

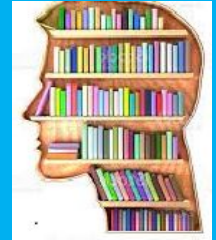
Uspješno kognitivno starenje

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Filozofski fakultet u Zagrebu



Osijek, 03. listopada 2022.

danas nudimo...

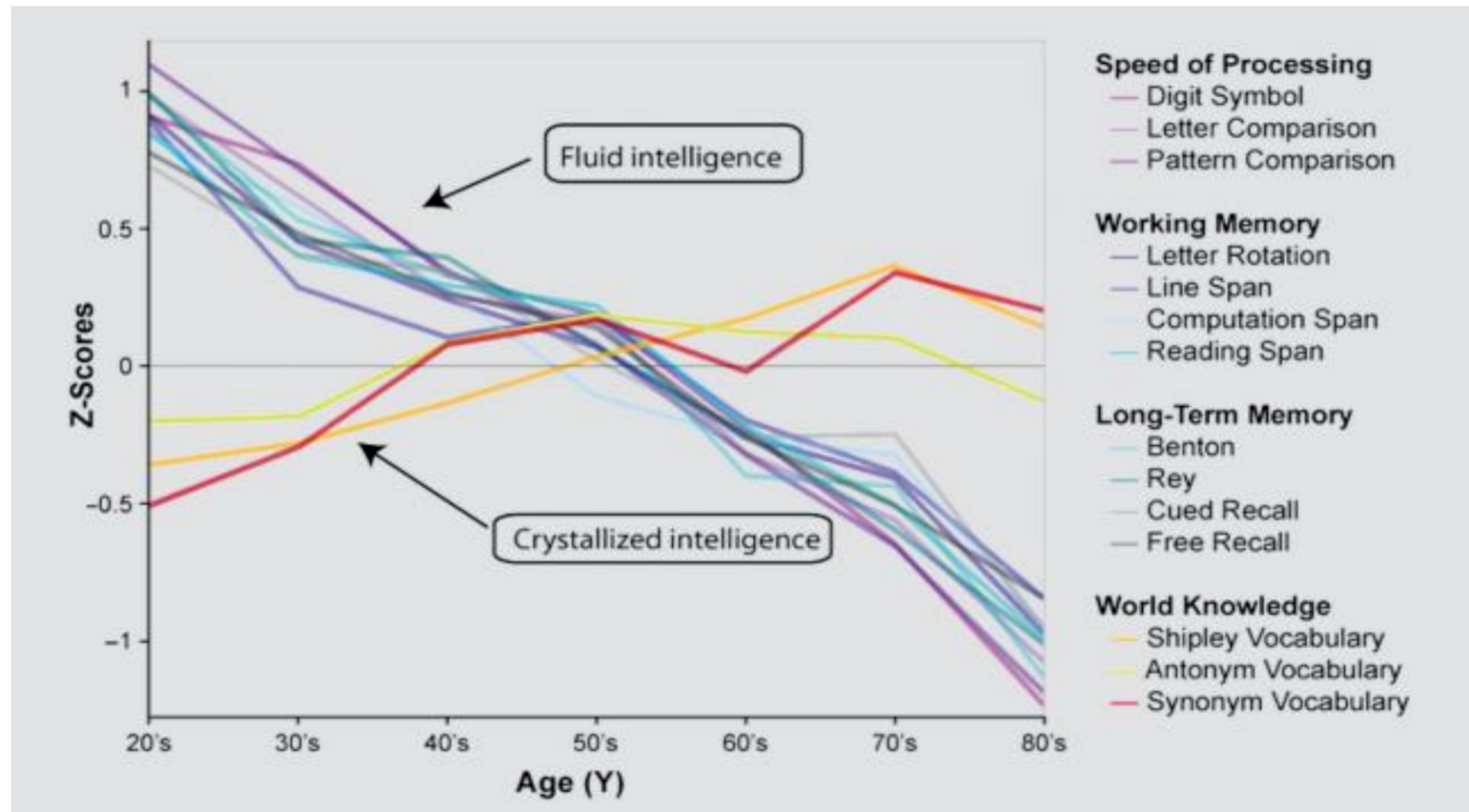


1. Kognitivno starenje i interindividualne razlike
2. Odrednice uspješnog starenja
3. Kognitivno osnaživanje

1. Kognitivno starenje i interindividualne razlike

Kognitivno starenje

(Park & Bischof, 2013)



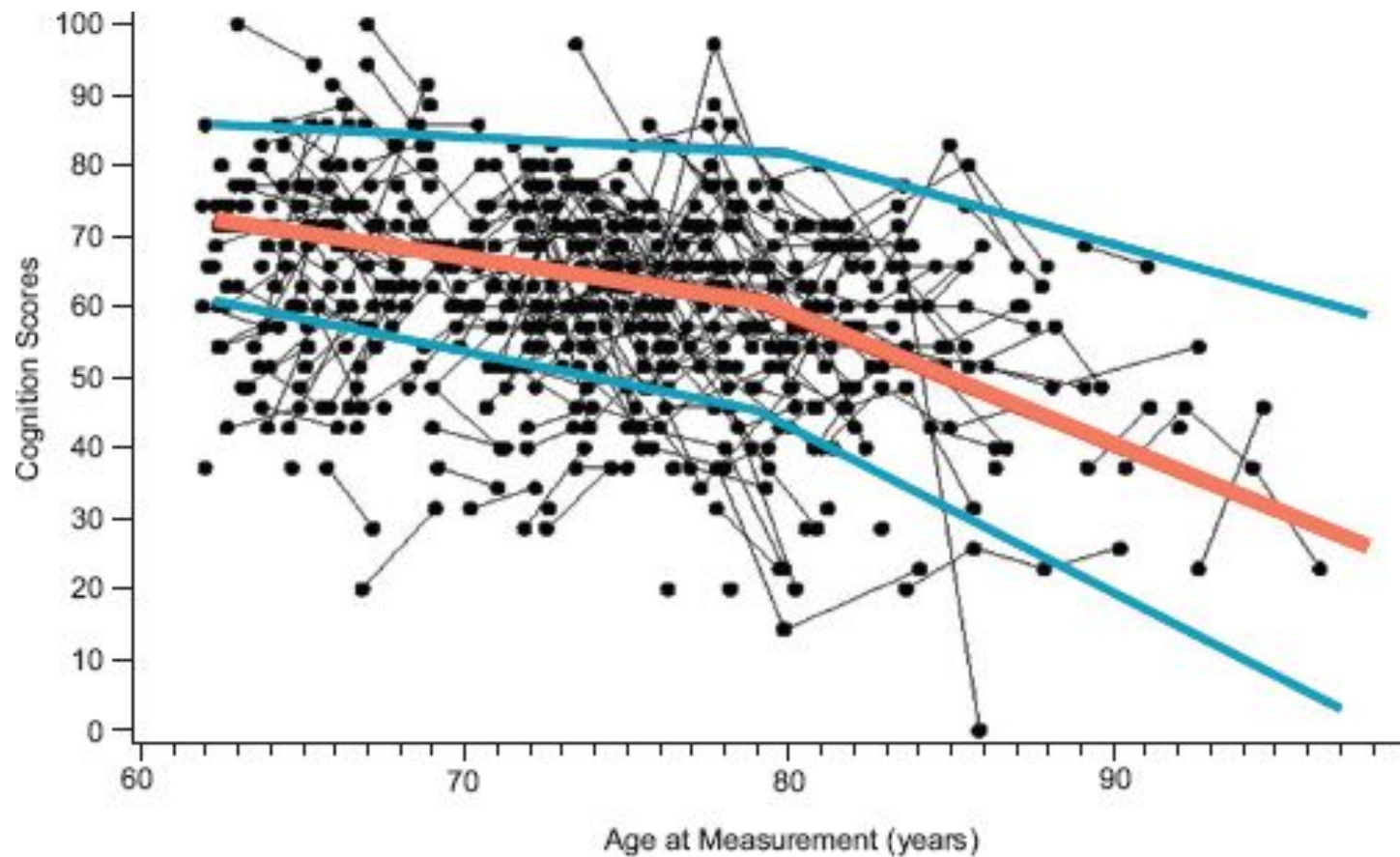
K = \uparrow .3-2% SD
F = \downarrow 2%SD

