

La prevenzione nella gestione delle malattie croniche

People aged ≥ 100 years in 2024 $\rightarrow$ 22,552 (+2000 persons vs. 2023)

2023:

- 818,970 persons aged ≥ 90 yrs
- 179,188 persons aged ≥ 95 yrs

2024:

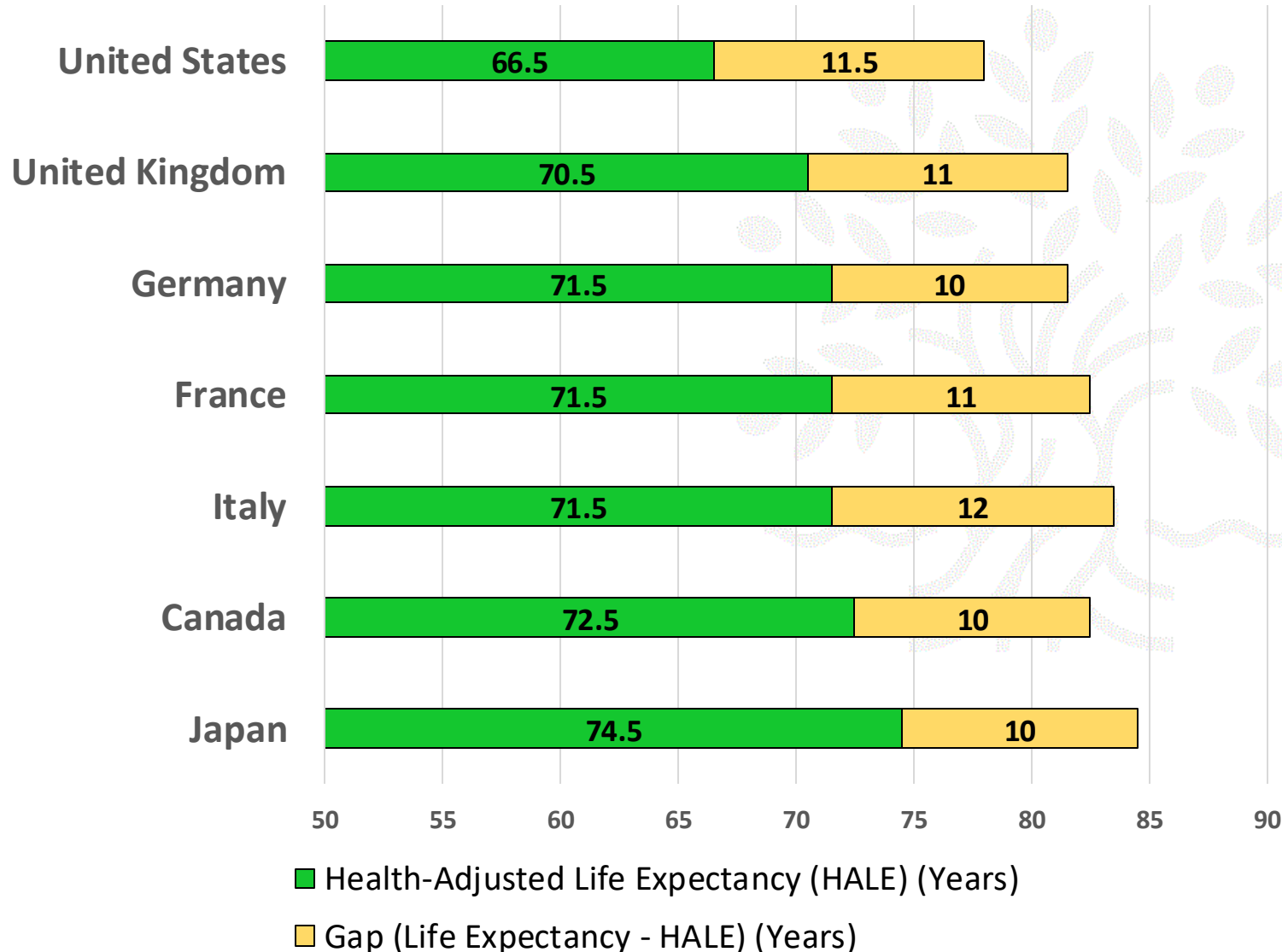
- 849,402 persons aged ≥ 90 yrs
- 189,718 persons aged ≥ 95 yrs



