

# EIP AHA Action Plan A3:

# Action for prevention of functional decline and frailty

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EUROPEAN INNOVATION PARTNERSHIP on  
ACTIVE AND HEALTHY AGEING (EIP AHA)

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# Action Plan on 'Prevention and early diagnosis of frailty and functional decline, both physical and cognitive, in older people'

## A3 Objectives and Actions

Develop and implement sustainable multimodal interventions for the prevention and comprehensive management of functional/cognitive decline and frailty.

Manage frailty and functional decline

- Biomarkers
- Intervention programs

Enhance participation and independence

- Education
- Resource and social networks
- Strategies

Systematic screening

- Screening programmes
- Screening tools

Integrated pathways

- Business models and support services
- Training

Knowledge generation

- Support to policy
- Imaging and novel techniques/approaches
- Learning programmes

Sustainability of health and social care

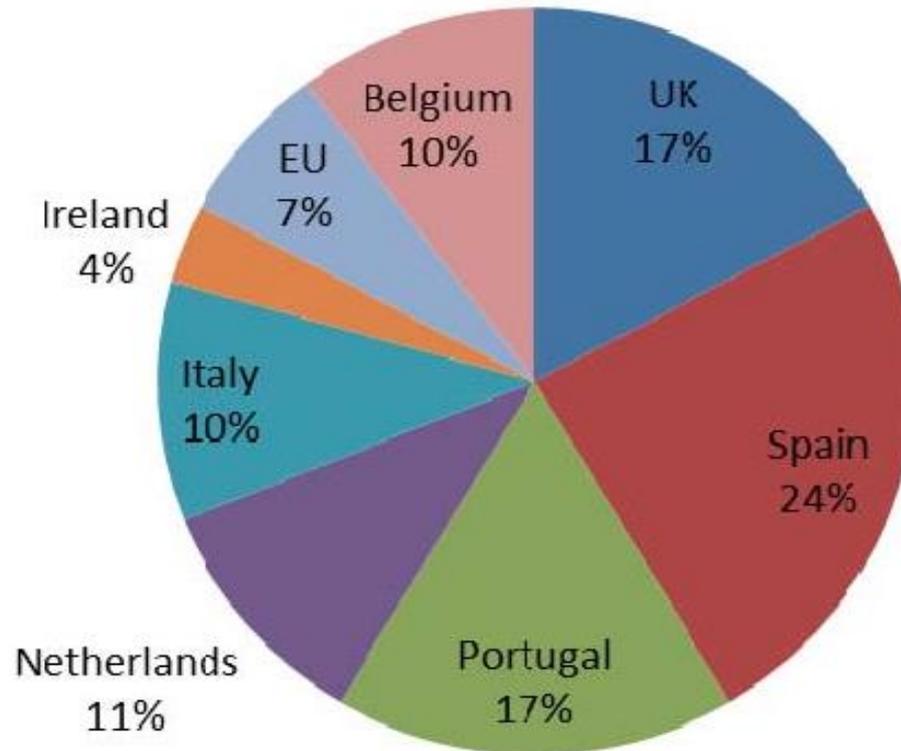
- Best practices and guidelines

Cooperation

- Events and networks

## A3 Partners

The Action Group brings together partners representing >40 multi-stakeholder commitments from national, regional and local authorities, research centres, academia, industry, enterprises and existing consortiums across the EU, for a total of >30 specific commitments.



to 2012

## A3 Partners

### Our members at a glance

160 partners, expressing a total of 131 commitments, are working together in this multidisciplinary Action Group: health/care providers, large businesses and SMEs, advocacy groups, research institutions, EU or international organisations. Research institutions feature prominently Group's commitments along with health/care providers.

