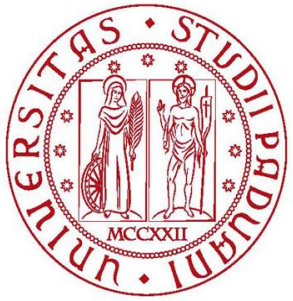
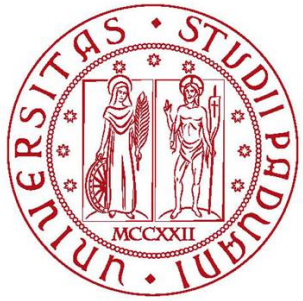


VILLA MARGHERITA
CASA DI CURA PRIVATA

STRESS OSSIDATIVO
nuove acquisizioni in
Fisiopatologia, clinica e terapia
IVª Edizione
17 SETTEMBRE 2016

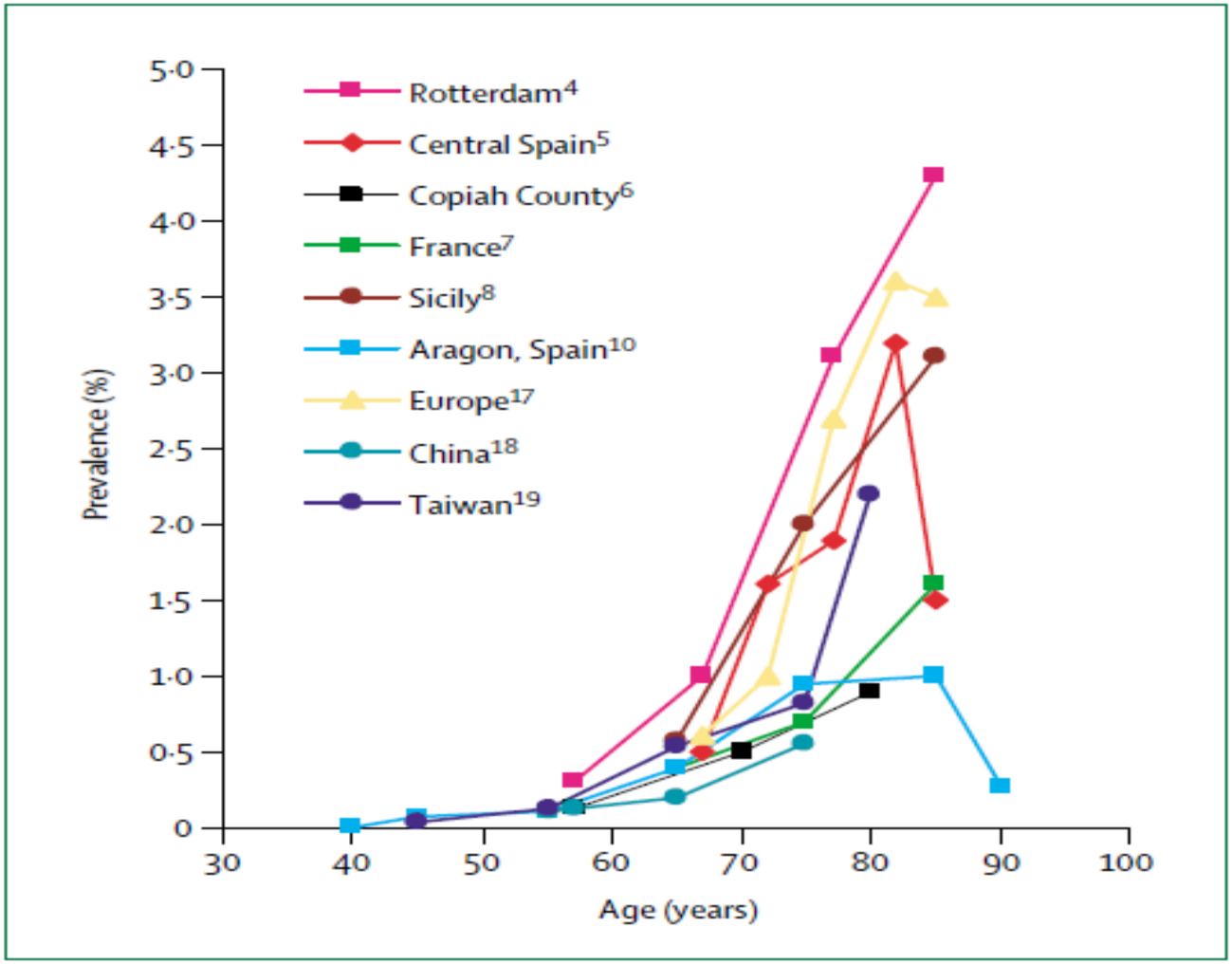


DIETA MEDITERRANEA E STRESS OSSIDATIVO NELLA MALATTIA DI PARKINSON

