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Sunfrail Tool for the identification of Frailty
and Multimorbidity

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COMMENTARY

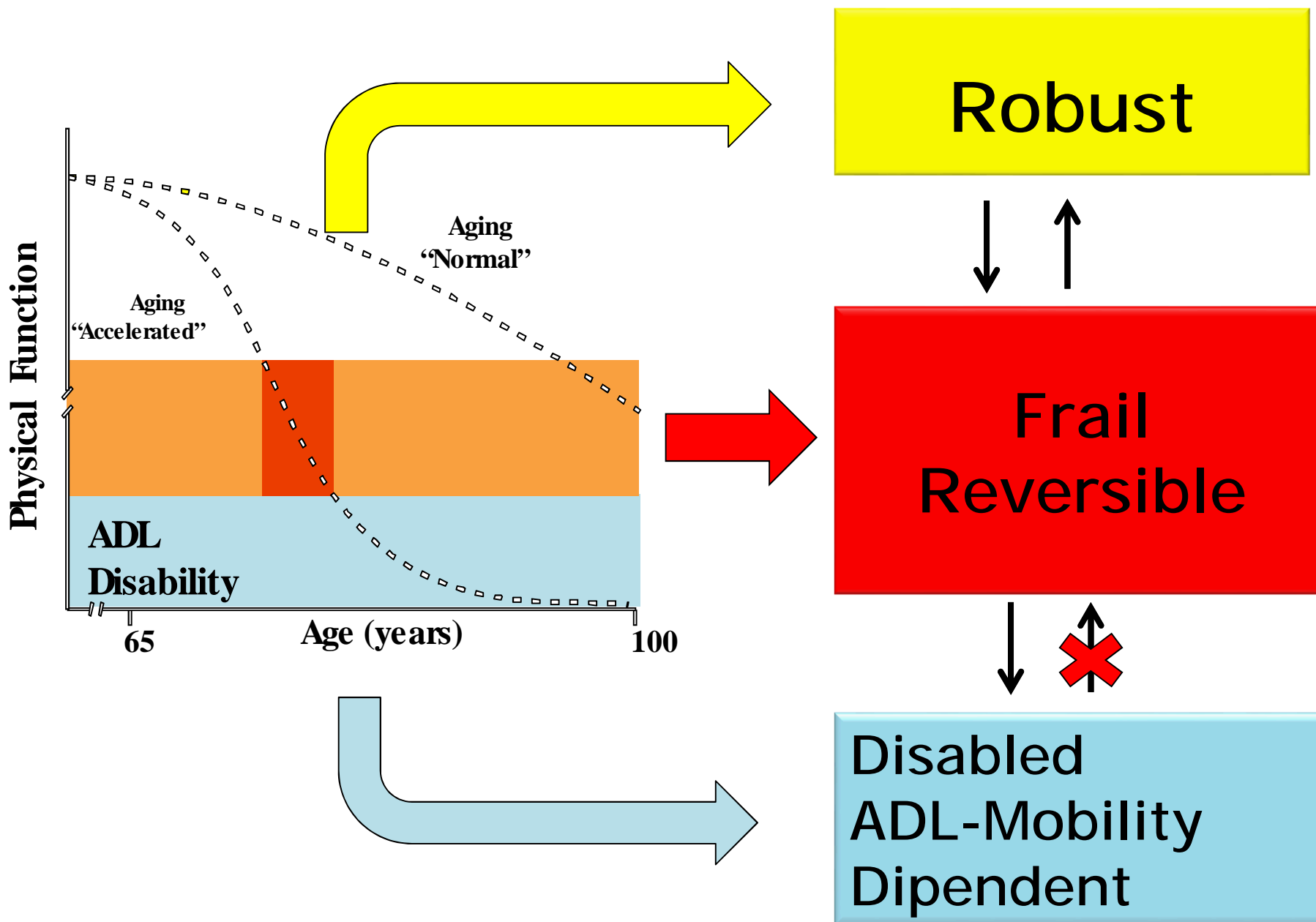
Changing the way “we” view and talk about frailty...

