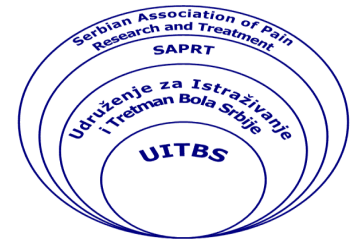


# BOL U STARIJIH –POSEBAN IZAZOV U REHABILITACIJI

Prof.dr Snežana Tomašević-Todorović



Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP (2017 – 3109 / 001 – 001)

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UITBS -SAPRT GODIŠNJI NAUČNI SIMPOZIJUM  
30.03. 2019.

# BOL U FOKUSU

## OSETLJIVE POPULACIONE GRUPE



Project number

1 – 001)

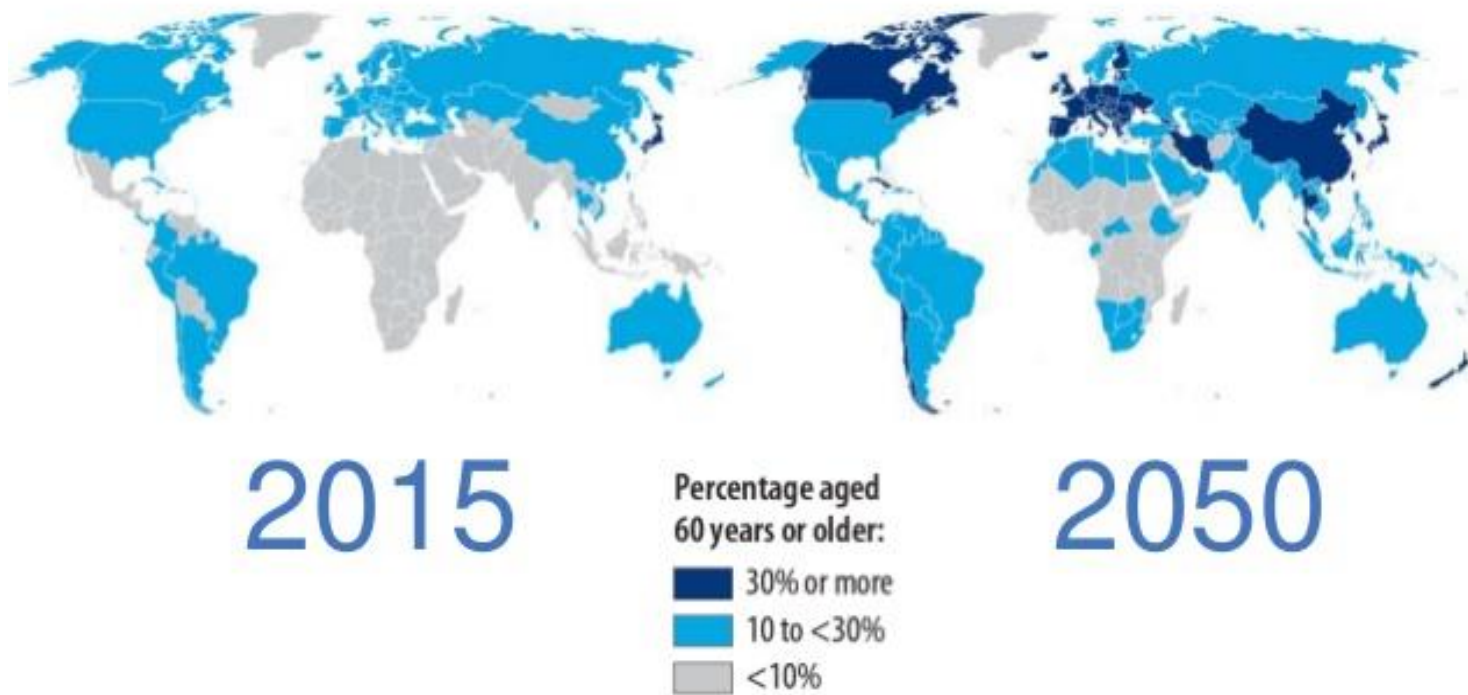
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of the author, and the Commission cannot

# "STARAČKI BUM"

## Populations are getting older



Which nations have the highest percentage of people aged 60+?

