SAPIENZA
UNIVERSITÀ DI ROMA
Dipartimento di Psicologia
Facoltà di Medicina e Psicologia

Un passo verso la diagnosi pre-clinica

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SANTA LUCIA
NEUROSCIENZE E RIABILITAZIONE

Le aree coinvolte precocemente nell'invecchiamento patologico fanno parte del network della navigazione!

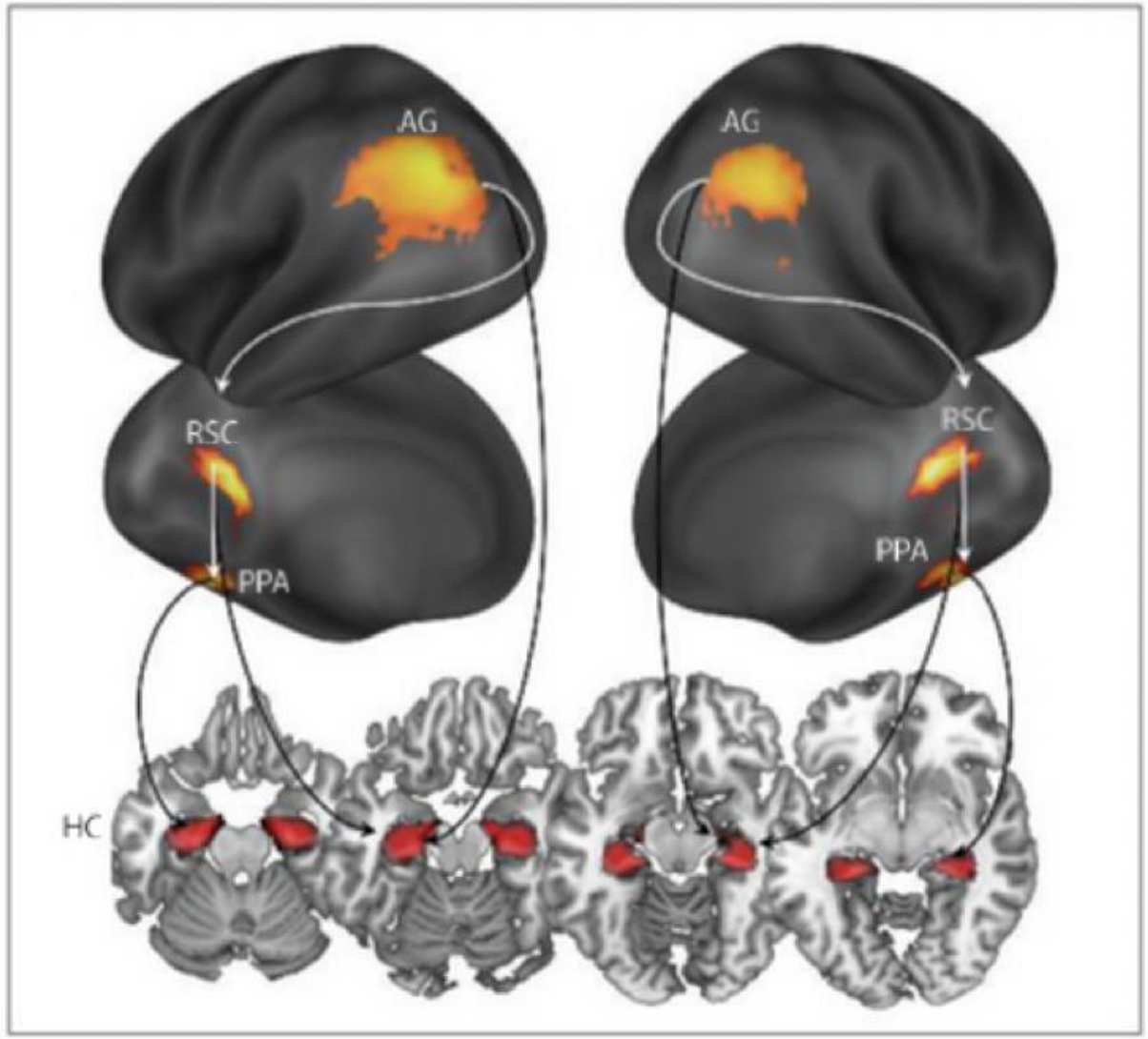
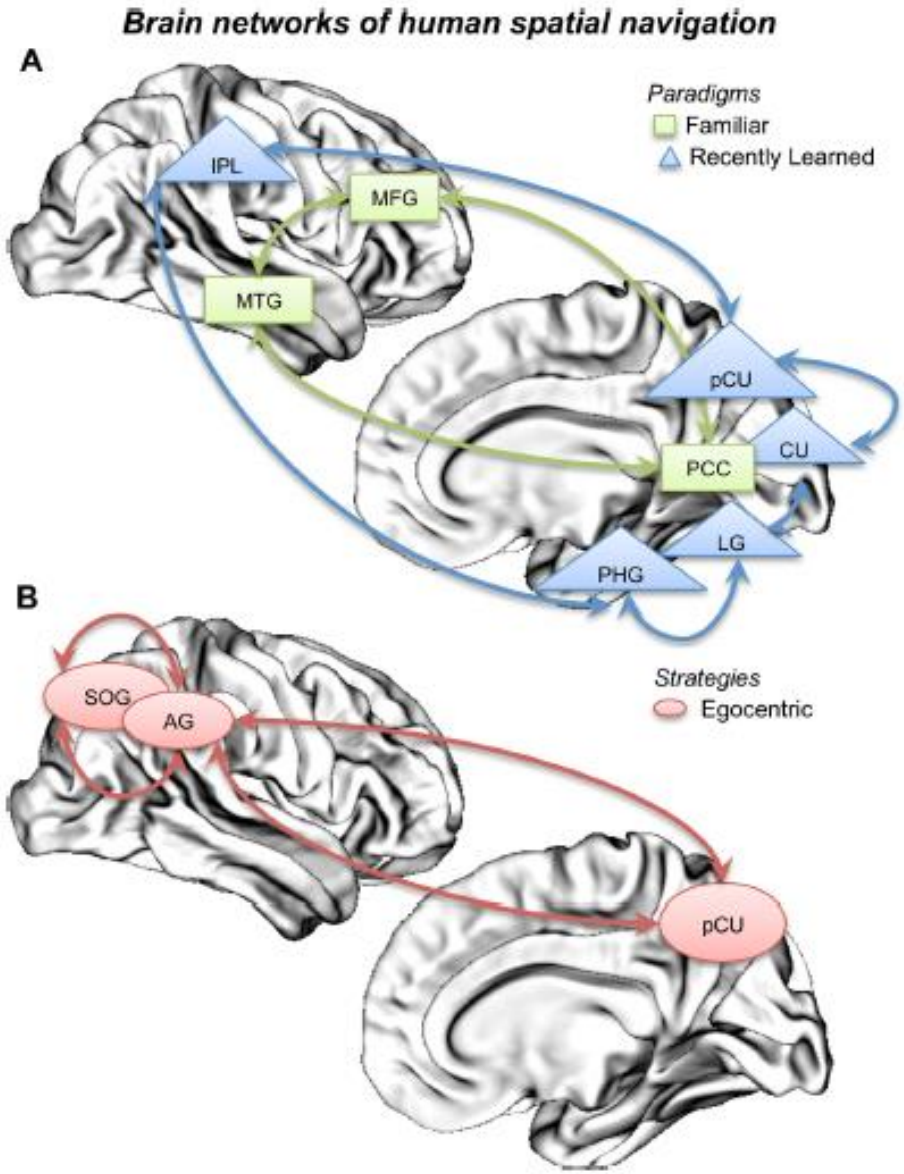
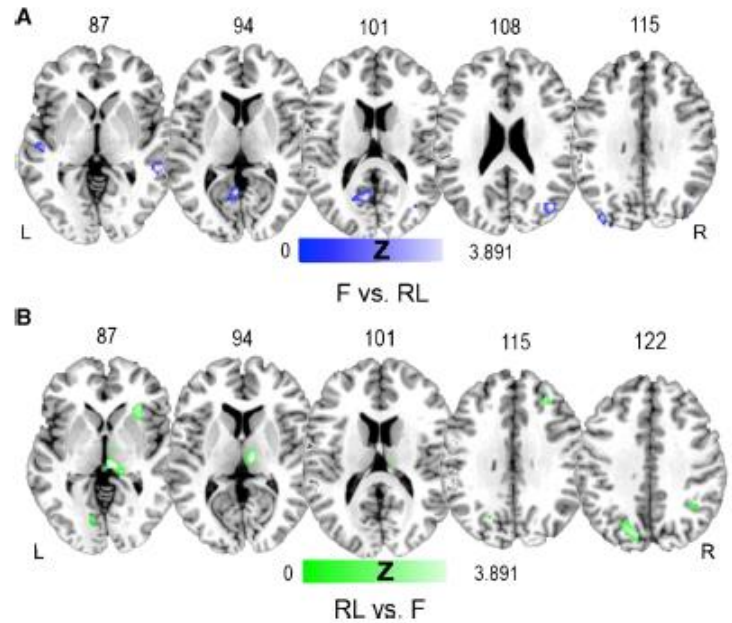


