# How We Age in a Changing World?

## From muscle and metabolic health to cognitive function and livable cities

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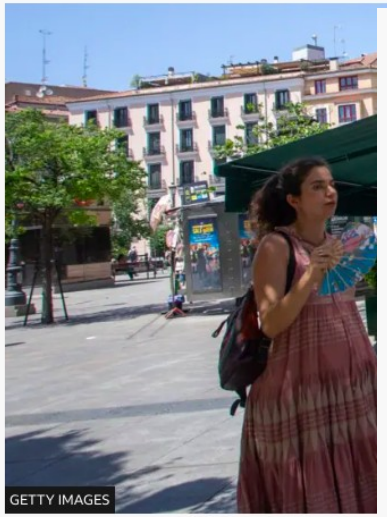
**FAPESP Week - Netherlands 2026**
**Process Number 2026/21479-2**

When we think about what makes a city a healthy place to live, we often focus on healthcare and individual lifestyle choices.



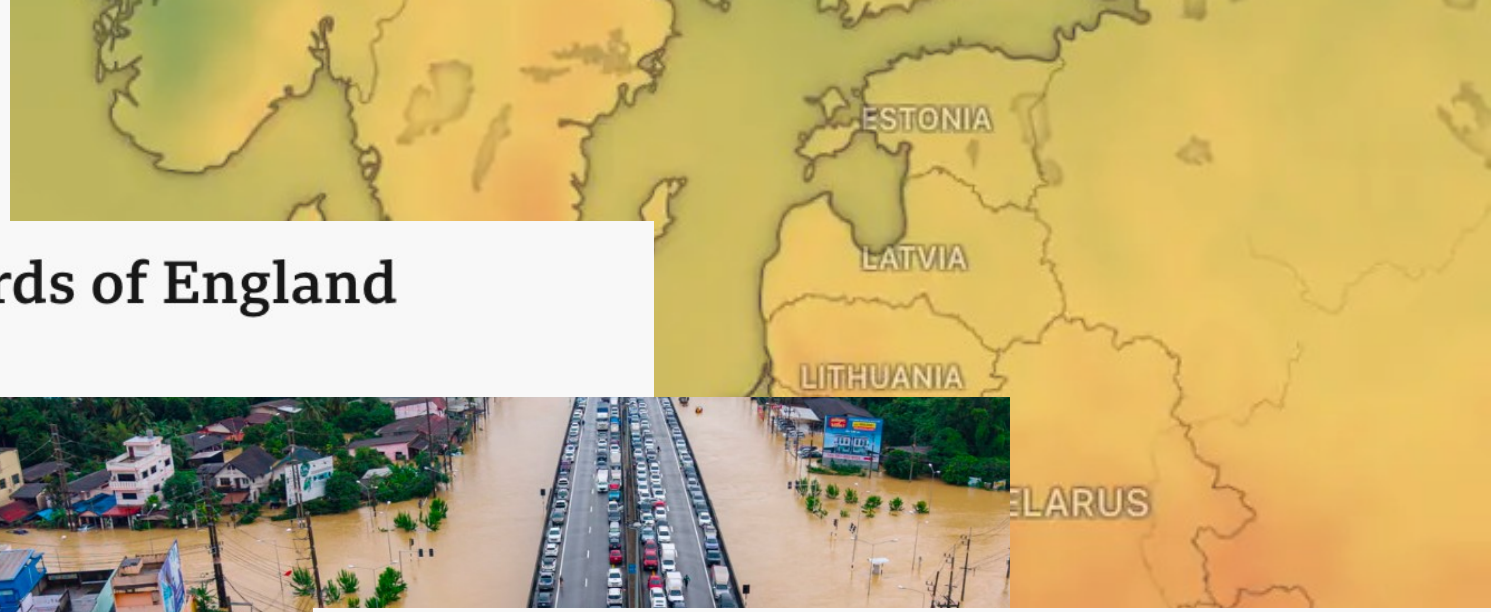
How does the city around us shape our ability to age healthily, maintain our independence, and enjoy a good quality of life?