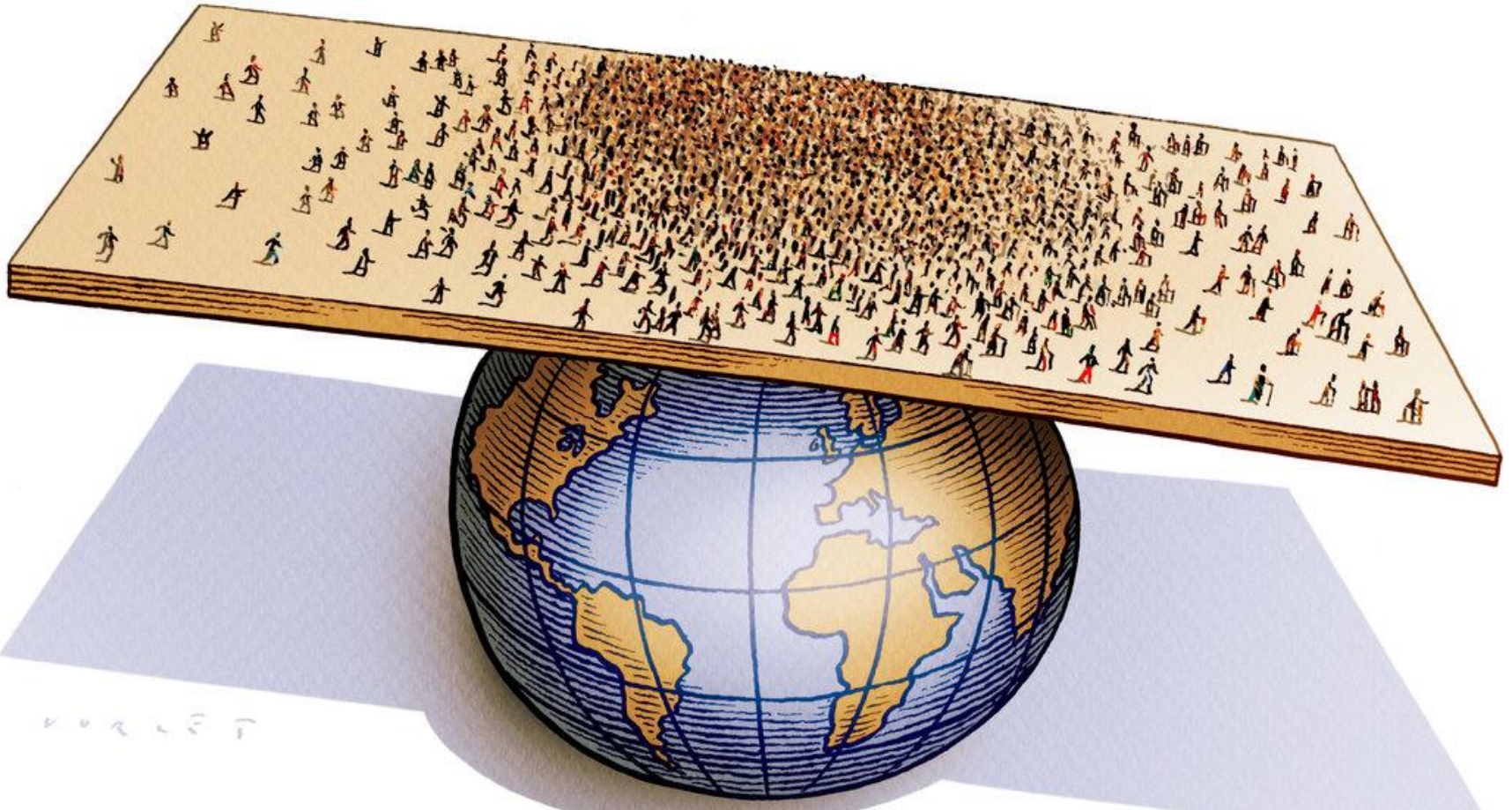
WORLD  
ECONOMIC  
FORUM

COMMITTED TO  
IMPROVING THE LIVES  
OF THE WORLD

Japan	
Italy	
Germany	
Finland	
Sweden	
Bulgaria	
Greece	
Portugal	
Croatia	
Channel Islands, UK	

Source: Global Agenda Council on Ageing Society

# BOL U STARIJIH MEDICINSKI I SOCIJALNI PROBLEM!!!



Preuzeto iz New York Times. The Financial Time Bomb of Longer Lives;

Franco MR Tong, A Howard K, et al. Br J Sports Med doi:10.1136/bjsports-2014-094015

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# BOL U STARIJIH

40% starijih ima bol na više lokalizacija (74.9% koji se žale na bol),

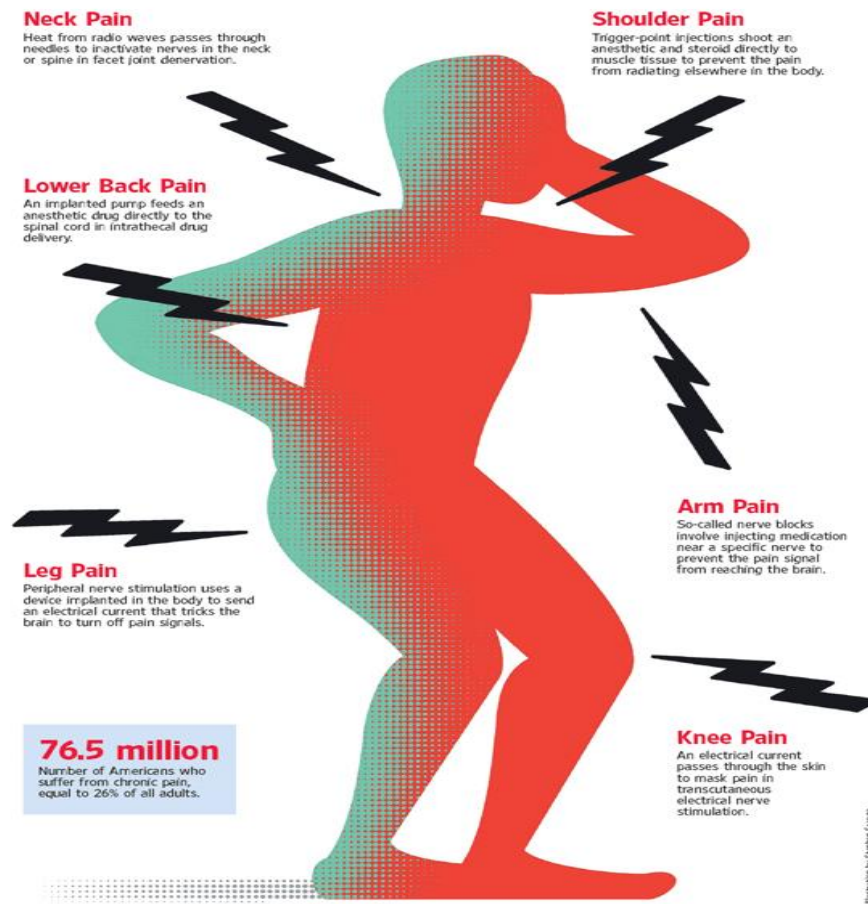
UZROCI

**Mišićno skeletni** (Osteoartritis, vertebralne kompresivne frakture, spinalna stenoza)

**Lezije i bolesti somatosenzornog nervnog sistema**

- DPN, PHN, centralni neuropatski bol posle IVC

- Fantomski bol ekstremiteta



Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP (2017 – 3109 / 001 – 001)

Blyth FM et al. Pain. 2008; 140(1):224–230,

Bryant LL, et al. J Gerontol B Psychol Sci Soc Sci. 2007; 62(9):989–996.

