Organización Panamericana de la Salud

Oficina Regional de la Organización Mundial de la Salud

ACADEMIA LATINOAMERICANA DE MEDICINA DEL ADULTO MAYOR

ALMA

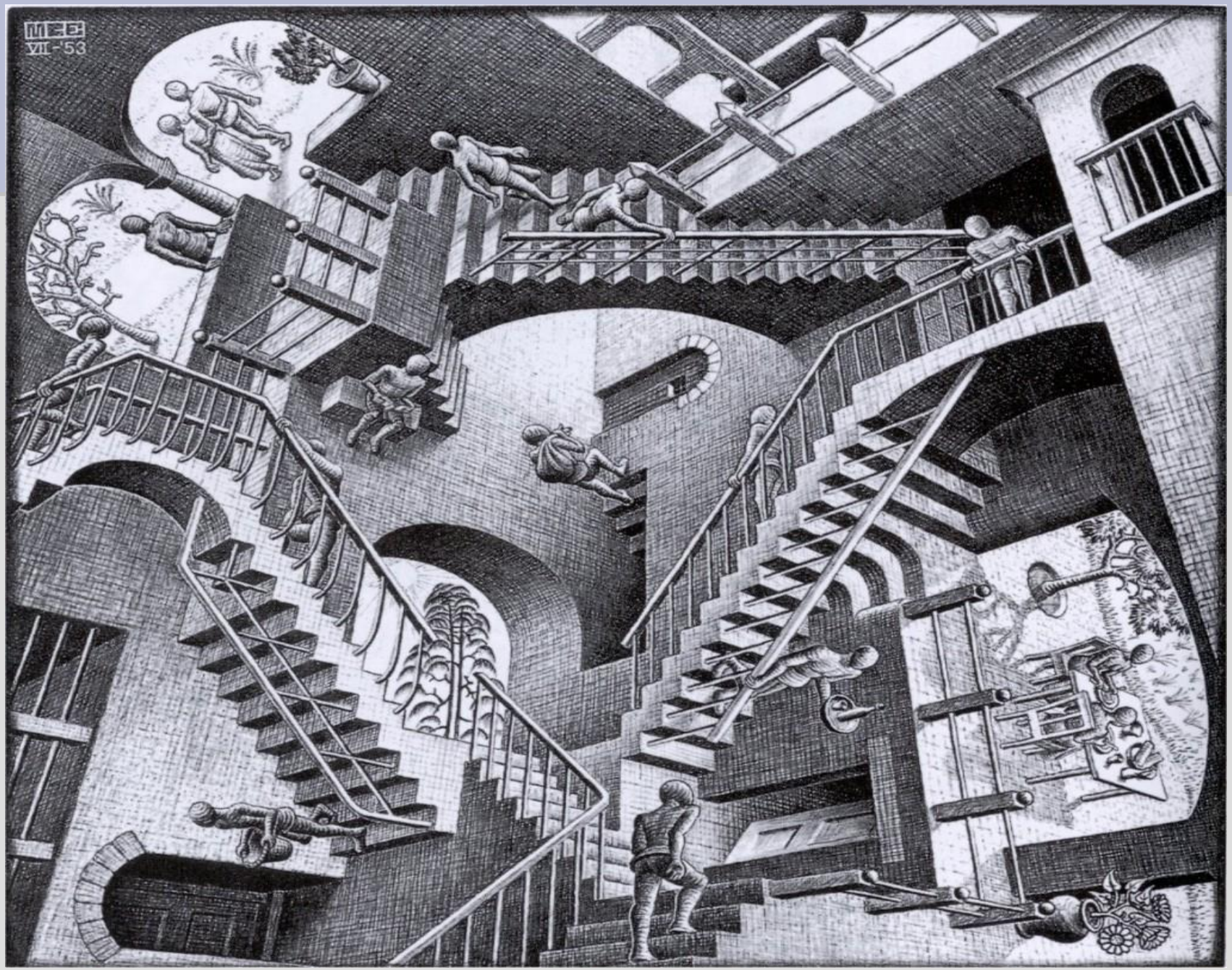
Factores predictores de Fragilidad

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M.C.E.
VII-'53

De donde proviene la información de la que disponemos?

Estudio	N	Seguimiento	Lugar	metodologia
ELSA	5000	11	Inglaterra	encuesta
LASA	3800	24	Holanda	encuesta
BLSA	3257	8	China	encuesta
SHARE	36000	11	20 paises europeos	encuesta
Manitoba follow up study	4000	57	Canada	seguimiento
LUCAS	3326	15	alemania	encuesta
TAIWAN	3363	18	China	encuesta
Helsinsky Longitudinal Study	1815	26	Finlandia	seguimiento
Toledo Aging Study	2488	3	Espana	seguimiento