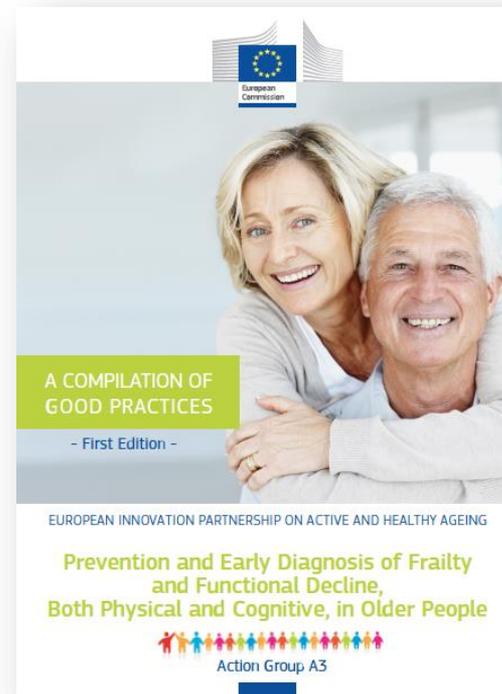
in 2013

## A3 Commitment

- **Increase understanding** around frailty and the prevention, early diagnosis and management of functional decline, both physical and cognitive, in older people.
- **Shift the approach from reactive disease management to screening, triage, anticipatory care and prevention of functional decline.** This shift is to be brought about through innovative, coordinated and comprehensive community based prevention, assessment and integrated case management systems delivered within an integrated health and care system.
- **Develop and implement early diagnosis and screening programmes for selected conditions that are associated with functional decline** – eg cardiovascular disease, diabetes, dementia, osteoarthritis and osteoporosis.
- Where physical problems related to functional decline and frailty are diagnosed, **solutions for optimal treatment** will be used.

(cont.)

- **Validate programmes to prevent functional decline and frailty**, focusing on nutrition, physical activity and cognitive impairment in older people.
- **Develop tools, networks and information to support these programmes** to reach at least 1000 care providers across the EU.
- **Create a functional capacity evaluation tool for active ageing in the workplace** which could help establish synergies/ fit between capabilities and workload.



## A3 Target population

| <b>Category</b>                        | <b>Target population</b>   |
|--|--|
| Older people in the general population | Healthy and independent older people in risk of dependency, frailty, undernutrition, dehydration, obesity, cognitive impairment  |
| Independent patients                   | Polimedicated patients; multi-morbidity patients chronic diseases patients in general and for specific diseases (e.g. diabetic, Alzheimer, renal cancer); patients in general (eg during hospitalisation periods due to acute diseases or major surgical procedures) |
| Dependent patients                     | Disabled people; nursing home patients; terminal patients  |
| Caregivers                             | Formal and informal carers; health professionals in hospital and primary care doctors and nurses; pharmacists, dieticians, physiotherapists; patients' groups  |

# Example - Partner: UMINHO

University of Minho, Life and Health Sciences Research Institute (ICVS)

## Activities for the Objective

- Promote systematic-routine screening for pre-frailty
- Realise integrated pathways of care

## Deliverables

### Partner

#### **UMINHO**

- University of Minho, Life and Health Sciences Research Institute (ICVS)
- Regional health care centres
- Hospital de Braga, Braga
- Hospital de Guimarães, Guimarães

### Deliverable

Stratification (identification) of risk factors (clinical, biochemical and sociodemographic) in cognitive decline.

Individual feedback and engagement in healthcare (prototypes for monitoring of biological/biometric signs and symptoms).

# Common Tasks: Cognitive Decline

Coordinator:

Antonio Cano

8th Meeting - A3 Action Group



EUROPEAN COMMISSION  
DIRECTORATE-GENERAL HEALTH AND CONSUMERS



- ① Committed programme
- ② What have we done?
- ③ What are we doing?
- ④ What are we preparing?



## ① Committed programme

**Task 1: Update concepts in relation with cognitive decline evaluation, from MCI to dementia**

**Aim:** Review conceptual update  
**Starting date:** February 2014  
**Deadline:** November 2014.

**Task 2: Technology and screening**

**Aim:** Use of a serious games platform in screening for mild cognitive decline. Validation of the tool and large scale screening. (people older than 50 yrs.)  
**Deadline:** Interim analysis on July 2013. Second analysis on December 2014.