# POSLEDICE NETRETIRANOG BOLA KOD STARIJIH

Anksioznost , depresija,  
kognitivne disfunkcije



Poremećaji spavanja



↓ FUNKCIONALNA  
SPOSOBNOST



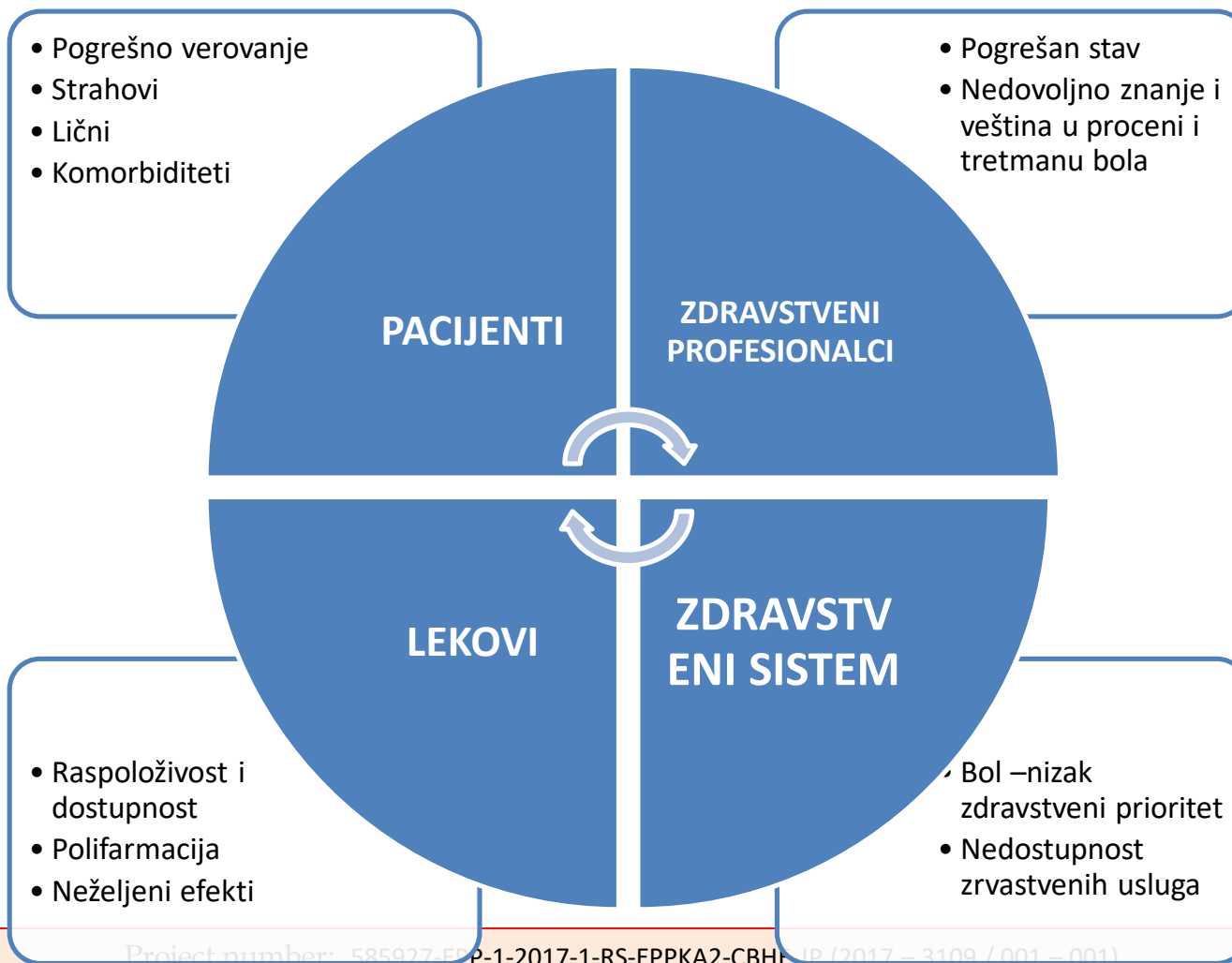
↓ klinički ishod



↓ Kvalitet života

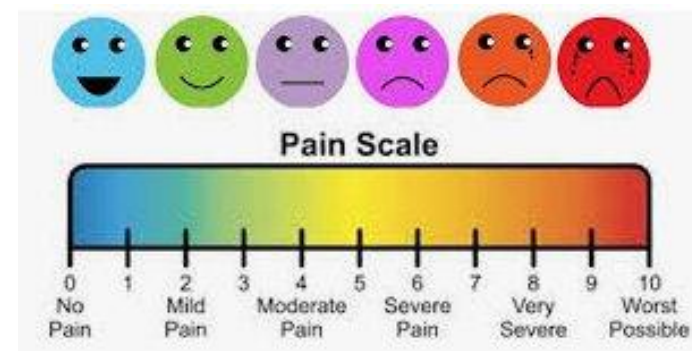
↑ Troškova zajednice

Project number: 585927-EPP-1-2017-1-RS-EPPKA2-2017-001-001



# PROCENA BOLA KOD STARIJIH OSOBA

- Unidimensionalne skale bola (NRS, VS, VS)
- Multidimensionalne skale (BPI, McGill)
- Skala izraza lica
- DN4, LANSS
- 
- Edukacija
- Ekspresija bola



Razmotriti oštećenja sluha i vida  
 Procena opšte funkcionalnosti (ADŽ)  
 Procena komponenti motoričkih sposobnosti (OP, MS, TUG, Balans,  
 Procena mentalne sposobnosti

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### DOLOPLUS-2 SCALE

BEHAVIOURAL PAIN ASSESSMENT IN THE ELDERLY

NAME: Christian Name: Unit: DATES: [ ][ ][ ][ ]

