Functional Changes with Age

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Member, Clinical Consortium Healthy Aging WHO
Board Member, WDA

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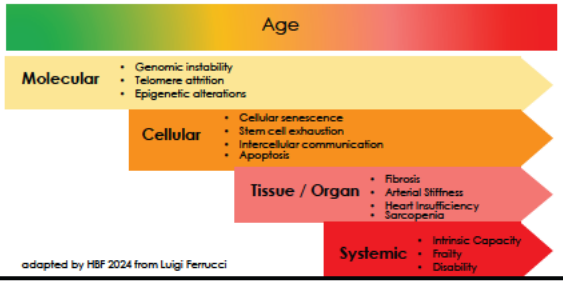
Aging starts at the molecular level and progresses to the systemic functional level



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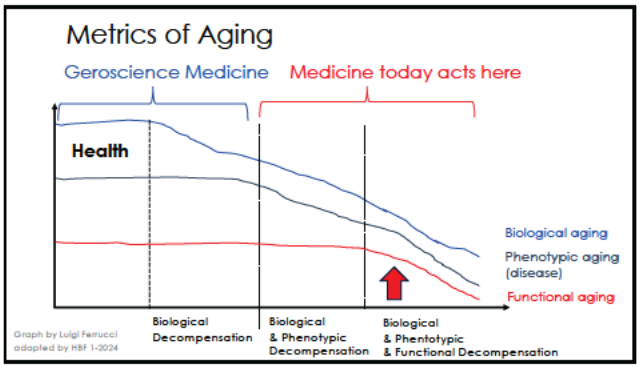
Metrics of Aging



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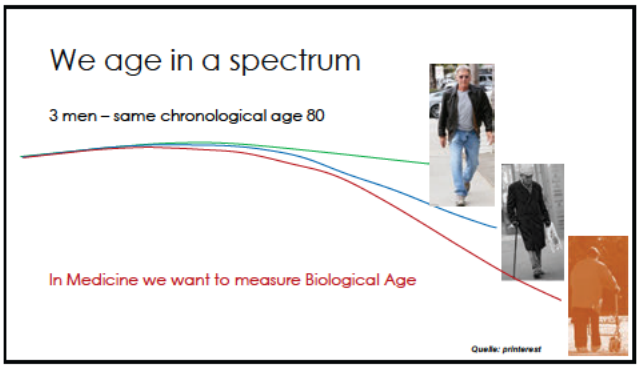
We age in a spectrum



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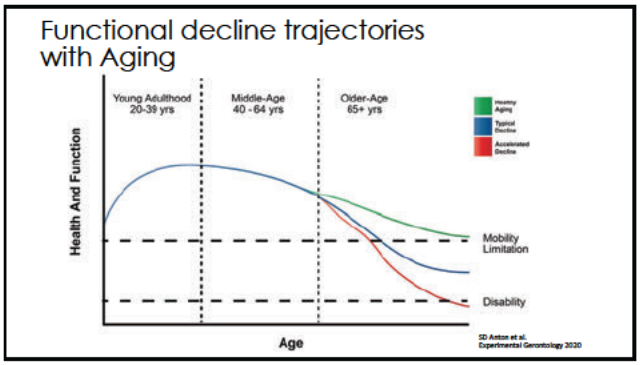
Functional decline trajectories with Aging



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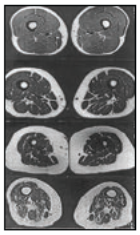
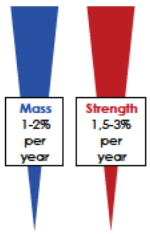
Muscle





40% muscle mass loss between age 20 to age 80

Volpi E. et al. Curr Opin Clin Nutr Metab Care. 2004 Jul; 7(4): 405–410.
Lexell et al. J. Neurol. Sci 84:275, 1988.
Koopman R. van Loon LJ. Journal of applied physiology 2009

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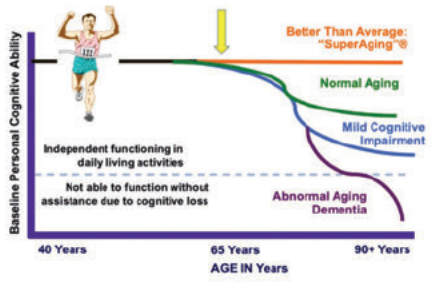
Same goes for the brain



https://www.brain.northwestern.edu/about/_news-articles/20210311-aging.html

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Think connected

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Loss of Hearing and Dementia Risk

