

Estendere la vita e potenziare la salute: la visione di una longevità attiva

Prof. Ennio Tasciotti, PhD

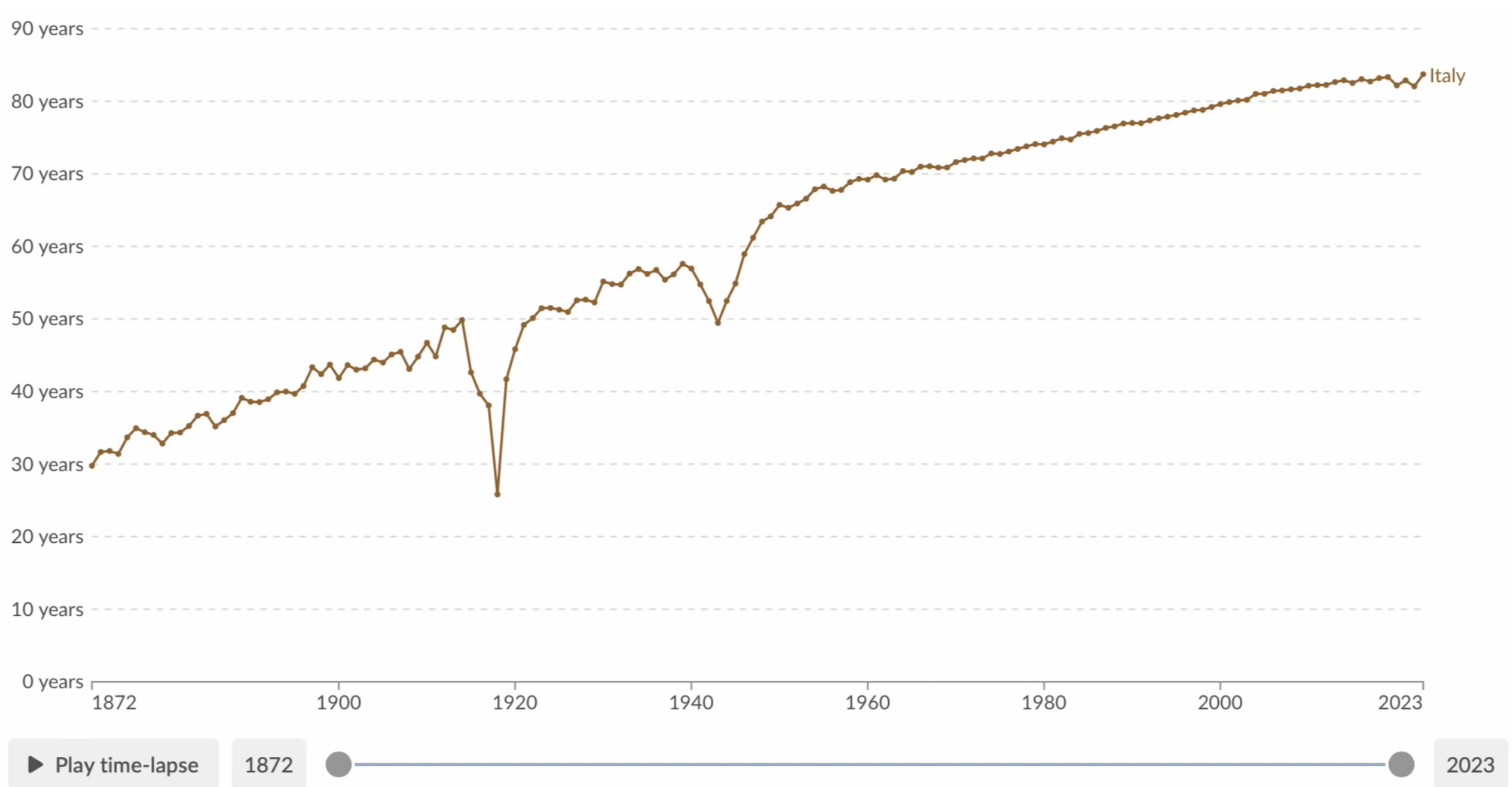
Professore Ordinario, Università San Raffaele, Roma
Direttore Human Longevity program, IRCCS San Raffaele, Roma

Scientific Advisor, The European House Ambrosetti

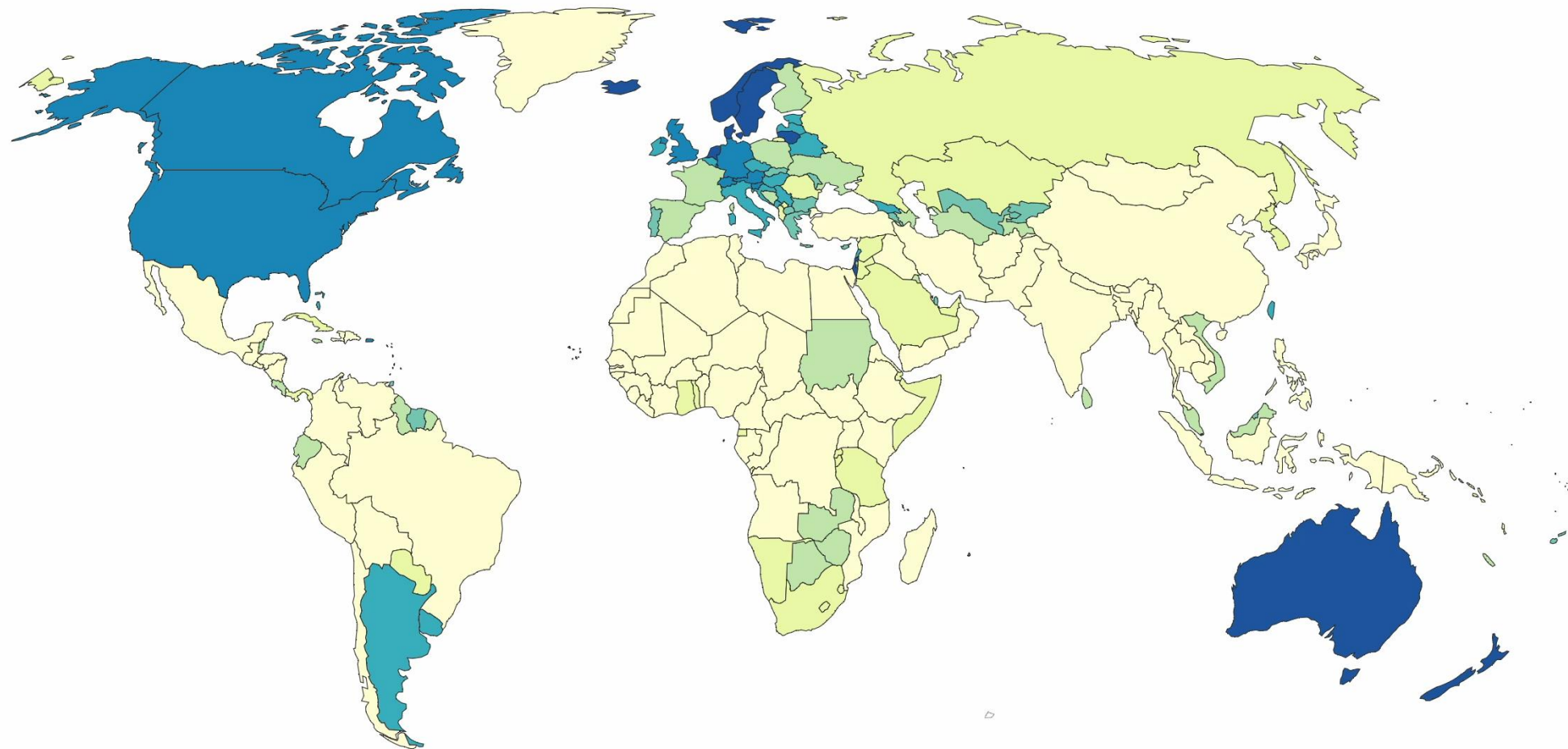


Email: ennio.tasciotti@sanraffaele.it

Aspettativa di vita alla nascita



Tutto il mondo invecchia...



No data

40 years 45 years 50 years 55 years 60 years 65 years 70 years 75 years 1940 years 85 years