FIGURA 1 In figura sono mostrate le principali aree cerebrali coinvolte nella navigazione spaziale nell'uomo (Boccia et al., 2014) e le loro connessioni. Le aree e le connessioni sono mutuate dal lavoro di Boccia et al. (2017), il quale dimostra l'esistenza nell'uomo di un network parieto-temporo-mediale per la navigazione spaziale, precedentemente dimostrato nel macaco (Kravitz et al., 2011).
AG = giro angolare;
RSC = corteccia retrospleniale;
PPA = area paraippocampale per i luoghi;
HC = ippocampo.
(Le autrici ringraziano la Dott.ssa Maddalena Boccia per la preparazione della figura.)



Boccia et al. 2014

Familiar (F) vs Recently Learned (RL) environments



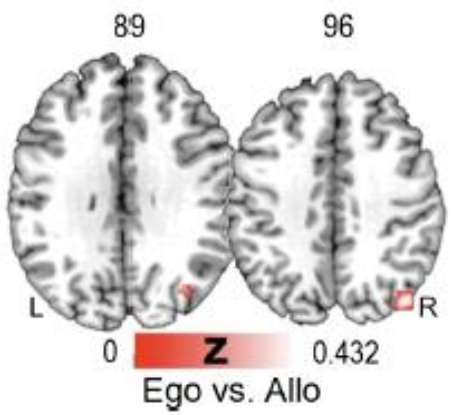
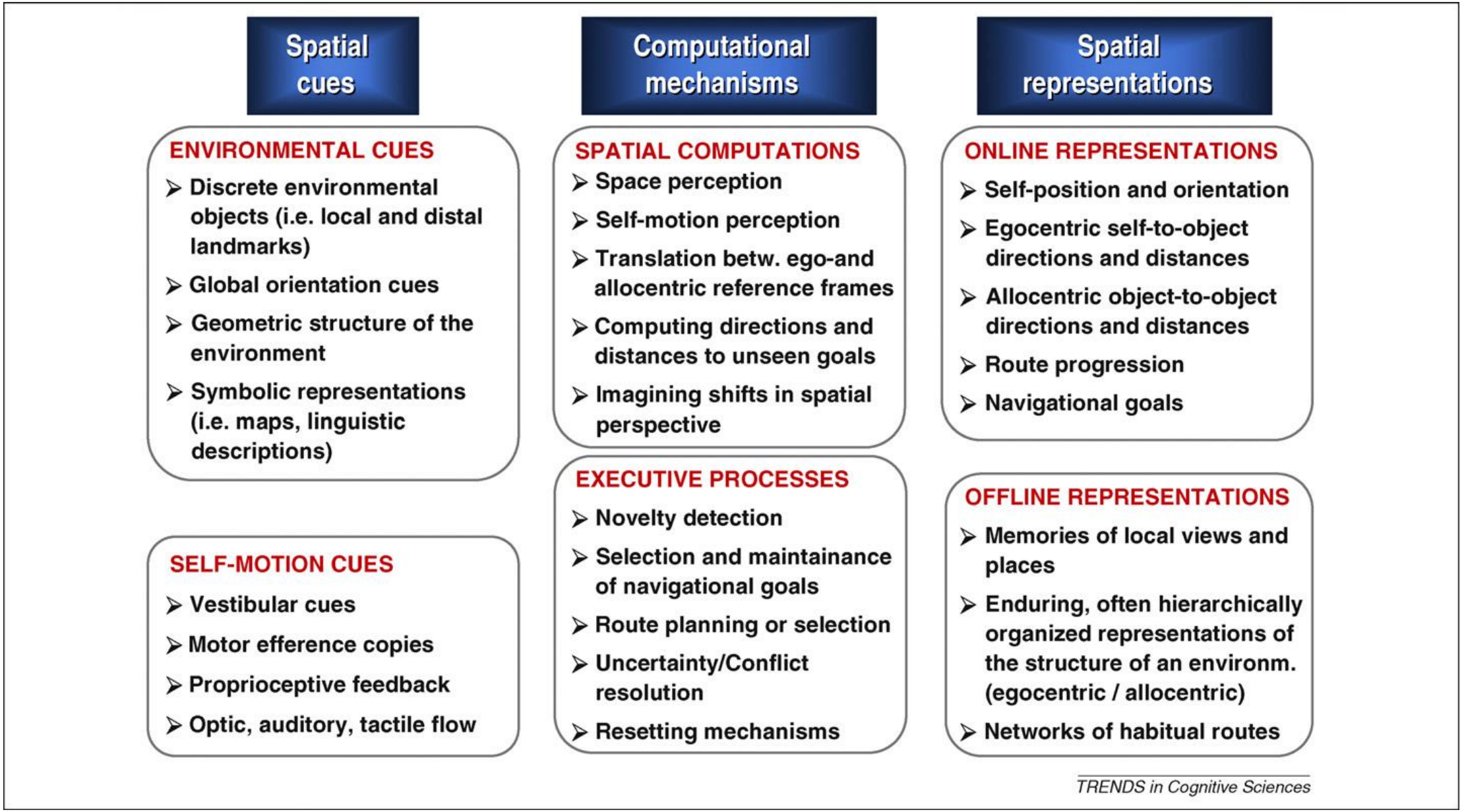


Fig. 3 Areas showing higher activation for egocentric than allocentric strategies, as revealed by the contrast between ego vs. allo strategies. A parieto-occipital network that includes the right superior occipital gyrus, angular gyrus and precuneus subtends egocentric representation of space



da Wolbers&Hegarty, TICS, 2010

Rappresentazione route

Route

Route

Route

Route


Foro Italico
Nomentano
Tiburtino
Grande Raccordo Anulare
autostrade
Circonvallazione

Route


corso Francia
SS 2 Cassia
Foro Italico
SS 3 Flaminia
autostrade
v.le Tor di Quinto
Foro Italico

Route

Route


Roma, Lazio
Google
Street View - nov 2018
Viale di Tor di Quinto
Istantanea scherm