Kognitivne sposobnosti i starenje

Održavanje	Slabljenje
STM	Brzina obrade Pažnja (selektivna i podijeljena) Radno pamćenje Izvršne funkcije
Semantičko pamćenje	Epizodičko pamćenje
Kristalizirane sposobnosti	Fluidne sposobnosti
Jezik (i imenovanje predmeta)	Verbalna fluentnost i pretraga pojmova
	Apstraktno mišljenje

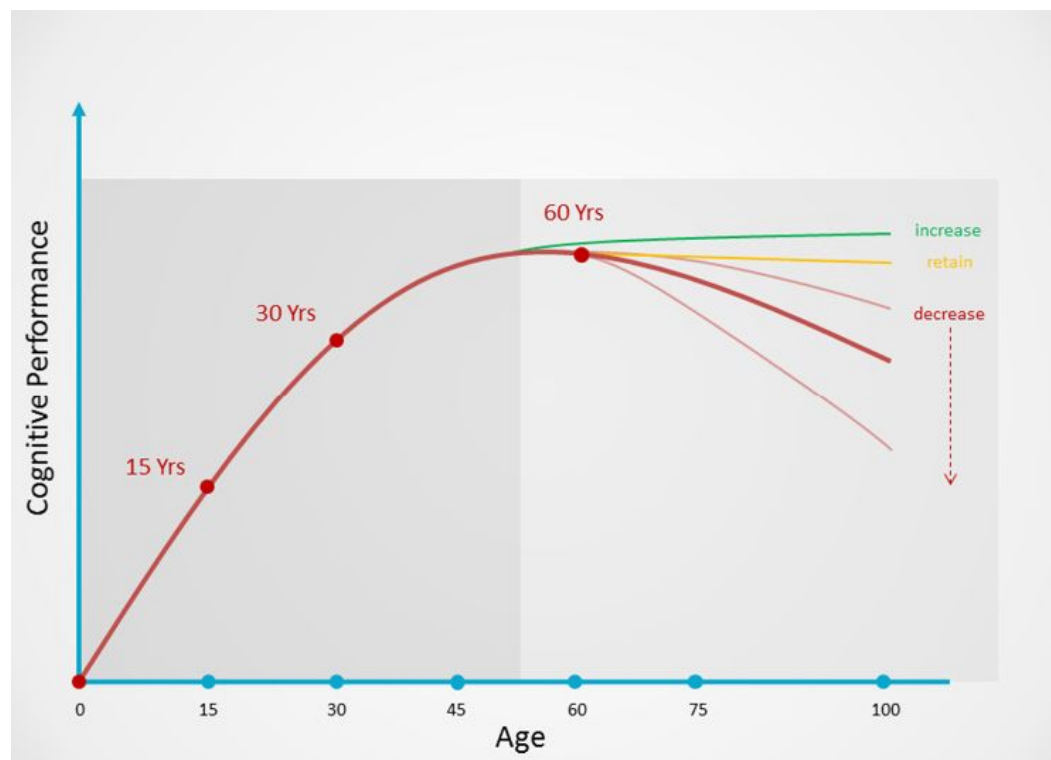
Kognitivno starenje: interindividualni varijabilitet

(McArdle, 2011)



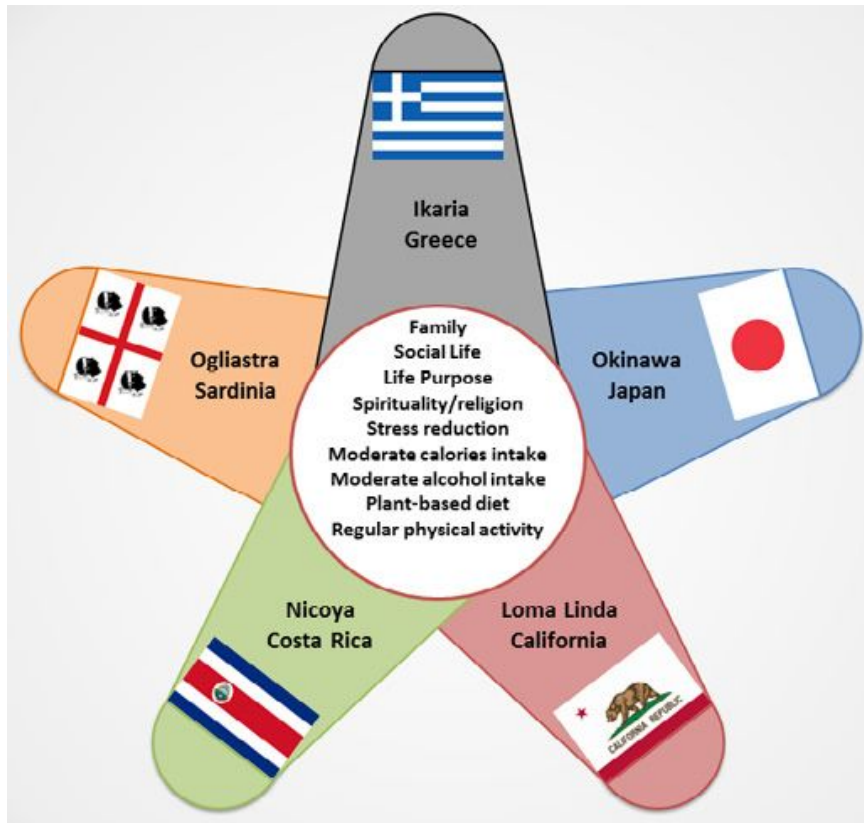
Implicitne teorije!