Dr. Nicola Veronese, MD

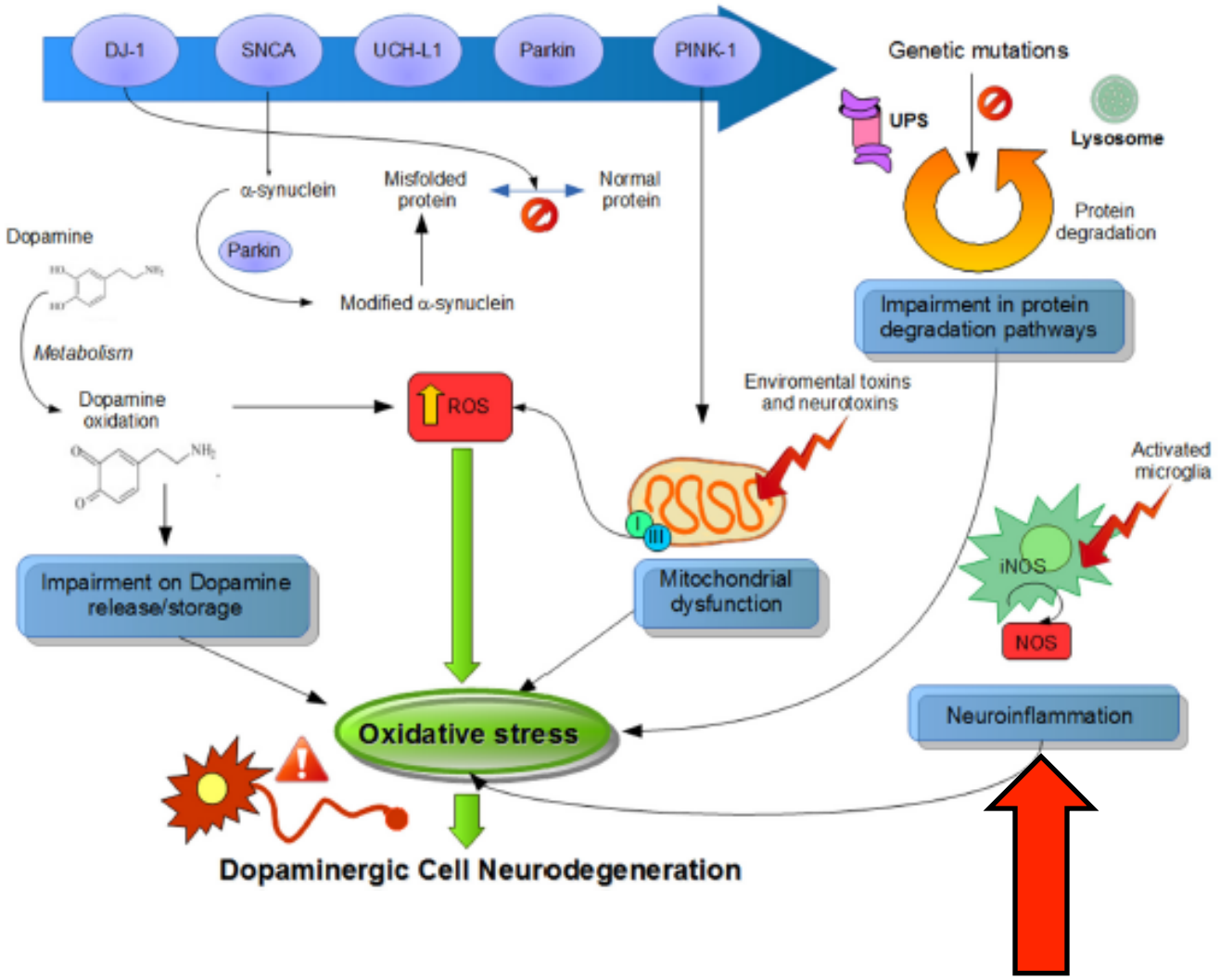
Università di Padova

PD: PREVALENZA



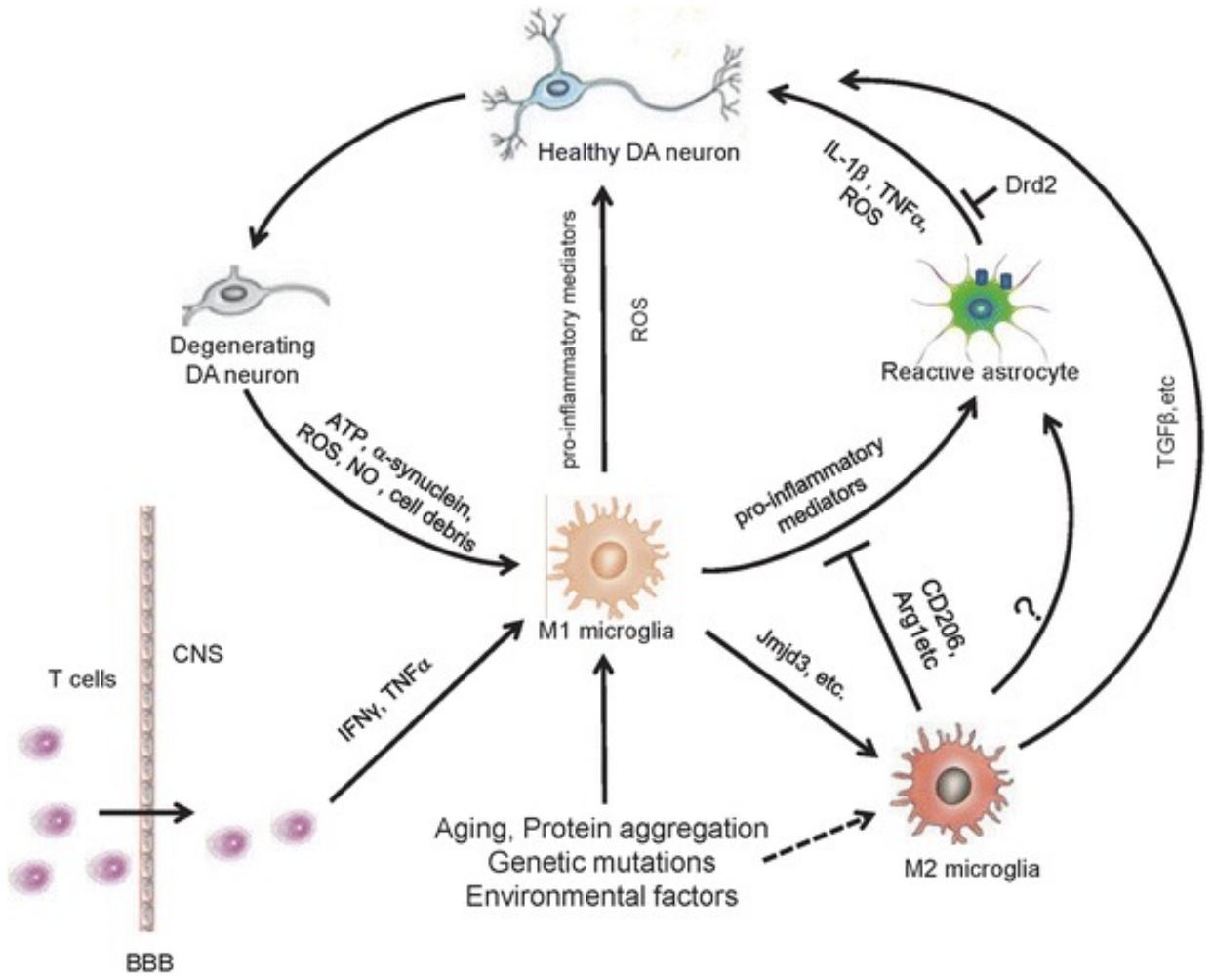
De Lau et al., Lancet Neurology, 2006

STRESS OSSIDATIVO E PD



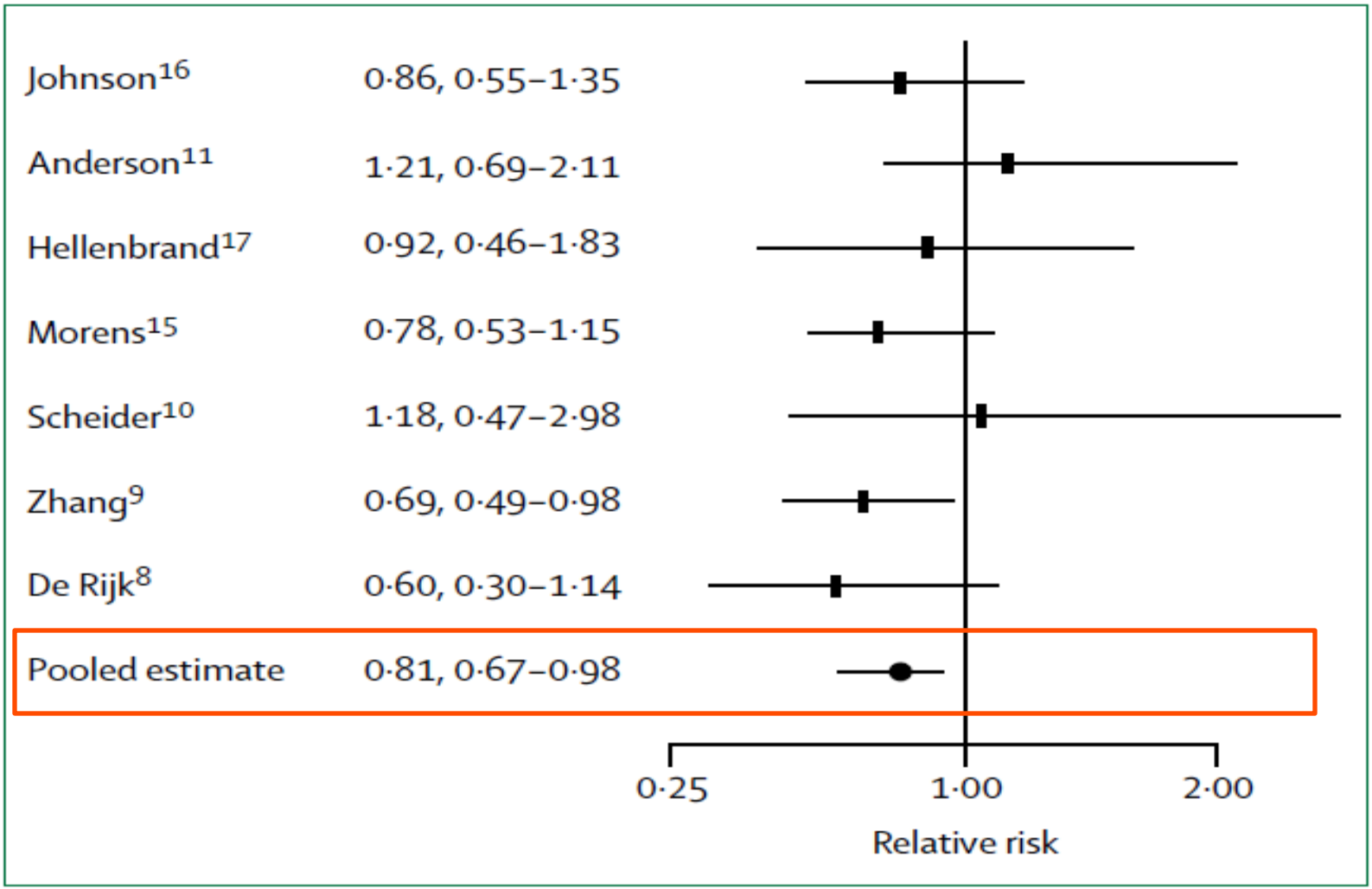
Blesa et al., Frontiers in Neuroanatomy, 2015

