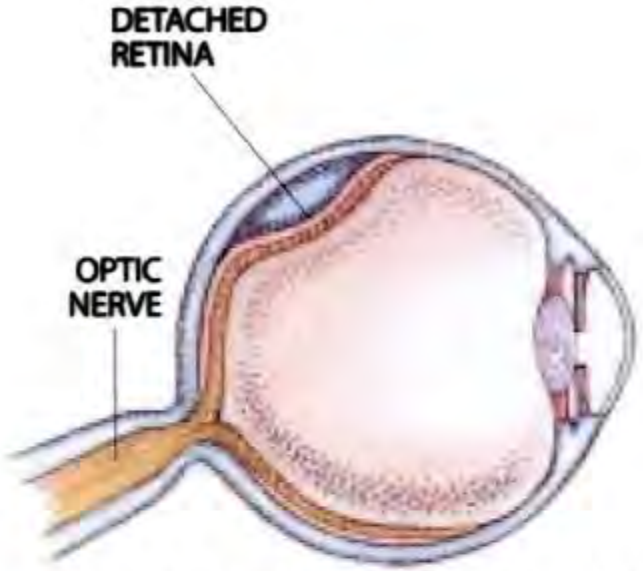
S. Jay Olshansky, Ph.D.
Bruce A. Carnes, Ph.D.
Robert N. Butler, M.D.

Flaws

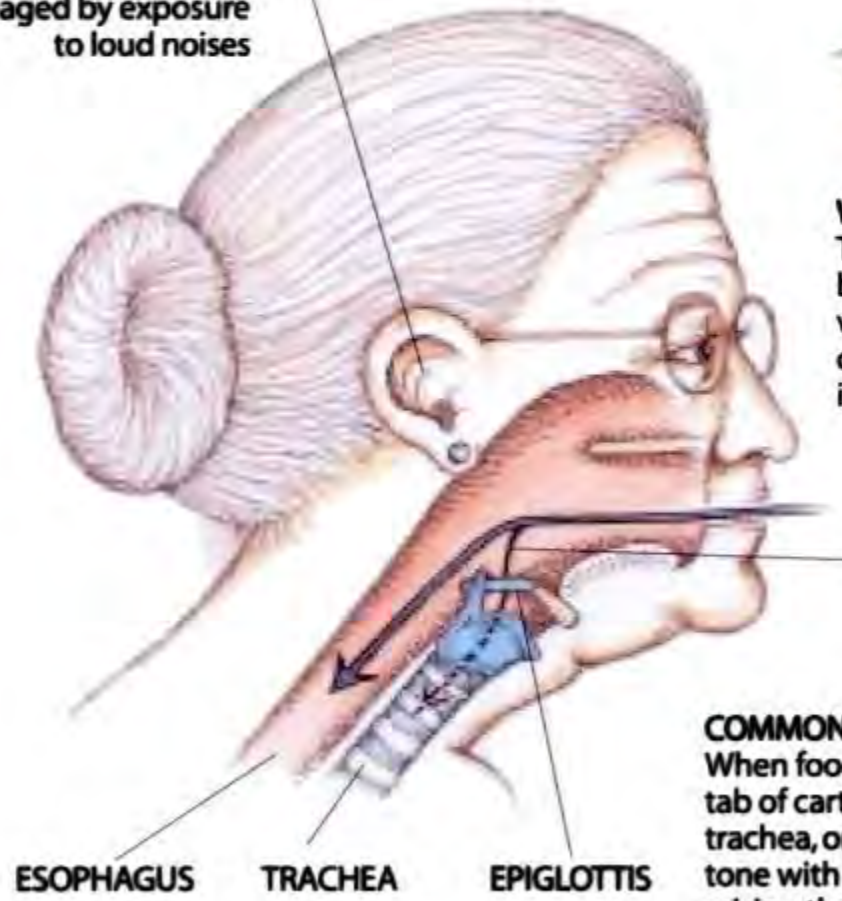

BONES THAT LOSE MINERALS AFTER AGE 30
Demineralization makes bones susceptible to fractures and, in extreme cases, can cause osteoporosis (severe bone degeneration), curvature of the spine and "dowager's hump"
FALLIBLE SPINAL DISKS
Years of pressure on the spongy disks that separate the vertebrae can cause them to slip, rupture or bulge; then they, or the vertebrae themselves, can press painfully on nerves
MUSCLES THAT LOSE MASS AND TONE
Such atrophy can impede all activities, including walking. In the abdomen, hernias can arise as the intestines (always pulled by gravity) protrude through weak spots in the abdominal wall. Flaccid abdominal muscles also contribute to lower-back pain
LEG VEINS PRONE TO VARICOSITY
Veins in the legs become enlarged and twisted when small valves that should snap shut between heartbeats (to keep blood moving up toward the heart) malfunction, causing blood to pool. Severe varicosities can lead to swelling and pain and, on rare occasions, to life-threatening blood clots
NORMAL DIRECTION OF BLOOD FLOW
MALFUNCTIONING CHECK VALVE
POOLED BLOOD
RELATIVELY SHORT RIB CAGE
Current cage does not fully enclose and protect most internal organs
JOINTS THAT WEAR
As joints are used repetitively through the years, their lubricants can grow thin, causing the bones to grind against each other. The resulting pain may be exacerbated by osteoarthritis and other inflammatory disorders

Flaws

EAR WITH FRAGILE TRANSMITTERS
Hair cells of the inner ear, which relay sound information to the brain, become damaged by exposure to loud noises



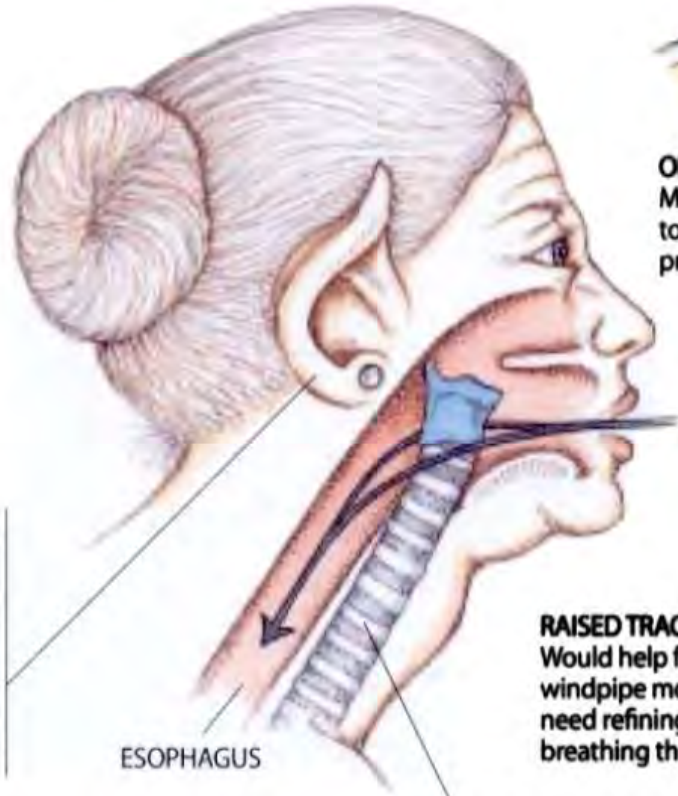
WEAK LINK BETWEEN RETINA AND BACK OF EYE
This frail connection exists in part because the optic nerve, which carries visual signals from the retina to the brain, connects to the retina only from the inside of the eye, not from the back

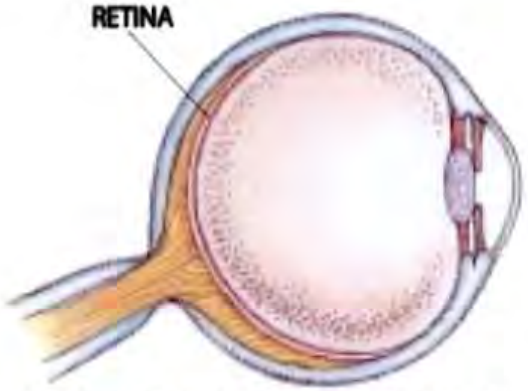


COMMON UPPER PASSAGEWAY FOR FOOD AND AIR
When food travels toward the esophagus, a flaplike tab of cartilage (the epiglottis) closes off the trachea, or windpipe. A progressive loss of muscle tone with age decreases the tightness of the seal, raising the risk of inhaling food or drink

om the back of the eye,
ng to blindness.
any of those problems
d be difficult to design
, but the squid eye sug-
an arrangement that
l have reduced the like-
d of retinal detach-
. A few anatomical
ks could also have pre-
d hearing in the elderly.
optimal design of the
r respiratory and diges-
ystems makes choking
ner risk for older peo-
A simple rearrangement
d have fixed that prob-
albeit at the cost of se-
rade-offs.

Fixes





OPTIC NERVE ATTACHED TO *BACK* OF RETINA
Might stabilize the retina's connection to the back of the eye, helping to prevent retinal detachment

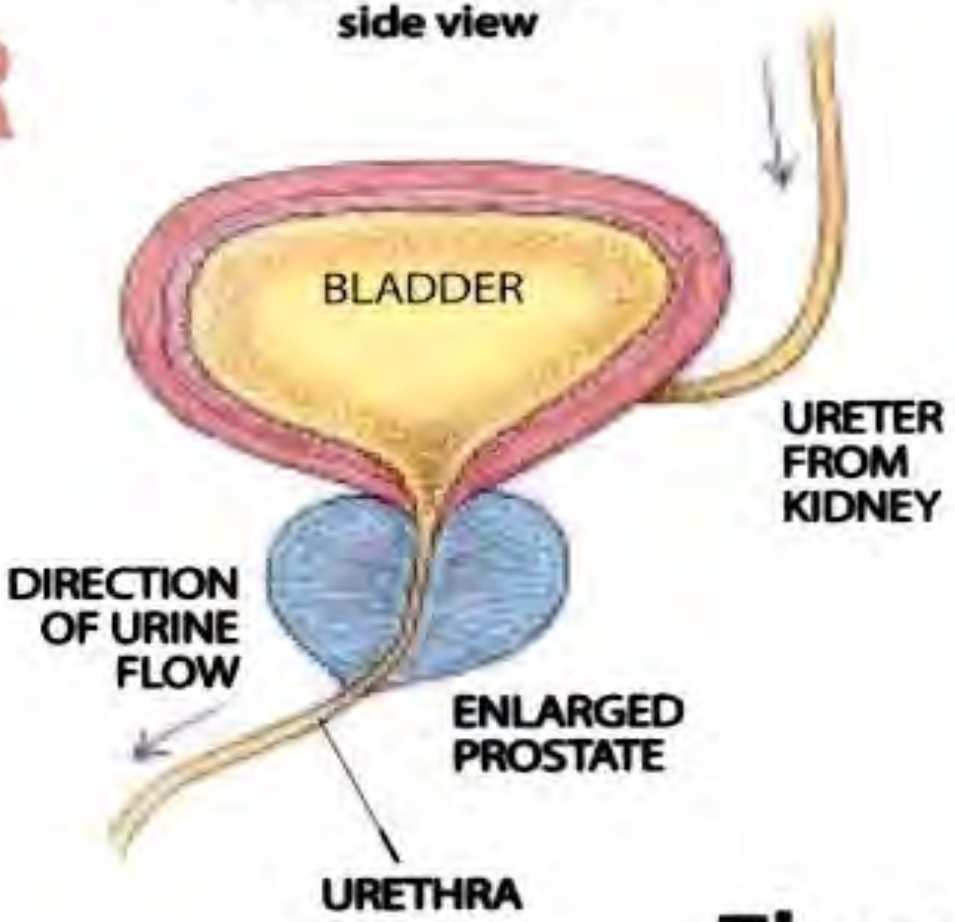
SAFER FLOW OF FOOD

ENLARGED, MOBILE OUTER EAR
Would collect sound with greater efficiency, to compensate for internal breakdowns

MORE PLENTIFUL AND DURABLE HAIR CELLS
Would preserve hearing longer

RAISED TRACHEA
Would help food and drink to bypass the windpipe more effectively. This design would need refining, though, because it would disrupt breathing through the mouth and the ability to speak

MALE PROSTATE
side view



Flaw

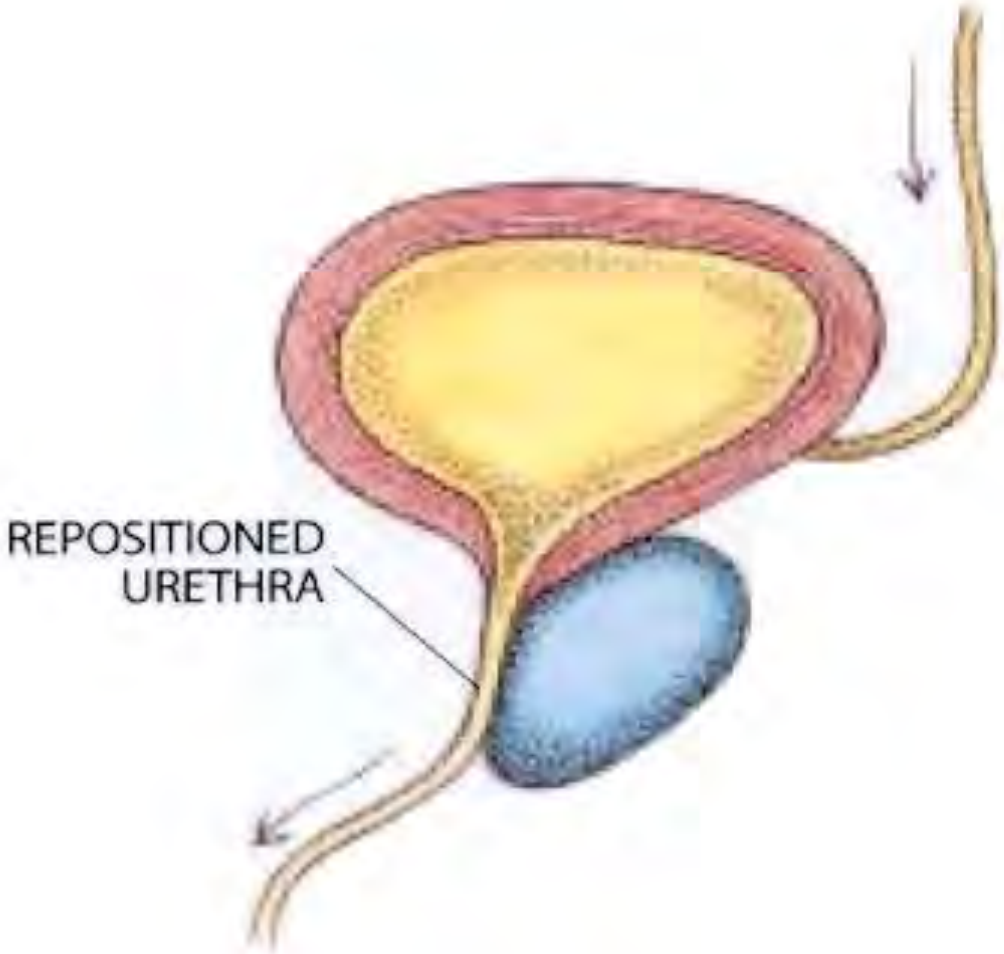
URETHRA PRONE TO CONSTRICTION

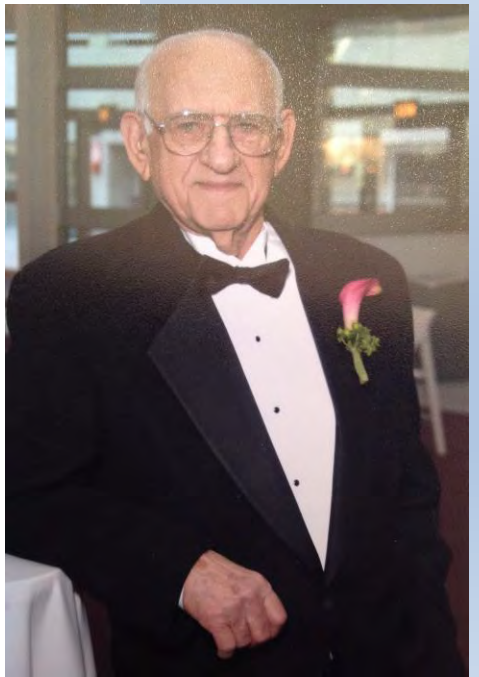
The prostate becomes enlarged in one of every two males at some point in their lives. As it grows, it squeezes the urethra, potentially obstructing the flow of urine. Total obstruction can be fatal