Kognitivna otpornost: The Nun study



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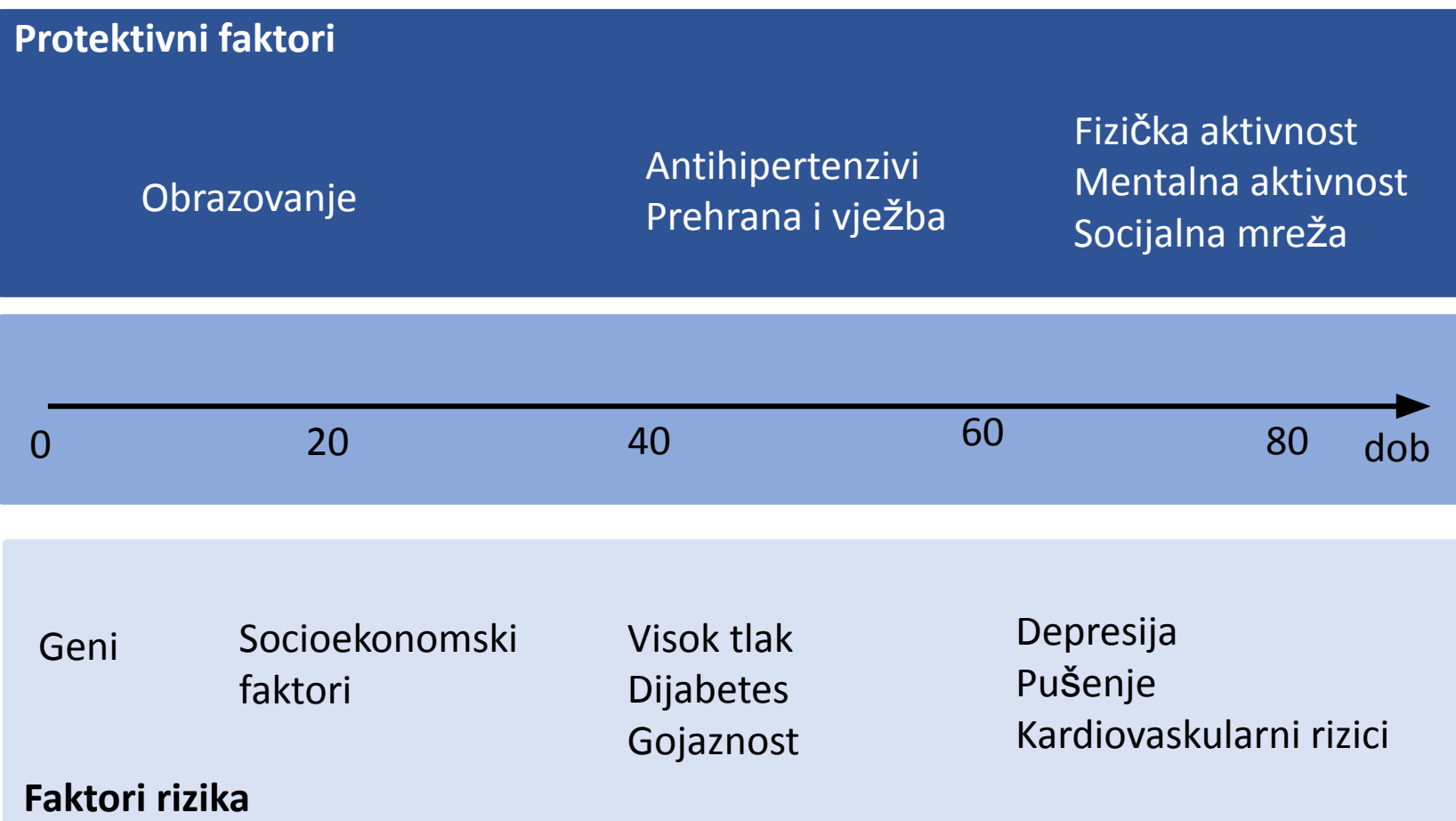
Kognitivna otpornost: Istraživanja 100-godišnjaka



Osjećaj svrhe
Smanjen stres
Nepušenje
Kurkumin, polifenol
Umjereni unos alkohola
„polu”vegetarijanstvo

Kognitivno starenje: okolinski utjecaji

(Dixon & Lachman, 2019)



2. Odrednice uspješnog starenja

Neuralno (kognitivno) starenje

Crveno = oslabljena kognicija
Zeleno = održana kognicija

↑ Aktivacija
↓ Supresija

Zdrav (mlad) mozak

Uravnotežena aktivacija i supresija uz intaktnu kogniciju



STARENJE



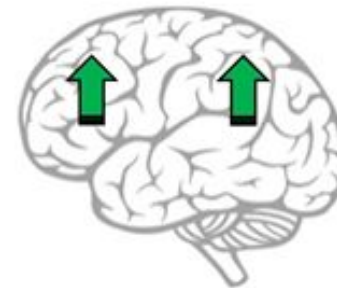
Gubitak neuralne diferencijacije

Neorganizirana dodatna aktivacija ili supresija neuralnih mreža i kognitivni pad



Neuralna neučinkovitost

oslabljena supresija neuralne aktivnosti i kognitivni pad



Neuralna kompenzacija

Potrebna dodatna aktivacija da oblaži kognitivni pad

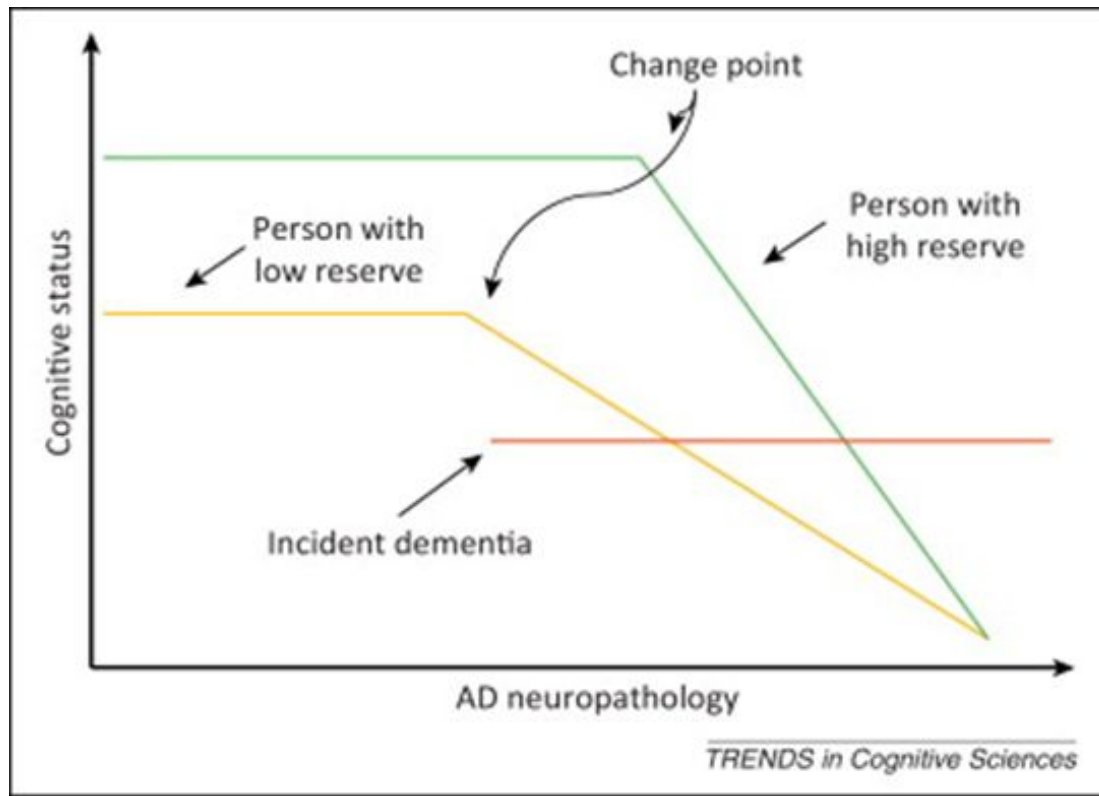


Neuralno održavanje

Nema promjene neuralne aktivnosti i kognicija je intaktna

Kognitivna rezerva

(Stern i sur., 1994)