Route


ISOKINETIC
UNIONE RUGBY CAPITOLINA
Flaminia
Istantanea scherm

Route

Route

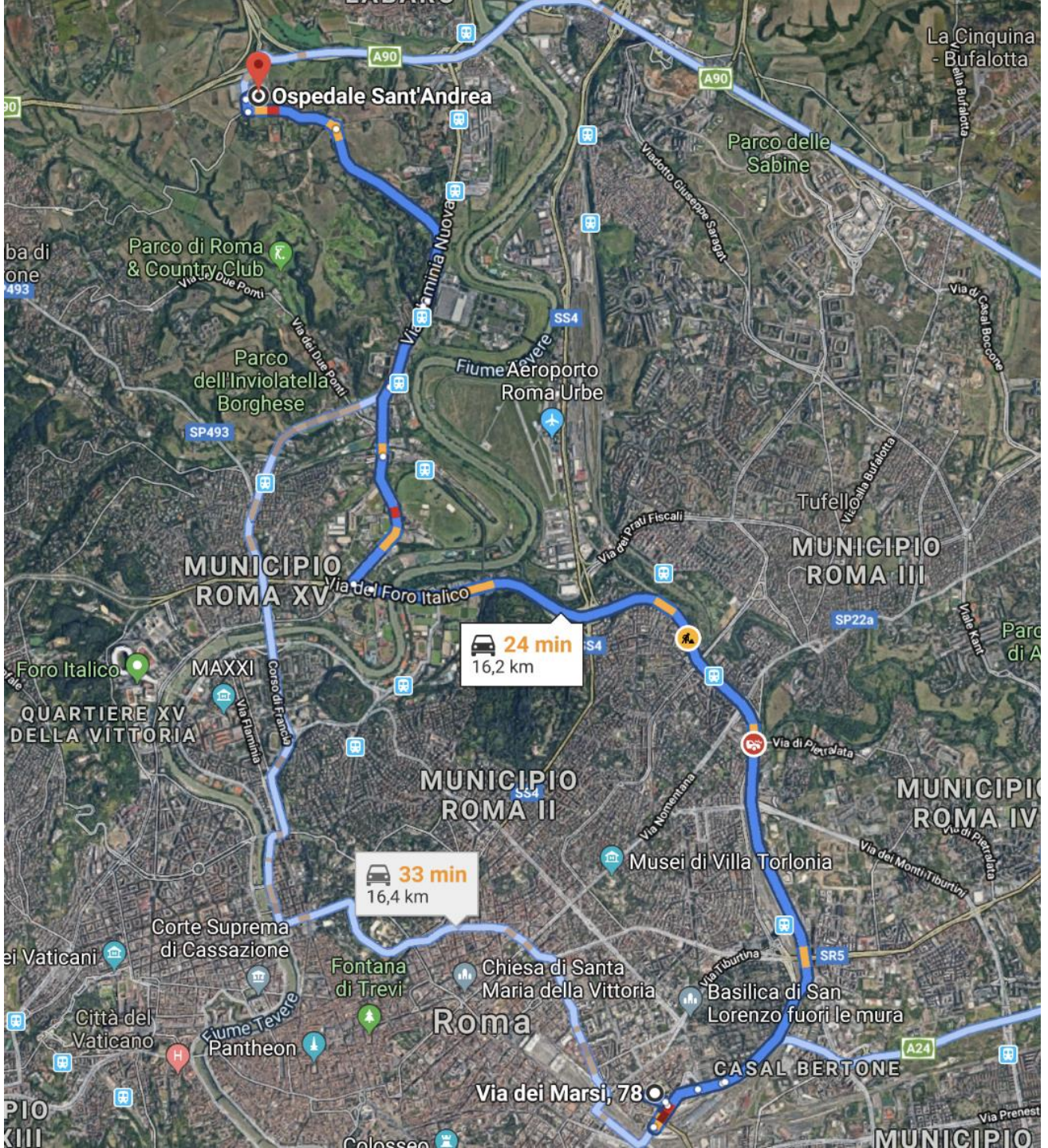

via di Grottarossa
ospedale S. ANDREA
Via Flaminia Nuova
Istantanea scherm

Route

Route

Route

Rappresentazione survey

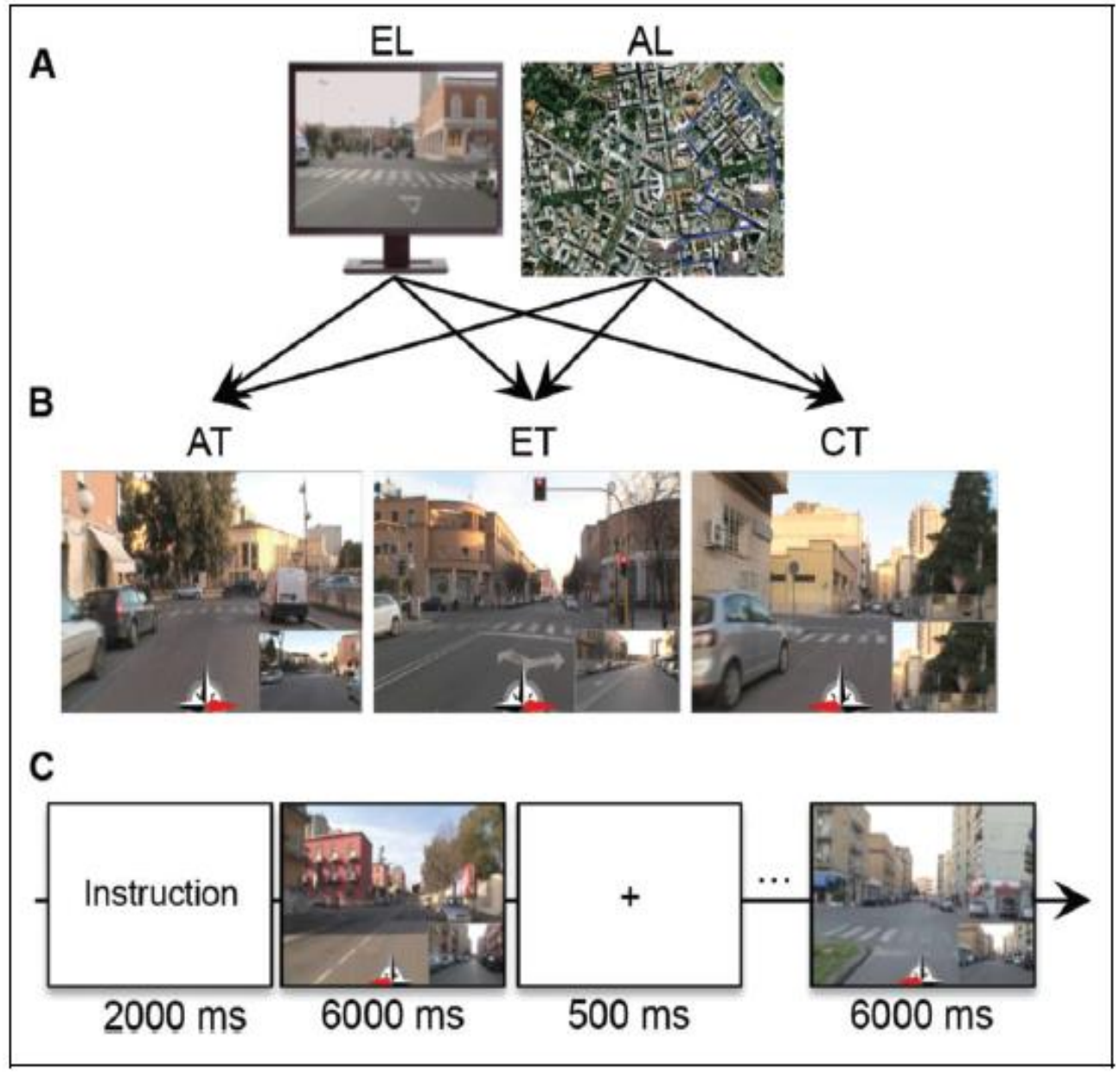


Roma - «Spina di Borgo»

Roma – via della Conciliazione

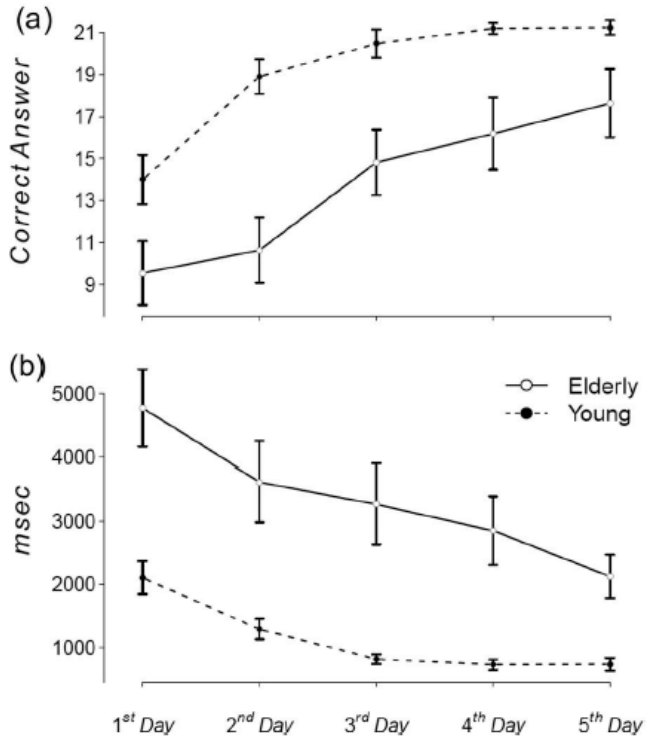
Cosa si perde nell’invecchiamento?