INFIAMMAZIONE E PD



Wang et al., Transl Neurodegener, 2015

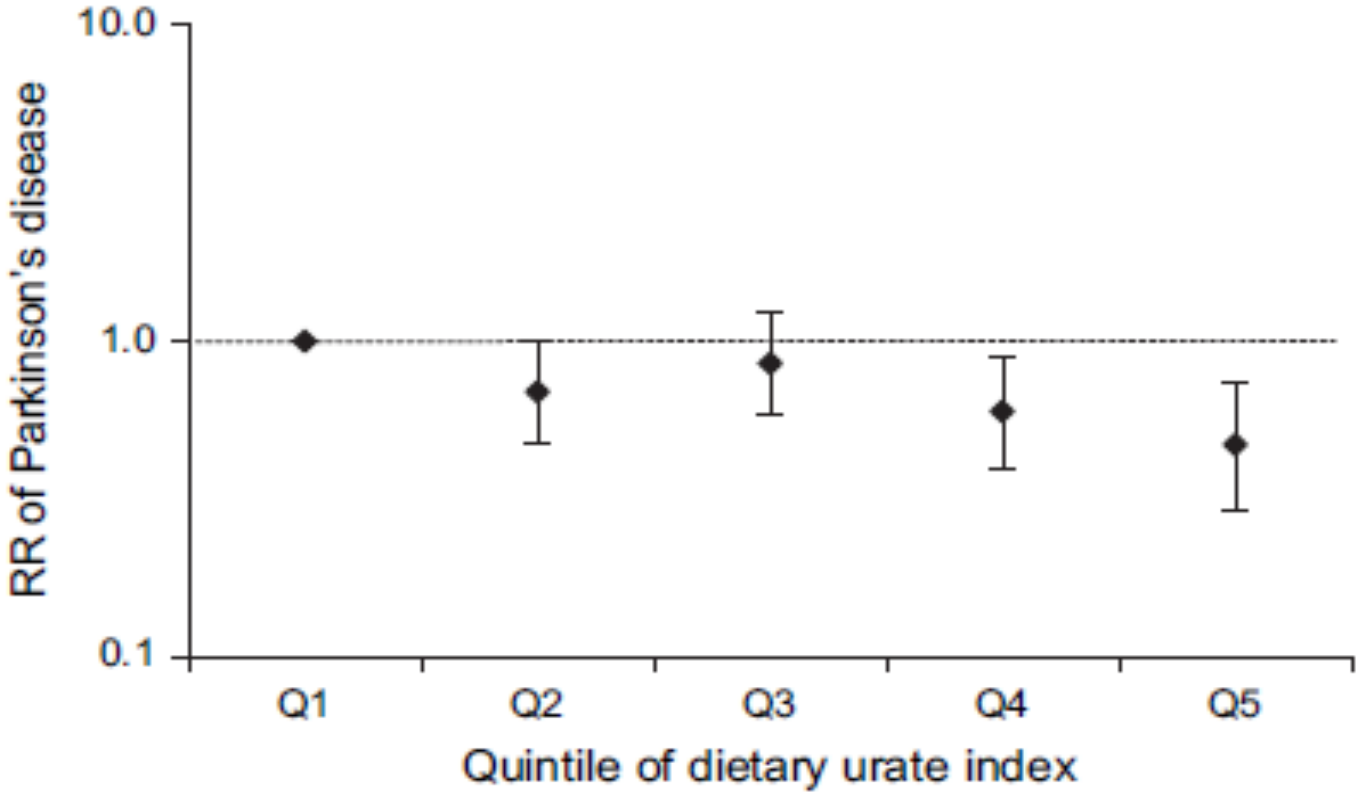
ANTIOSSIDANTI E PD



Etaminan et al., Lancet Neuro, 2005

ACIDO URICO E PD

47406 uomini (NHPFS); 14 anni follow-up



Gao et al., Am J Epidem., 2008

FUMO E PD

44 studi caso-controllo, 4 studi longitudinali

Smoking status	No. of Studies	RR[a] (95% CI) Fixed Effects	RR[a] (95% CI) Random Effects	Ri Statistic	Q Test (p Value)
Ever smokers					
All studies	45	0.59 (0.54–0.63)	0.58 (0.54–0.63)	0.07	0.35
Case–control studies	41	0.60 (0.55–0.65)	0.59 (0.55–0.65)	0.09	0.31
Cohort studies	4	0.52 (0.42–0.64)	0.52 (0.42–0.64)	<0.01	0.64
Past smokers					
All studies	16	0.80 (0.69–0.93)	0.80 (0.69–0.93)	0.40	0.06
Case–control studies	13	0.88 (0.78–1.00)	0.88 (0.75–1.02)	0.22	0.24
Cohort studies	3	0.57 (0.45–0.72)	0.57 (0.45–0.72)	0.04	0.35
Current smokers					
All studies	18	0.39 (0.32–0.47)	0.39 (0.32–0.47)	0.31	0.10
Case–control studies	15	0.41 (0.34–0.49)	0.41 (0.32–0.51)	0.37	0.08
Cohort studies	3	0.32 (0.22–0.47)	0.32 (0.22–0.47)	<0.01	0.53