**Task 3: Update status of art concerning monitoring of the main forms of cognitive decline.**

**Aim:** Review biomarkers in cognitive decline and dementia. Main options and their role in monitoring. Biomarkers from biological fluids. Quality control. Magnetic resonance and cognitive decline. A critical approach to the role of biomarkers in the management of cognitive decline.

**Target population:** subjects older than 50 yrs.

**Setting:** community

**Starting date:** February 2014.

**Deadline:** November 2014.

**Task 4: Analyses of datasets from ongoing longitudinal studies: an initiative for progressing in analyses and modelling collaboration.**

**Aim:** Exploring complementary analyses in the trajectories of cognitive decline between four longitudinal studies in England [English Longitudinal Study of Ageing (ELSA)], Ireland [Irish Longitudinal Study on Ageing (TILDA)], Spain [Chronic Ailment Reduction after Menopause (CARMEN)] and the smaller scale Extra Care data in England, to facilitate sharing of analyses and modelling delivering insights into the predictors of transitions.

**Target population:** people older than 50 yrs.

**Setting:** community

**Starting date:** April 2014

**Deadline:** April 2015

**Task 5: State of art concerning strategies to reduce cognitive decline.**

**Aim:** Review strategies to reduce the burden of dementia and cognitive decline.

Prevention of cognitive decline: state of the art. Life style and reduction of cognitive decline: The role of physical activity. Interactions with the environment: the living environment and social contact. The role of ICT technology to promote social interaction. Lessons from cohort studies: the Irish Longitudinal Study on Ageing, the Aston Research Centre for Healthy Ageing (ARCHA)-Birmingham experience. The impact of gender: the Carmen issues.

**Target population:** people older than 50 yrs.

**Setting: community**

**Starting date:** February 2014

**Deadline: November 2015.**

**Task 6:  
Definition of a PhD program in Ageing, with specific modules for cognitive decline.**

**Aim:** To create an European PhD program on healthy ageing issues..

**Target population:** Postgraduates wishing to obtain PhD on healthy ageing issues.

**Setting:** European countries

**Starting date:** February 2014

**Deadline: June 2015**



## ② What have we done?

### The update review

Should we do screening for cognitive decline and dementia?

Calzà Laura<sup>a,b</sup>, Beltrami Daniela<sup>a</sup>, Gagliardi Gloria<sup>a</sup>, Ghidoni Enrico<sup>c</sup>, Marcello Norina<sup>c</sup>,  
Rossini-Favretti Rema<sup>d</sup>, Tamburini Fabio<sup>d</sup>

*After the first, Authors are listed in alphabetic order*

- ***Frailty, cognitive frailty and cognitive decline: not only in neurological disorders.***
  - Frailty and cognitive frailty
  - Cognitive decline and deterioration
- ***Moving from cognitive assessment toward cognitive screening***
  - Why early diagnosis
  - Screening tools
- ***The need for novelty: the language domain and perspective of automatic analysis of language production.***
- ***Ethical concerns.***



## Use of serious games platform for large scale screening: validation and large scale screening

Preliminary results show that *the score of the global index of correct actions - **Global correctness** - significantly correlates with the score at the MOCA test*