Come ci si perde?

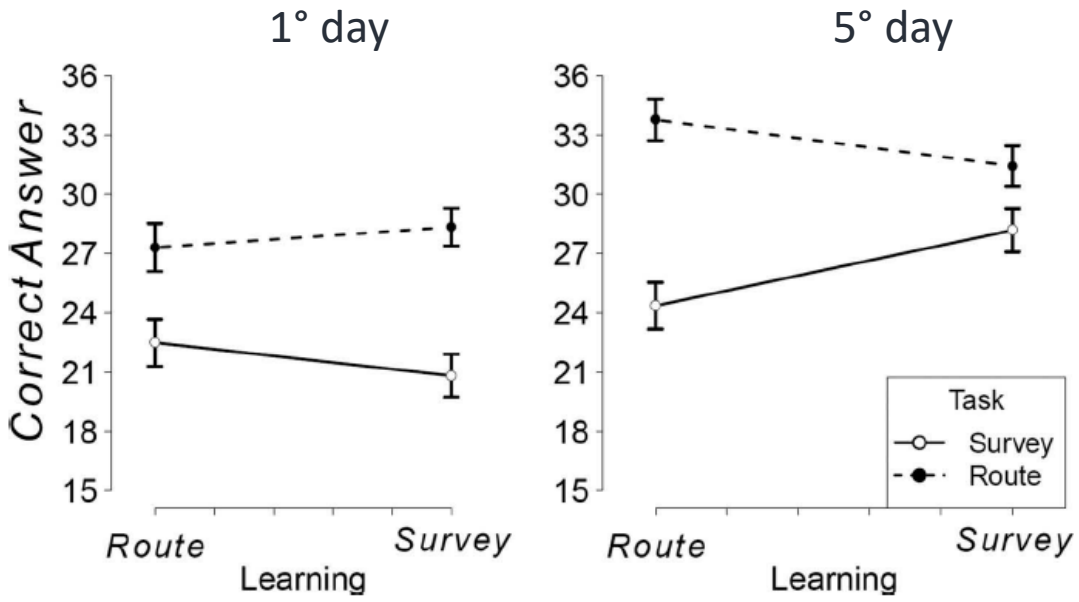


Nemmi et al., 2016

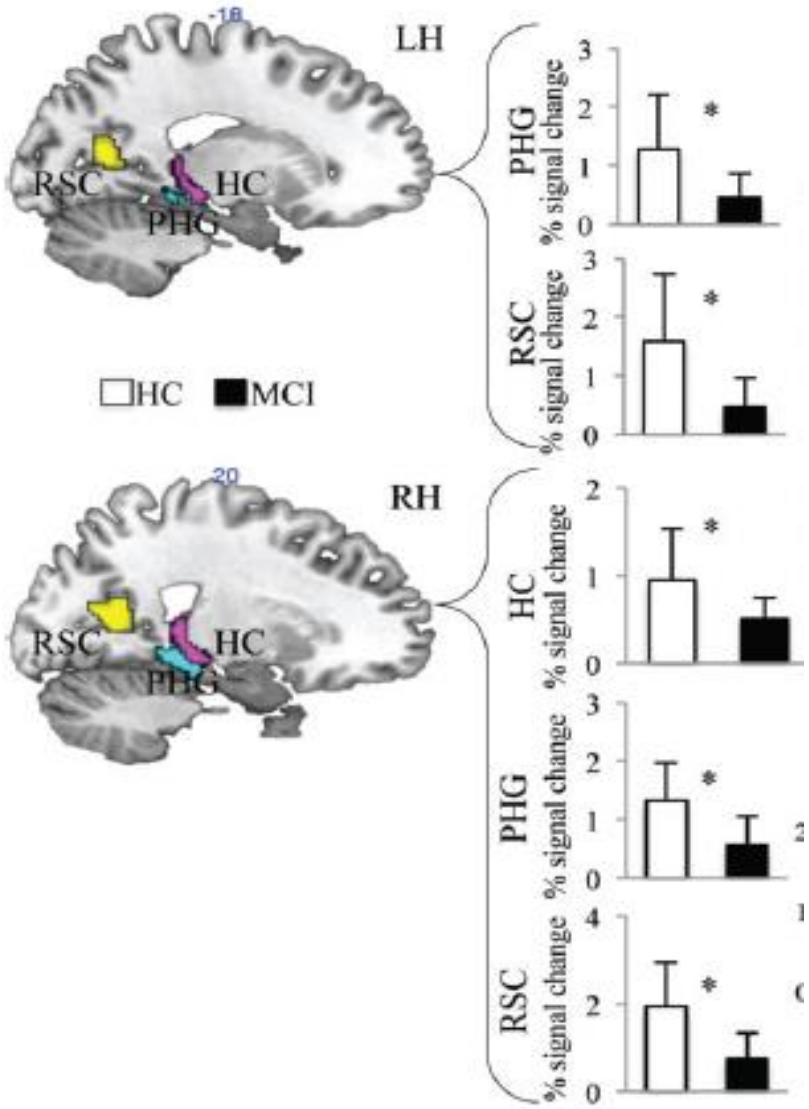
Giovani vs anziani



Apprendimento più lento e con più errori



Peggiore rappresentazione survey e peggiore capacità di shifting tra rappresentazioni