Behavioural Records

SOMATIC REACTIONS					
1* Somatic complaints	* no complaints	0	0	0	0
	* complaints expressed upon inquiry only	1	1	1	1
	* occasional involuntary complaints	2	2	2	2
	* continuous involuntary complaints	3	3	3	3
2* Protective body postures adopted at rest	* no protective body postures	0	0	0	0
	* the patient occasionally avoids certain positions	1	1	1	1
	* protective postures continuously and effectively sought	2	2	2	2
	* protective postures continuously sought, without success	3	3	3	3
3* Protection of sore areas	* no protective action taken	0	0	0	0
	* protective actions attempted without interfering against any investigation or nursing	1	1	1	1
	* protective actions against any investigation or nursing	2	2	2	2
	* protective actions taken at rest, even when not approached	3	3	3	3
4* Expression	* usual expression	0	0	0	0
	* expression showing pain when approached	1	1	1	1
	* expression showing pain even without being approached	2	2	2	2
	* permanent and unusually blank look (listless, staring, looking blank)	3	3	3	3
5* Sleep pattern	* normal sleep	0	0	0	0
	* difficult to go to sleep	1	1	1	1
	* frequent waking (awakeness)	2	2	2	2
	* insomnia affecting waking times	3	3	3	3
PSYCHOMOTOR REACTIONS					
6* washing &/or dressing	* usual abilities unaffected	0	0	0	0
	* usual abilities slightly affected (careful but thorough)	1	1	1	1
	* usual abilities highly impaired, washing &/or dressing is laborious and incomplete	2	2	2	2
	* washing &/or dressing rendered impossible as the patient resists any attempt	3	3	3	3
7* Mobility	* usual abilities & activities remain unaffected	0	0	0	0
	* usual activities are reduced (the patient avoids certain movements and reduces his/her walking distance)	1	1	1	1
	* usual activities and abilities reduced (even with help, the patient cuts down on his/her movements)	2	2	2	2
	* any movement is impossible, the patient resists all persuasion	3	3	3	3
PSYCHOSOCIAL REACTIONS					
8* Communication	* unchanged	0	0	0	0
	* heightened (the patient demands attention in an unusual manner)	1	1	1	1
	* lessened (the patient cuts him/herself off)	2	2	2	2
	* absence or refusal of any form of communication	3	3	3	3
9* Social life	* participates normally in every activity (social, entertainment, therapy workshop)	0	0	0	0
	* participates in activities when asked to do so only	1	1	1	1
	* sometimes refuses to participate in any activity	2	2	2	2
	* refuses to participate in anything	3	3	3	3
10* Problems of behaviour	* normal behaviour	0	0	0	0
	* problems of impulsive reactive behaviour	1	1	1	1
	* problems of permanent reactive behaviour	2	2	2	2
	* permanent behaviour problems (without any external stimuli)	3	3	3	3

COPYRIGHT SCORE: [ ][ ][ ][ ]

### Abbey Pain Scale

For measurement of pain in people with dementia who cannot verbalize

How to use scale: While observing the resident, score questions 1 to 6

Name of resident: .....

Name and designation of person completing the scale: .....

Date: ..... Time: .....

Latest pain relief given was ..... at ..... h.

Q1. Vocalization eg, whimpering, groaning, crying Absent 0 Mild 1 Moderate 2 Severe 3	Q1	<input type="text"/>
Q2. Facial expression eg, looking tense, frowning grimacing, looking frightened Absent 0 Mild 1 Moderate 2 Severe 3	Q2	<input type="text"/>
Q3. Change in body language eg, fidgeting, rocking, guarding part of body, withdrawn Absent 0 Mild 1 Moderate 2 Severe 3	Q3	<input type="text"/>
Q4. Behavioural Change eg, increased confusion, refusing to eat, alteration in usual patterns Absent 0 Mild 1 Moderate 2 Severe 3	Q4	<input type="text"/>
Q5. Physiological change eg, temperature, pulse or blood pressure outside normal limits, perspiring, flushing or pallor Absent 0 Mild 1 Moderate 2 Severe 3	Q5	<input type="text"/>
Q6. Physical changes eg, skin tears, pressure areas, arthritis, contractures, previous injuries Absent 0 Mild 1 Moderate 2 Severe 3	Q6	<input type="text"/>

Add scores for 1-6 and record here  $\Rightarrow$  Total Pain Score

Now tick the box that matches the Total Pain Score  $\Rightarrow$

0-2 No pain	3-7 Mild	8-13 Moderate	14+ Severe
----------------	-------------	------------------	---------------

Finally, tick the box which matches the type of pain  $\Rightarrow$

Chronic	Acute	Acute on chronic
---------	-------	------------------

Abbey, J, De Belle, A, Piller, N, Esterman, A, Gile, L, Parker, D and Lowcay, B.  
Funded by the JH & JD Gunn Medical Research Foundation 1996 – 2002  
(This document may be reproduced with this acknowledgment retained)

-1-RS

"This p

not

# Frailty-(nemoć-krhkost)

- **Gubitak t. težine** od 4,5 kg tokom prethodne godine
- **Zamor** -često ili uvek (odgovor: Sve mi je naporno na skali depresije)
- **Smanjena aerobna aktivnost**-aktivnost < 1h/za nedelju dana u prethodnoj godini
- **Usporenost-brzina hoda na 4m** (6 minutni test >200m)
- **Slabost stiska šake**> od 20% za uzrast
- 0-zdravi; 2-3 umerena, 4 izražena, 5 veoma izražena

OPTIMALNA  
FUNKCIONALNOST



Nemoć-Frailty



Funkcionalna  
nesposobnost-  
Disability

„Frail“ starije osobe imaju povećan rizik za hronični bol (67-89%), komorbiditete, polifarmaciju, delirijum, padove i pogoršanje „frailty“

# PROCENA STEPENA FIZIČKE AKTIVNO

- Modified Baecke Questionnaire for Older Adults
- Physical Activity Scale for the Elderly
- YALE Physical Activity Survey
- Zutphen Physical Activity Questionnaire

Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP (2017 – 3109 / 001 – 001)