TRAJECTORIES OF FRAILTY AND RELATED FACTORS OF THE OLDER PEOPLE IN TAIWAN

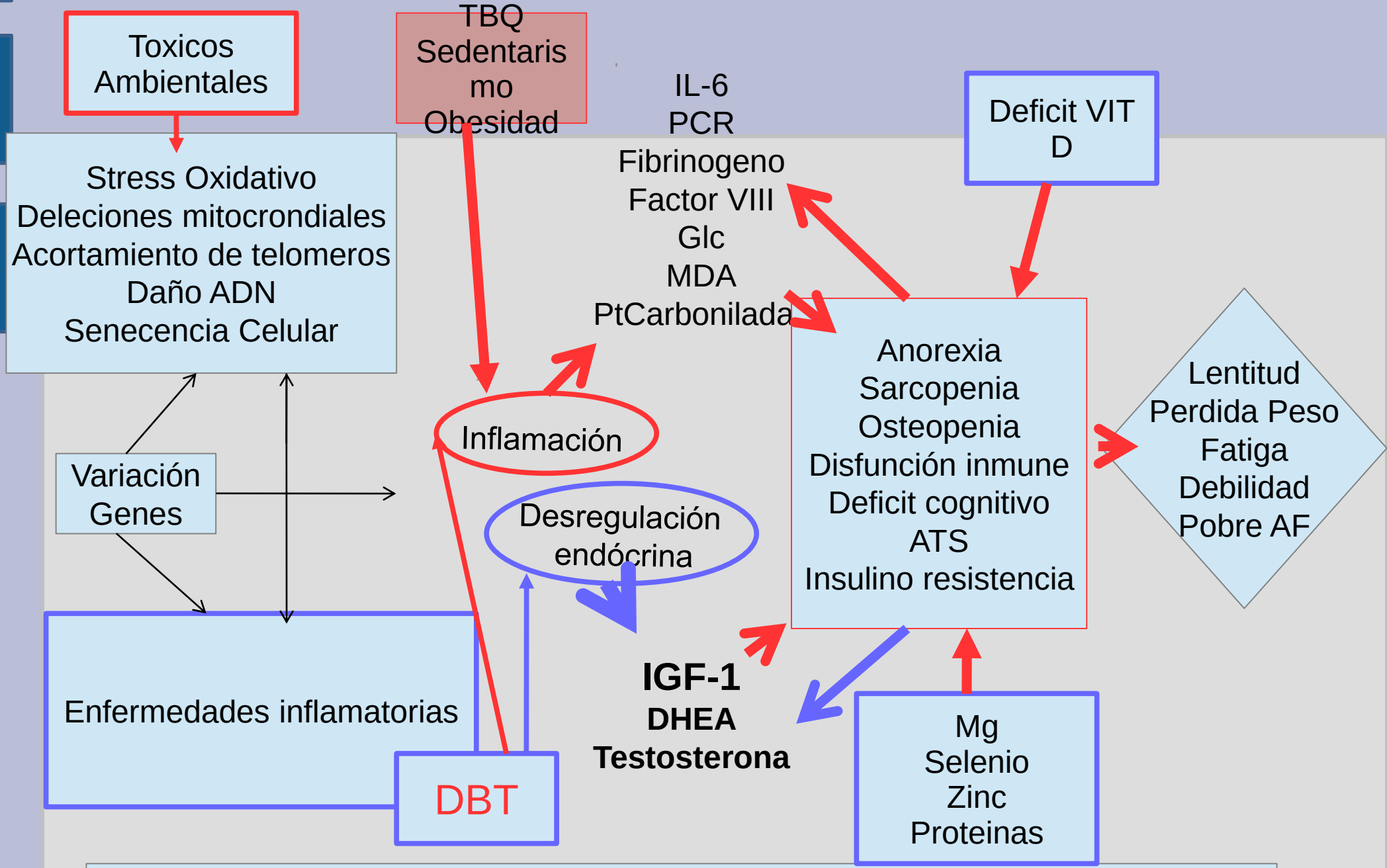
Hui-Chuan Hsu

Table 3. Covariates predicting frailty trajectory memberships and risk of frailty

Variable	Group 1 (*Maintaining nonfrailty*) *B* (*SE*)	Group 2 (*Developing frailty*) *B* (*SE*)	Group 3 (*High risk of frailty*) *B* (*SE*)
Time-constant covariates			
Sex (male)	—	−0.76 (0.31)*	−1.58 (0.30)***
Age	—	0.07 (0.04)*	0.17 (0.03)***
Education level	—	−0.13 (0.04)***	−0.15 (0.04)***
Time-varying covariates			
Intercept	−1.45 (1.02)	−1.00 (0.68)	0.78 (0.60)
Linear	—	1.42 (0.81)	2.71 (0.70)***
Quadratic	—	0.00 (0.49)	−2.17 (0.57)***
Number of chronic diseases	0.10 (0.12)	0.29 (0.08)***	0.36 (0.09)***
ADL difficulty	0.71 (0.12)***	3.49 (0.73)***	0.15 (0.06)**
Financial satisfaction	−0.19 (0.19)	−0.54 (0.15)***	−0.21 (0.12)
Social participation	−0.48 (0.40)	−0.44 (0.23)	−0.80 (0.22)***
Depressive mood	1.21 (0.19)***	0.63 (0.13)***	0.73 (0.12)***
Cognitive function	−0.63 (0.16)***	−0.19 (0.13)	−0.37 (0.10)***

Note. BIC = −3445.04 (*N* = 8205 observations); BIC = −3438.74 (*N* = 2026 persons).
*$p < .05$; **$p < .01$; ***$p < .001$.