Hernan et al., Ann Neurol, 2002

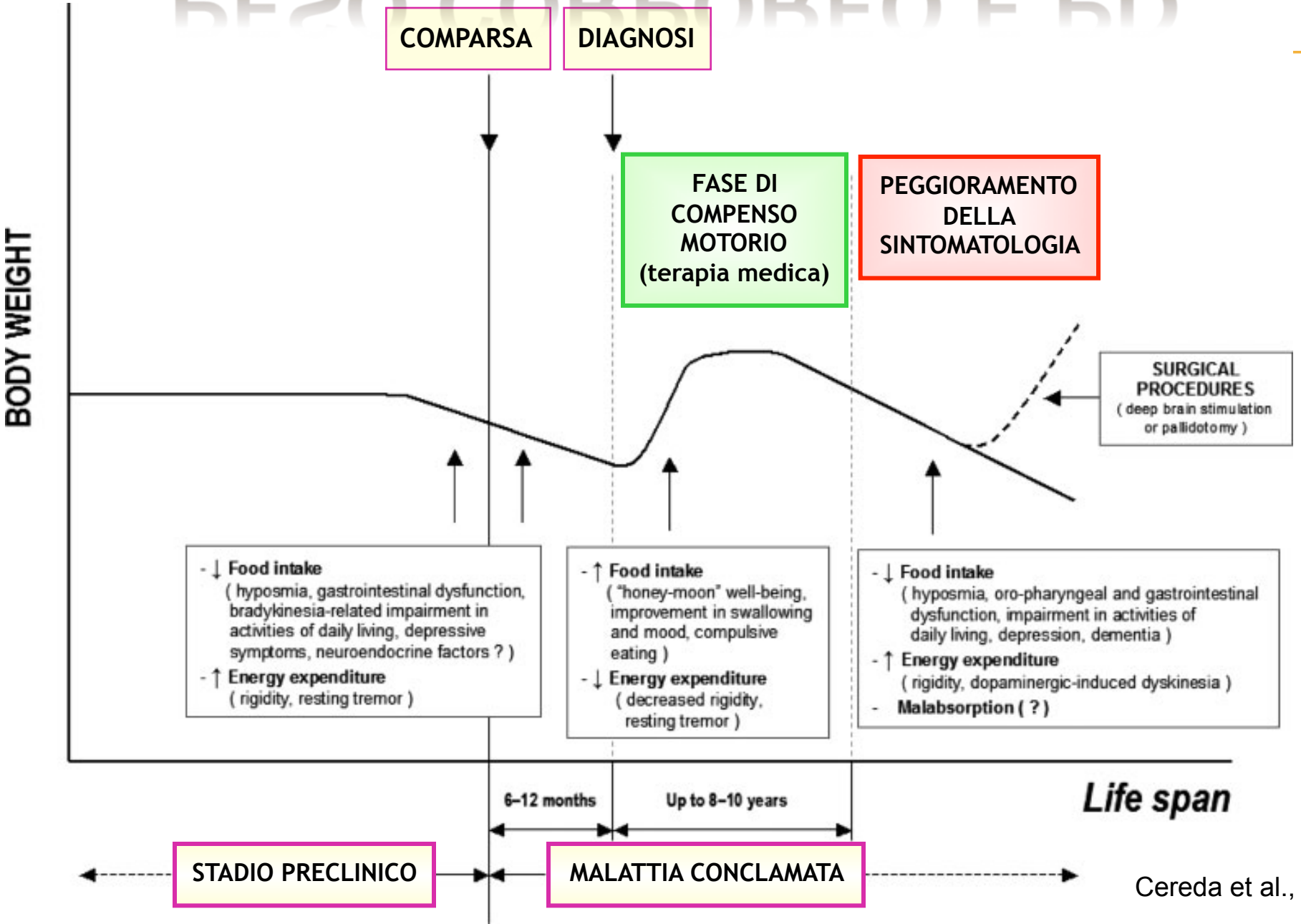
NUTRIZIONE E PD

Prevalence of malnutrition in Parkinson's disease: a systematic review

Jamie M Sheard, Susan Ash, Peter A Silburn, and Graham K Kerr

prevalence of malnutrition in PD patients. Studies that attempted to classify participants with PD into nutritional risk and/or malnutrition categories using body mass index, weight change, anthropometric measures, and nutritional screening and assessment scores were included. The prevalence of malnutrition ranged from 0% to 24% in PD patients, while 3–60% of PD patients were reported to be at risk of malnutrition. There was a large degree of variation among studies in the methods chosen, the definition of malnutrition using those methods, and the detail in which the methodological protocols were reported. The true extent of malnutrition in the PD population has yet to be accurately quantified. It is important, however, to screen for malnutrition at the time of PD diagnosis.

PESO CORPOREO E PD



Cereda et al.,

An algorithm (decision tree) for the management of Parkinson's disease (2001):

Treatment Guidelines

AMERICAN ACADEMY OF NEUROLOGY

Le linee guida raccomandano di consigliare ai pazienti che sperimentano tali interazioni (blocco post - prandiale) di ridistribuire la assunzione di proteine, limitando questa, il più possibile, al solo pasto serale (~ 80 %).

NON SUSSISTE UN' INDICAZIONE AD UNA DIETA IPOPROTEICA!!

Tuttavia, l'aderenza a tali regimi dietetici può non essere sempre soddisfacente per il paziente in termini di risultati terapeutici e la sua efficacia può essere variabile.

Inoltre, vi è ancora la necessità di definire quali siano i pazienti che realmente beneficiano di tale terapia nutrizionale.

REVISIONE SISTEMATICA DELLA LETTERATURA

Low-Protein and Protein-Redistribution Diets for Parkinson's Disease Patients with Motor Fluctuations: A Systematic Review

Movement Disorders - *Ottobre 2010;13:2021-34*

Emanuele Cereda, MD, PhD,[1*] Michela Barichella, MD,[1] Carlo Pedrolli, MD,[2] and Gianni Pezzoli, MD[1]

Tutti gli studi dal Gennaio 1973 al Giugno 2009

L'aderenza a tali regimi dietetici si associa ad un sostanziale miglioramento della funzione motoria. Tuttavia possono presentarsi anche delle complicanze che possono inficiare l'aderenza stessa alla dieta.

COMPLICANZE PIU' FREQUENTI

- Discinesie severe (↓ levodopa)
- Calo ponderale
- Fame prima di cena

DROP-OUT PRECOCE

Sovradosaggio levodopa +++

Scarsi risultati (raro)