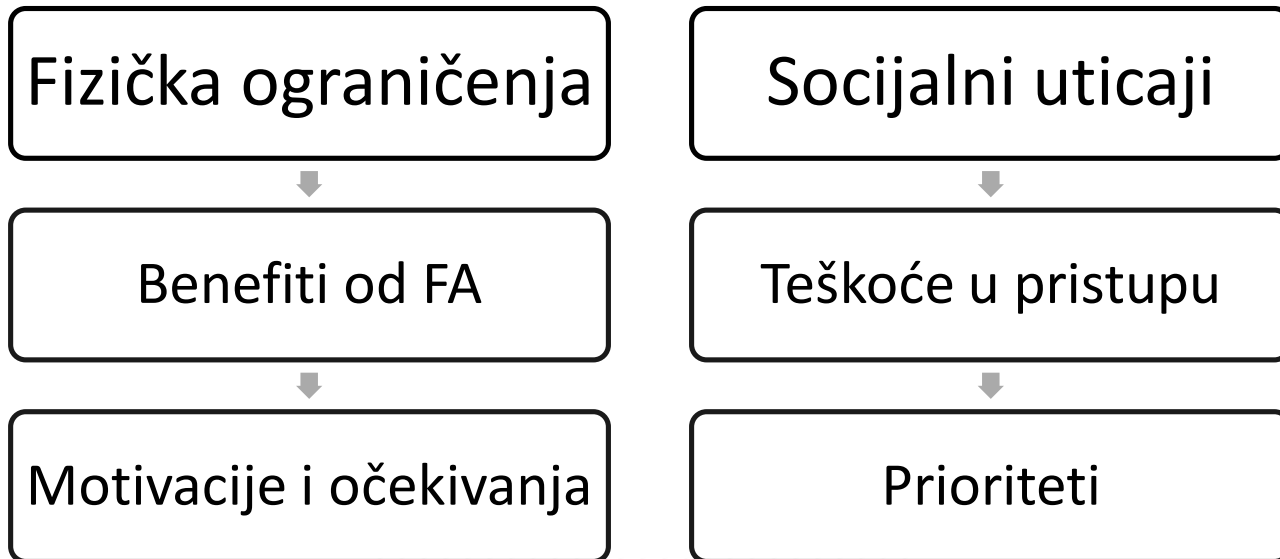
[www.ipaq.ki.se](http://www.ipaq.ki.se)

"This project has been

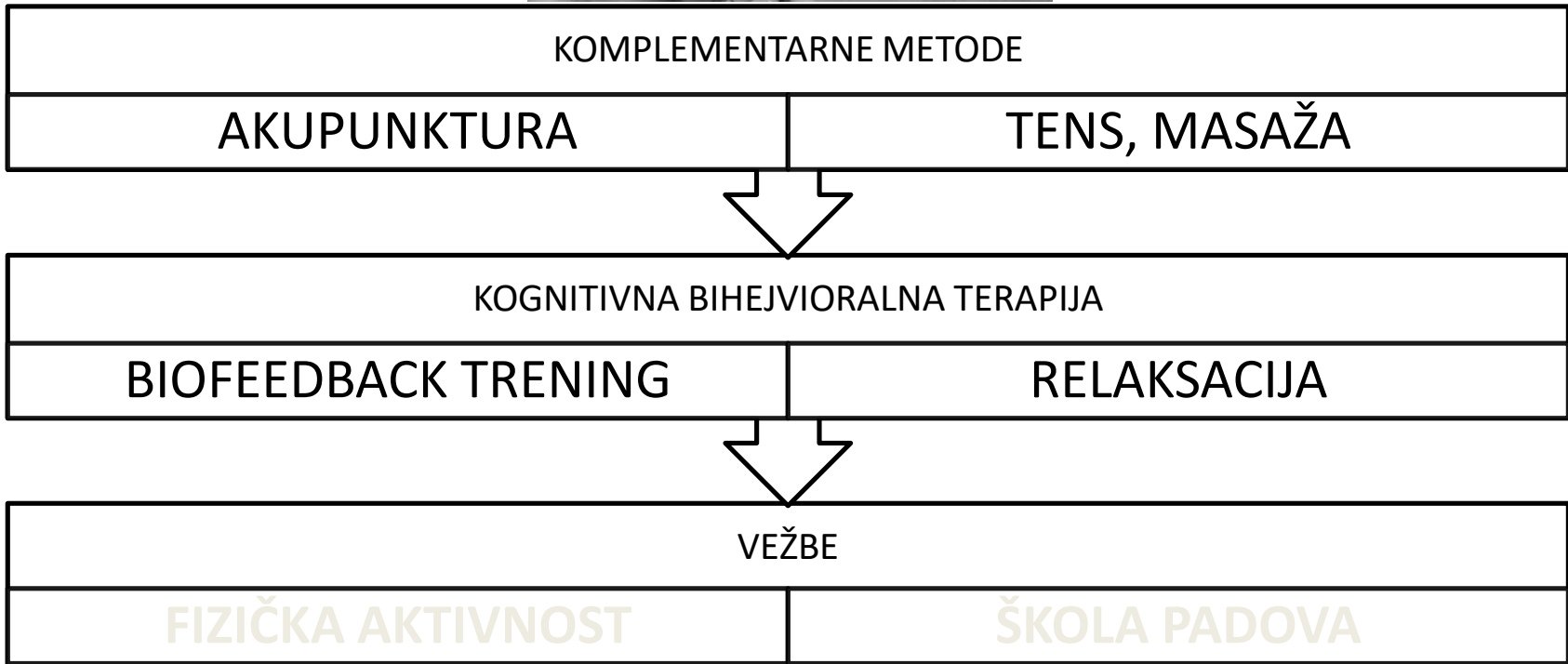
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be held responsible for any use which may be made of the information contained therein"

# Faktori koji utiču na participaciju u fizičkoj aktivnosti kod starijih osoba



# NEFARMAKOLOŠKI TRETMAN



Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-IP (2017 – 31/09 / 001 – 001)

