AGIDEI
ASOCIACION GALLEGA PARA LA INVESTIGACION Y DOCENCIA EN ENFERMEDADES INFECCIOSAS

HIV & Aging

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The “Beard Conflict”

Beard length is aging





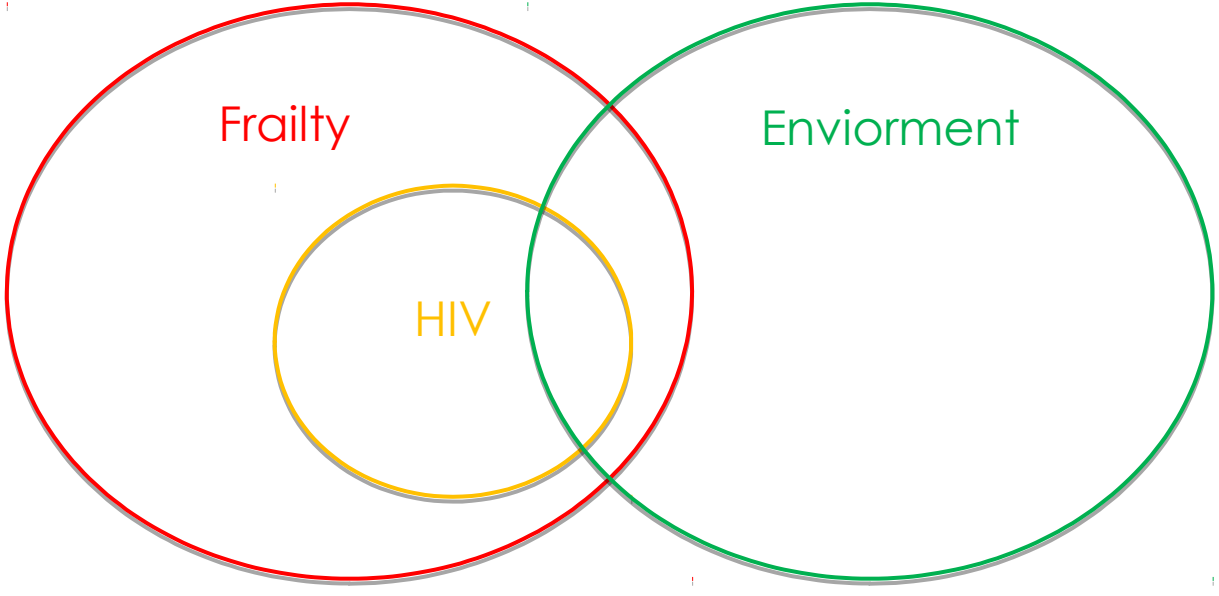
Prof Guaraldi received research grant from Gilead sciences, ViiV, MERCK, Jansen.

From the same companies he accepted travel sponsorship and speaker honorarium.

He attended advisory boards of Gilead sciences, ViiV and MERCK.

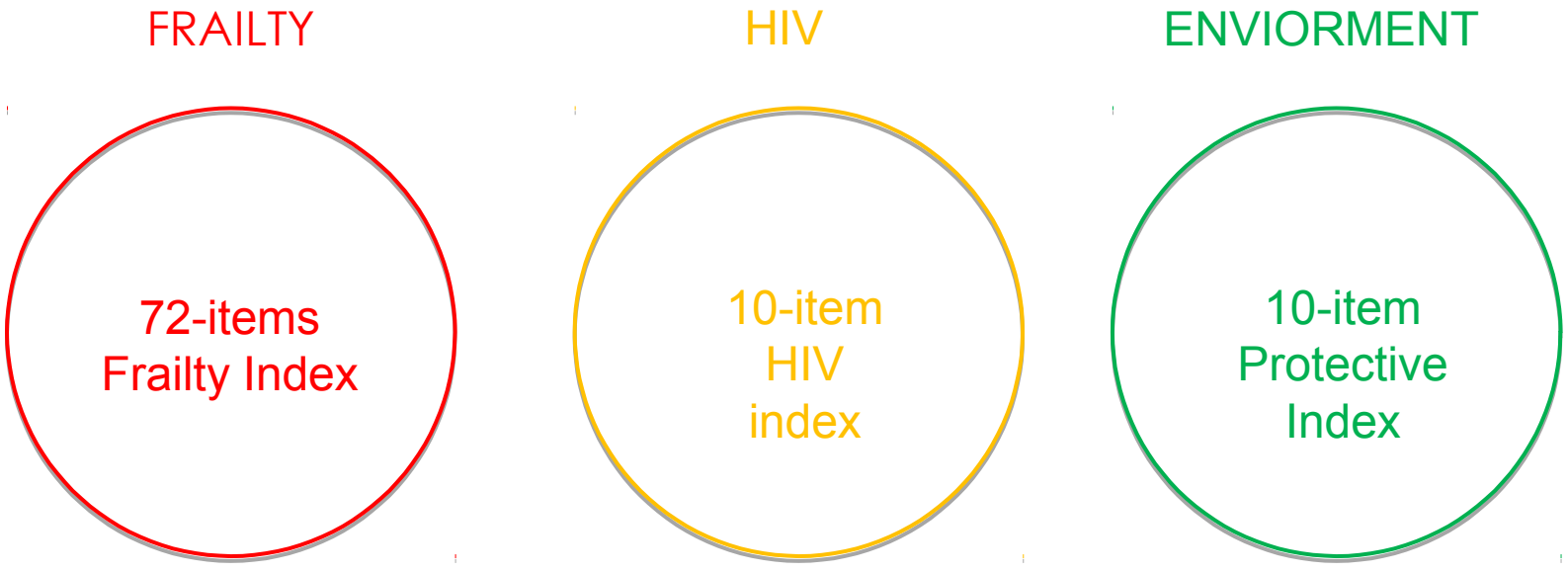
A conceptual approach:

HIV in Frailty, not Frailty in HIV



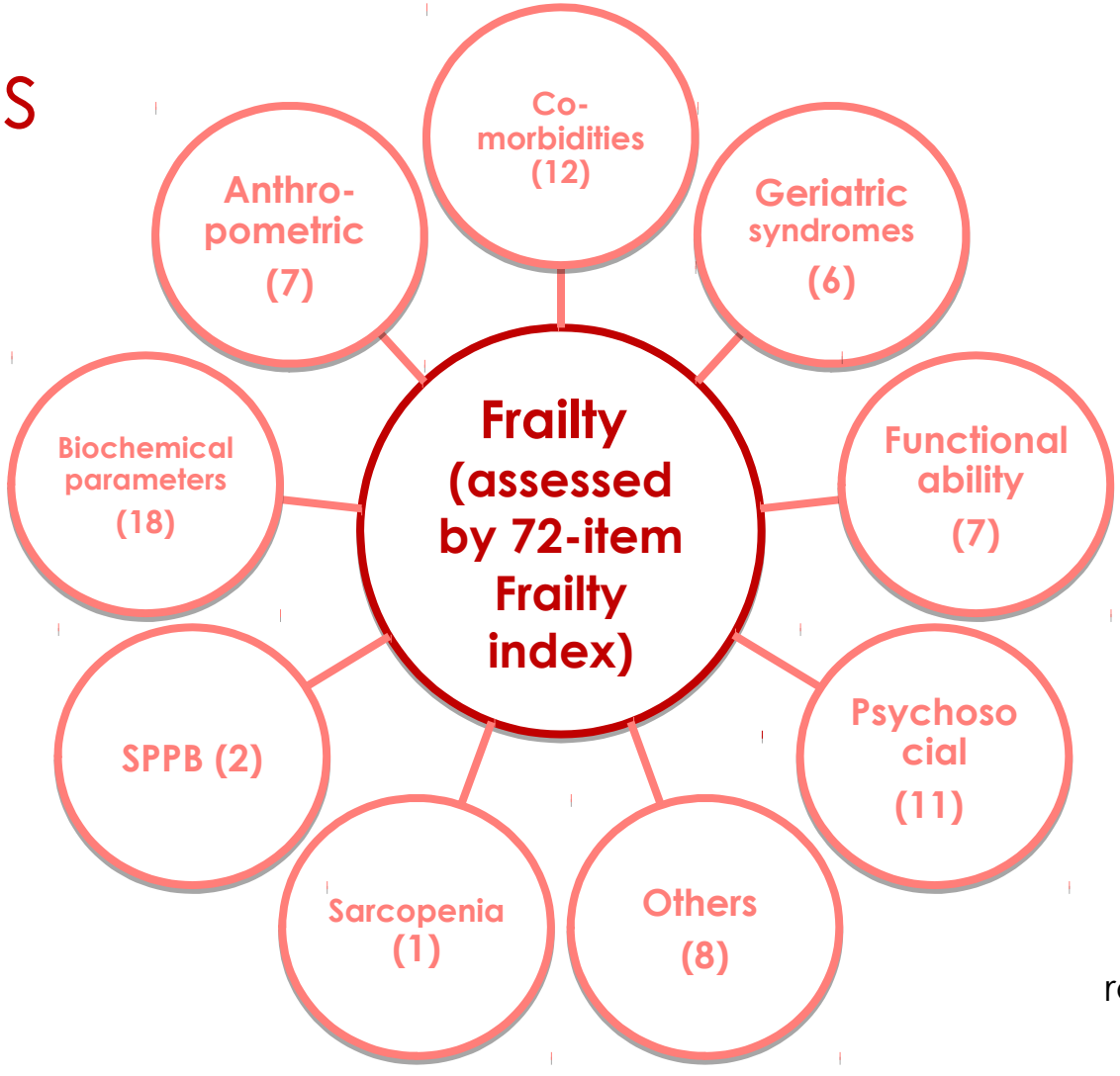
Study aim

Aim of this study was to evaluate the relationship between frailty, HIV and social vulnerability using two health indexes previously developed by our group, HIV and Protective Indexes, (HIVI, PI).



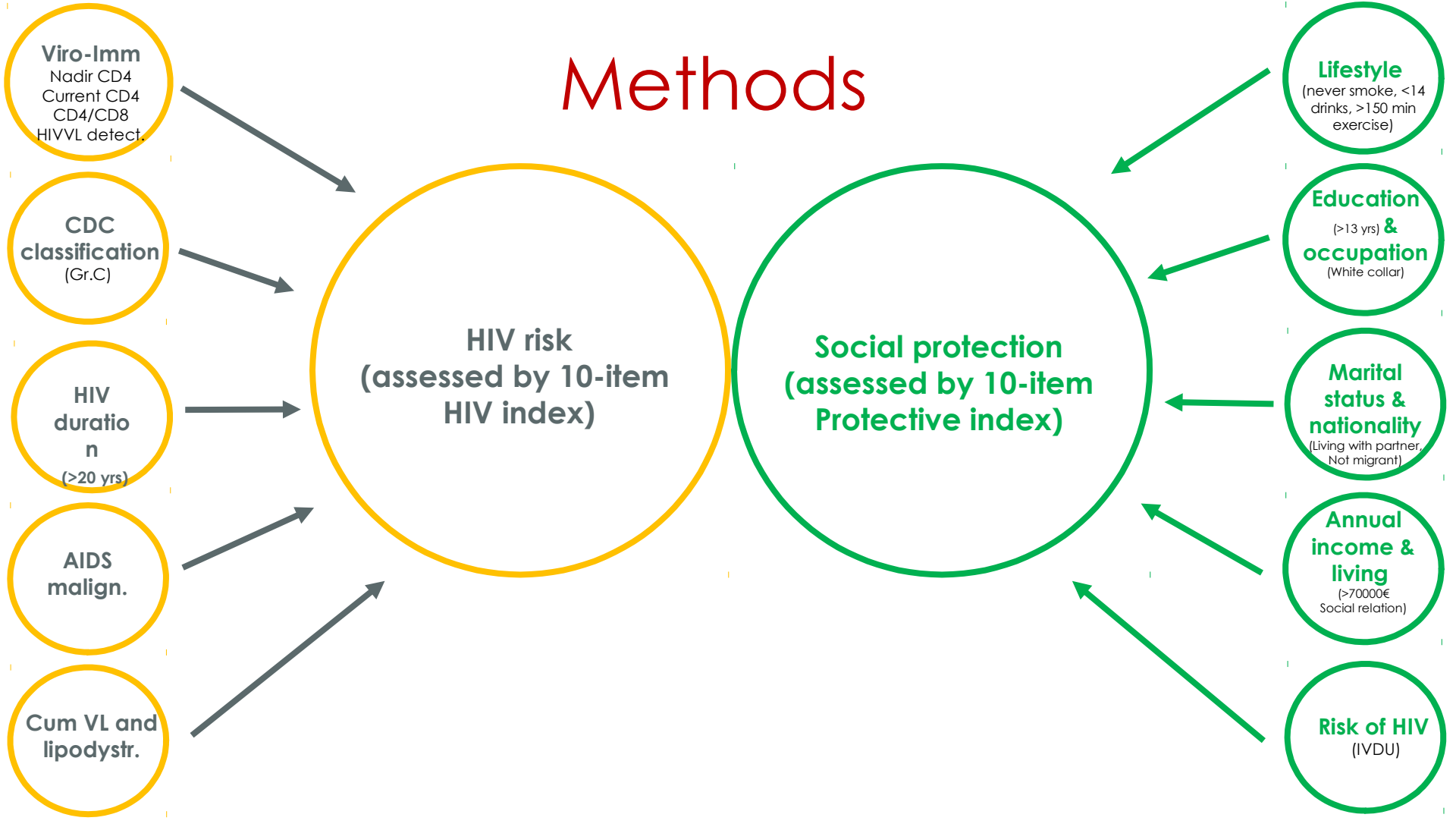
Methods

Cross sectional analyses of 1612consecutive HIV patients evaluated in 2017 at MHMC



Parameters were obtained from the **Comprehensive Geriatric Assessment** routinely performed at MHMC.