DEMENTIA INCIDENCE IN 639 ADULTS FOLLOWED FOR >10 YEARS IN THE BALTIMORE LONGITUDINAL STUDY OF AGING (BLSA)

Severe hearing impairment associated with 5-fold risk of dementia

Hazard ratio of incident all-cause dementia (compared to normal hearing)[a]

	HR	95% CI	p
Mild	1.89	1.00 – 3.58	0.05
Moderate	3.00	1.43 – 6.30	.004
Severe	4.94	1.09 – 22.4	.04

[a] Adjusted for age, sex, race, education, DM, smoking, & hypertension

Lin et al., Arch Neurol., 2011

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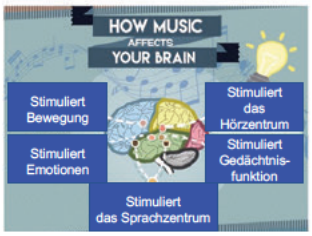
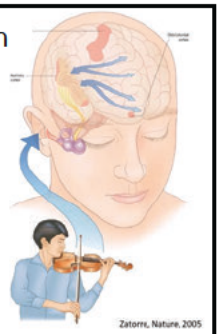
Hearing and cognitive function





Music activates multiple brain function

Zatorre, Nature, 2005

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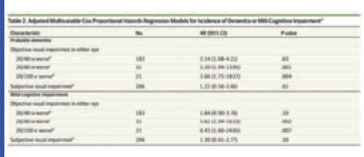
Vision impairment and dementia risk

Severe vision impairment associated with 5-fold risk of dementia



Association of Visual Impairment With Risk of Incident Dementia in a Women's Health Initiative Population. Paine AJ, Thao BA et. al.; *JAMA Ophthalmol.* 2020;138(6):624-633.

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How Loneliness Is Damaging Our Health

The New York Times

Even before the pandemic, there was an "epidemic of loneliness," and it was affecting physical health and life expectancy.

April 2022

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Loneliness
reduces healthy life expectancy

more dangerous than 16 cigarettes a day

more dangerous than overweight

more dangerous than 6 alcoholic drinks a day

more dangerous than immobility

The New York Times

https //www nytimes com/2022/04/20/nyregion/loneliness-epidemic html

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Mechanisms

Stress

unhealthy lifetime

less selfcare

EU 2022 report on Loneliness and health

NY Times April 2022

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Isolation doubles risk of dementia

How?

Teltteh J. et al. BMJ Open Ophthalmol. 2020 5(1): e000492.
Sundström A. et al. J Gerontol B Psychol Sci Soc Sci 2020

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What can we do?
to prevent functional decline and increase healthy longevity

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ICOPE - **Monitoring**
WHO Integrated Care for Older People

World Health Organization ICOPE

ICOPE offeres to monitor and support function at the public health level

ICOPE captures six integrated domains of function that people value most

https://www.who.int/teams/integrated-health-services/clinical-services-and-systems/icope/icope-monitoring

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Intrinsic Capacity

combination score of the 6 functions that people value most

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ICOPE - **Monitoring**

WHO Integrated Care for Older People

World Health Organization | ICOPE

Why build on ICOPE intrinsic Capacity?

1) **Feasibility of implementation shown in a large-scale global study**

(Tavassoli N et al. Lancet Healthy Longevity 2022;3(6):e394-404)

2) **Relevant to overall health**: predicts current and future health state, and future care needs

(Beard JR et al. J Gerontol A Biol Sci Med Sci 2022;77(1):94-100)

ICOPE offers a concept to **address Aging** based on six functional domains

Low-cost monitoring accessible for all

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World Health Organization

"Healthy longevity is the process of and maintaining the functional ability that enables wellbeing in older age"

Age-associated decline in intrinsic capacity (function) included in the ICD-11 (2022), code MG2A

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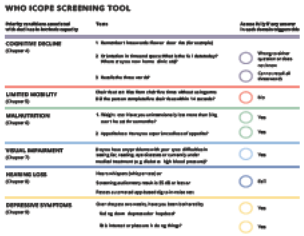
ICOPE Screening – step 1



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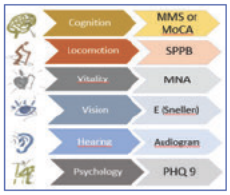
ICOPE Nurse Assessment – step 2



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Integrated Intervention – Step 3

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Limited mobility

Limited mobility is found in 39% of people over 65 years of age (2014).