Fisiopatología de la Fragilidad



Research Agenda for Frailty, Waltson et al. JAGS 2006, Modificado GA

Dieta y fragilidad

Cardiovascular risk profile and frailty in a population-based study of older British men

S E Ramsay,[1] D S Arianayagam,[1] P H Whincup,[2] L T Lennon,[1] J Cryer,[1] A O Papacosta,[1] S Iliffe,[1] S G Wannamethee[1]

- Cohorte de Hombres británicos reclutados en 1978
- 1600 Reexaminados en 2013 (3000 sobrevivientes)
- Edades de 70 a 90
- 19% fragilidad
- 54% prefragilidad

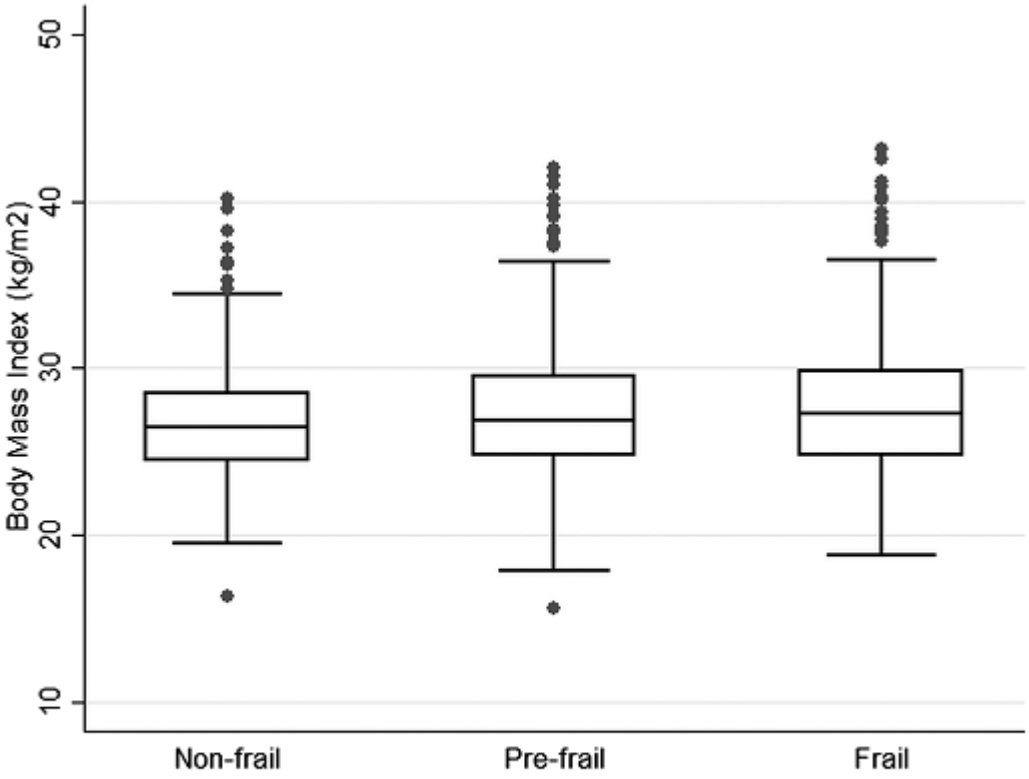


Figure 1 Box and whisker plot with the distribution of body mass index according to frailty groups in 1622 older British men.

http://heart.bmj.com/ on July 29, 2015

Tipo de Dieta y Fragilidad

Major dietary patterns and risk of frailty in older adults: a prospective cohort study

Luz M León-Muñoz[1,2*], Esther García-Esquinas[1,2], Esther López-García[1,2], José R Banegas[1,2] and Fernando Rodríguez-Artalejo[1,2*]

- Estudio prospectivo tiempo de seguimiento 3,5 años
- Compararon individuos adherentes a Dieta prudente (DP) vs Dieta occidentalizada (DO)
- Tercilo de mayor adherencia a DP : OR 0,4 (0,2-0,81) para fragilidad
- Tercilo superior de DO: OR 1,61 (0,85-3,03)
  - Enlentecimiento marcha: OR 1,85 (1,19-2,87)
  - Perdida inv.de peso: OR 2,12 (1,22-3,70)

BMC Medicine (2015) 13:11

Contents lists available at ScienceDirect

Experimental Gerontology

journal homepage: www.elsevier.com/locate/expgero

- Estudio de longitudinal
- 592 mujeres edad promedio de 74 años (Cohorte Toledo 1994)
- Elevación de PINP y disminución de VitD **OR 4.65 (IC 1,46-14,8) para el desarrollo de fragilidad**

Table 2
Serum levels of BTMs, PTH, and 25(OH)D according to frailty status.