Methods


Viro-Imm
Nadir CD4
Current CD4
CD4/CD8
HIVVL detect.
CDC classification
(Gr.C)
HIV duration
(>20 yrs)
AIDS malign.
Cum VL and lipodystr.
HIV risk (assessed by 10-item HIV index)
Social protection (assessed by 10-item Protective index)
Lifestyle
(never smoke, <14 drinks, >150 min exercise)
Education
(>13 yrs) & occupation
(White collar)
Marital status & nationality
(Living with partner, Not migrant)
Annual income & living
(>70000€ Social relation)
Risk of HIV
(IVDU)

Patient disposition

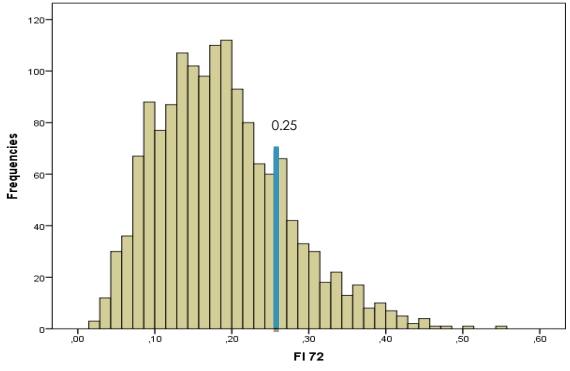
Sample size (n)	1612
Age mean ± SEM (years)	53.13 ± 0.20
Sex (men %)	73.9
BMI (Kg/m²)	24.43 ± 3.92
MultiMorbidity (≥ 2 comorbidities, n,%)	975 (60.5)
Alchool consumption n(%)	1132(70.8)
None	148(28)
Mild	20(1.2)
Heavy	
Smoking habit n(%)	
None	1074(67.2)
Mild	280(17.5)
Heavy	245(15.2)

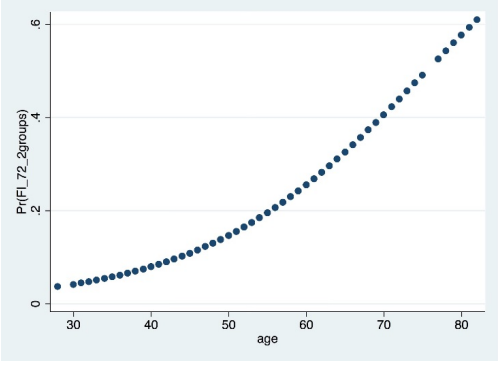
CDC classification n(%)	
A	698(43.3)
B	451(28)
C	362(22.5)
CD4 nadir mean ± SEM (cell/mmc)	225 ± 5
Current CD4 mean ± SEM (cell/mmc)	748 ± 7
CD4/CD8 ratio ± SEM	0.98 ± 0.02
Duration of HIV mean ± SEM (years)	20.83 ± 0.22

Frailty index construct validity and relationship with HIVI and PI

FI mean ± SD	0.18 ± 0.08

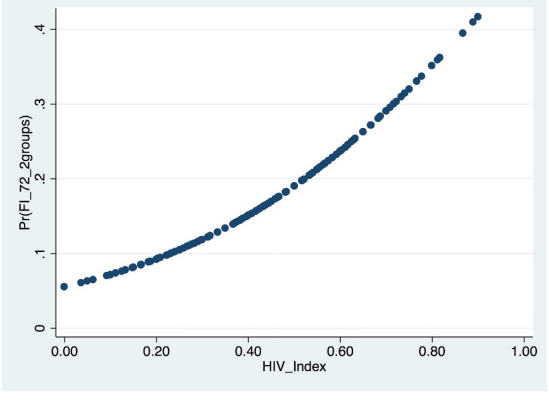
FI distribution and association with age





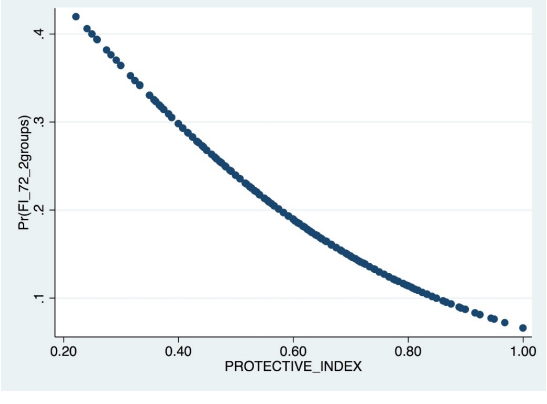
HIVI mean ± SD	0.48 ± 0.17

Correlation of HIVI with FI



PI mean ± SD	0.61 ± 0.13

Correlation of PI with FI



Logistic regression model was used to assess the probability of being frail in relation to HIV index and Protective index

Frailty index	Coefficient	95% confidence Interval	P
Protective index	-2.58	-3.71 - -1.44	<0.001
HIV index	2.00	0.98 - 3,02	<0.001
age	0.06	0.04 – 0.08	<0.001

$$\Pr(Frailty \,/\, Age, PI, HIVI) = \frac{exp^{(-4.31+0.06Age-2.58PI+2.0HIVI)}}{1+exp^{(-4.31+0.06Age-2.58PI+2.0HIVI)}}$$

We genrated tables which shows the probability of being frail according to different levels of PI and HIV index stratified by age categories.

Probability of being frail according to different levels of PI and HIV index stratified by age categories

PROTECTIVE Index

HIV Index	25 YEARS	0,25	0,35	0,45	0,55	0,65	0,75
	0.15	4.3	3.3	2.6	2.0	1.6	1.2
	0,25	5.2	4.0	3.2	2.5	1.9	1.5
	0,35	6.2	4.9	3.8	3.0	2.3	1.8
	0,45	7.5	5.9	4.6	3.6	2.8	2.2
	0,55	9.0	7.1	5.6	4.4	3.4	2.7
	0,65	10.8	8.6	6.8	5.3	4.1	3.2
	0.75	12.9	10.3	8.1	6.4	5.0	3.9

PROTECTIVE Index

HIV Index	45 YEARS	0,25	0,35	0,45	0,55	0,65	0,75
	0.15	13.3	10.6	8.4	6.6	5.2	4.1
	0,25	15.8	12.6	10.1	8.0	6.3	4.9
	0,35	18.6	15.0	12.0	9.5	7.5	5.9
	0,45	21.8	17.8	14.3	11.4	9.1	7.1
	0,55	25.4	20.9	16.9	13.6	10.9	8.6
	0,65	29.4	24.4	19.9	16.1	12.9	10.3
	0.75	33.7	28.2	23.3	19.0	15.4	12.3

PROTECTIVE Index

HIV Index	35 YEARS	0,25	0,35	0,45	0,55	0,65	0,75
	0.15	7.6	6.0	4.7	3.7	2.9	2.2
	0,25	9.2	7.2	5.7	4.5	3.5	2.7
	0,35	11	8.7	6.9	5.4	4.2	3.3
	0,45	13.1	10.4	8.3	6.5	5.1	4.0
	0,55	15.5	12.5	9.9	7.8	6.2	4.8
	0,65	18.4	14.8	11.8	9.4	7.4	5.8
	0.75	21.5	17.5	14.1	11.3	8.9	7.0

PROTECTIVE Index

HIV Index	55 YEARS	0,25	0,35	0,45	0,55	0,(		
	0.15	22.1	18.0	14.5	11.6	9		
	0,25	25.8	21.1	17.2	13.8	11		
	0,35	29.8	24.7	20.2	16.4	13		
	0,45	34.1	28.6	23.6	19.3	15		
	0,55	38.7	32.8	27.4	22.6	18		

PROTECTIVE Index

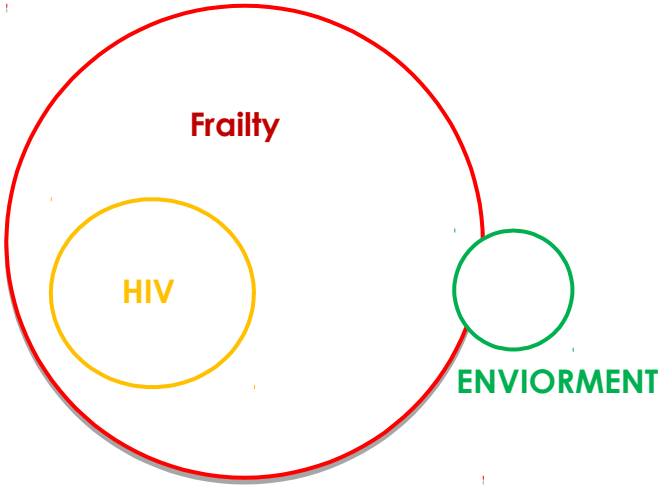
HIV Index	65 YEARS	0,25	0,35	0,45	0,55	0,(		
	0.15	34.5	28.9	23.9	19.5	15		
	0,25	39.1	33.2	27.7	22.9	18		
	0,35	44.0	37.8	31.9	26.6	21		
	0,45	49.0	42.6	36.4	30.7	25		
	0,55	54.0	47.5	41.2	35.1	29		

Color code for Frailty risk probability: low (<.20%), intermediate (20-40%) and high (>40%)

Probability of being frail at the age of 45 years

PROTEC

Index \ 45 YEARS	0,25	0,35	0				
0.15	13.3	10.6					
0,25	15.8	12.6	1				
0,35	18.6	15.0	1				



PI=0.25

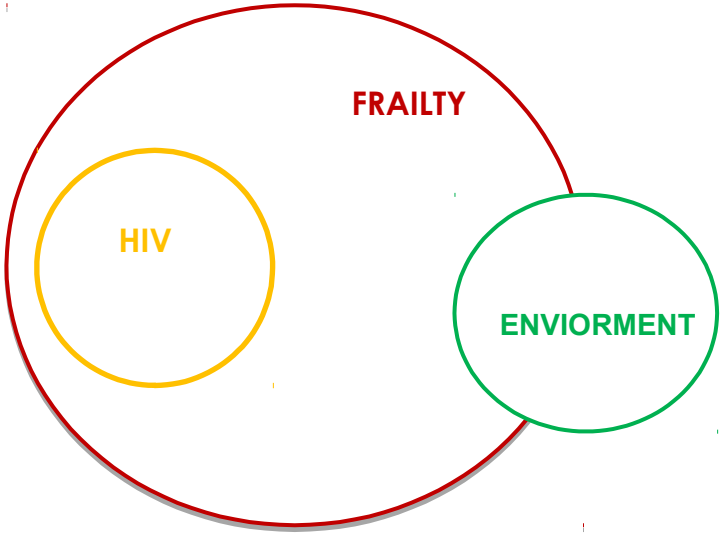
At the age of 45 years, frailty probability increases, mostly **driven by high HIVI**, while low PI alone still places individual at low risk of frailty.

Color code for Frailty risk probability: **low (<.20%), intermediate (20-40%)** and **high (>40%)**

Probability of being frail at the age of 55 years

PROTECT

Index	55 YEARS	0,25	0,35	0
	0.15	22.1	18.0	1
	0,25	25.8	21.1	1
	0,35	29.8	24.7	2



PI=0.35

At the age of 55 years, HIV index still prevails in the contribution to frailty, nevertheless **an interaction HIVI and PI is substantial**

Color code for Frailty risk probability: **low (<.20%), intermediate (20-40%)** and **high (>40%)**

