

# MEDICINA BOLA

## KANCERSKA BOL

Podgorica, 22.03.2021

**Danko Živković**

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

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# Zašto uopšte pričamo o bolu ?

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**Sedare dolorem  
divinum opus est !**

**Božansko je delo ublažiti bol !**

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**Veličina/Značaj Problema**  
**Podaci iz Evropskih Studija o Bolu**

Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment

Harald Breivik a,\*,1, Beverly Collett b, Vittorio Ventafridda c, Rob Cohen d, Derek Gallacher d

European Journal of Pain 10 (2006) 287–333

**SURVEY ON CHRONIC PAIN 2017**  
**DIAGNOSIS, TREATMENT AND IMPACT OF PAIN**

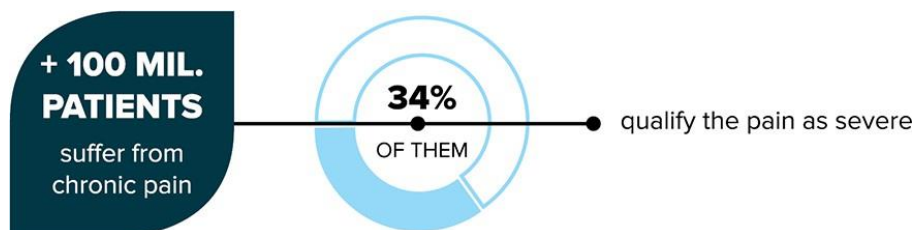
**PAIN ALLIANCE EUROPEE**  
**JUNE 2017**

**Fragrantni rezultati ukazuju na devastirajući uticaj HRONIČNOG BOLA**

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# BOL – široko rasprostranjen problem

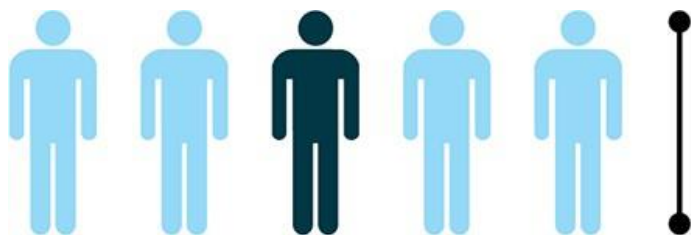


Ukupna cijena posljedica hroničnog bola se procjenjuje  
na oko 300 milijardi €

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# Bol – Široko rasprostranjen problem



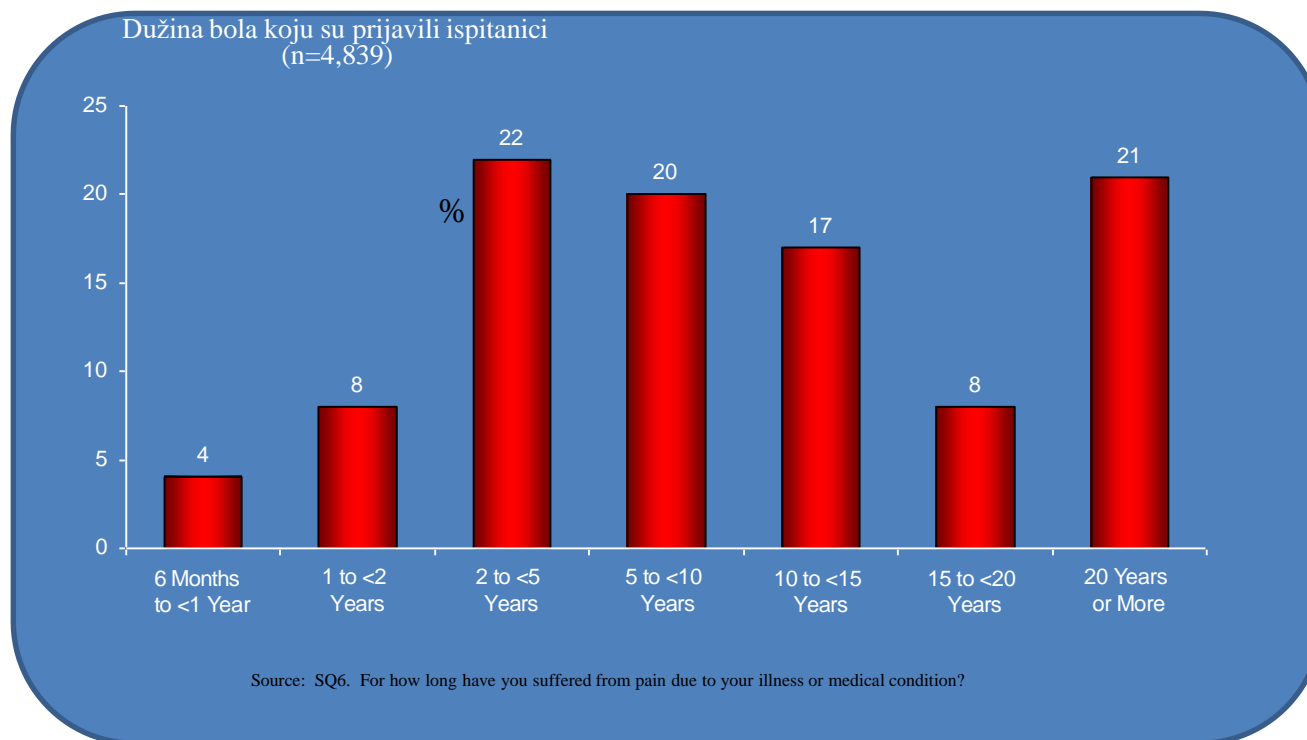
**1 out of 5 Europeans**  
suffers from chronic pain