	Robust	Prefrail	*P* value	Frail	*P* value
PINP (ng/mL)	39.70 [29.37–55.35]	43.4 [33.01–59.58]	0.024	52.2 [36.27–70.77]	<0.001
β-CTX (pg/mL)	295.60 [–]	[219.48–466.28]	0.014	356.40 [–]	0.019
PTH (pg/mL)	51.73 [40.97–67.86]	57.00 [43.70–72.05]	0.006	64.36 [46.30–82.83]	0.001
25(OH)D (nmol/L)	39.88 [26.03–51.99]	34.33 [20.87–47.38]	0.014	30.19 [17.01–48.21]	0.005

The median levels of the biomarkers were compared using the Kruskal–Wallis non-parametric ANOVA with post-hoc Mann–Whitney U-test. All values are expressed as medians [IQRs]. A value of $P < 0.025$ was considered significant after adjusting for comparison twice (4th column: prefrail vs. robust; 6th column: frail vs. robust).

Actividad Física y Fragilidad



Sarcopenic obesity predicts instrumental activities of daily living disability in the elderly. **Baumgartner RN et al.**

Obes Res 2004;12(12):1995–2004

Osteoartritis y fragilidad

	Risk of Frailty (Longitudinal Analyses)		
	N (%)	Crude RR	Adjusted* RR (95% CI)
Radiographic knee OA			
No (ref) (*N* = 1,121)	28 (2.50)	1.0	1.0
Yes (*N* = 1,859)	88 (4.73)	1.94	1.45 (0.91, 2.30)
Symptomatic knee OA			
No (ref) (*N* = 2,053)	58 (2.83)	1.0	1.0
Yes (*N* = 921)	58 (6.30)	2.31	1.66 (1.11, 2.48)
Radiographic severity of knee OA			
KL = 0 (ref) (*N* = 701)	18 (2.57)	1.0	1.0
KL = 1(*N* = 406)	10 (2.46)	0.96	0.79 (0.35, 1.79)
KL = 2 (*N* = 705)	26 (3.69)	1.45	1.16 (0.62, 2.17)
KL = 3 (*N* = 677)	31 (4.58)	1.82	1.20 (0.65, 2.24)
KL = 4 (*N* = 491)	31 (6.31)	2.56	1.50 (0.82, 2.87)
Number of knees with OA			
None (ref) (*N* = 1,121)	28 (2.50)	1.0	1.0
Unilateral (*N* = 783)	34 (4.34)	1.78	1.51 (0.89, 2.56)
Bilateral (*N* = 1,069)	54 (5.05)	2.08	1.36 (0.82, 2.25)

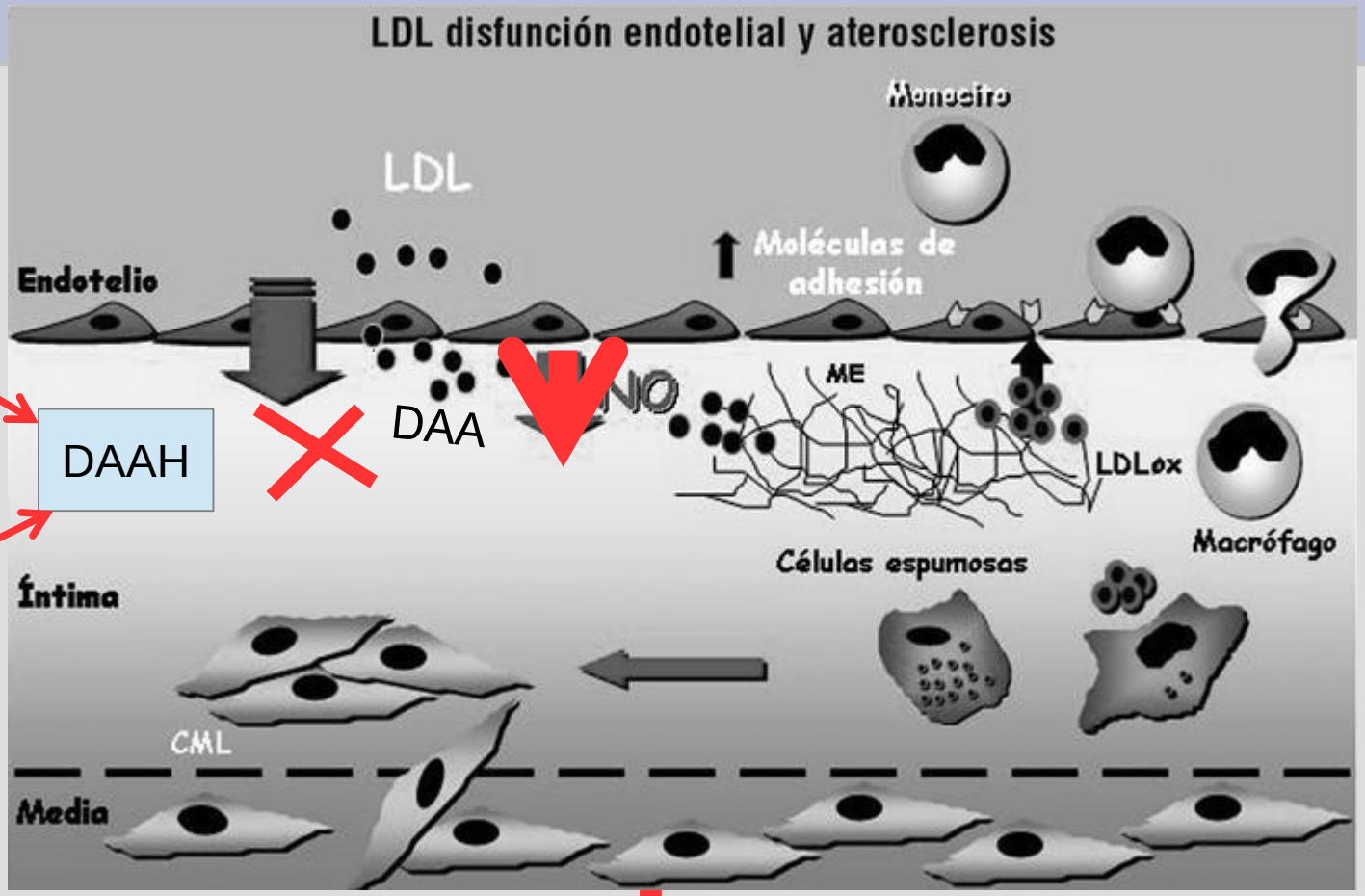
Journal of Gerontology Medical Sciences Marzo 2015