# Temperature exceeds 40C in parts of Europe - is a September heatwave likely for UK?




**Sarah Keith-Lucas**
Lead Weather Presenter

5 September 2026 · 695 Comments




# More than two-thirds of England now in drought




All of Wales and parts of England were alre

**Ella Kipling**, **Justin Rowlatt**, Climate e



Vehicles parked on an elevated road to keep them away from floodwaters in Hat Yai in Thailand. Photograph: Arnun Chonmahatrakool/Thai News Pix/AFP/Getty Images

This article is m

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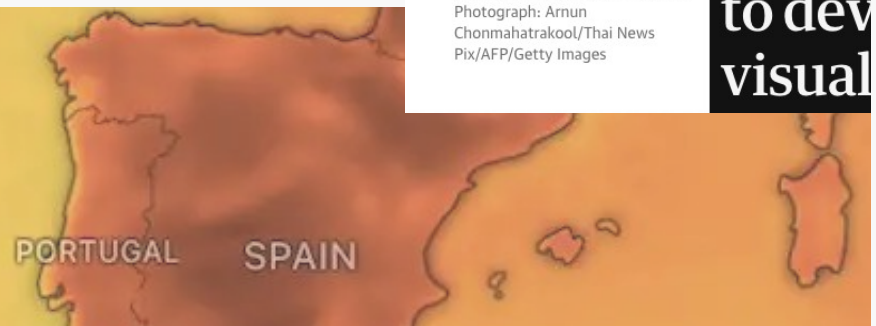
# UN warns of 'supersized' El Niño as countries prepare for impact



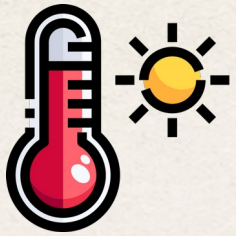

Countries in East Africa, like Kenya, experienced intense rainfall during the last El Niño event

**Esme Stallard**, senior climate and science reporter, **Mark Poynting and Becky Dale**, BBC Verify and **Yvette Tan, Tiffanie Turnbull and Nikita Yadav**

