

68° CONGRESSO NAZIONALE SIGGG

Ritorno al futuro

FIRENZE, 13-16 DICEMBRE 2023
PALAZZO DEI CONGRESSI

Tessuto adiposo epicardico e imbalance simpato-vagale in pazienti anziani con deficit cognitivo lieve

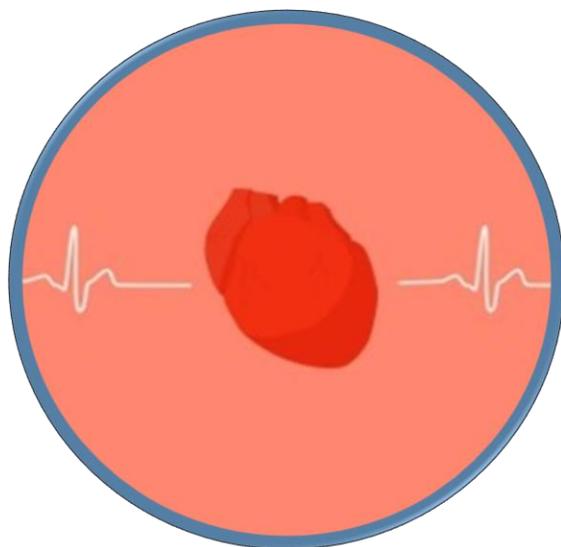


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Dott.ssa Martina Valentino

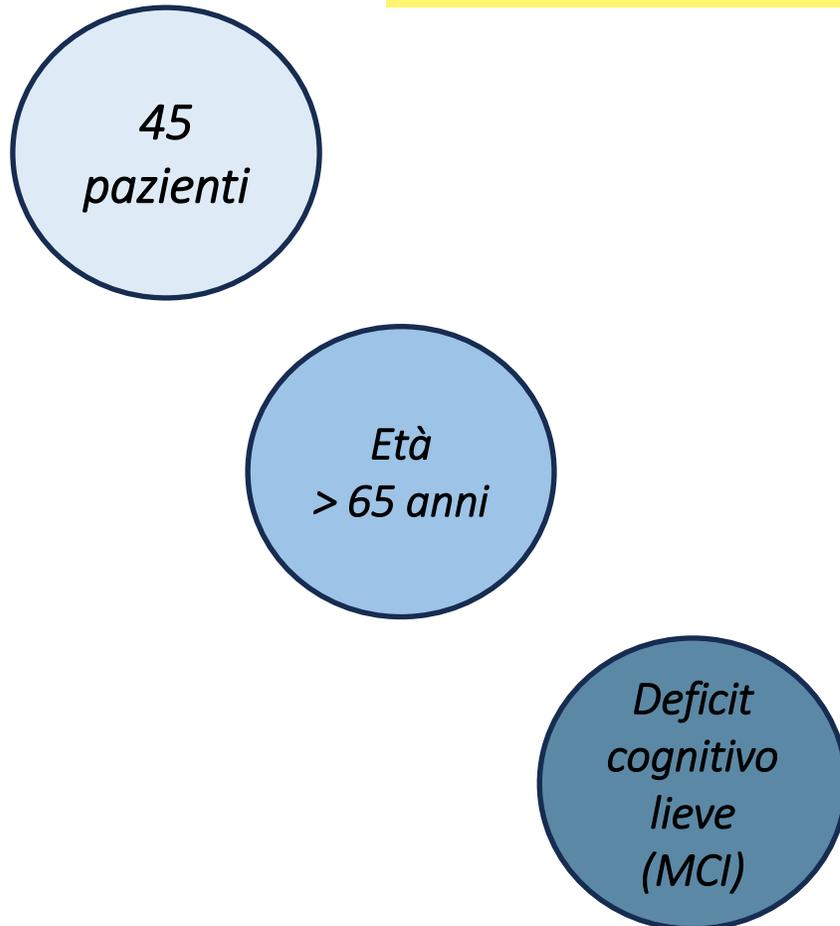


Esiste una correlazione tra l'imbalance simpato-vagale e l'aumento dello spessore del tessuto adiposo epicardico (EAT) nel paziente anziano con deficit cognitivo lieve (MCI)?