CAROLINE NICHOLSON¹, ADAM LEE GORDON², ANTHEA TINKER³

«The approach to Frailty both from patient and Public Health perspective is negative and is focusing on glass half empty (elevated risk) rather than half full (reversible condition and therapeutic target)»

The negative approach is not surprising since 'Oxford English Dictionary defines Frailty as «fault and infirmity» at physical and psychological level

3 categories of older subjects



FRAILTY



From most of GPs and older patient's perspective

Low priority issue

too early or too late phenomenon

Not enough clinically relevant

No easy to use tools
Actions: very expensive

DISABILITY



High priority

Efficient tools

too late phenomenon

very very expensive

Projection of non autosufficient older persons in Italy

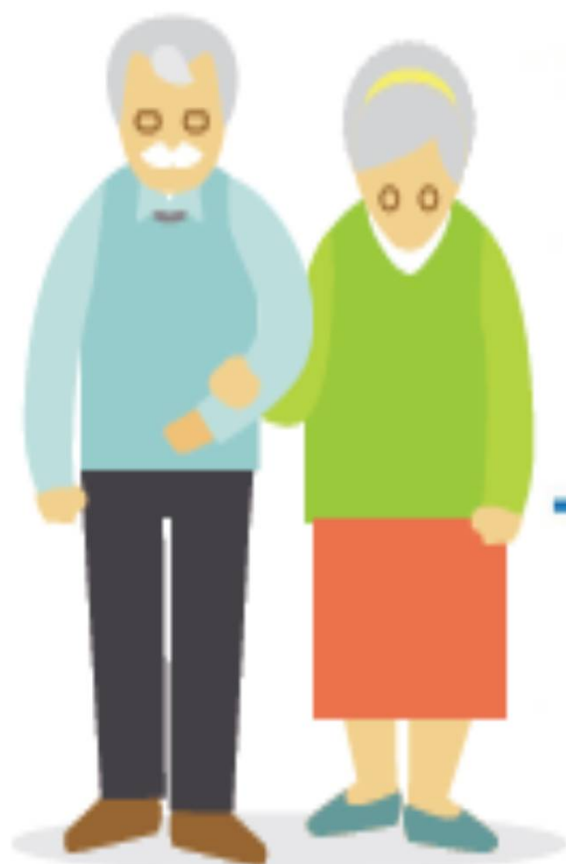
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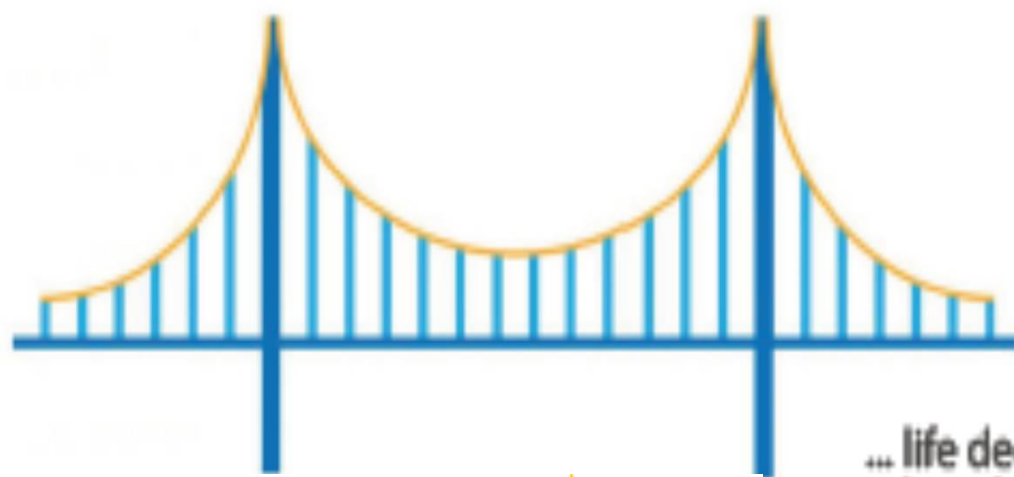
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FIGURE 3. PERCEPTION OF FRAILTY AND BARRIERS TO CARE: BRIDGING THE GAP

need for independence ——— FRAILTY? ——— state of...