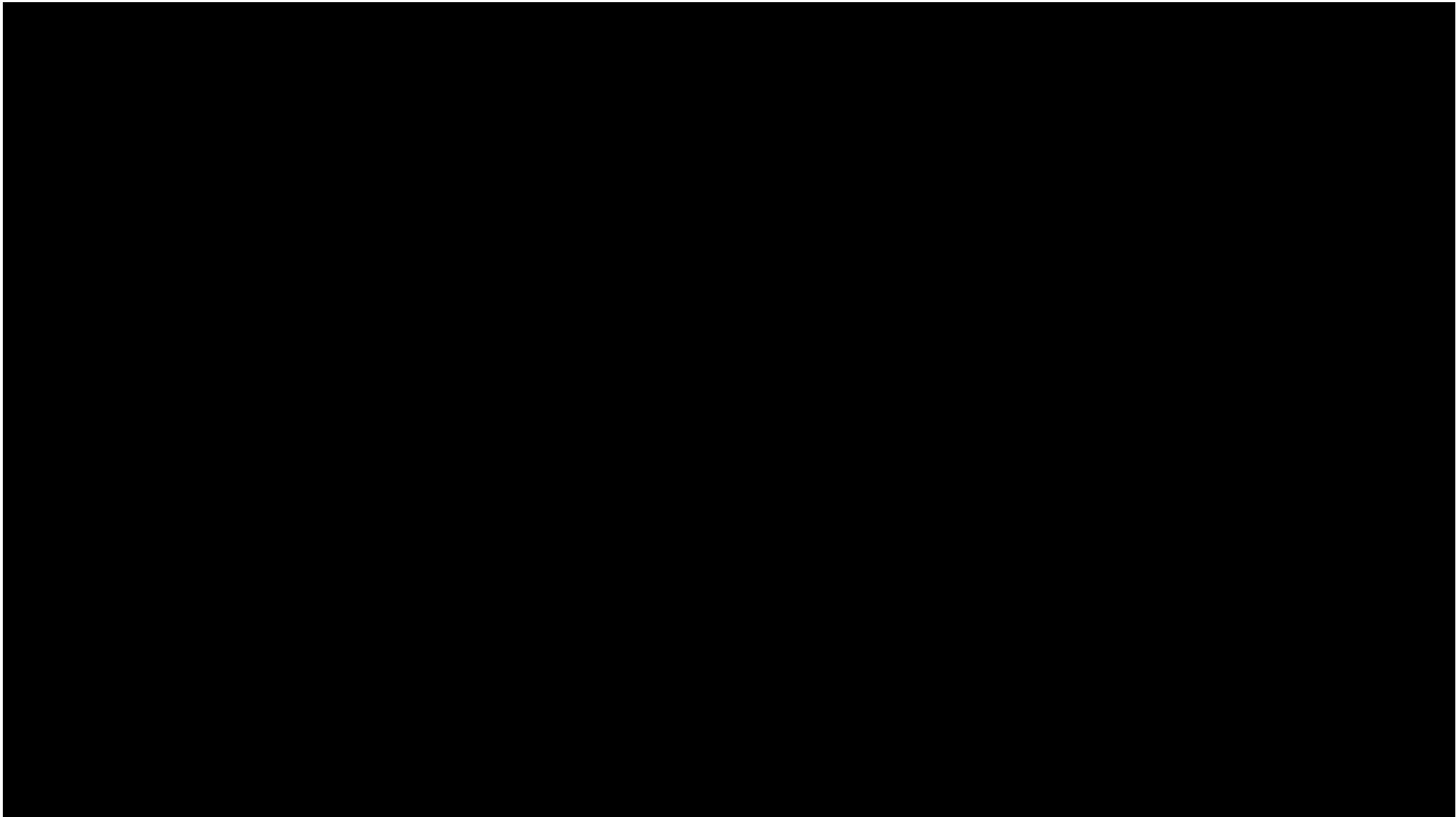
% change from 2023:

- + 3.7%
- + 5.9%

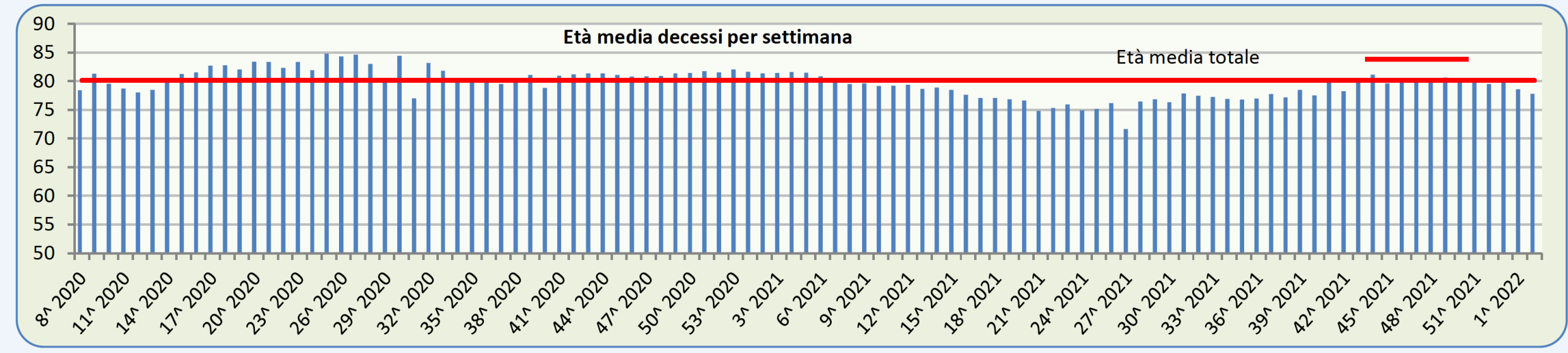
Lifespan/Healthspan Gap in G7 Countries



...there is a recognized gap between lifespan (the total life lived) and healthspan (the period free from disease). Using health-adjusted life expectancy, ... the healthspan-lifespan gap is estimated at around 10 years