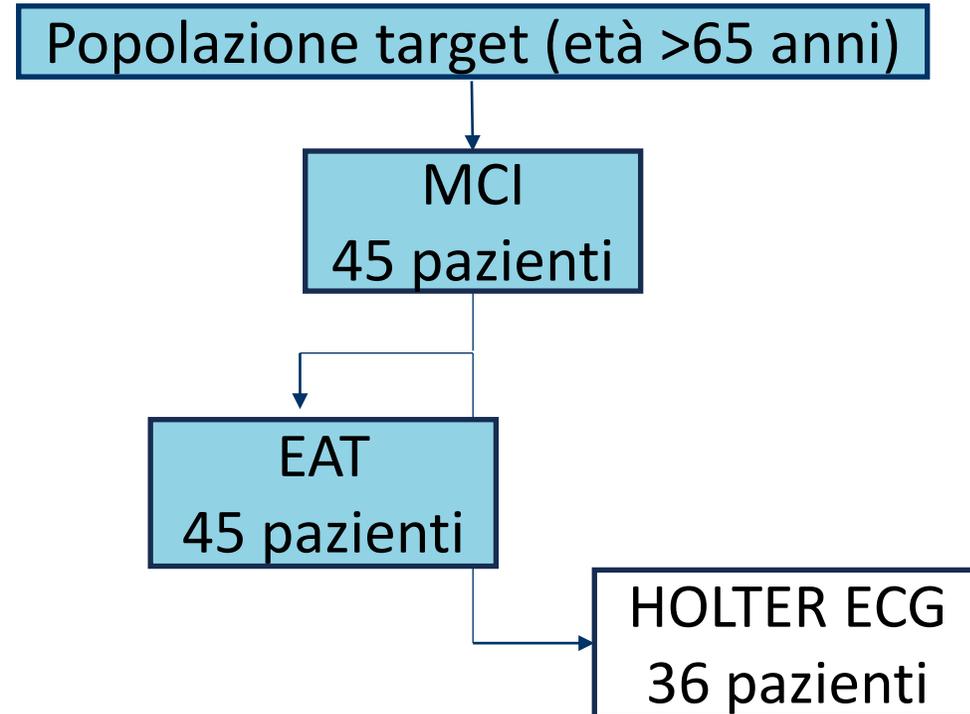




Materiali e metodi



Fase 1

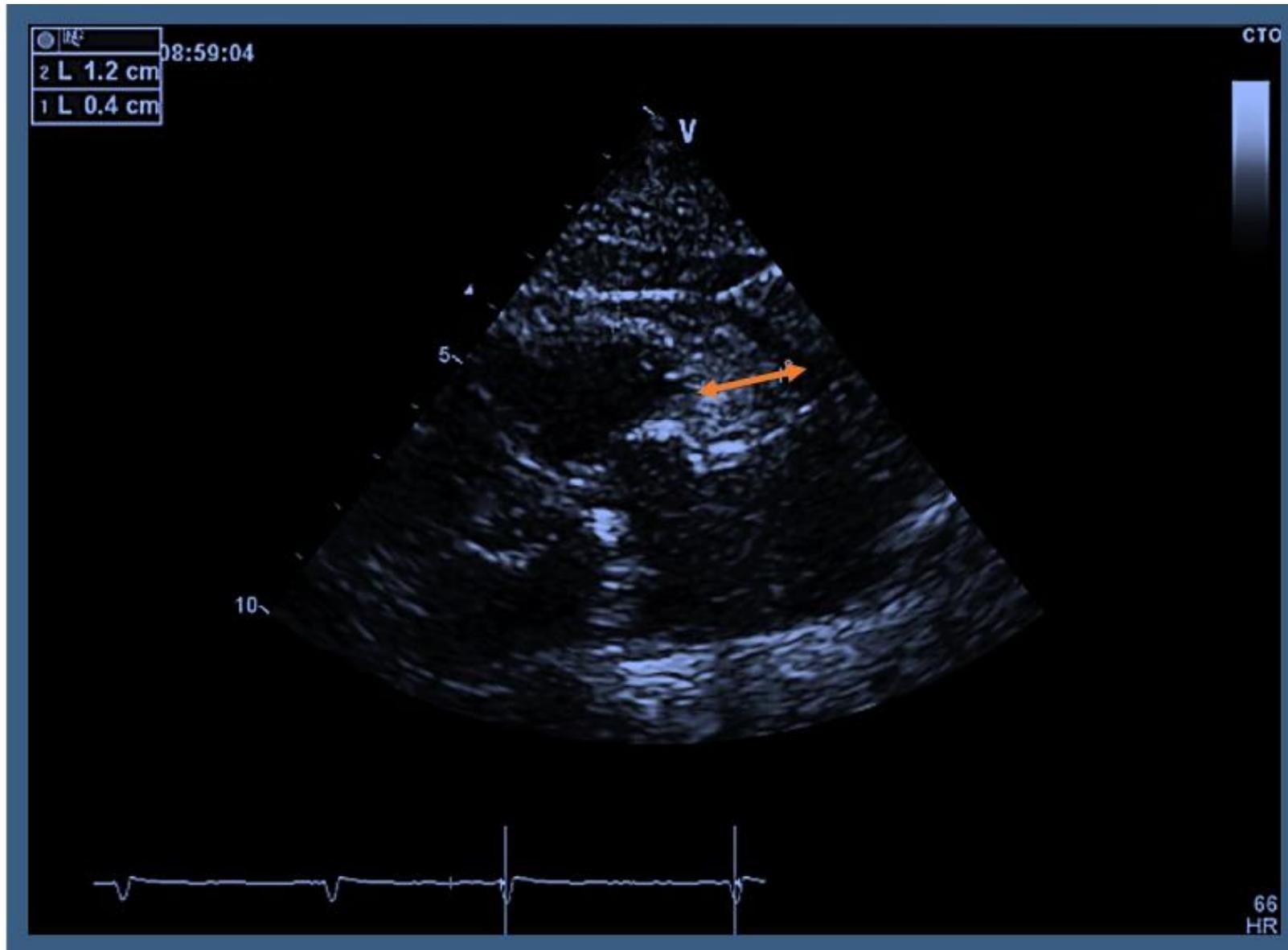




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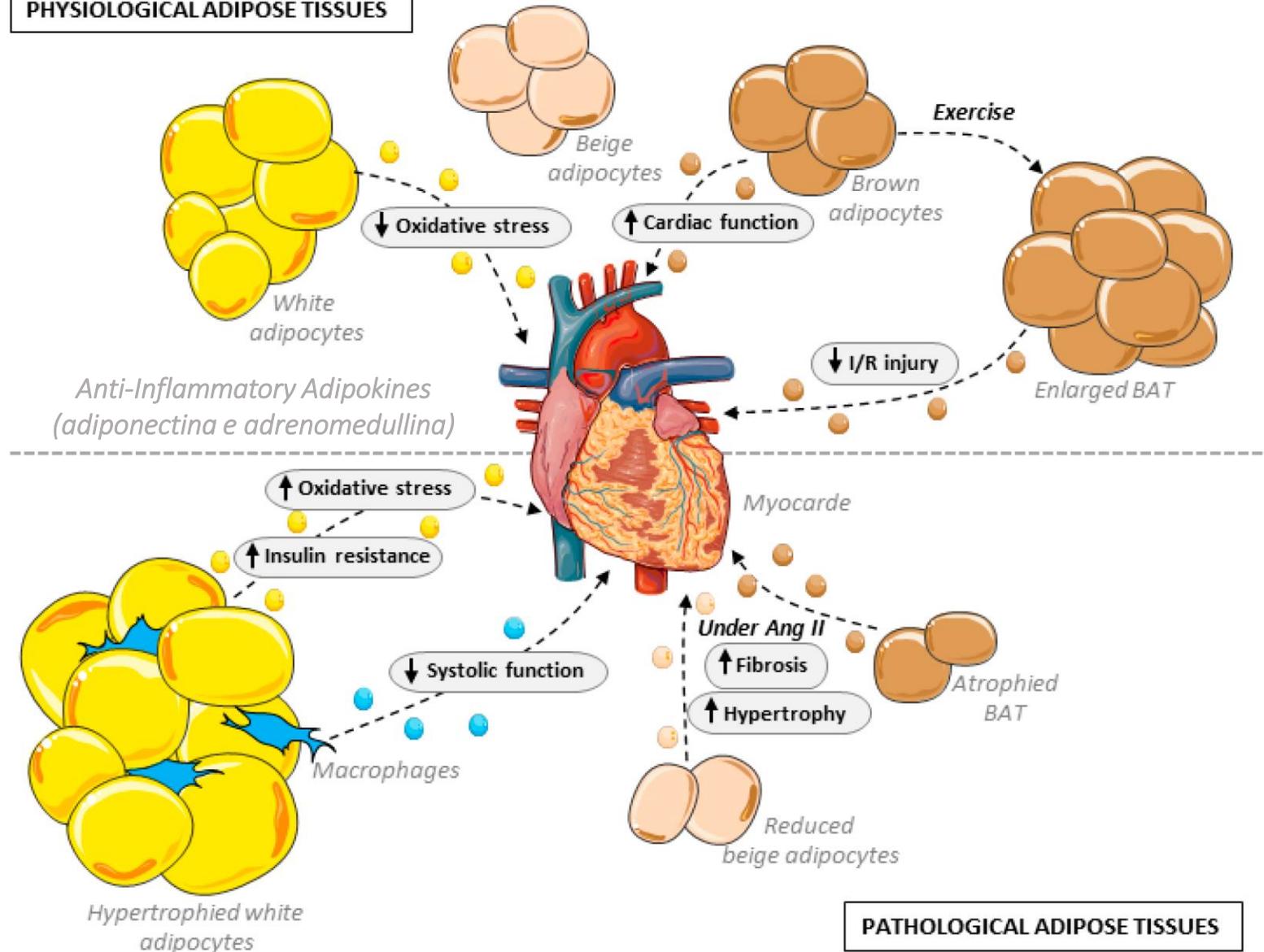
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PHYSIOLOGICAL ADIPOSE TISSUES



PATHOLOGICAL ADIPOSE TISSUES



G. Iacobellis and G. Barbaro / Nutrition 59 (2019) 1–6

Epicardial Fat Imbalance

Overfeeding

- Intrinsic inflammatory infiltrate
- Highest synthesis and release of FFAs
- Lower glucose uptake
- High lipolysis
- Intrinsic insulin resistance
- Myocardial fatty infiltration
- Proinflammatory transcriptome
- Proinflammatory secretome
- Atherogenic lipid and glucose metabolism
- Mechanical obstacle

Feeding

- Thermoregulation of the myocardium
- FFA source for the myocardium
- Buffer against FFA toxic effect
- Antiinflammatory cytokines
- Mechanical protection

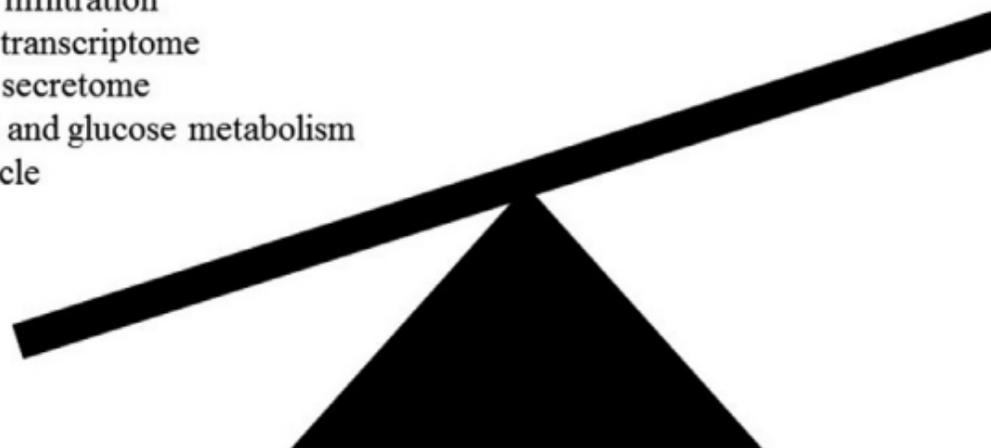


Fig. 1. Schematic of the delicate equilibrium of epicardial fat between physiological and pathologic properties. FFA, free fatty acid.