Comprehensive Assessment for Patients with HIV

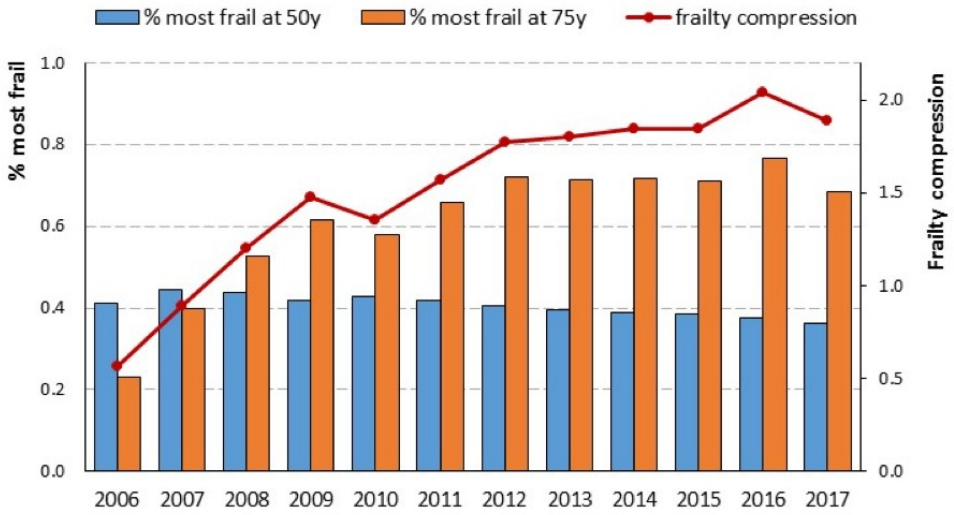
NadirCD4+ □ ≥350 cell/mL (0) □ <350 cell/mL (1)	**CDC** □ A (0) □ B (0) □ C (1)	**Duration of HIV** □ <20 years (0) □ ≥20 years (1)	**Detectable HIV-Viral Load** □ No (0) □ Yes (1)	**time between diagnosis and ARV initiation** □ No (0) □ Yes (1)
Lipodystrophy □ No (0) □ Yes (1)	**3rd line ARV** □ No (0) □ Yes (1)	**CD4+** □ ≥500 cell/mL (0) □ <500 cell/mL (1)	**CD4/CD8** □ ≥0.8 (0) □ <0.8 (1)	**AIDS malignancy requiring chemotherapy or radiotherapy** □ No (0) □ Yes (1)
HIV TOTAL SCORE: / 10				
Comorbidities	□ None (0) □ CKD (1)	□ COPD (1) □ DM (1)	□ Osteoporosis (1) □ CVD/HTN/DLP (1)	□ Cancer (1) dyslipidemia □ NAFLD/cirrhosis (1)
Falls (past year) □ No (0) □ Yes (1)	**Medications** □ <5 (0) □ ≥5 (1)	**Exercise** □ ≥150min/week (0) □ Less or none (1)	**BMI** (Kg/m^2) □ 18.5-25 (0) □ <18.5 (1) □ >25 (1)	**WBC** □ 4000-10000 (0) □ <4000 / >10.000 (1)
Systolic BP □ 80-120 mmHg (0) □ <80 mmHg (1) □ >120 mmHg (1)	**Diastolic BP** □ 60-90 mmHg (0) □ <60 mmHg (1) □ >90 mmHg (1	**Hemoglobin** □ Normal (0) □ Low (1) □ High (1)	**Glucose** □ Normal (0) □ Low (1) □ High (1)	**PLT** □ Normal (0) □ Low (1) □ High (1)
Bilirubin □ Normal (0) □ High (1)	**GGT** □ Normal (0) □ High (1)	**Creatinine** □ Normal (0) □ High (1)	**GPT/ALT** □ Normal (0) □ High (1)	**Total Cholesterol** □ Normal (0) □ High (1)
Cough □ No/rarely (0) □ Sometimes (1) □ Most times (1)	**Happy** □ No/rarely (0) □ Sometimes (1) □ Most times (1)	**Lonely** □ No/rarely (0) □ Sometimes (1) □ Most times (1)	**Bothered by things that don't usually bother** □ No/rarely (0) □ Sometimes (1) □ Most times (1)	
Poor appetite □ No/rarely (0) □ Sometimes (1) □ Most times (1)	**Self-care** □ Good (0) □ Fair (1) □ Poor (1)	**Mobility** □ Independent (0) □ Mild dependent (1) □ Total dependent (1)	**Usual activities** □ Independent (0) □ Mild dependent (1) □ Total dependent (1)	
FRAILTY INDEX TOTAL SCORE: / 30				
Alcohol (past week) □ ≥14 drinks (0) □ <14 drinks (1)	**Smoking** □ Current (0) □ Past (0) □ Never (1)	**Education** □ <13 years (0) □ 13-16 years (1) □ >16 years (1)	**Marital status** □ widow Single/divorced(0) □ Partner /Married (1) □ (1)	**Occupation** □ White collar (0) □ Blue collar (1) □ Unemployed/retired (1)
Nationality □ Other (0) □ Italian (1)	**Living** □ Alone (0) □ With others (1)	**Risk of HIV** □ IDU (0) □ Other (1)	**Annual income (Euro)** □ ≤10.000 (0) □ 30.000-70.000 (1) □ 10.000-30.000 (0) □ ≥70.000 (1)	**Unintentional weight loss** □ <4.5Kg/past year (0) □ ≥4.5Kg/past year (1)
PROTECTIVE INDEX TOTAL SCORE: / 9				

HIV Score /10

Frailty Index score /30

Protective index score /9

HIV& ARV impact frailty



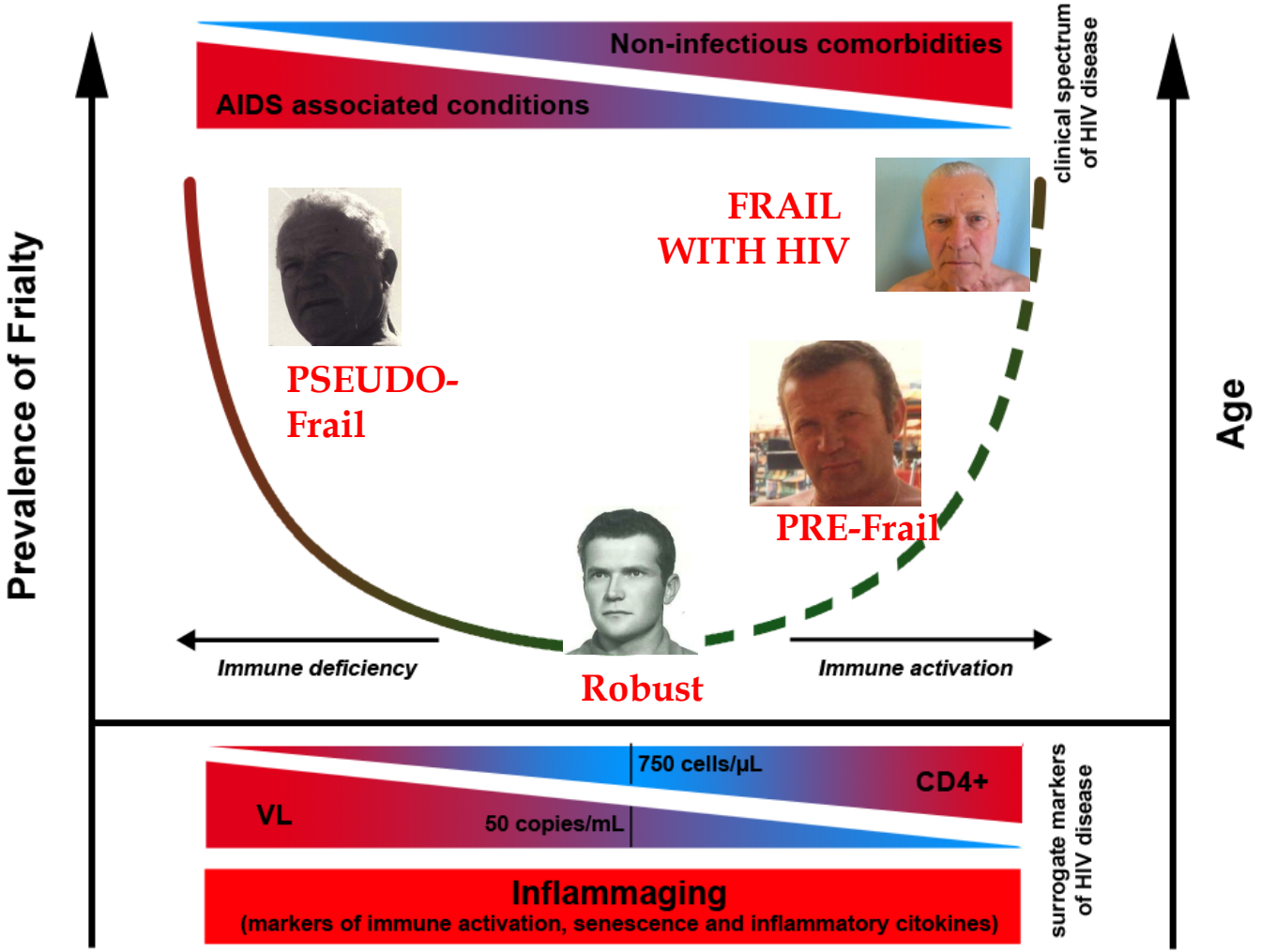
Frailty Compression: is the ratio of the proportion of frail individuals at the age of 75 and at the age of 50 years at any given year.

The frailty compression score increased from 0.56 to 1.89

Predictors of FRAILTY COMPRESSION sat multivariable analyses:

- ✓ male patients (p=0.02), age (p<0.001)
- ✓ nadir CD4+ T cell count (p<0.001)
- ✓ proportion of patients with HIV duration more than 20 years (p=0.001)

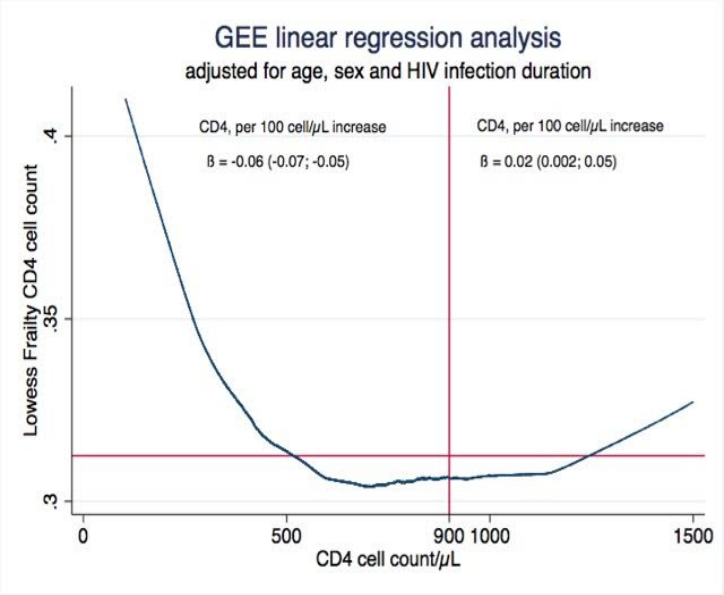
Hypothetical association between frailty, HANA and immune activation / inflammation



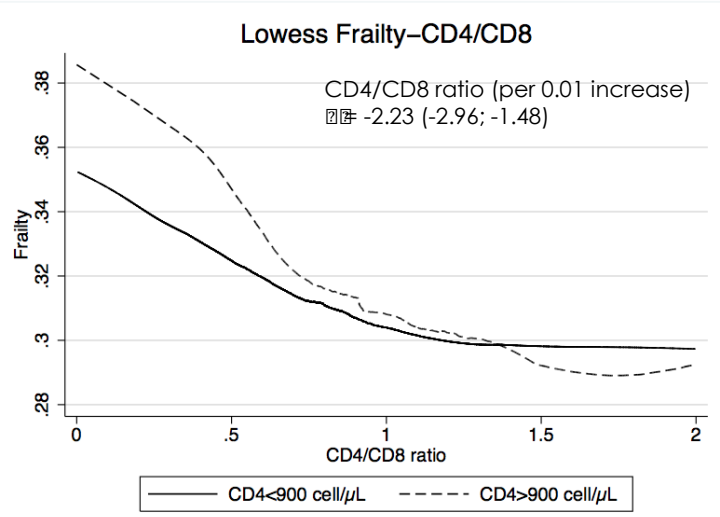
The dynamic association between Frailty, CD4 and CD4/CD8 ratio in people aging with HIV

2915 participants

10.686 observations



8975 observations



We found a dynamic relationship between current CD4 count and frailty
Lower CD4/CD8 ratio, a surrogate marker of immune senescence, is associated with severity of frailty both below
and above this cut-off of 900 CD4 cells/μL.

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The Journal of Frailty & Aging©

SPECIAL ARTICLE

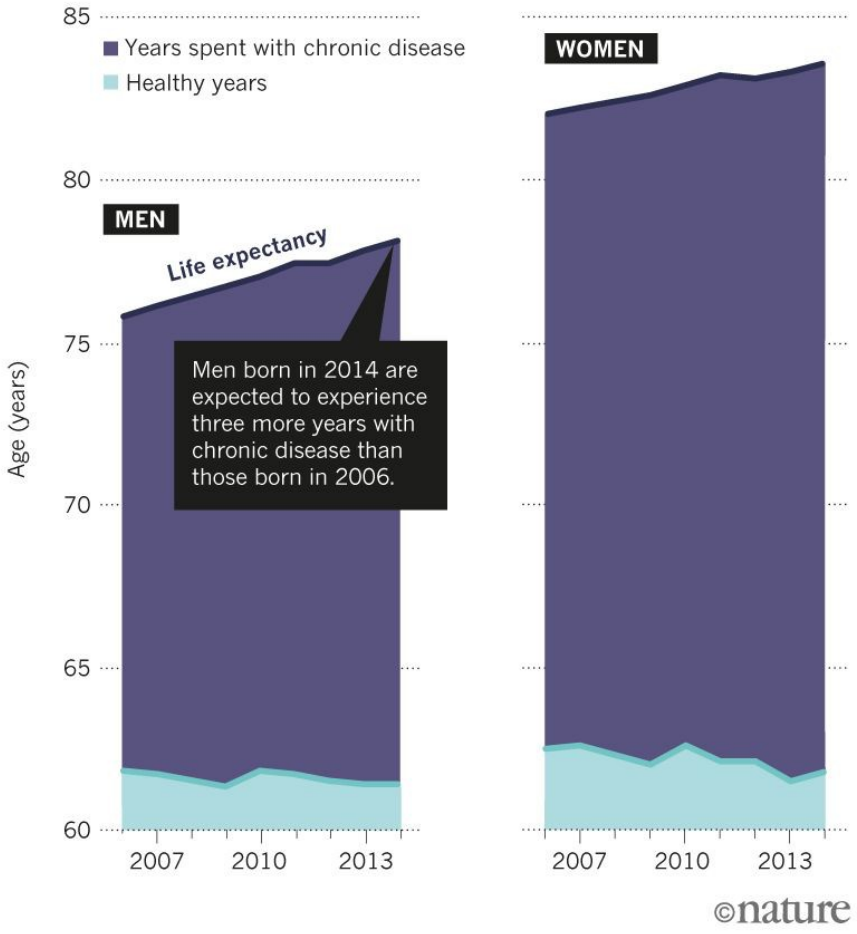
THE MANAGEMENT OF GERIATRIC AND FRAIL HIV PATIENTS. A 2017 UPDATE FROM THE ITALIAN GUIDELINES FOR THE USE OF ANTIRETROVIRAL AGENTS AND THE DIAGNOSTIC-CLINICAL MANAGEMENT OF HIV-1 INFECTED PERSONS