↑ rezerva, 46% ↓ demencije
Valenzuela & Sachdev (2006)

Intelektualne aktivnosti

OBRAZOVANJE

- nejednoznačni rezultati
 - ovise o primijenjenim testovima



Mentalni status
Testovi pamćenja

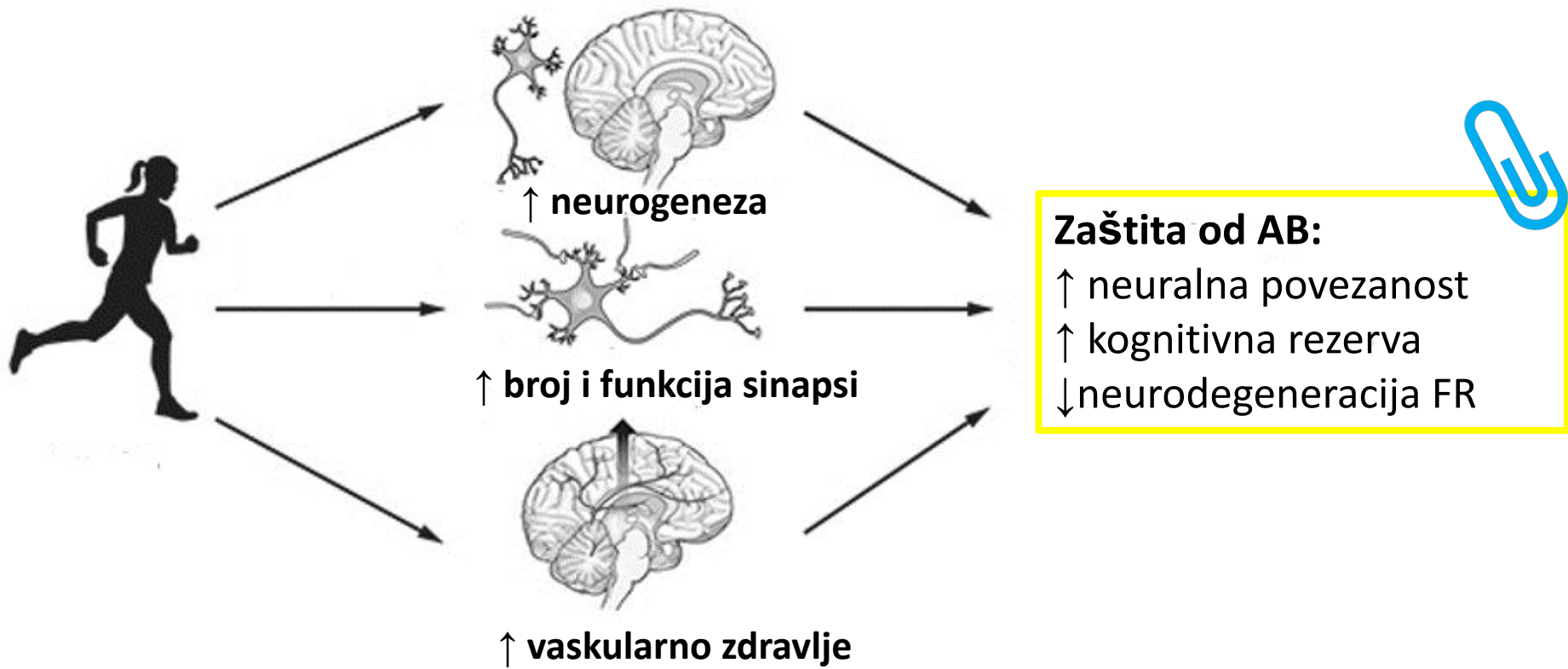
SLOBODNE AKTIVNOSTI

- čitanje, križaljke
- igranje društvenih igara
- sviranje instrumenata



Upotreba računala
Gledanje TV

Fizičke aktivnosti



Društvene aktivnosti



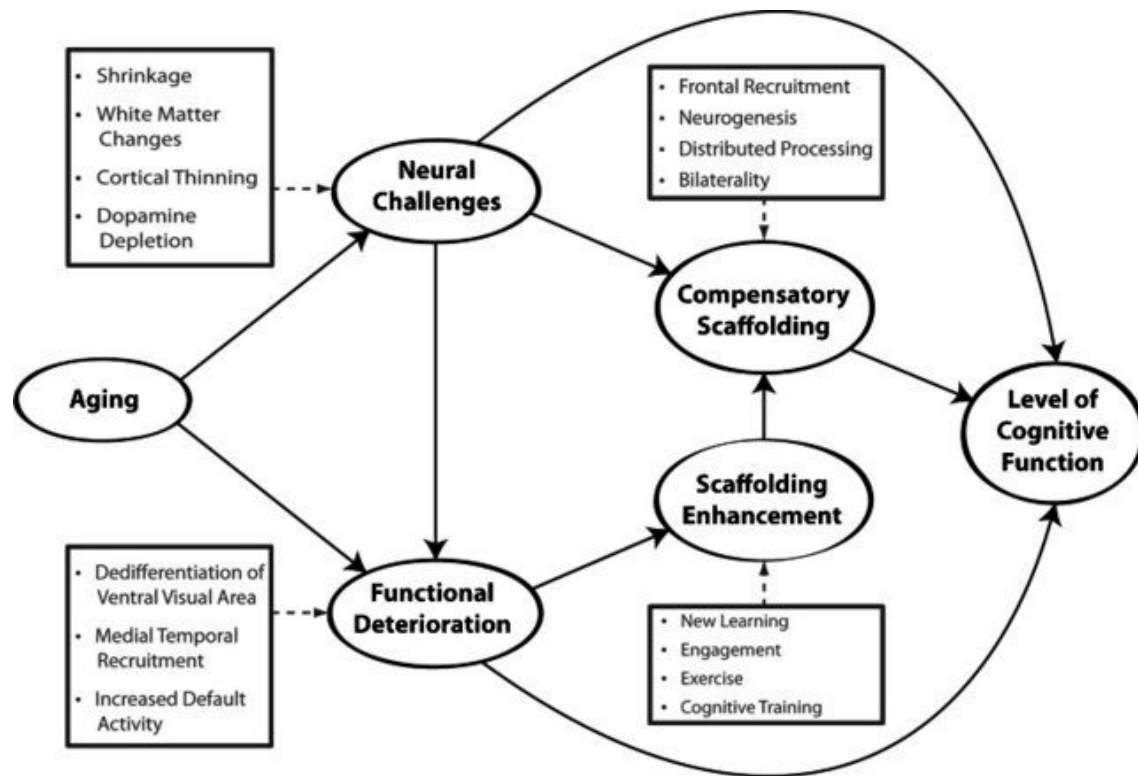
↑ mreža, produktivne aktivnosti

↑ pamćenje, IF, RP

↓ demencije

Teorija skele (STAC)