DROP-OUT TARDIVO

Cambiamento delle abitudini +++

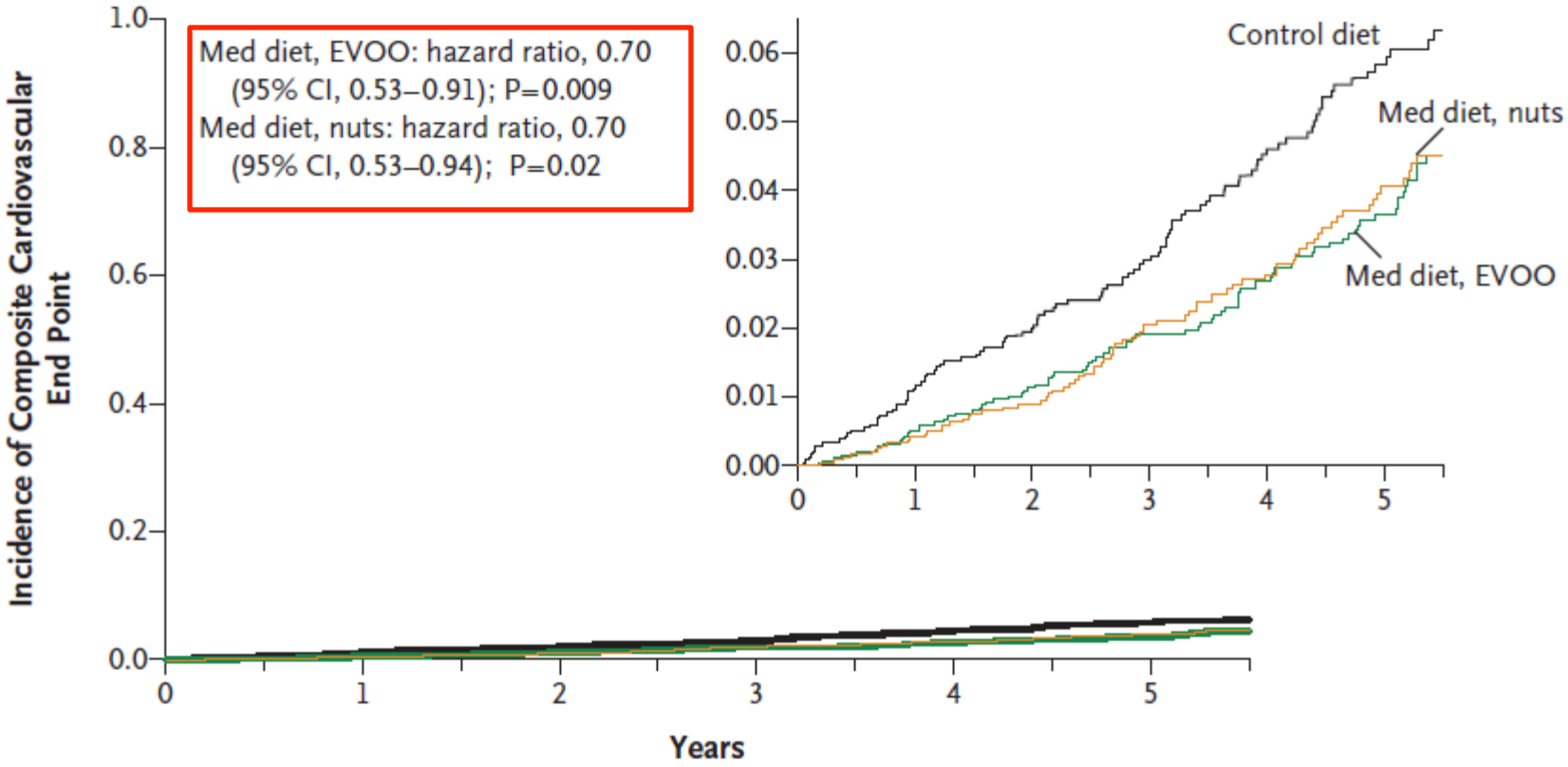
Effetti collaterali della dieta

DIETA MEDITERRANEA

Giornalmente	cereali non raffinati (pane di grano integrale, pasta di grano integrale, riso bruno ecc.): 8 porzioni frutti: 3 porzioni vegetali (incluse verdure selvatiche): 6 porzioni olio di oliva come principale grasso aggiunto latte e prodotti del latte: 2 porzioni vino con moderazione (3 porzioni nell'uomo, 1,5 per la donna), preferibilmente rosso e durante il pasto acqua in quantità libera sostituire il sale per il condimento con spezie (es. origano, basilico, timo ecc).
Settimana	pesce: 5-6 porzioni pollame: 4 porzioni olive, legumi, noci: 3-4 porzioni patate: 3 porzioni uova: 3 porzioni dolci: 3 porzioni
Mese	carni rosse: 4 porzioni

PREDIMED STUDY

A Primary End Point (acute myocardial infarction, stroke, or death from cardiovascular causes)

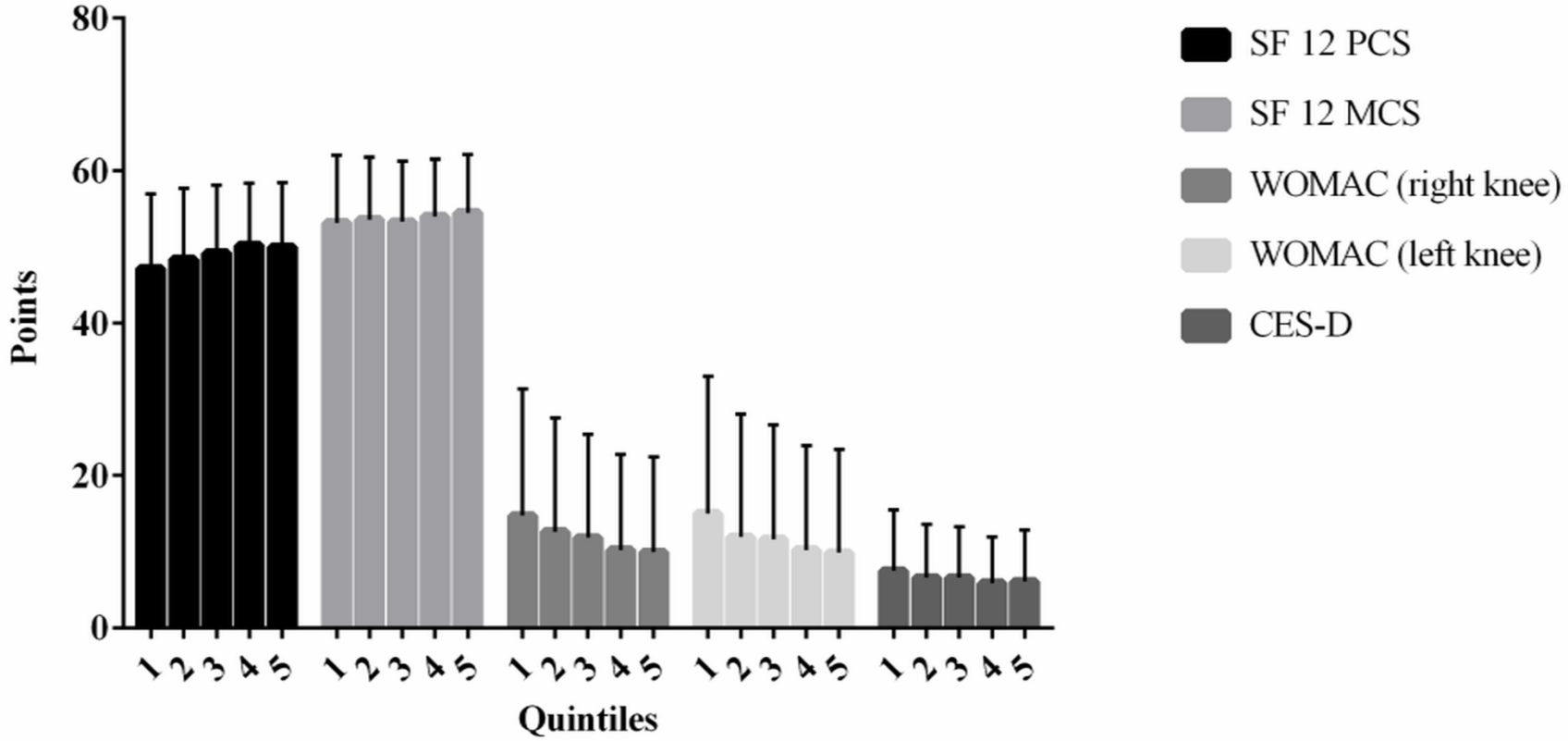


No. at Risk

Control diet	2450	2268	2020	1583	1268	946
Med diet, EVOO	2543	2486	2320	1987	1687	1310
Med diet, nuts	2454	2343	2093	1657	1389	1031