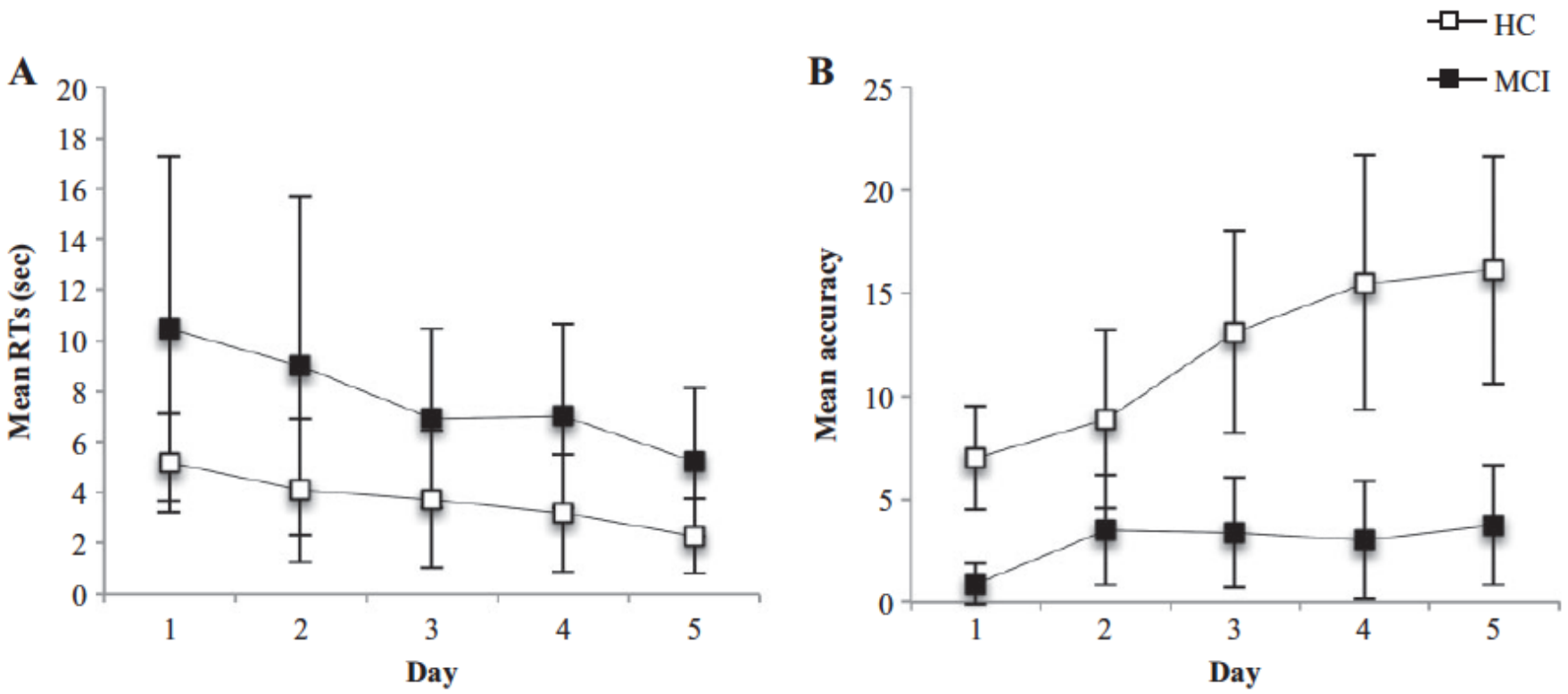


Percentage BOLD signal change in HC and MCI

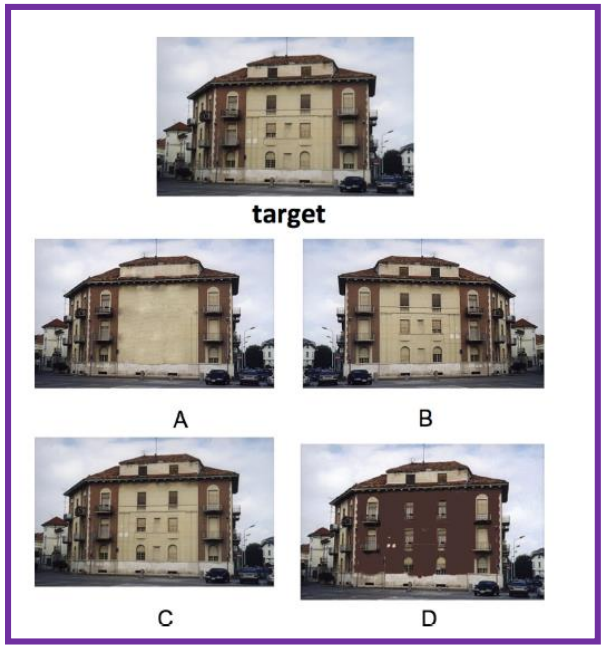
MCI: diminuito volume di ippocampo (H), giro paraippocampale e corteccia retrospleniale,

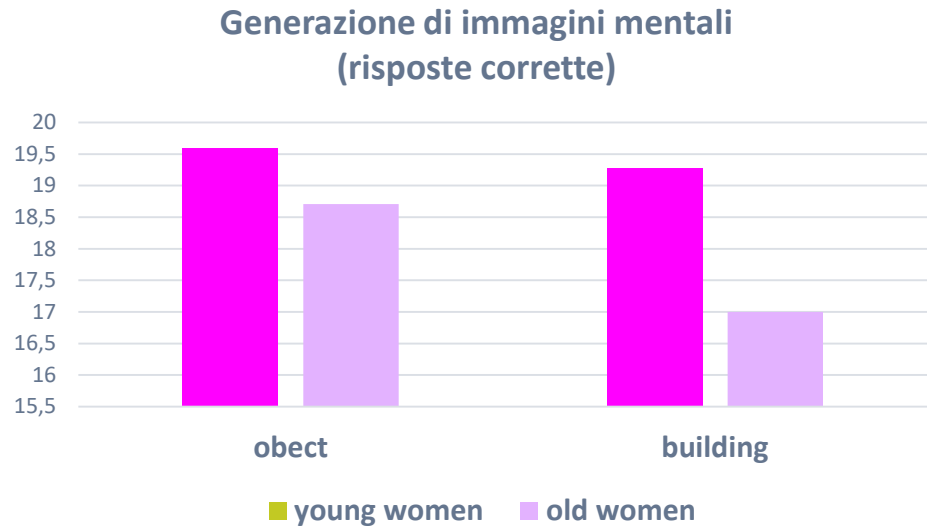
ma anche di giro angolare e corteccia orbitofrontale

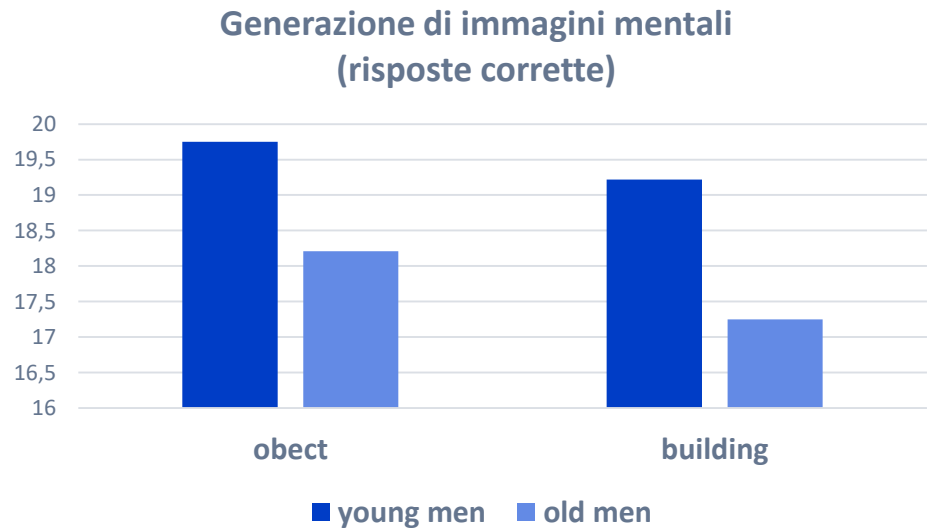
Boccia et al., 2016



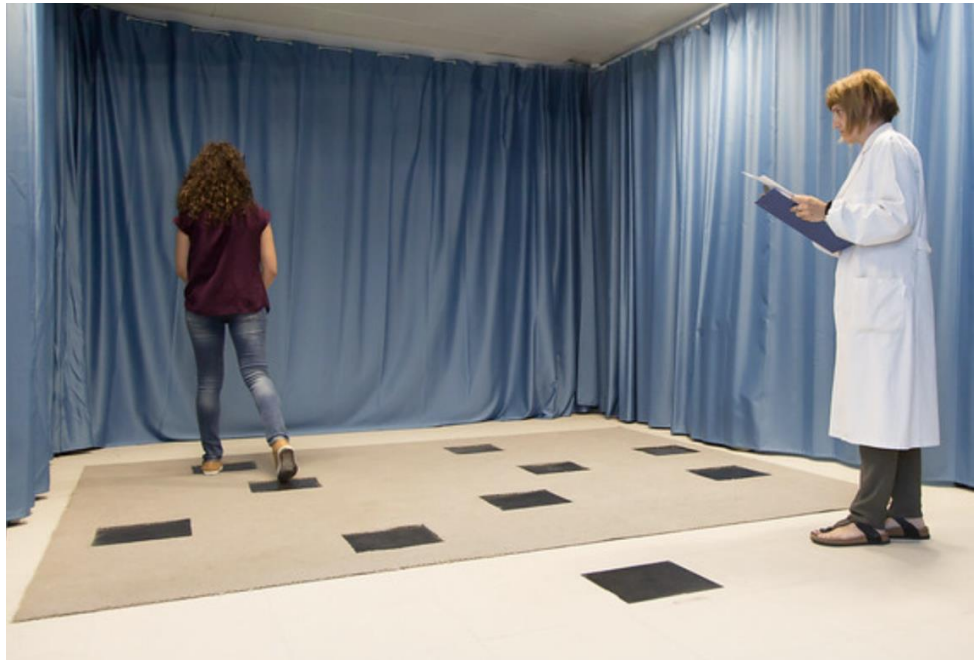
aMCI non differiscono da C nell'apprendimento dalla prospettiva Egocentrica, ma sono particolarmente deficitari in quello dalla prospettiva Allocentrica e nel rievocare in prospettiva Egocentrica quanto appreso in prospettiva Allocentrica