		Sesso			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	M	31	68.9	68.9	68.9
	F	14	31.1	31.1	100.0
	Total	45	100.0	100.0	

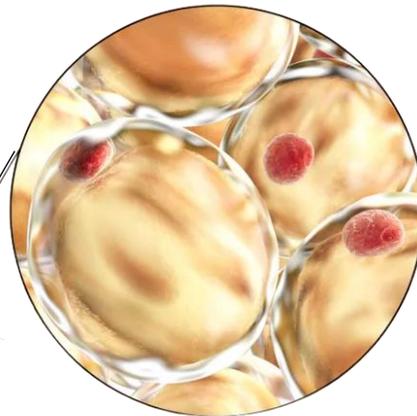
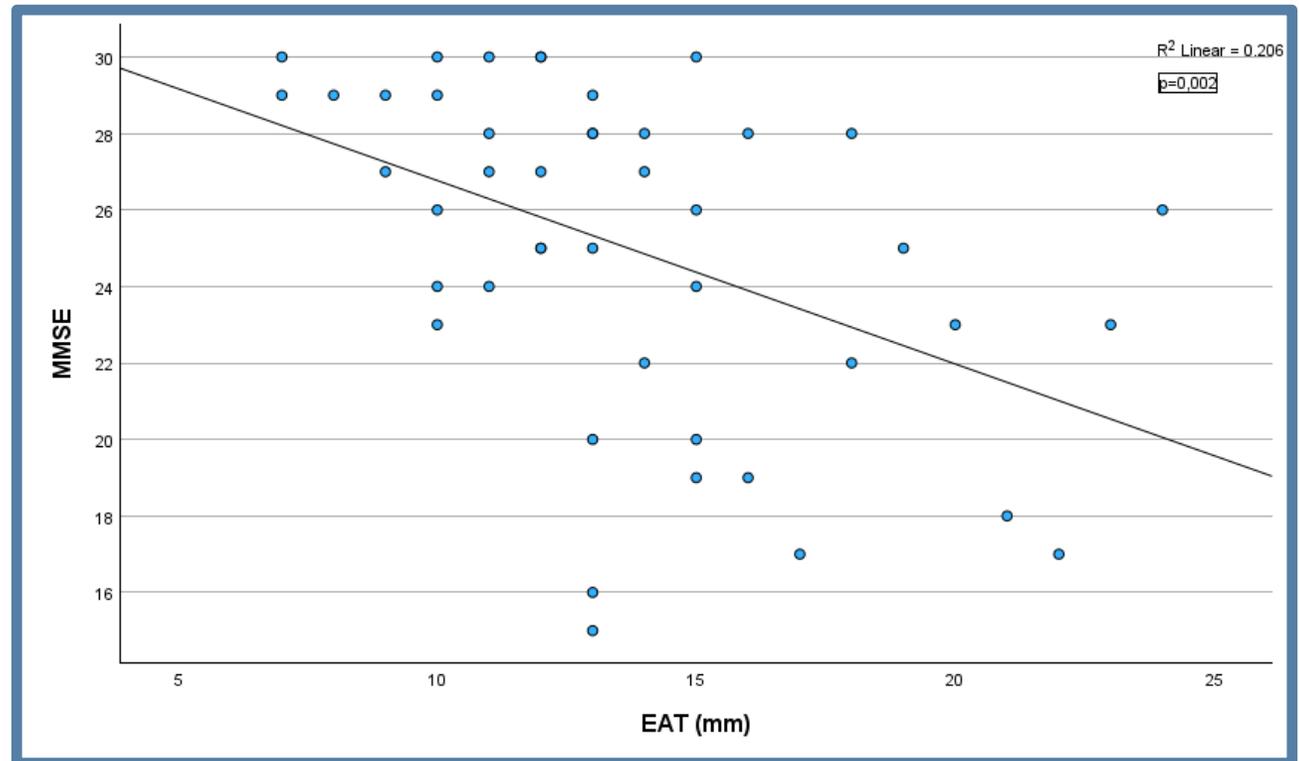
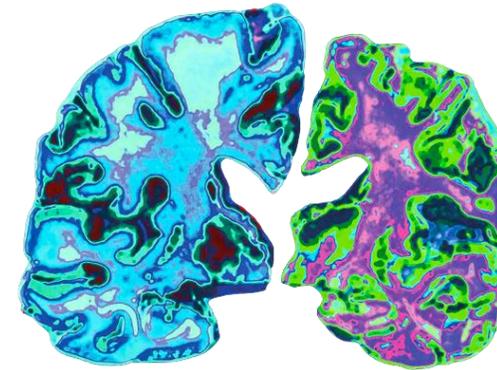
Descriptive Statistics				
	Minimum	Maximum	Mean	Std. Deviation
Età	65	93	77.13	6.851
MMSE	15	30	25.00	4.306
EAT	7	24	13.69	4.078



Correlations

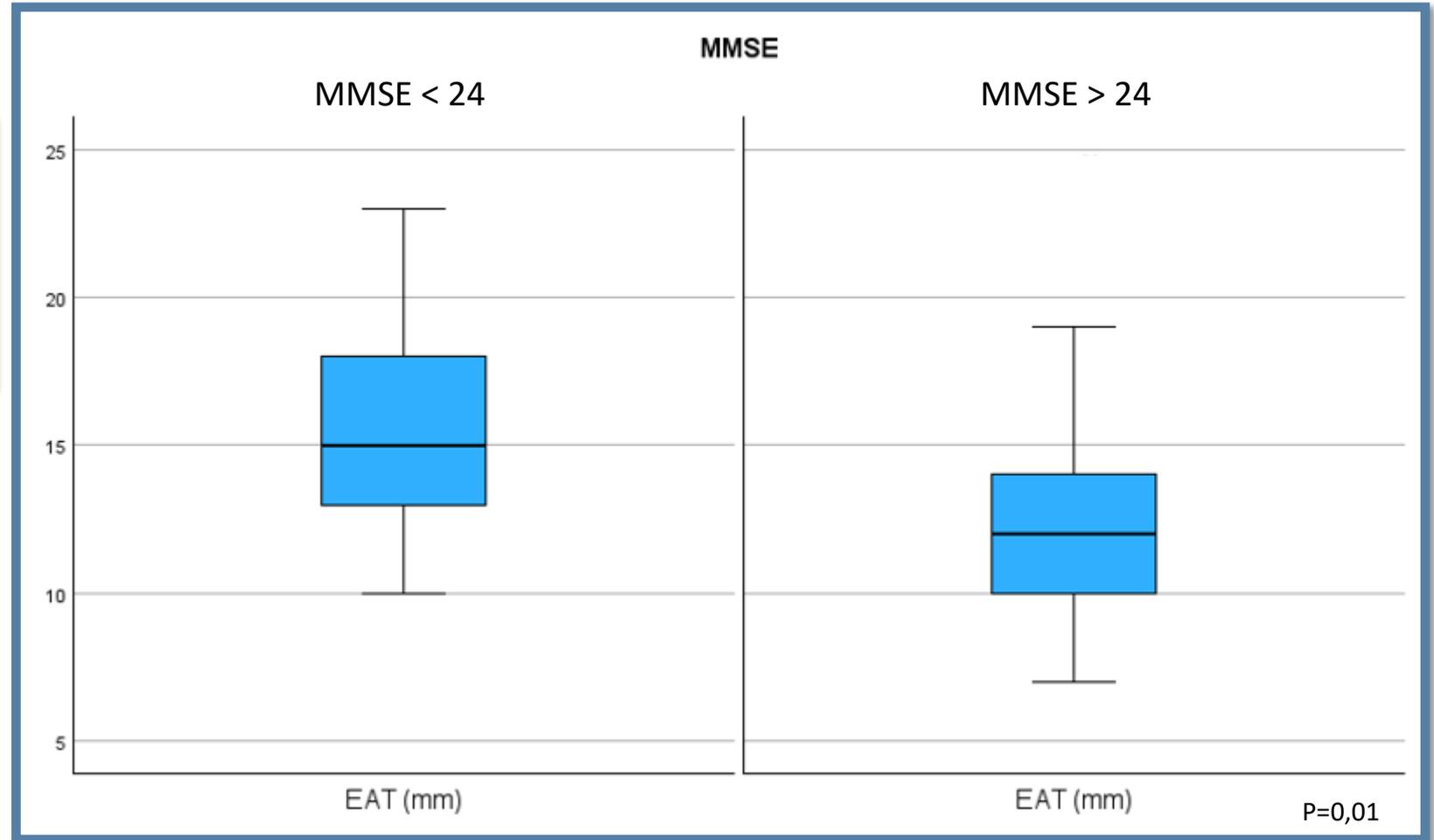
		MMSE	EAT
MMSE	Pearson Correlation	--	
	N	45	
EAT	Pearson Correlation	-.454**	--
	Sig. (2-tailed)	.002	
	N	45	45