DIETA MEDITERRANEA E QUALITA' DI VITA

4,470 soggetti; età media 62 anni; Osteoartrhitis Initiative



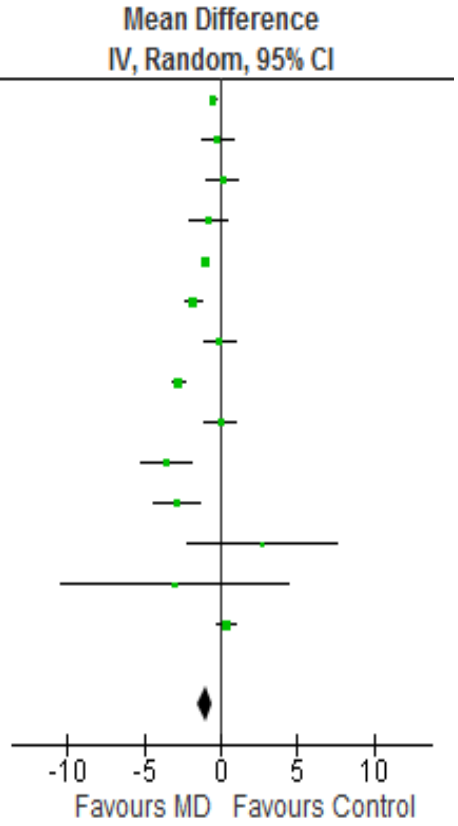
Veronese et al., AJCN, 2016-in press

DIETA MEDITERRANEA ED INFIAMMAZIONE

	MD			Control				Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI
Athyros et al. 2011	1.8	0.5	50	2.3	0.6	50	11.0%	-0.50 [-0.72, -0.28]
de Mello et al. 2011	-0.3	2.2	36	-0.1	2.2	34	7.5%	-0.20 [-1.23, 0.83]
Djuric et al. 2009	1.55	1.89	27	1.43	2.2	33	7.5%	0.12 [-0.92, 1.16]
Esposito et al. 2003	-1.1	3.3535	60	-0.3	3.3535	60	6.7%	-0.80 [-2.00, 0.40]
Esposito et al. 2004	-1.1	0.4	90	-0.1	0.3	90	11.1%	-1.00 [-1.10, -0.90]
Estruch et al. 2006	-0.1	3.6	514	1.7	3.9	256	9.7%	-1.80 [-2.37, -1.23]
Itsiopoulos et al. 2010	2.38	1.83	27	2.49	2.04	27	7.5%	-0.11 [-1.14, 0.92]
Mekki et al. 2010	4.2	0.89	20	7	0.44	20	10.3%	-2.80 [-3.24, -2.36]
Michalsen et al. 2006	0.72	2.46	48	0.74	2.93	53	7.4%	-0.02 [-1.07, 1.03]
Panunzio et al. 2011	6.2	2.5	25	9.8	4.1	36	4.9%	-3.60 [-5.26, -1.94]
Poulsen et al. 2013	-1.5	5.21	90	1.38	3.96	56	5.5%	-2.88 [-4.37, -1.39]
Sexton et al. 2013	2.1	6.2021	11	-0.62	5.8197	12	0.9%	2.72 [-2.21, 7.65]
Sköldstam et al. 2003	12	15	26	15	12	25	0.4%	-3.00 [-10.44, 4.44]
Uusitupa et al. 2013	2.7	2.2	96	2.3	1.9	70	9.5%	0.40 [-0.23, 1.03]
Total (95% CI)			**1120**			**822**	**100.0%**	**-0.98 [-1.48, -0.49]**

Heterogeneity: $Tau^2 = 0.56$; $Chi^2 = 143.55$, df = 13 ($P < 0.00001$); $I^2 = 91\%$

Test for overall effect: $Z = 3.93$ ($P < 0.0001$)



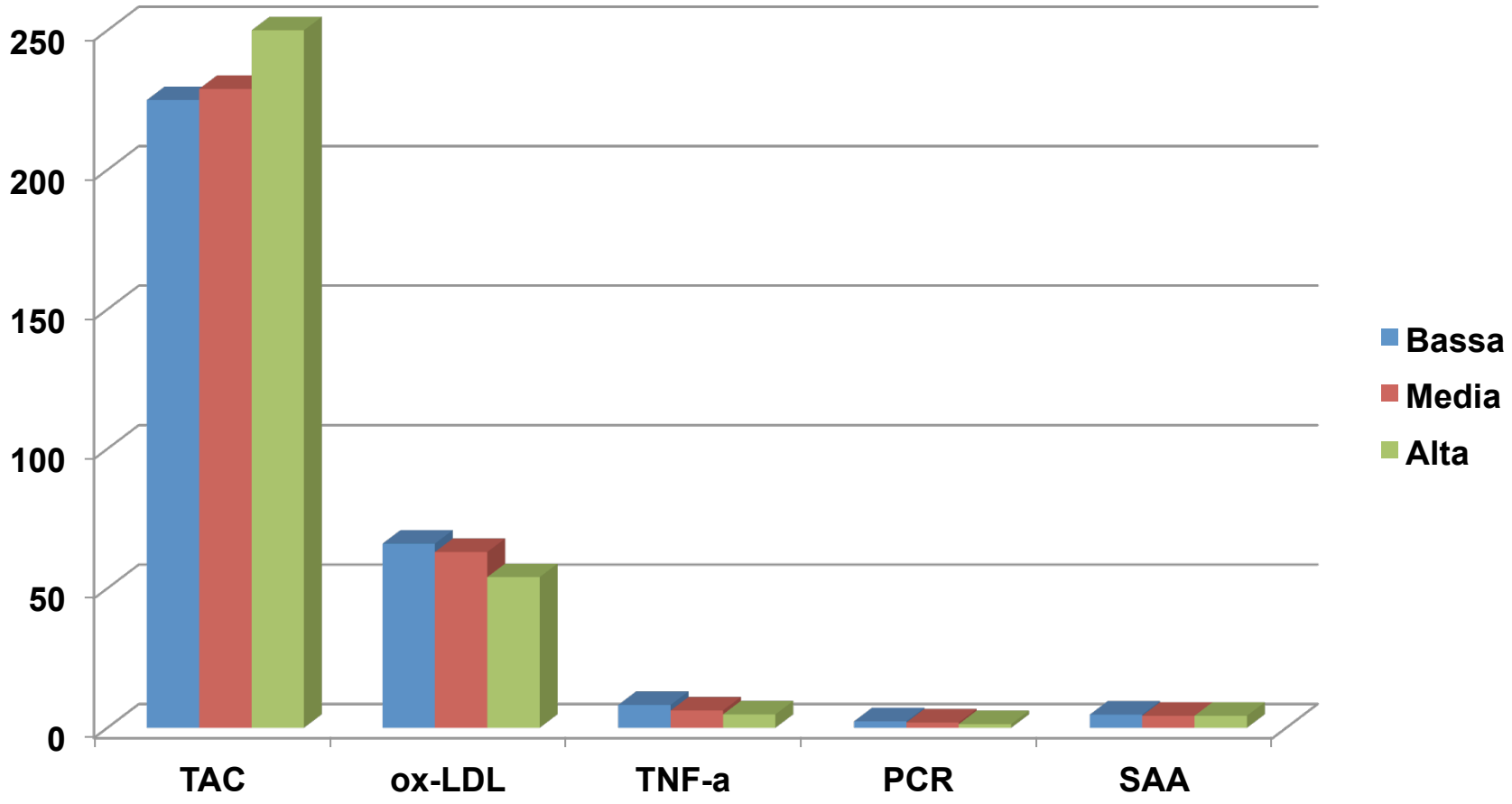
Schwingshackl et al., Nutr Met CVD, 2014

DIETA MEDITERRANEA E STRESS OSSIDATIVO

- La dieta Mediterranea contiene elevate quantità di anti-ossidanti.
- L'effetto protettivo della dieta Mediterranea sulle malattie potrebbe dipendere dalla riduzione nello stress ossidativo.
- Pochi studi, soprattutto cross-sectional.