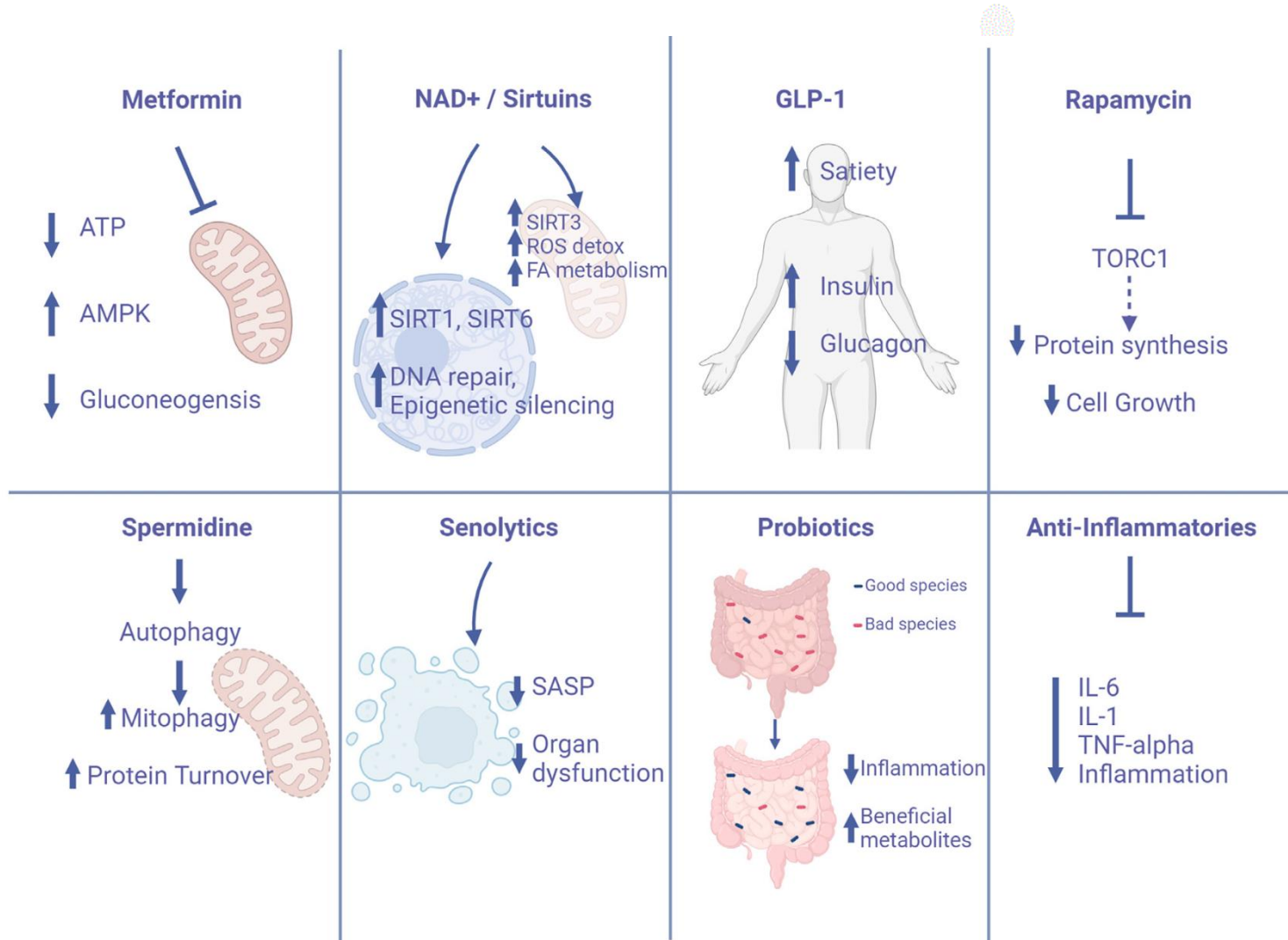


Età media dei pazienti deceduti
SARS-CoV-2 positivi per settimana di decesso



Human trials exploring anti-aging medicines

Leonard Guarente,^{1,2,*} David A. Sinclair,^{2,3} and Guido Kroemer^{2,4,5,6,*}



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NEWS | 02 September 2024

Senolytics target cellular senescence – but can they slow aging?

By [Natalie Healey](#)

«Senolytics can prevent and treat age-related diseases in mice, but data in humans are lacking — for now.»