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# Pacijenti su prinuđeni da žive sa bolom

- U prosjeku žive sa hroničnim bolom oko 7 godina
- Petina pati od bola više od 20 godina

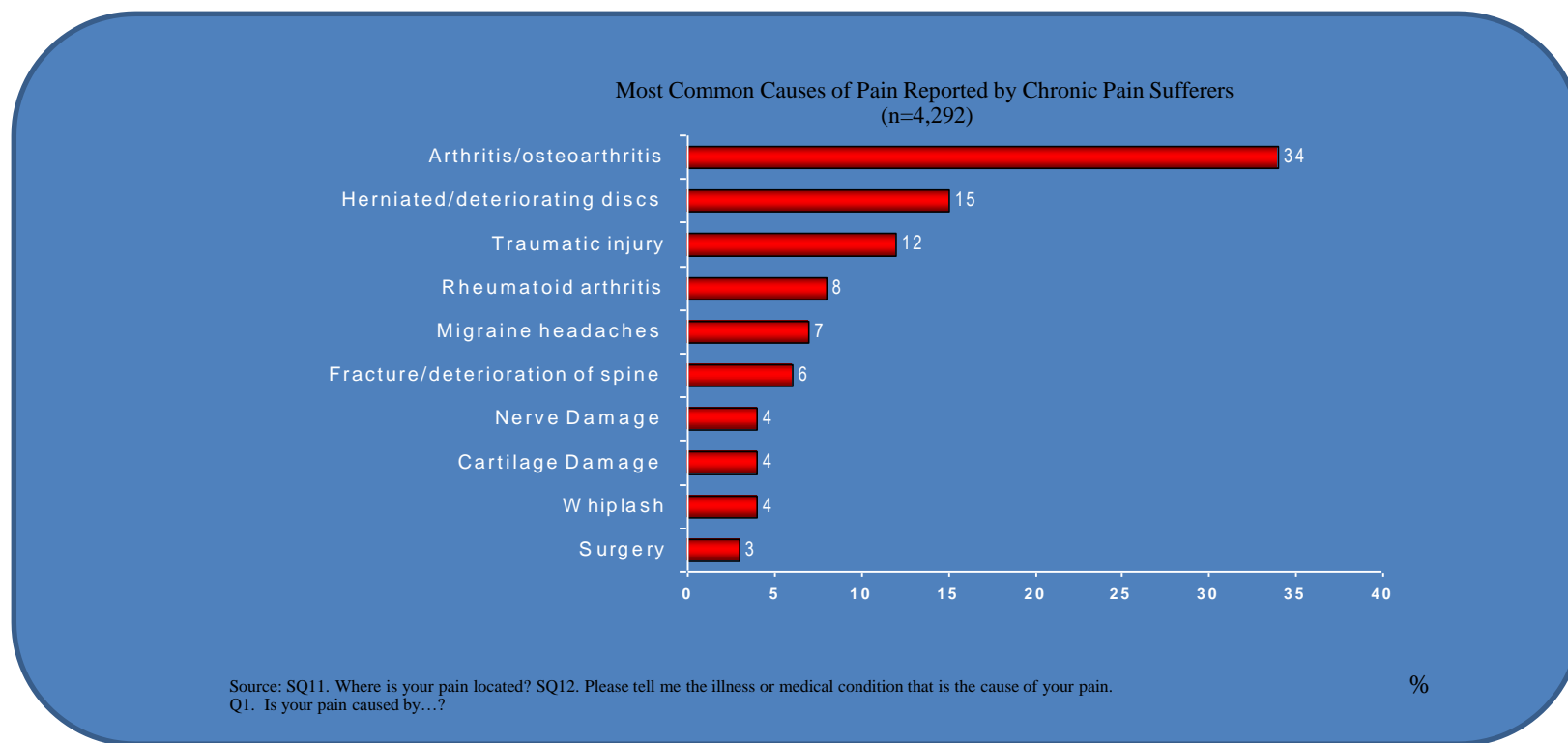


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# Gde ih to boli? – Najčešći uzrok hroničnog bola je arhritis / osteoarhritis (34%)