* playing with grandsons
* driving * dancing * walking



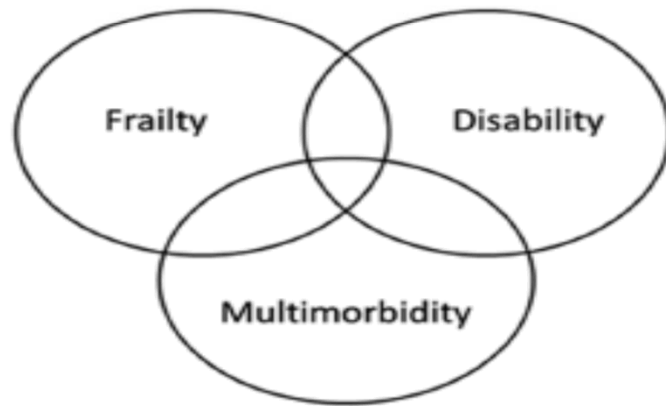
sunfrail 

... life decline and extreme vulnerability characterized by weakness and decreased physiologic reserve contributing to increased risk for falls, institutionalization, disability, death.

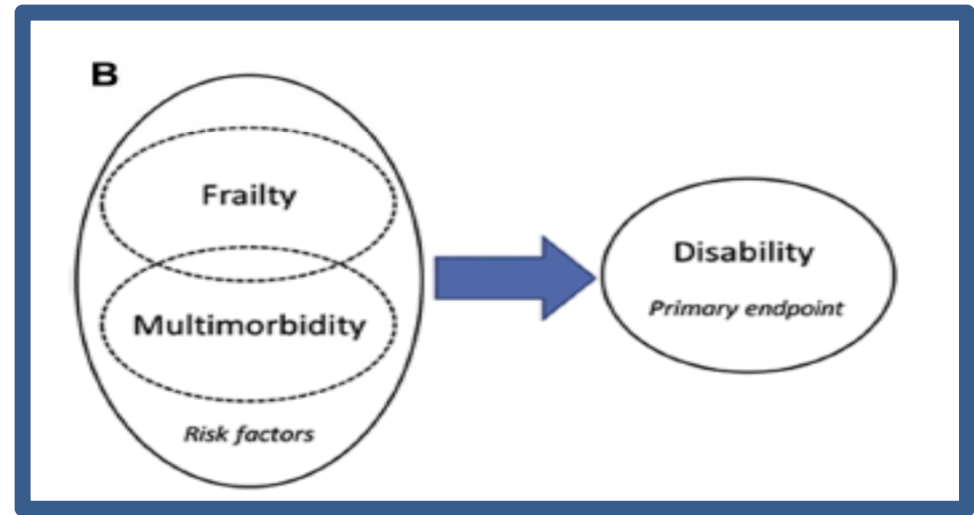
Controversies in Long-term Care

Frailty and Multimorbidity: Different Ways of Thinking About Geriatrics

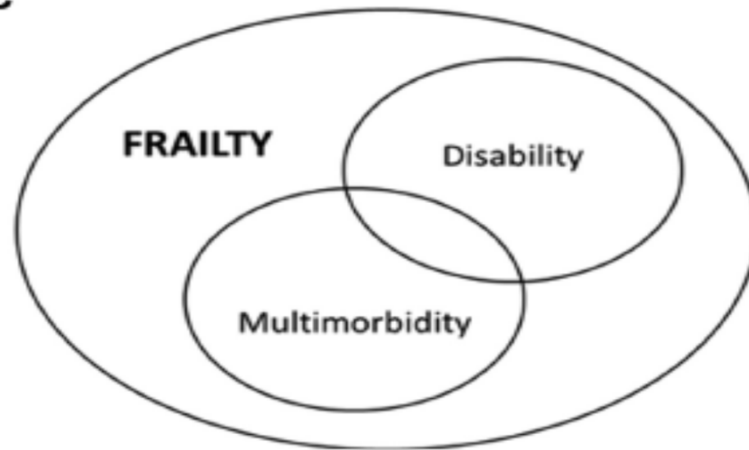
A



B



C



From Certification of Disability
To rapid assessment of frailty and Mulyimorbidity

**FRAILTY
AND
MULTIMORBIDITY**

DISABILITY

Simple
Tools

Multiprofessional

Hospital-Community
Platform

Barthel
ADL- IADL
Braden
InterRAI suite

Proactive
Interventions

Activation of Community System
Device Prescription

State of Art

Not easy to instruments

The majority is addressing disability rather than frailty

Time Consuming

Complex Score

Not translating in proactive interventions

Group of Experts of Sunfrail Consortium

- Public Health
- Geriatric Medicine
- Sociology

After Revision of the Literature, Good Practices and the selection of single items of preexisting instruments

Sunfrail Tool

QUESTIONNAIRE NUMBER		ID
Date and place		
PROFESSIONALS		
Professional	<ul style="list-style-type: none"> • Nurse • GPs • Other Professionals • Social Worker • Community Actor • Caregiver 	
BENEFICIARIES		
Gender	Age	Level of education
<ul style="list-style-type: none"> • M • F 	<ul style="list-style-type: none"> • 65-74 • 75-85 	<ul style="list-style-type: none"> • Low (Without studies, Primary School) • Medium (Secondary school, or vocational degree) • High (University, Master or PhD degree)
Questions		
1. Do you regularly take 5 or more medications per day?	• Yes	• No
2. Have you recently lost weight such that your clothing has become looser?	• Yes	• No
3. Your physical state made you walking less during the last year?	• Yes	• No
4. Have you been evaluated by your GP during the last year?	• Yes	• No