Đuraković i sar 2012, Mišigoj-Đuraković 2015

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# MOTIVACIJA PACIJENATA ZA FA

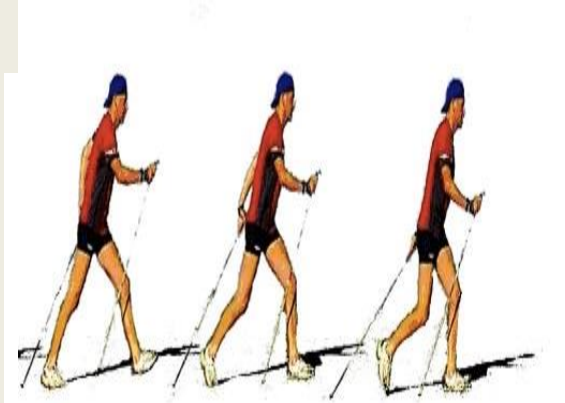
S-(specific)

M-(measurable)-30 minuta, 3 x nedeljno

A-(action –oriented)-

R-(realistic)-čvrsti dokazi iz literature ili iskustva o ostvarivosti zadanog cilja

T-(timed)-npr. Praćenje očekivanog poboljšanja u određenom vremenskom periodu



Ania Zubala and all. PromotionOf Physical activityinterventionsforcommunityDwelling older Adults:A systematic review of reviews. PLOS ONE <https://doi.org/10.1371/journal.pone.0180902> July 10, 2017

Griffin 2006, Pedersen i Saltin , 2015.

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# Preporuke Svetske zdravstvene organizacije (WHO, 2010)

Stariji > 65

150 minuta /nedeljno ili  
75 min / n  
Dodatni benefit

- Umerena FA
- Intenzivna FA
- Povećanje umerene TA na 300 min /n

Aerobna FA

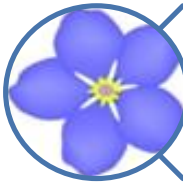
- 30 min/d
- 10 min 2-3x/d

Vežbe za povećanje mišićne  
snage velikih mišićnih grupa  
V. Za poboljšanje ravnoteže

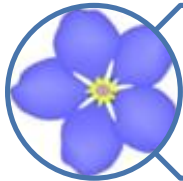
- 2x /n
- 3x/n



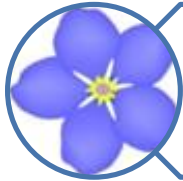
Utvrditi komorbiditete



Izabrati lek

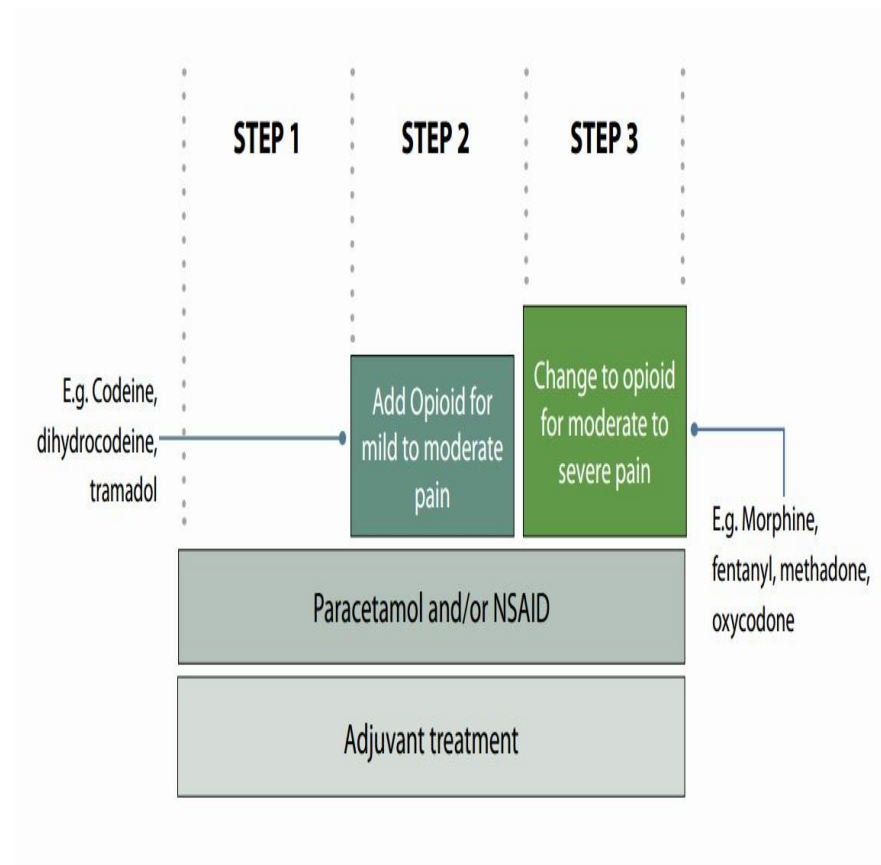
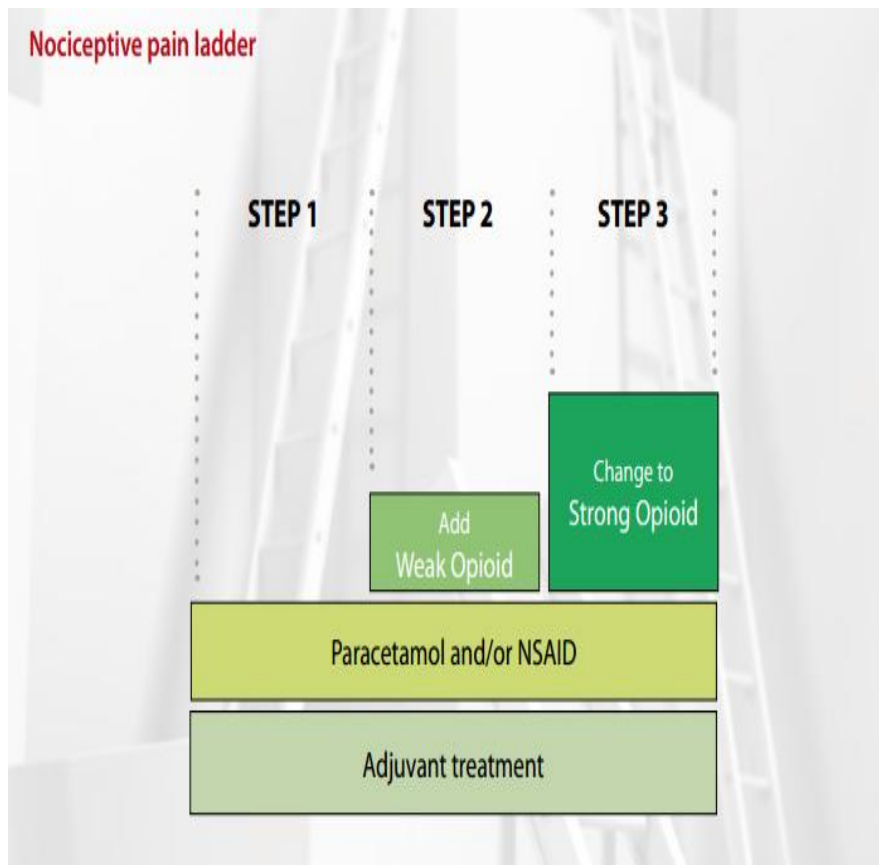