– Najčešća lokacija je lumbalni bol

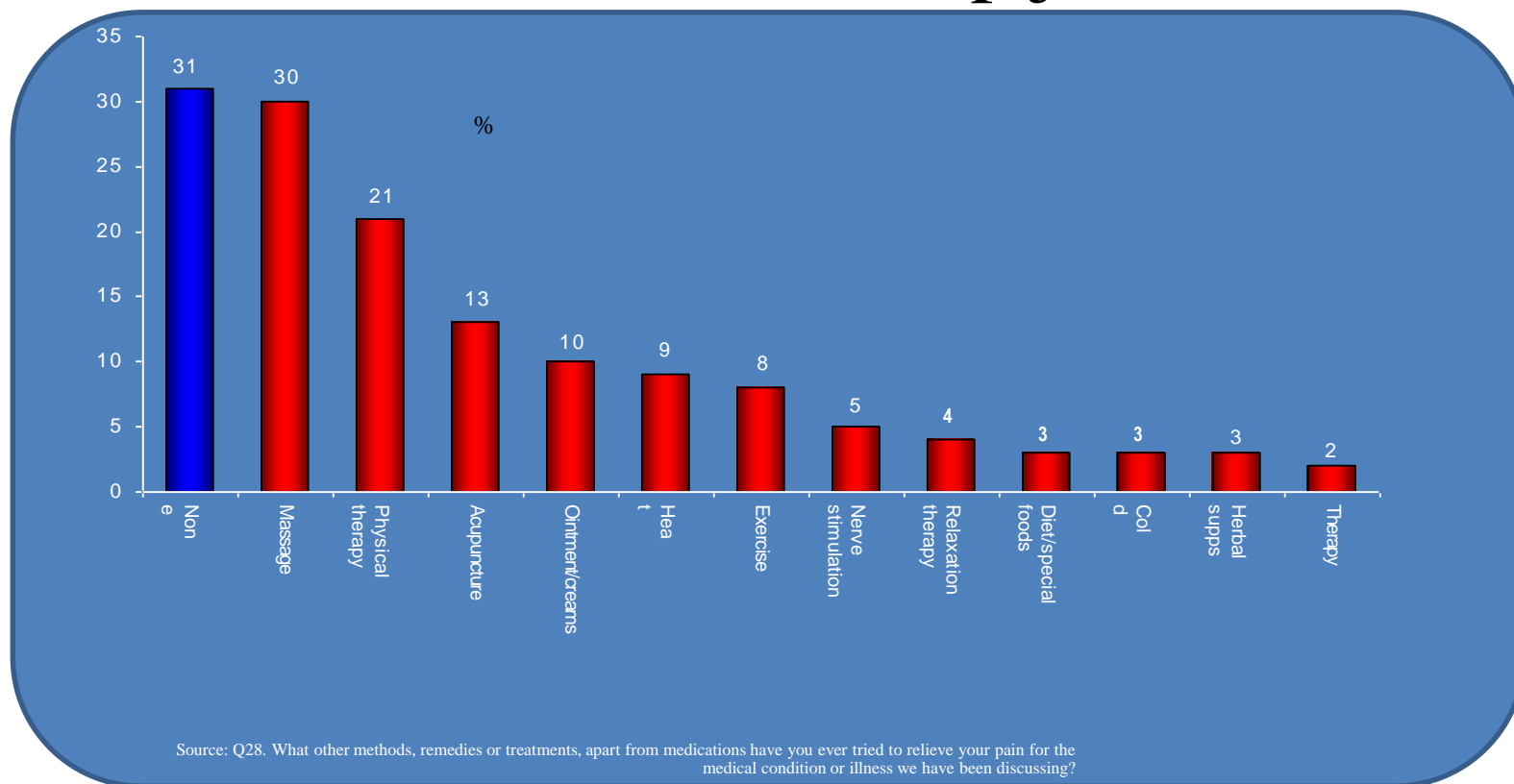


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# Alternativna Terapija



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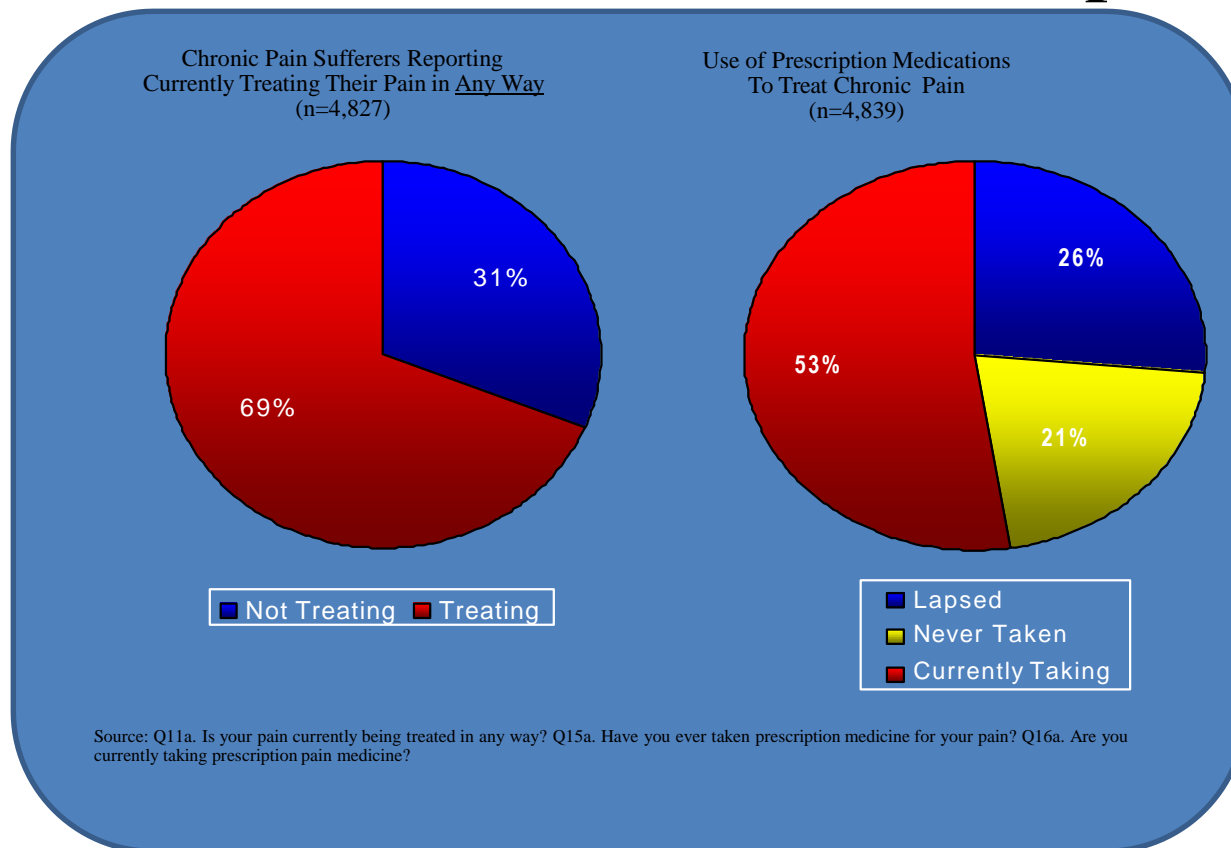
# I može razoriti (opustošiti) život !