Blue Zones



OGLIASTRA, *Italy*

ICARIA, *Greece*

LOMA LINDA, *US*

NICOYA, *Costa Rica*

OKINAWA, *Japan*



www.bluezones.com

Blue Zones: The 7 Principles



Move Naturally



Eat Wisely



Avoid Stress & Get plenty of Sleep



Keep Strong Family Ties



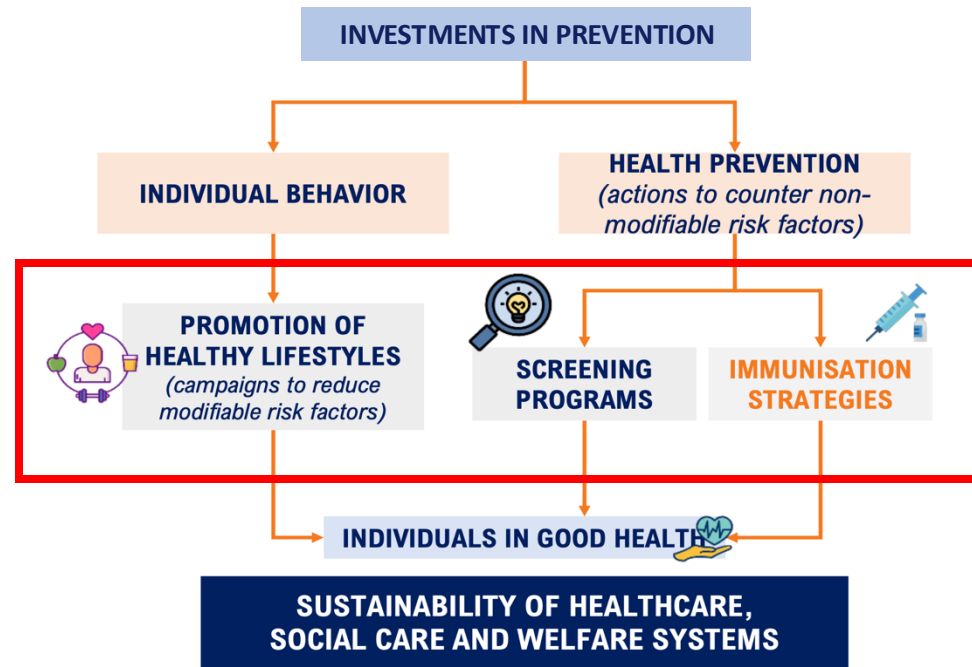
Stimulate Strong Community Support



Respect for the Planet

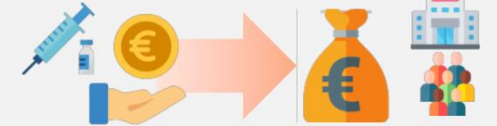


Having a Purpose in Life



Studies suggest that **every 1 euro** spent on **preventative healthcare** generates a **14 euro** return to the health and social care economy.

TEHA on Masters, Rebecca, et al.
"Return on investment of public health interventions: a systematic review." J Epidemiol Community Health 71.8 (2017) data, 2024



Studies suggest that **every 1 euro** spent on **adult vaccination** generates a **19 euro** return to the health and social care economy*

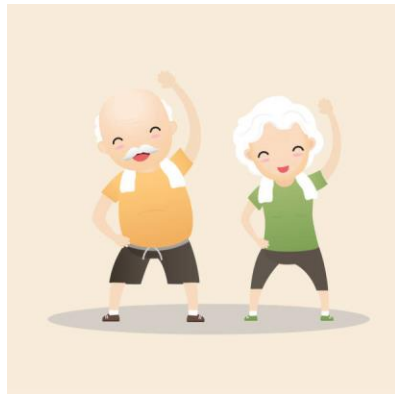
TEHA on Steuten, H. E. B. et al. (2024), «Socio-Economic Value of Adult Immunisation Programmes», 2024



Multicomponent intervention to prevent mobility disability in frail older adults: randomised controlled trial (SPRINTT project)

Bernabei R et al. BMJ 2022;377:e068788

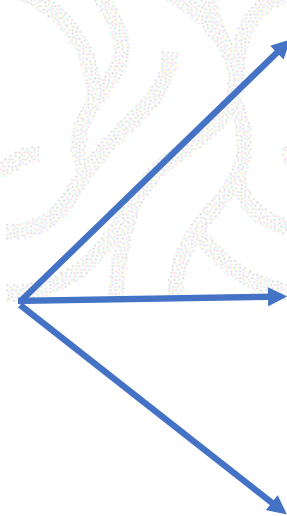
**Multicomponent Intervention
(Healthy lifestyle)**