Fix

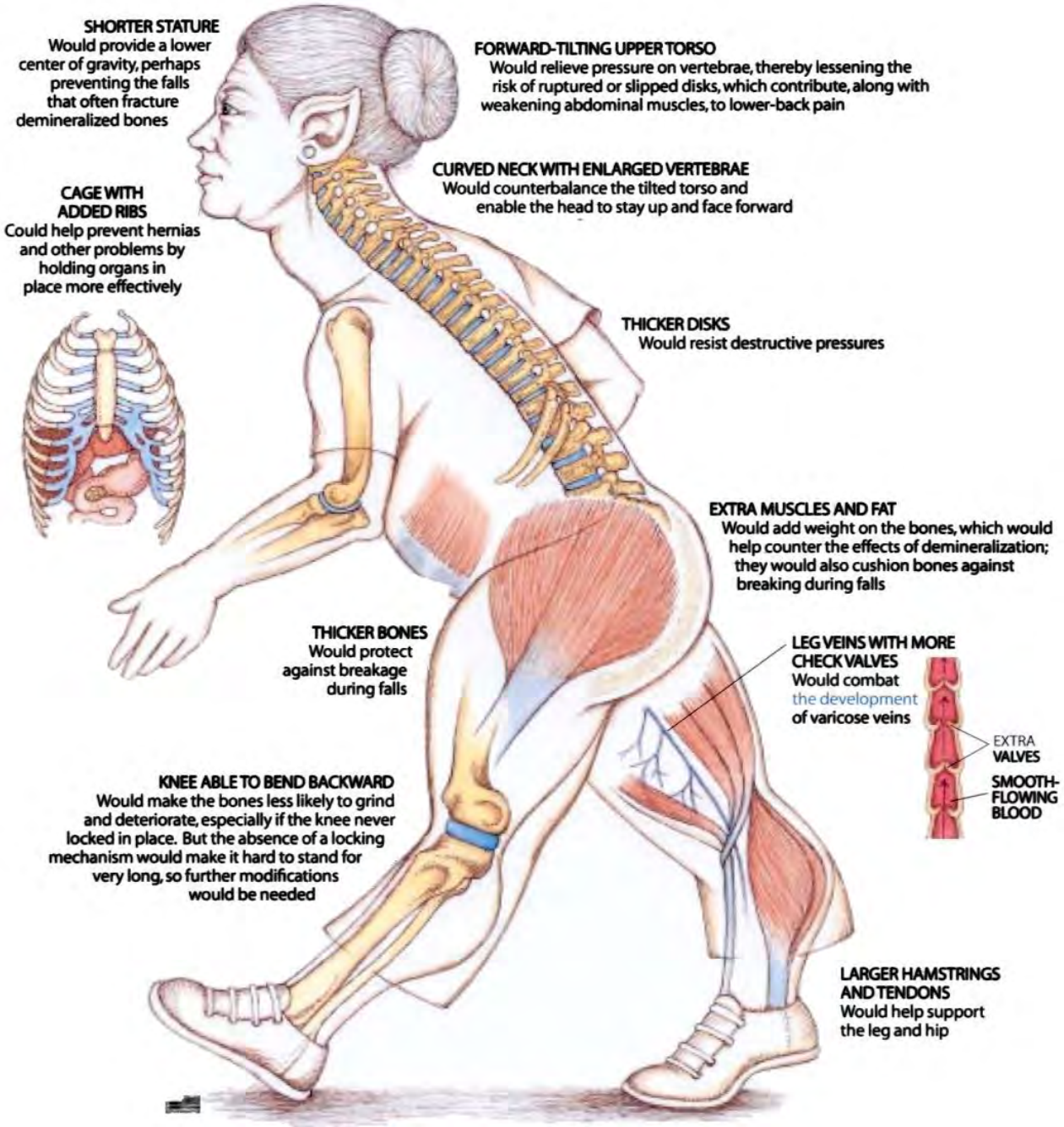
URETHRA HUGGING OUTSIDE OF PROSTATE

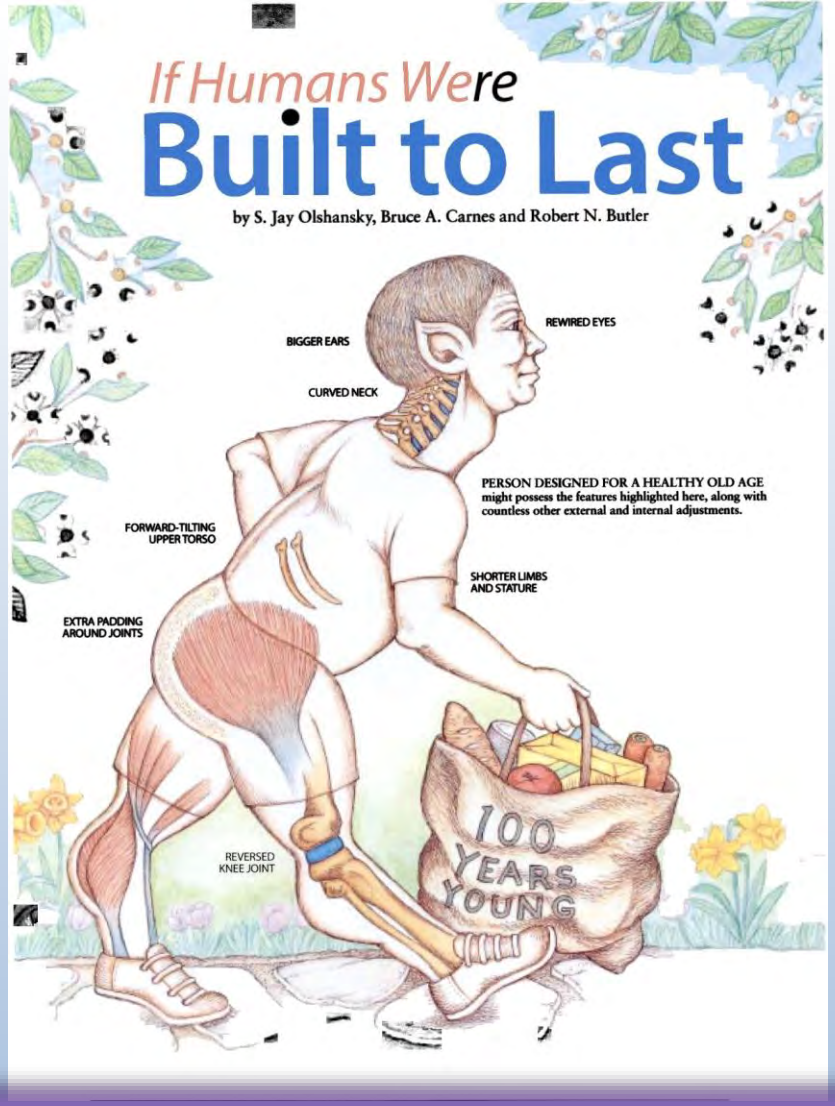
Would not be squeezed if the prostate became enlarged





Fixes

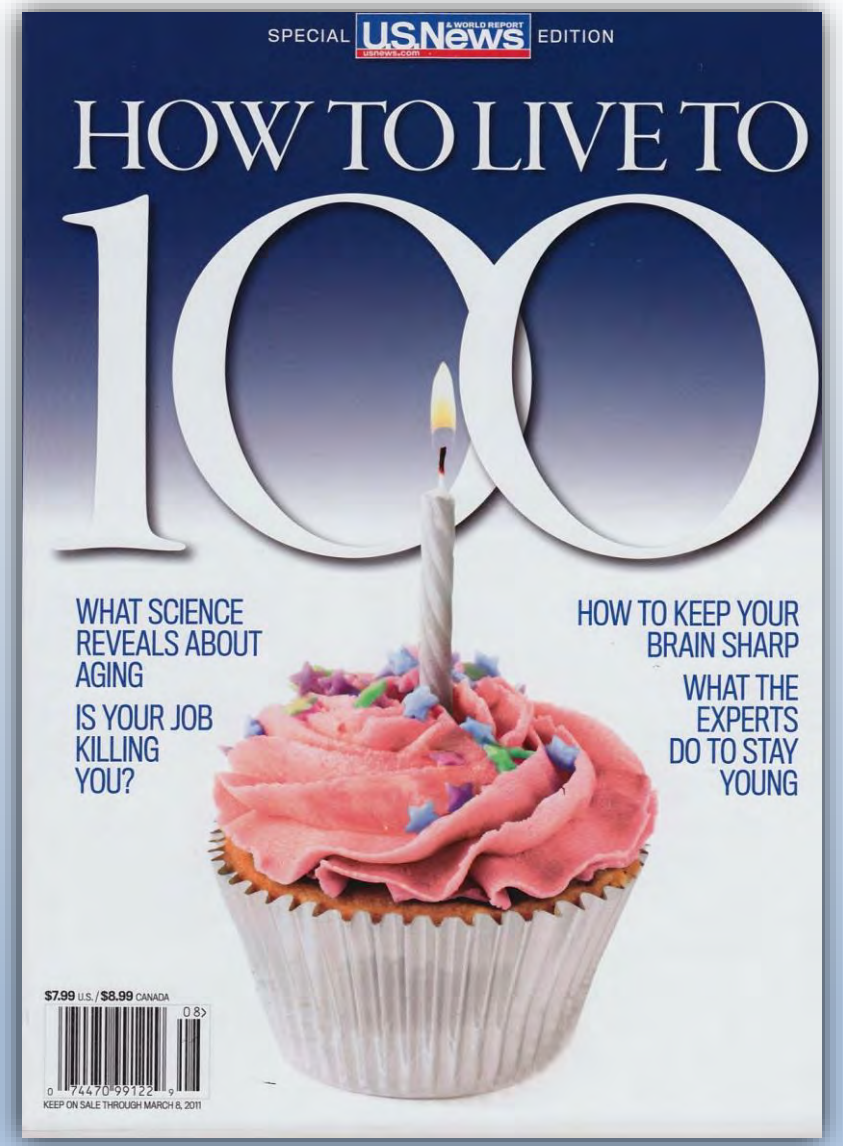

SHORTER STATURE
Would provide a lower center of gravity, perhaps preventing the falls that often fracture demineralized bones
FORWARD-TILTING UPPER TORSO
Would relieve pressure on vertebrae, thereby lessening the risk of ruptured or slipped disks, which contribute, along with weakening abdominal muscles, to lower-back pain
CURVED NECK WITH ENLARGED VERTEBRAE
Would counterbalance the tilted torso and enable the head to stay up and face forward
CAGE WITH ADDED RIBS
Could help prevent hernias and other problems by holding organs in place more effectively
THICKER DISKS
Would resist destructive pressures
EXTRA MUSCLES AND FAT
Would add weight on the bones, which would help counter the effects of demineralization; they would also cushion bones against breaking during falls
THICKER BONES
Would protect against breakage during falls
LEG VEINS WITH MORE CHECK VALVES
Would combat the development of varicose veins
EXTRA VALVES
SMOOTH-FLOWING BLOOD
KNEE ABLE TO BEND BACKWARD
Would make the bones less likely to grind and deteriorate, especially if the knee never locked in place. But the absence of a locking mechanism would make it hard to stand for very long, so further modifications would be needed
LARGER HAMSTRINGS AND TENDONS
Would help support the leg and hip



The key point to remember is not that we have the capacity to re-design our bodies better than they already are, but that unless we "rethink aging" instead of just treating diseases, we are going to have to live with what we have. The time has arrived to <u>Rethink Aging</u>!

Can Most Live to100?

Can we really add decades of life to people aged 70+ today faster than we added decades of life to children born in the early 20th century?



SPECIAL U.S.News & WORLD REPORT EDITION
usnews.com
HOW TO LIVE TO
100
WHAT SCIENCE REVEALS ABOUT AGING
IS YOUR JOB KILLING YOU?
HOW TO KEEP YOUR BRAIN SHARP
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NATIONAL GEOGRAPHIC
THIS BABY WILL LIVE TO BE 120*

NATIONAL GEOGRAPHIC
The Secrets of Living Longer
Undersea Oddballs
Stealth Cats


TIME
AGING SEX SCANDALS
1998 TECH BUYER'S GUIDE
How science is searching for ways to keep us
Forever Young


Election 2010: Foreign money in the midterms?
Chilean Miners: Their amazing journey
China's Fury: Eyes on the Nobel Prize
40 Under 40: The young pols to watch
TIME
Alzheimer's
At last, some progress against the most stubborn disease


Afghanistan: Racing to Save Lives
Toyota: The Fall of An Icon
Reality TV: Why It's Better Than You Think
The Oscars: The Year's Best Performances
TIME
The Science of Living Longer
SPECIAL 22-PAGE HEALTH SECTION


TIME
CAN Google SOLVE DEATH?
The search giant is launching a venture to extend the human life span
That would be crazy—if it weren't Google

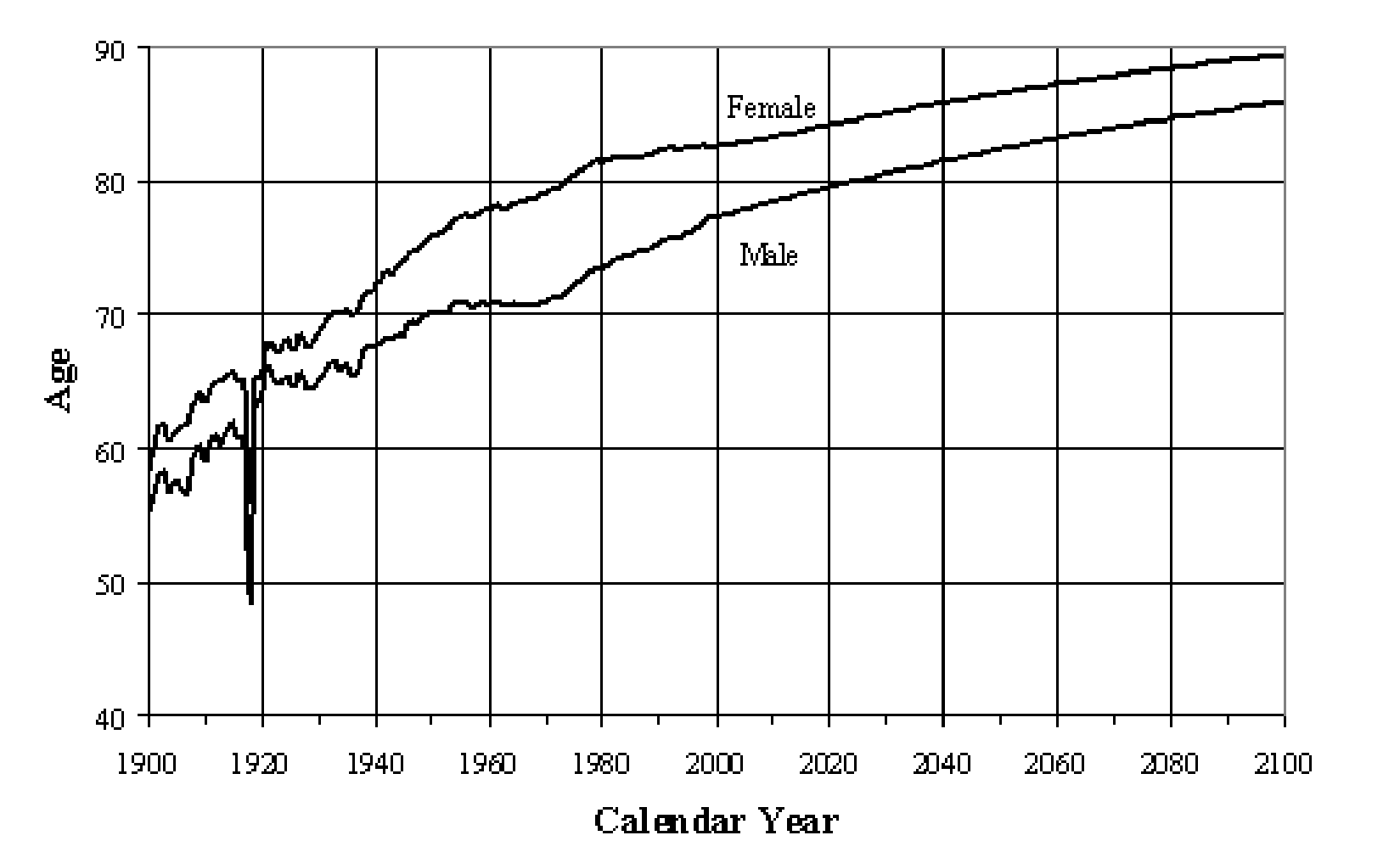

FEBRUARY 23 / MARCH 2, 2015
TIME
SPECIAL HEALTH DOUBLE ISSUE
THIS BABY COULD LIVE TO BE 142 YEARS OLD
Dispatches From the Frontiers of Longevity
time.com


TIME
VOL. 185, NO. 6–7 | 2015
HOW OLD CAN WE LIVE TO BE?
That remains to be seen, but if a promising drug does to humans what it does to mice—a big if—the answer is 142. Mice have a median survival time of 27 MONTHS, but with treatment, the longest-living mouse hit 48 MONTHS, a life 1.77 TIMES LONGER. The median human lifespan is 80 YEARS—so if the oldest person lived 1.77 times longer, he or she would reach 142.