- HB ima nesporni uticaj na svakodnevni život
- Npr: podizanje, napor, spavanje i rad
- Jedna četvrtina (26%) misli da njihov bol ima uticaja na posao (zaposlenje)
- 15 radnih dana/god se gubi na bol
- 1 od 5 prijavljuje
  - Gubitak posla(19%)
  - Ili da mu je dijagnostikovana depresija kao posledica bola (21%)

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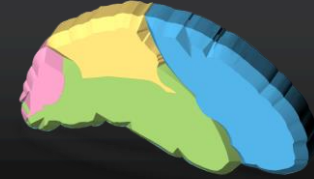
# Upotreba lijekova



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## DEFINICIJA BOLA



- bol je subjektivni osećaj koji je teško definisati
- The International Association for the Study of Pain (IASP)

*“BOL je neprijatno senzorno ili emocionalno iskustvo udruženo sa aktuelnim ili*

*•“BOL je neprijatno senzorno ili emocionalno iskustvo udruženo sa aktuelnim ili potencijalnim tkivnim oštećenjem, ili opisano terminima takvog oštećenja”.*

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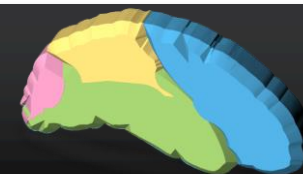
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## DEFINICIJA BOLA



To je ono što nam pacijent saopšti

**ŠTETNOST – BOL - PATNJA**

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## EVOLUCIJA ZNANJA O BOLU

- ČAK I SAMO NASTAJANJE MEDICINE SE MOŽE VEZATI ZA UKLANJANJE BOLA.
- Principi lečenja i razumevanja bola reflektuju samo razumevanje bolesti uopšte i lečenje u datom momentu.
- Teorije bola
  - Utiču na način procene, praćenja i lečenja bola,
  - Kao i na nivo prioriteta koji je ovom problemu dodeljivan u praktičnom životu.



Iceman of the Alps - “Utze”

- Oldest, best preserved corpse.
- 5300 years old.



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# MITOVI

## STAVOVI, VEROVANJA, PRAKSA

**Treba da  
boli**

### Prehistoric Medicine: myths and legends



**Asclepius** is the god of medicine and healing in ancient Greek, love child of Apollo and Coronis. His mother was killed for being unfaithful to Apollo but the unborn child was rescued from her womb. Asclepius means "to cut open." Daughters: Hygieia (hygiene) and Panacea ("all healing")

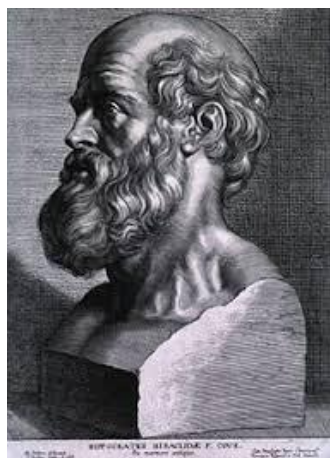


**Bol je određen  
fizičkom lezijom**

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**Hippocrates**  
(c. 460 – c. 370 BC)



**Aelius Galen ili Claudius Galen**  
(129 – c. 200 / c. 216)

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1664 u spisu [Treatise of Man](#), [René Descartes](#) teoretiše da je telo slično mašini, a bol je poremećaj koji putuje duž nerava dok ne dosegne mozak.

## René Descartes

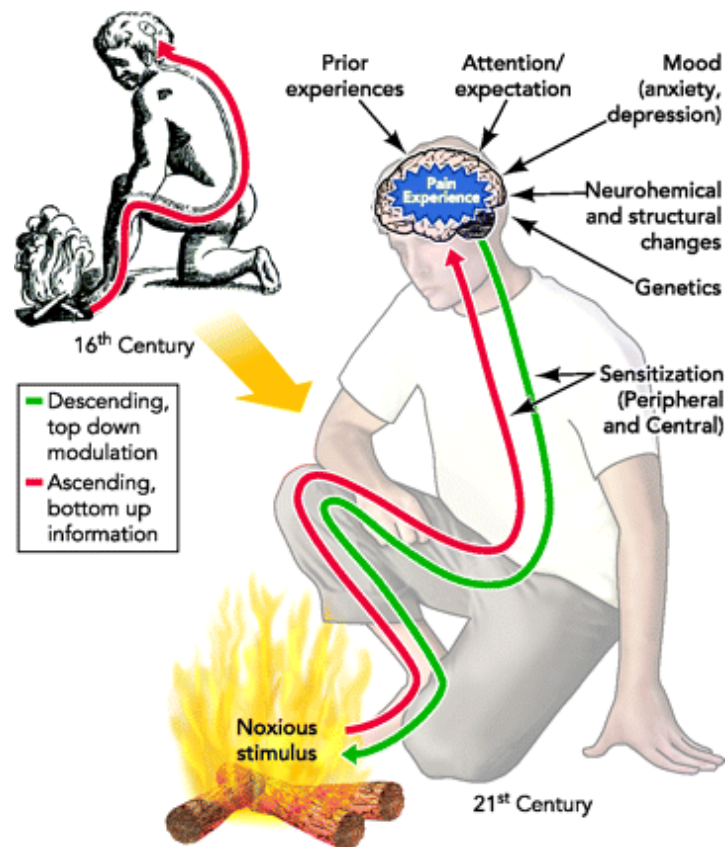
(31 Mart 1596 – 11 Februar 1650)