Exercise



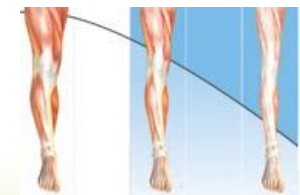
Nutrition

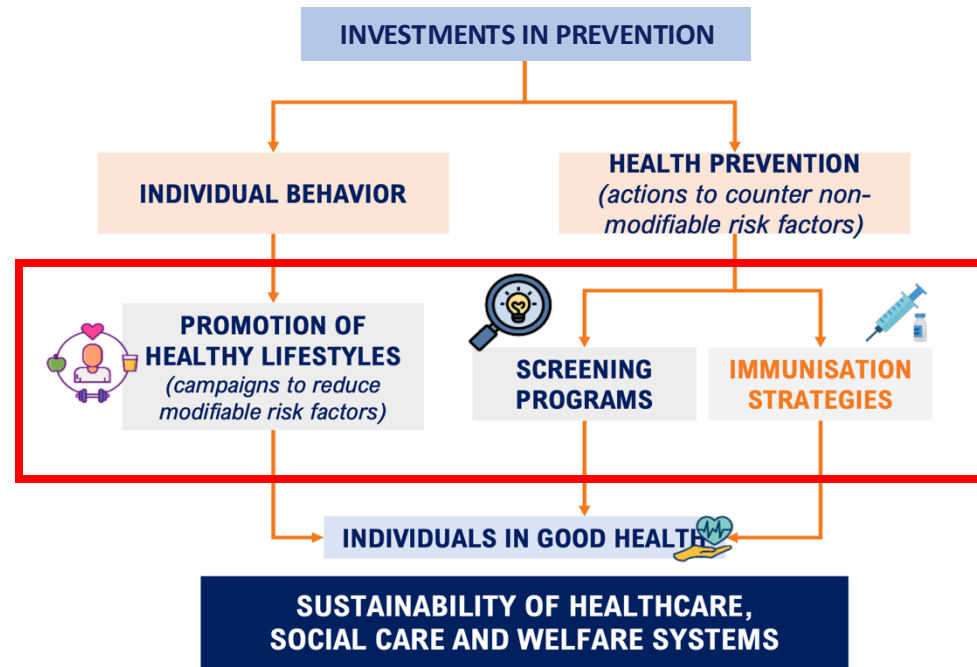


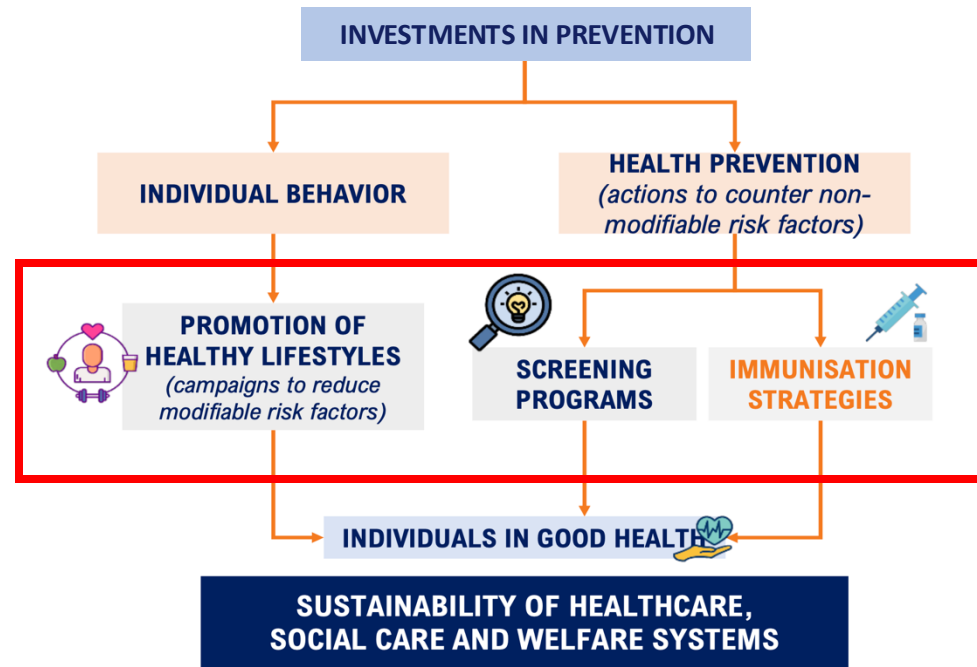
↓
**risk of developing
mobility disability**

↑
Physical Function

↓
Muscle loss (in women)







Studies suggest that **every 1 euro spent on preventative healthcare** generates a **14 euro return to the health and social care economy.**

TEHA on Masters, Rebecca, et al.
 "Return on investment of public health interventions: a systematic review." J Epidemiol Community Health 71.8 (2017) data, 2024



Innovation to promote healthy longevity: Humanoid robots and AI-based digital twins

nature

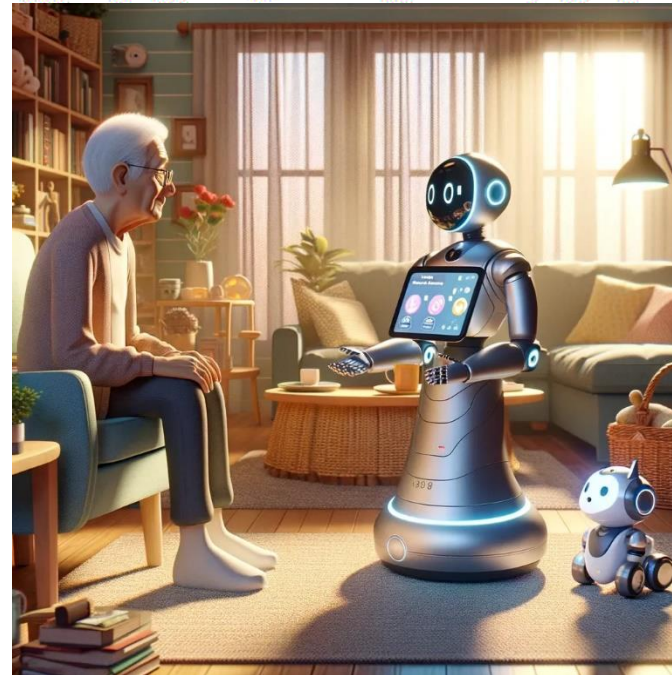
Are robots the solution to the crisis in older-person care?

Social robots that promise companionship and stimulation for older people and those with dementia are attracting investment, but some question their benefits.

By [Tammy Worth](#)



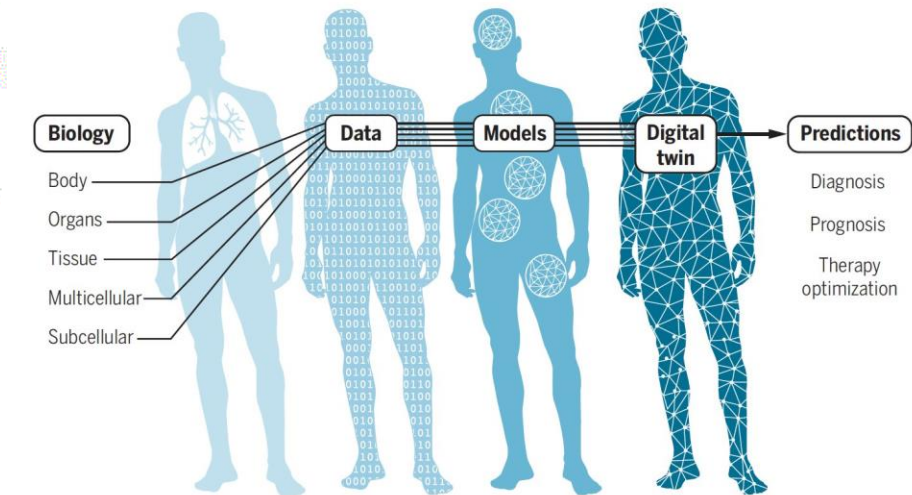
Interactive therapeutic robot Paro keeps a resident company at a nursing home in Japan. Credit: Noriko Hayashi/Panos Pictures



Science
JOURNALS | AAAS

Building a personalized digital twin

Data from multiple scales are needed to build computational representations of biological processes and body systems that are affected by viral infection. These submodels are integrated and personalized with clinical data from individual patients. The digital twin can then be used to derive predictions about diagnosis, prognosis, and efficacy and optimization of therapeutic interventions.