Pratiti neželjena dejstva, interakcije i  
analgetičku efikasnost



Upotrebiti PO put davanja, najmanju  
efektivnu dozu i sporo titriranje

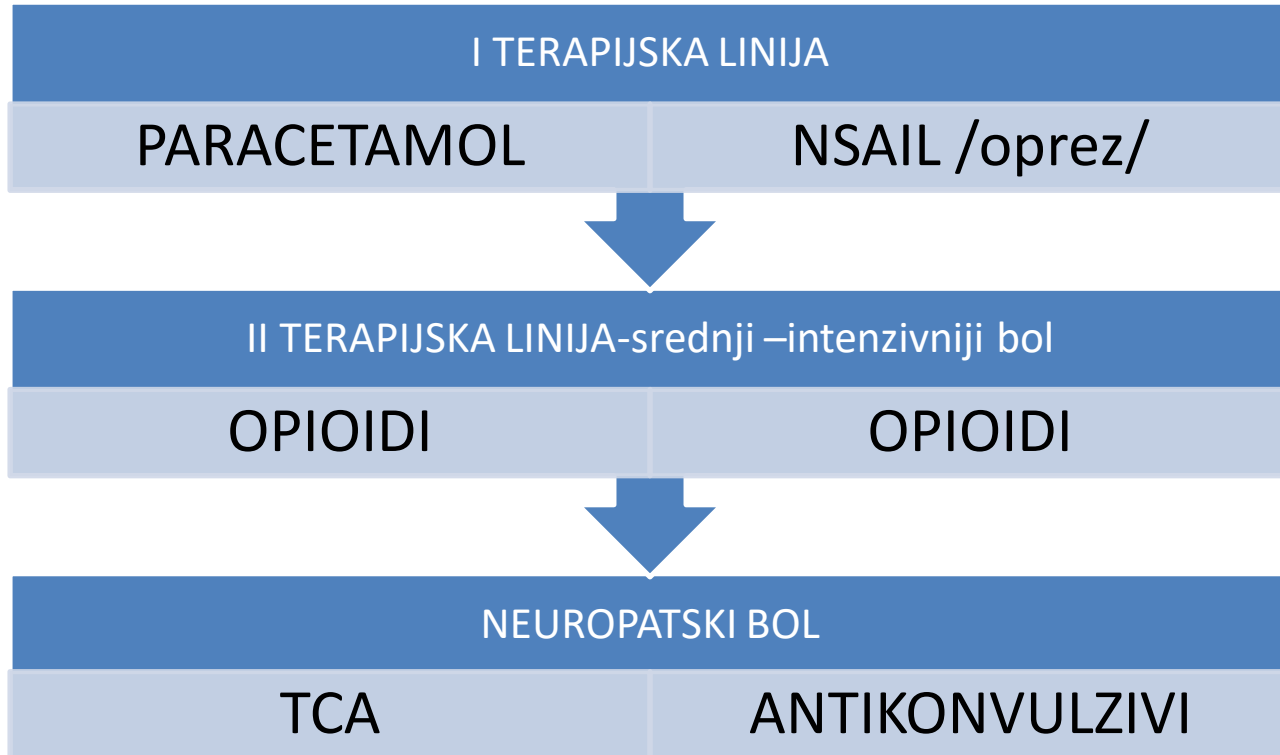




Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP (2017 – 3109 / 001 – 001)

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# FARMAKOLOŠKI TRETMAN



Reid MC, Eccleston C, Pillemer K. Management of chronic pain in older adults. *BMJ*. 2015 Feb 13;350:h532. doi: 10.1136/bmj.h532. PubMed PMID: 25680884; PubMed Central PMCID: PMC4707527.