5. Have you fallen 1 or more times during the last year?	• Yes	• No
6. Have you experienced memory decline during the last year?	• Yes	• No
7. Do you feel lonely most of the time?	• Yes	• No
8. In case of need, can you count on someone close to you?	• Yes	• No
9. Have you had any financial difficulties in facing dental care and health care costs during the last year?	• Yes	• No

Population: context and target

Community-dwelling older subjects and outpatients with low and higher level of education, living in urban and rural areas, not institutionalized and not presenting physical and mental disability, capable to understand the questionnaire.

Intervention: Actors that will administer the SUNFRAIL TOOL and where

Who? Different professionals:

- community nurses
- social workers
- primary care physicians
- community actors and caregivers,
- students in Medicine and nursing schools

Where? Setting

- in the primary health, social care and community setting in the hospital during outpatient routinary visits.

Methodology: Phase 1

Translation and back translation of the Sunfrail tool

The Tool will be translated and back translated by native speakers from English into 4-5 languages:
Italian, French, Polish, Spanish and German.

Objectives

To verify the adaptability, understandability and comprehensibility of the Sunfrail tool, and its applicability into the current professional practice.

Methodology: Phase 2

understandability/comprehensibility of the Sunfrail tool

Each item/question of the questionnaire will be tested and a score attributed (Understandable, ambiguous or Not Understandable), for each potential option

Phase 3. To verify the applicability of the Sunfrail tool into the current professional practice

-Professionals (nurses, social workers, GPs), community actors and caregivers, will administer the Sunfrail tool into their daily practice by collecting the responses and registering the results (option yes and no).