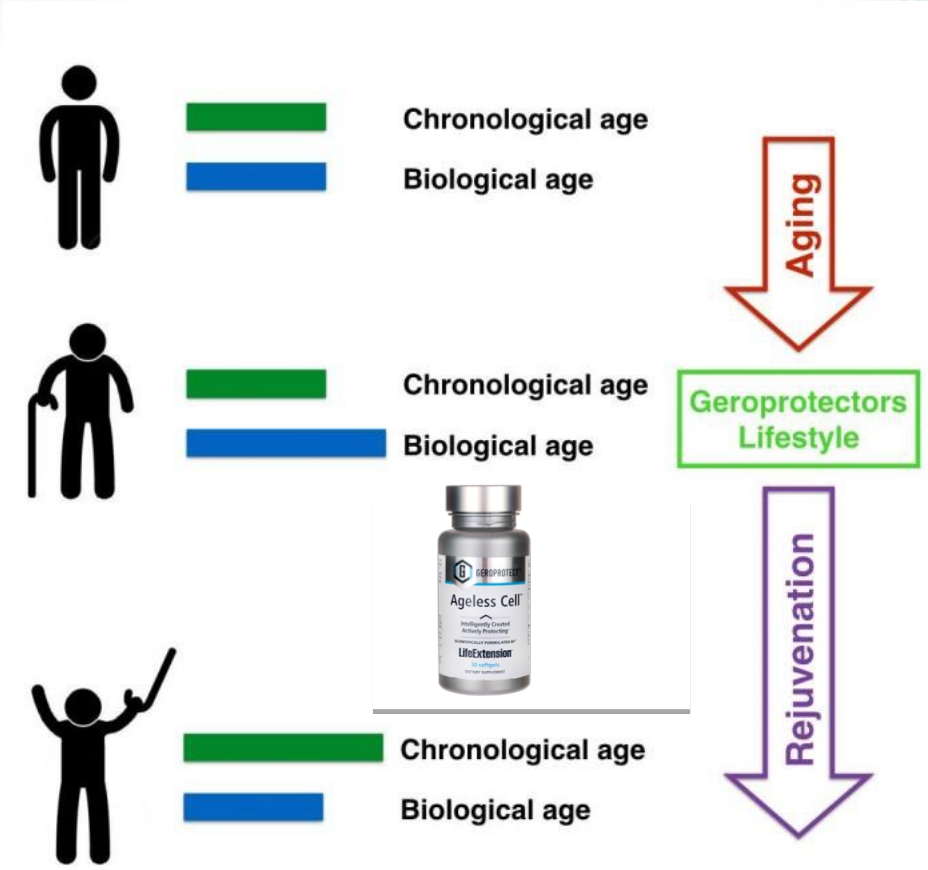
	Recommendation (Strength of evidence)
Host-related	
Limited CD4+ T cell count recovering with ageing	
Superior virological response (due to higher treatment adherence) with ageing	[AII]
Higher risk of progression compared to those below 50 years of age	
Higher risk of mortality related to non-AIDS conditions	[AII]
Higher risk of ART interruption due to toxicity	[AII]
Treatment-related	
The ART decisions should consider multi-morbidity and polypharmacy, as well as virological efficacy	[AII]
When virological suppression is achieved, NRTI-sparing, boosted-free regiments or even a simplification in mono or dual therapy should be considered in multi-morbidity and/or polypharmacy conditions	[BII]
TAF should be preferred to TDF	[AI]

Guaraldi G et al JFA 2018

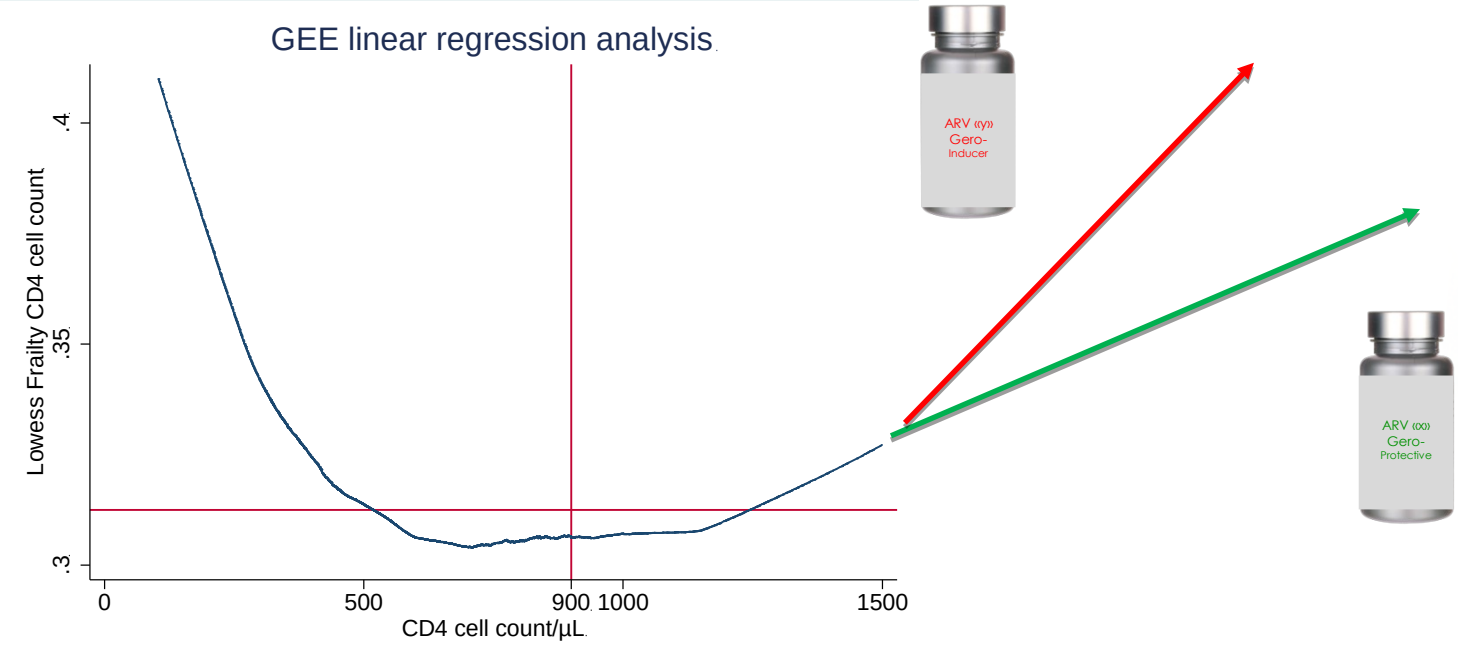
MORE YEARS OF WHAT?

In Europe, men and women are living longer. They are also spending more years with chronic conditions such as diabetes, cancer and Alzheimer's disease.





Can we test Geroprotective effect o ARVs



The dynamic association between Frailty and CD4 in people aging with HIV.

EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

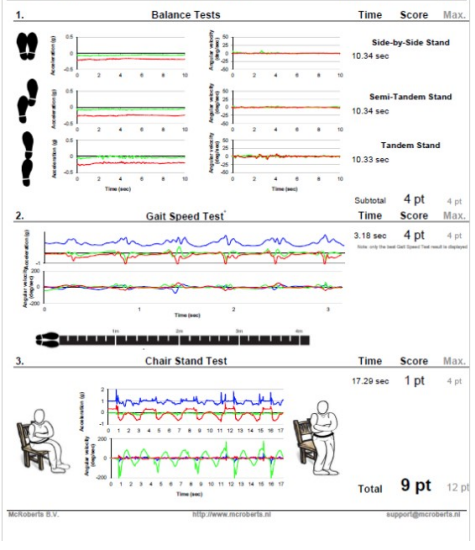
16 December 2015
EMA/CHMP/778709/2015
Committee for Medicinal Products for Human Use (CHMP)

Points to consider on frailty: Evaluation instruments for baseline characterisation of clinical trial populations

The following aspects of frailty are considered;

- ✓ physical frailty
- ✓ cognitive dysfunction
- ✓ malnutrition
- ✓ multi-morbidity

The Short Physical Performance Battery (SPPB) is identified as the scale providing the overall best predictive value for the baseline characterization of the (physical) frailty of older people enrolled in a clinical trial.



EU Programmes 2014-2020

- Search Topics
- Updates
- Calls
  - H2020
  - 3rd Health Programme
  - Asylum, Migration and Integration Fund
  - Consumer Programme
  - COSME
  - European Statistics Programme
  - Hercule III Programme
  - Internal Security Fund - Borders
  - Internal Security Fund - Police

TOPIC : Digital endpoints in neurodegenerative and immune-mediated diseases

Topic identifier: IMI2-2018-15-06
Publication date: 18 July 2018

Types of action: IMI2-RIA Research and Innovation action
DeadlineModel: two-stage
Opening date: 18 July 2018
Deadline: 24 October 2018 17:00:00
2nd stage Deadline: 15 May 2019 17:00:00

Time Zone : (Brussels time)

Horizon 2020
Pillar: Societal Challenges
Work Programme Year: H2020-JTI-IMI-2018
Work Programme Part: H2020-JTI-IMI-2018
Call : H2020-JTI-IMI2-2018-15-two-stage

H2020 website

Call budget overview

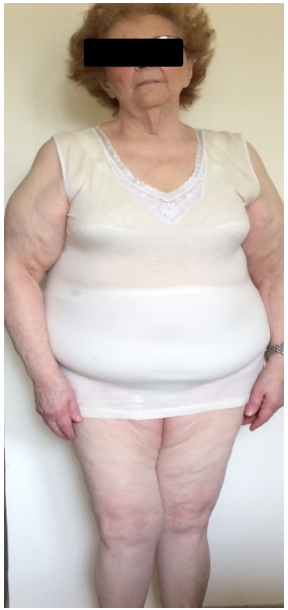
Topic Description

+ More

Specific Challenge:

Neurodegenerative movement disorders (NMD) and immune mediated inflammatory diseases (IMID) can cause considerable disability and morbidity in spite of the availability of approved treatments. Recent

Three patients



Case «A»
Mirella, 80 years,

HIV duration 14 years

CD4=478/microL

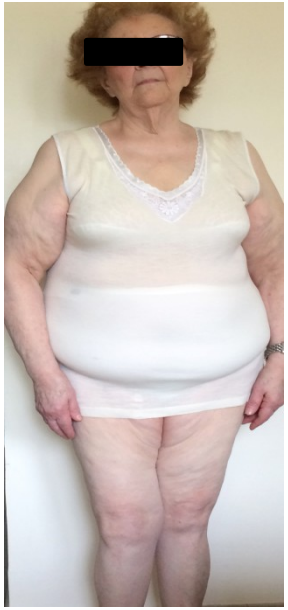
CD4/CD8=0.7

HIV VL<40 c/mL (ND)

Co-morbidities:

- ✓ MetS (HTN, DLP)
- ✓ Ostepenia
- ✓ CKD
- ✓ CAC 206↑

Three patients



Case «A»
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CD4/CD8=0.7
HIV VL<40 c/mL (ND)

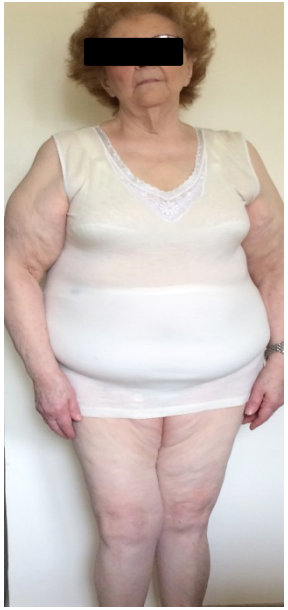
Co-morbidities:
- ✓ MetS (HTN, DLP)
- ✓ Ostepenia
- ✓ CKD
- ✓ CAC 206↑

Case B
John, 63 years,

HIV duration 23 years
CD4=407/microL
CD4/CD8=0.6
HIV VL<40 c/mL (ND)

Co-morbidities:
- ✓ T2DM
- ✓ DLP
- ✓ Osteonecrosis
- ✓ MI
- ✓ CKD

Three patients



Case «A»
Mirella, 80 years,

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- ✓ MetS (HTN, DLP)
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- ✓ CKD
- ✓ CAC 206↑

Case B
John, 63 years,

HIV duration 23 years
CD4=407/microL
CD4/CD8=0.6
HIV VL<40 c/mL (ND)