Science. 2021 March 12; 371(6534): 1105–1106. doi: 10.1126/science.abf3370.

Comorbidità nei decessi con COVID-19 per periodi

Campione delle cartelle cliniche valutate	Tutti (n=7.681)	marzo-maggio 2020 (n=4.538)	giugno-sett 2020 (n=545)	ottobre 2020-luglio 2021 (n=2.598)	<i>p-value*</i>
	n (%)	n (%)	n (%)	n (%)	
N. di comorbosità					
0	226 (2,9)	169 (3,5)	8 (1,7)	49 (2,0)	<0,001
1	884 (11,4)	608 (13,0)	46 (8,7)	230 (9,1)	<0,001
2	1.393 (18,1)	916 (20,0)	71 (13,8)	406 (15,8)	<0,001
3 o più	5.178 (67,6)	2.845 (63,6)	420 (75,8)	1.913 (73,1)	<0,001

Fasce di età	16-59		60-69		70-79		80+		Totale	
	(n=551)		(n=761)		(n=1848)		(n=4515)		(n=7675)	
<i>Patologie preesistenti</i>	N	%	N	%	N	%	N	%	N	%
<i>Cardiopatía ischemica</i>	36	6,5	154	20,2	538	29,1	1.429	31,7	2.157	28,1
<i>Fibrillazione atriale</i>	13	2,4	79	10,4	355	19,2	1437	31,8	1.884	24,5
<i>Scompenso cardiaco</i>	26	4,7	70	9,2	241	13,0	871	19,3	1.208	15,7
<i>Ictus</i>	17	3,1	64	8,4	190	10,3	612	13,6	883	11,5
<i>Ipertensione arteriosa</i>	207	37,6	453	59,5	1.245	67,4	3.146	69,7	5.051	65,8
<i>Diabete mellito-Tipo 2</i>	135	24,5	255	33,5	669	36,2	1.194	26,4	2.253	29,4
<i>Demenza</i>	15	2,7	45	5,9	215	11,6	1.535	34,0	1.810	23,6
<i>BPCO (Bronco Pneumopatia Cronica Ostruttiva)</i>	41	7,4	92	12,1	358	19,4	829	18,4	1.320	17,2
<i>Cancro attivo negli ultimi 5 anni</i>	94	17,1	142	18,7	368	19,9	647	14,3	1.251	16,3
<i>Epatopatia cronica</i>	46	8,3	52	6,8	114	6,2	175	3,9	387	5,0
<i>Dialisi</i>	22	4,0	20	2,6	55	3,0	71	1,6	168	2,2
<i>Infezione da HIV</i>	11	2,0	2	0,3	4	0,2	1	0,0	18	0,2
<i>Malattie autoimmuni</i>	40	7,3	44	5,8	71	3,8	196	4,3	351	4,6
<i>Obesità</i>	169	30,7	174	22,9	254	13,7	273	6,0	870	11,3

Patologie più comuni
osservate nei pazienti
deceduti SARS-CoV-2 positivi
per fascia di età

COVID-2 positivi non vaccinati , con 'ciclo incompleto di vaccinazione' e con 'ciclo completo

		Non vaccinati (n=1.258; 3.2% *)		Vaccinati con ciclo incompleto di vaccinazione (n=58; 3,0%*)		Vaccinati con ciclo completo di vaccinazione (n=326; 6,1%*)		<i>p-value</i>	
		Media	<i>dev.std.</i>	Media	<i>dev.std.</i>	Media	<i>dev.std.</i>		
	Età	78,6	9,7	82,6	13,4	84,7	13,1	<0,001	
	Comorbidità	3.9		5.0		4.9			

*cartelle dei **46.572** pazienti deceduti tra l’01/02/2021 ed il 10/01/2022 esaminate:

- 39292 'non vaccinati'
- 1935 con 'ciclo incompleto di vaccinazione'
- 5345 con 'ciclo completo di vaccinazione'