(Park & Reuter-Lorenz, 2009)



Funkcionalna
reorganizacija
Prilagodba
Konsolidacija

3. Kognitivno osnaživanje



Osnovna paradigma



- **aktivna i pasivna kontrola**
- pokazatelji učinkovitosti:
 - **dugotrajnost** (*follow-up; booster*)
 - **transfer**: blizak i daleki

Bihevioralne strategije

STRATEŠKI TRENING

MULTIMODALNI TRENING

KARDIOVASKULARNI TRENING

PROCESNI TRENING

Lustig i sur. (2009)

AMBIJENTALNE

AKCIJSKE VIDEO-IGRE

EXERGAMES

CASUAL IGRE

Strobach & Karbach (2020)



Strateški trening

Mental imagery training in older adults: Which are benefits and individual predictors?

Andrea Vranic¹ | Marina Martincevic¹ | Erika Borella²

TABLE 1 Demographic statistics for training and control groups

	Training group N = 48 (69% female)		Control group N = 43 (67% female)		t (df)
	M	SD	M	SD	
Age	72.3	6.78	71.4	6.72	0.59 (89)
Education	12.04	4.18	11.9	3.83	0.19 (85)
MMSE	28.0	1.27	28.3	1.34	1.08 (89)

Abbreviation: MMSE, mini-mental state exam.

* $p < 0.05$; ** $p < 0.01$.

Sesija	Aktivnost
1 + 2	Predtest 1+2. Uvod u program (mentalne predodžbe).
3	Odmjereni zadavanja. Provjera stvaranja predodžbi.
4	Lista riječi brzinom 4 sekunde po riječi.
5	Lista riječi brzinom 2 sekunde po riječi.
6 + 7	Posttest 1 + 2

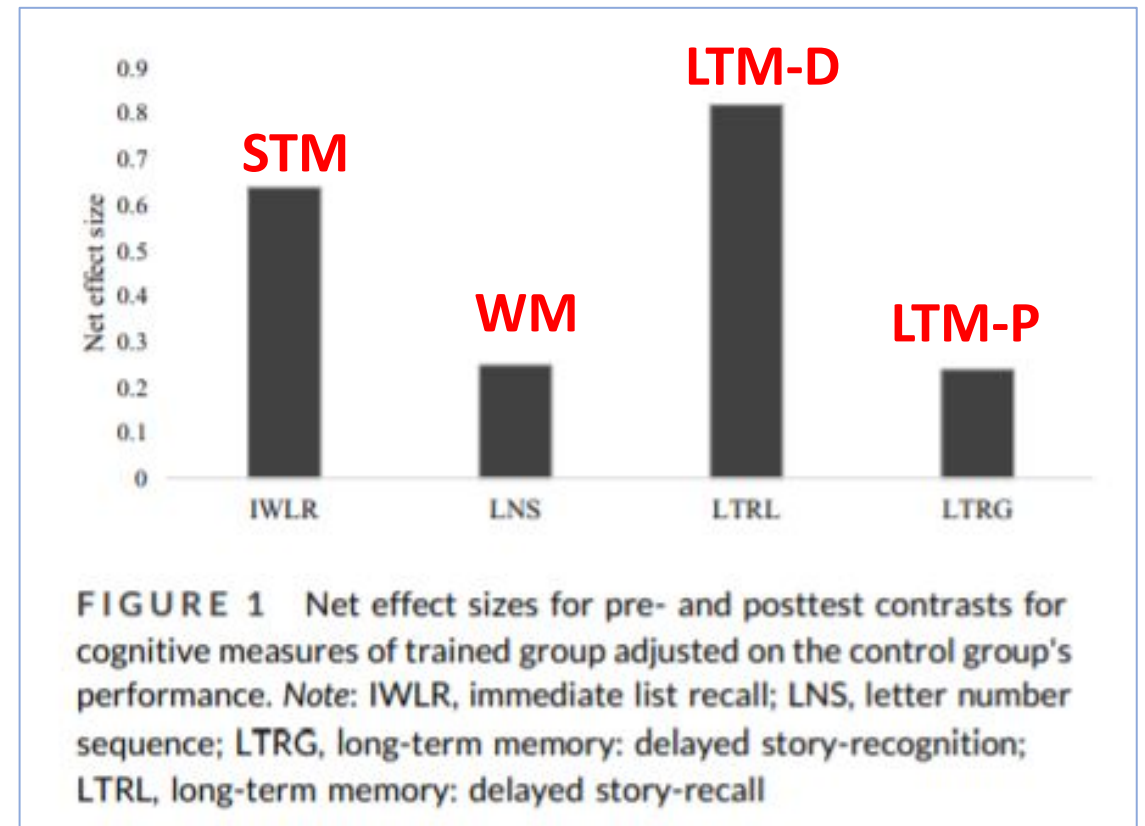
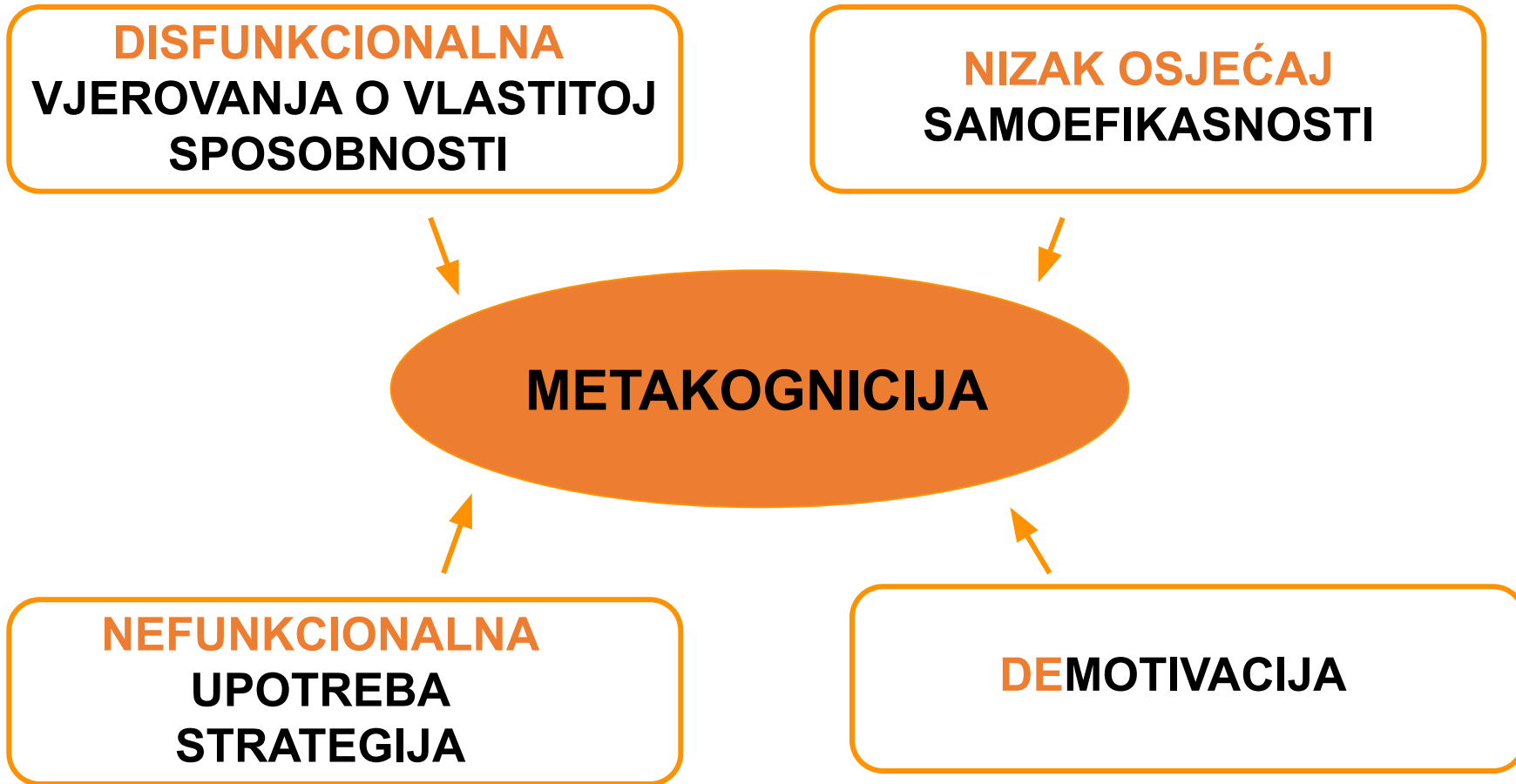