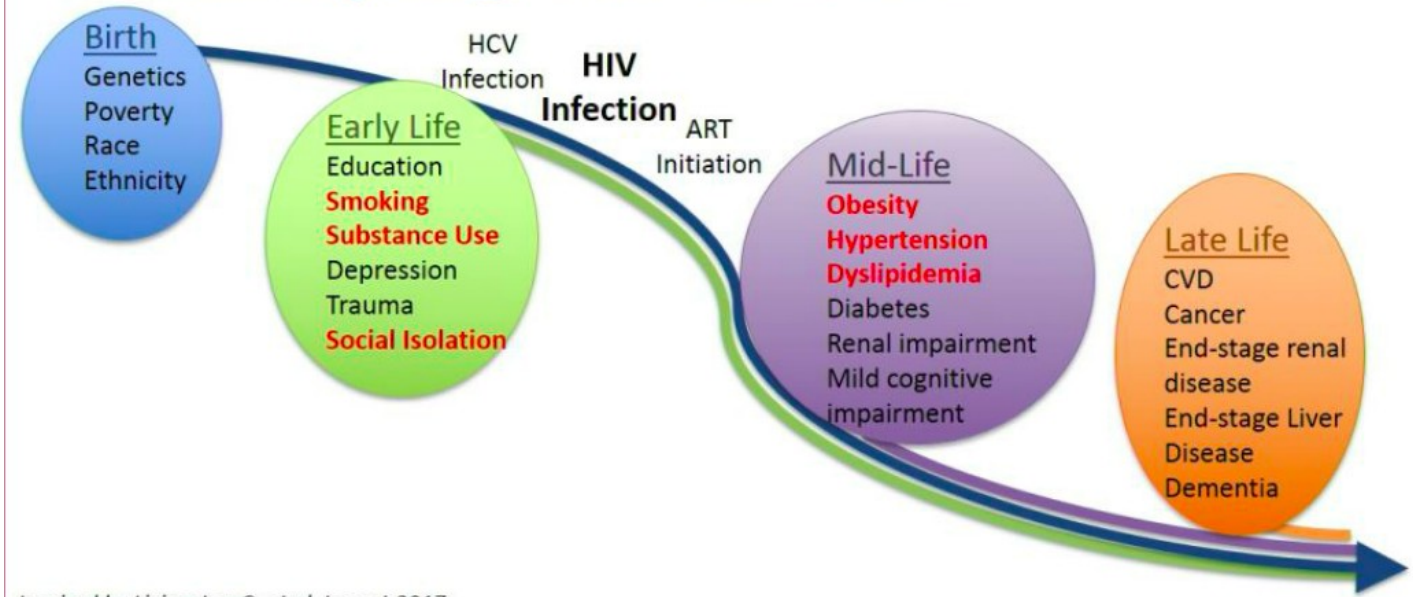
Co-morbidities:
- ✓ T2DM
- ✓ DLP
- ✓ Osteonecrosis
- ✓ MI
- ✓ CKD

Case «C»
Angelo, 55 years,

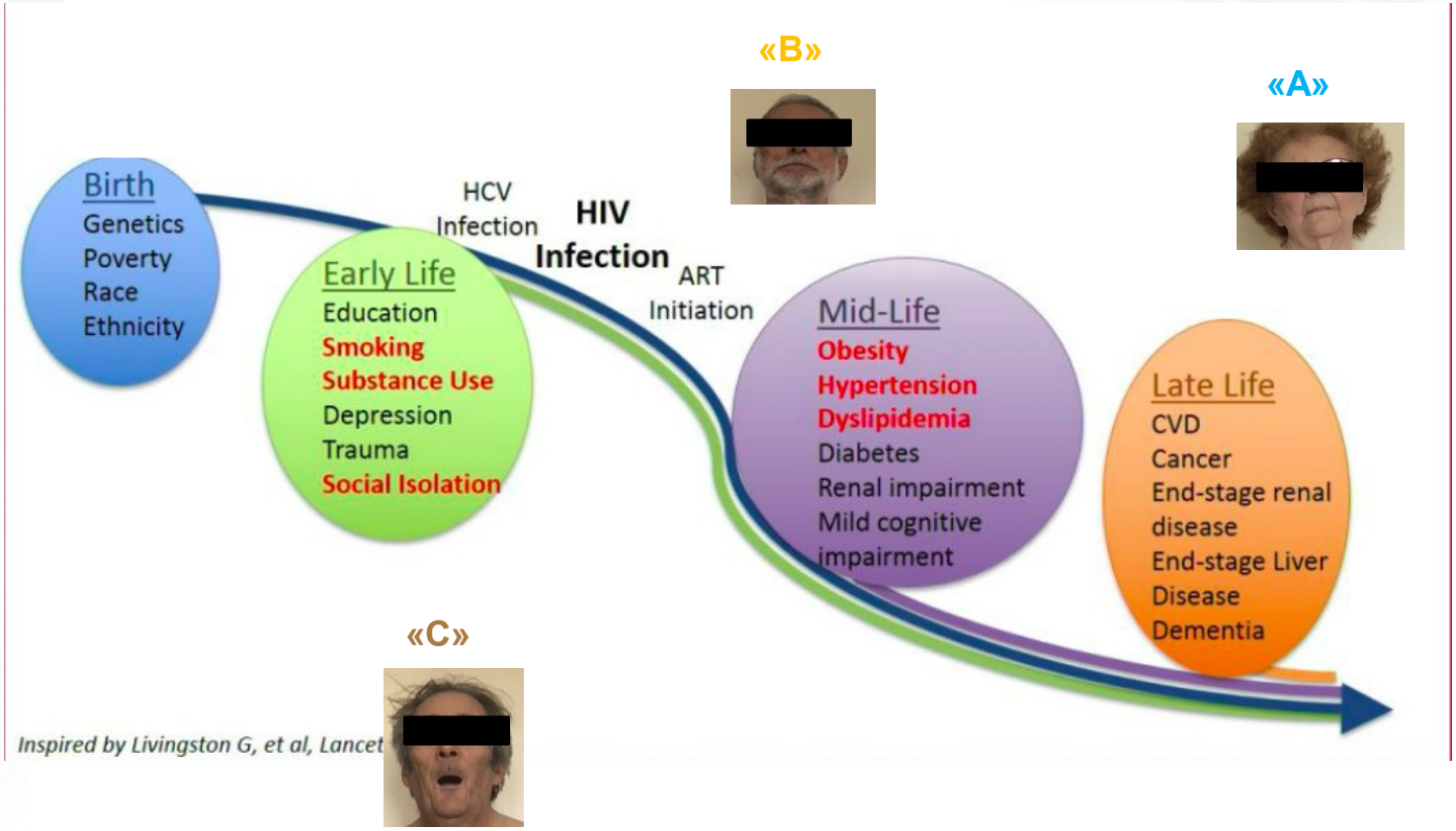
HIV duration 21 years
CD4=408/microL
CD4/CD8=0.7
HIV VL<40 c/mL (ND)

Co-morbidities:
- ✓ Cancer
- ✓ T2DM
- ✓ Fractures
- ✓ COPD

Identifying risk factors



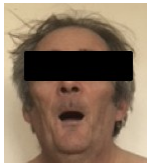
Inspired by Livingston G, et al, Lancet 2017 .

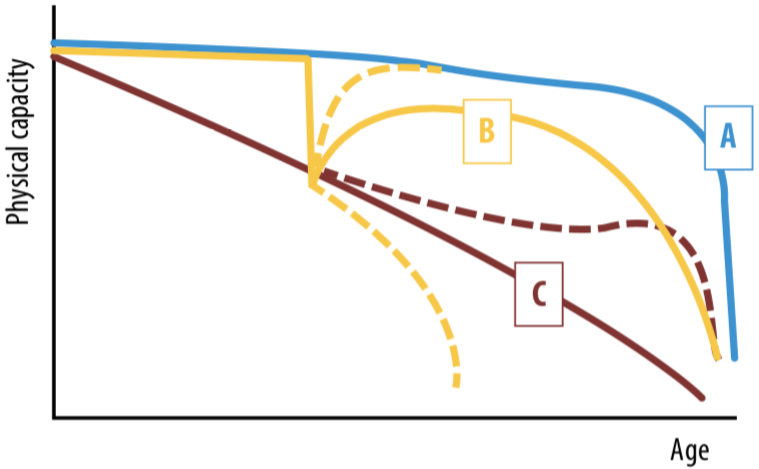

«B»
«A»
Birth
Genetics
Poverty
Race
Ethnicity
HCV
Infection
HIV
Infection
ART
Initiation
Early Life
Education
Smoking
Substance Use
Depression
Trauma
Social Isolation
Mid-Life
Obesity
Hypertension
Dyslipidemia
Diabetes
Renal impairment
Mild cognitive impairment
Late Life
CVD
Cancer
End-stage renal disease
End-stage Liver Disease
Dementia
«C»
Inspired by Livingston G, et al, Lancet

Trajectories of *Healthy Ageing*

«B»

«C»

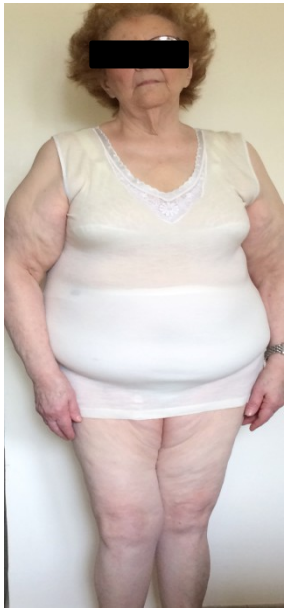




«A»

A. Optimal trajectory, intrinsic capacity remains high until the end of life.
B. Interrupted trajectory, an event causes a decrease in capacity with some recovery.
C. Declining trajectory, capacity declines steadily until death.
The dashed lines represent alternative trajectories.

Three frail patients



Case «A»
Mirella, 80 years,

Geriatric Syndromes
F. Phenotype 3/5 ✓
FI=0.39✓
Slow walk ✓

M-Morbidity✓
Disability ✘

Functional ability
(Pt. expectation:
Attend charity meeting in parish

Case B
John, 63 years

Geriatric Syndromes
F. Phenotype 3/5 ✓
FI=0.35✓
Falls ✓
Viusual imp. ✓
Slow walk ✓

M-Morbidity ✓
Disability ✘

Functional ability
(Pt. expectation:
Attend cultural events

Case «C»
Angelo, 55 years,

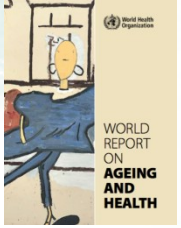
Geriatric Syndromes
F. Phenotype 4/5 ✓
FI=0.39✓
Falls ✓
Urinary incont. ✓
Slow walk ✓

M-Morbidity ✓
Disability ✓

Functional ability
(Pt. expectation:
Follow soccer game (Milan) in a bar

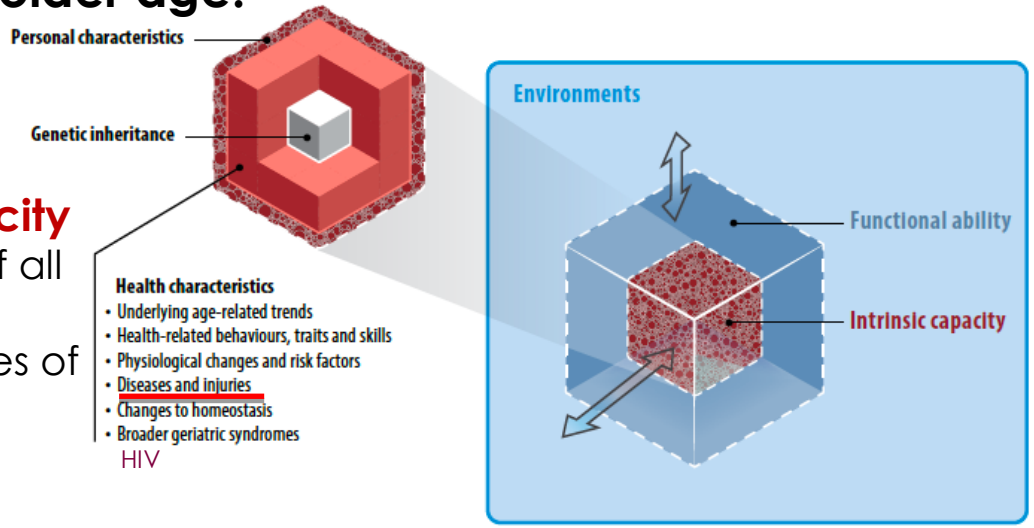
Heart and stroke foundation. Published on February 4, 2013
https://www.youtube.com/watch?v=Qo6QNU8kHxI

World Health Organization



Healthy Ageing: the process of developing and maintaining the **functional ability** that enables well-being in older age.

Instrinsic Capacity
the composite of all the physical and mental capacities of an individual.

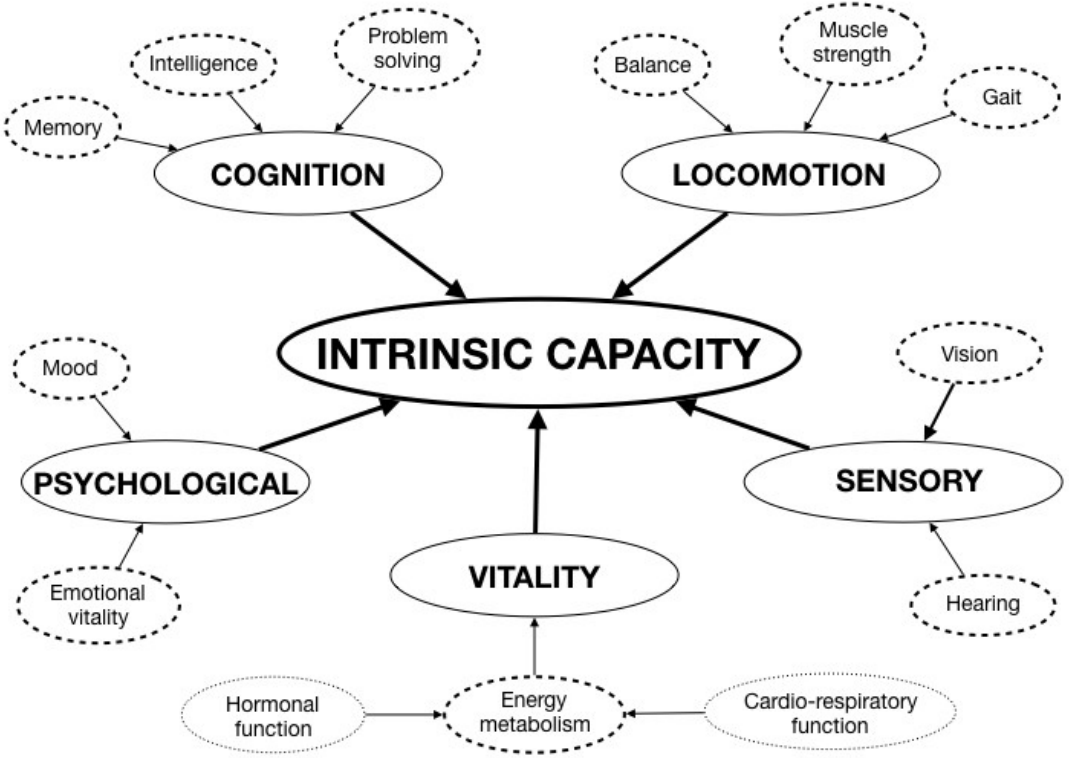


Functional ability: the health-related attributes that enable people to be and to do **what they have reason to value.** It is made up of the *intrinsic capacity* of the individual, relevant *environmental characteristics* and the interactions between the individual and these characteristics.