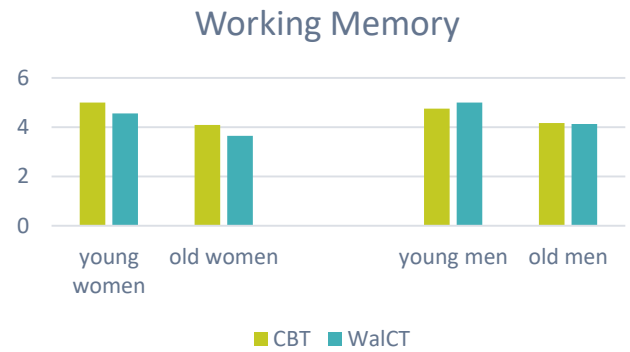


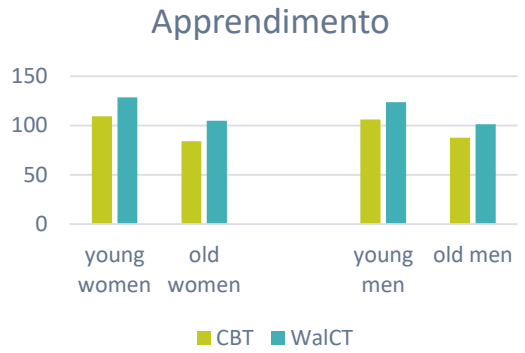


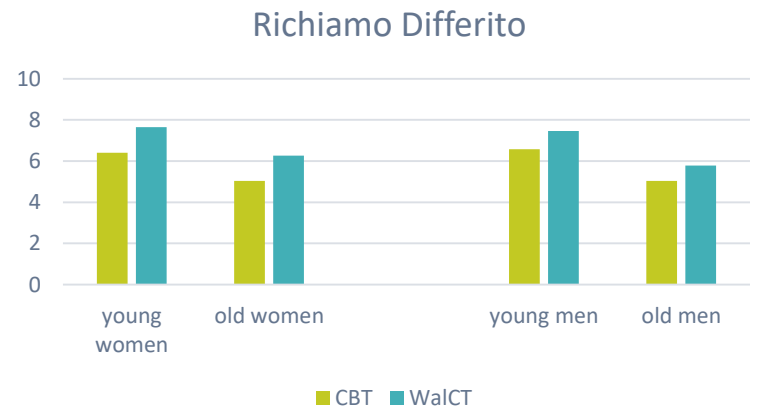
Piccardi et al., 2015



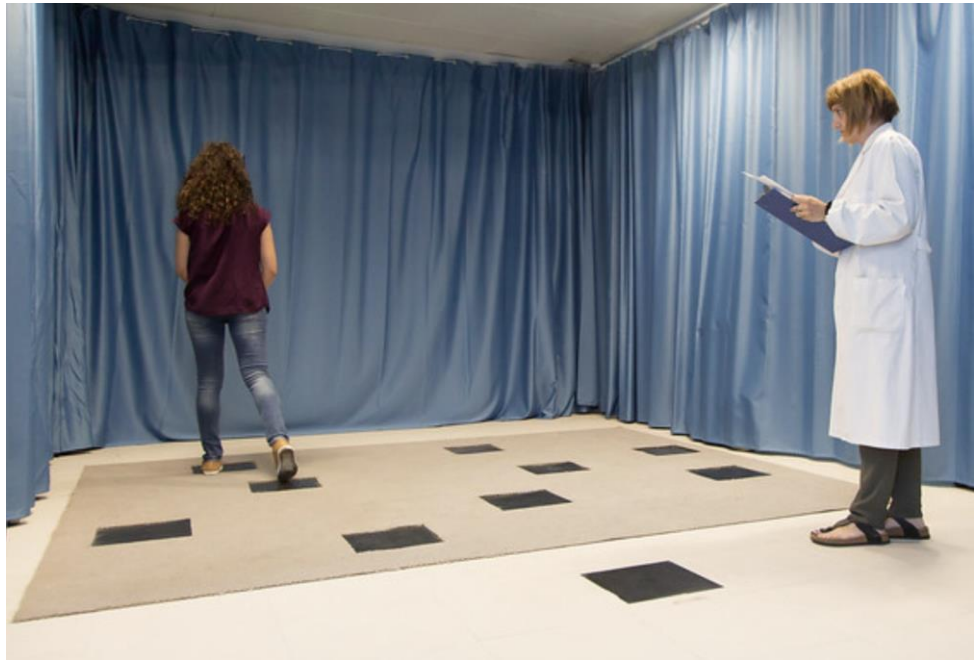
Giovani: 35-46 anni
Anziani: 60-86 years