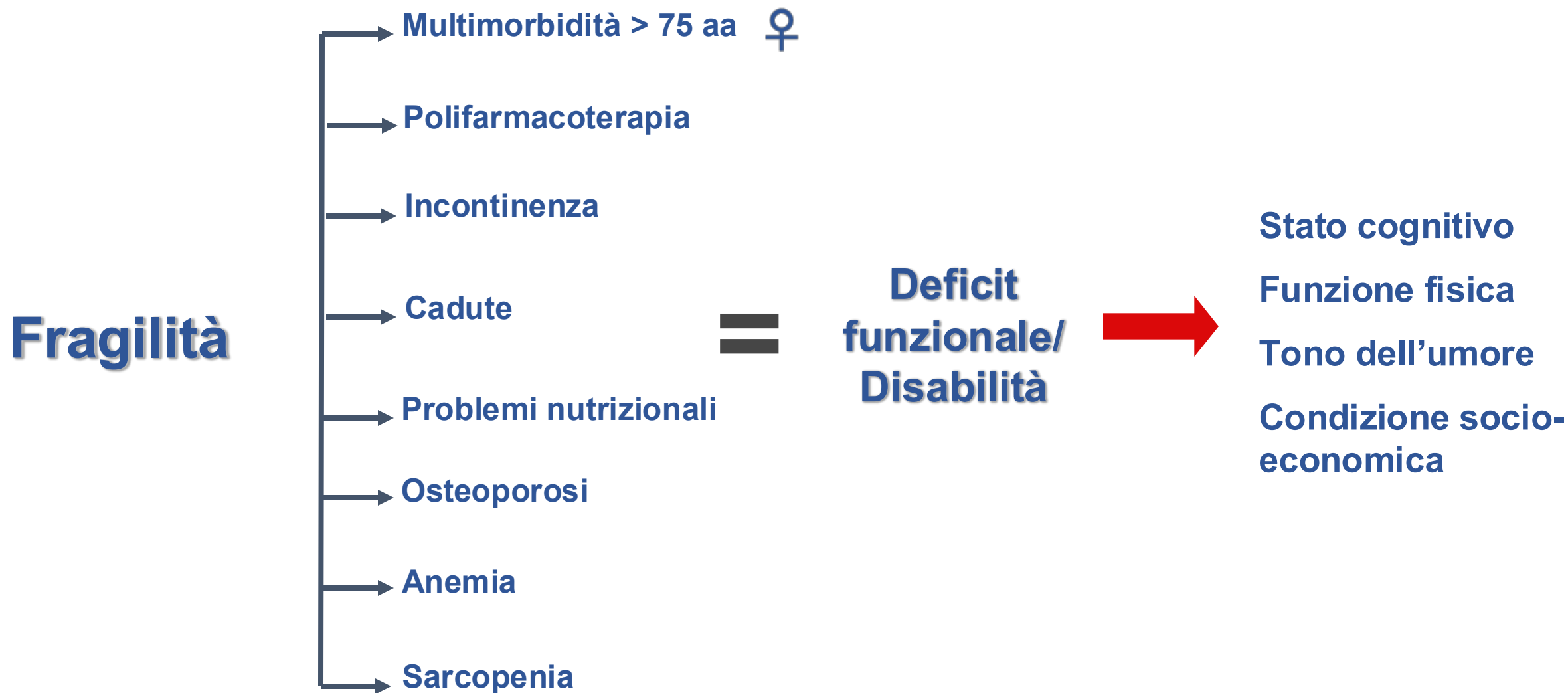
Fonte: EpiCentro ISS
dati al 10 gennaio 2022

Frailty

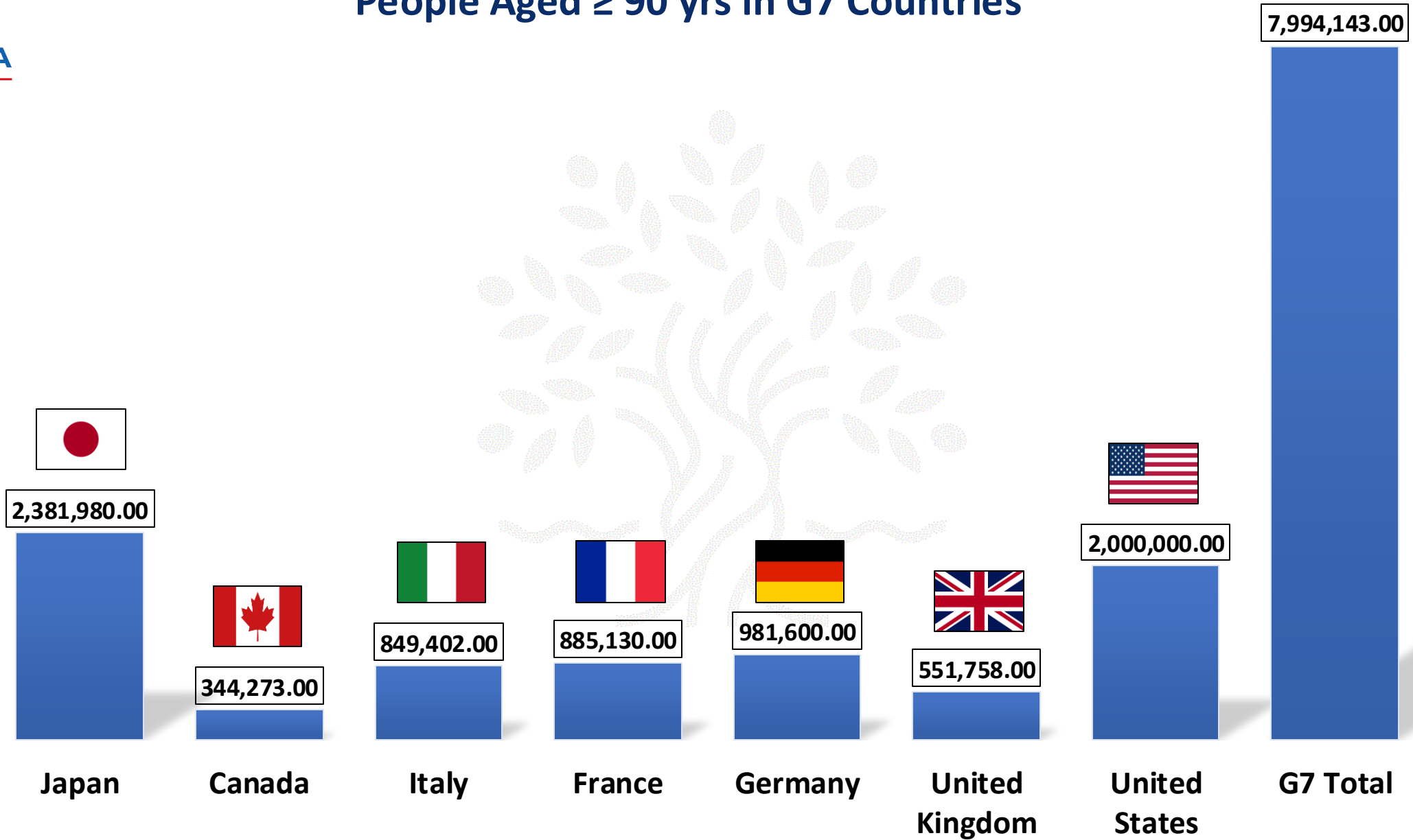
- “Frailty is a clinical state in which there is an increase in an individual's vulnerability for developing increased dependency and/or mortality when exposed to a stressor”
- Prevalence in older people 8-16%