** Correlation is significant at the 0.01 level (2-tailed).





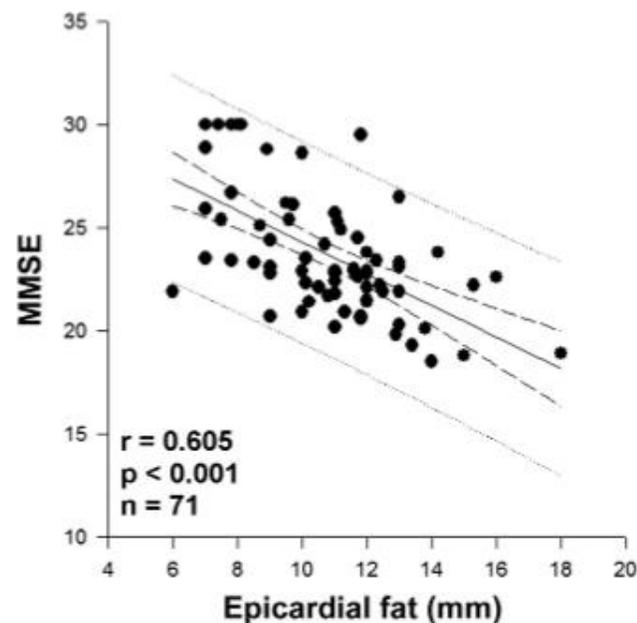
MMSE			
		Frequenza	Percentuale
Valido	MMSE<24	17	37,8
	MMSE>24	28	62,2
Totale		45	100,0





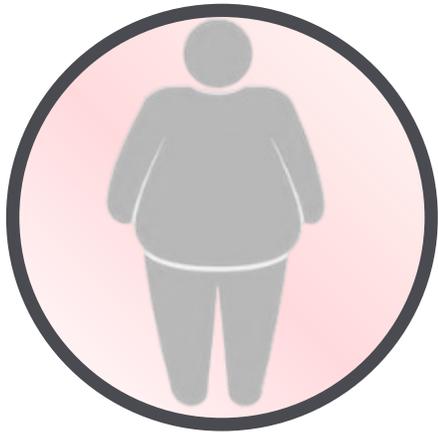
An association study between epicardial fat thickness and cognitive impairment in the elderly

Gianluigi Mazzoccoli, Mariangela Pia Dagostino, Manlio Vinciguerra, Filomena Ciccone, Giulia Paroni, Davide Seripa, Filomena Addante, Rosa Chiara Montella, Salvatore De Cosmo, Francesco Sera, Antonio Greco



↑ *Spessore EAT valutato mediante ecocardiografia transtoracica*

Risultati carenti (↓) nei test psicometrici che valutano le prestazioni cognitive



BMI ↑



↓ VELOCITA' DEL FLUSSO SANGUIGNO

RESISTENZA CEREBROVASCOLARE ↑

RISULTATI CLINICI FUNZIONALI
NEGLI ANZIANI

citochine proinfiammatorie

Regolazione -

plasticità sinaptica e cognizione

Macrofagi perivascolari
Macrofagi di derivazione periferica



barriera emato-encefalica

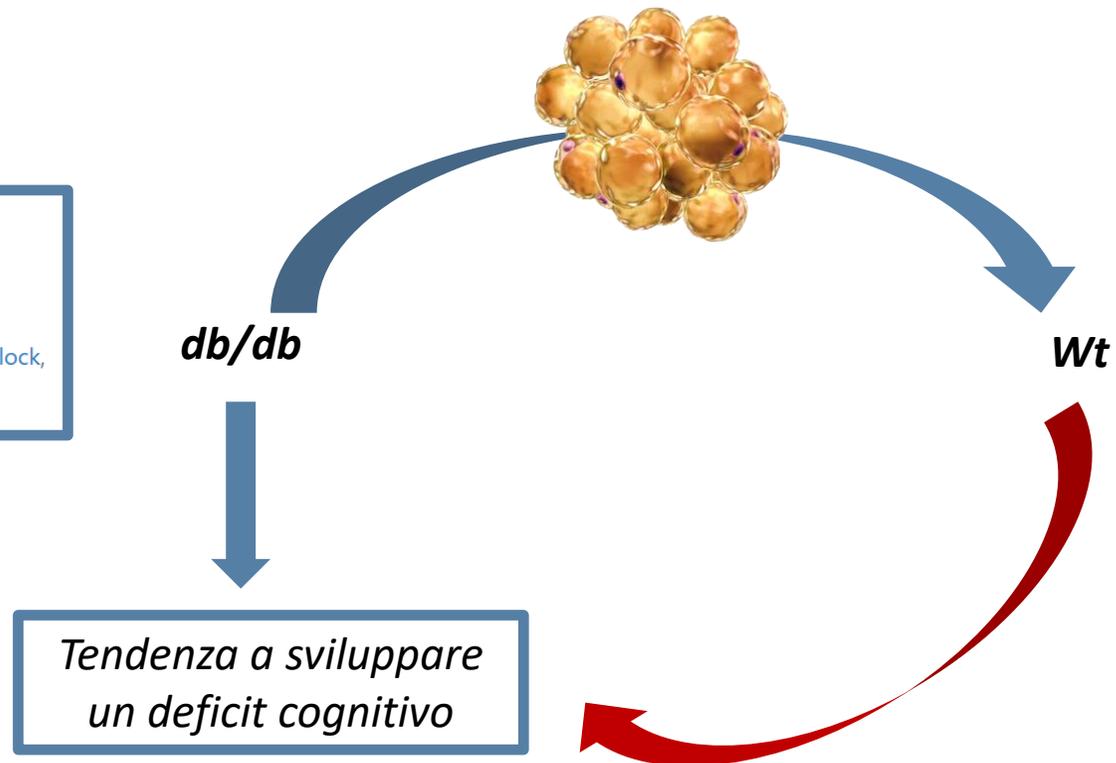


cascata proinfiammatoria cerebrale



Obesity elicits interleukin 1-mediated deficits in hippocampal synaptic plasticity

Joanna R Erion¹, Marlana Wosiski-Kuhn, Aditi Dey, Shuai Hao, Catherine L Davis, Norman K Pollock, Alexis M Stranahan