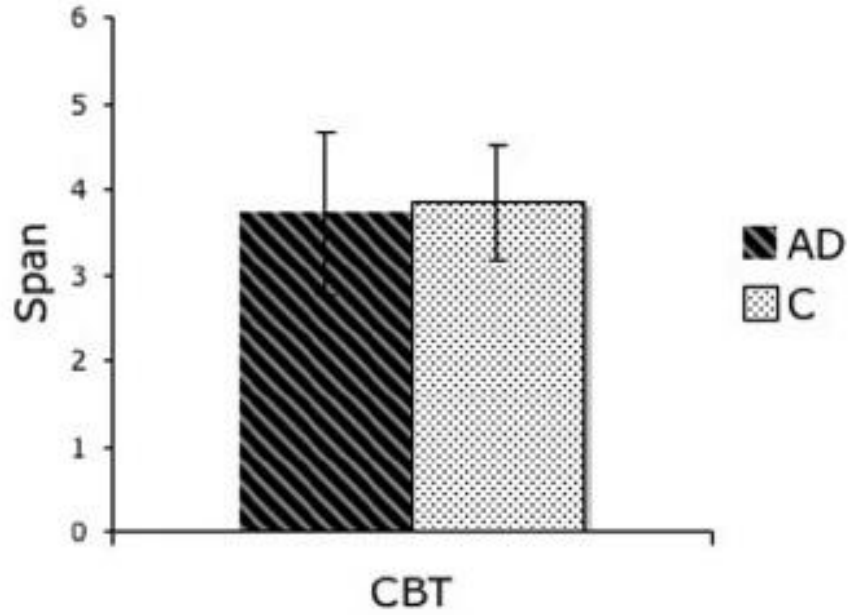


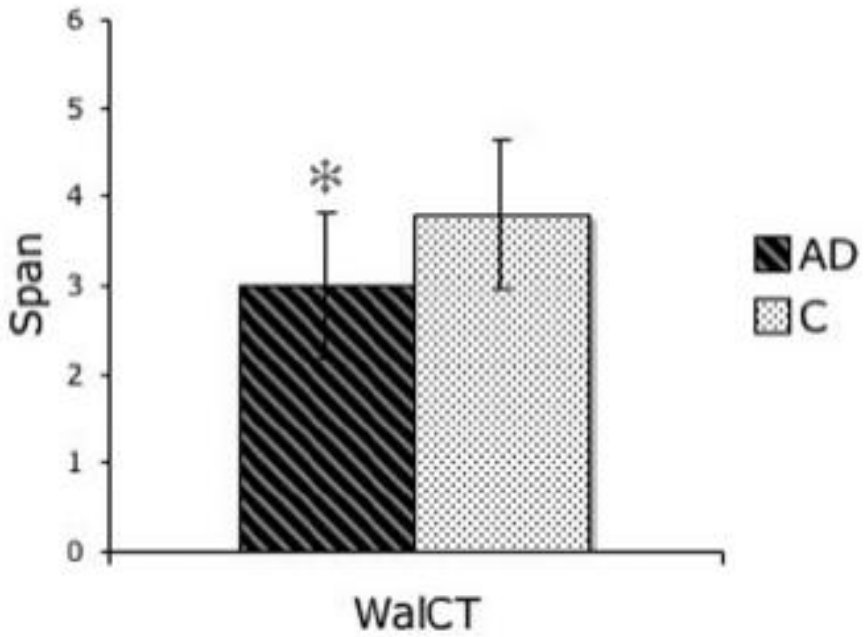




Piccardi et al., 2013





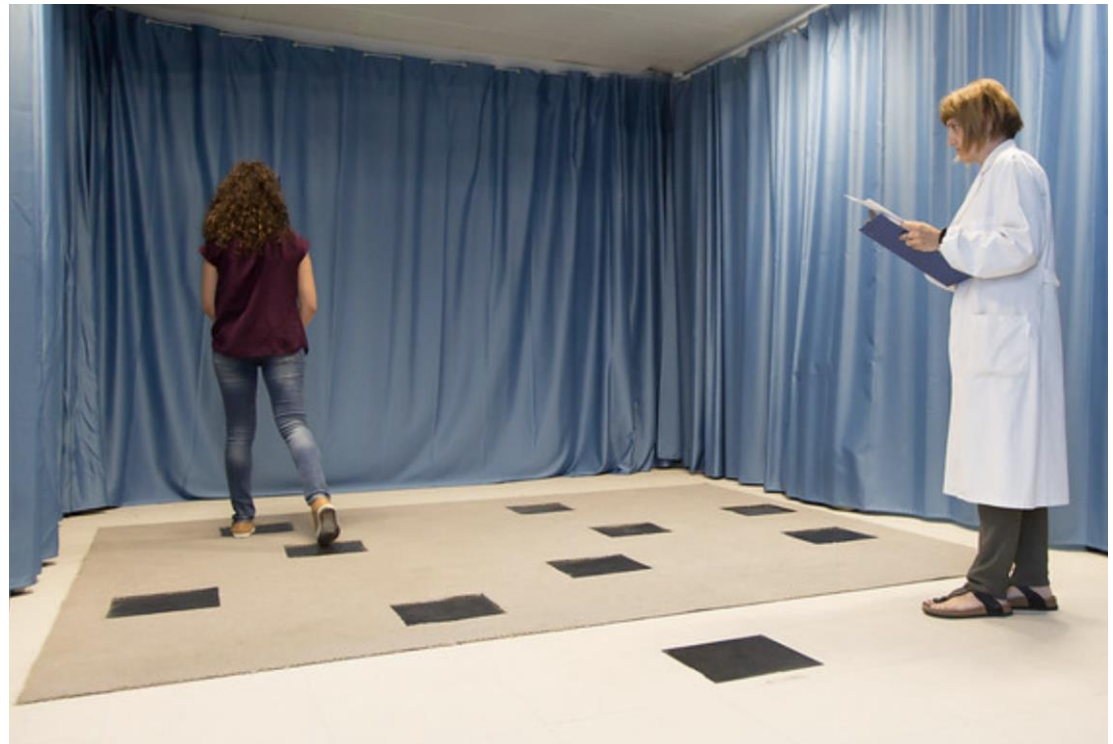


Bianchini et al,. 2014

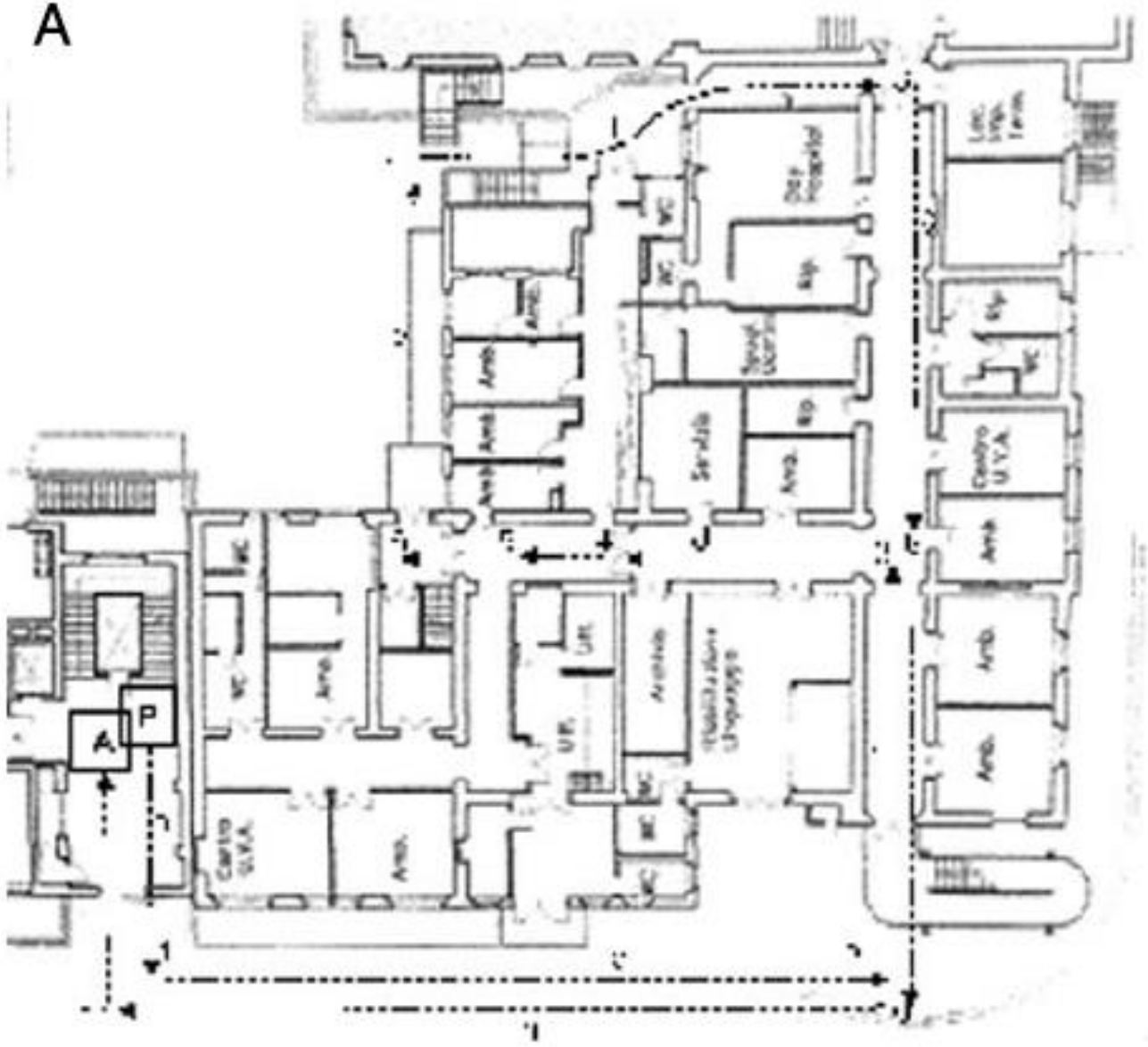
19 MCI (3 single domain)
19 Controlli

Test	C		MCImd	
	M	SD	M	SD
				Verbal Memory
RAVLT (immediate recall)	37.51	4.85	23.81	7.24
RAVLT (delayed recall)	*6.10*	*1.40*	3.31	3.36
RAVLT correct recognitions	*14.79*	*0.42*	10.50	3.98
RAVLT false recognitions	*0.58*	*0.77*	2.19	2.86
				Episodic Memory
BSR (immediate recall)	*4.88*	*0.63*	2.96	1.77
BSR (delayed recall)	*4.83*	*0.67*	2.51	2.36
				Verbal working memo
DS	4.99	0.58	4.63	0.50
				Visual memory
Rey-Osterrieth's figure (immediate recall)	*15.06*	*7.11*	7.53	6.48
Rey-Osterrieth's figure (delayed recall)	*15.08*	*7.42*	7.41	6.09
				Selective Attention
VS	46.95	5.15	44.31	8.31
				Attentional shift
TMT	*44.16*	*26.09*	137.38	74.60
				Language
VPF	*30.95*	*8.17*	24.25	8.15
VSF	35.00	5.64	28.81	10.00
BNT	*29.53*	*0.61*	26.75	2.24
				Visuo-constructional s
Clock Test	*1.00*	*0.00*	2.81	1.28
Rey-Osterrieth's figure (copy)	*33.97*	2.68	23.25	11.59
				Executive functions
FAB	*18.00*	*0.00*	14.25	3.19
				Logic and abstract reasoni
RCPM	*27.04*	*3.51*	22.57	4.21