Integriert

- **Assess mobility**
- **Promote a combination of exercise** (strength/resistance, aerobic, balance, flexibility training)
- **Improve nutrition**
- **Review and eliminate unnecessary medication**
- **Assess and manage pain**
- **Adapt home to provide safe spaces and ensure accessibility**
- **Provide assistive devices** such as canes, crutches and walkers

ICOPE

Cognitive decline & dementia

The number of people living with dementia worldwide (around 50 million in 2015) will almost triple by 2050.

Integriert

- **Assess cognitive capacity**
- **Identify reversible conditions that could cause cognitive decline** such as severe dehydration, delirium and polypharmacy
- **Offer cognitive stimulation and combination of exercise** (strength/resistance, aerobic, balance, flexibility training)
- **Assess the need for social care and support**
- **Assess caregiver's burden** and **provide support**

ICOPE

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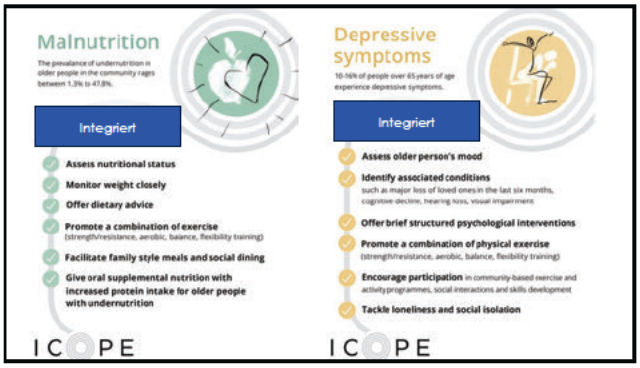

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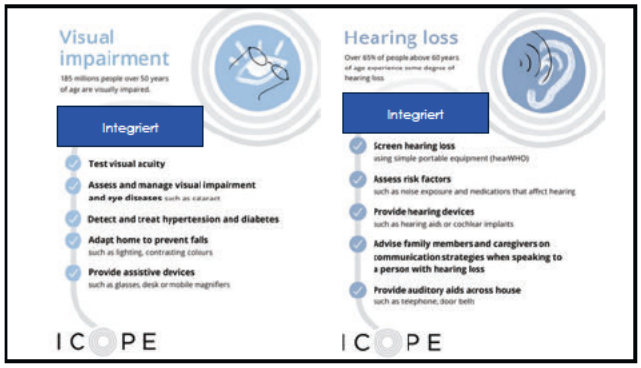

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Where do we stand in CH?

Can Lifestyle interventions change functional decline?

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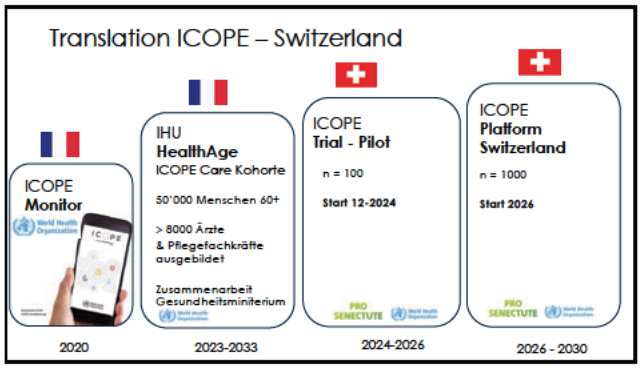

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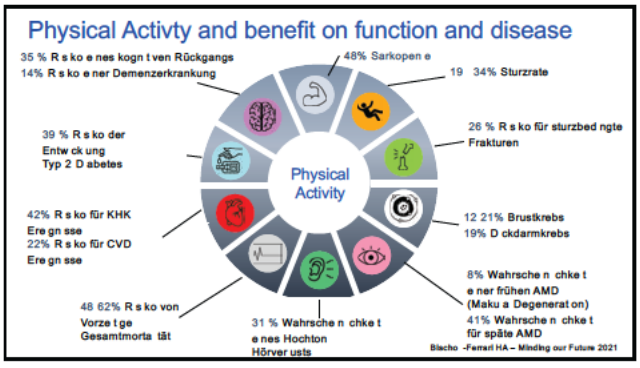