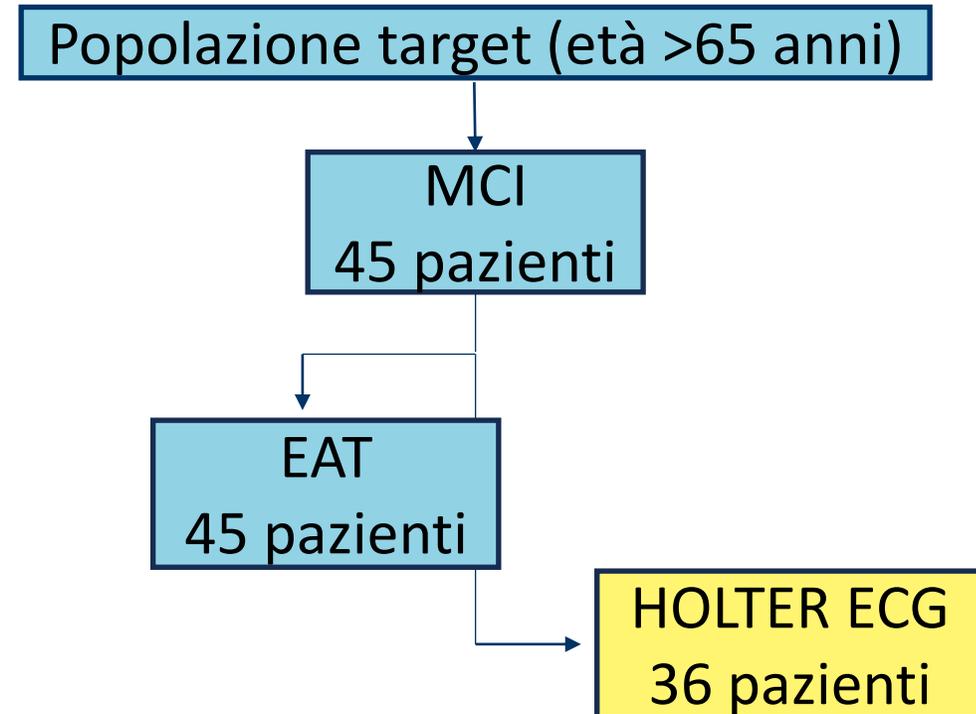


36
pazienti

Età
> 65 anni

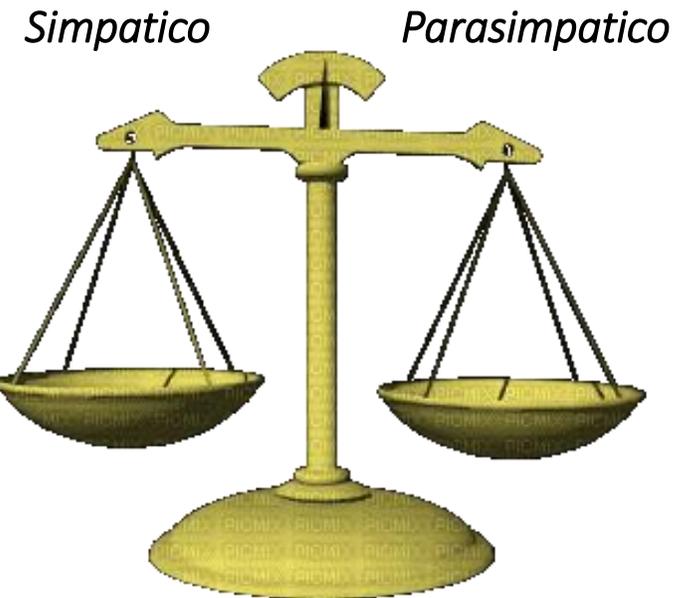
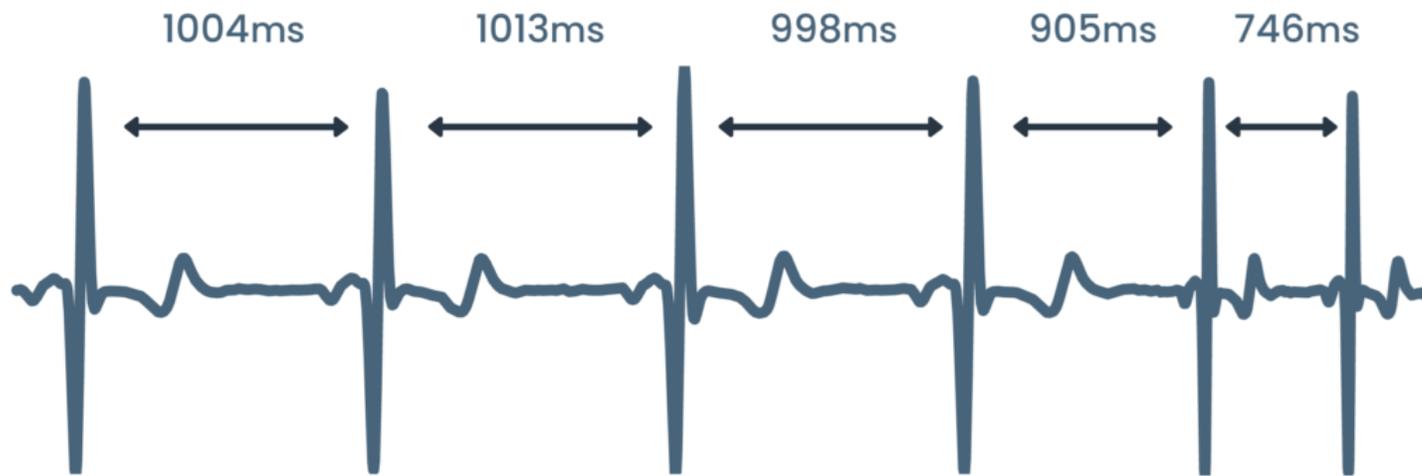
Deficit
cognitivo
lieve
(MCI)

Fase 2





Heart Rate Variability (HRV)



La fluttuazione degli intervalli di tempo misurata tra battiti cardiaci consecutivi