THE FIRST PERSON TO LIVE
TO 150 IS ALIVE TODAY.
Let's get ready for a longer retirement.
Prudential
Bring Your Challenges

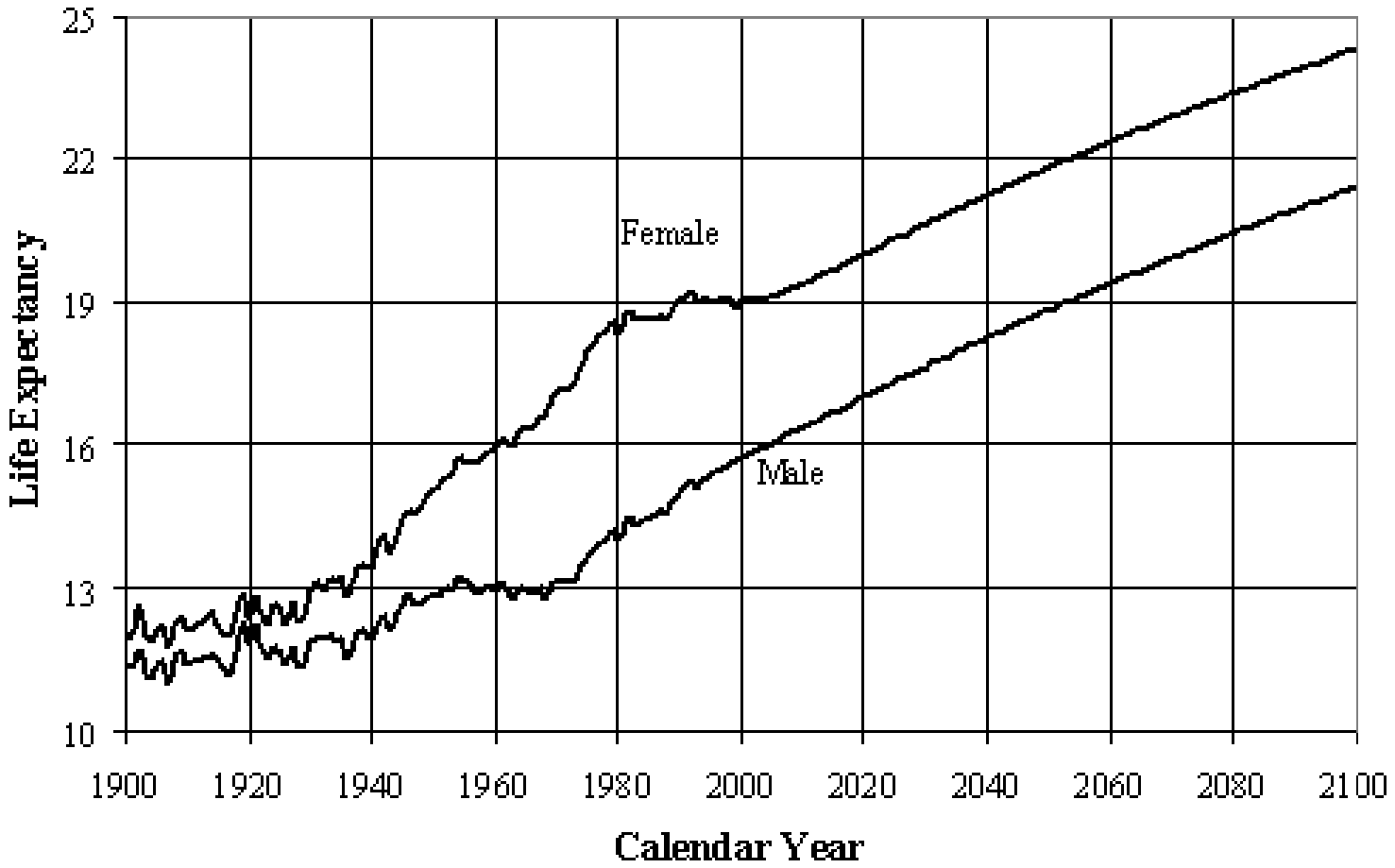

Bloomberg Businessweek
The Forever Pill
173
Inside Novartis's quest for the world's first anti-aging drug

Life Expectancy at Birth

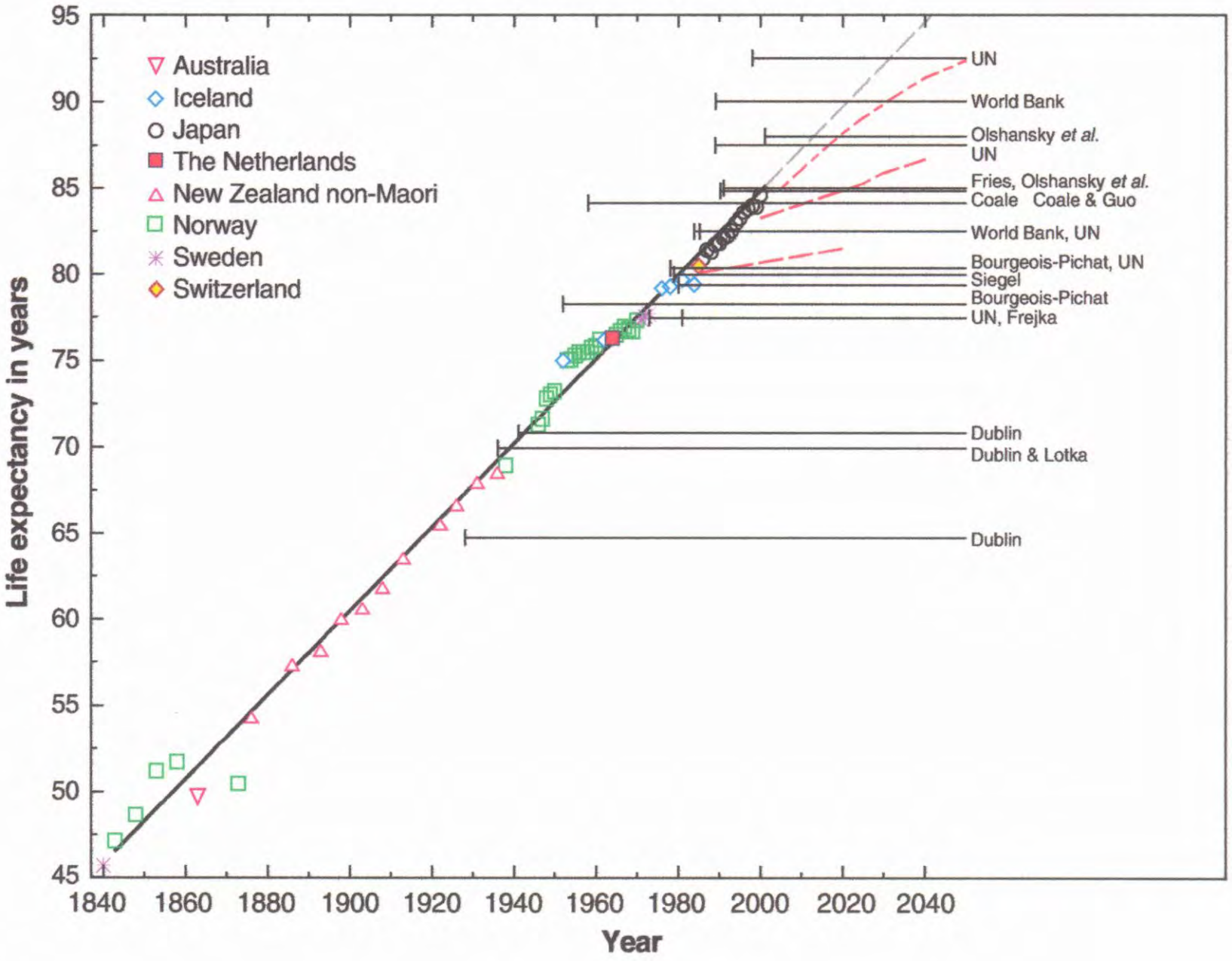


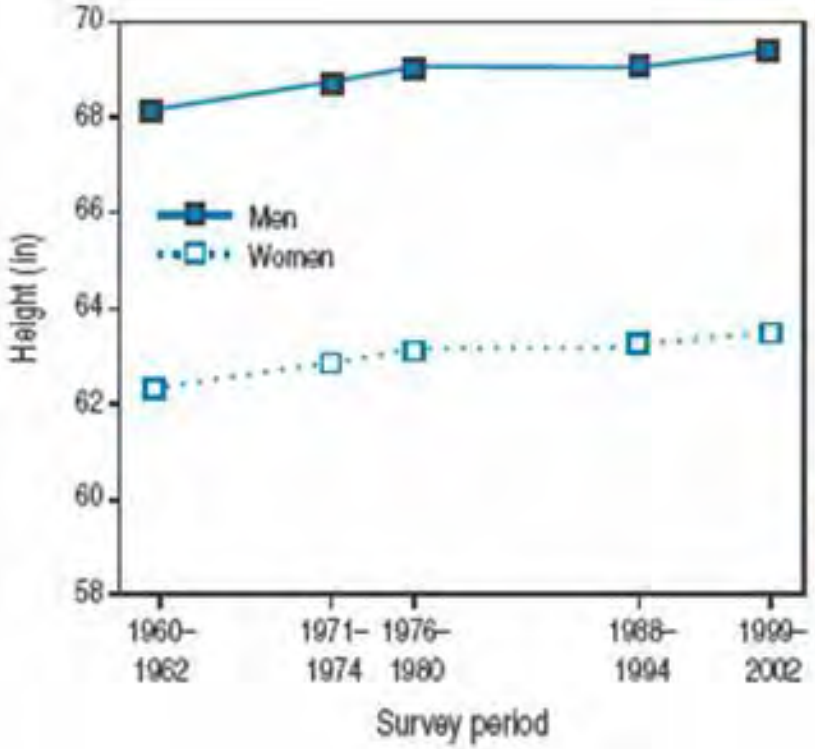
Source: SSA, Actuarial Study No. 116. 2002.

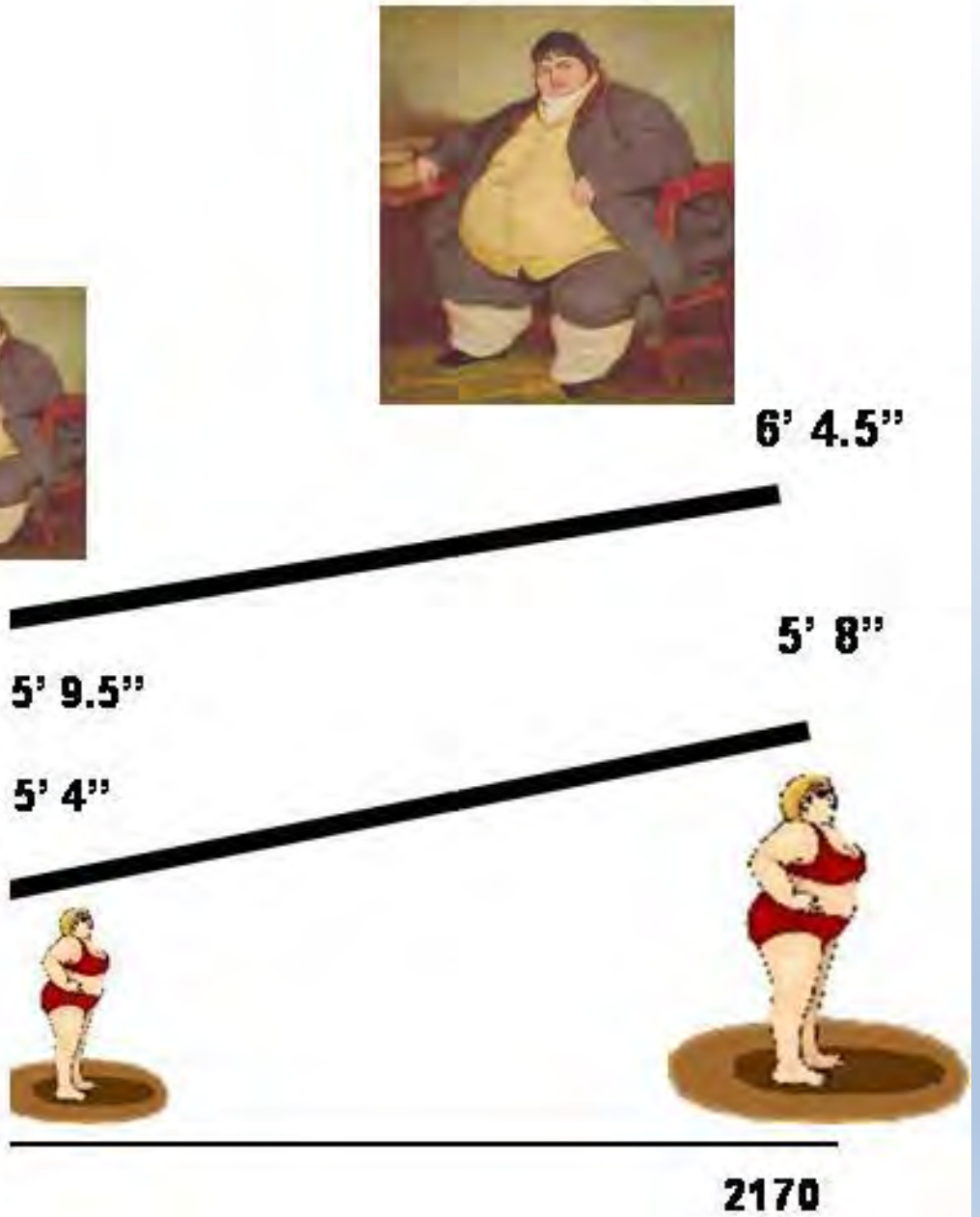
Life Expectancy at Age 65

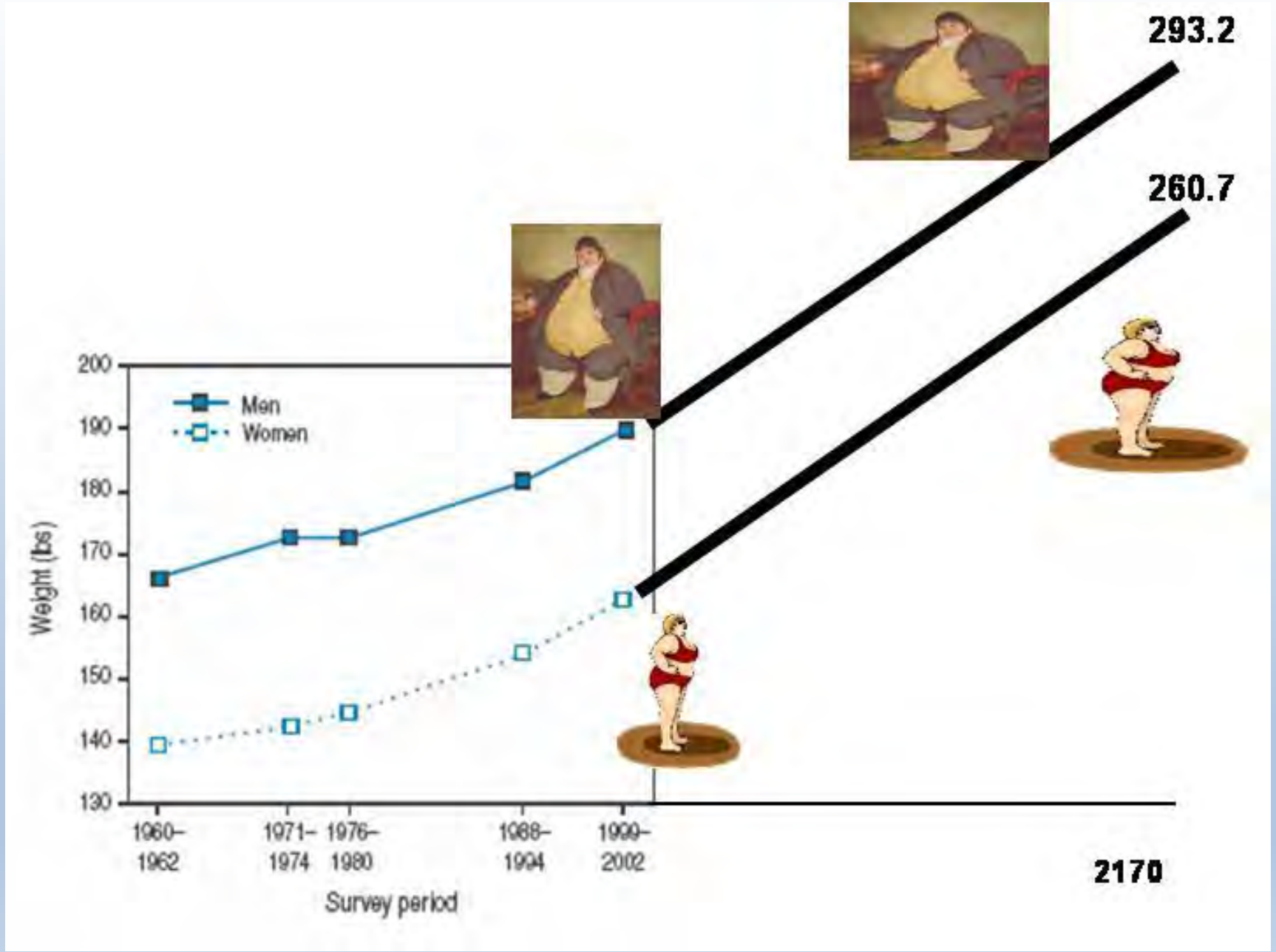


Source: SSA, Actuarial Study No. 116. 2002.