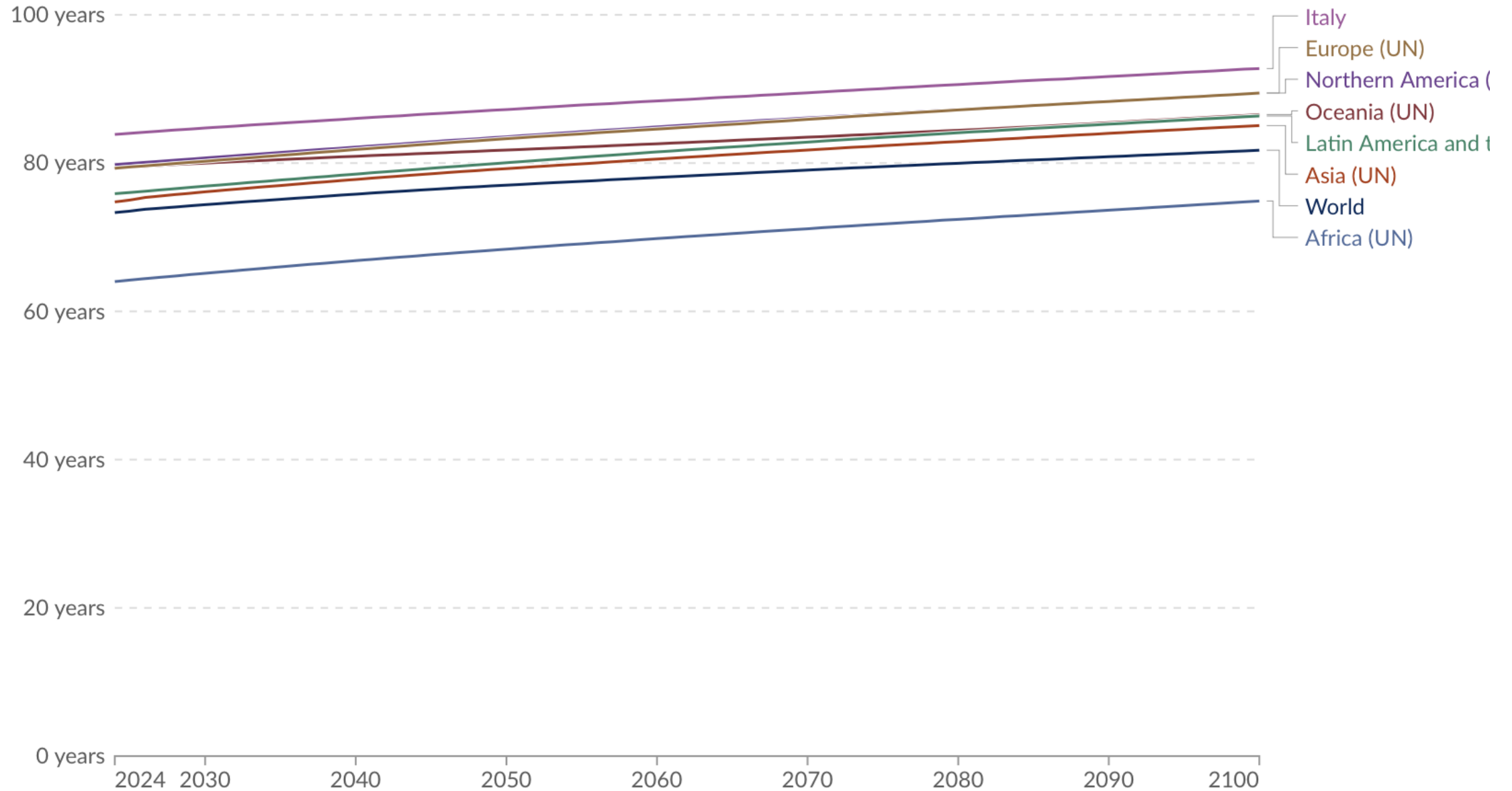
1543

Google Chrome

1940

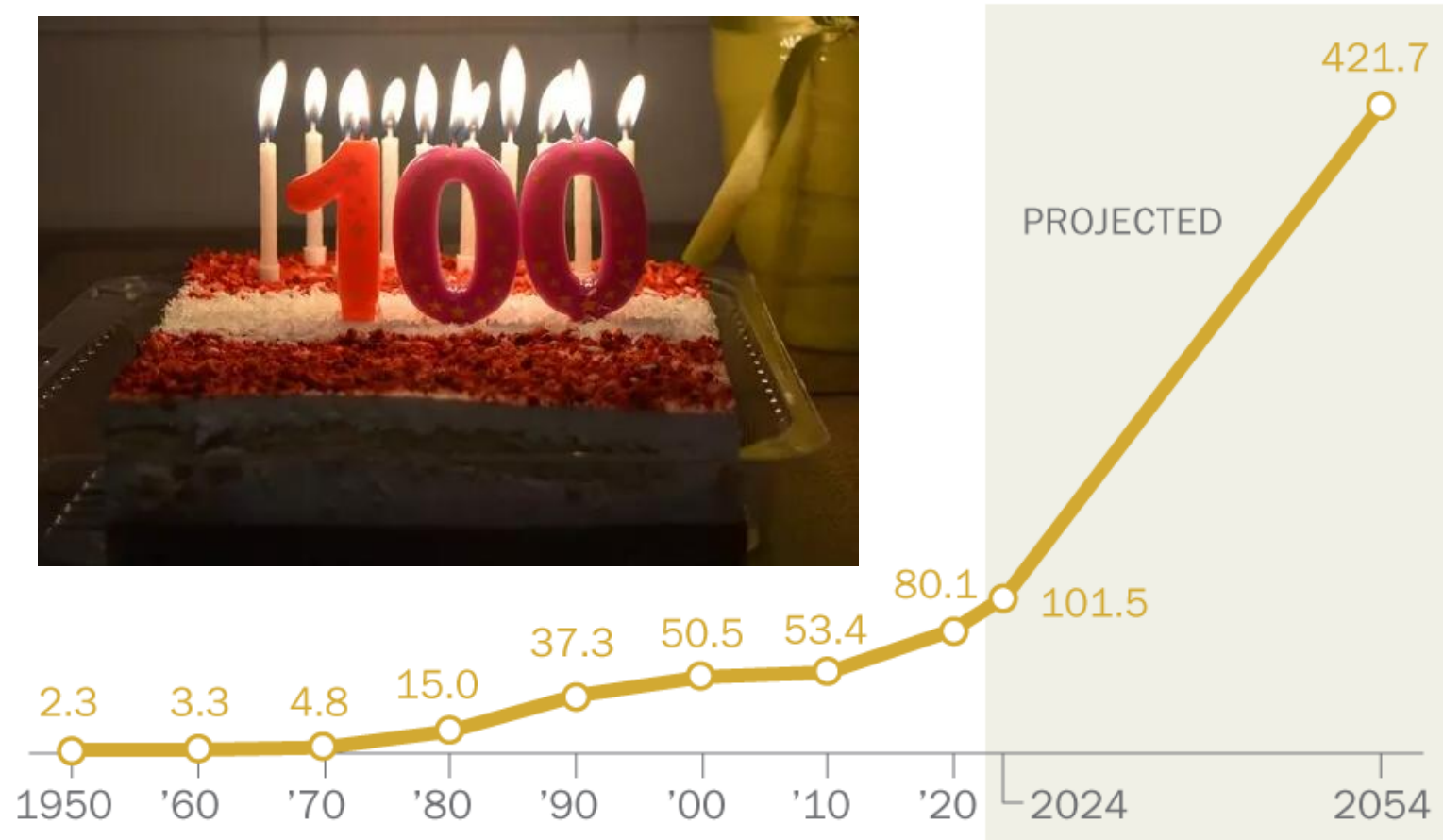
2023

Crescita dell'aspettativa di vita futura



Centenarians are projected to quadruple by 2054

Rank	Country	Centenarians per 100,000
1	Japan	76.5
2	France	47.1
3	Spain	41.1
4	Italy	36.0
5	South Korea	17.1
6	United States	25.0
7	China	4.0
8	India	2.1



La sfida demografica è già qui: chi inizia oggi, guiderà il cambiamento di domani



RAAD FESTIVAL™ 10

An unprecedented collaboration for
the **single most essential event in longevity**

July _____
10-13, 2025

Las Vegas _____
Red Rock Resort

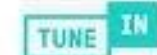
 + 

RAADfest is the largest and **most immersive event focused on super-longevity**.
Bringing together cutting-edge science, inspiration, and entrepreneurship
RAADfest is more than just a conference – it's a celebration of life.

From **brain longevity and sexual health, to senolytics, personalized medicine**
and helping your pets live longer too, RAADfest provides the information and
inspiration to enable people to take charge of their longevity.

RADICAL LIFE EXTENSION

James Strole, Co-Founder and Co-Director of People Unlimited and
Director of the Coalition For Radical Life Extension, interviewed by Ira
Pastor, ideaXme.



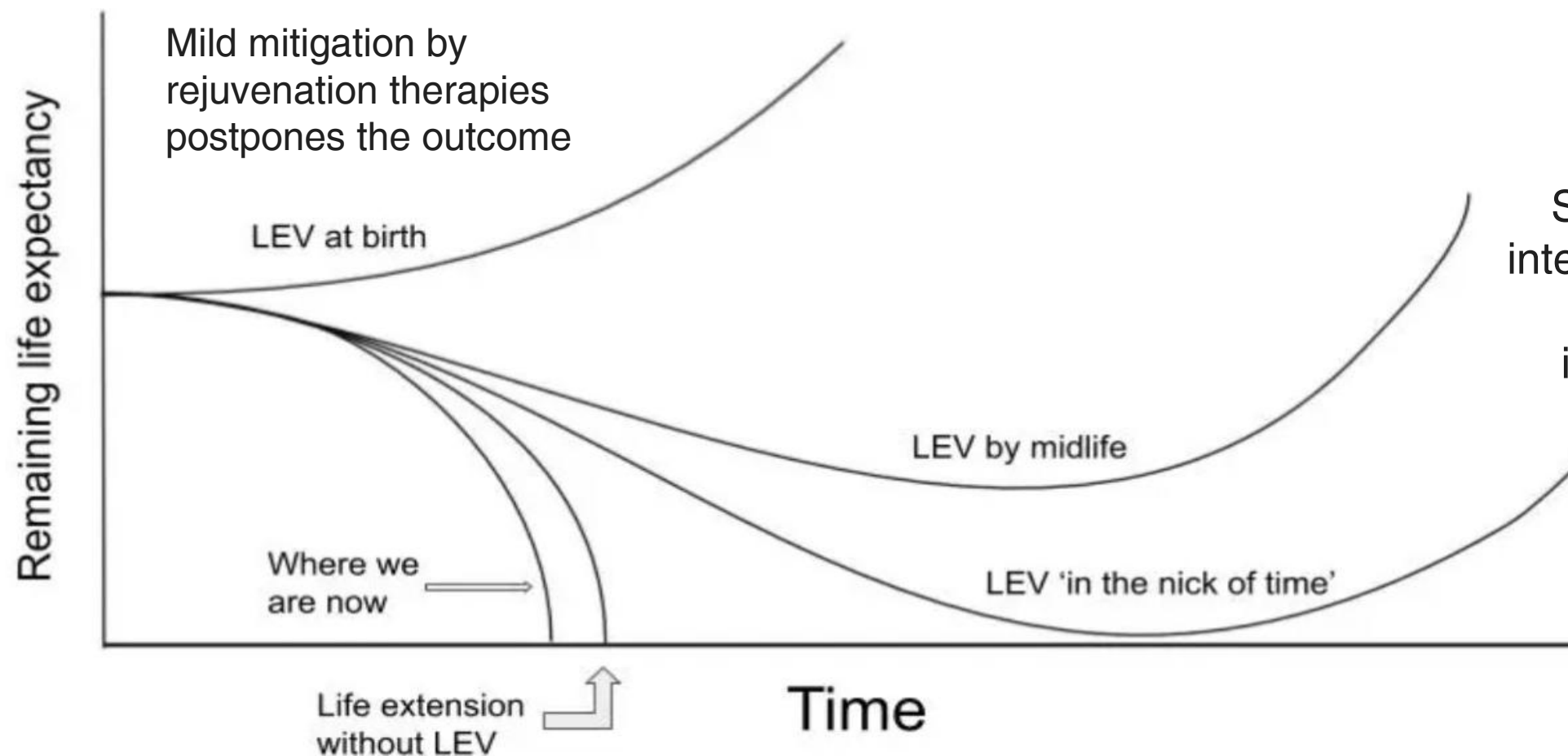
Move the human story forward! www.radioideaxme.com



Longevity Escape Velocity Foundation



Dr. Aubrey de Grey
biomedical gerontologist



Sufficiently aggressive
intervention overcomes the
force of frailty and
increasingly amplifies
lifespan

Organ transplants, longevity and extending human lifespans to 150



“70 is still a child”

“humans could reach 150 this century”

“rapid advances in biotechnology and organ replacement might extend life”

Let's get back to reality

117
anni



Source: National Geographic



[Linkazzato.it](https://www.linkazzato.it)

L'uomo più vecchio mai vissuto:
Ecco l'elisir di lunga vita

Il 28 Dicembre 2012, invece, Kimura ha superato il record di uomo più vecchio mai vissuto, battendo il primato precedente...