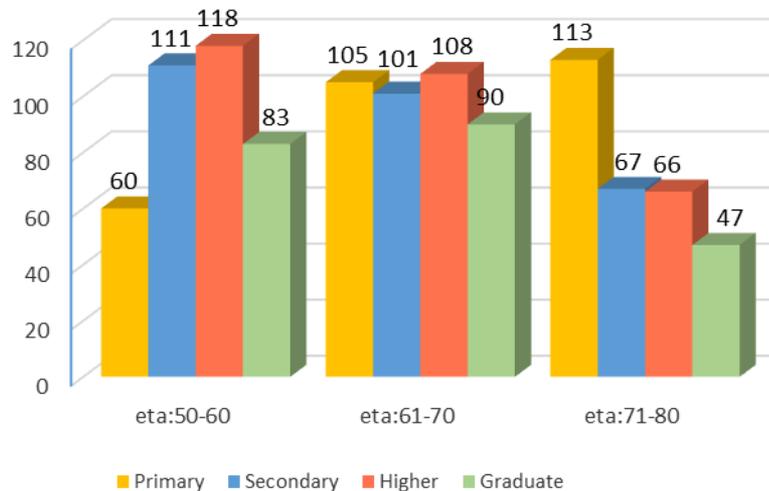
## Scientific Validation

STATE OF ART – APRIL 2015

**1.069 HEALTHY PEOPLE**



Group by Education Degree & Age  
(Sample: 1069 healthy aged 50 - 80)



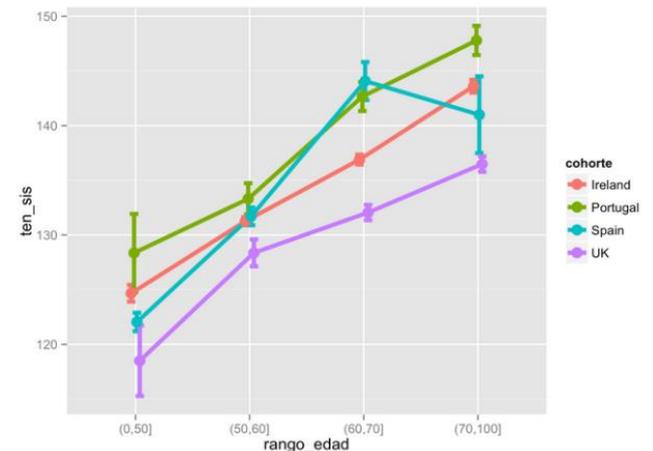
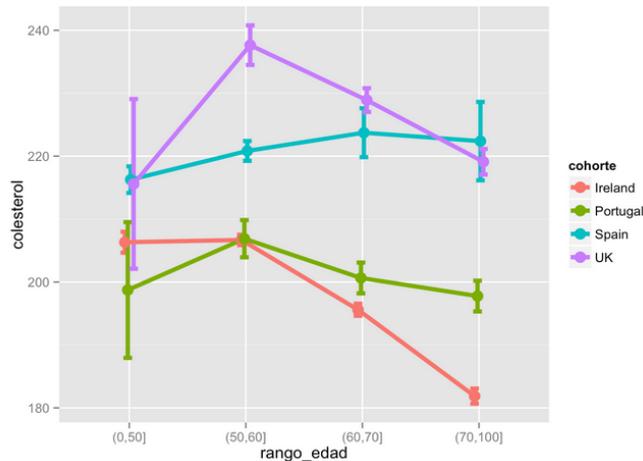


## Convergence work through cross analyses of European databases

### Somatometric and clinical cardiovascular risk factors in midlife and older women. A tale of four European countries.

Antonio Cano<sup>1,2,8</sup>, Carol Holland<sup>3,8</sup>, Joan Vila-Francés<sup>1,4</sup>, Alexis Boukouvalas<sup>3</sup>, James Brown<sup>3,8</sup>, Ana Castro<sup>2</sup>, Emilio Soria-Olivas<sup>1,4</sup>, Nadine Correia Santos<sup>5,8</sup>, Pedro Cunha<sup>5</sup>, Nuno Sousa<sup>5</sup>, Matthew D. O'Connell<sup>6,8</sup>, Joanne Feeney<sup>7</sup> and Rose Anne Kenny<sup>6</sup>.