ATTICA STUDY

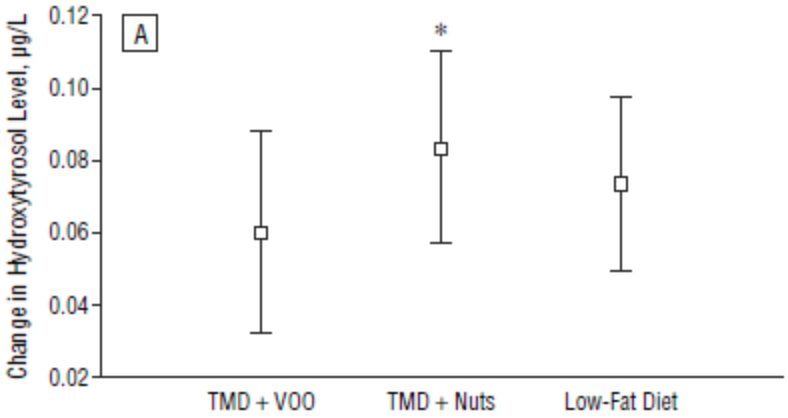
1514 uomini e 1528 donne; età media: 45 anni; Grecia

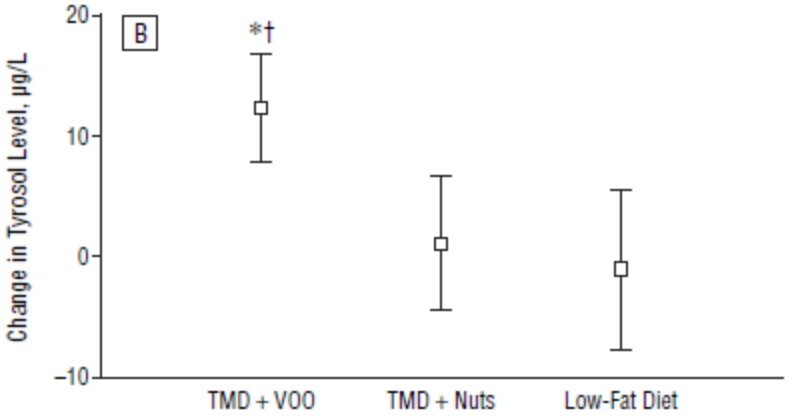


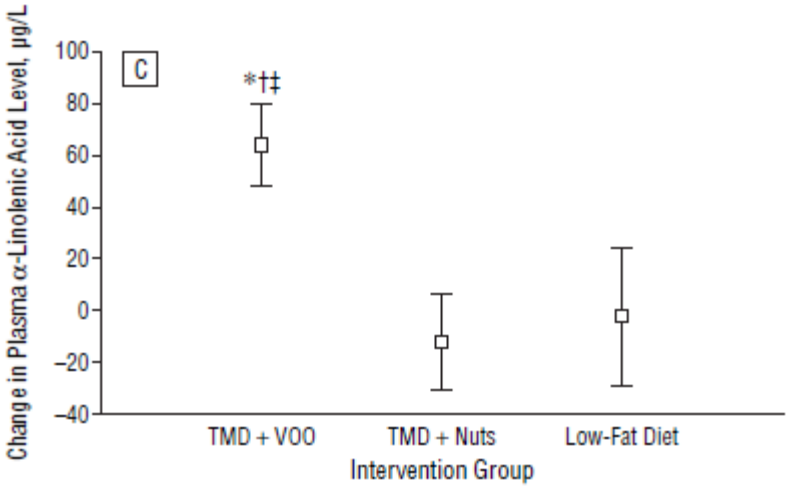
Koloverou et al., Diabetes Metab Res Rev, 2016

PREDIMED STUDY

372 soggetti; 6 mesi di follow-up; low-fat vs. MD (+noccioline o olio)







Fito' et al., Arch Int Med, 2007

DIETA MEDITERRANEA E PD (1)

Studio caso-controllo; 277 PD vs. 198 controlli sani.

	Univariate model			Multivariate model[a]		
	OR	95% CI	*P* value	OR	95% CI	*P* value
Mediterranean diet adherence (continuous)	0.8	0.78–0.96	.008	0.86	0.77–0.97	.010
Mediterranean diet adherence (tertiles)			.006 for trend			.008 for trend
Middle versus low	0.61	0.39–0.98		0.64	0.39–1.03	
Higher versus low	0.49	0.29–0.82		0.48	0.28–0.82	

Alcalay et al., Mov Dis 2012

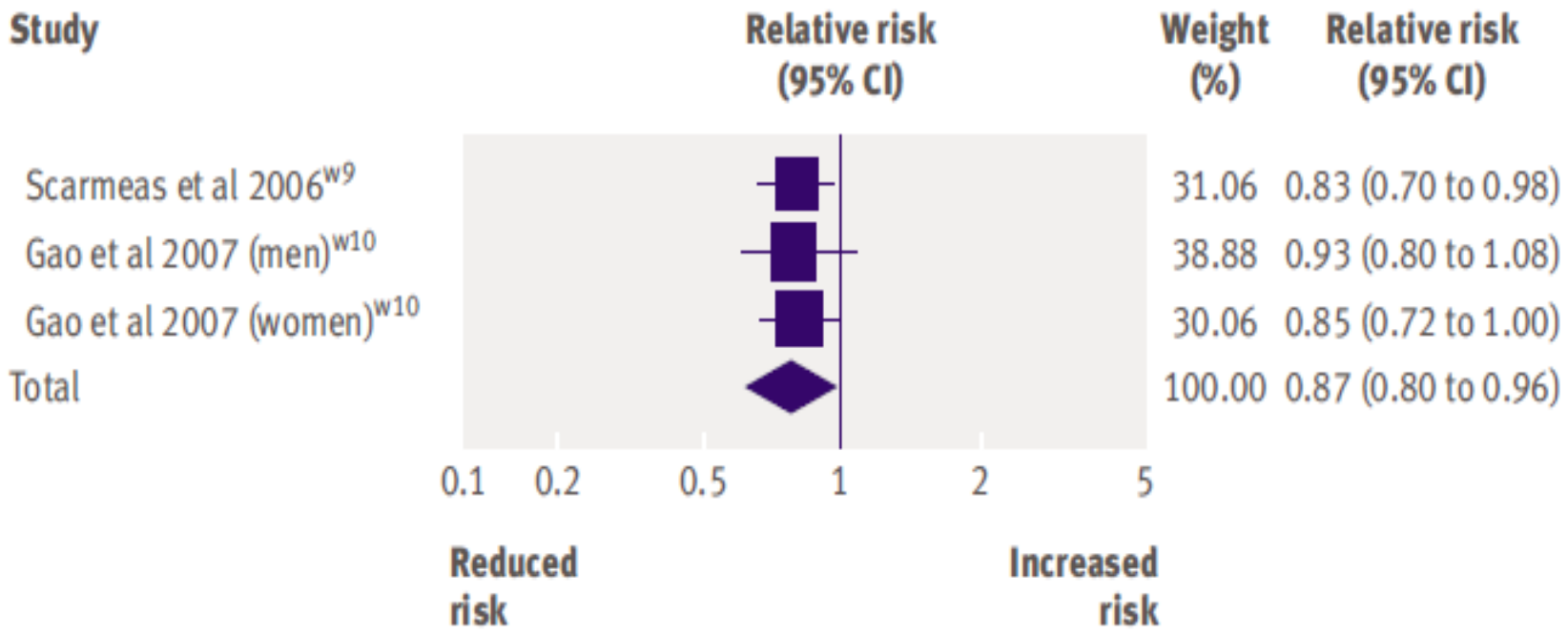
DIETA MEDITERRANEA E PD (2)