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## Biomedikalni Model Bola

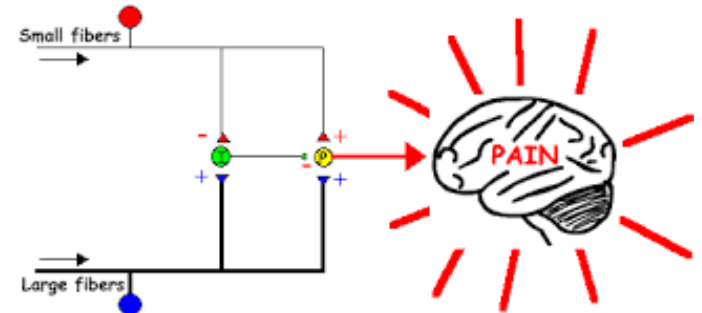


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## Teorija kontrole ulaza bola (Gate Control Theory of Pain)

- Ronald Melzack & Patrick Wall (1965)
- Različiti faktori u percepciji bola
- Melzackova istraživanja: “body-self neuromatrix”
- Kortikalni neuroplasticitet
  
- Značaj CNS & psiholoških faktora



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Aristotle (384-322 BC) -  
DeAnima- "Pain is a  
quality of the soul."



Renaissance –  
Descartes dualistic.

Freud -  
psychosomatics.



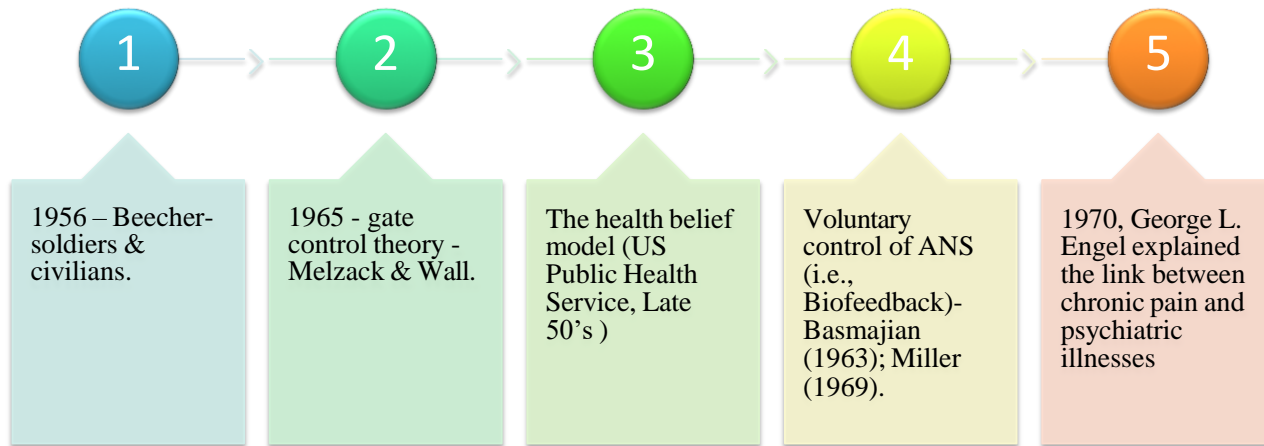
## Istorijski uticaji

Tokom vremena i kroz različite kulture, razumjevanje i ekspresija bola reflektuje važeći duh epohe.

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# Nastanak Psihosomatske Medicine