-With the aid of a flow-chart they will chose on the activation of specific care pathways (request of visit by GP, Specialist, geriatric evaluation, diagnostic evaluation, social support, physical exercise, psychological and/or cognitive support, non-relevant, relevant and not available) (see table 2, 3 and 4 below).

A number of at least **100 beneficiaries** (age group 65-75 N=50 and 75-90 N=50) will be assessed in **each reference site** participating at the experimentation.

Timing: this phase will last 3 Months (1.2.2017-31.5.2017)

Phase 3. To verify the applicability of the Sunfrail tool into the current professional practice

The assessment of professionals opinion on the applicability and transferability of the Sunfrail Tool : close-end questionnaire or Focus Group Discussions based on Partners preferences


Goals

1. Whether the tool is suitable to identify the domains of frailty and to activate care pathways.
2. Whether it is easily understandable and applicable during the daily professional/care practice.
3. Whether it needs to be modified/improved and how.

Sunfrail Tool

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BENEFICIARIES		
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5. Have you fallen 1 or more times during the last year?	• Yes	• No
6. Have you experienced memory decline during the last year?	• Yes	• No
7. Do you feel lonely most of the time?	• Yes	• No
8. In case of need, can you count on someone close to you?	• Yes	• No
9. Have you had any financial difficulties in facing dental care and health care costs during the last year?	• Yes	• No

Sequence of Actions in Frailty

WHAT	HOW	WHERE	CHI
Screening and Alert Generation	Questionnaires	COMMUNITY	Multiprofessional
 CGA (confirmation)	Performance test <ul style="list-style-type: none"> ▫ SPPB ▫ Hand Grip Strength ▫ Mini Mental State Examination 	COMMUNITY HOSPITAL	Geriatrician Internal Medicine Nurse Psychiatrics Dieticians
Activation of Pathways And Treatment	Diet Physical Exercise Vitamin D and protein Revise or Suggest Medications	Community HOSPITAL	Geriatrician Internal Medicine Nurse Psychiatrics Dieticians
MONITORING	PERIODIC VISIT	COMMUNITY HOSPITAL	

Phase 4. Suggested Pathways.

Multiple choices are allowed

Request GP visit		•
Request Specialist-Geriatrician evaluation		•
Diagnostic Evaluation		•
Proactive & Preventive Interventions	Social Support transportation for social activity/services, Nutritional Support, economic support, leisure and community and social activities	•
	Physical Exercise	•
	Psychological and/or Cognitive support	•
Other Pathways		•
Relevant but not available		•
Non-relevant		•

PHYSICAL AND COGNITIVE ALERT

CONFIRMATION BY OBJECTIVE PERFORMANCE TESTS

PHYSICAL

COGNITIVE

GAIT SPEED

Mini Mental State

HAND GRIP STRENGTH



Original Investigation

Effect of Structured Physical Activity on Prevention of Major Mobility Disability in Older Adults
 The LIFE Study Randomized Clinical Trial

The physical activity intervention involved walking, with a goal of 150 min/wk, strength, flexibility, and balance Training. The intervention included attendance at 2 center based visits per week and home-based activity 3 to 4 times per week for the duration of the study

Primary outcome: major mobility disability defined as the inability to complete a 400-m walk test within 15 minutes without sitting and without the help of another person or walker

	817	765	680	617	540	358	162	13	817	762	707	655	567	371	178	12
Physical activity	0	29	67	115	155	197	224	246	0	18	32	64	88	104	113	120
Health education	0	33	105	155	190	232	277	286	0	25	64	91	118	138	158	162

HR indicates hazard ratio. The graph for major mobility disability was truncated at 3.5 years and the health education group had 4 additional failures between

and adjusted HRs and P values are from proportional hazards regression models defined in the Methods section.