Boccia et al., 2019



A



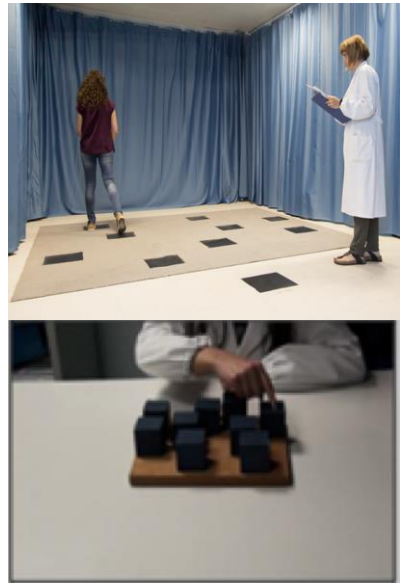





Working Memory:

MCI < HC

CBT > WalCT



Apprendimento:

MCI < HC

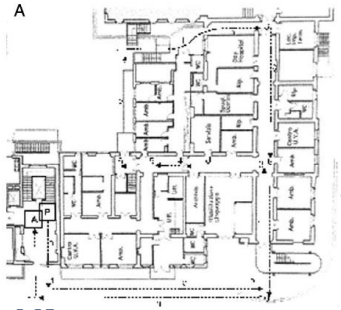
in C CBT=WalCT

in MCI WalCT < CBT

Richiamo Differito:

MCI < HC

CBT = WalCT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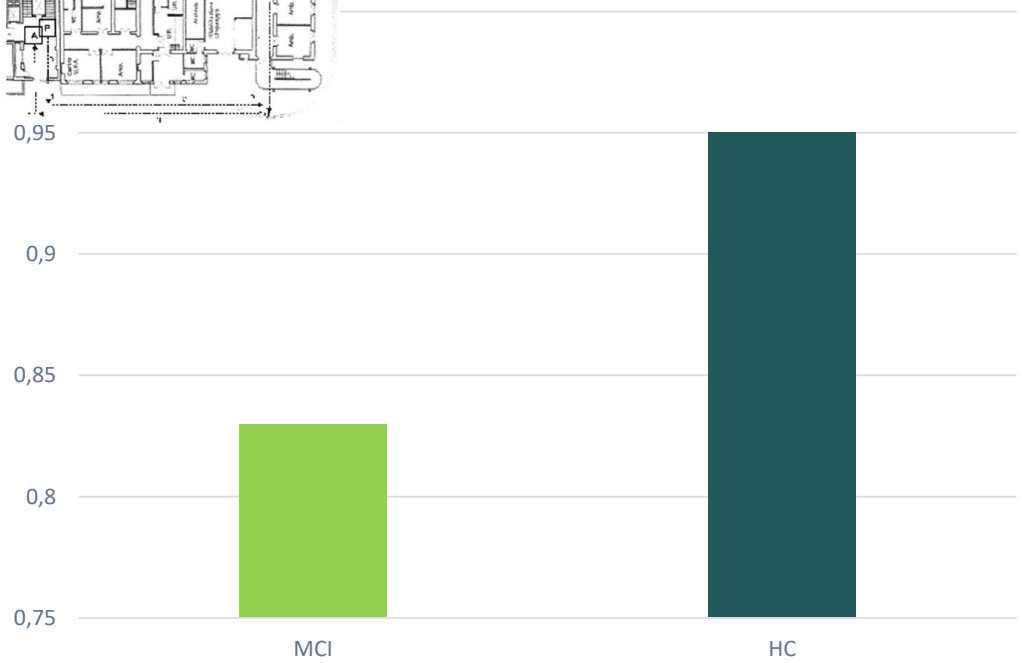
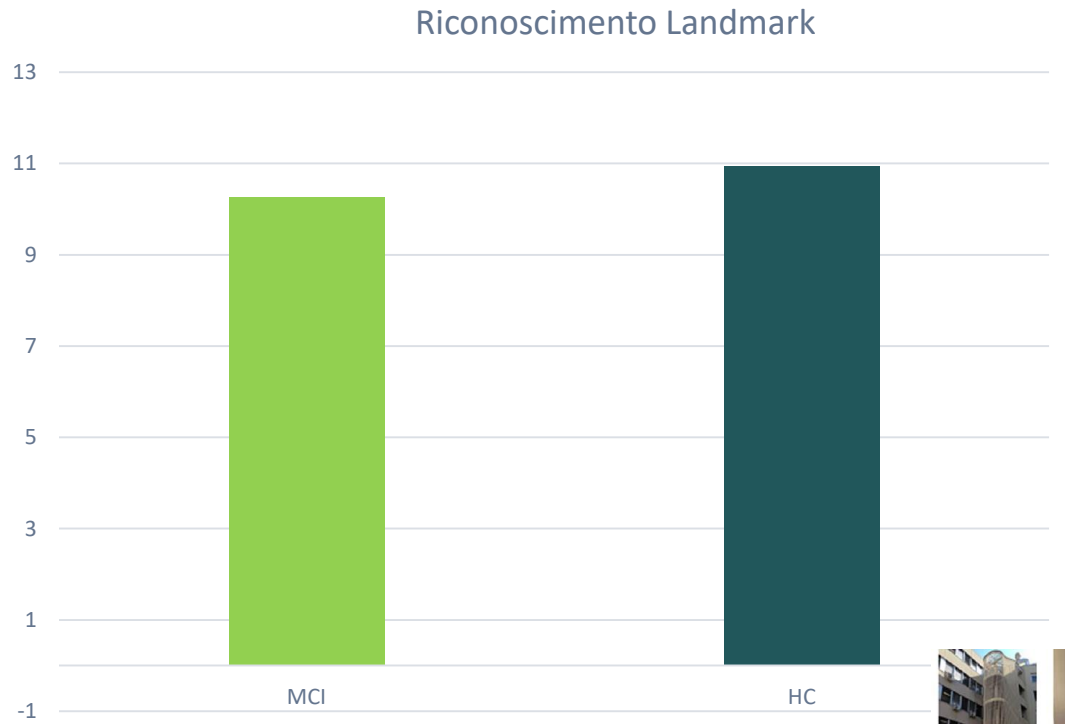
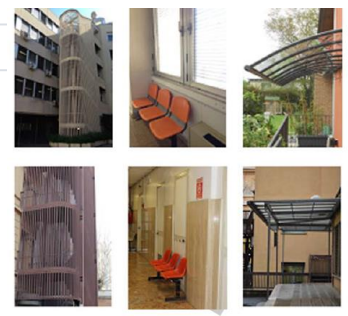

Apprendimento Percorso
0,95
0,9
0,85
0,8
0,75
MCI
HC


Riconoscimento Landmark
13
11
9
7
5
3
1
-1
MCI
HC



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Liana Palermo
Laura Piccardi
Umberto Sabatini
Caterina Silveri
Valentina Sulpizio
Alessandro Trebbastoni
Giulia Zazzaro

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a voi

per l'attenzione