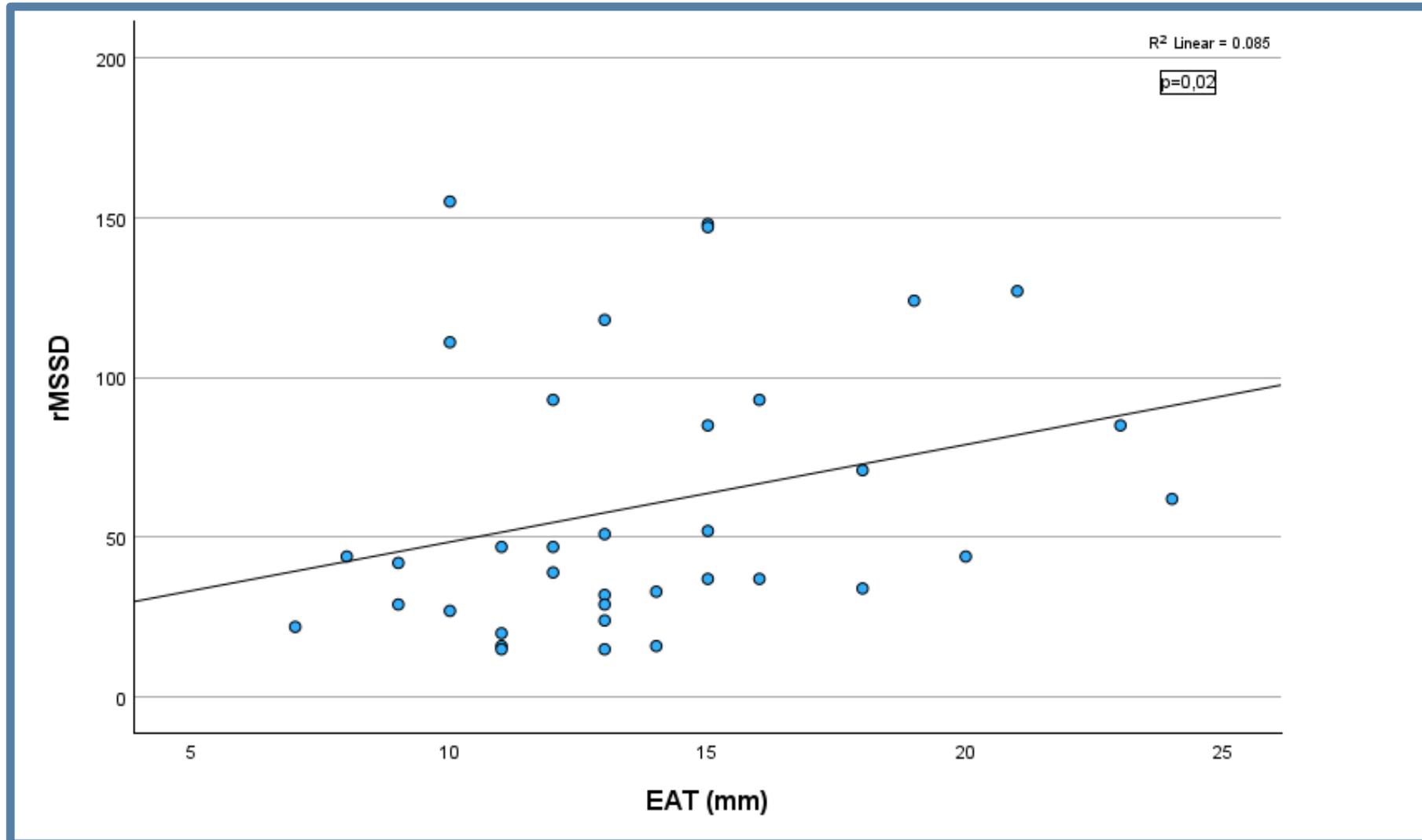


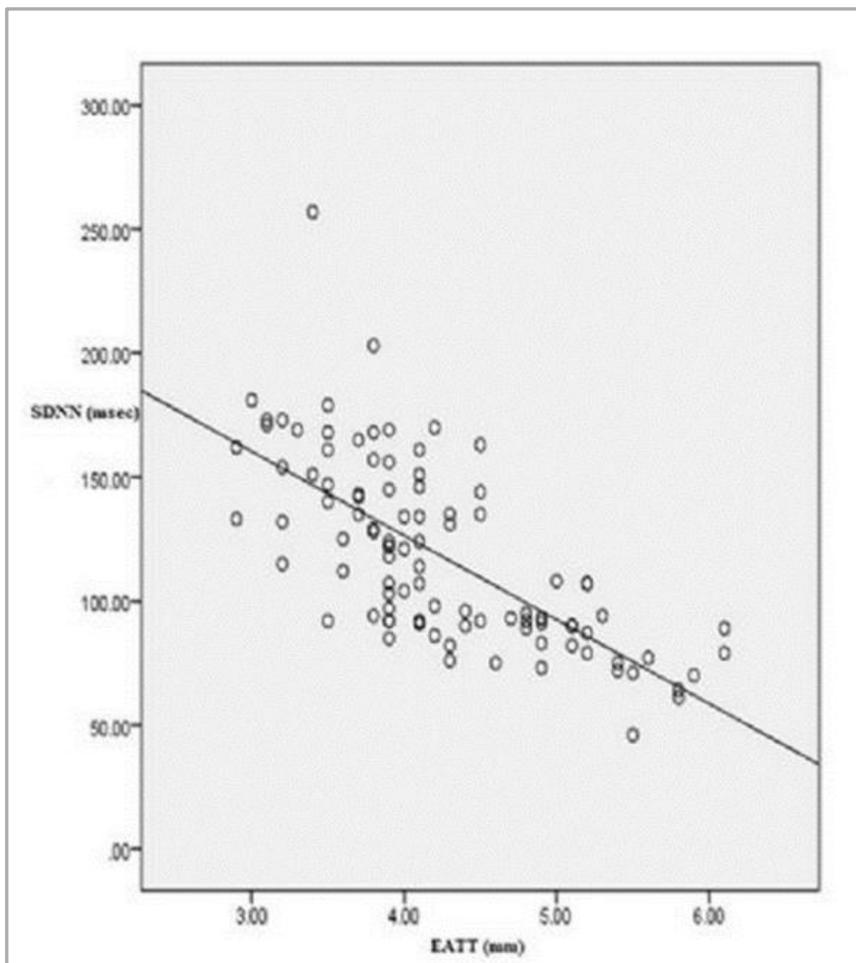
Frequency-domain indices

Parameter	Unit	Description
ULF power	ms ²	Absolute power of the ultra-low-frequency band (≤ 0.003 Hz)
VLF power	ms ²	Absolute power of the very-low-frequency band (0.0033–0.04 Hz)
LF peak	Hz	Peak frequency of the low-frequency band (0.04–0.15 Hz)
LF power	ms ²	Absolute power of the low-frequency band (0.04–0.15 Hz)
LF power	nu	Relative power of the low-frequency band (0.04–0.15 Hz) in normal units
LF power	%	Relative power of the low-frequency band (0.04–0.15 Hz)
HF peak	Hz	Peak frequency of the high-frequency band (0.15–0.4 Hz)
HF power	ms ²	Absolute power of the high-frequency band (0.15–0.4 Hz)
HF power	nu	Relative power of the high-frequency band (0.15–0.4 Hz) in normal units
HF power	%	Relative power of the high-frequency band (0.15–0.4 Hz)
LF/HF	%	Ratio of LF-to-HF power

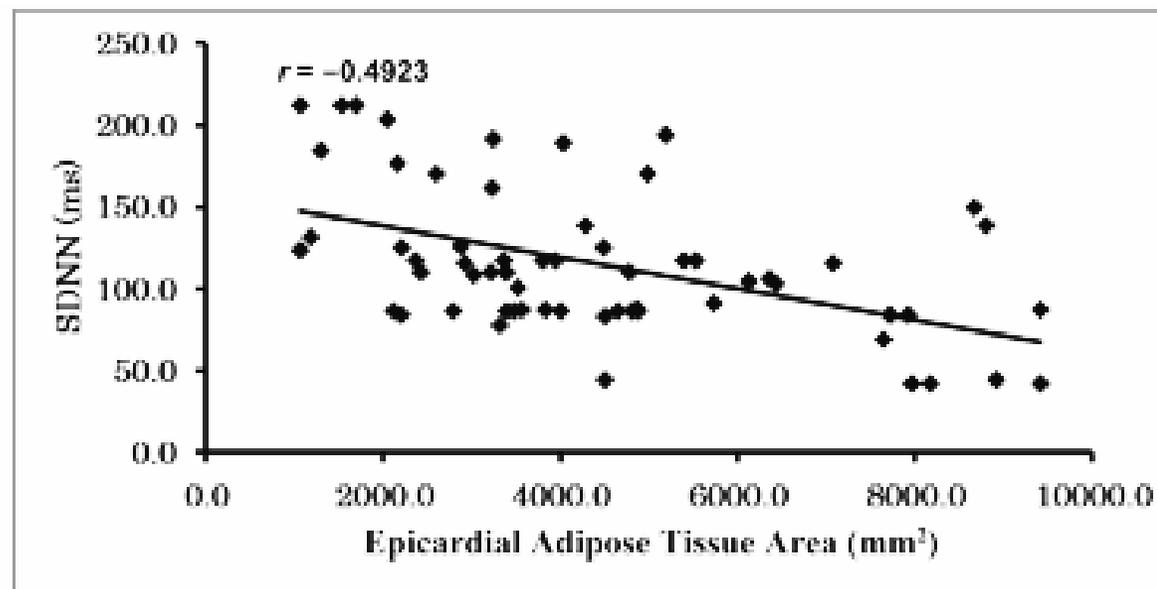
Time-domain indices

Parameter	Unit	Description
SDNN	ms	Standard deviation of NN intervals
SDRR	ms	Standard deviation of RR intervals
SDANN	ms	Standard deviation of the average NN intervals for each 5 min segment of a 24 h HRV recording
SDNN index (SDNNI)	ms	Mean of the standard deviations of all the NN intervals for each 5 min segment of a 24 h HRV recording
pNN50	%	Percentage of successive RR intervals that differ by more than 50 ms
HR Max – HR Min	bpm	Average difference between the highest and lowest heart rates during each respiratory cycle
RMSSD	ms	Root mean square of successive RR interval differences
HRV triangular index		Integral of the density of the RR interval histogram divided by its height
TINN	ms	Baseline width of the RR interval histogram