Exercise

Nutrition

Technology

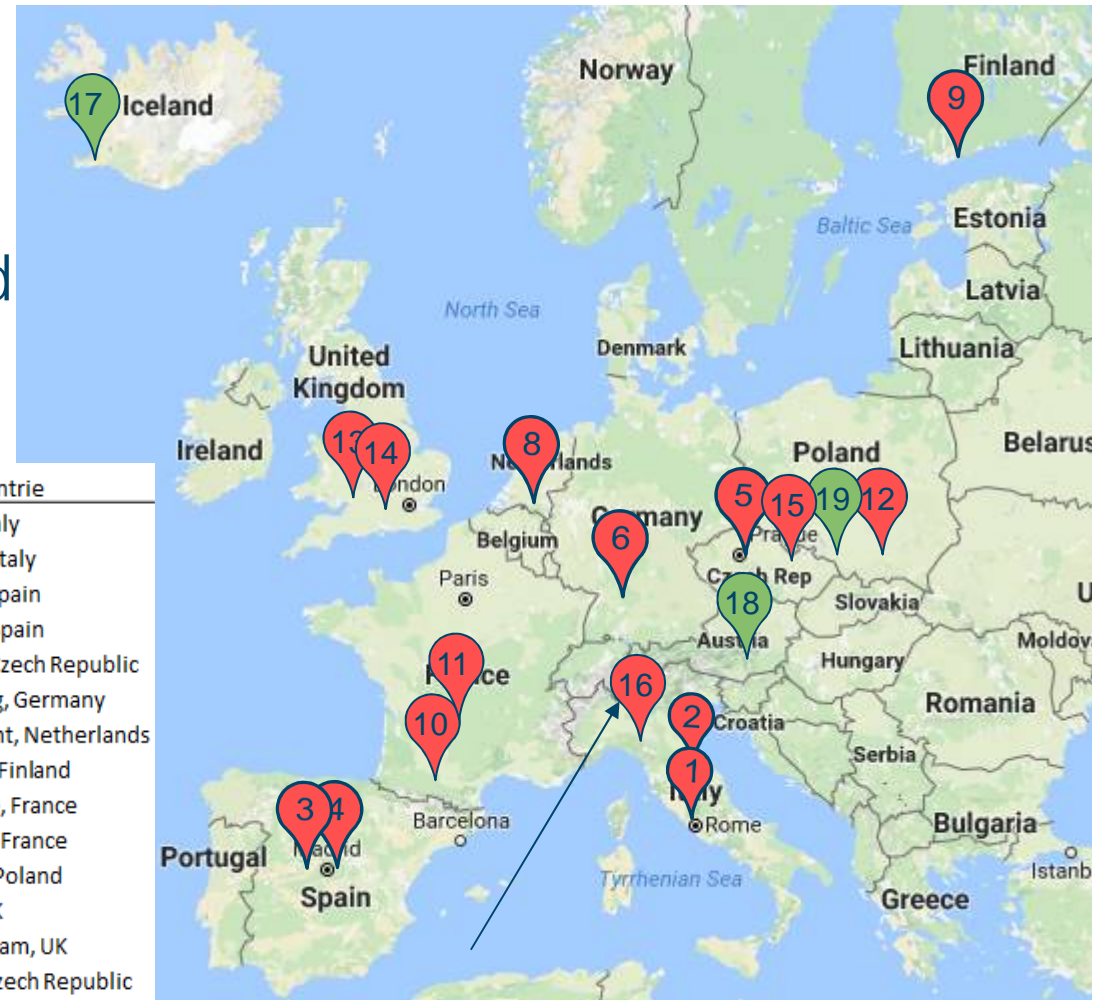


18 sites open
11 European Countries

3 sites of 18 recently opened

RCT Centers

Site Number	Site name	City, Country
1	Catholic University of the Sacred Heart	Rome, Italy
2	IRCCS-INRCA	Ancona, Italy
3	University Hosdpital of Getafe	Getafe, Spain
4	University Hospital Ramon y Cajal	Madrid, Spain
5	Charles University	Prague, Czech Republic
6	Friedrich Alexander Universität Erlangen Nürnberg	Nürnberg, Germany
8	University of Maastricht	Maastricht, Netherlands
9	University of Helsinki	Helsinki, Finland
10	CHU Toulouse	Toulouse, France
11	CHU Limoges	Limoges, France
12	Jagiellonian University Medical College	Krakow, Poland
13	Aston University	Aston, UK
14	University of Birmingham	Birmingham, UK
15	Silesians Hospital	Opava, Czech Republic
16	University of Parma	Parma, Italy
17	Lanspitali University Hospital	Reykjavik, Iceland
18	Medical University of Graz	Graz, Austria
19	JP II Geriatric Hospital of Katowice	Katowice, Poland



MultiComponent Intervention



Inclusion Criteria



- **Informed Consent**
- **Subjects of both sexes**
- **Age • 70 years**
- **Short Physical Performance Battery (SPPB) score between 3 and 9 (included)**
- **Ability to walk 400 meters in 15 minutes without setting**
- **Low Muscle Mass according to Foundation for the National Institute of Health (FNIH) Sarcopenia Project, measured by DXA (dual-energy X-ray absorptiometry). I valori di massa magra considerati diagnostici per sarcopenia saranno i seguenti: rapporto massa magra appendicolare (ALM)/body mass index <0.789 per gli uomini e <0.512 per le donne, oppure ALM<19.75 kg per gli uomini e <15.02kg per le donne**

Study outcomes

Primary outcome

Incidence of mobility disability (incident inability to complete the 400-m walk test)

Secondary outcomes

- Changes in physical performance (i.e., SPPB, handgrip strength)
- Body composition modifications
- Incidence of falls
- Changes in nutritional status