Medicación y fragilidad

Use of				
Aspirins	40 (13.4%)	47 (20.3%)	14 (23.0%)	0.049
Antidepressants	31 (10.4%)	46 (19.8%)	20 (32.8%)	<0.001
Tranquilizers	56 (18.7%)	69 (29.7%)	20 (32.8%)	0.001
Proton pump inhibitors	87 (29.1%)	108 (46.6%)	29 (47.6%)	<0.001
Oral hypoglycemic	38 (12.7%)	33 (14.2%)	7 (11.5%)	0.805
Insulin therapy	3 (1.0%)	13 (5.6%)	2 (3.3%)	N/A
Analgesic drugs	73 (24.4%)	80 (34.5%)	30 (49.2%)	<0.001
NSAIDs	81 (27.1%)	63 (27.2%)	13 (21.3%)	0.623
Antihypertensive drugs	184 (61.5%)	161 (69.4%)	48 (78.7%)	0.016
Lipid-lowering agents	117 (39.1%)	88 (37.9%)	28 (45.9%)	0.522
Thyroid therapy	29 (9.7%)	17 (7.3%)	10 (16.7%)	0.097
Cardiovascular drugs	66 (22.1%)	72 (31.0%)	22 (36.1%)	0.017
Neurological drugs	20 (6.7%)	26 (11.2%)	9 (14.8%)	0.062
Respiratory drugs	21 (7.0%)	32 (13.8%)	17 (27.9%)	<0.001
Digestive drugs	32 (10.7%)	33 (14.2%)	17 (27.9%)	0.002
Oral anticoagulants	33 (11.0%)	53 (22.8%)	16 (26.2%)	<0.001

Experimental Gerontology, May 2015

Enfermedad Cardiovascular y fragilidad: Disfunción Endotelial



Enfermedad Cardiovascular

Association between endothelial dysfunction and frailty: the Toledo Study for Healthy Aging

Cristina Alonso-Bouzón · Laure Carcaillon · Francisco J. García-García · María S. Amor-Andrés · Mariam El Assar · Leocadio Rodríguez-Mañas