The Journals of GERONTOLOGY®

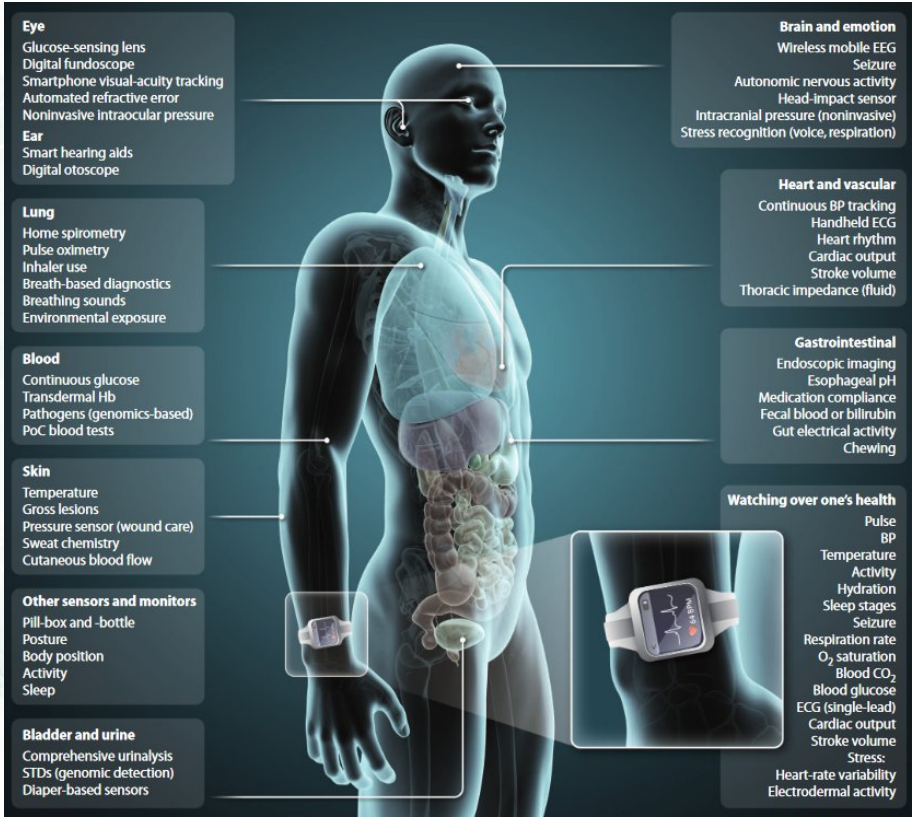
Evidence for the Domains Supporting the Construct of Intrinsic Capacity

Matteo Cesari, MD, PhD ✉, Islene Araujo de Carvalho, MD, MPH, Jotheeswaran Amuthavalli Thiyagarajan, MSC, PhD, Cyrus Cooper, MD, FMedSci, Finbarr C Martin, MD, MSc, Jean-Yves Reginster, MD, PhD, Bruno Vellas, MD, PhD, John R Beard, MBBS, PhD



Cesari M et al. *J Gerontol 2018*

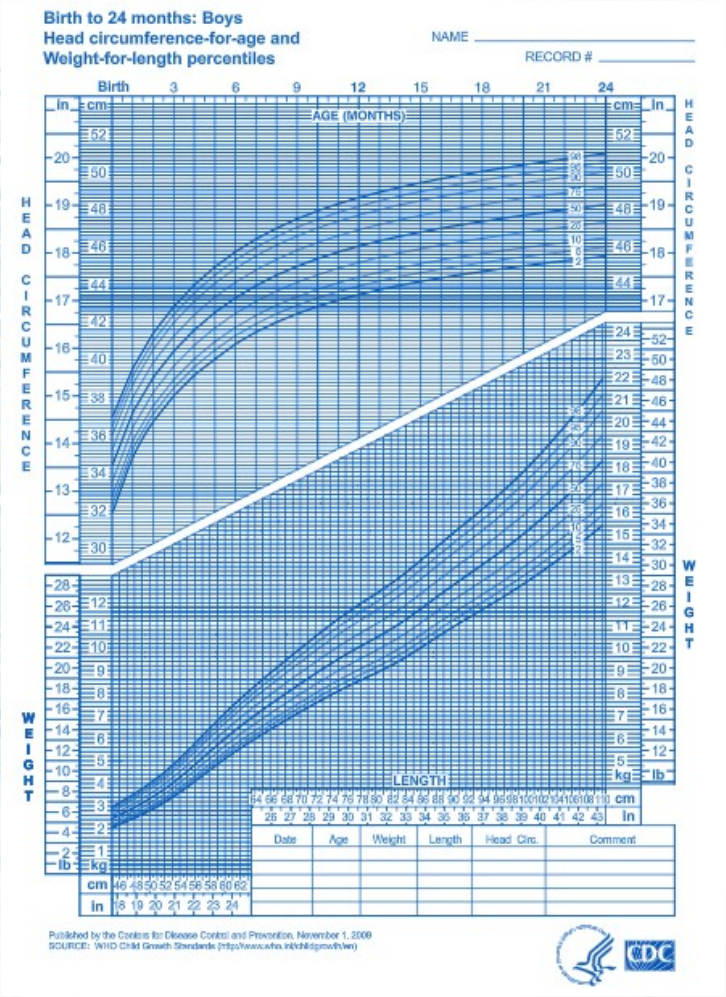
Internet of Medical Things (IoMT) is the future of healthcare



IoMT Framework

- Big data management
- Real time collection variables
- Integration of physiological parameters and patient related outcomes (ePRO)

Normogram of Intrisic capacity in aging trajectories



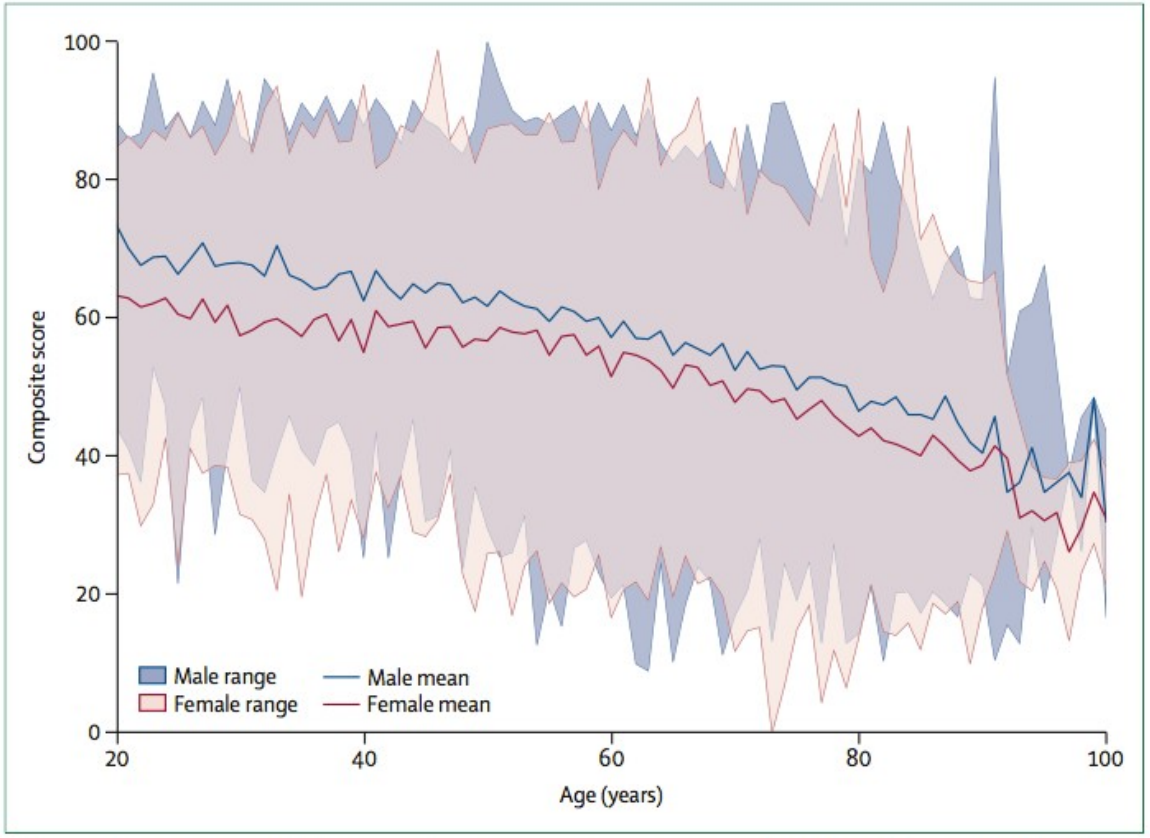
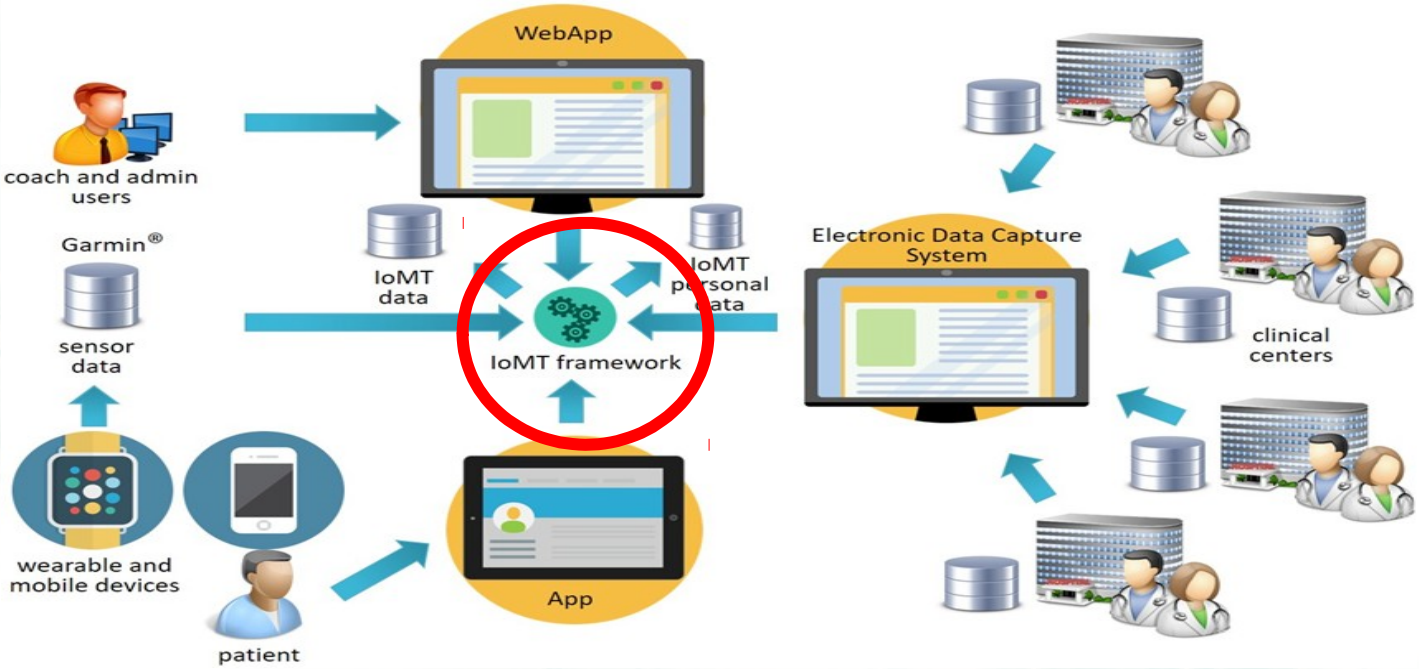


***Figure 3*: Range and mean intrinsic capacity of men and women in countries in the Study on global AGEing and adult health 2007–2010 (wave 1)[42]**

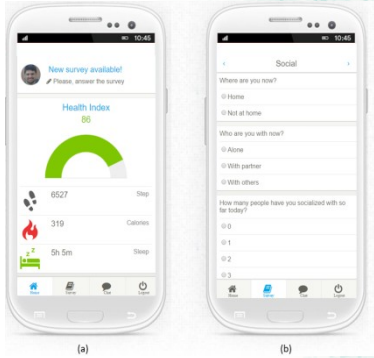
Beard JR, et al. *Lancet* 2015;387:2145-2154

My Smart Age With HIV

MySAwH is a 18 months multi-center prospective ongoing study designed to empower older adults living with HIV (OALWH) to achieve Healthy Ageing

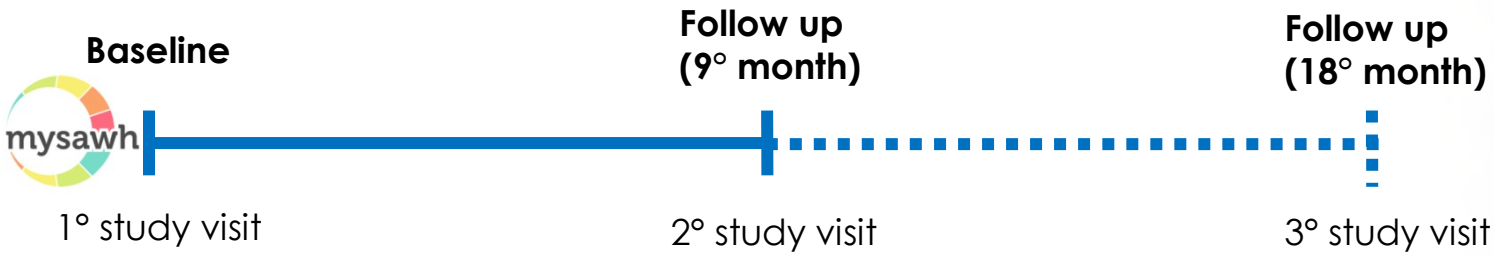


Calories, steps, sleep hours



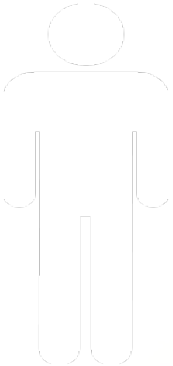
EMA

Methods



Inclusion Criteria

- **Age > 50**;
- undergoing stable ART;
- routine access to a smartphone and willingness to use the fitness tracking device;
- willingness to be trained to use an interactive mobile application (MySAwH App).