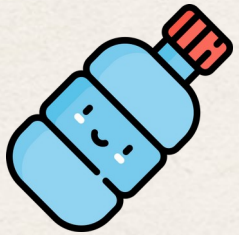




# Why do elderly people suffer more from climate change?



**Impaired thermoregulation**



**Dehydration during heat exposure, acute kidney injury and cardiovascular stress**



**Malnutrition and electrolyte disturbance during droughts, infection and psychological distress following floods.**

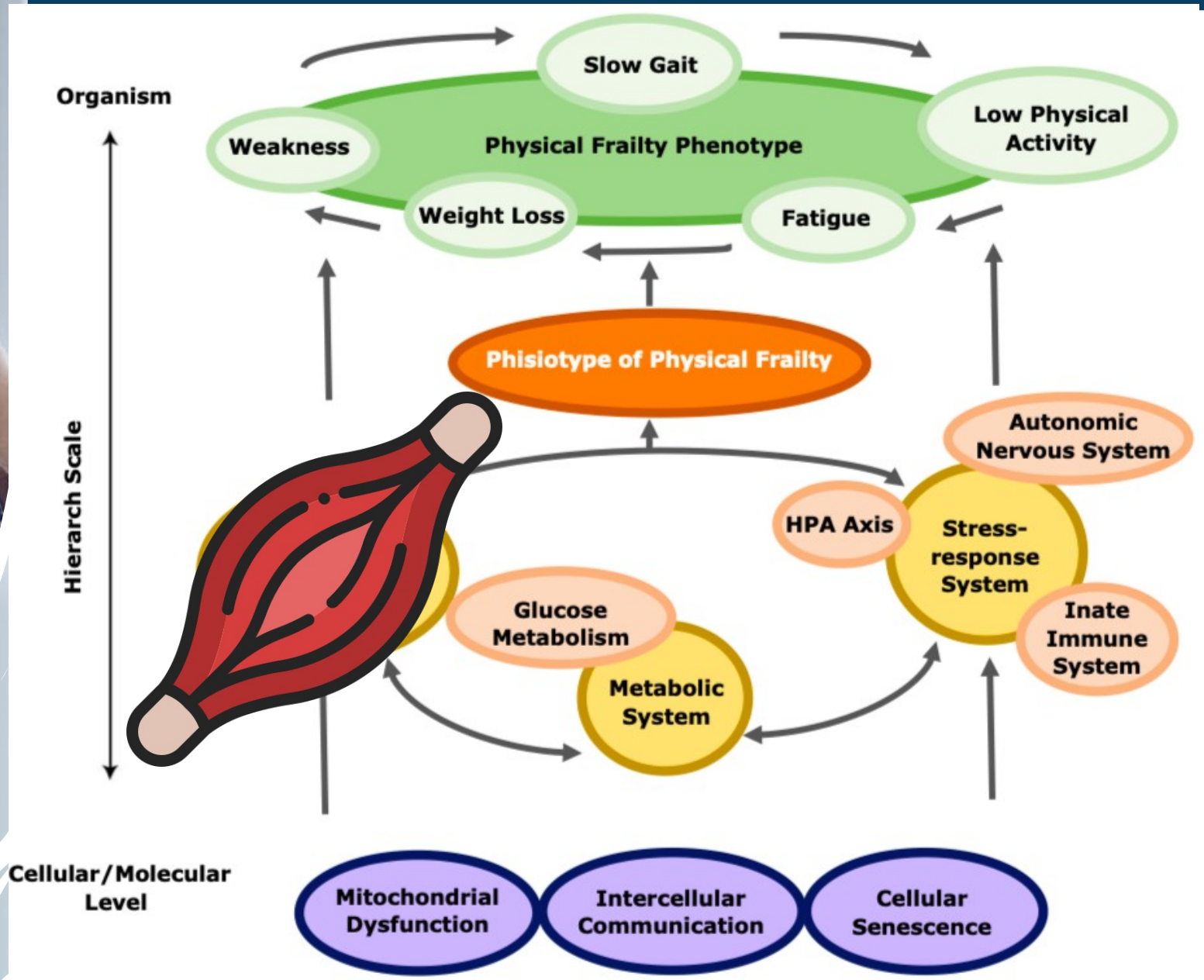


**Reduced mobility and dependence**





# Frailty Syndrome



# InterCoLAgeing



UCL



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ufscar



UCL



UT Health San Antonio



FIOCRUZ
Fundação Oswaldo Cruz

# Musculoskeletal Ageing

We have been studying the **progression of musculoskeletal ageing**, including changes in muscle strength, physical performance, and functional independence.

São Paulo Research Foundation
Young Investigator Grant Number 2018/13917-3

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MARIA CL
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THE GERONTOLOGICAL SOCIETY OF AMERICA®

*Journals of Gerontology: Medical Sciences*
cite as: *J Gerontol A Biol Sci Med Sci*, 2018, Vol. XX, No. XX, 1–7
doi:10.1093/gerona/gly182
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OXFORD

Research Arti

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**RESEARCH PAPER**

# Is dynapenic abdominal obesity a risk factor for cardiovascular mortality? A competing risk analysis

PAULA CAMILA RAMÍREZ[1,2], DAYANE CAPRA DE OLIVEIRA[1], ROBERTA DE OLIVEIRA MÁXIMO[1], ALINE FERNANDA DE SOUZA[1], MARIANE MARQUES LUIZ[1], MAICON LUÍS BICIGO DELINOCENTE[3], ANDREW STEPTOE[4], CESAR DE OLIVEIRA[4], TIAGO DA SILVA ALEXANDRE[1,3,4,5]

Calcified Tissue International
https://doi.org/10.1007/s00223-022-01021-8

ORIGINAL RE

## Are Serum Factors fo

Maicon Luís Bi
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DOI: 10.1111/dom.16317

ORIGINAL ARTICLE

WILEY

## Is serum 25 incidence o from the Er

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Aline Fernanda d
Sara Souza Lima
Thaís Barros Pere
Cesar de Oliveira

GeroScience
https://doi.org/10.1007/s11357-025-01800-9

ORIGINAL ARTICLE

## Vitamin D def in individuals

Natália Cochar-Soares
Maicon Luis Bicigo De
Tiago da Silva Alexand

Received: 27 March 2025 /
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*nutrients*

MDPI

*Article*

## Is Abdominal O Vitamin D Insuf Evidence from t

Thaís Barros Pereira da Silva
Cesar de Oliveira [4] and Tia

*Diabetes, Obesity and Metabolism*

WILEY

ORIGINAL ARTICLE OPEN ACCESS

# Does the Combination of Abdominal Obesity and Vitamin D Deficiency Increase the Risk of Death in Individuals Aged 50 or Older? Evidence From the ELSA Study