Epicardial Adipose Tissue Thickness is Inversely Related to Heart Rate Variability. *Aycan Fahri Erkan, Berkay Ekici, Hasan Fehmi Töre. Ufuk University, Faculty of Medicine, Department of Cardiology.*



Epicardial adipose tissue is associated with prevalent atrial fibrillation in patients with hypertrophic cardiomyopathy

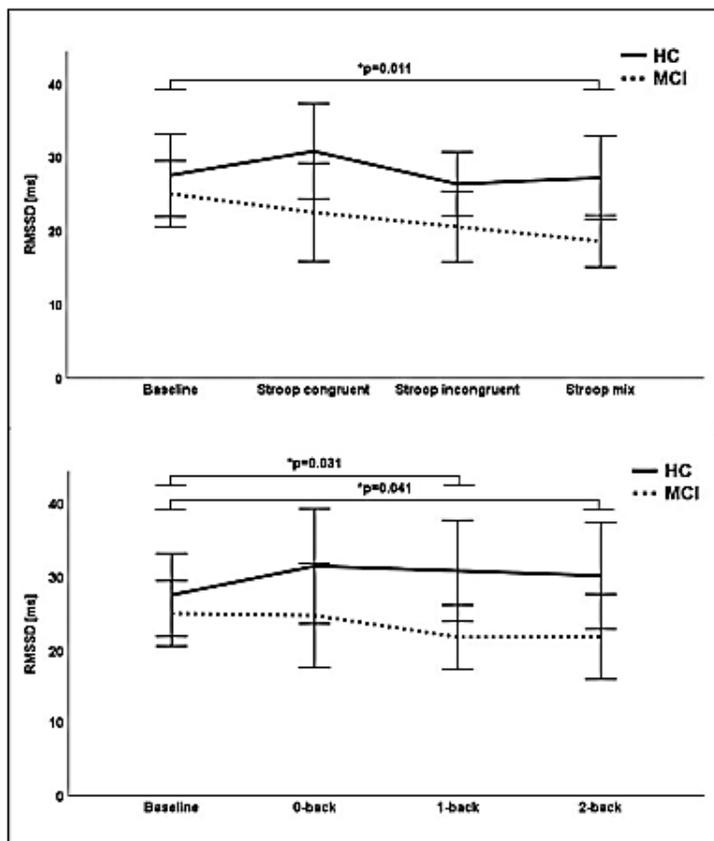
Sharifi Muhib¹, Takayuki Fujino, Nobuyuki Sato, Naoyuki Hasebe



Is there a link between heart rate variability and cognitive decline? A cross-sectional study on patients with mild cognitive impairment and cognitively healthy controls

Bernhard Grässler¹, Milos Dordevic^{2 3 4}, Sabine Darius⁵, Fabian Herold^{2 3 4},
Giuseppe Forte^{6 7}, Corinna Langhans¹, Nicole Halfpaap¹, Patrick Müller^{2 3 8}, Wenzel Glanz⁹,
Estélio Henrique Martin Dantas^{10 11}, Irina Böckelmann⁵, Notger Müller^{2 3 4 12},
Anita Hökelmann¹

MCI
↕
Alterazioni
sistema cardio-vagale



Deterioramento del Central Autonomic Network (CAN)

Cambiamenti neuro-chimici:

- *Deficit colinergico*
- *Rilascio citochine proinfiammatorie*

Aumento di markers pro-infiammatori

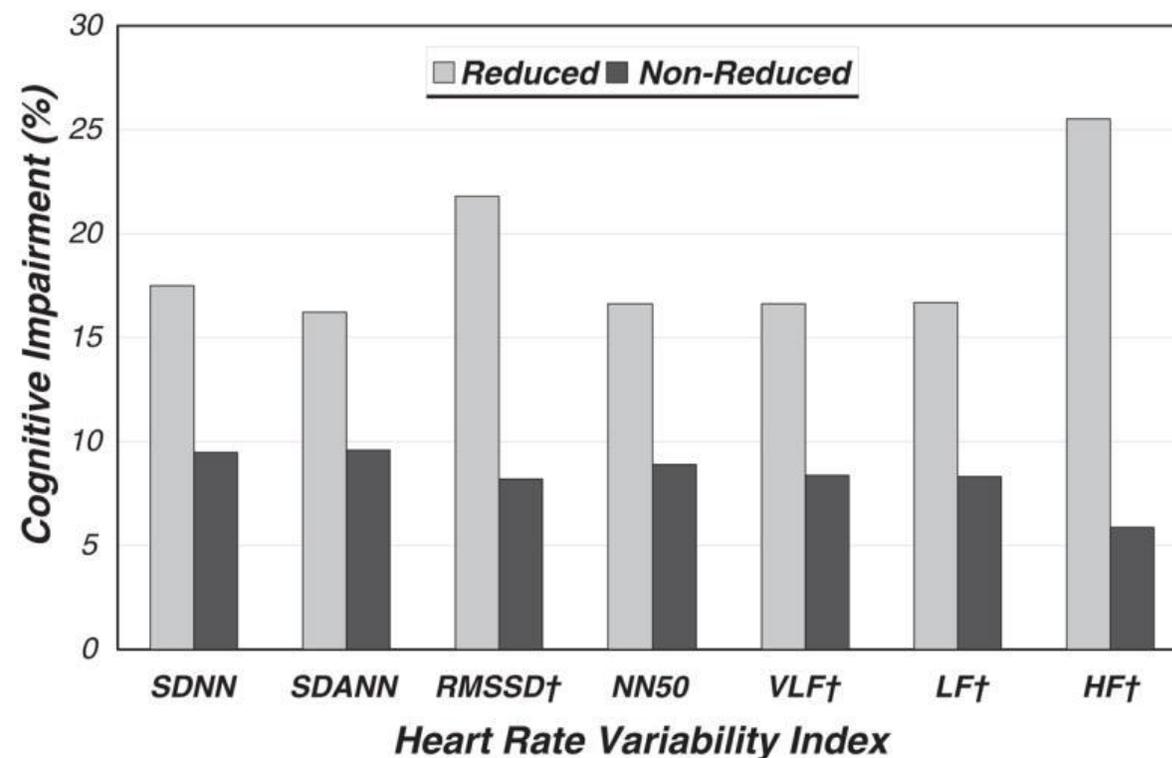
Alterazioni nella perfusione cerebrale

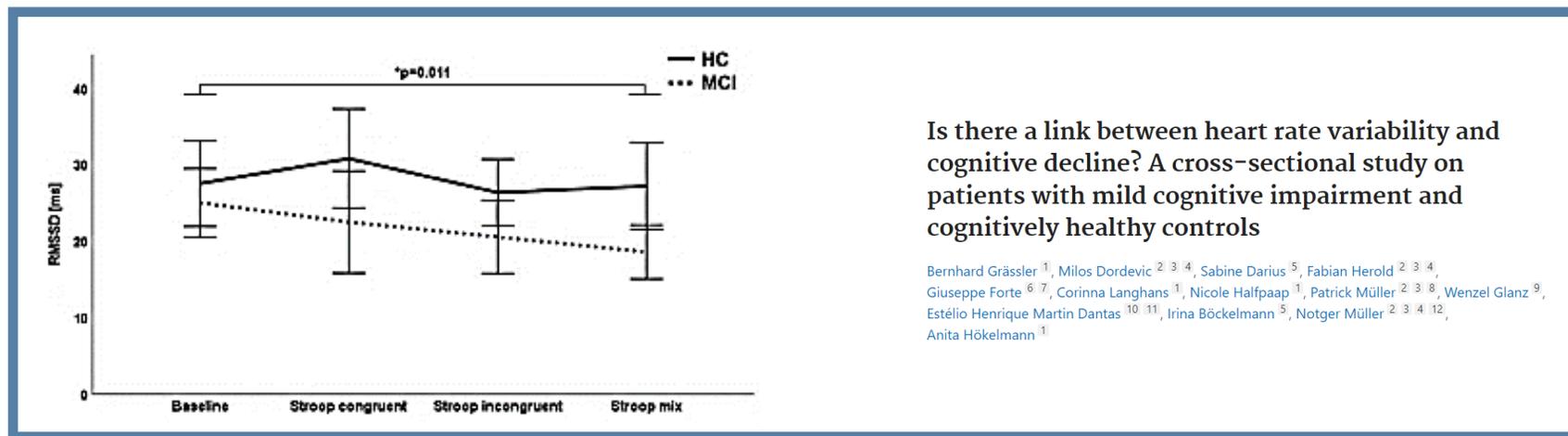
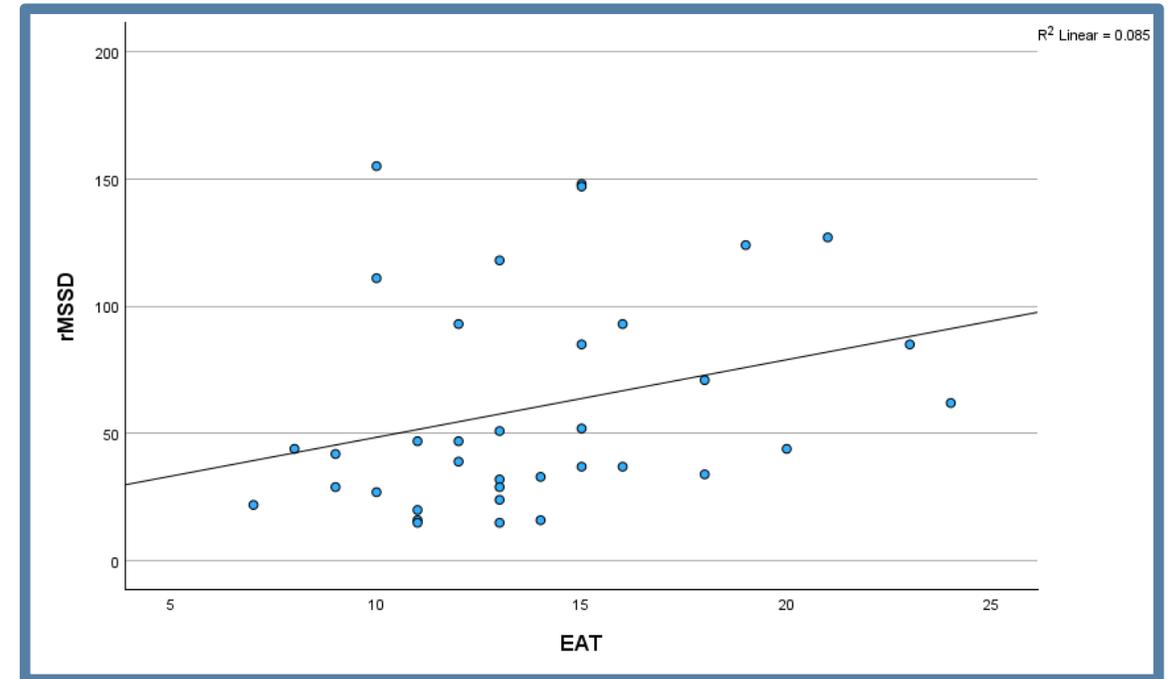
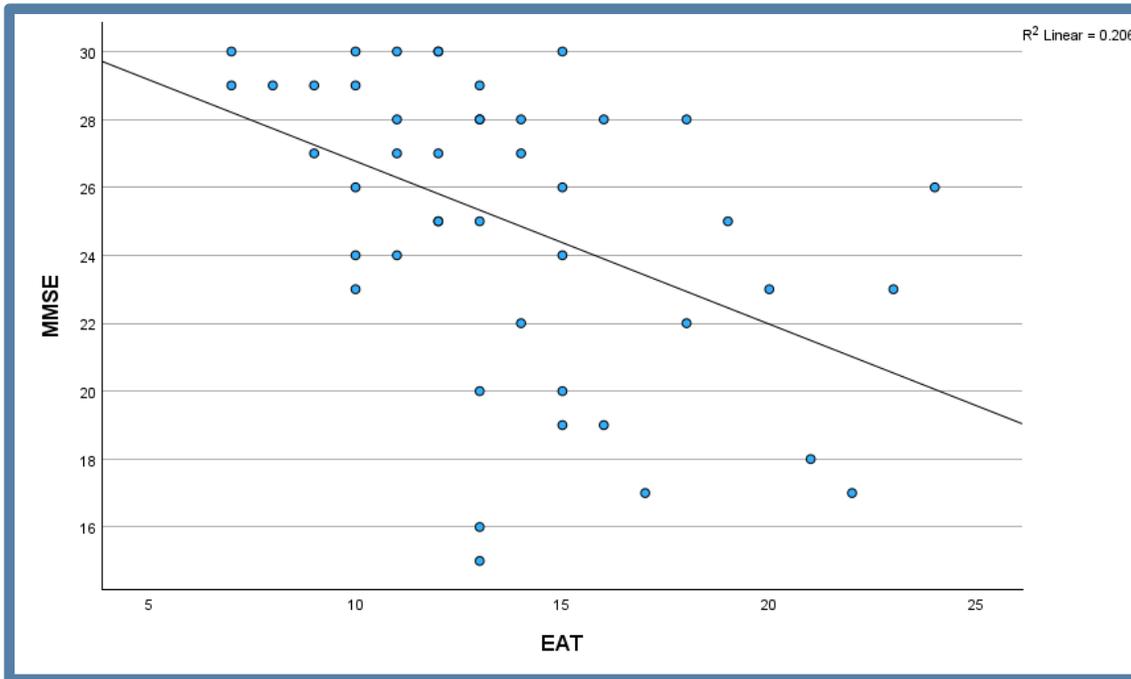


Association between reduced heart rate variability and cognitive impairment in older disabled women in the community: Women's Health and Aging Study I

Dae Hyun Kim¹, Lewis A Lipsitz, Luigi Ferrucci, Ravi Varadhan, Jack M Guralnik, Michelle C Carlson, Lee A Fleisher, Linda P Fried, Paulo H M Chaves

La riduzione della potenza RMSSD, NN50 e HF era associata a un deterioramento cognitivo prevalente (MMSE) nelle donne anziane disabili residenti in comunità





Is there a link between heart rate variability and cognitive decline? A cross-sectional study on patients with mild cognitive impairment and cognitively healthy controls

Bernhard Grässler¹, Milos Dordevic^{2 3 4}, Sabine Darius⁵, Fabian Herold^{2 3 4}, Giuseppe Forte^{6 7}, Corinna Langhans¹, Nicole Halpaap¹, Patrick Müller^{2 3 8}, Wenzel Glanz⁹, Estélio Henrique Martin Dantas^{10 11}, Irina Böckelmann⁵, Notger Müller^{2 3 4 12}, Anita Hökelmann¹



*Potenziale valore predittivo
dell'indice di attivazione parasimpatica rMSSD
nello sviluppo e progressione del declino cognitivo*

Simpatico

Parasimpatico