FIGURE 1 Net effect sizes for pre- and posttest contrasts for cognitive measures of trained group adjusted on the control group's performance. Note: IWLR, immediate list recall; LNS, letter number sequence; LTRG, long-term memory: delayed story-recognition; LTRL, long-term memory: delayed story-recall



STARIJA DOB = LOŠE OPĆE STRATEŠKO ZNANJE

The efficacy of a multifactorial memory training in older adults living in residential care settings

Andrea Vranić,¹ Ana Marija Španić,¹ Barbara Carretti² and Erika Borella²

¹Department of Psychology, University of Zagreb, Croatia

²Department of General Psychology, University of Padova, Italy

Multimodalni trening

PREDTEST	SMSQ, NFC, TOS, SU, SZPP
Susret 1	Upoznavanje, Kognitivni propusti SPM, VLTM-DOS, VLTM-PREP
Susret 2	Zadaci pamćenja brojeva (DSF, DSB) Dosjećanje liste riječi
Susret 3	Dovršavanje rečenica, Rječnik
Susret 4	Moj jučerašnji dan, Sklonost prisjećanju, Subjektivna dobrobit (SWB), Optimizam (O), Internalnost (IPC)
Susret 5	Autobiografsko pamćenje
Susret 6	Stilovi atribuiranja, Povjerenje u vlastite mnestičke sposobnosti
Susret 7 - 9	Strategije & Mnemotehlike Ponavljanje, jednostavne i interaktivne predodžbe, stvaranje priče
POSTTEST FU (7mj)	TOS, SPM, VLTM-DOS, VLTM-PREP, DSF, DSB