Joyce da Silva Milliati[1] | Thaís Barros Pereira da Silva[2] | Roberta de Oliveira Máximo[2] | Mariane Marques Luiz[3] | Sara Souza Lima[3] | Andrew Steptoe[4] | Cesar de Oliveira[5] | Tiago da Silva Alexandre[1,2,3,5]

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**Keywords:** 25(OH)D | abdominal obesity | ELSA study | mortality | vitamin D

# Interactions between the brain, muscle, bone and adipose tissue:

## Unveiling Mechanisms to Prevent Frailty and Promote Healthy Ageing

















FAPESP
FUNDAÇÃO DE AMPARO À PESQUISA DO ESTADO DE SÃO PAULO

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UCL

uk biobank

elsa English Longitudinal Study of Ageing

ELSI BRASIL
Estudo Longitudinal da Saúde e Bem-Estar dos Idosos Brasileiros

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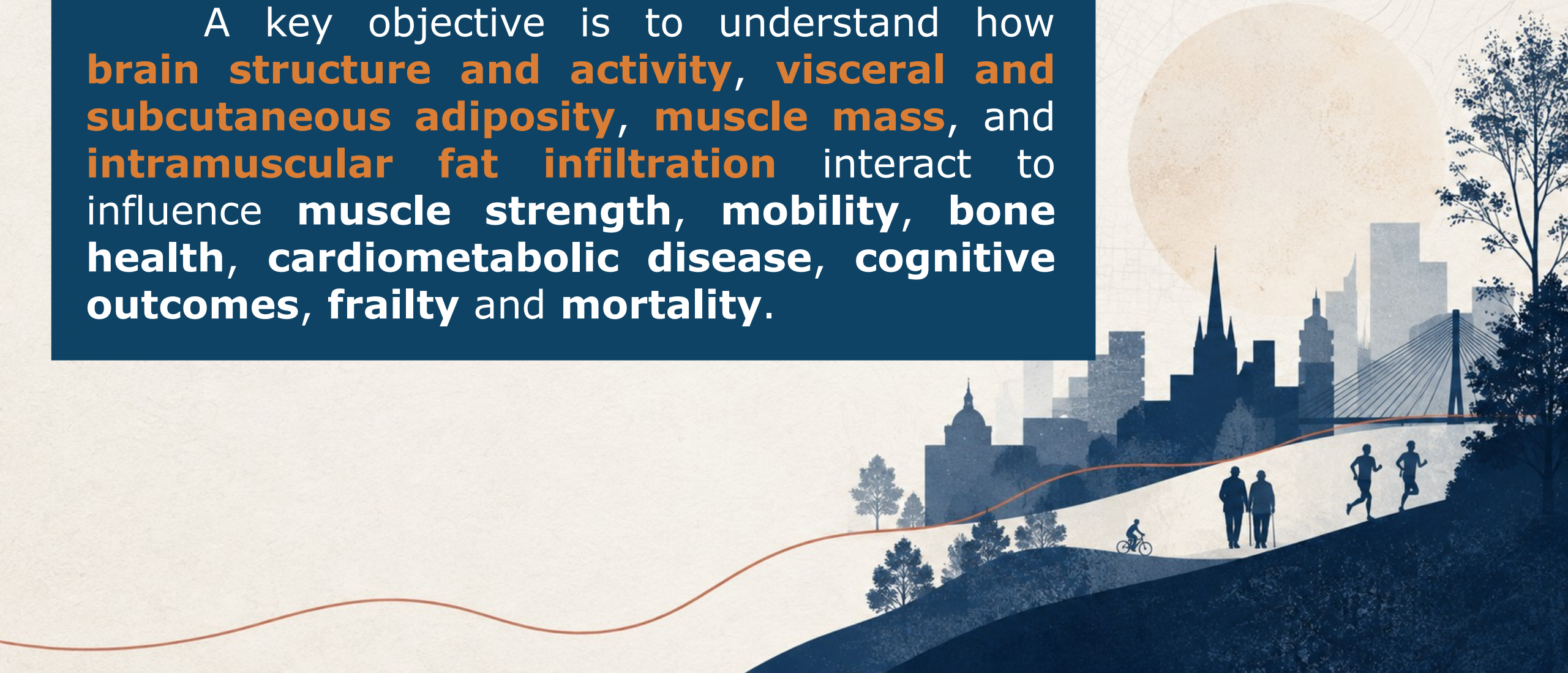
UNICAMP

São Paulo Research Foundation Thematic Grant Number 2024/01918-6

A key objective is to understand how **brain structure and activity**, **visceral and subcutaneous adiposity**, **muscle mass**, and **intramuscular fat infiltration** interact to influence **muscle strength**, **mobility**, **bone health**, **cardiometabolic disease**, **cognitive outcomes**, **frailty** and **mortality**.