Morley JE et al. JAMDA (2013)

Paziente moderno



People Aged ≥ 90 yrs in G7 Countries



Dysbiosis

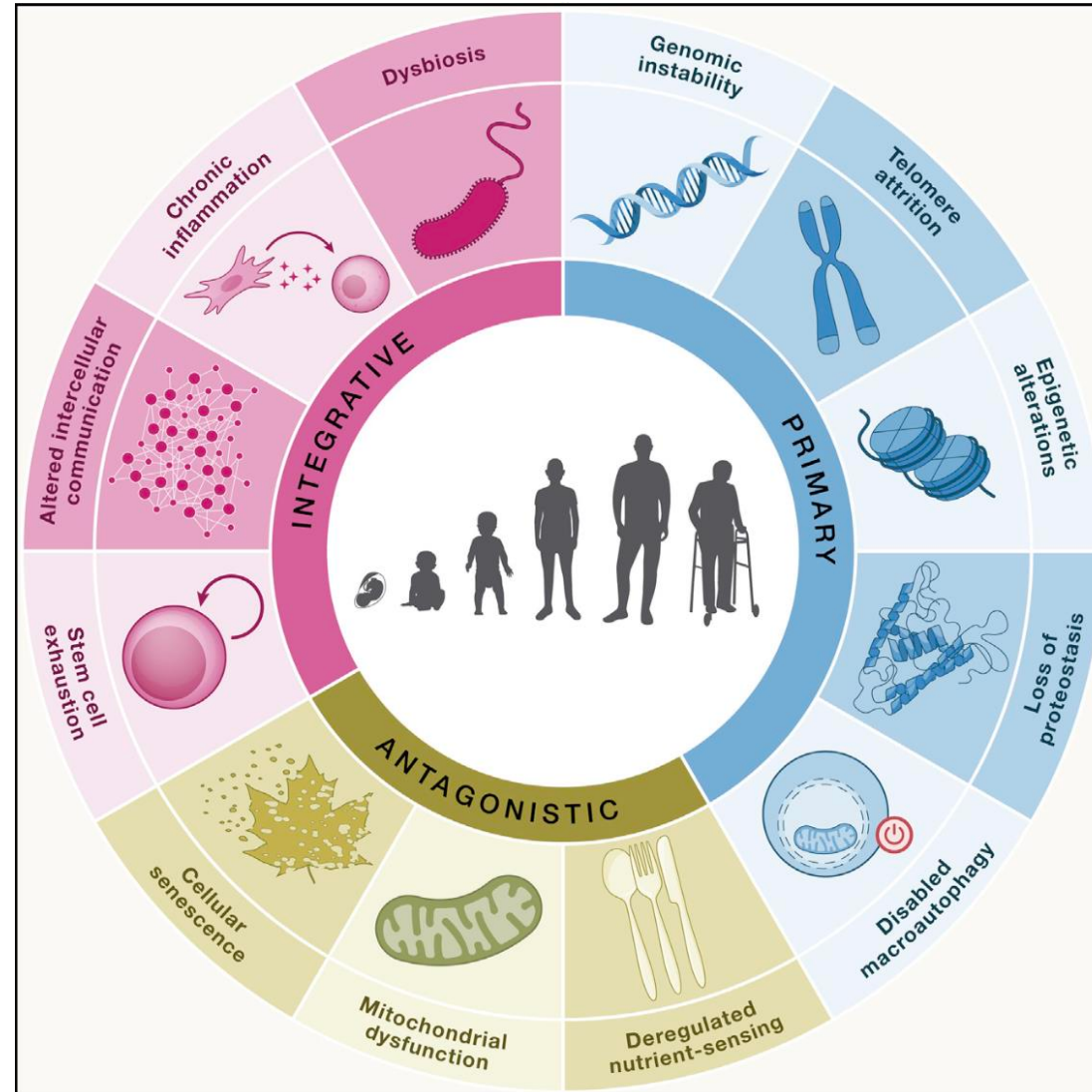
Chronic Inflammation

Altered Intercellular Communication

Stem cell exhaustion

Cellular senescence

Mitochondrial Dysfunction



Genomic Instability

Telomere Attrition

Epigenetic Alterations

Loss of Proteostasis

Disabled Macroautophagy

Deregulated Nutrient-Sensing

Human trials exploring anti-aging medicines

Leonard Guarente,^{1,2,*} David A. Sinclair,^{2,3} and Guido Kroemer^{2,4,5,6,*}