Population

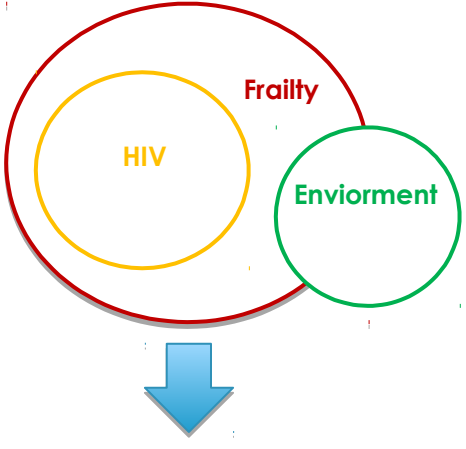
224 OALWH

117 (52.23%) from Modena (Italy)
82 (36.61%) from Sidney (Australia)
25 (11.16%) from Hong Kong (China).

- Median age was 58.57 (5.74) years;
- 190 (86.76%) patients were man;
- Mean CD4 was 658.5 (480.25-817.75);
- 204 (91.07%) patients had undetectable HIV viral load.

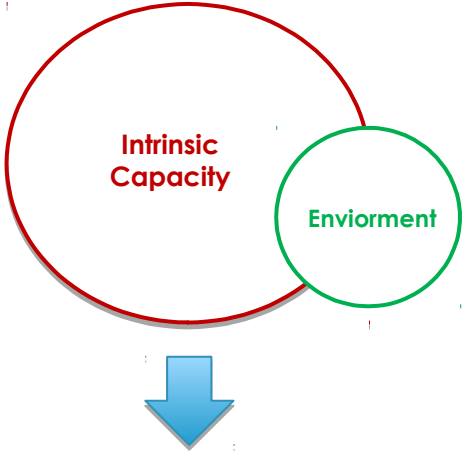
Conceptual models to disease and health

Assessment of
Deficit accumulation



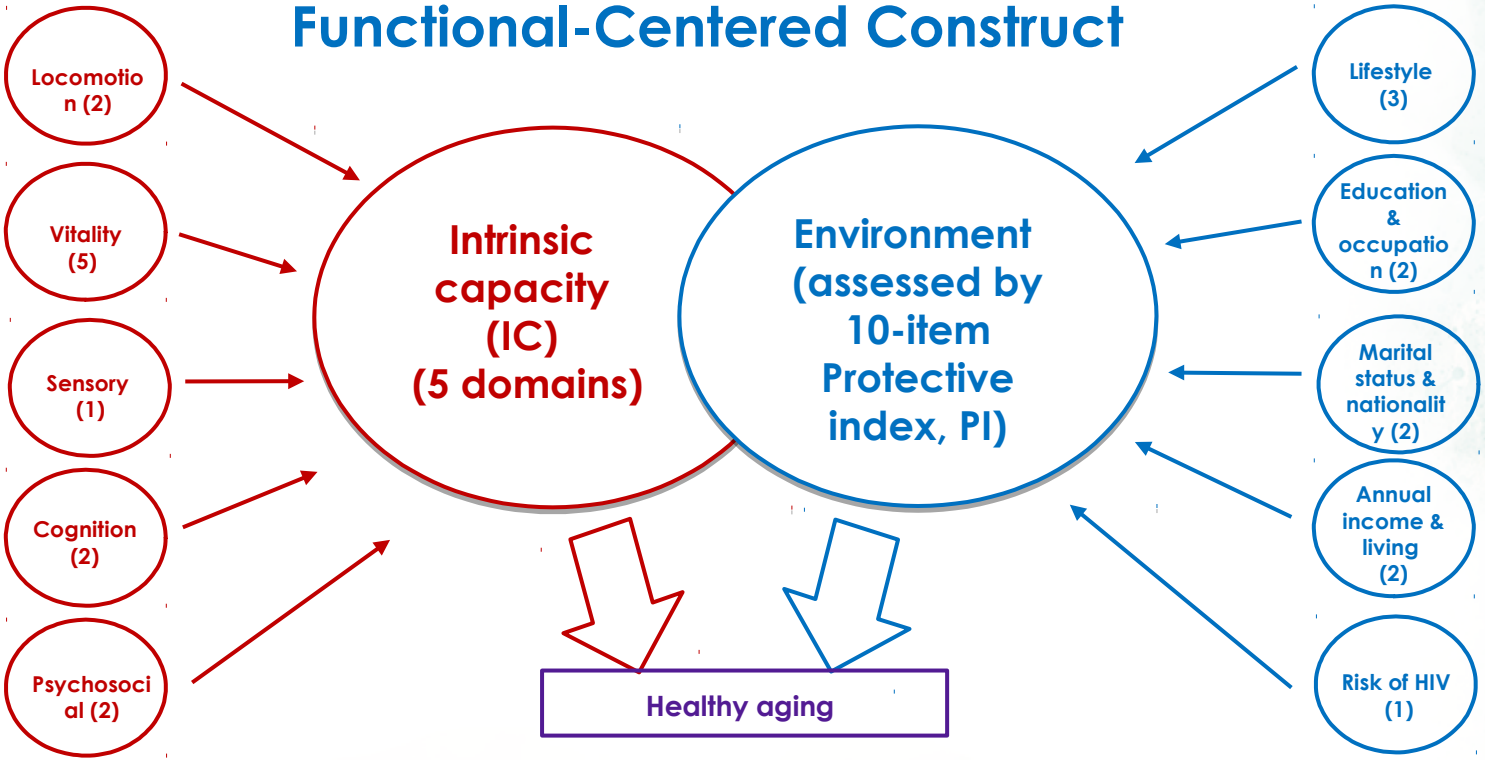
Quality of Life

Assessment of
Functional Ability



Healthy Aging

Methods


Functional-Centered Construct
Locomotion (2)
Vitality (5)
Sensory (1)
Cognition (2)
Psychosocial (2)
Intrinsic capacity (IC) (5 domains)
Environment (assessed by 10-item Protective index, PI)
Lifestyle (3)
Education & occupation (2)
Marital status & nationality (2)
Annual income & living (2)
Risk of HIV (1)
Healthy aging

Intrinsic capacity

Domains	Assessment
Locomotion	✓ Number of daily steps (Vivofit) ✓ SPPB (short physical performance battery)
Vitality	✓ Eating Behaviours questionnaire (EMA) ✓ Sleep Quality (EMA) ✓ Number of daily sleeping hours (Vivofit) ✓ Sexual Function Questionnaire (SFQ) ✓ Hand grip
Sensory	✓ Hearing handicap inventory for the elderly (HHIE)
Cognition	✓ PAOFI questionnaire ✓ GDS generated with Cogstate battery
Psychosocial	✓ Stress level questionnaire (EMA) ✓ Depression questionnaire (CES-D)

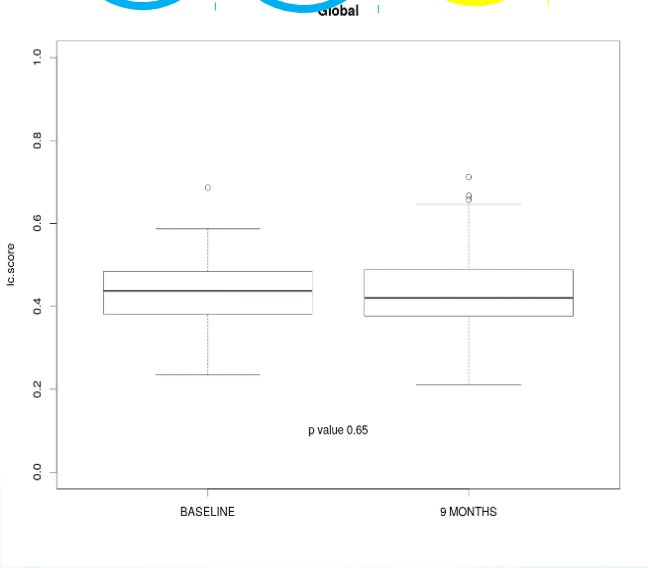
Cesari, M. *et al.* Evidence for The Domains Supporting The Construct of Intrinsic Capacity. *J. Gerontol. A. Biol. Sci. Med. Sci.* (2018).

Protective Index

Protective Index domains	Assessment
Education	Elementary school
	High school
	Junior high School
	No formal education
	Post-secondary Educartion
Profession	Employed
	Retired
	Unemployed
Marital Status	Divorced
	Married & living together
	Married but living separated
	Never married
	Registered partnership
	Widowed
Income	20th percentile or lower
	Higher than the 20th percentile
Alchool use	How many drinks containing alcohol do you have on a typical day when you are drinking? 1 or ≥2
Smoking	Yes/No
Intra-Venous Drug Use	Yes/No
Physical activity (METS)	≥ 150 min/Week
	Less
	None
Nationality	Same of the site/Other
Living alone	Yes/No

Results

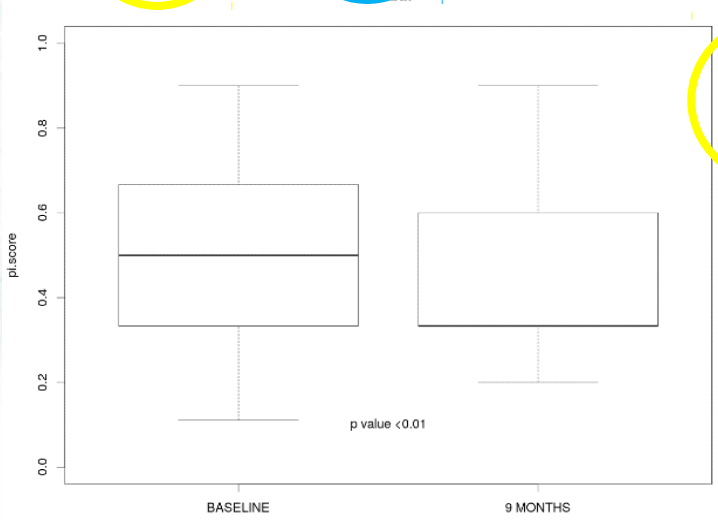
	Baseline					Follow-up				
	Total N=224	Modena N=117	Sydney N=82	Hong Kong N=25	P	Total N=224	Modena N=117	Sydney N=82	Hong Kong N=25	P
	Mean (SD)									
IC	**0.43** (0.07)	0.45 (0.05)	0.44 (0.09)	0.36 (0.06)	<0.01	**0.43** (0.09)	0.45 (0.07)	0.42 (0.11)	0.36 (0.06)	<0.01



p 0,65

Results

	Baseline					Follow-up				
	Total N=224	Modena N=117	Sydney N=82	Hong Kong N=25	P	Total N=224	Modena N=117	Sydney N=82	Hong Kong N=25	P
	Mean (SD)									
PI	**0.49** (0.2)	0.58 (0.18)	0.4 (0.18)	0.37 (0.15)	<0.01	**0.44** (0.18)	0.51 (0.19)	0.36 (0.14)	0.35 (0.11)	<0.01