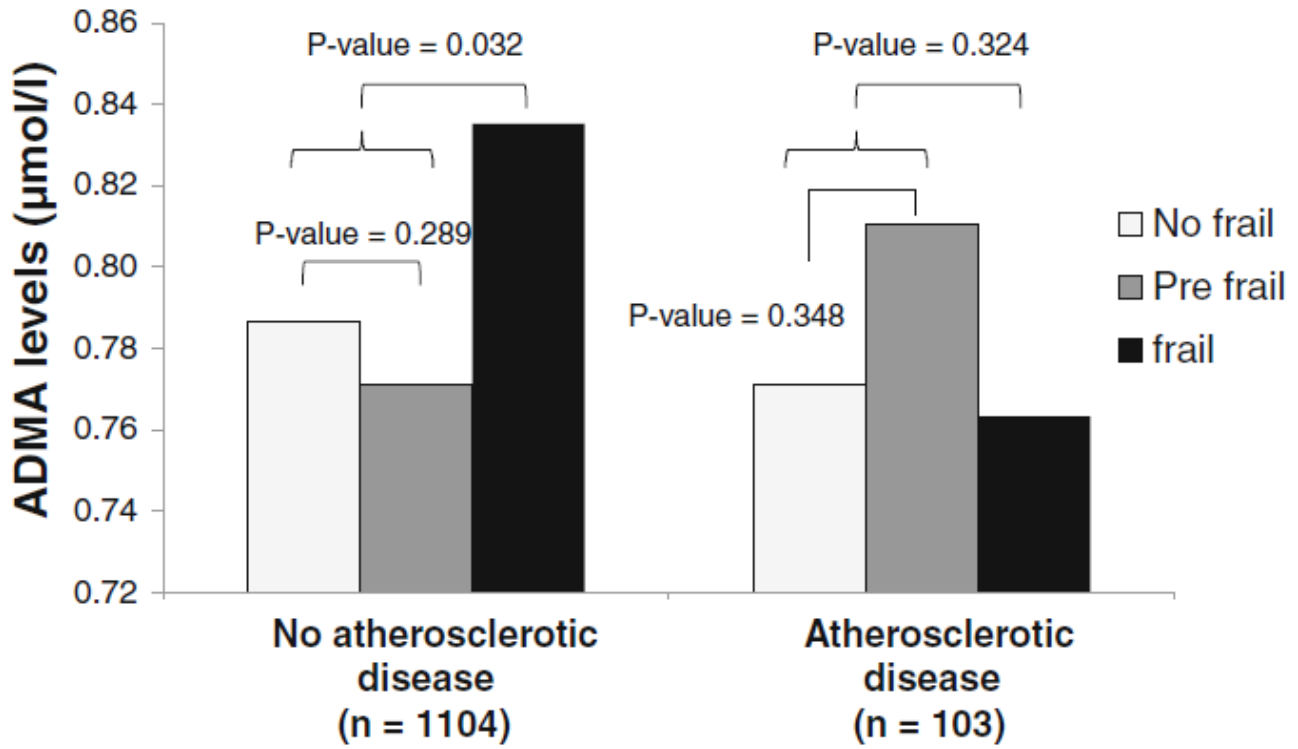


Fig. 1 Age-adjusted geometric means of ADMA in frail, pre-frail, and non-frail subjects with and without atherosclerotic disease

AGE (2014) 36:495–505

Table 2 Cardiovascular disease and related chronic conditions according to frailty in a population-based study of 1622 older British men aged 71–92 years

	Not frail	Pre-frail	Frail
Angina			
n (%)	45 (10%)	149 (17%)	80 (27%)
OR (95% CI)	1.00	1.75 (1.22 to 2.50)	2.94 (1.64 to 4.45)
Heart attack			
n (%)	41 (9%)	123 (14%)	63 (21%)
OR (95% CI)	1.00	1.61 (1.11 to 2.35)	2.64 (1.70 to 4.11)
Stroke			
n (%)	23 (5%)	86 (10%)	51 (17%)
OR (95% CI)	1.00	2.00 (1.24 to 3.23)	3.78 (2.22 to 6.45)
Peripheral vascular disease			
n (%)	4 (1%)	36 (4%)	22 (7%)
OR (95% CI)	1.00	5.01 (1.77 to 14.20)	10.01 (3.36 to 29.85)
Heart failure			
n (%)	1 (0%)	16 (2%)	18 (6%)
OR (95% CI)	1.00	8.56 (1.13 to 64.97)	30.93 (4.05 to 236.43)
Deep vein thrombosis			
n (%)	8 (2%)	24 (3%)	18 (6%)
OR (95% CI)	1.00	1.55 (0.69 to 3.50)	3.56 (1.48 to 8.53)
Diabetes			
n (%)	60 (14%)	135 (15%)	83 (27%)
OR (95% CI)	1.00	1.24 (0.89 to 1.73)	2.78 (1.89 to 4.09)

All ORs are age-adjusted.

Ramsay SE, *et al*. *Heart* 2015;**101**:616–622.

DBT, Hipoglucemia y Fragilidad

- 1,23 episodios por cada 100 tratados con sulfonilureas
- 2.7 episodios por cada 100 tratados con insulina
- Hipoglucemia asintomática en ancianos
- Mayor riesgo de hipoglucemia con
  - Edad
  - Polifarmacia
  - Deterioro cognitivo o demencia
- Reiterados episodios de hipoglucemia aumentan la mortalidad y dependencia (ECV y ACV)