Born

19 Apr
1897

Kyotango,
Kyoto, Japan

Died

12 Jun
2013

Kyotango,
Kyoto, Japan



Jiroemon Kimura

112
anni



Kiyotaka Mizuno



Born

26 Aug
1912

Liverpool,
United...

Died

25 Nov
2024

Southport,
United...

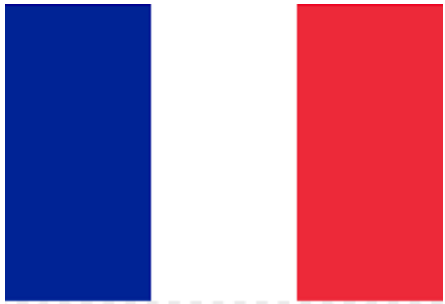




Jeanne Calmet

Lifespan: (21, 12, 1875 – **04.08.1997**)

Age: **122 years, 164 days**



Inah Canabarro Lucas

Lifespan: (**08.06.1908** – **30.04.2025**)

Age: **116 years, 326 days**



Ethel May Caterham

Lifespan: (**21.08.1909** – present)

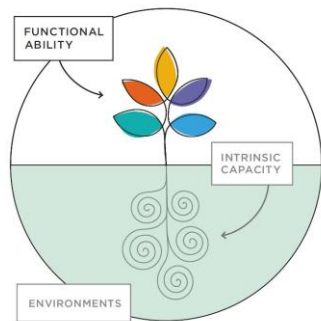
Age: **115 years**



400 supercentenari nel mondo

2020-2030

il decennio dell'invecchiamento sano



Decade of
Healthy Ageing



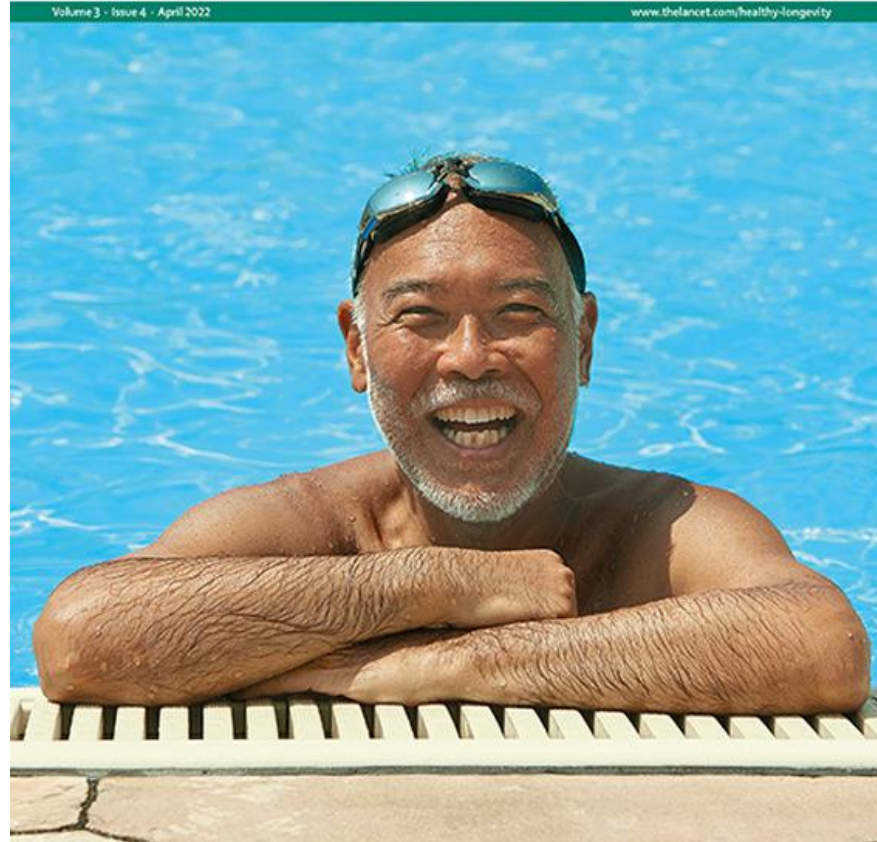
L'invecchiamento è una malattia?

THE LANCET
Healthy Longevity

Vol 3 July 2022

Volume 3 - Issue 4 - April 2022

www.thelancet.com/healthy-longevity



Comment

Geriatrics in the face of war
See page e229

Articles

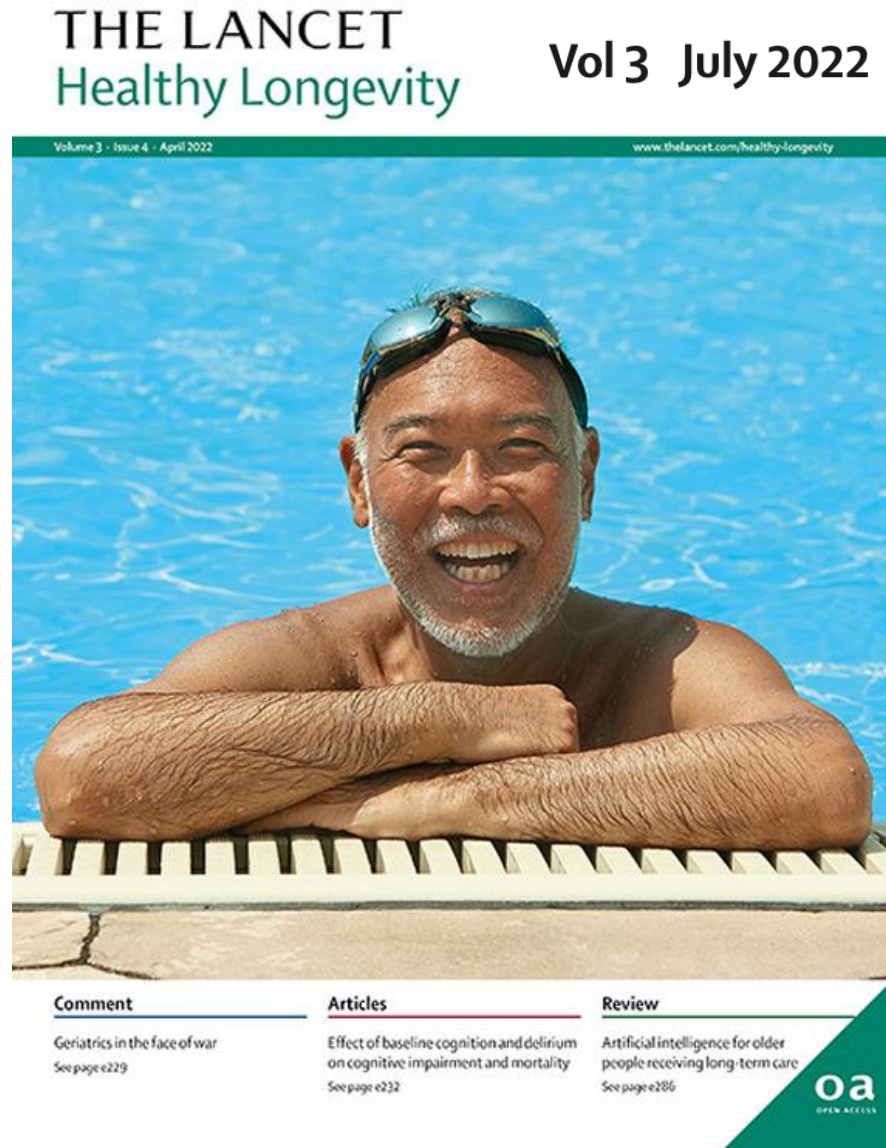
Effect of baseline cognition and delirium
on cognitive impairment and mortality
See page e232