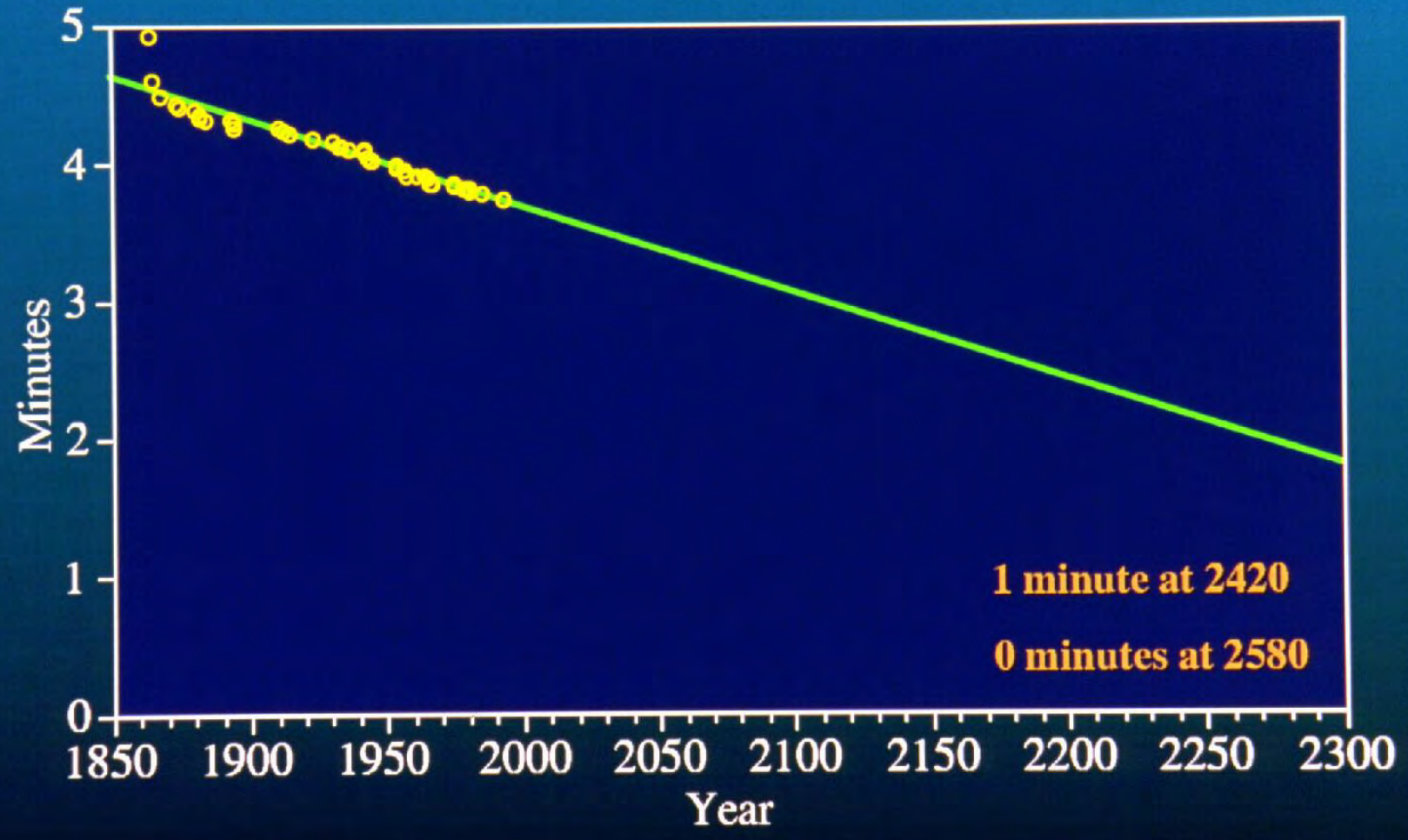

Australia
Iceland
Japan
The Netherlands
New Zealand non-Maori
Norway
Sweden
Switzerland
UN
World Bank
Olshansky et al.
UN
Fries, Olshansky et al.
Coale Coale & Guo
World Bank, UN
Bourgeois-Pichat, UN
Siegel
Bourgeois-Pichat
UN, Frejka
Dublin
Dublin & Lotka
Dublin
Life expectancy in years
Year
95
90
85
80
75
70
65
60
55
50
45
1840
1860
1880
1900
1920
1940
1960
1980
2000
2020
2040


70
68
66
64
62
60
58
Height (in)
Men
Women
1960–1962
1971–1974
1976–1980
1988–1994
1999–2002
Survey period


6' 4.5"
5' 8"
5' 9.5"
5' 4"
2170


293.2
260.7
Men
Women
Weight (lbs)
200
190
180
170
160
150
140
130
1960–1962
1971–1974
1976–1980
1988–1994
1999–2002
Survey period
2170

World Record for the 1-Mile Run (Males)



Source: World Almanac, 1985; 1990; 1995

In Search of Methuselah: Estimating the Upper Limits to Human Longevity

S. Jay Olshansky, Bruce A. Carnes, Christine Cassel

The Canary in the Coal Mine of Coronary Artery Disease

FULL TEXT

Article *in* Archives of Internal Medicine 168(3):261 · March 2008

DOI: 10.1001/archinternmed.2007.58 · Source: PubMed

1st S. Jay Olshansky
39.99 · University of Illinois at C...

2nd Victoria Persky

Viewpoint | April 04, 2016

Lifespan Weighed Down by Diet FREE

David S. Ludwig, MD, PhD[1]

[+] Author Affiliations

JAMA. Published online April 04, 2016. doi:10.1001/jama.2016.3829

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL REPORT

A Potential Decline in Life Expectancy in the United States in the 21st Century

S. Jay Olshansky, Ph.D., Douglas J. Passaro, M.D., Ronald C. Hershow, M.D., Jennifer Layden, M.P.H., Bruce A. Carnes, Ph.D., Jacob Brody, M.D., Leonard Hayflick, Ph.D., Robert N. Butler, M.D., David B. Allison, Ph.D., and David S. Ludwig, M.D., Ph.D.

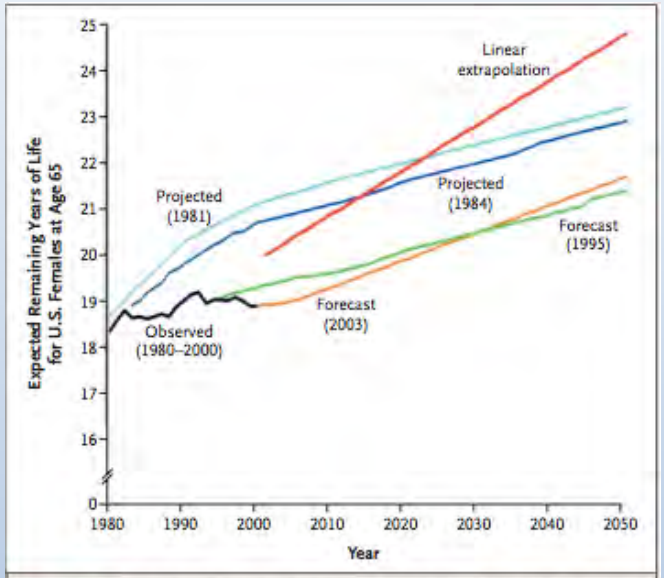


Figure 3. Observed and Projected Life Expectancy at Age 65 for U.S. Females (1980 to 2050).

Shown are observed changes, from 1980 to 2000,[46] in expected remaining years of life at age 65 for females in the United States, projections of the expected remaining years of life at age 65 made by the SSA in actuarial studies published in 1981[46] and 1984,[47] and forecasts based on the SSA's 1995 and 2003 Trustees Reports.[48,49] A forecast of the expected remaining years of life at age 65 for females in the United States, assuming the observed trend from 1940 to 2000 is extrapolated linearly from 2000 to 2050, is shown.

By Eric N. Reither, S. Jay Olshansky, and Yang Yang

New Forecasting Methodology Indicates More Disease And Earlier Mortality Ahead For Today's Younger Americans

DOI: 10.1377/hlthaff.2011.0092
HEALTH AFFAIRS 30,
NO. 8 (2011): -

ABSTRACT Traditional methods of projecting population health statistics, such as estimating future death rates, can give inaccurate results and lead to inferior or even poor policy decisions. A new "three-dimensional" method of forecasting vital health statistics is more accurate because it takes into account the delayed effects of the health risks being accumulated by today's younger generations. Applying this forecasting technique to the US obesity epidemic suggests that future death rates and health care expenditures could be far worse than currently anticipated. We suggest that public policy makers adopt this more robust forecasting tool and redouble efforts to develop and implement effective obesity-related prevention programs and interventions.

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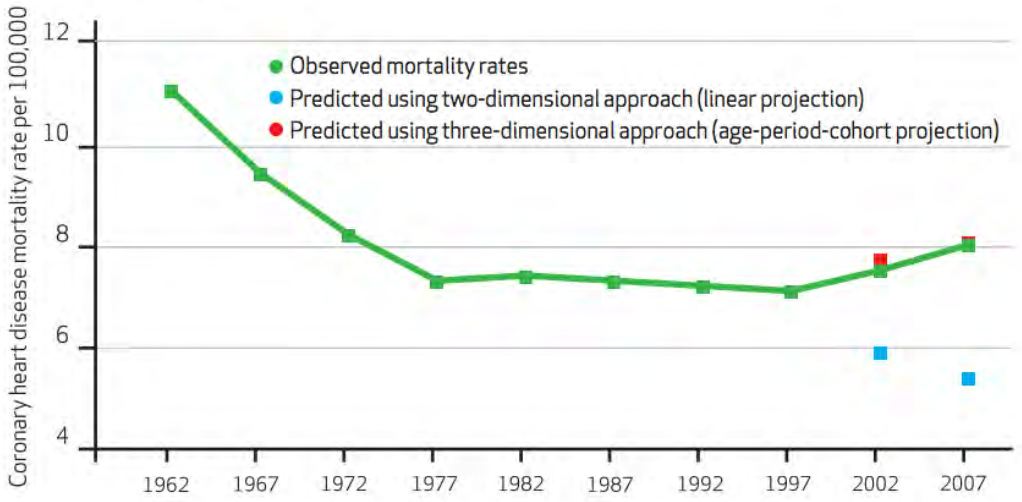
S. Jay Olshansky is a professor in the School of Public Health at the University of Illinois, in Chicago.

Yang Yang is an associate professor in the Department of Sociology and the Lineberger Comprehensive Cancer Center at the University of North Carolina, , in Chapel Hill.

EXHIBIT 2

Two- Versus Three-Dimensional Projections For Coronary Heart Disease Mortality Among US Males Ages 25–29, 1962–2007



SOURCE Authors' analysis.

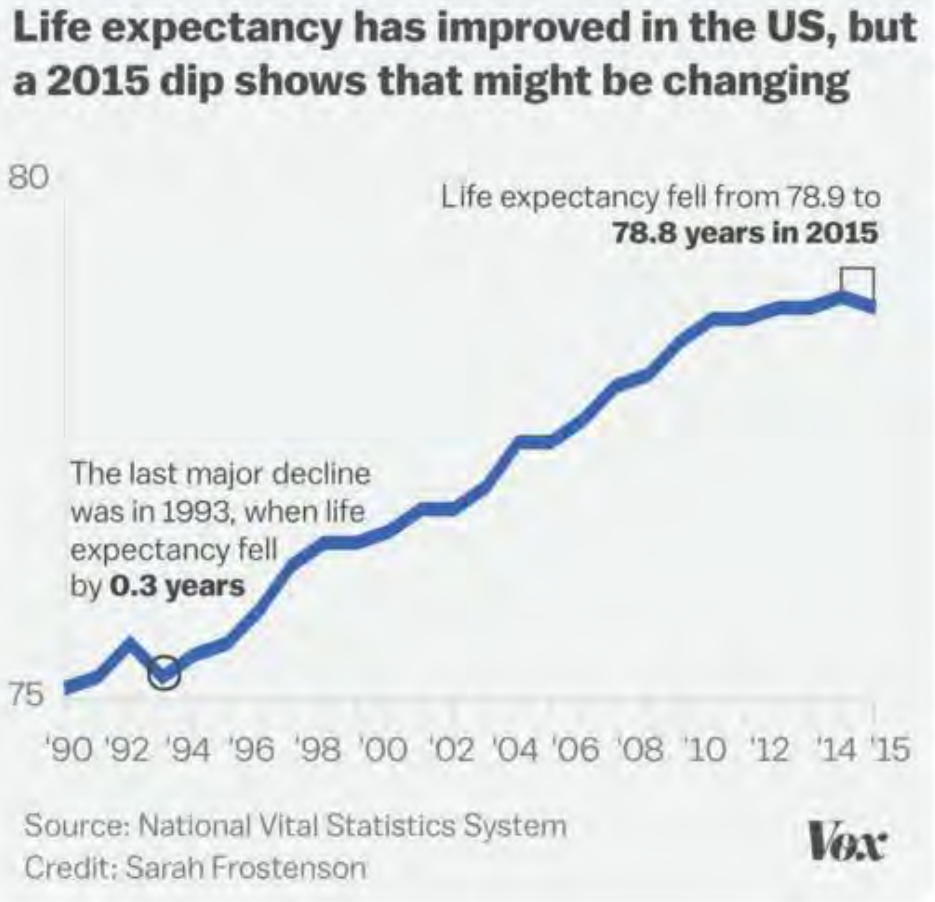
Current Developments in Aging and Mortality
Tuesday, April 18, 2017
Budapest Marriot Hotel

Is longevity *still* improving?

Brian Ridsdale
br@ridsdales.com
Chairman, IAA Mortality Working Group

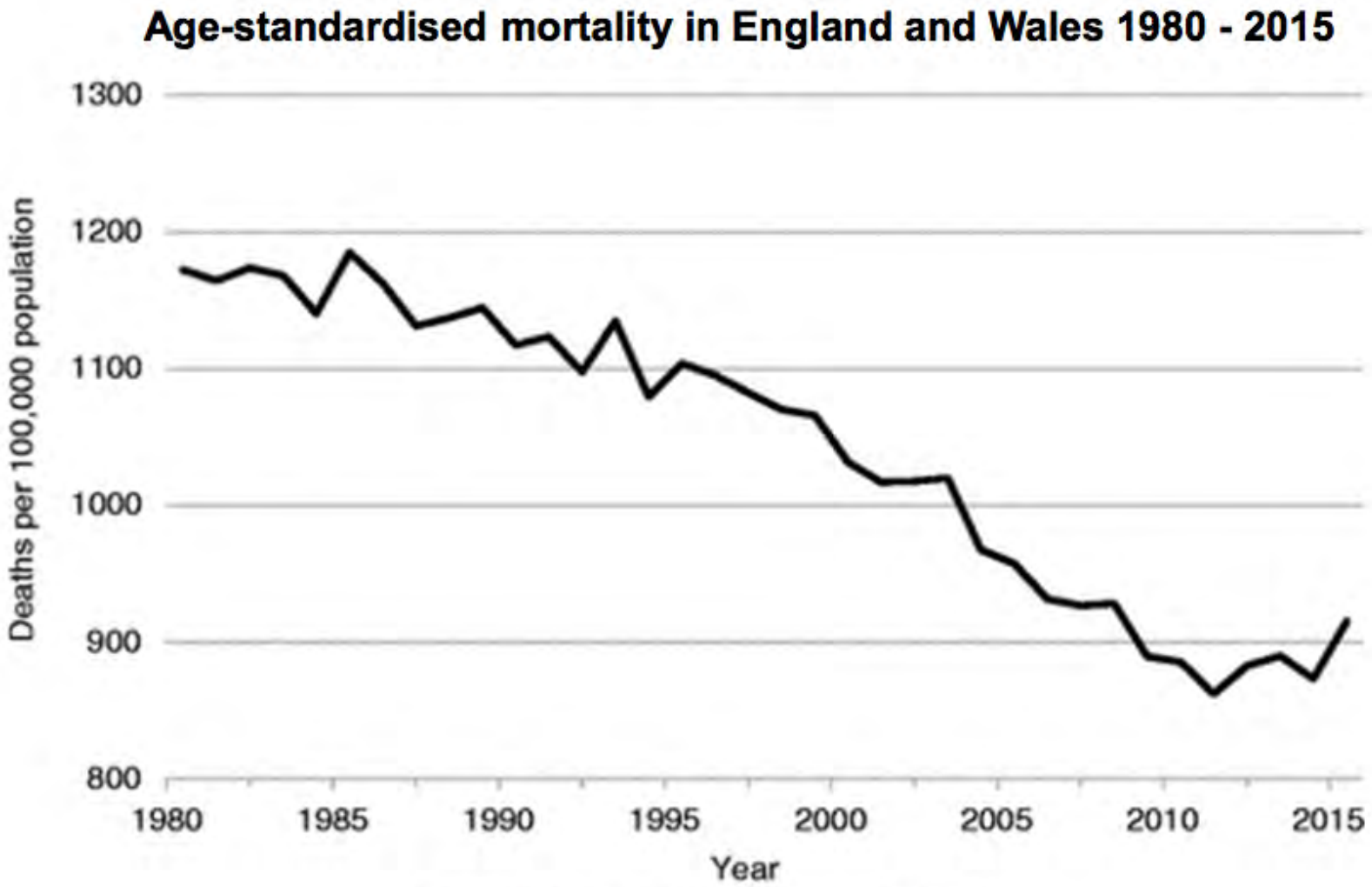
With thanks to:

Adrian Gallop, Jon Palin, Richard Willets, Magali Barbieri, Assia Billig, Al Klein, Sam Gutterman, Michael Sherris, Kriszti Halay, David Raymont and many others



Decline

Flattening of slope

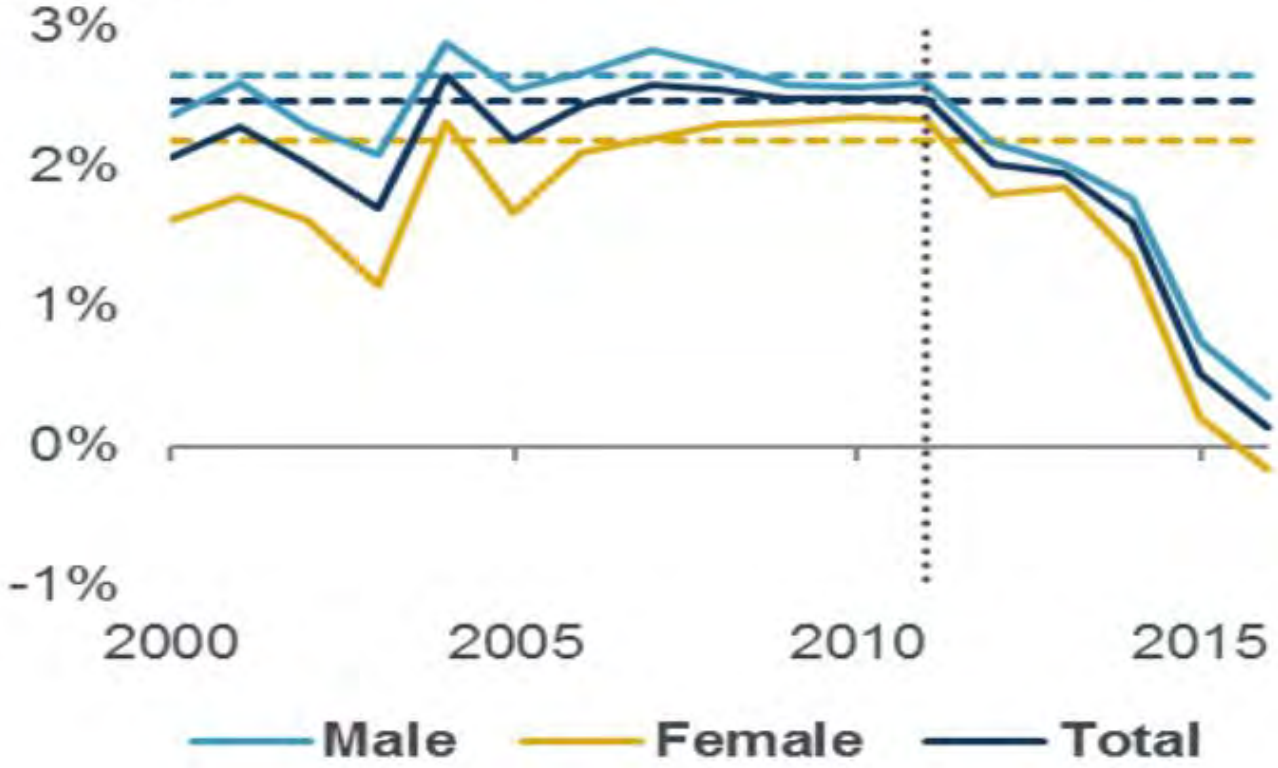


Is longevity *still* improving? Brian Ridsdale April 2017

England and Wales

Five-year average annual mortality improvements

Five-year average annual mortality improvements (solid) compared to trends from 2000-2011 (dashed)



Source: CMI Working Paper 97, 27 Mar 2017 Chart 2E

Is longevity *still* improving? Brian Ridsdale April 2017

England and Wales

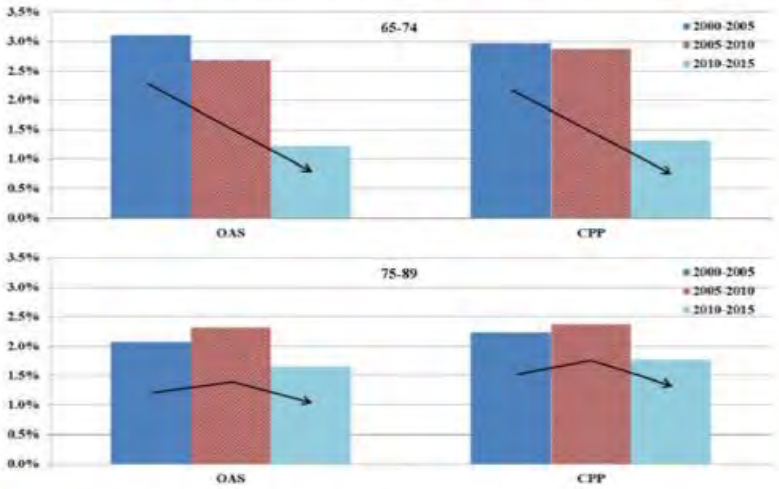
affects all age bands

The average mortality improvements affect all age bands
Five-year average mortality improvements for different age bands (male shown)

Source: CMI Working Paper 97, 27 Mar 2017 Chart 2G/H

Canada: Canada Pension Plan

CPP-OAS Average Annual Mortality Improvement Rates (males)



Source: Office of the Chief Actuary calculations.