Arch Intern Med 1997
Aging and Disease 2015

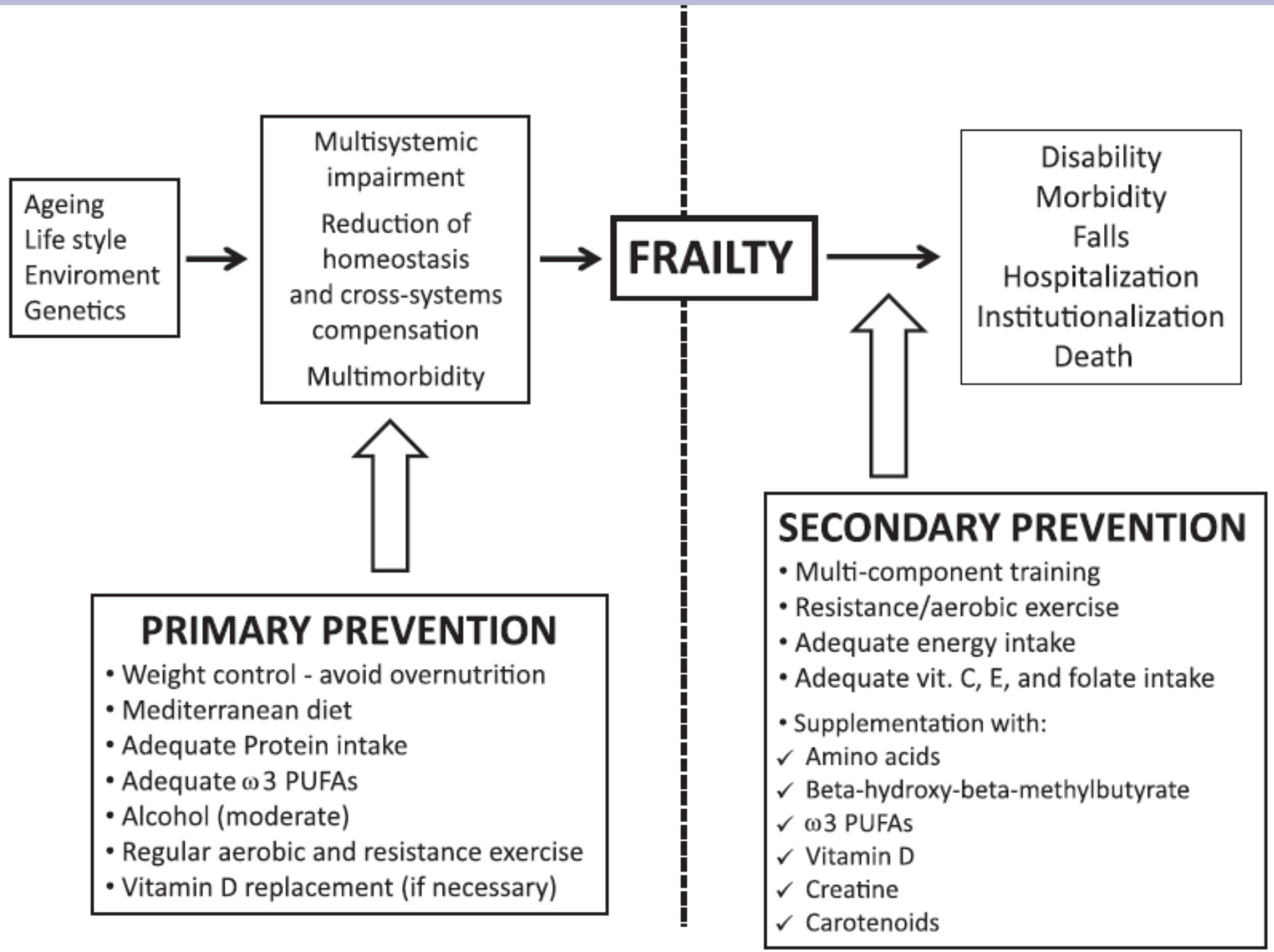
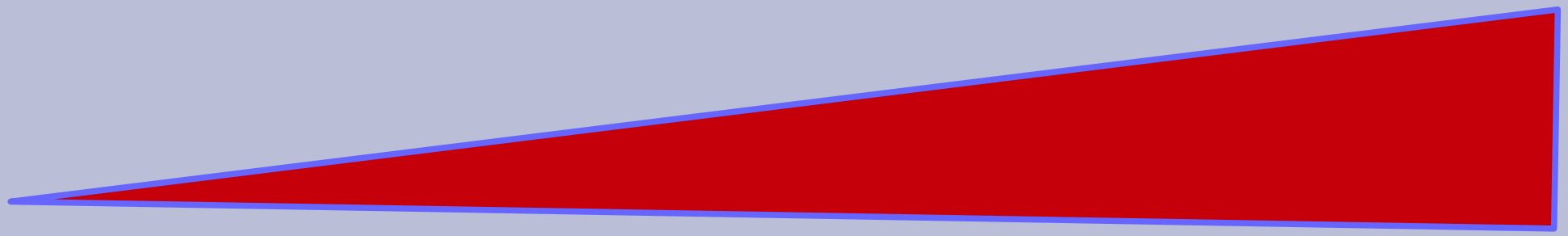