Review

Artificial intelligence for older
people receiving long-term care
See page e286

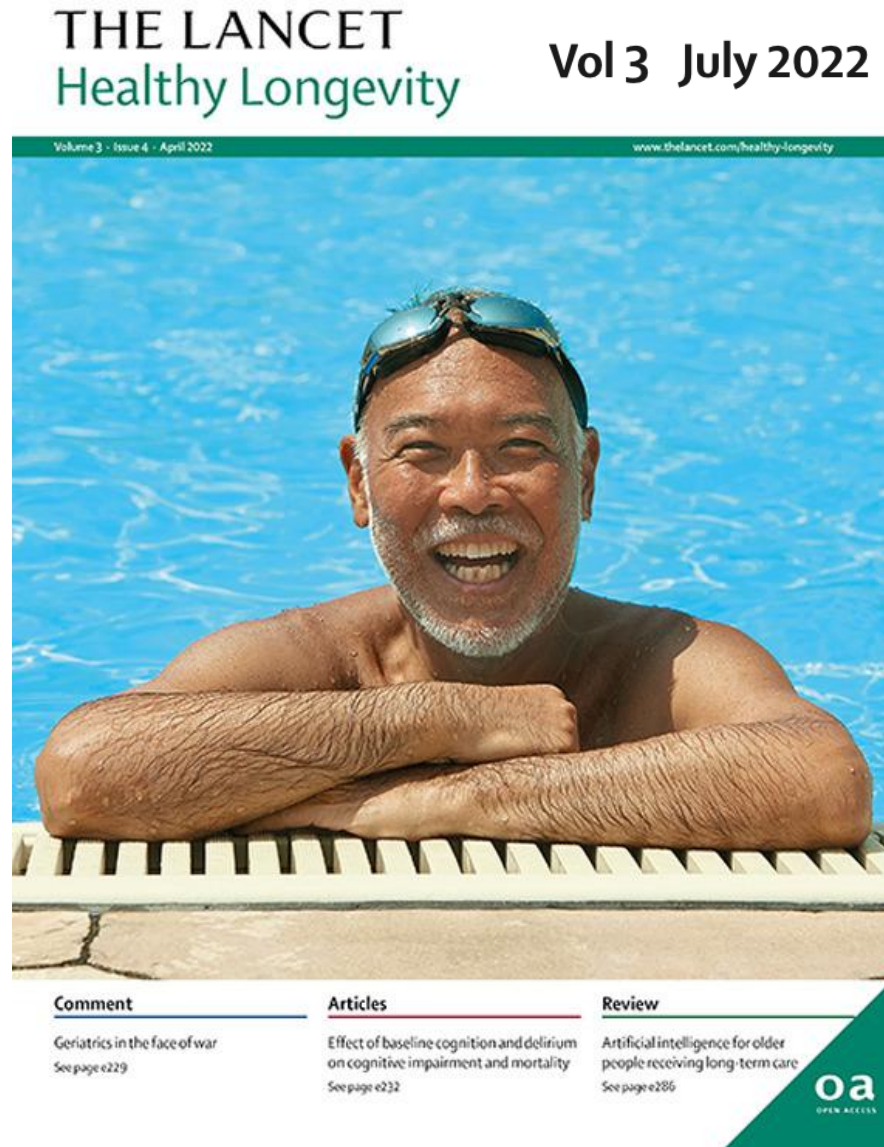
oa
OPEN ACCESS

L'invecchiamento è una malattia?



Prevenire

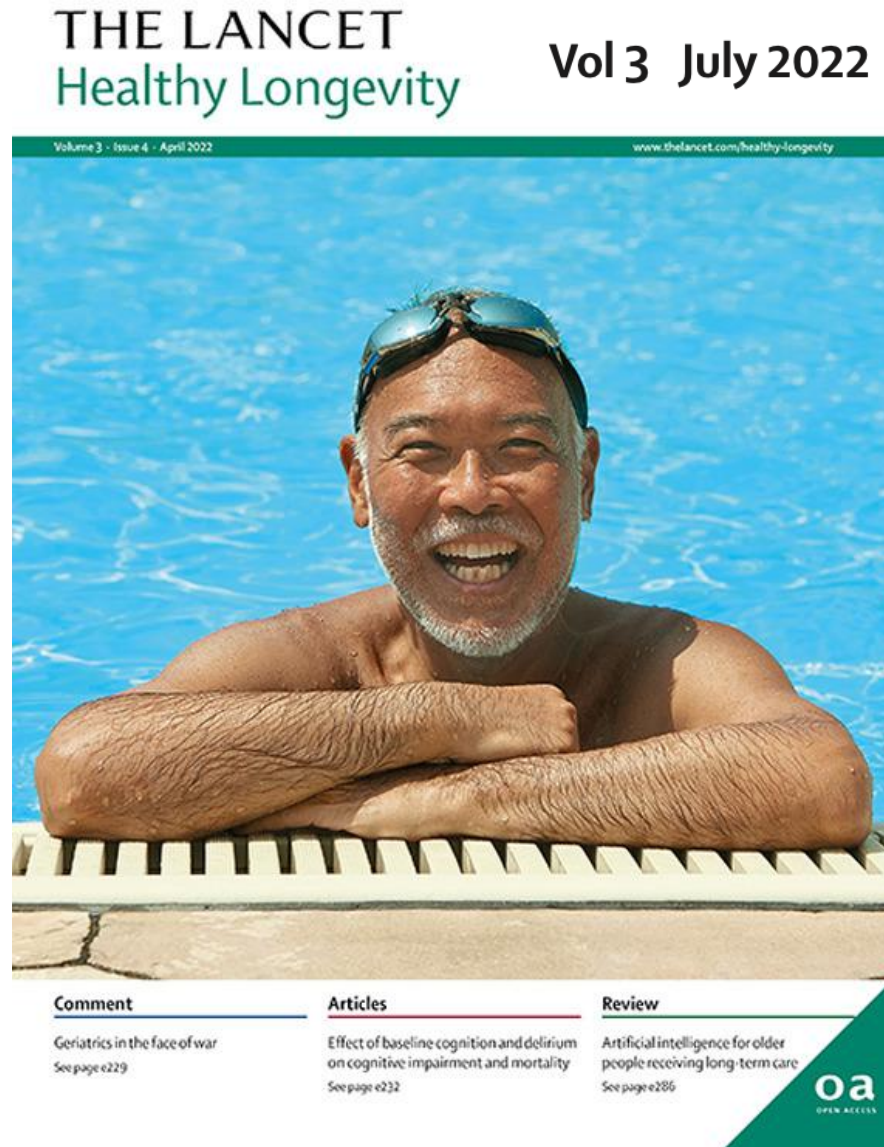
L'invecchiamento è una malattia?



Prevenire

Diagnosticare

L'invecchiamento è una malattia?



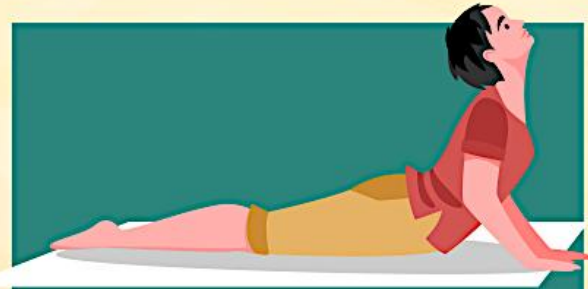
Prevenire

Diagnosticare

Curare

Tips To **BOOST** Your Health as You Age

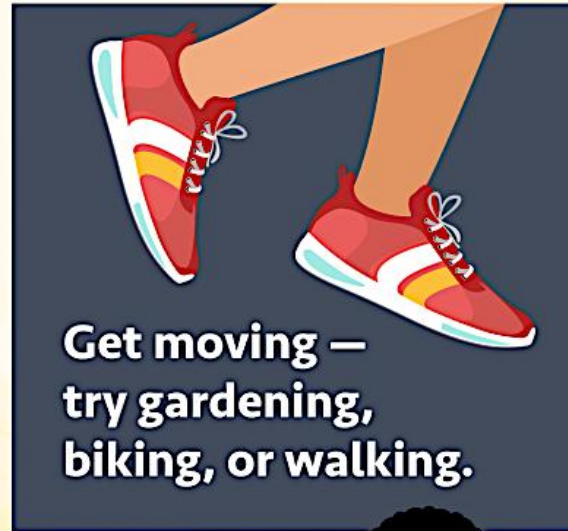
Did you know that making lifestyle changes can help you live longer and better? Try these tips to get started.



**Manage stress —
try yoga or keep
a journal.**



**Learn something
new — take a class
or join a club.**



**Get moving —
try gardening,
biking, or walking.**



**Choose healthy foods
rich in nutrients.**



**Go to the
doctor
regularly.**



**Connect
with family
and friends.**

Learn more about steps you can take to promote healthy aging at www.nia.nih.gov/healthy-aging.