OSFI BSIF

Office of the Chief Actuary Bureau de l'actuaire en chef

22

So a slowdown in improvements for over 65s in Canada

Courtesy Assia Billig, Actuary, OCA and OFI

Is longevity *still* improving? Brian Ridsdale April 2017

So, have longevity improvements reduced?

In the past five years:

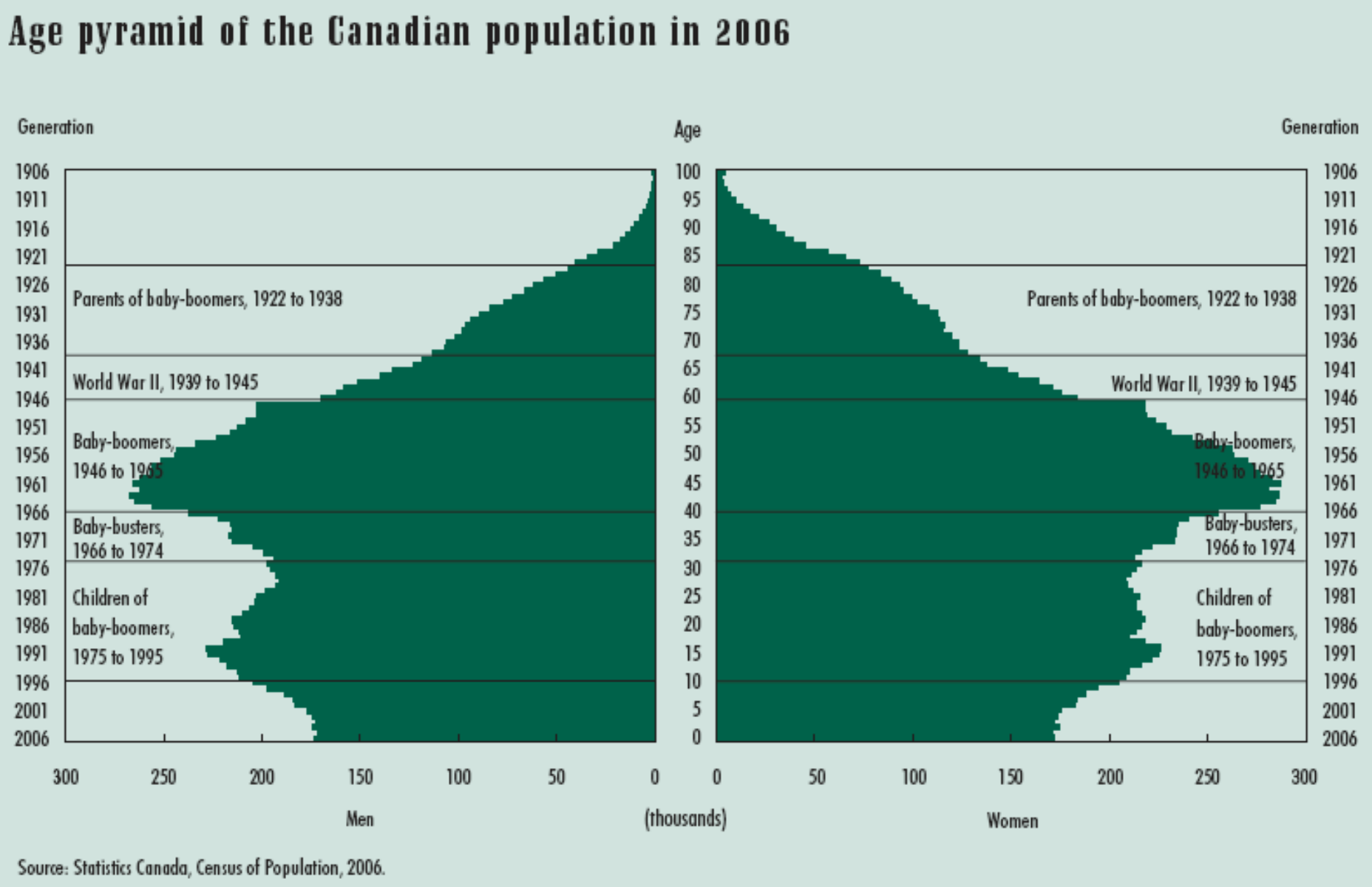
UK England and Wales yes

Rest of Europe: France, Germany, Hungary, Netherlands, ……., likely

Australia maybe

Canada likely

USA yes



Predictions!

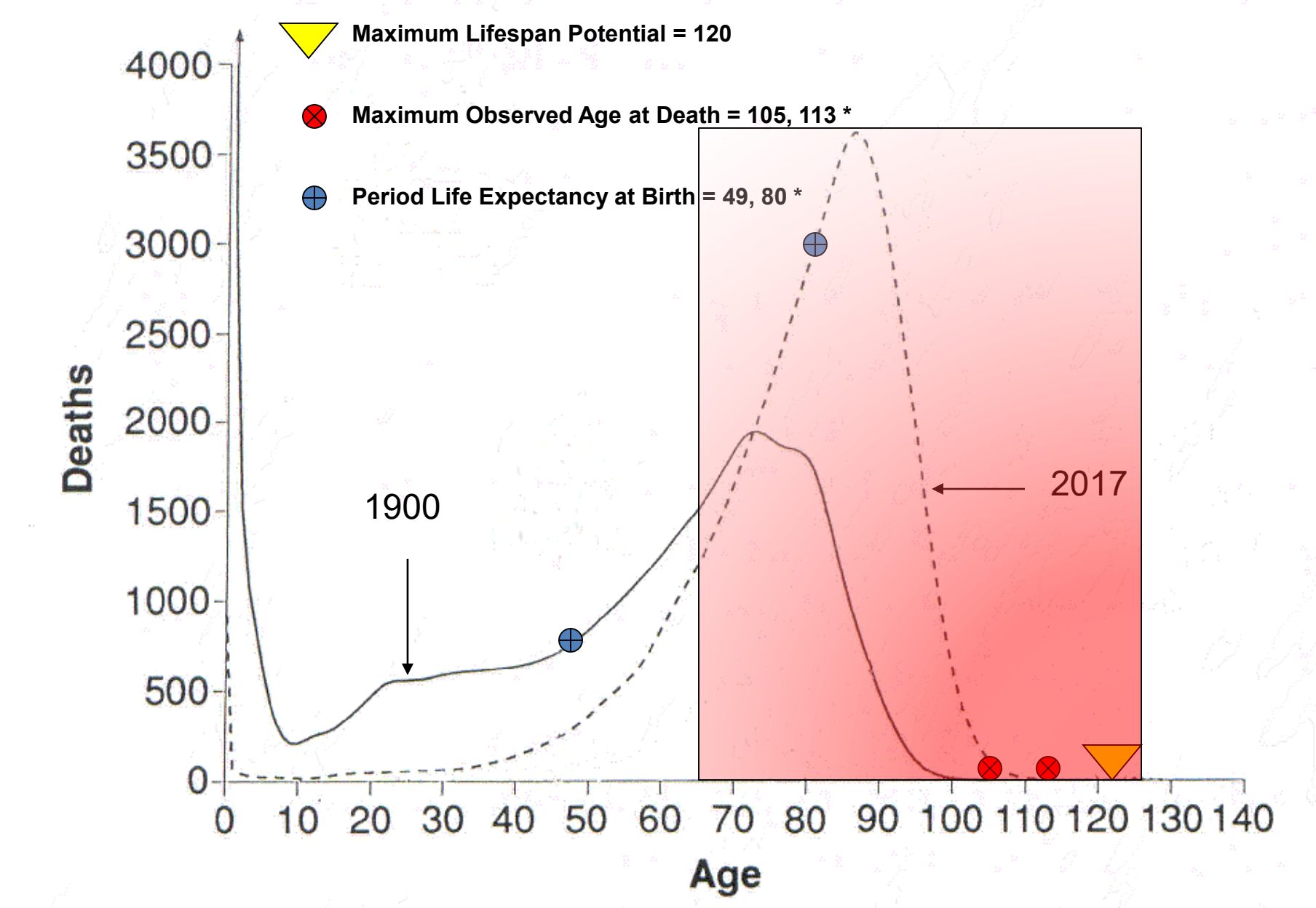
1. Hispanic life expectancy will soon drop rapidly. Why?

2. Negative burden on national life expectancy in U.S. will accelerate. Why? Hispanic mortality + latent effect of obesity/diabetes.

3. Advances in biomedical technology will accelerate. The first subgroups to benefit will be the educated/wealthy (higher level insured populations).

4. Life expectancy in Japan will level or soon decline. Why?

Females – Developed Nations



In pursuit of the

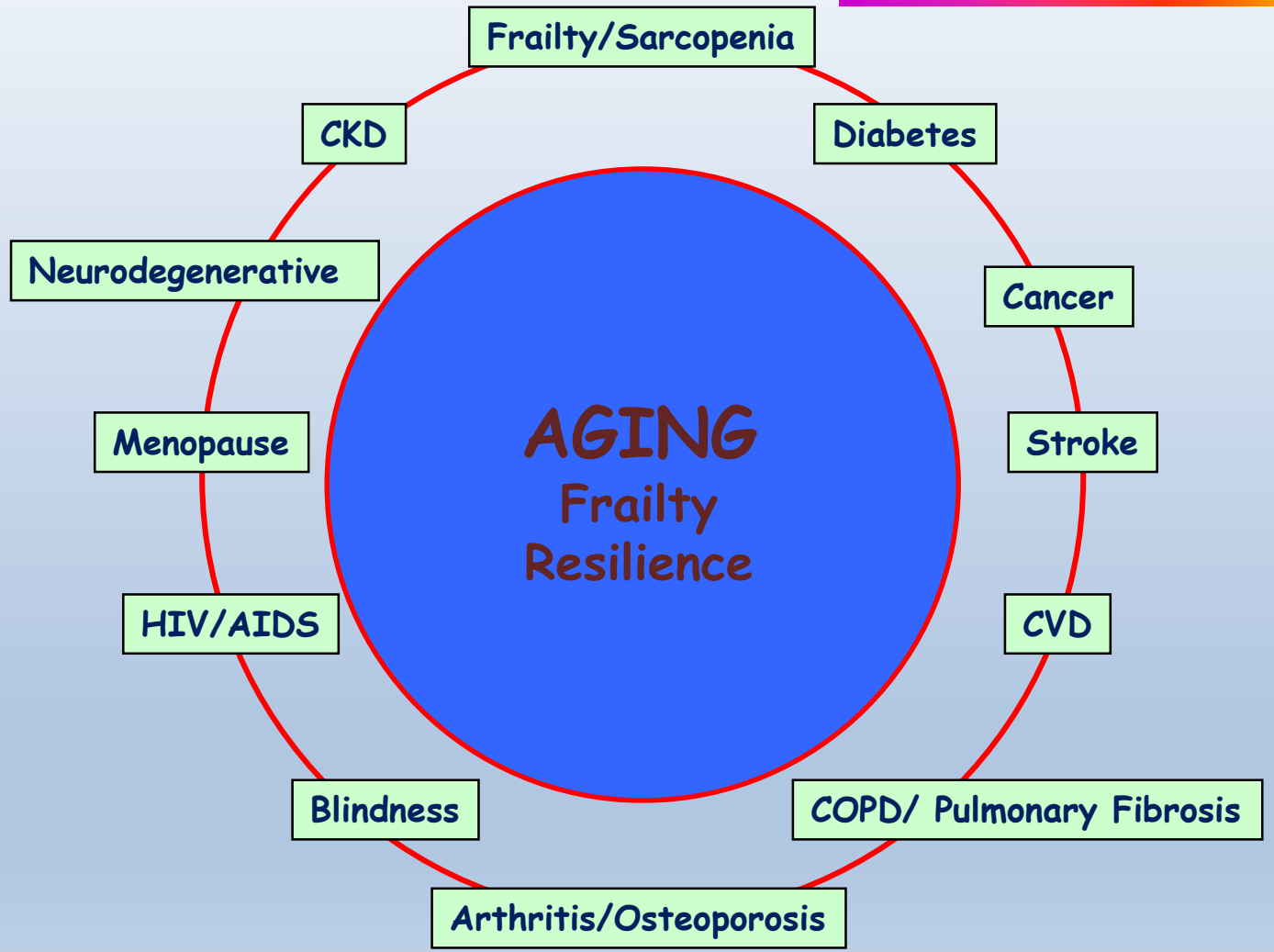
LONGEVITY DIVIDEND

What should we be doing to prepare for the unprecedented aging of humanity?

S. JAY OLSHANSKY, DANIEL PERRY, RICHARD A. MILLER, ROBERT N. BUTLER

Imagine an intervention, such as a pill, that could significantly reduce your risk of cancer. Imagine an intervention that could reduce your risk of stroke, or dementia, or arthritis. Now, imagine an intervention that does all these things, and at the same time reduces your risk of everything else undesirable about growing older: including heart disease, diabetes, Alzheimer and Parkinson disease, hip fractures, osteoporosis, sensory impairments, and sexual dysfunction. Such a pill may sound like fantasy, but aging interventions already do this in animal models. And many scientists believe that such an intervention is a realistically achievable goal for people. People already place a high value on both quality and length of life, which is why children are immunized against infectious diseases. In the same spirit, we suggest that a concerted effort to slow aging begin immediately – because it will save and extend lives, improve health, and create wealth.