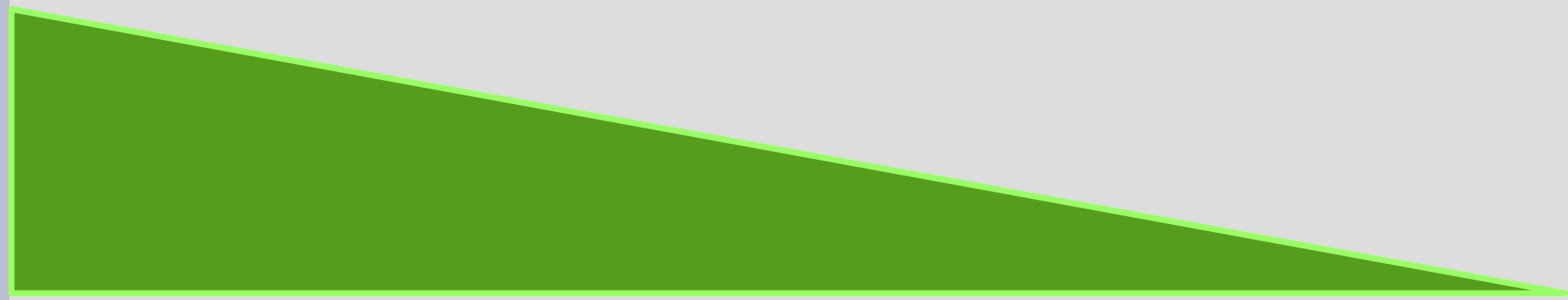
Fig. 3. Possible approach to primary and secondary prevention of frailty syndrome based on diet and physical exercise.



Robusto

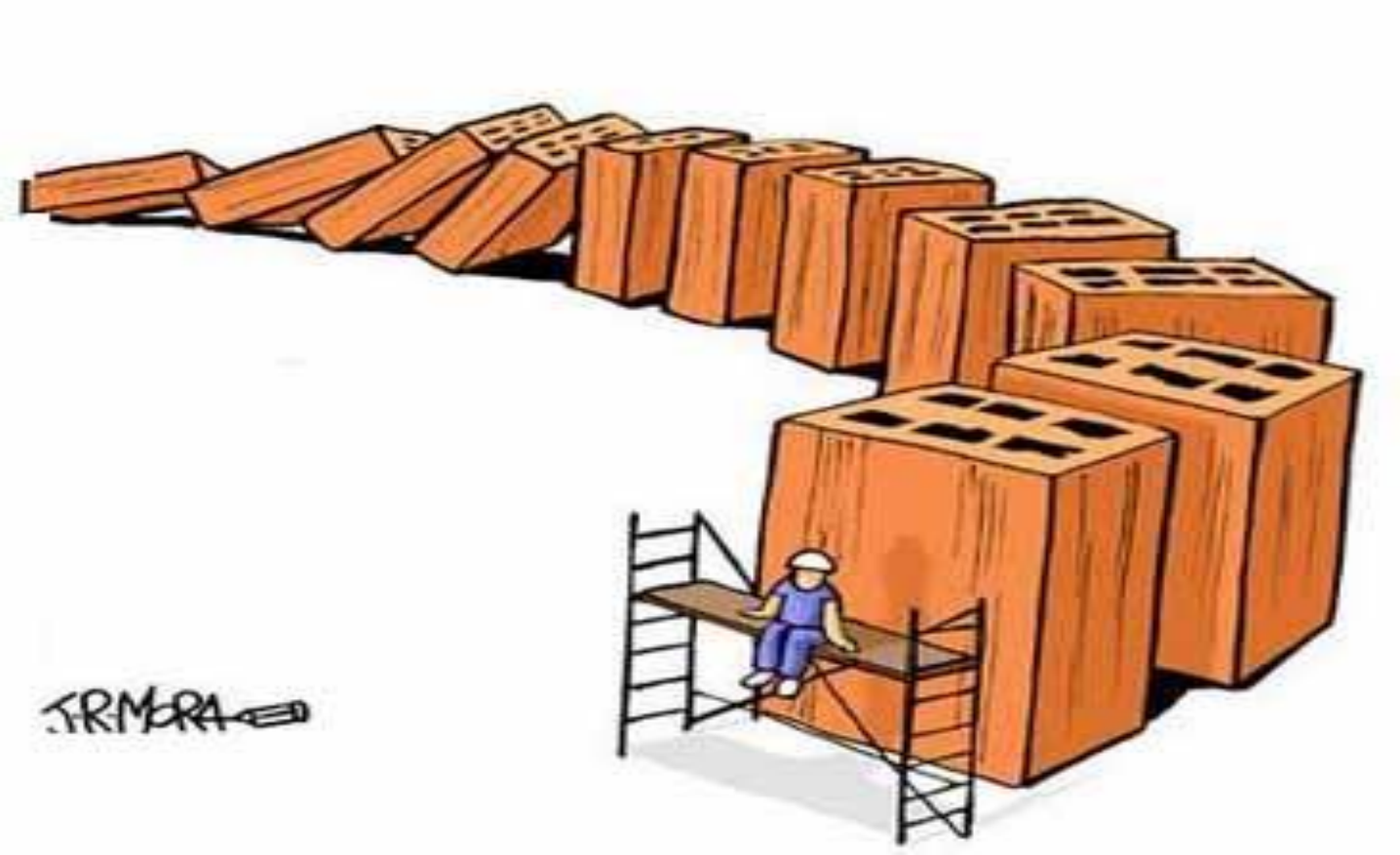
Prefrágil

Frágil




Geissmann-
Evangelium
Vol. 3
Geissmann

- Trayectorias de envejecimiento
- Determinantes Múltiples
- Determinantes biológicos e inflamación
- Conocer para corregir trayectorias antes de llegar al destino final



Muchas Gracias