84%

di tutti i costi medici sono causati dalle 4S

84%

**di tutti i costi medici sono causati dalle 4S
Sedentarietà**

84%

di tutti i costi medici sono causati dalle 4S
Sedentarietà
Scelte alimentari

84%

di tutti i costi medici sono causati dalle 4S

Sedentarietà

Scelte alimentari

Stress

84%

di tutti i costi medici sono causati dalle 4S

Sedentarietà

Scelte alimentari

Stress

Stravizi

84%

di tutti i costi medici sono causati dalle 4S

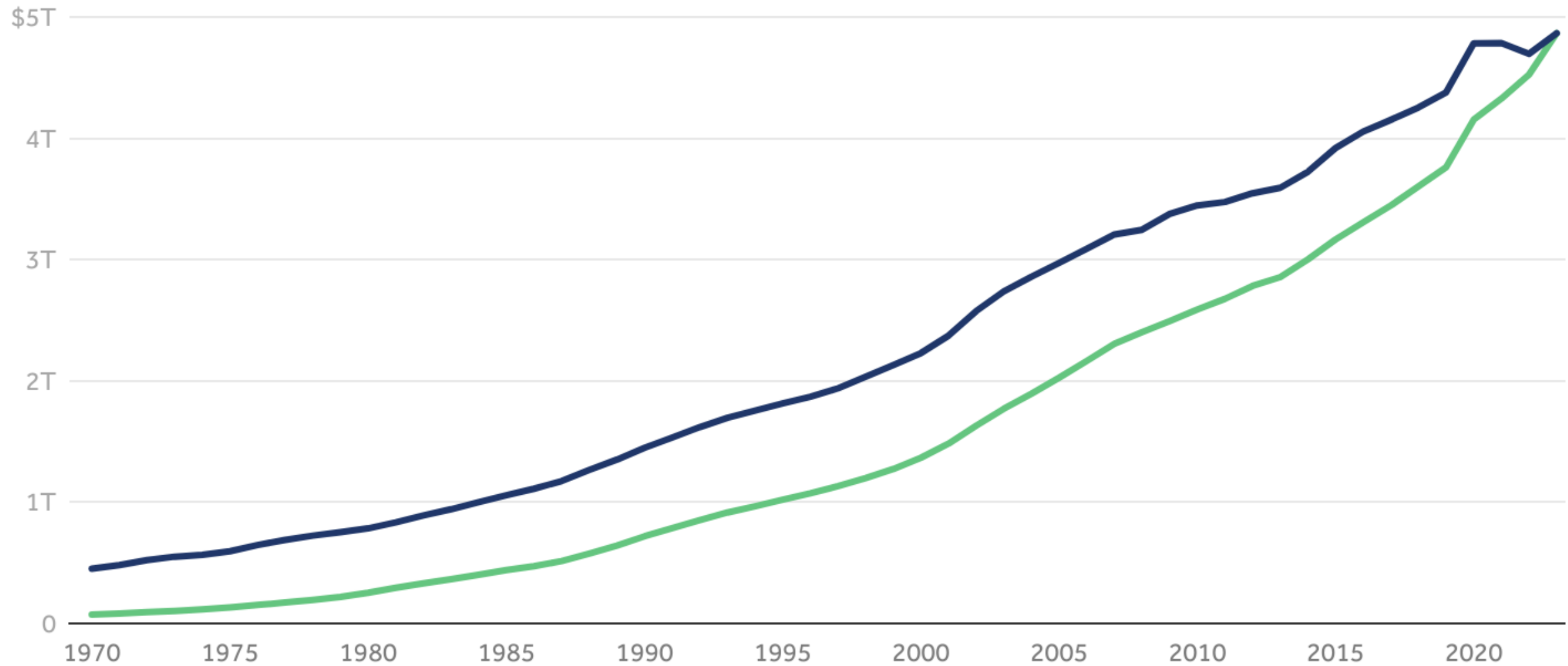
Sedentarietà

Scelte alimentari

Stress

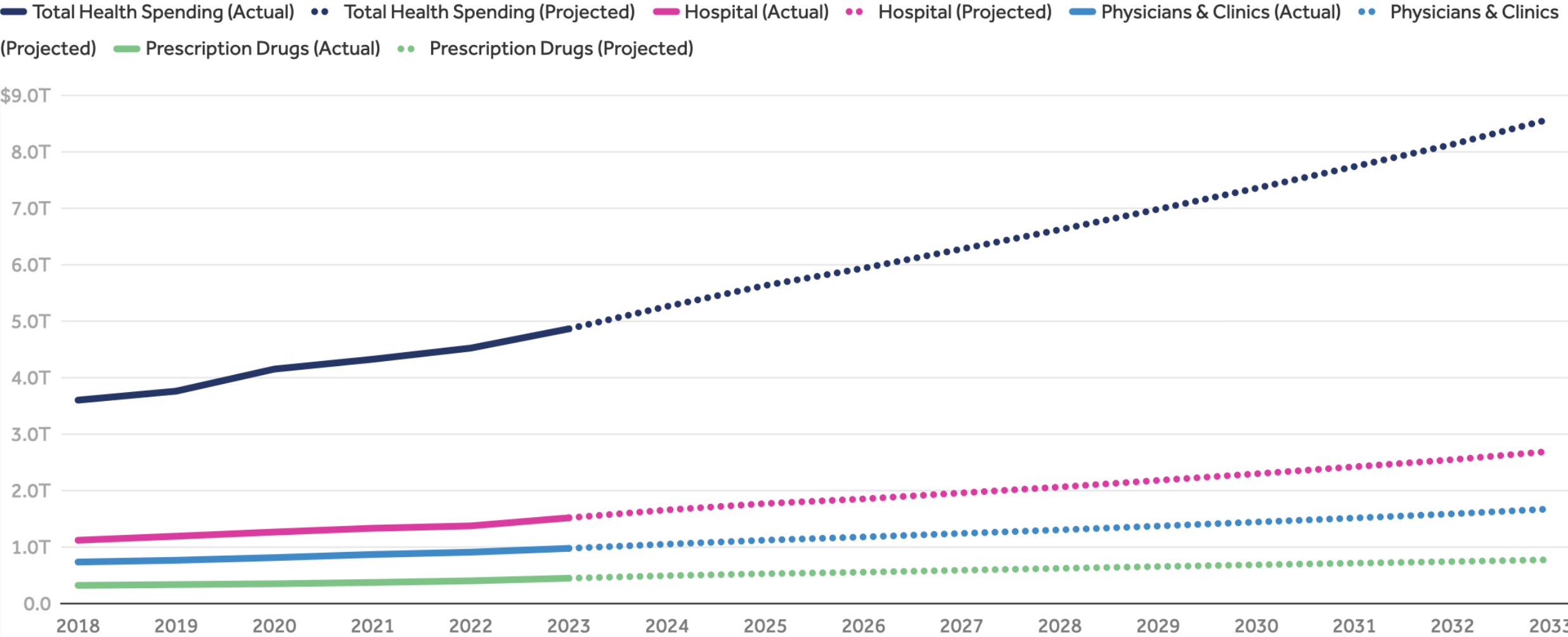
Stravizi

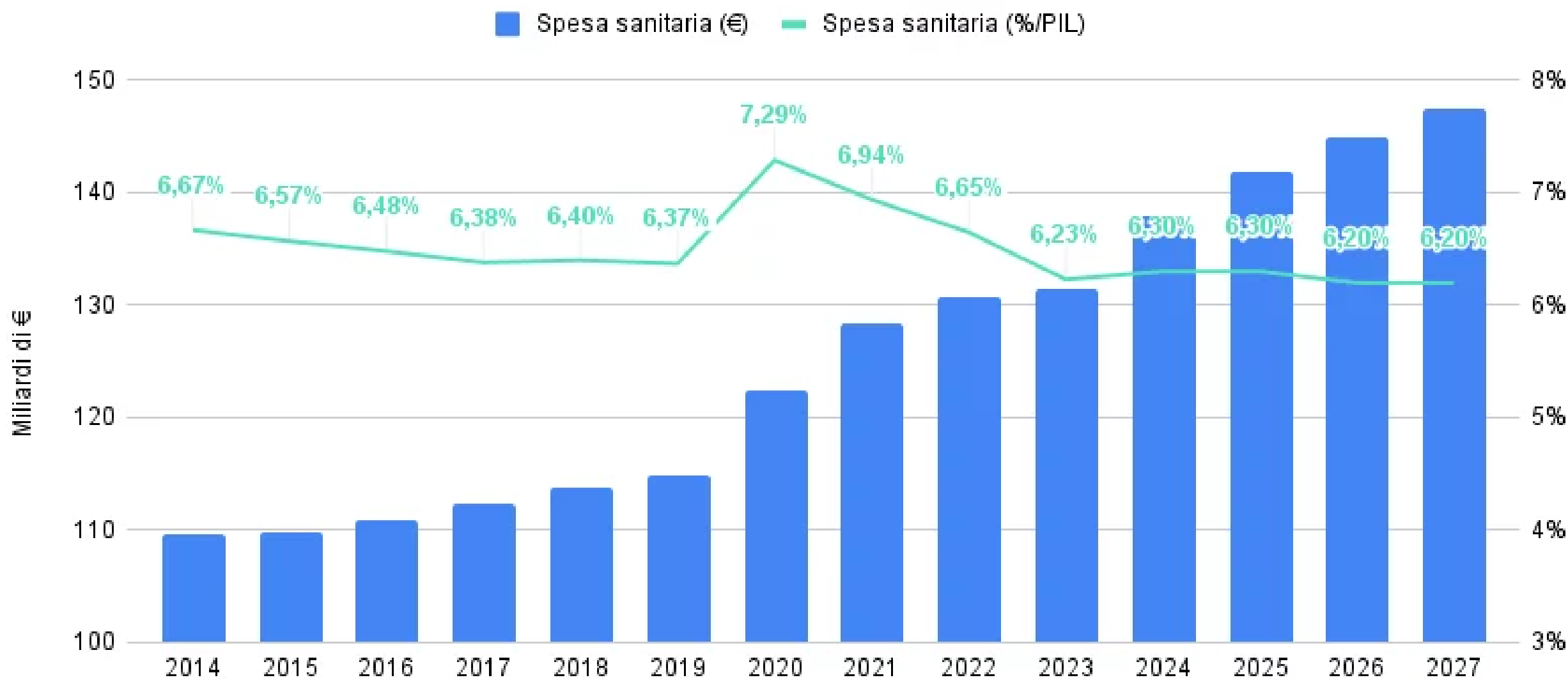
USA total health expenditure 1970-2023



USA projected health expenditure 2023-2033

Total health spending, by service type, 2018-2023; projected 2024-2033





La sfida sanitaria è agire prima della malattia: la prevenzione come infrastruttura del futuro

- Non possiamo più permetterci un sistema sanitario che cura solo quando è troppo tardi
- Necessità di modelli basati su monitoraggio continuo, diagnostica precoce, interventi personalizzati
 - Opportunità per aziende in: biotech, telemedicina, wearables, diagnostica avanzata

E se prevenire diventasse il vero core business della sanità?

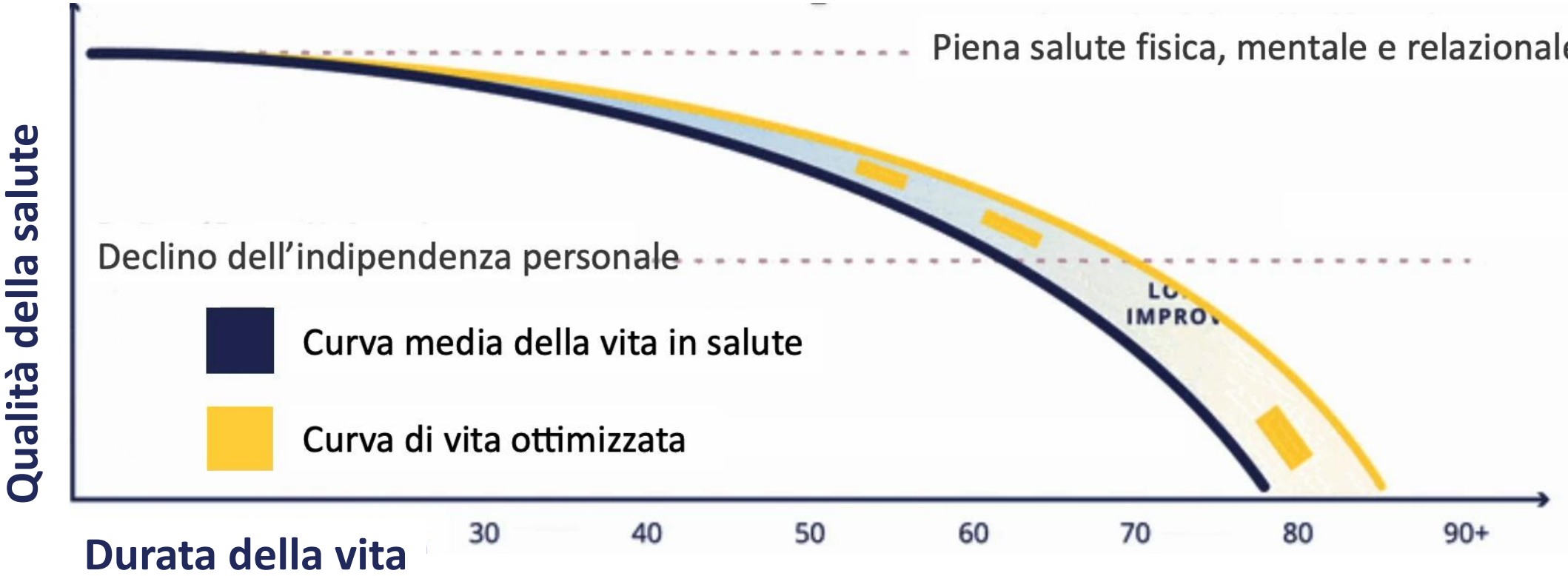
Vivere più a lungo non basta: serve vivere meglio, in salute e in autonomia