p <0,01

Income

Baseline	Follow up
0,33	0,19

Marital status

Baseline	Follow up
0,32	0,29

Professional

Baseline	Follow up
0,48	0,3

Physical Activity

Baseline	Follow up
0,95	0,89

p <0,01

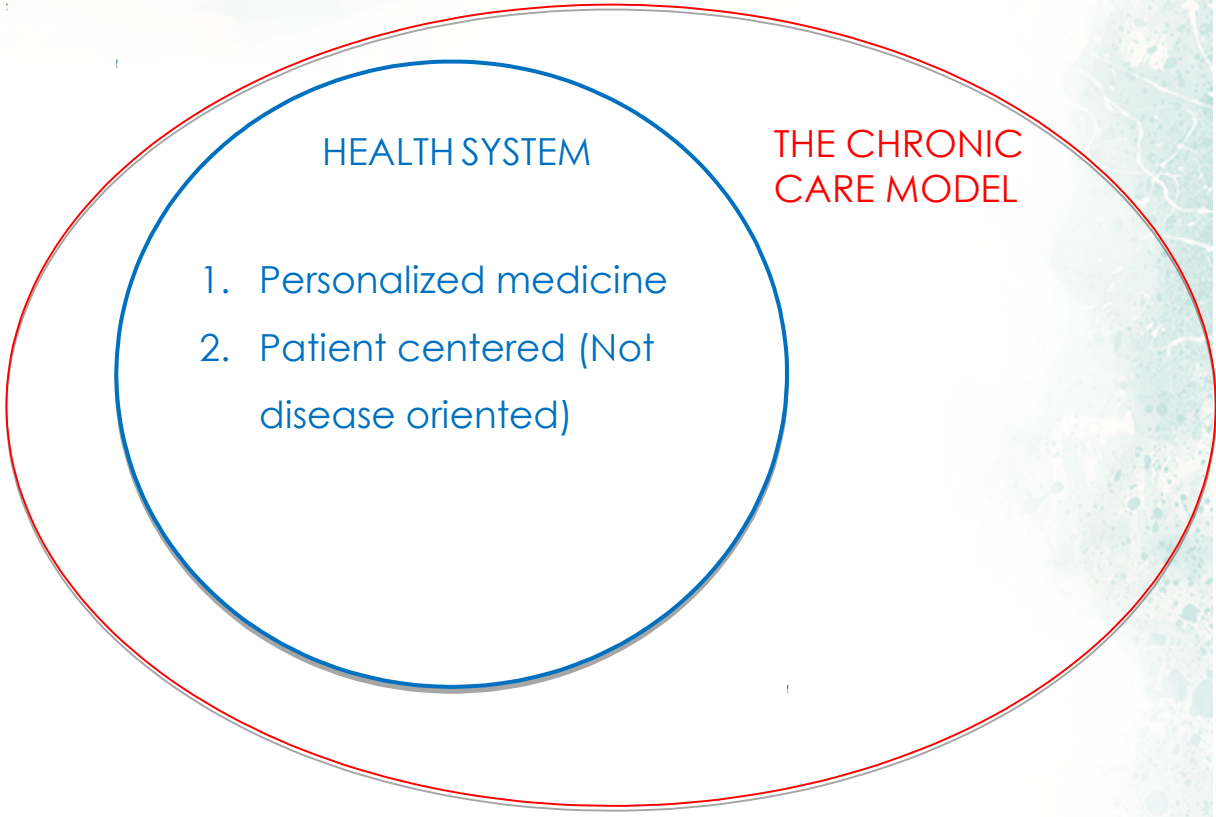
Results

	Baseline					Follow-up				
	Total N =224	Modena N=117	Sydney N=82	Hong Kong N=25	P	Total N=224	Modena N=117	Sydney N=82	Hong Kong N=25	P
	Mean (SD)									
QoL	**0.86** (0.15)	0.86 (0.14)	0.84 (0.18)	0.92 (0.1)	0.02	**0.9** (0.09)	0.9 (0.08)	N/A	0.9 (0.1)	0.92

p <0.01

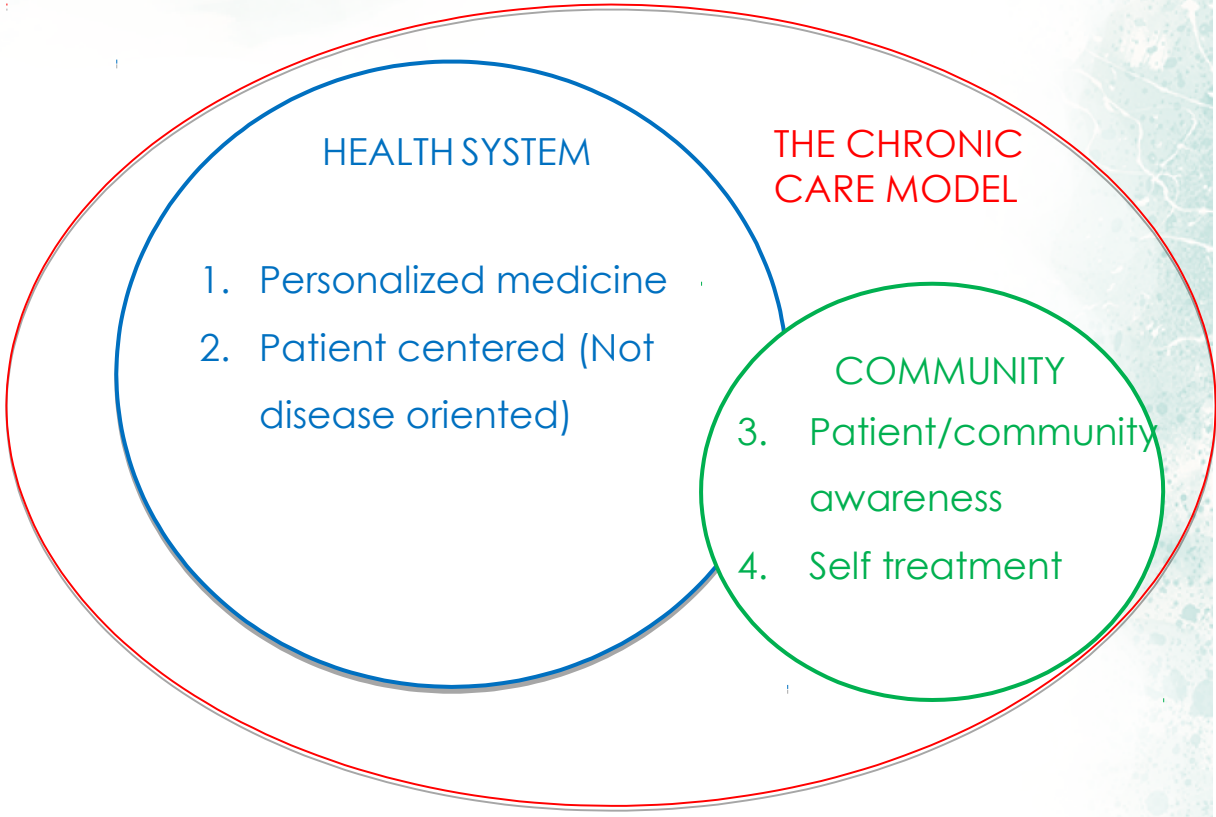
Total Patient care

Total Patient Care is a comprehensive patient approach which considers the physical, emotional, social, economic, and spiritual needs of the person; his or her response to illness;



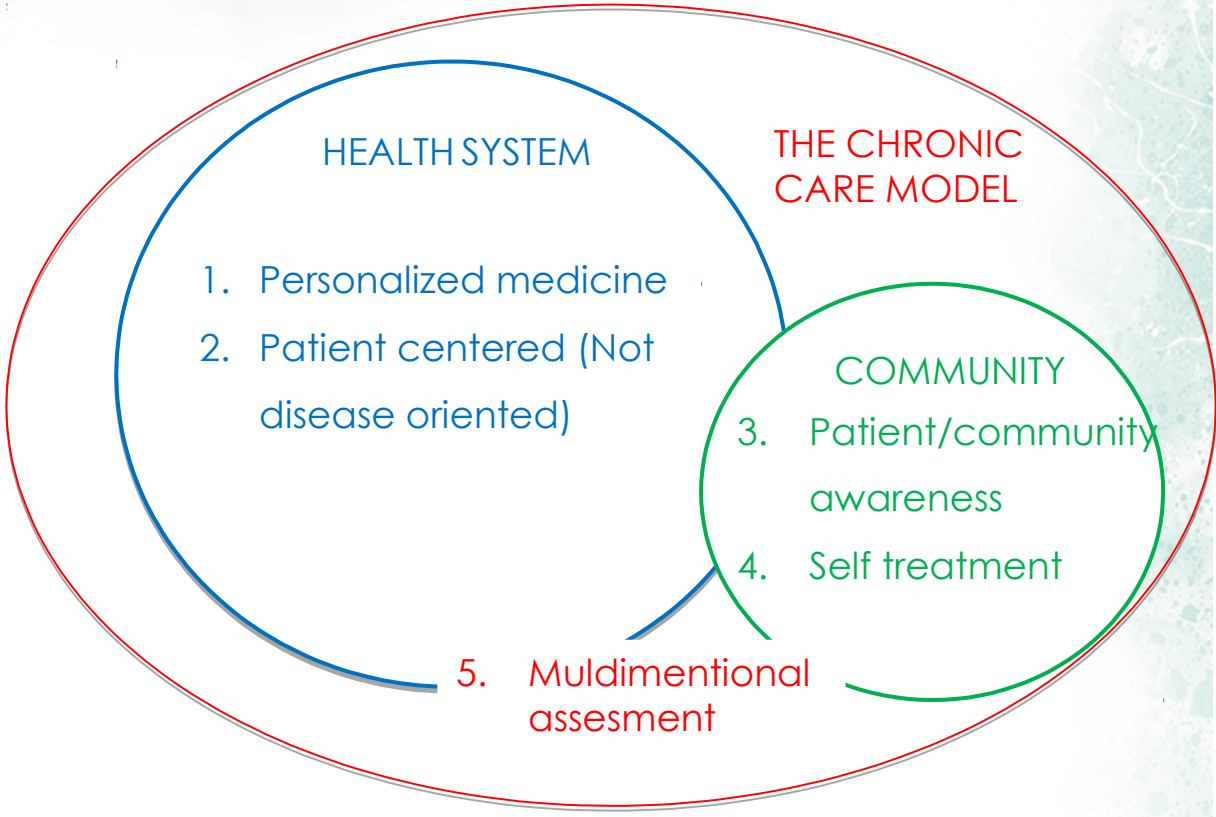
Total Patient care

Total Patient Care is a comprehensive patient approach which considers the physical, emotional, social, economic, and spiritual needs of the person; his or her response to illness; and the effect of the illness on the ability to meet self-care needs.



Total Patient care

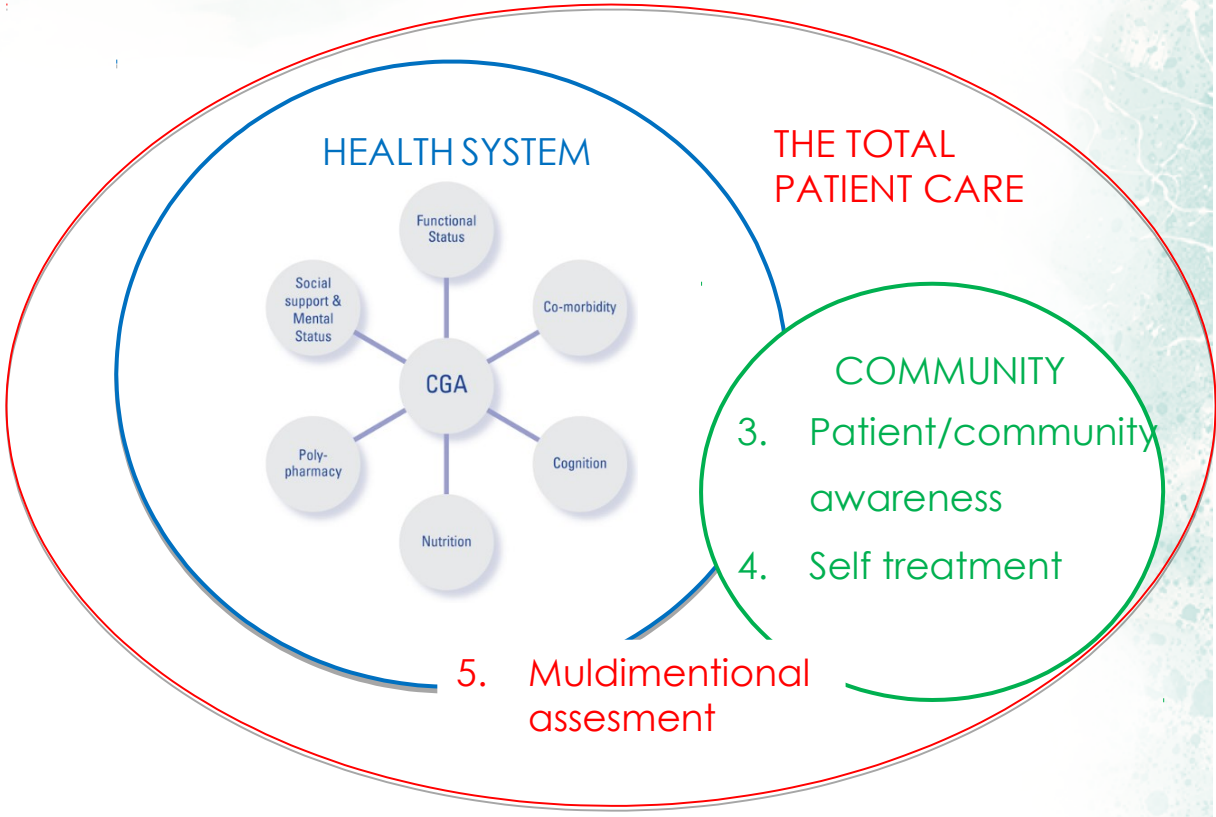
Total Patient Care is a comprehensive patient approach which considers the physical, emotional, social, economic, and spiritual needs of the person; his or her response to illness; and the effect of the illness on the ability to meet self-care needs.
It means a transition away from a model of single referral center for care provision to a system of comprehensive coordinated care able to provide both primary and specialized support for PLWH



THE COMPREHENSIVE GERIATRIC ASSESSMENT (CGA)

The CGA is what better reproduce a Total Patient Care Model suitable to:

- ✓ Assess functional capacities
- ✓ Address a comprehensive coordinated care



Take home messages

- ✓ It is time to reshape healthcare system and define new relevant clinical outcomes based on a total patient care paradigm
- ✓ HIV care goes beyond obtaining HIV undetectability
- ✓ Assessment implies a switch from a multi-disciplinary approach of HIV disease into a Multi-dimensional assessment of functional ability, through a comprehensive geriatric assessment

The ultimate goal for our patient (and for us) is
HEALTHY AGING