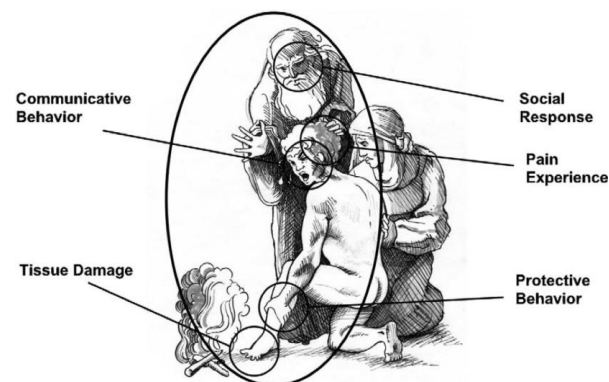


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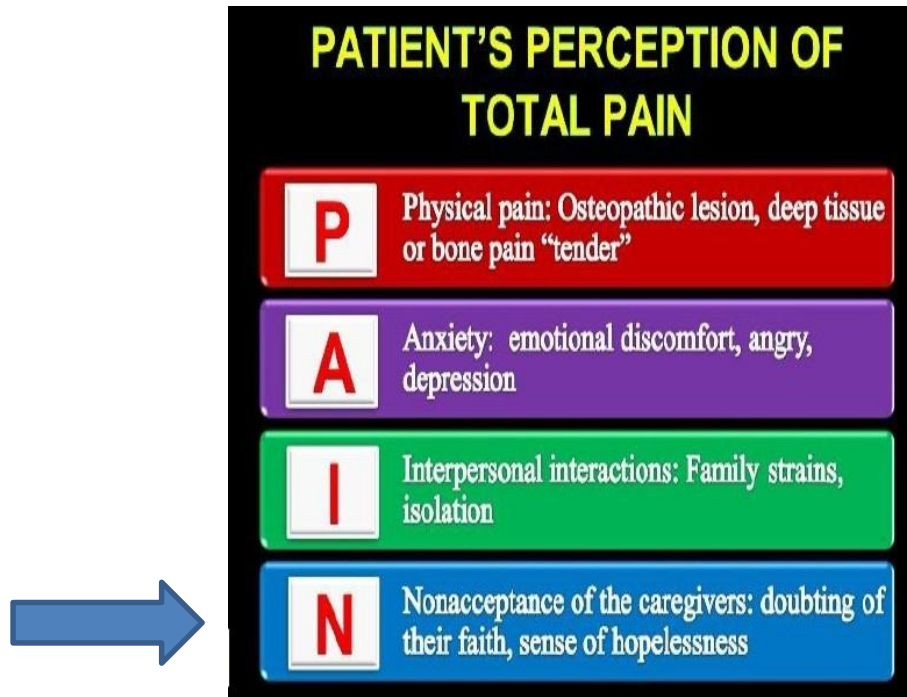
*...mi nismo svoji dok god priroda, pod pritiskom,  
komanduje umu da pati sa telom.*

Shakespeare, *King Lear*



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Madjar I: The lived experience of pain in the context of clinical practice. In Handbook of phenomenology and medicine. Edited by Toombs S. Dordrecht: Kluwer Academic Publishers; 2011: p:263-277.

„Da bi smo razumeli bol moramo razumeti osobu u bolu, a fenomenološki pristup nam može u tome pomoći. Ključ je u našoj pažnji prema životnom iskustvu osobe u boli, kao i u našoj spremnosti da individualno ili kao zdravstveni tim, naporno radimo sa našim pacijentima.

*... afirmišući postupke koji omogućuju da se čuje i vrednuje glas pacijenta. ”*

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I tako  
smo  
danas  
ovde !

- Liječenje bola  
je podcijenjeno
- Bol je 5<sup>ti</sup> vitalni znak
- „Bol“ je pitanje ljudskih  
prava

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# Kako dalje?

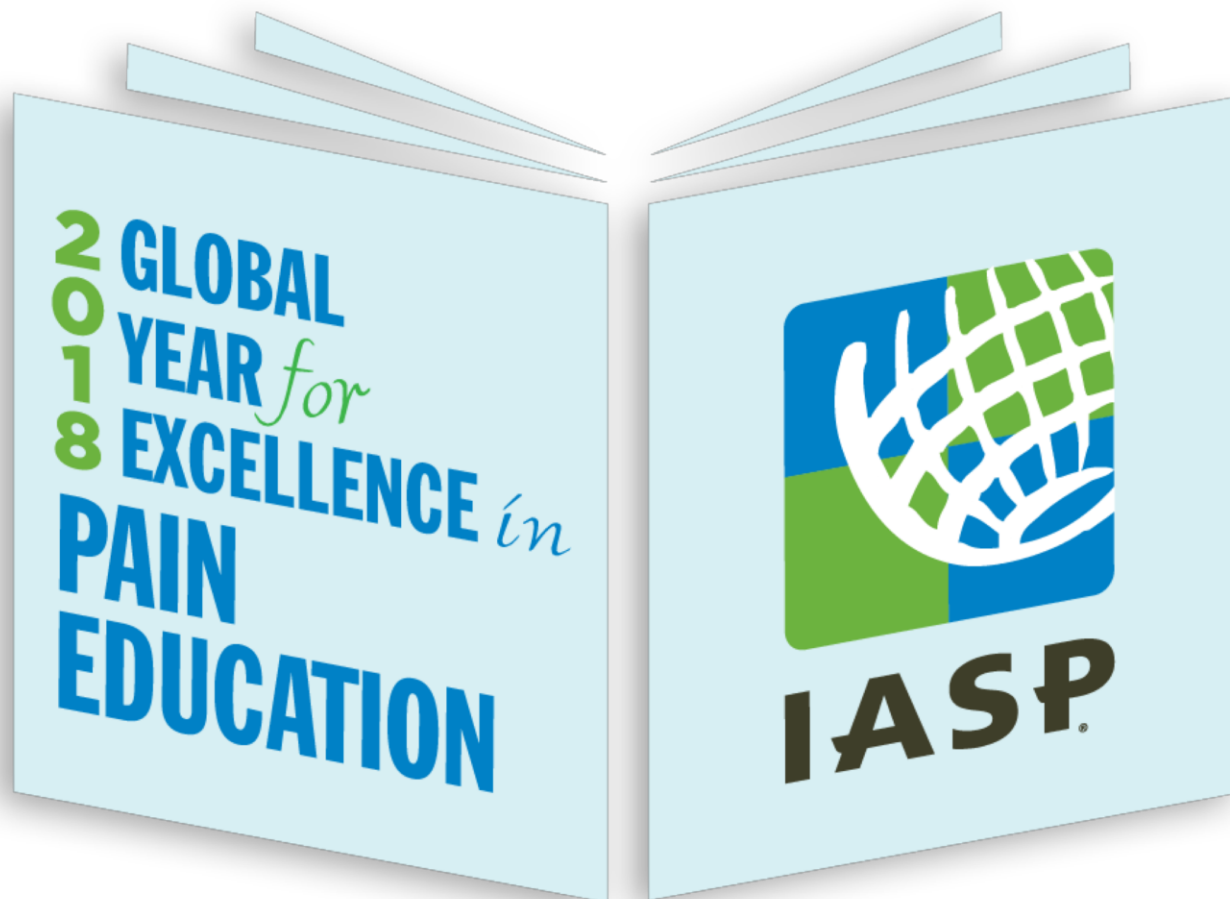
Prvi korak - edukacija:

- Edukacija zdravstvenih radnika,
- Pacijenata,
- Podizanje svesti opšte populacije (društva) o značaju problema bola i njegovom obimu, kroz kampanje borbe protiv bola.