AGING BIOLOGY IS AT THE CORE OF CHRONIC DISEASES



Source: Dr. Felipe Sierra

July, 2008

Robert N Butler president, International Longevity Center, New York, USA

Richard A Miller professor, University of Michigan, Ann Arbor, MI, USA

Daniel Perry executive director, Alliance for Aging Research, Washington, DC, USA

Bruce A Carnes professor, University of Oklahoma, Oklahoma City, OK, USA

T Franklin Williams professor emeritus, University of Rochester School of Medicine and Dentistry, Rochester, NY, USA

Christine Cassel president, American Board of Internal Medicine, Philadelphia, PA, USA

Jacob Brody professor, University of Illinois at Chicago, 1603 West Taylor Street, Chicago, IL 60612, USA

Marie A Bernard professor, University of Oklahoma, Oklahoma City, OK, USA

Linda Partridge director , Institute of Healthy Ageing, University College London, London

Thomas Kirkwood director, Institute for Ageing and Health, Newcastle University, Newcastle

George M Martin scientific director, American Federation for Aging Research, Seattle, WA, USA

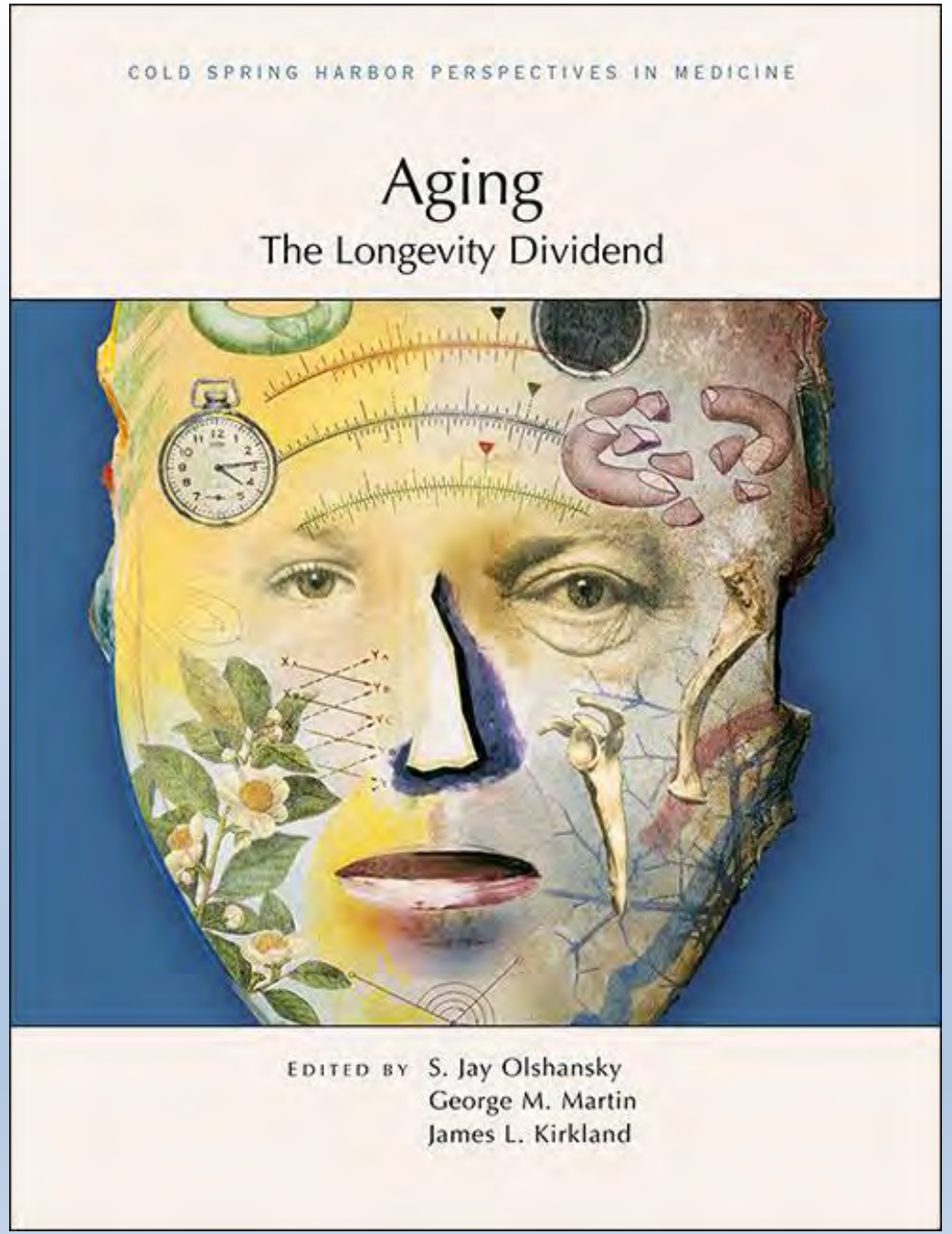
S Jay Olshansky professor, University of Illinois at Chicago, 1603 West Taylor Street, Chicago, IL 60612, USA

New model of health promotion and disease prevention for the 21st century

Our susceptibility to disease increases as we grow older. **Robert Butler and colleagues** argue that interventions to slow down ageing could therefore have much greater benefit than those targeted at individual disease

LDI Leading Organizations / Research Advisory Committee

Affiliated Research Institutions and Universities

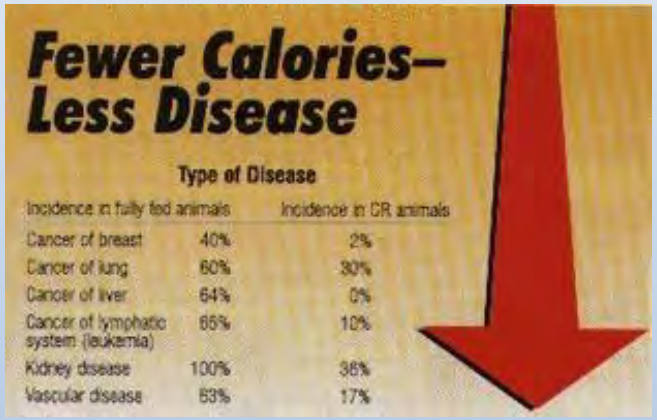

COLD SPRING HARBOR PERSPECTIVES IN MEDICINE
Aging
The Longevity Dividend
EDITED BY S. Jay Olshansky
George M. Martin
James L. Kirkland


A GLOBAL SERIES EVENT
BREAKTHROUGH
PREMIERES FALL 2016

Allianz
Global Investors

Do We Need to Know in Advance Which Scientific Pathways to the Longevity Dividend Will Work?

Genetics of long-lived people



Fewer Calories– Less Disease

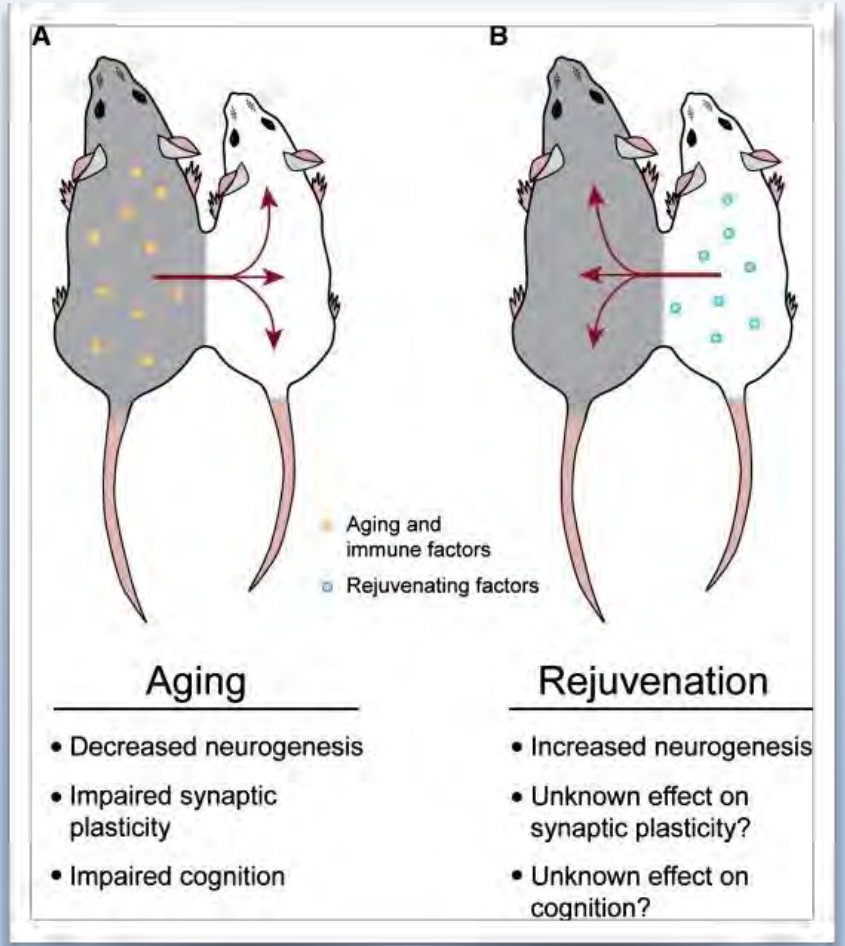
Type of Disease

	Incidence in fully fed animals	Incidence in CR animals
Cancer of breast	40%	2%
Cancer of lung	60%	30%
Cancer of liver	64%	0%
Cancer of lymphatic system (leukemia)	65%	10%
Kidney disease	100%	38%
Vascular disease	63%	17%

Caloric restriction

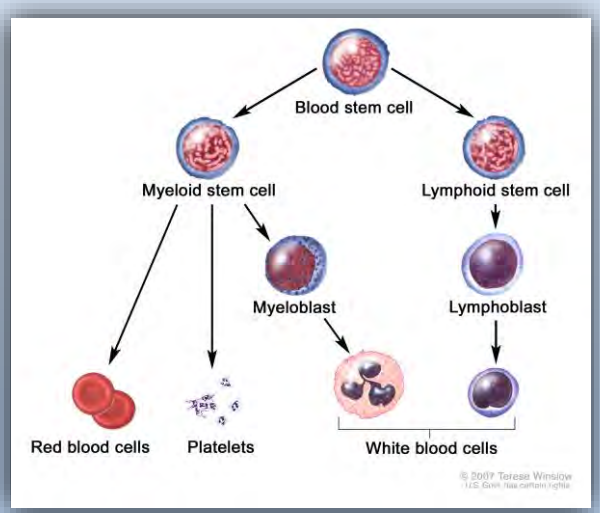
Compounds with properties that appear to slow aging

Parabiosis


A
B
Aging and immune factors
Rejuvenating factors
Aging
• Decreased neurogenesis
• Impaired synaptic plasticity
• Impaired cognition
Rejuvenation
• Increased neurogenesis
• Unknown effect on synaptic plasticity?
• Unknown effect on cognition?

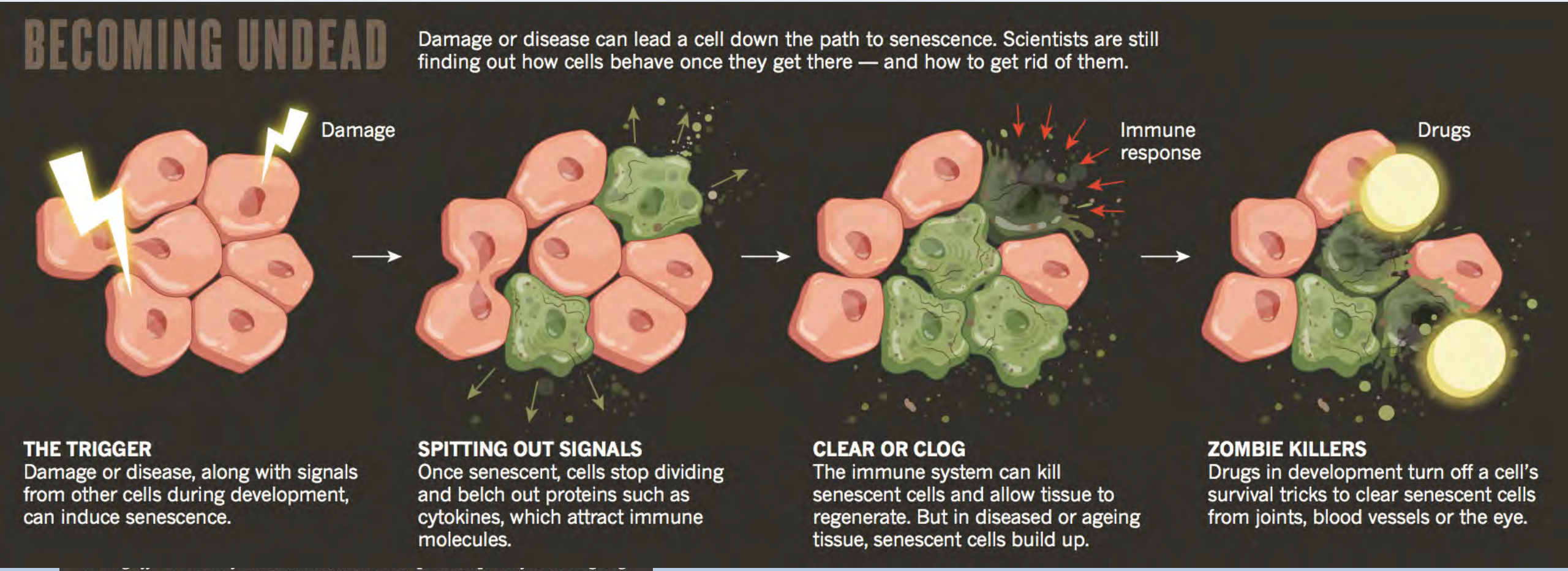

The Collection Process:
placenta
tubing
needle
umbilical cord
collection bag


Umbilical cord blood is often stored after birth.
CORD BLOOD
COLD STORAGE


Blood stem cell
Myeloid stem cell
Lymphoid stem cell
Myeloblast
Lymphoblast
Red blood cells
Platelets
White blood cells

Senolytics

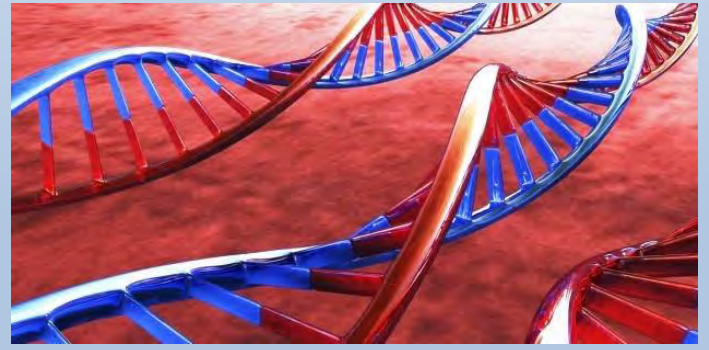
Fight Aging by Killing Zombies



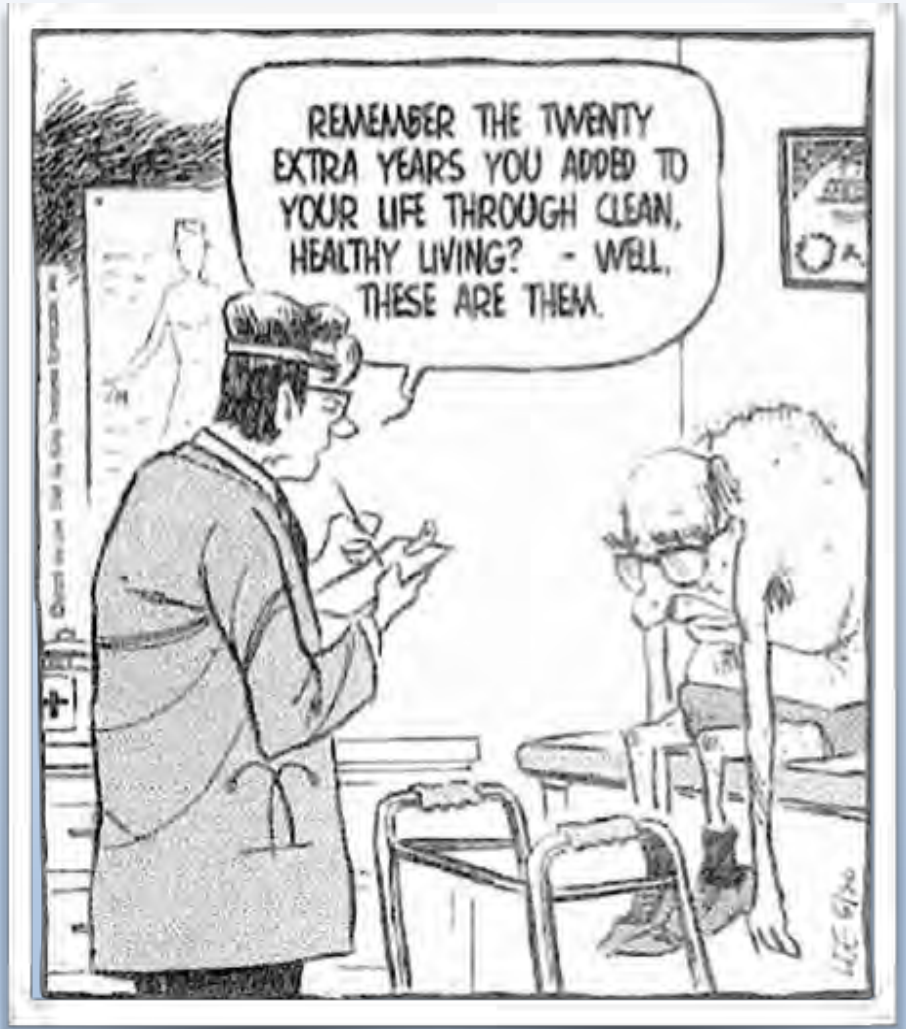
strategy in mice. Now it's about to be tested in humans.