By combining **advanced imaging**, **longitudinal epidemiology**, and **machine learning**, the project aims to identify underlying mechanisms and **develop predictive models of frailty and healthy ageing** that can be translated into clinical practice across different socioeconomic contexts.





# THRIVE

Transforming Health and Resilience for Healthy Lives

PROJECT

The consortium brings together researchers from **17 countries** and institutions and draws on **17 international ageing cohorts**, representing approximately **50,000 older adults**.



McGill | Division of Geriatric Medicine

clsa élcv
Canadian Longitudinal Study on Aging
Étude longitudinale canadienne sur le vieillissement

Centre universitaire de santé McGill
Institut de recherche



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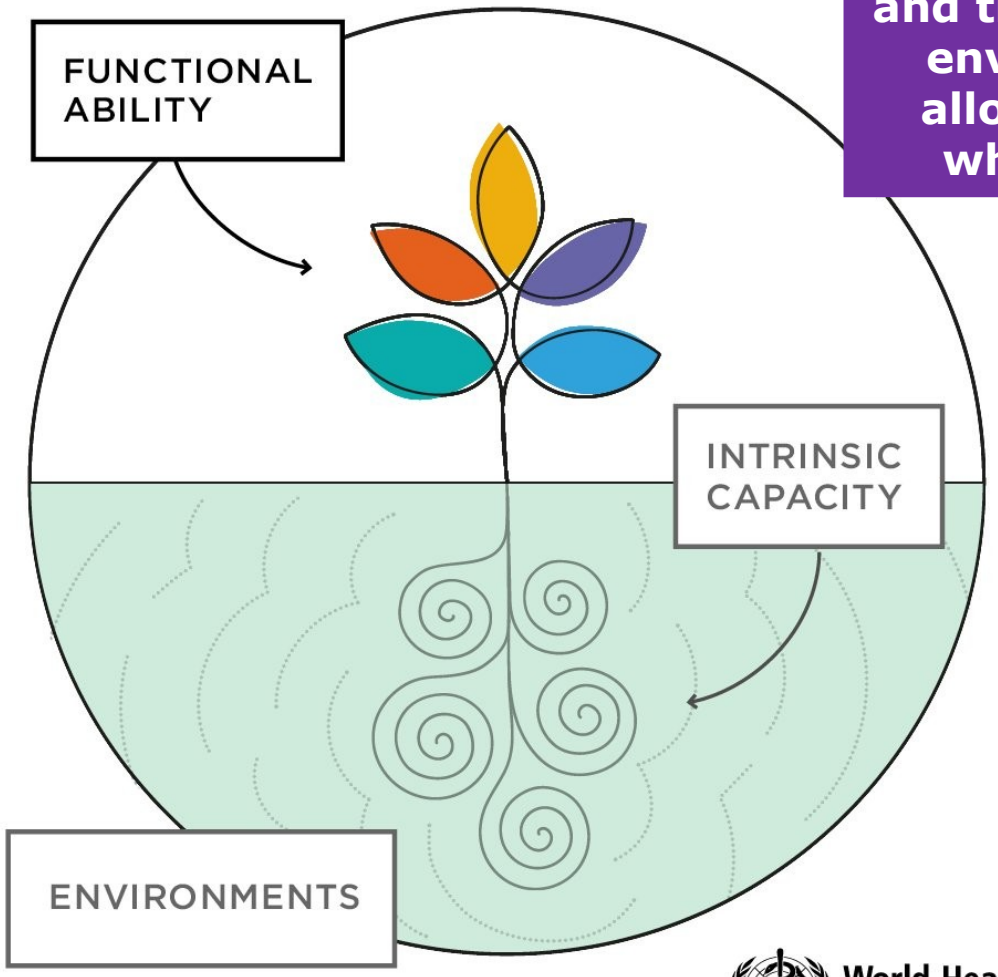
UCLM Universidad de Castilla~La Mancha

elsa English Longitudinal Study of Ageing

tilda
The Irish Longitudinal Study on Ageing

UFRN

**Is the combination of a person's physical and mental capacities and their surrounding environment that allows them to do what they value**