49962 uomini e 81676 donne (NHS e NHPFS); 16 anni follow-up;

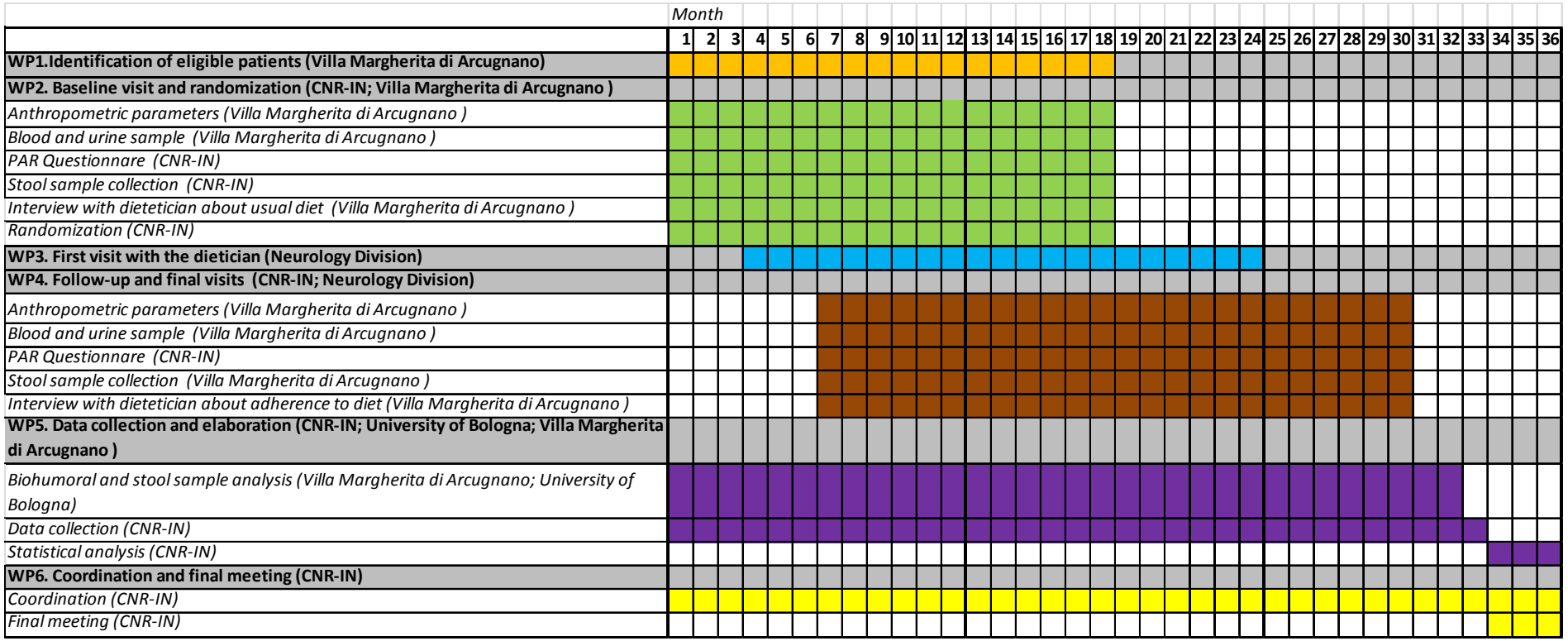
	Diet-quality scores					*P* for trend
	Q1	Q2	Q3	Q4	Q5	
Alternate Mediterranean Diet Score						
Men						
n	54	51	65	62	86	
Age- and smoking-adjusted	1	1.03 (0.69, 1.54)	1.16 (0.80, 1.69)	1.09 (0.75, 1.60)	0.90 (0.63, 1.29)	0.55
Multivariate-adjusted[2]	1	1.02 (0.68, 1.52)	1.13 (0.78, 1.65)	1.04 (0.71, 1.54)	0.84 (0.58, 1.22)	0.33
Women						
n	50	31	28	33	48	
Age- and smoking-adjusted	1	0.68 (0.43, 1.06)	0.57 (0.36, 0.91)	0.73 (0.47, 1.13)	0.75 (0.50, 1.12)	0.27
Multivariate-adjusted[2]	1	0.66 (0.42, 1.04)	0.54 (0.33, 0.86)	0.67 (0.42, 1.05)	0.66 (0.43, 1.00)	0.09
Pooled[3]	1	0.83 (0.54, 1.27)	0.79 (0.38, 1.65)	0.85 (0.55, 1.31)	0.75 (0.57, 1.00)	0.07

Gao et al., AJCN, 2007

DIETA MEDITERRANEA E MALATTIE NEURODEGENERATIVE



Sofi et al., BMJ, 2008


Month
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
WP1.Identification of eligible patients (Villa Margherita di Arcugnano)
WP2. Baseline visit and randomization (CNR-IN; Villa Margherita di Arcugnano)
Anthropometric parameters (Villa Margherita di Arcugnano)
Blood and urine sample (Villa Margherita di Arcugnano)
PAR Questionnare (CNR-IN)
Stool sample collection (CNR-IN)
Interview with dietetician about usual diet (Villa Margherita di Arcugnano)
Randomization (CNR-IN)
WP3. First visit with the dietician (Neurology Division)
WP4. Follow-up and final visits (CNR-IN; Neurology Division)
Anthropometric parameters (Villa Margherita di Arcugnano)
Blood and urine sample (Villa Margherita di Arcugnano)
PAR Questionnare (CNR-IN)
Stool sample collection (Villa Margherita di Arcugnano)
Interview with dietetician about adherence to diet (Villa Margherita di Arcugnano)
WP5. Data collection and elaboration (CNR-IN; University of Bologna; Villa Margherita di Arcugnano)
Biohumoral and stool sample analysis (Villa Margherita di Arcugnano; University of Bologna)
Data collection (CNR-IN)
Statistical analysis (CNR-IN)
WP6. Coordination and final meeting (CNR-IN)
Coordination (CNR-IN)
Final meeting (CNR-IN)

CONCLUSIONI

- Stress ossidativo sembra essere importante nella patogenesi del PD
- La dieta Mediterranea abbassa i markers di stress ossidativo.
- Sono necessari RCTs per confermare il ruolo della dieta Mediterranea nel PD.

GRAZIE PER L'ATTENZIONE!!