BY MEGAN SCUDELLARI

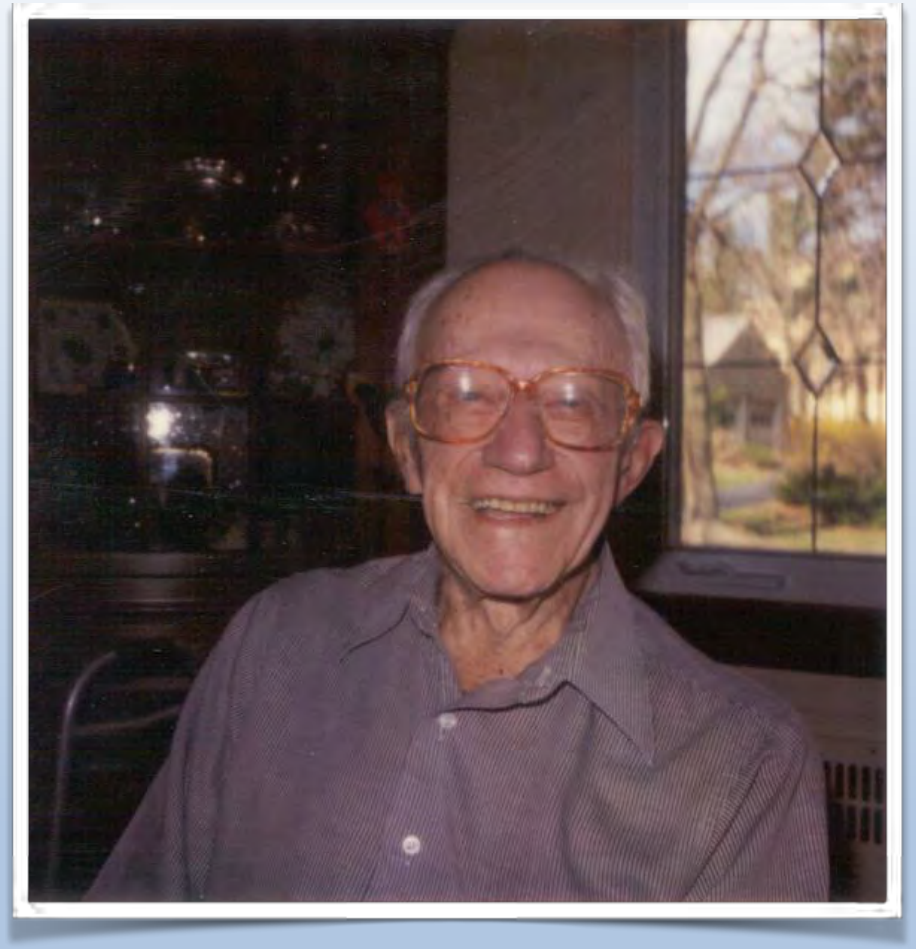
The secret to Primary Prevention is already here…



Centenarians and their offspring possess genes that protect them from fatal diseases that kill the rest of us at younger ages

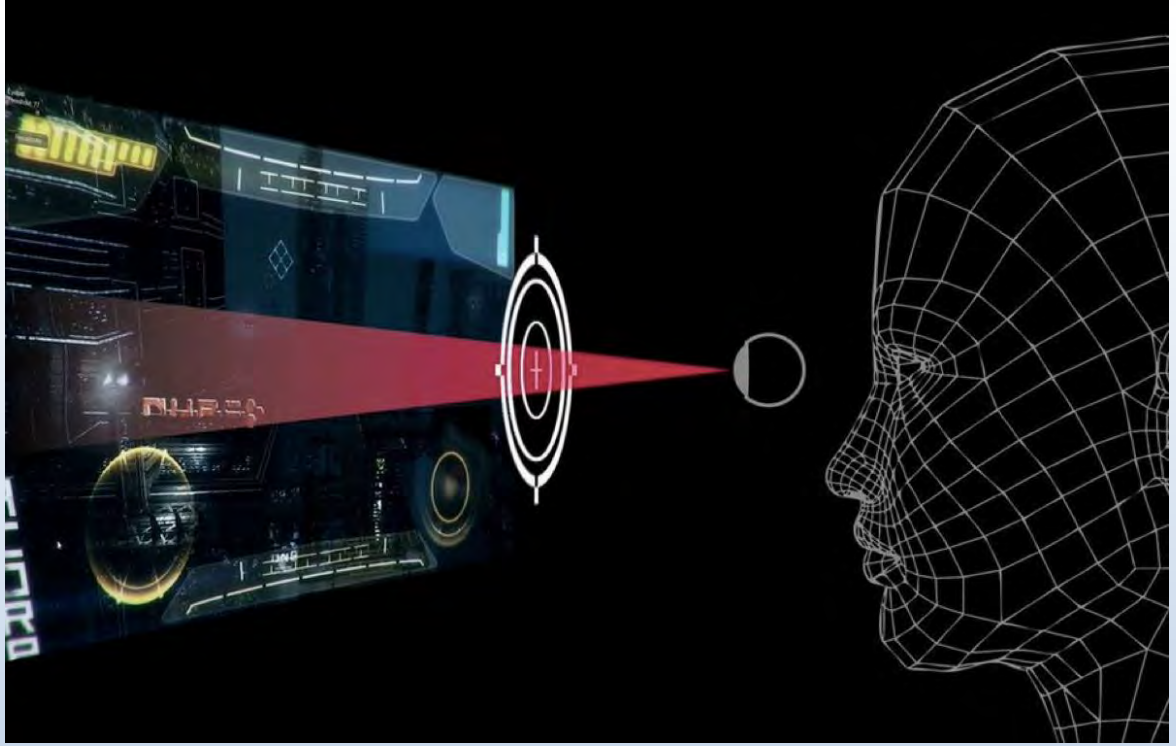

REMEMBER THE TWENTY EXTRA YEARS YOU ADDED TO YOUR LIFE THROUGH CLEAN, HEALTHY LIVING? - WELL, THESE ARE THEM.

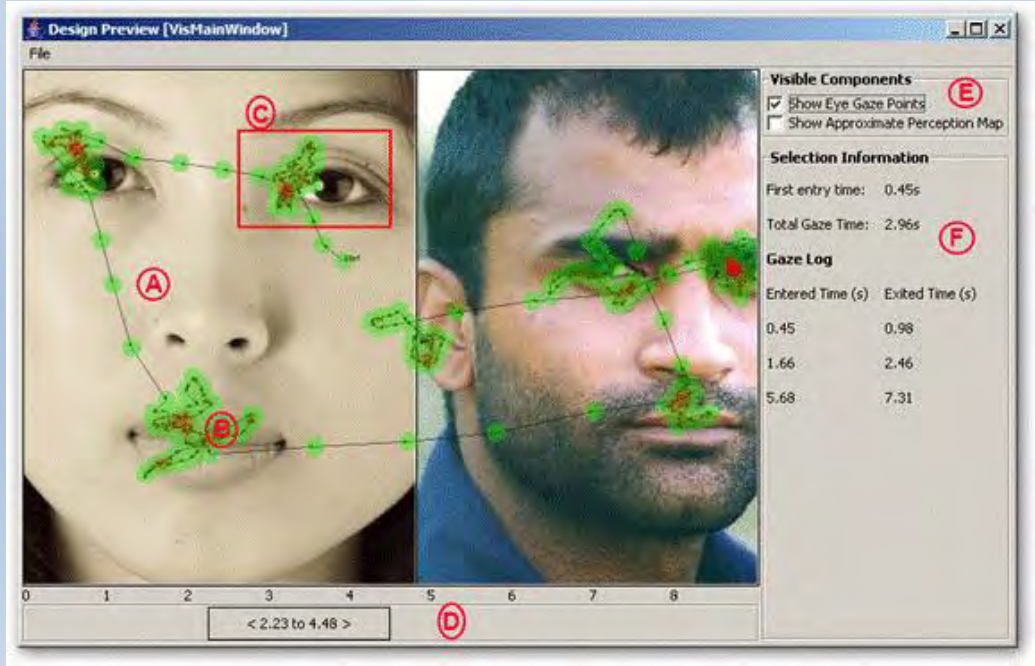
100 year old proband

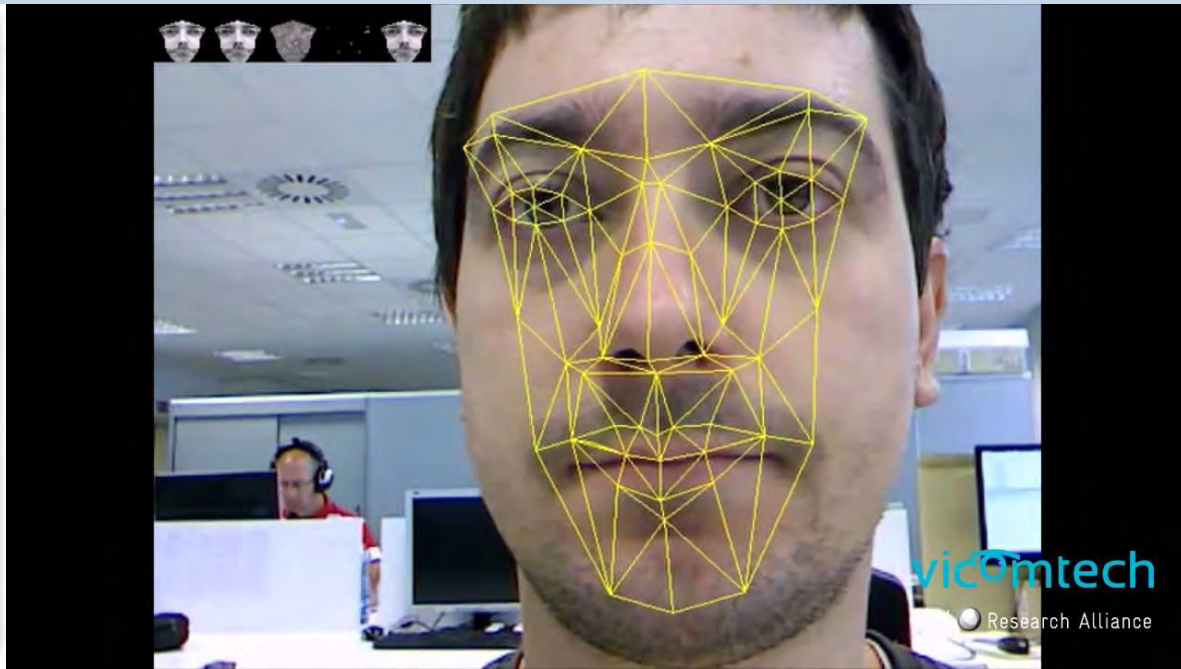


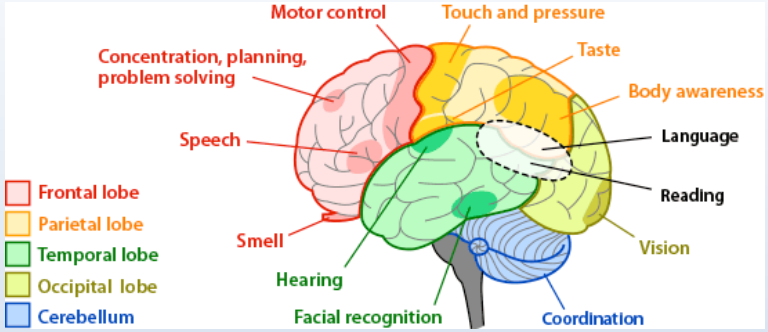
70 year old son

Photos from Dr. Nir Barzilai



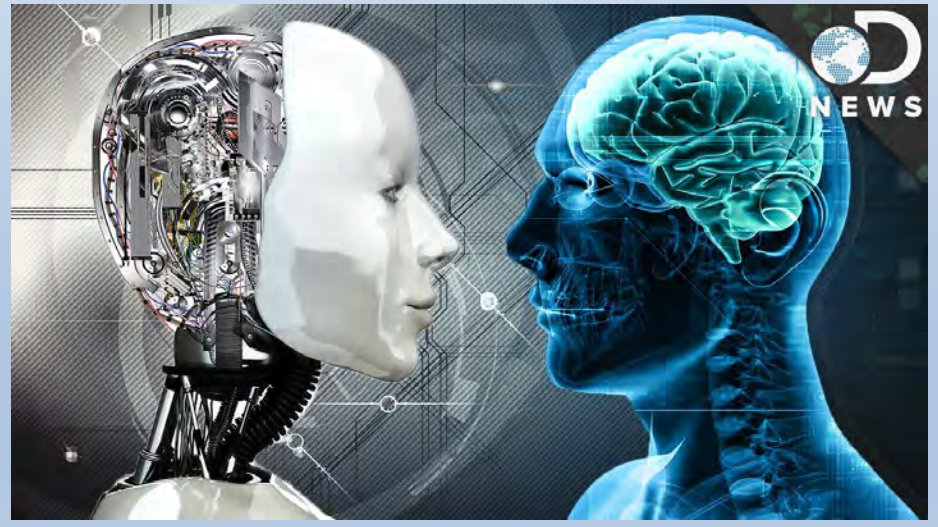

Design Preview [VisMainWindow]
File
Visible Components
Show Eye Gaze Points
Show Approximate Perception Map
Selection Information
First entry time: 0.45s
Total Gaze Time: 2.96s
Gaze Log
Entered Time (s) Exited Time (s)
0.45 0.98
1.66 2.46
5.68 7.31
0 1 2 3 4 5 6 7 8
< 2.23 to 4.48 >
A
B
C
D
E
F


vicomtech
Research Alliance



The human brain is hardwired to detect attributes of people. We use all of our senses in this process, and we're very good at it. The first point of contact is the face.

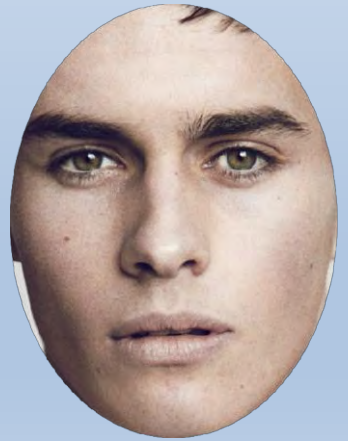
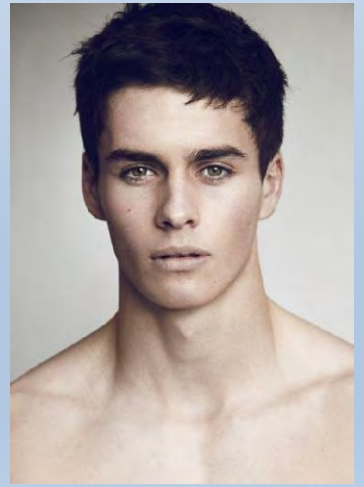
Lapetus has successfully trained computers to mimic the human brain's ability to detect these attributes.

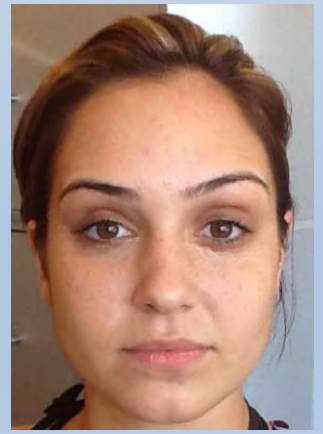


Gender Detection







Age Detection

70

Health Detection

BMI Detection

25.4

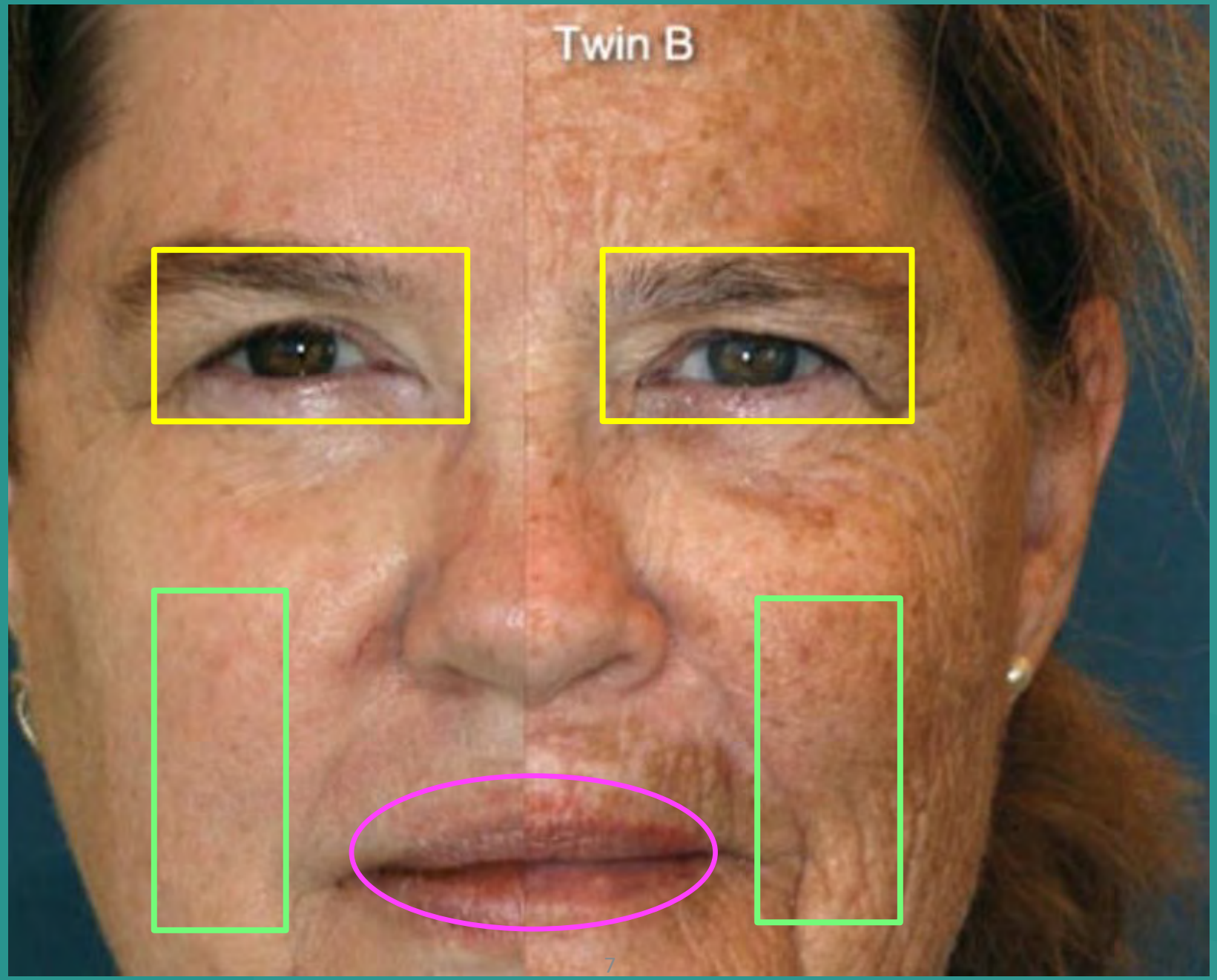
35.6

Intelligent BMI

30.8
/
25.3

35.6

Smoking Detection


Twin B

Disease Detection

The Faces of Disease

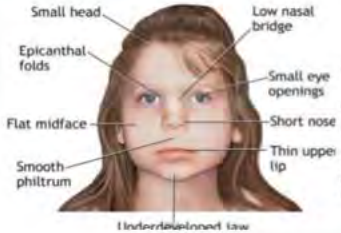
Amyloidosis
[linked to kidney and heart disease]

- **Diabetic rubeosis –**
  - A peculiar rosy reddening of the face, and sometimes of the hands and feet, may be seen in long-standing diabetes.
  - The changes have been attributed to decreased vascular tone or diabetic microangiopathy