DOB

$Mt = 71.68 \pm 2.93, N = 35$

$Mc = 74.45 \pm 4.10, N = 31$

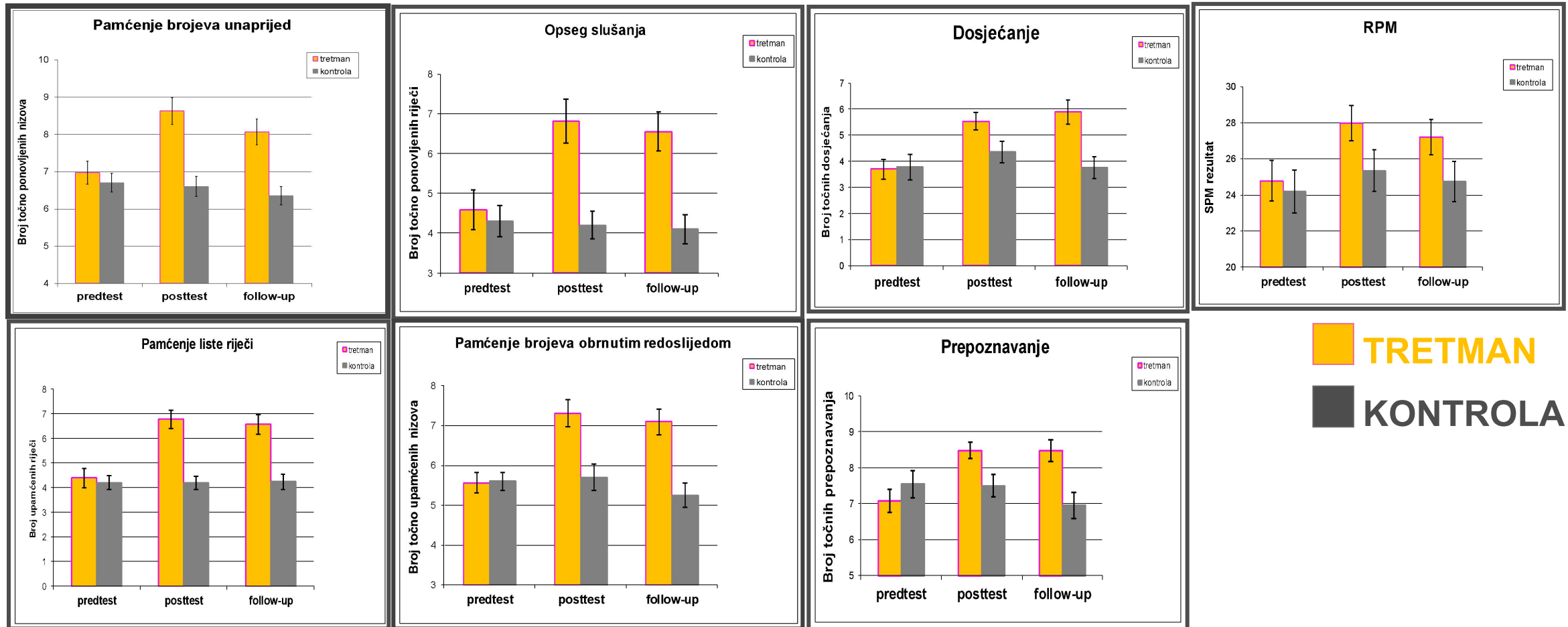
Multimodalni trening

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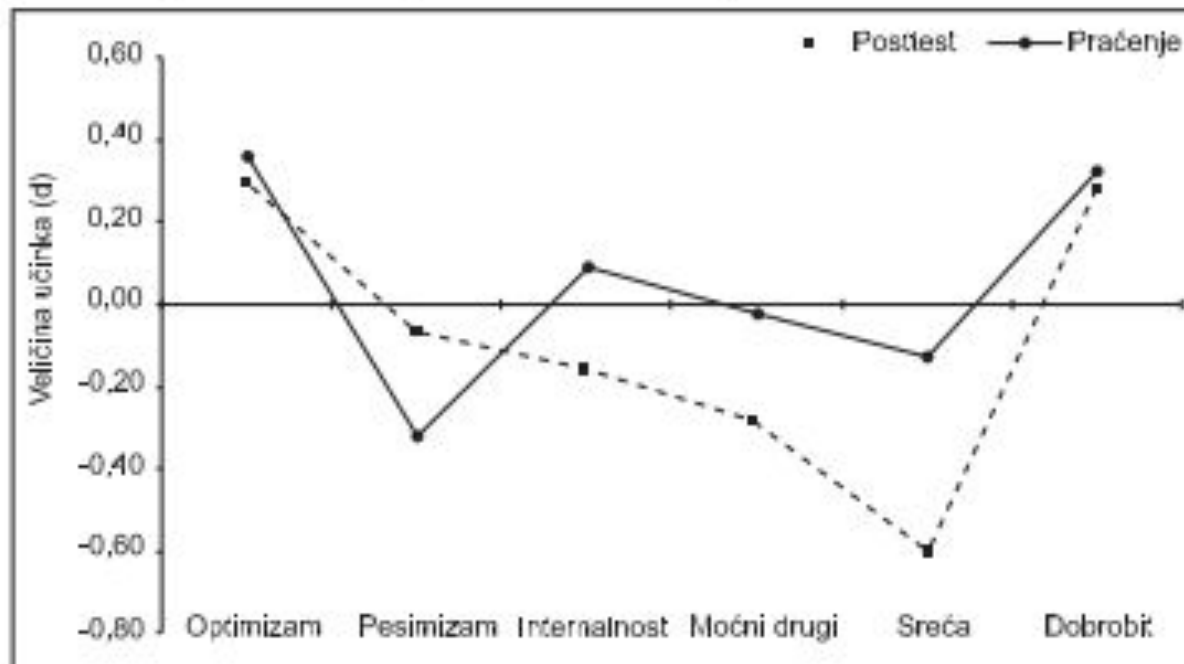
TRETMAN
KONTROLA

Pažnja & STM

WM

Verbalno LTM

Multimodalni trening



- ✓ SUBJEKTIVNA DOBROBIT
- ✓ OPTIMIZAM
- ✓ LOKUS KONTROLE



Kardiovaskularni trening

The Efficacy of a Dance Intervention as Cognitive Training for the Old-Old

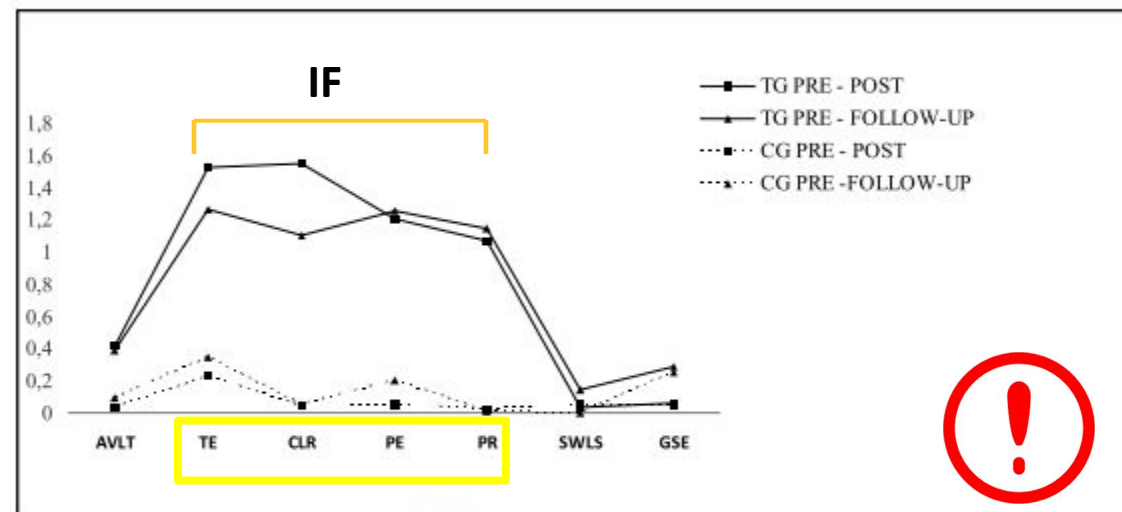
Helena Kosmat, Andrea Vranic

PMID: 27182068 DOI: 10.1123/japa.2015-0264

Table 1
Timing and activity schedule within one training session

Time	Activity
0-15 min	Greeting and warm-up (sitting position)
15-30 min	Step sequence learning and repetition (sitting and standing)
30-33 min	Pause and clarification (when needed)
33-40 min	Waltz (standing)
40-45 min	Repetition and free style

Figure 1. Effect sizes (Cohen's *d*) for pre- and post-test training effect as a function of measure and group (treatment and control)



Note: SWLS=Satisfaction with Life Scale, GSE=General Self-efficacy Scale, AVLT=Auditory-verbal Learning Test, TE= total number of errors, CLR= conceptual level responses, PR=perseverative responses, PE=perseverative errors, TG=treatment group, CG=control group



Video-igra *Belot*

Computerized tabletop games as a form of a video game training for old-old

Marina Cujzek¹, Andrea Vranic¹

Affiliations + expand

PMID: 27775485 DOI: 10.1080/13825585.2016.1246649

Table 1. Demographic information about participants i

Characteristics	Treatment <i>M</i> (<i>SD</i>)	Control <i>M</i> (<i>SD</i>)
Age (years)	72.60 (9.83)	73.71 (9.97)
Education (years)	13.60 (2.95)	12.86 (2.80)
MMSE	28.13 (1.81)	27.29 (2.13)

Means and standard deviations (*SD*) by group; MMSE: Mini Ment:

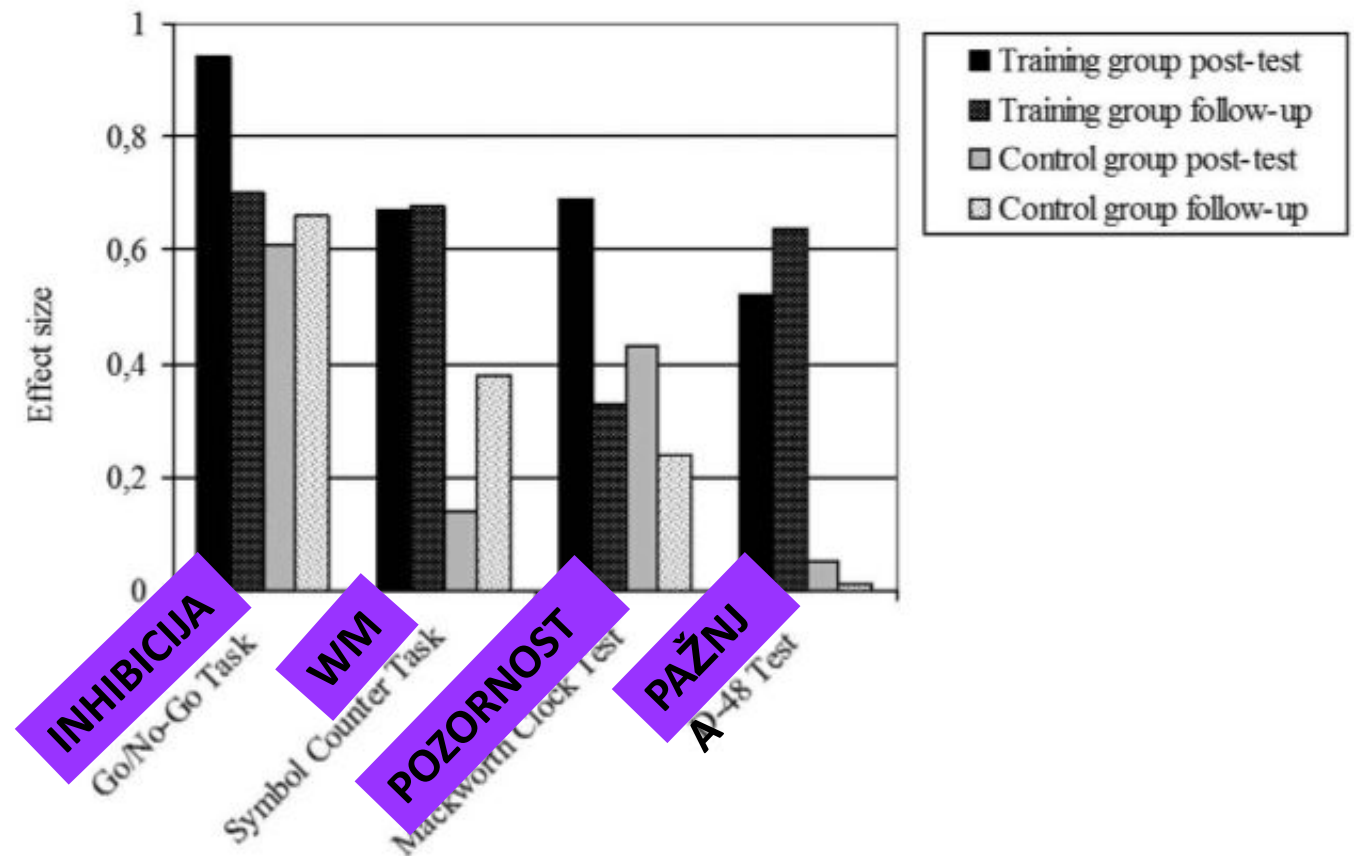


Figure 1. Effect sizes (Hedges's *g*) for pre and posttest, and pretest and follow-up contrasts for cognitive functions of trained and control group ($N = 29$).



Afektivni kognitivni trening: neuralni, kognitivni i bihevioralni učinci (ACT)

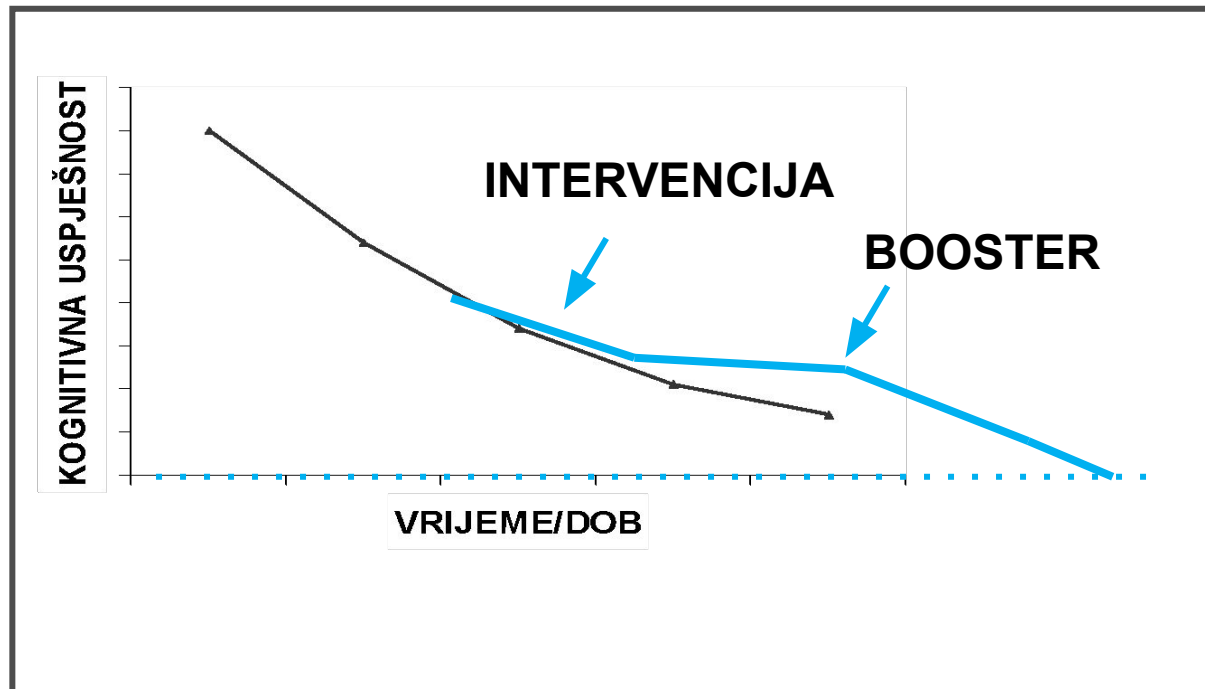


- $N=400$
- WM trening
- Elektrofiziološka provjera
- Široka baterija testova
- transfer na svakodnevno funkcioniranje



Projekt financira Hrvatska zaklada za znanost u
razdoblju od 01. 01. 2021. do 31. 12. 2024. godine,
broj ugovora IP-2020-02-6883.

Kognitivni trening i kognitivno starenje



It's a fortunate person whose brain
Is trained early, again and again,
And who continues to use it
To be sure not to lose it,
So the brain, in old age, may not wane.

Rosenzweig & Bennett (1996; *BBR*)

Age is an issue of mind over matter.
If you don't mind, it doesn't matter.

M. Twain

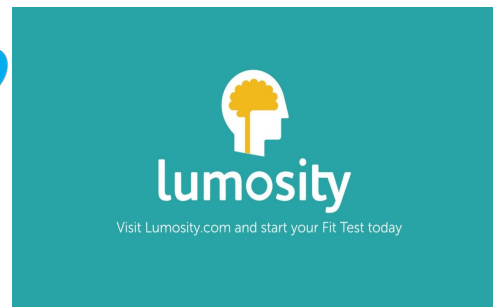
Hvala!

Brain train aplikacije/servisi

2015 – 50 mil
2019 – 85 mil

50000 dnevno

50% = ↑ 50god
30% = 18-50
20% = ↓ 18



2020-2025
3,2 → 11,4 mil \$
CAGR = 29%