TILDA  
ELSA  
SWITCHBOX  
CARMEN





## Proposals for funding: sMiLe (not funded) & FOCUS (funded)



**FOCUS - Frailty management Optimisation through EIP AHA Commitments and Utilisation of Stakeholders input**

### LIST OF APPLICANTS

| Applicant No*   | Applicant organisation name   | Country     |
|-----------------|---|-------------|
| 1 (Coordinator) | UNIVERSITAT DE VALÈNCIA (UVEG)                                      | SPAIN       |
| 2               | ROESSINGH RESEARCH AND DEVELOPMENT (RRD)                            | NETHERLANDS |
| 3               | WROCLAW MEDICAL UNIVERSITY (WMU)                                    | POLAND      |
| 4               | Aston Research Centre for Healthy Ageing Aston University (ARCHA)   | UK          |
| 5               | Fondazione IRCCS Cà Granda - Ospedale Maggiore Policlinico (POLIMI) | ITALY       |
| 6               | IRCCS Istituto Di Ricerche Farmacologiche "Mario Negri" (IRCCS-MN)  | ITALY       |
| 7               | Escola Superior de Enfermagem de Coimbra (ESEnfC)                   | PORTUGAL    |
| 8               | University of Aveiro (UAVR)   | PORTUGAL    |
| 9               | EVERIS SPAIN S.L.U (EVR)  | SPAIN       |
| 10              | ESAM TECNOLOGÍA S.L. (ESAM)   | SPAIN       |



### ③ What are we doing?

## Monographic issue on personalized medicine at midlife and beyond



1. Immunosenescence implications for diagnosing infection Prof Solana.
2. Sarcopenia and nutrition Vincenzo Malafarina, Univ Navarra.
3. Personalised remote health care for cardiovascular disease and diabetes, Laura Shane, Utah Univ.
4. Preventing falls and fractures a tailored approach, Anne Ambrose, Uiv Illinois.
5. Individualising prevention of cardiovascular disease Sheridan SL North Carolina Univ.
6. Complementary and alternative medicine: focus on older people T Low Dog and Paula Gardiner, Boston Univ Med Center.
7. Healthcare after breast cancer: the nononcological perspective Gertruide de Bock, Med Centre Univ Groningen.
8. Omics to personalise medicine, from Emory univ Atlanta.
9. Personalising treatment abroad for older people: benefits and risks, PM Carrera Univ Twente.



## Position Statement about Mild Cognitive Impairment

Clusters of authors according to section within the statement:

| Concept       | Risk factors | Assessment  | Management     |
|---------------|--------------|-------------|----------------|
| Joao Apostolo | M. O'Connell | C Holland   | R. Tabares     |
| M. O'Connell  | L Calzá      | G. Tadros   | B. Crespo      |
| Joanne Feeney | M Marcucci   | J. Apostolo | E. Vieta       |
|               | J. Feeney    | V Felipo    | D. Popovic     |
|               | I. Varela    | S. Pazzi    | C. Holland     |
|               | M. Sousa     | N. Santos   | G. Tadros      |
|               | Rui Costa    | J Malva     | A. Rauter      |
|               |              |             | R. Estevez     |
|               |              |             | M. de Girolamo |

### Revision of biomarkers to follow up cognitive decline and dementia

1. The biochemical indicators (beta-amyloid proteins and their A-beta precursors and tau). L. Calzá.
2. Imaging/Functional imaging (MR & fMR, PET and others). V. Felipo.
3. Genomics. J Malva & S. Pazzi



## **Extension of the convergence work through sharing protocols in the context of European databases**

### **CARMEN & ELSA**

Through introduction in CARMEN of protocols (C Holland & Esperanza Navarro) prospectively assessing:

- Frailty through Rockwood tool.
- Cognition and mood (HADS,...)

80 women from the Physical activity initiative.

- Assessment of the impact of PA on both dimensions.



## ④ What are we preparing?

1. Extension of the convergence work through cross analyses of European databases.
  - Musculo-skeletal dimension through analysis of bone metabolism (TILDA & CARMEN).
  - ICT use in cognitive decline assessment (serious games through CBIM)\*.
2. TASK 6 modification: converted into an ITN initiative (pending the Call).
3. Dissemination:
  - EIPAHA- ECHAlliance meeting in Valencia, due for 1st October 2015.

\*Extension & continuation of the task 2.