**Key domains of intrinsic capacity**

5 **Cognition** | Cognitive decline

6 **Locomotor capacity** | Limited mobility

7 **Vitality** | Malnutrition

8 **Vision** | Vision impairment

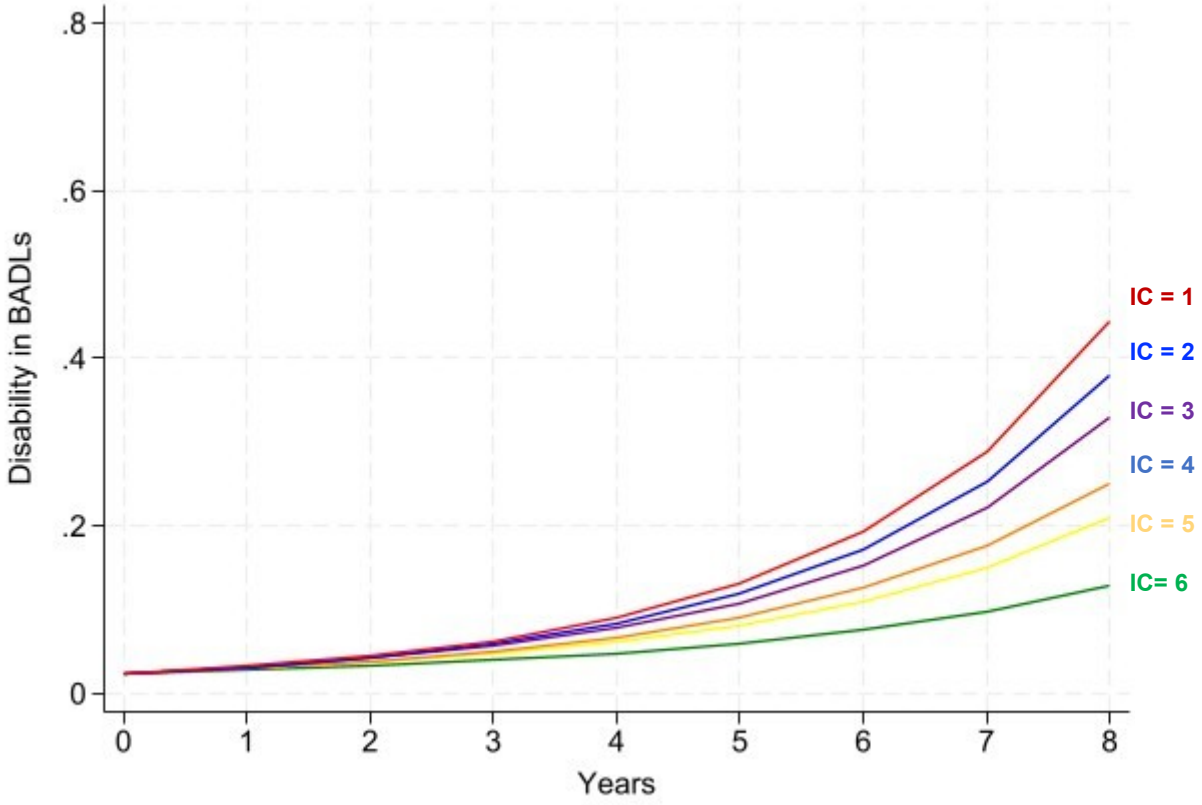
9 **Hearing** | Hearing loss

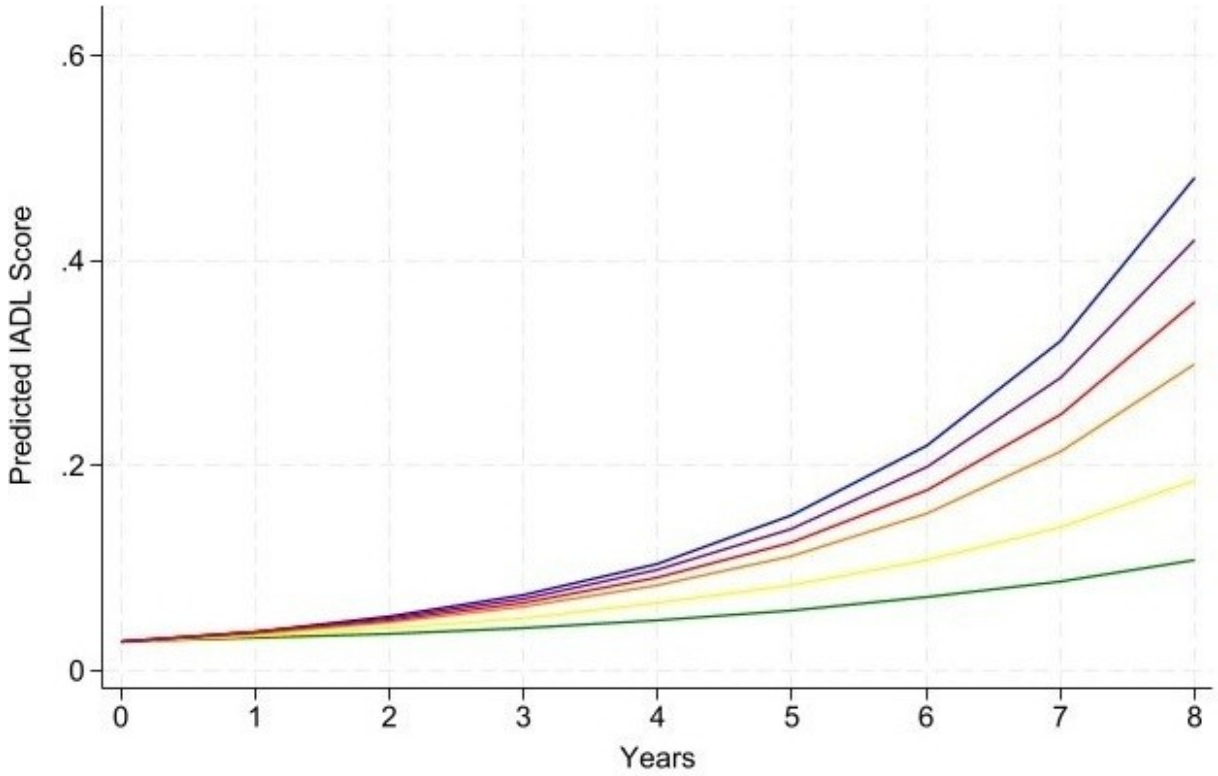
10 **Psychological capacity** | Depressive symptoms

World Health Organization

**Livable cities**

# Intrinsic Capacity and Disability Progression



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Published: 16 April 2026
**Special Issue: Osteosarcopenia and Intrinsic Capacity | Review**

# The crossroads between osteosarcopenia and intrinsic capacity—a narrative review

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**Special Issue: Osteosarcopenia and Intrinsic Capacity | Research Article**

# The interplay between osteosarcopenia and intrinsic capacity: insights and associations with all-cause mortality in the Toledo Study for Healthy Aging

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# Human Ageing Research Center



**Dr. Tiago da Silva Alexandre**
**Dr. Marcia Regina Cominetti**

**Financier of Studies and Projects**
**Process Number: 1383/25**

CENTROS DE CIÊNCIA PARA O DESENVOLVIMENTO

FAPESPWeek NETHERLANDS
OCT 27-29, 2026

# Science Center for Development in Intelligent Models for the Treatment of People with Dementia in the Brazilian Health System (CCD-MIDEM)

By integrating **artificial intelligence**, **clinical assessments**, **neuropsychological testing**, **blood-based biomarkers**, and **digital health** management tools, CCD-MIDEM seeks to **accelerate diagnosis**, **support personalized care**, **optimize healthcare services**, and **improve quality of life** for people living with dementia and their caregivers.

**Process Number: 2026-04592-0**

**After all this, we must never forget that urban planning is an integral part of public health.**



**The city determines whether an older person can walk safely, access food, reach healthcare services, exercise, socialize with others, and remain physically active. Therefore, the urban environment plays a key role in disease prevention.**




# THANK YOU

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**Process Number**
**2026/21479-2**