Una nuova visione di longevità attiva da costruire attraverso prevenzione, tecnologia e nuovi modelli sanitari e sociali



- Dalla medicina reattiva alla medicina predittiva e personalizzata
- Dall'assistenza passiva alla partecipazione attiva

Estendere “gli anni in salute” (*healthspan*), non solo “gli anni di vita” (*lifespan*)



Bryan Johnson



Bryan Johnson

100 integratori al giorno
Va in palestra ogni giorno
Checkup medici rigorosi



Bryan Johnson

100 integratori al giorno
Va in palestra ogni giorno
Checkup medici rigorosi



Aspettativa di vita: 100 anni

Bryan Johnson

Zio Gino

100 integratori al giorno
Va in palestra ogni giorno
Checkup medici rigorosi



Aspettativa di vita: 100 anni

Bryan Johnson



**100 integratori al giorno
Va in palestra ogni giorno
Checkup medici rigorosi**

Zio Gino



**Vive in spiaggia
Non si allena dal 1945
Non sa cosa sia una caloria**

Aspettativa di vita: 100 anni

Bryan Johnson



**100 integratori al giorno
Va in palestra ogni giorno
Checkup medici rigorosi**

Aspettativa di vita: 100 anni

Zio Gino



**Vive in spiaggia
Non si allena dal 1945
Non sa cosa sia una caloria**

Aspettativa di vita: 112 anni

Elementi fondamentali per un invecchiamento in salute

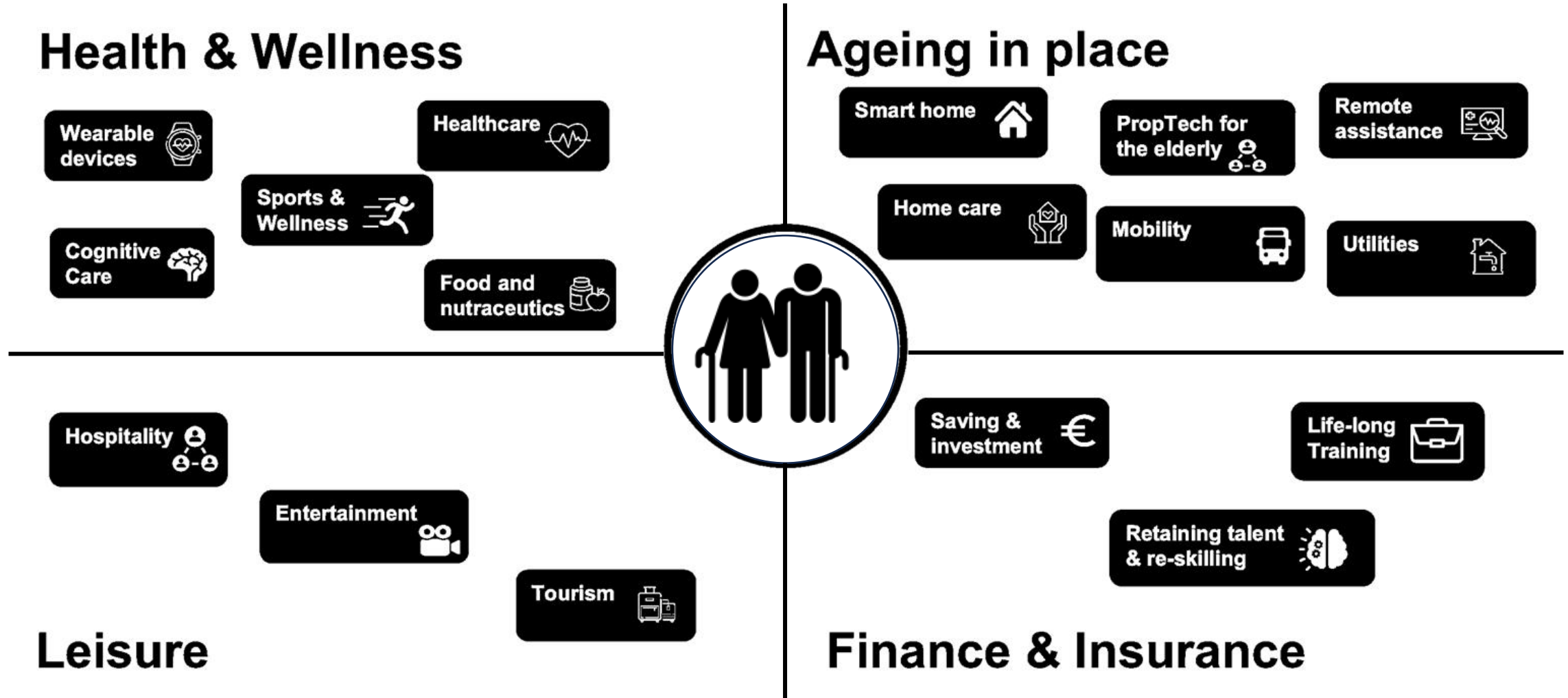


Nutrizione, movimento, equilibrio mentale e benessere emotivo

MA ANCHE

lavoro appagante, stabilità finanziaria, stimolazione intellettuale, inclusività sociale, connessioni interpersonali

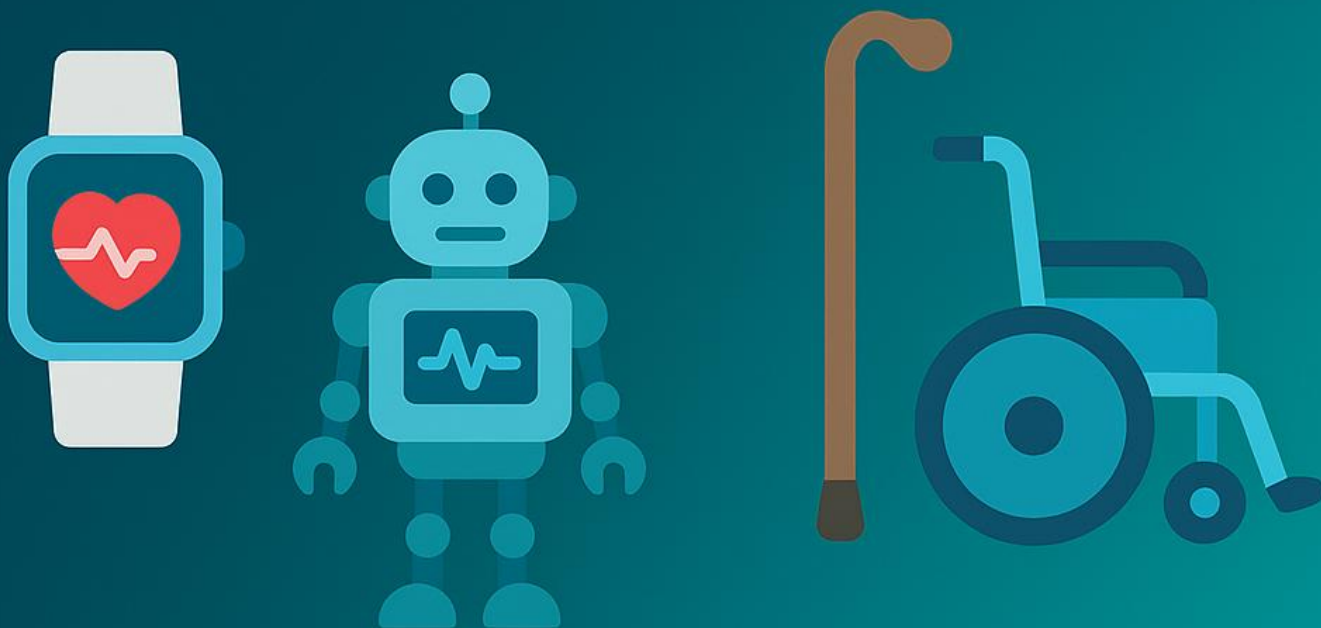
Silver economy





SANITÀ E FARMACEUTICA	Sviluppo dell'e-health e servizi online, dispositivi intelligenti e app.. Nuove terapie senolitiche e supplementary.
BANCARI E ASSICURATIVI	Gestione della grande ricchezza, assistenza contro truffe e contro il declino cognitivo
INDUSTRIA ALIMENTARE	Produzione di pasti razionati, preparati funzionali (proteine), alimenti dietetici.
ELETTRONICA	Prodotti elettromedicali, elettroterapeutici, di misurazione caratteristiche fisiche degli anziani (smartphone, strumenti musicali, ecc.).
MOBILITÀ	Fabbricazione veicoli per invalidi e persone con ridotta capacità motoria, servizi di sharing e di assistenza (trasporti cliniche, ospedali, ambulatori).
SERVIZI ABITATIVI E DOMOTICA	Dispositivi mobili e applicativi per il monitoraggio delle persone più anziane (prevenzione) e per attivare servizi di allarme (specialmente nel caso di anziani soli o affetti da patologie croniche).
ASSISTENZA SANITARIA E SOCIALE (RESIDENZIALE E NON)	Servizi ospedalieri, e degli studi medici specialistici, centri di radioterapia e di dialisi, laboratori di analisi cliniche, fisioterapia. Strutture di assistenza infermieristica residenziale per anziani e disabili.
TURISMO E SERVIZI CULTURALI E RICREATIVI	Programmi specifici per caratteristiche (mobilità ridotta) e interessi (musei, teatri...) del pubblico over 65. Per la Commissione Europea, nel 2030 il settore raggiungerà i 548 mld di euro (+169% dal 2010).
FORMAZIONE PERMANENTE E EDUCAZIONE DIGITALE	Aggiornamento competenze digitali e cognitive. piattaforme e ambienti di apprendimento su misura per rimanere mentalmente attivi, partecipare al mondo digitale e reinventarsi professionalmente dopo i 65 anni
DESIGN E BENI DI CONSUMO PERSONALIZZATI	Moda, accessori, arredo e oggetti quotidiani devono rispondere a esigenze fisiche mutate ma anche a gusti e identità precise. Prodotti di bellezza e skincare per pelli mature.