Diabetes

Lupus

HIV-associated Lipohypertrophy



Fetal Alcohol Syndrome

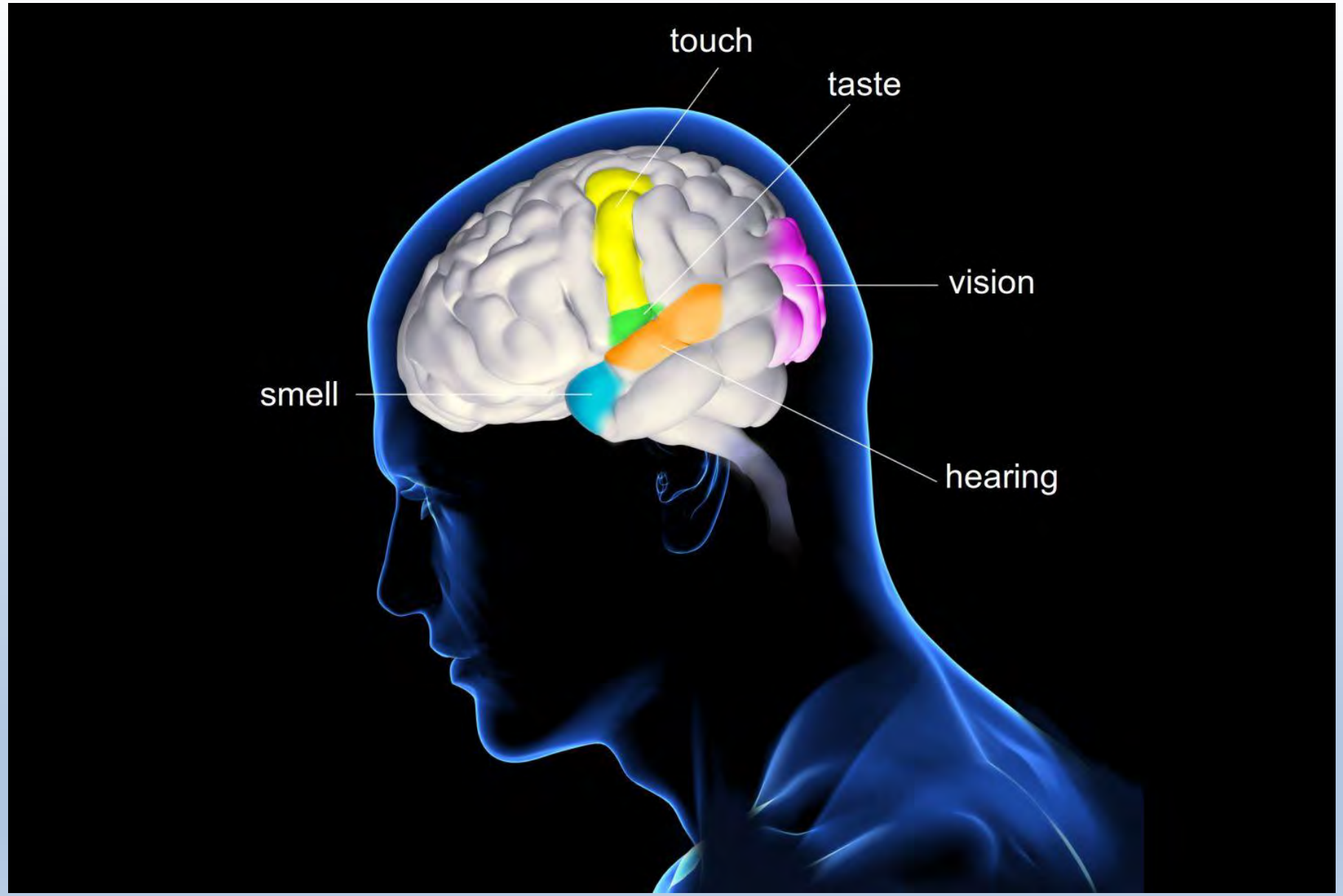
Rare genetic disorders diagnosed by computer analysis of photos

Written by Marie Ellis

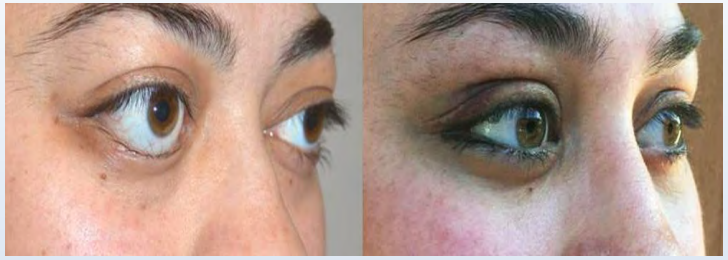
Published: Tuesday 24 June 2014

More and more, the medical world is being merged with technology to improve diagnosis, prevention and treatment of health conditions. Now, researchers from Oxford University in the UK have developed a computer algorithm that can analyze photographs and diagnose which children have a rare genetic disorder.

LAPETUS
LIFE EVENT SOLUTIONS


touch
taste
vision
smell
hearing

Graves disease can be identified with a photograph of the eye. This is a byproduct of an overactive thyroid, and it appears in a photograph as bug eyes.

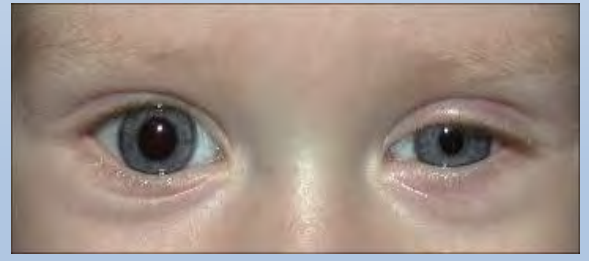


Source: http://www.nejm.org/doi/full/10.1056/NEJMra1510030

Arcus Senilis, characterized by a gray ring around the eye, is linked to high cholesterol and triglycerides, and an increased risk for heart disease and stroke.

Source:http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.741.4990&rep=rep1&type=pdf

Horner's Syndrome is characterized by a combination of droopy eyelids (ptosis) and pupils of a different size (aneisocoria). This condition is associated with aneurysms and tumors in the neck.



Source: http://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2016.193.1_MeetingAbstracts.A3598

BMJ

BMJ 2012;345:e7396 doi: 10.1136/bmj.e7396 (Published 13 December 2012) Page 1 of 8

RESEARCH

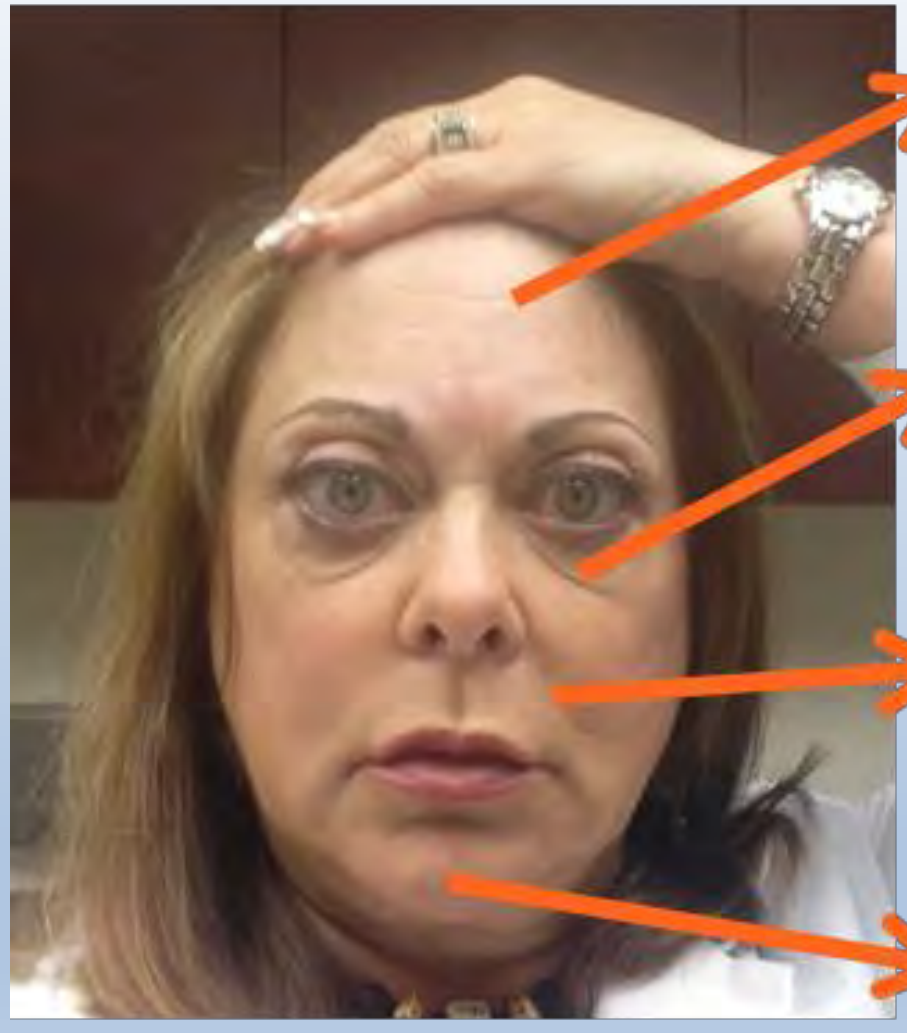
CHRISTMAS 2012: RESEARCH

Using a dog's superior olfactory sensitivity to identify *Clostridium difficile* in stools and patients: proof of principle study

Cliff has been trained to sniff out the bacteria clostridium difficile

Results The dog's sensitivity and specificity for identifying *C difficile* in stool samples were both 100% (95% confidence interval 91% to 100%). During the detection rounds, the dog correctly identified 25 of the 30 cases (sensitivity 83%, 65% to 94%) and 265 of the 270 controls (specificity 98%, 95% to 99%).

Conclusion A trained dog was able to detect *C difficile* with high estimated sensitivity and specificity, both in stool samples and in hospital patients infected with *C difficile*.

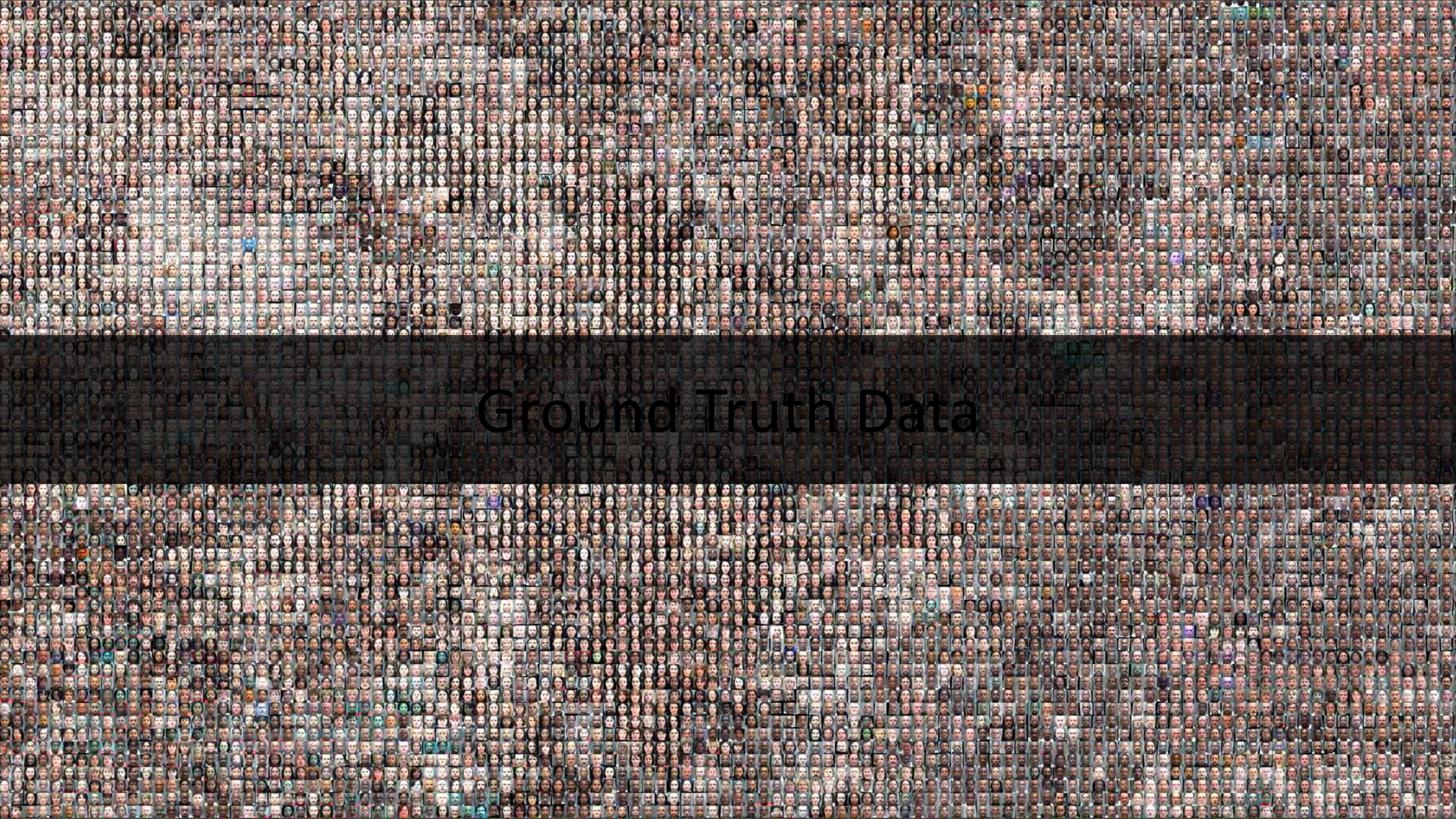


Chronological age: 3-year range of error

Gender: near 100% accuracy

Smoking: 85% accurate

BMI: 79% accurate


Ground Truth Data

Face Age + Gender + BMI + Smoking

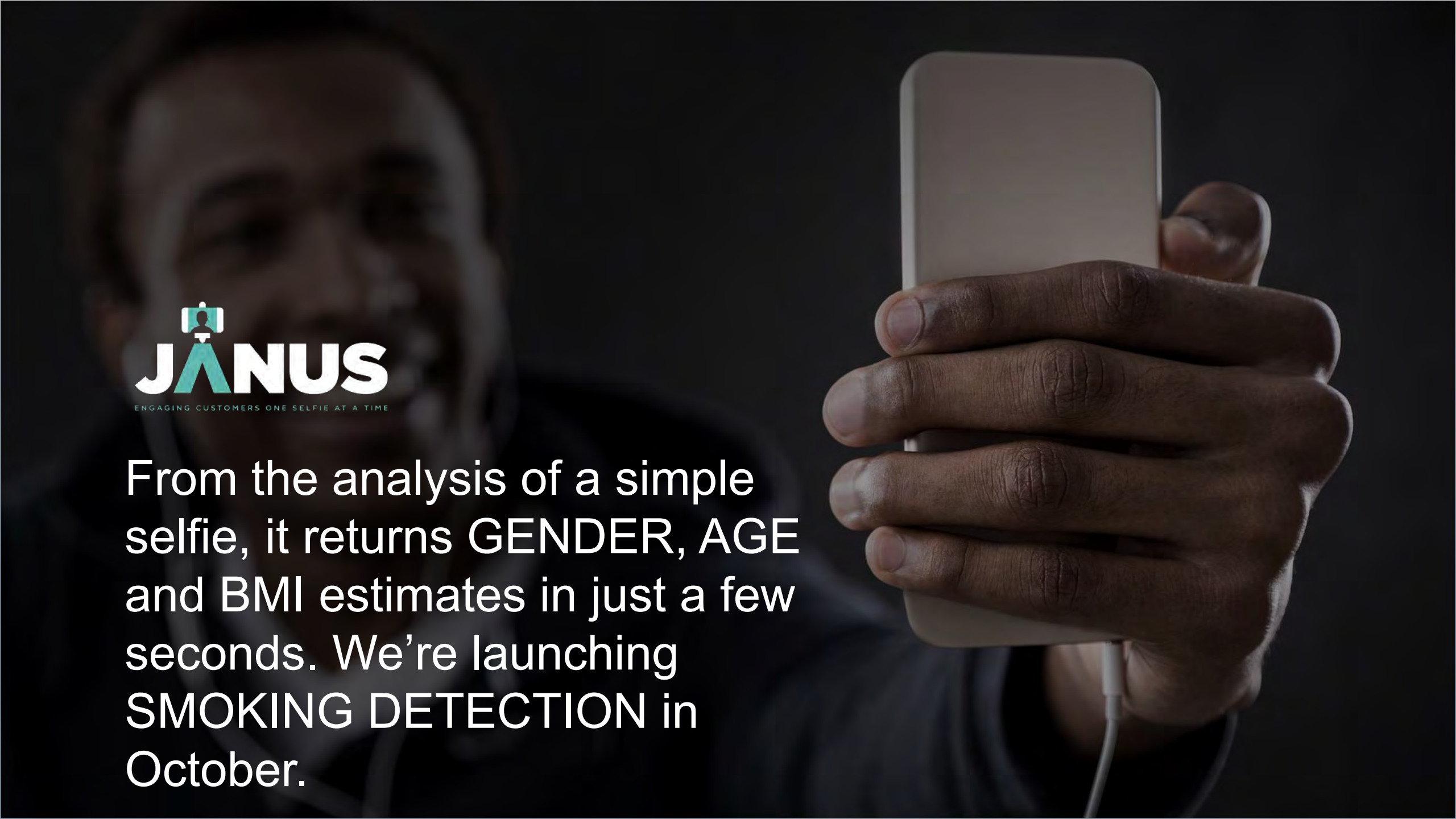
SMILe

SMOKER INDICATION AND LIFESTYLE ESTIMATION

- ✓ Consumer signs release form
- ✓ Completes a detailed health questionnaire
- ✓ We capture multiple photos- various poses and expressions
- ✓ We also capture video and voice recording

LAPETUS
LIFE EVENT SOLUTIONS

SMILe
SMOKER INDICATION AND LIFESTYLE ESTIMATION


JANUS
ENGAGING CUSTOMERS ONE SELFIE AT A TIME
From the analysis of a simple selfie, it returns GENDER, AGE and BMI estimates in just a few seconds. We’re launching SMOKING DETECTION in October.

JANUS IS NOW IN THE FIELD

Quilt

Legal & General

Legal and General and Quilt are both in the initial pilot phase, initially using it for engagement. They are assessing our outputs to determine how this can fit within their entire process.