- Changes in disability status (i.e., ADL, IADL, PAT-D)
- Changes in cognitive function and mood
- Changes in healthcare services utilisation
- Changes in quality of life (i.e., EuroQoL-5D, Participant-Reported Outcomes)
- Mortality rate

Preliminary Data from SPRINTT screening
Frailty-Multimorbidity Lab University-Hospital of Parma

Table 1. Characteristics of the study population (n=205).

	N	Mean	SD
Age (years)	205	81.25	8.06
MMSE	205	21.41	6.33
4-m Walking Speed (m/sec)	204	0.59	0.40
Handgrip (Kg)	202	19.69	9.33
BMI (Kg/m²)	196	27.48	4.96
MNA-SF	203	10.66	2.64
Male*	82*	(40)	
Female*	123*	(60)	
* N (%)			

Table 2. Prevalence of single items of questionnaire in the studied population (n=205).

Item	n	%
-Do you regularly take 5 or more medications per day?	125	61.58
-Have you unintentionally lost weight during the past year such that your clothing has become looser?	76	37.44
- Your physical state made you walk less during the past year?	151	74.38
-Have you been seen by your GP during the past year ?	112	55.17
-Have you fallen 1 or more times during the past year?	96	47.29
-Have you experienced any memory decline during the past year?	146	71.92
-Do you experience loneliness most of the time?	86	42.36
-In case of need, can you count on someone close to you?	NO 10	4.93
Have you had any economic difficulty in facing dental care and health care costs during the past year?	112	55.17

Table 3. Mean Differences in cognitive and motoric parameters, stratified on positivity to Sunfrail questionnaire.

		MMSE	(SD)	p*
Memory decline :	YES (n=144)	20.3	6.6	<0.001
	NO (n=57)	23.9	4.6	
		4-m WS	(SD)	p*
Falls during last year:	YES (n= 96)	0.41	0.35	<0.0001
	NO (n=104)	0.73	0.37	
		Handgrip	(SD)	p*
Falls during last year:	YES (n= 94)	17.41	8.59	0.004
	NO (n=105)	21.63	9.61	
		4-m WS	(DS)	p*
Walking less because of your physical Staus:	YES (n=151)	0.48	0.37	0.0001
	NO (n=49)	0.89	0.26	

*Adjusted for age and sex

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