Tecnologie digitali e non a supporto di tutto il percorso di vita della persona sana e malata



Tecnologie per l'anziano sano: autonomia, benessere e partecipazione



- **Health tracking e prevenzione**

Wearables, smart watches, balance intelligenti, sensori con feedback predittivo

Tecnologie per l'anziano sano: autonomia, benessere e partecipazione



• Interazione & Inclusione

Robot sociali, piattaforme per community senior, traduttori vocali per barriere linguistiche

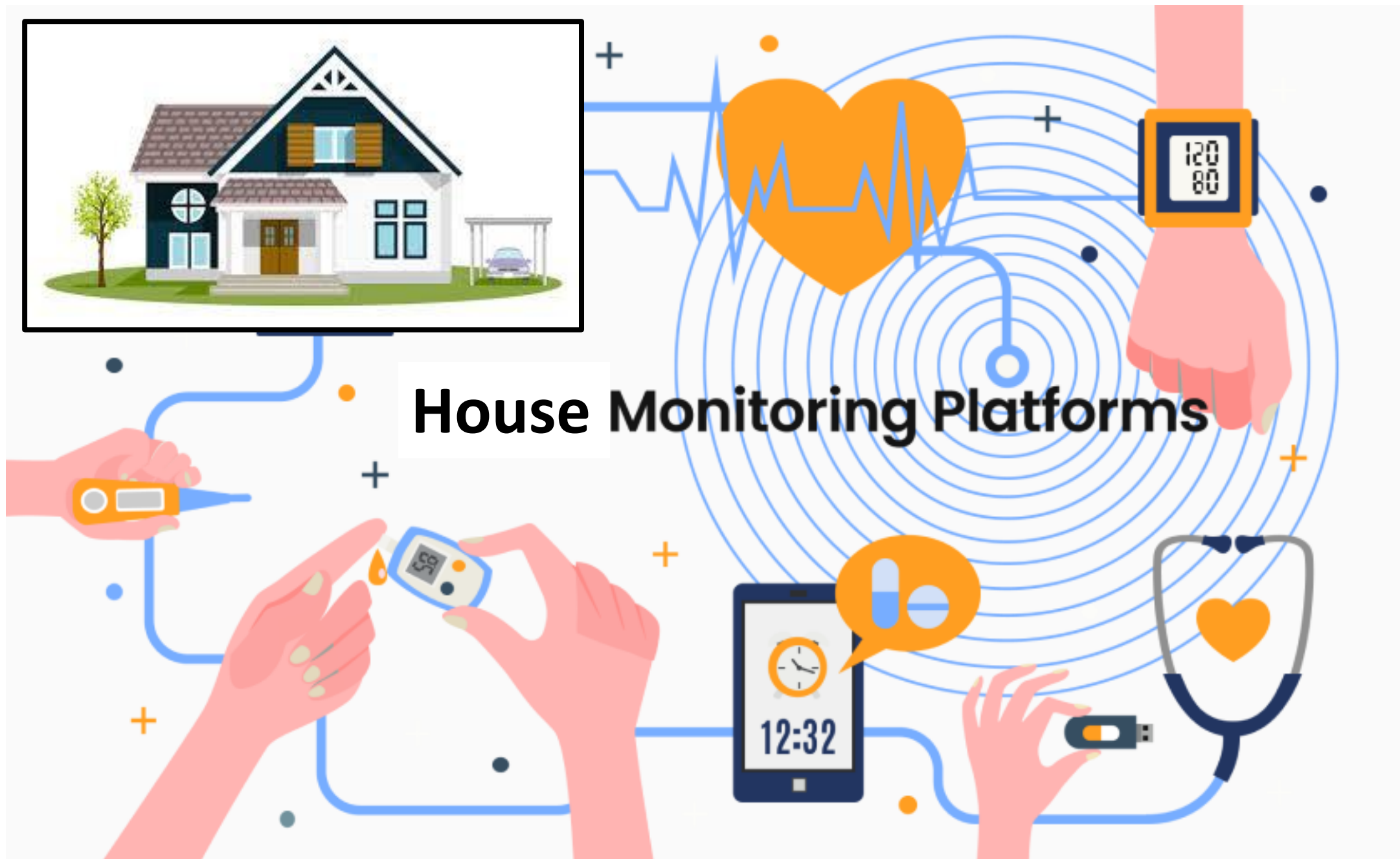
Telemedicine

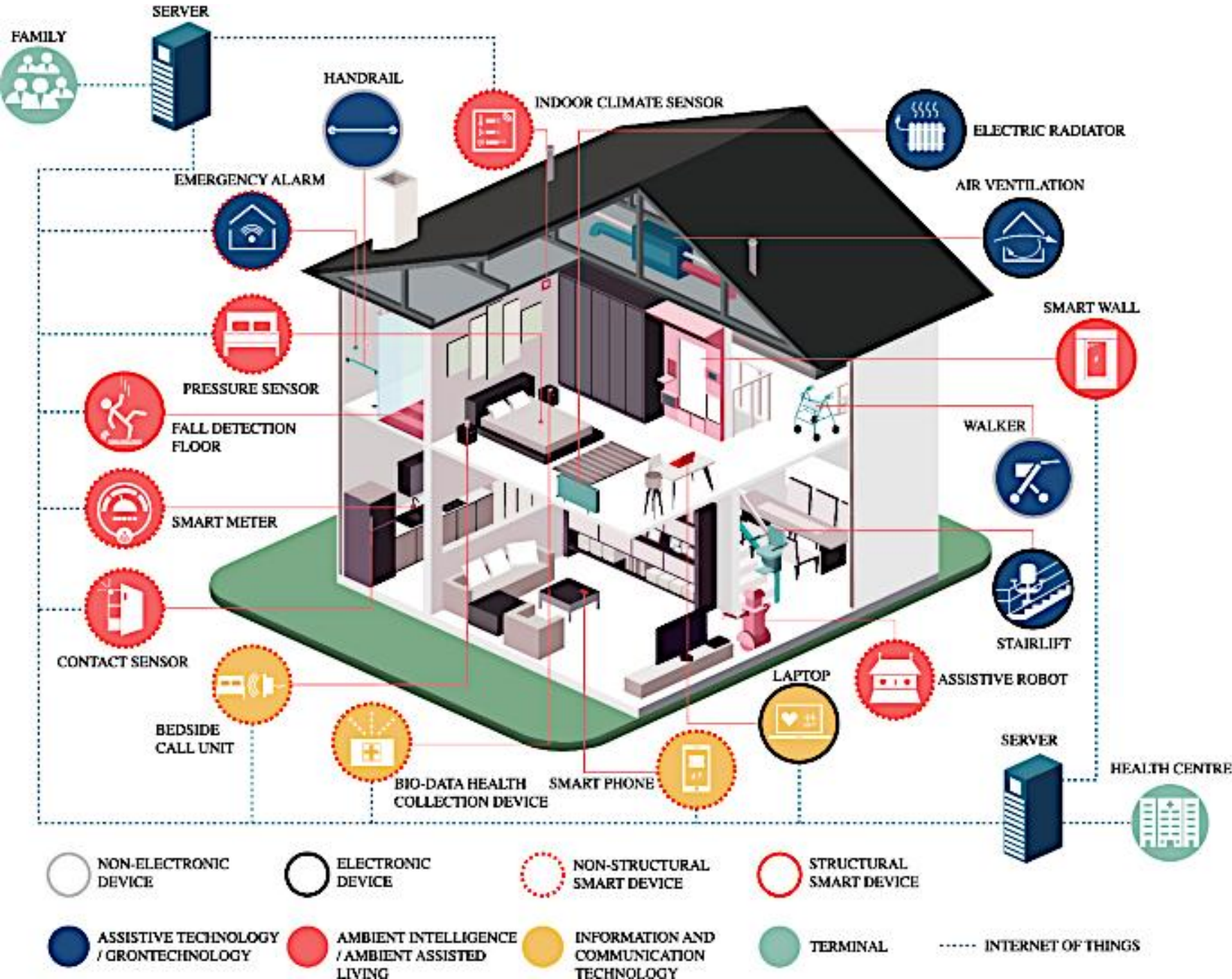
- Remote consultations
- Remote monitoring devices
- Management chronic conditions





House Monitoring Platforms





Ambient Assisted Living

- Surveillance cameras
- Motion sensors
- Alarm systems
- Voice assistants

Domotica

- Sensori ambientali
- Luci intelligenti,
- Efficientamento routine
- Distribuzione farmaci

Impatto di Nutrizione Personalizzata, Nutrigenomica, Microbioma su Longevità





Genetic Testing

- Collection of DNA sample
- Analysis of genetic variants



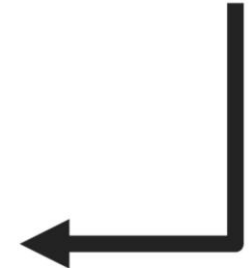
Data Integration

- Combine genetic data with phenotypic & lifestyle information



Personalized Dietary Planning

- Develop tailored dietary recommendations
- Include specific nutrients and food choices