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# OPIOIDI –bezbednost i neželjena dejstva

## Oštećena f- jetre

FENTANIL

TAPENTADOL

## Oštećena f- ja bubrega

FENTANIL  
TAPENTADOL

METADON  
BUPRENORFIN

- Dozno-zavisni

- Najčešći razlog za prekid opioidne analgezije kod starijih osoba su neželjeni efekti (kognitivna oštećenja, sedacija, konfuzija, delirijum) i nepostizanje terapijskog cilja

- Nenamerna zloupotreba prepisanih opioida češća je u starijih osoba :zbog polifarmacije i visoke prevalencije hroničnog bola

I linija



Pregabalin 25-50mg  
Neurontin-100mg



Duloxetine 20mg



Topikalni lidokain,  
kapsaicin

II -linija



III -linija



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# Bol u starijih – algoritam

## Assessment

Detailed history – pain, comorbidities, medicinal, impact of pain  
Detailed physical examination – pain, comorbidities  
Mental status, function, and frailty



## Diagnosis

Hierarchy Pain Assessment tool – cognitive intact vs cognitive impairment  
Diagnostic tests



## Management

Education of patient and health care providers, to overcome their misplaced beliefs and biases and keep them up to date with new developments  
Clear and frequent communication between patient, family, and health care providers  
Formulation of individualized, multimodal care plans incorporating pharmacological, injections or surgical intervention, psychological, physical therapy, social and spiritual interventions simultaneously

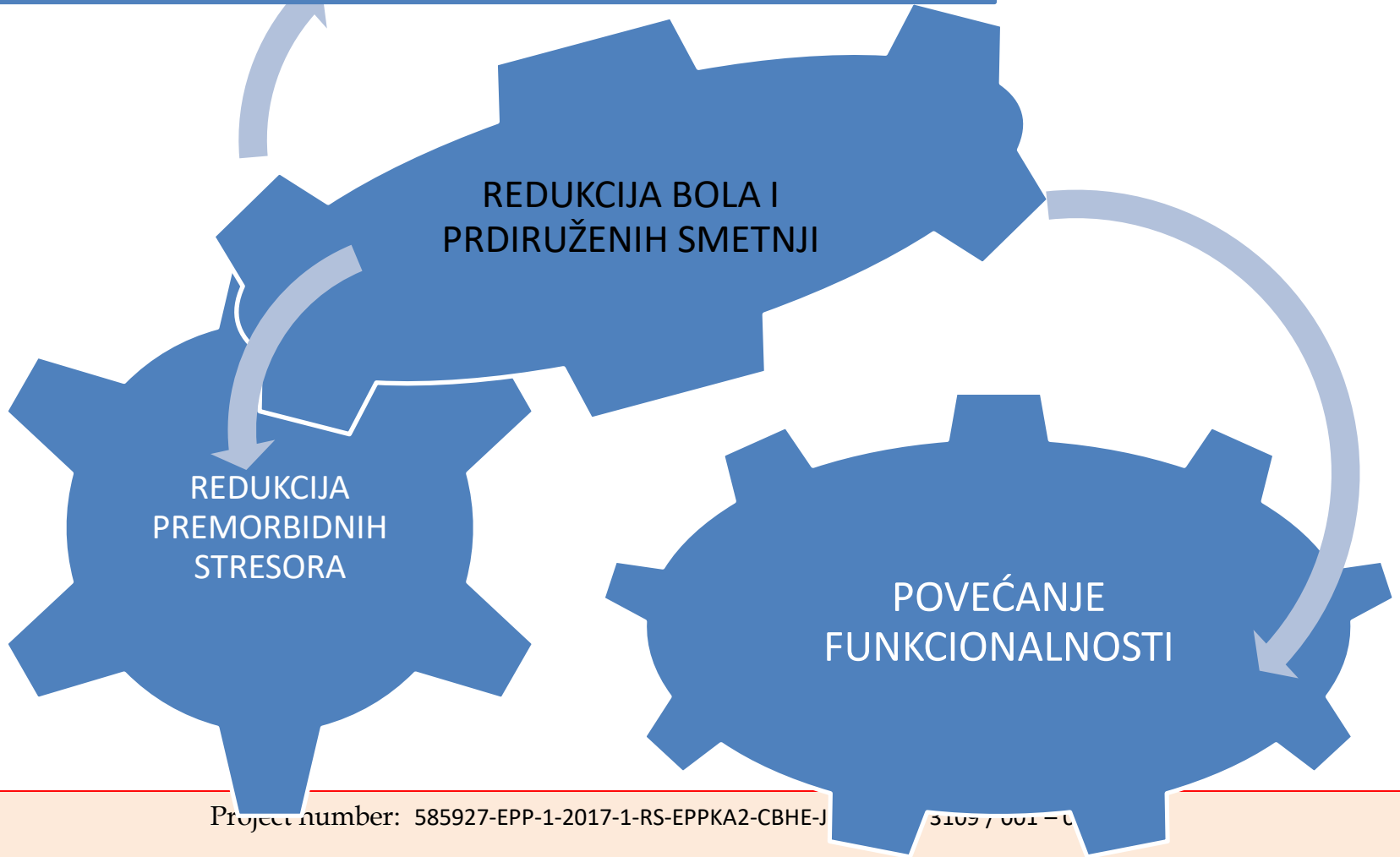


## Pharmacology

1. Review pain type, comorbid status, medicinal history
2. Understand physiological changes associated with aging
3. Avoid high-risk medications per "Beer's Criteria" ie, tricyclic antidepressants, NSAIDs, etc
4. Choose and adjust dosage according to patient's hepatic and renal functional status
5. Choose least invasive route of delivery of medicine ie, oral, topical, etc
6. Start with lowest effective dose
7. Titrate slow –  
Give enough intervals between dose changes to determine its effects  
For opioids, use the analgesic ladder, increase dose by 30%–50% in 24 or more hours
8. Frequent and close monitoring for therapeutic efficacy and possible adverse events, especially upon each change in dosage
9. Side effects – recognize early and treat early

# ZAKLJUČCI

■ Identifikacija terapijskih ciljeva:



Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-J

5105 / 001 - 0

# ZAKLJUČCI

NFT

Topikalni  
lekovi

Rehabilitacija

- Fizičku aktivnost tretirati kao vitalni znak

Procena nivoa fizičke  
aktivnosti

Propisivanje fizičke  
aktivnosti u skladu sa  
porukama SZO

Voditi računa o rizicima i  
vrsti vežbi u starijih  
osoba

# ZAKLJUČCI

“NE PRESTAJEMO VEŽBATI JER POSTAJEMO STARIJI - STARIMO JER PRESTAJEMO VEŽBATI”

➤ dr Kenneth Cooper