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# Strengthening Capacities for Higher Education of Pain Medicine in Western Balkan countries – HEPMP

**Danko Živković**  
**University of Montenegro**



**University of  
Belgrade**

**2018-2021.g.**



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# University of Montenegro



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# STRENGTHENING CAPACITIES FOR HIGHER EDUCATION OF PAIN MEDICINE IN WESTERN BALKAN COUNTRIES - HEPMP

[WELCOME ADDRESS](#)

[PROJECT CONSORTIUM](#)

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# Zašto HEPMP projekat?

- Bol je vjerojatno jedan od najstarijih i najuniverzalnijih oblika stresa i jedna od najranijih patnji čovječanstva
- Bol je pratilac mnogih bolesti i stanja :reumatoidni artritis , herpetična neuralgia , degenerativna oboljenja kicmenog stuba , osteoartritis, AIDS , migrena , dijabetična neuropatija kao i hronična bol kod malignih oboljenja .
- Sa ekonomskog ugla posmatranja , procjenjuje se da su troškovi liječenja pacijenata sa hroničnim bolom veći od ukupnih troškova za liječenje kardijalnih bolenika , onkoloških i bolesnika oboljelih od AIDS-a.
- Hronična bolna stanja su čest uzročnik odsustvovanja sa posla i smanjene produktivnosti mnogih radnika .To je problem svake zajednice i ima negativni uticaj na kvalitet života pacijenata i njihovih porodica .

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# Zašto HEPMP projekat?

- Uprkos naporima i činjenicama da je star koliko i čovječanstvo ,bol nije dovoljno shvaćen niti je dobro kontrolisan
- Zdravstveni radnici kao i ukupna javnost imaju malu spoznaju o važnosti liječenja bola.
- Broj ljekara koji su obučeni za terapiju bola nije dovoljan .
- Moramo poboljšati znanje o bolu i podići svijest , kako kod profesionalaca – zdravstvenih radnika , tako i cjelokupnog društva, o značaju ovog problema.

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## Strategy of the WHO - Health 2020

- The main aim of HEMP project is **to increase quality of education** in PM ***in order to contribute to the improvement of public health care services*** in PCs in line with the strategy of the World Health Organization in 2020 and its Health Priority area 3.
- Priority area 3. consider strength of people-centred health systems, public health capacity and emergency preparedness, surveillance and response.
- One of the priorities of the strategy Health 2020 is **improvement of the quality of medical services and continuously adapt to changing patterns of disease.**

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# HEPMP- ciljevi

- Jačanje kapaciteta u visokom obrazovanju, u oblasti medicine bola u zemljama Zapadnog Balkana
- Razvoj i formiranja servisa za medicinu bola sa obučanim i kvalifikovanim kadrom
- Podrška u razvoju kurikuluma medicina bola na osnovnim studijama kao i uspostavljanja obrazovnog programa u vidu specijalizacije .
- Uspostaviti akademsku mrežu i poboljšati profesionalnu saradnju koje pružaju nove tehnologije (internet, telemedicina )...

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# EU partnerske institucije

University of Florence, Italy



University of Ljubljana, Slovenia



University of Rijeka, Croatia



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# Zadaci na projektu

- Pomoći u analizi trenutne situacije u oblasti medicine bola u zemljama Zapadnog Balkana
- Definisatanje mogućih promjena koje bi poboljšale i uvele novi nastavni predmet medicina bola u osnovnim i posle diplomskim studijama .
- Obuka nastavnog osoblja iz zemalja Zapadnog Balkana u zemljama Evropske unije.

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## Universities of Partner countries

University of Belgrade



University of Kragujevac



University of Banja Luka



University of Tuzla



University of Montenegro



UHC Dr. Dragisa Misovic – Dedinje, Belgrade



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## Zadaci Univerziteta zemalja partnera -

- Osavremeniti postojeći nastavni plan i program iz medicine bola.
- Koordinirati postojeće programe poslediplomskog obrazovanja iz oblasti medicine bola sa nastavnim planom i programom Evropske federacije za bol (EFIC).
- Razviti modul predavanja za osnovne studije – MEDICINA BOLA
- Razviti veb platformu za medjusobno učenje i komunikaciju za zdravstvene radnike koji se bave medicinom bola
- Organizovati kurseve MEDICINA BOLA za ljekare iz primarne zdravstvene zaštite.
- Uspostaviti akademsku mrežu zdravstvenih radnika i Univerziteta iz oblasti medicina bola.