Implementation

- Personalized meal plans
- Nutritional supplements if needed



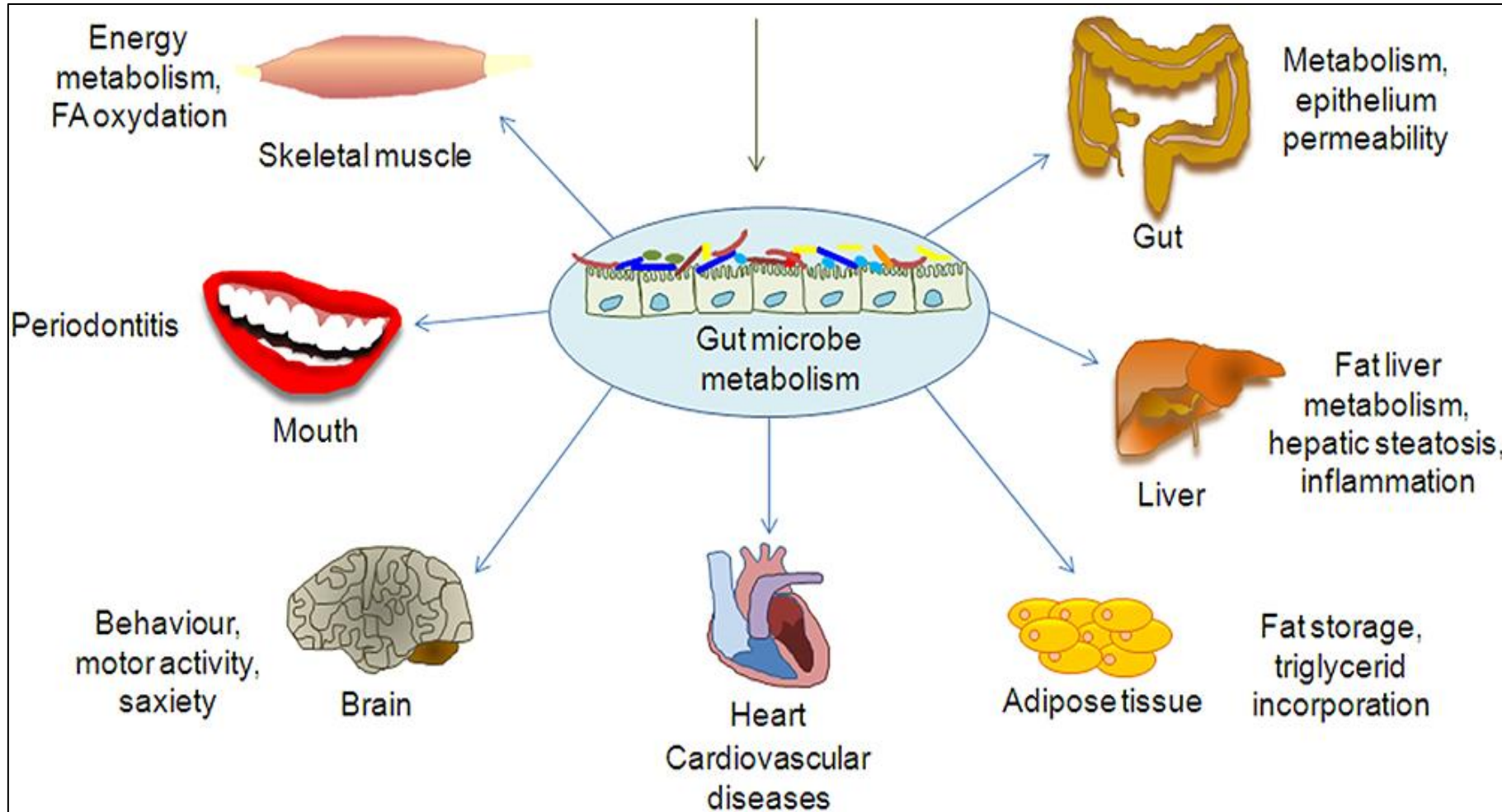
Follow-up & Monitoring

- Regular check-ins to assess adherence & outcomes
- Adjustments based on feedback & progress

AI-based dietary planning

Tools and apps to recommend food choices and track parameters based on real-time data from wearables and genetic profiles.

Microbiome revolution



X-biotics products

Gli "psychobiotics" (kefir, kimchi, mushroom based extracts) emergono come cibo-farmaco per la salute mentale

LE NUOVE SFIDE

The Billionaires Fueling the Quest for Longer Life

Investors including Peter Thiel and Sam Altman are making big bets on where longevity science is headed



Share



Resize



Listen (1 min)

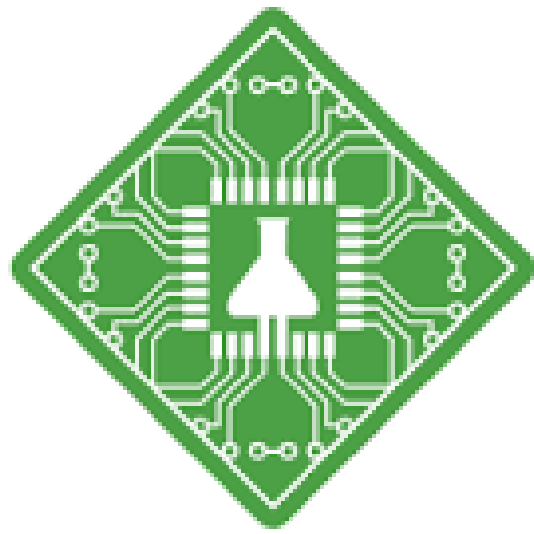


Peter Thiel: *Unity Biotechnology*, develops therapeutics to slow or reverse aging by targeting cellular senescence

Sam Altman: *Retro Biosciences*, aiming to extend human life by up to 10 years through stem cell rejuvenation

Peter Diamandis: *Human Longevity Inc.* and *BOLD Capital Partners*, focusing on genomics and advanced cell therapies.

Yuri Millner: the *Breakthrough Initiatives*, addressing fundamental questions about life extension



Insilico Medicine

Raised 400 million

AI-driven drug discovery to target aging and age-related diseases.
Rentosertib, is the first drug where both the biological target and the
therapeutic compound were discovered with generative AI
(Reportedly in **Phase 2 trials**)



Raised \$240 million

Cellular Reprogramming with in vivo gene therapies to rejuvenate aged cells without altering their specialized functions.

Autophagy Enhancement through small molecule to boost degradation of senescent cells, clear protein aggregates and damaged biomolecules.



Raised \$180 million

Mitochondrial augmentation therapy. Enriching a patient's hematopoietic stem and progenitor cells with healthy mitochondria sourced from allogeneic or syngeneic donors to restore cellular energy production and improve organ function, addressing the underlying cause of mitochondrial diseases and aging.



Function

Raised \$55 million (Series A)

Personalized prevention/health analytics. A membership service providing access to over 100 lab tests annually, including assessments for heart health, hormones, thyroid function, nutrients, cancer signals, immunity, aging factors, and autoimmunity, designed to provide a comprehensive understanding of an individual's health, enabling proactive management and early detection of diseases.



Raised \$40 million (Series A)

Senolytic drugs, first-in-class GPX4 modulator designed to eliminate senescent cells by inducing ferroptosis, a regulated form of cell death. This approach aims to reduce inflammation and tissue degeneration associated with aging. Currently undergoing Phase 1 clinical trials.



JANUARY 2 2022

The start-up raised \$3bn.
A life sciences industry record.

The Big Read Disease control and prevention

+ Add to myFT

The start-ups seeking a cure for old age

Tech billionaires are funding research to help us live longer and healthier lives, but experts warn of an ethical minefield ahead

In 2025 they initiated human clinical trials targeting neurodegenerative and immune-related aging disorders.



Jeff Bezos, Yuri Milner, Flagship Pioneering

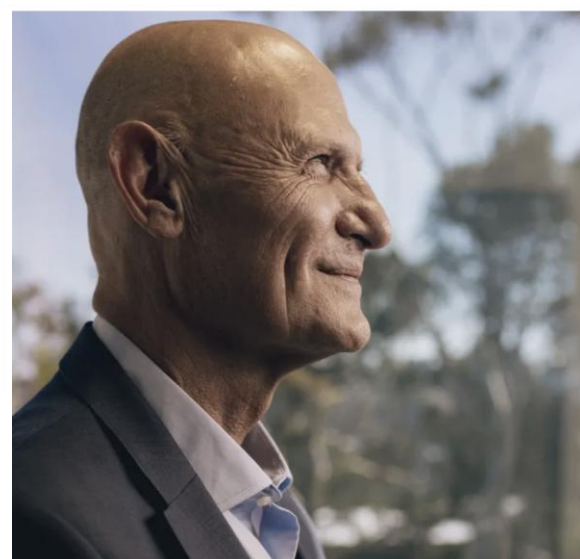
Our mission is to restore cell health and resilience through cell rejuvenation to reverse disease, injury and the disabilities that can occur throughout life

Shinya Yamanaka, MD, PhD

Senior Scientific Advisor

Dr. Shinya Yamanaka serves as Senior Scientific Advisor to Altos Labs without remuneration, overseeing research activities in Japan.

Dr. Yamanaka is a Senior Investigator and the L.K. Whittier Foundation Investigator in Stem Cell Biology at the Gladstone Institute for Cardiovascular Disease. He is also a Professor of Anatomy at the University of California, San Francisco, as well as a Director and Professor of the Center for iPS Cell Research and Application (CiRA) at Kyoto University. Dr. Yamanaka earned an MD from Kobe University and a PhD from Osaka City University. He became an Assistant Professor at Osaka City University Medical School, and later an Associate Professor at Nara Institute of Science and Technology, where he eventually became a full Professor in 2003. Dr. Yamanaka attained professor position at Kyoto University in 2004, and was appointed Senior Investigator at



EVOLUTION

The founding science

Altos Founding Scientist Juan Carlos Izpisua Belmonte built on Yamanaka's findings in 2016 by showing that cells could be "partially" reprogrammed. Instead of reverting all the way back to stem cells, Belmonte and his colleagues found that cells can be "partially" reprogrammed to a state that is more resilient to stressors while retaining both their identity and the enhanced functions seen in young cells.

The Human Longevity Program of IRCCS San Raffaele