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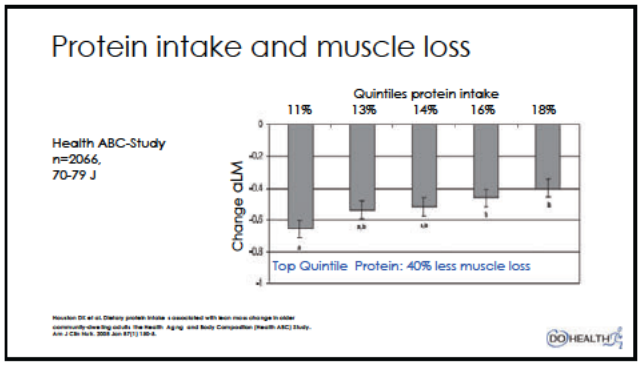

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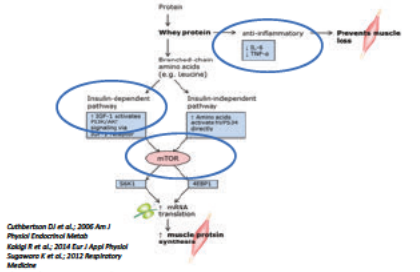
Effect of Whey Protein on functional decline and falls



STRONG

SNF – IICT trial
800 Teilnehmer 75+
Zürich&Basel

2019 to 2025

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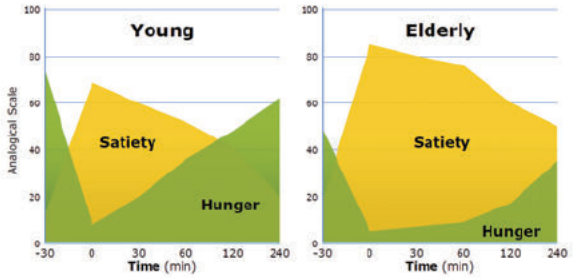
Satiety is prolonged in older adults



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Not eating at older age is detrimental

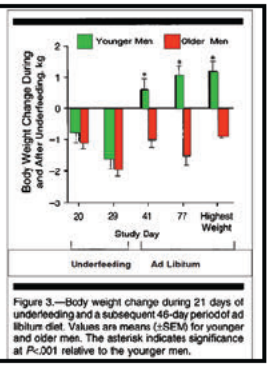

Figure 3.—Body weight change during 21 days of underfeeding and a subsequent 46-day period of ad libitum diet. Values are means (±SEM) for younger and older men. The asterisk indicates significance at $P<.001$ relative to the younger men.

Roberts SB et al. Control of Food Intake in Older Men. JAMA 1994

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Summary

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Healthy longevity not aligened with total longevity today

Europe Total longevity (2020 data) 80 years	⟷ 20% gap ⟷	Europe Healthy longevity (2020 data) 64 years

already today, 25% of life, most of retirement age, is spend with impaired function and reduced health

ec.europa.eu/eurostat

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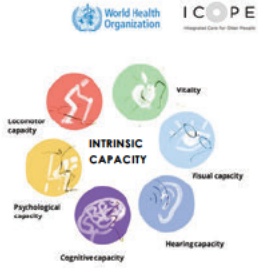
ICOPE

Personalized function-centered entry gate to prevention

of functional decline and healthy longevity at the public health level



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Opportunity ICOPE

Enable individuals to influence their own ageing process and thereby extend their healthy life expectancy - reach everyone

Early diagnosis – by empowering individuals to self-monitor the six key functions

Systemic look on health

Reduce healthcare costs

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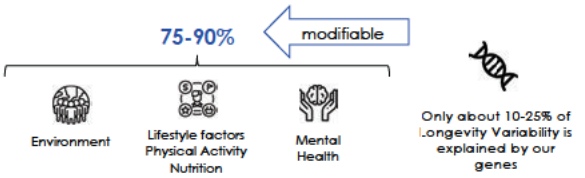
ICOPE implements life-style factors that move biology of aging



Lopez-Otin C. Cell 2013
Passarino G et al. Immun Ageing 2016

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Public Event DO-HEALTH 15.11.2024

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SIAF – Podium 15.11.2024

Panel on Happiness and Longevity in Old Age

Prof. Linda Fried

Wir wagen einen Blick in die moderne alternde Gesellschaft.
Podiumsgespräch mit Donna Leon, Linda P. Fried, Heike A. Bischoff-Ferrari und Urs Zeltner.

Donna Leon
Prof. Dr. Linda P. Fried
Prof. Dr. med. Heike A. Bischoff-Ferrari
Urs Zeltner

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