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## **MEETING PROGRAM**

**HEPMP**

**HIGHER EDUCATION OF PAIN MEDICINE IN WESTERN**

**BALKAN COUNTRIES**

**SEPTEMBER 13-17, 2018**

*University of Florence, Department of Health Sciences (DSS)*

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

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# Kancerska bol

Prof.dr Danko Živković



Co-funded by the  
Erasmus+ Programme  
of the European Union

**HEPMP**  
HIGHER EDUCATION PAIN MEDICINE PROJECT

Podgorica 23.12.2020

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# Kancerski bol -koliko je zastupljen ?

Kancerski bol Izveštaj E. Z.

- 9 miliona novih pacijenata svake godine
- Bol je prisutan na početku bolesti kod 30-40% pacijenata a na kraju života kod 60-80% obolelih
- Bez obzira na liječenje, ovi pacijenti se žale na:

Umeren do jak bol: 40-50%

Veoma jak bol: 25-30%

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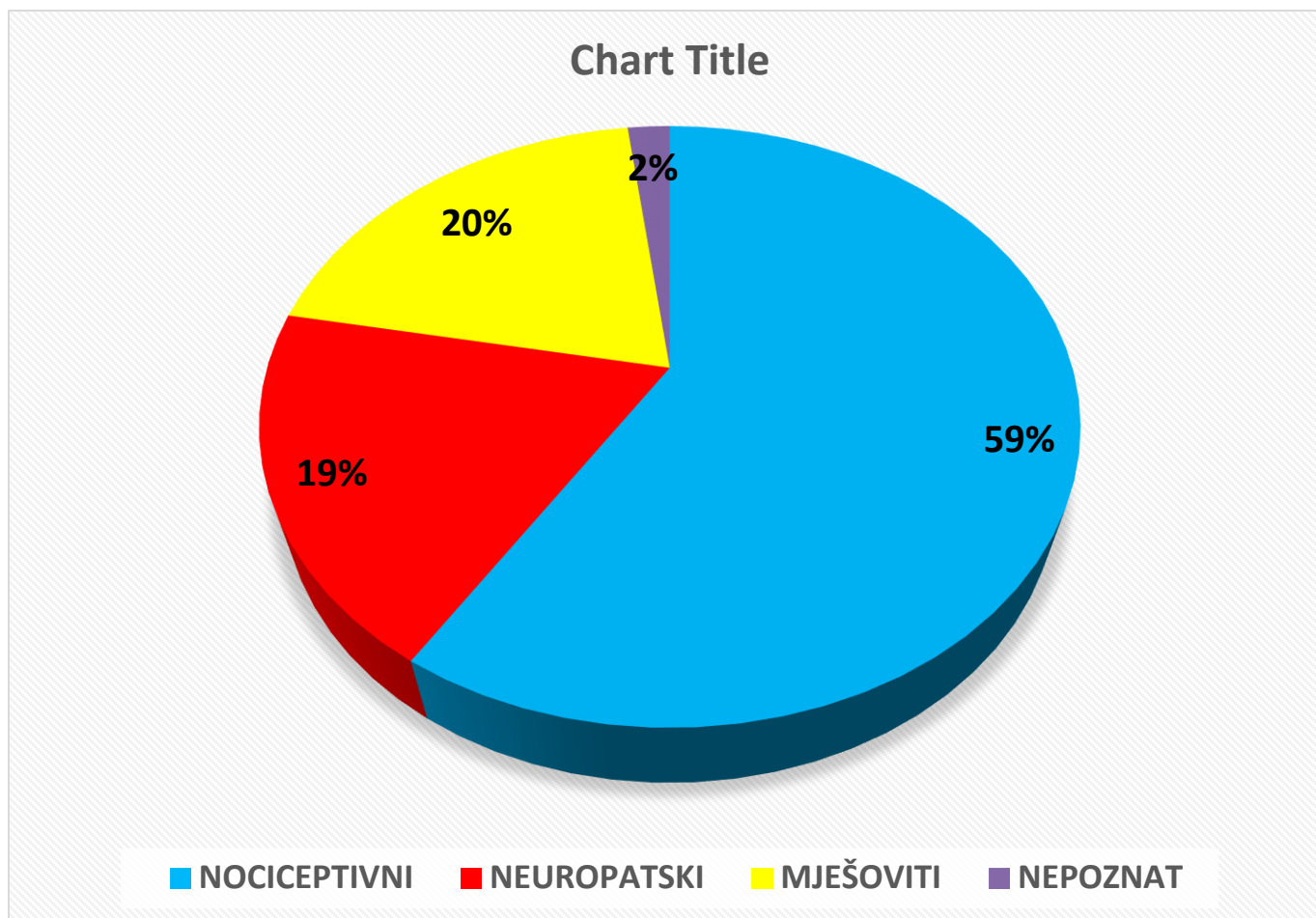
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# Liječenje bola kod starijih pacijenata sa karcinomom (zastupljenost)

- Dnevni bol 25-40% pacijenata
- Bez terapije: 26%
- Morfijum i drugi opioidi: 26%
- 13% pct. >85 dobija terapiju  
vs 38% pct. 65-74 god.

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## Etiološka podjela kancerske boli

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## Opšti principi terapije kancerskog bola – ciljevi njege

- 1. Produženje preživljavanja**
- 2. Optimizacija komfora**
- 3. Optimalno funkcionisanje**
- 4. Odsustvo bola**

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# Lokalizacija tumora i procenat pacijenata sa bolom

Lokalizacija tumora	Procenat pacijenata sa bolom (%)
Kosti	85-100
Usna duplja	60-80
Dojka	35-65
Pluća	45-85
Stomak	60-75
Kolon i rektum	50-95
Prostata	40-75
Limfoma	15-20

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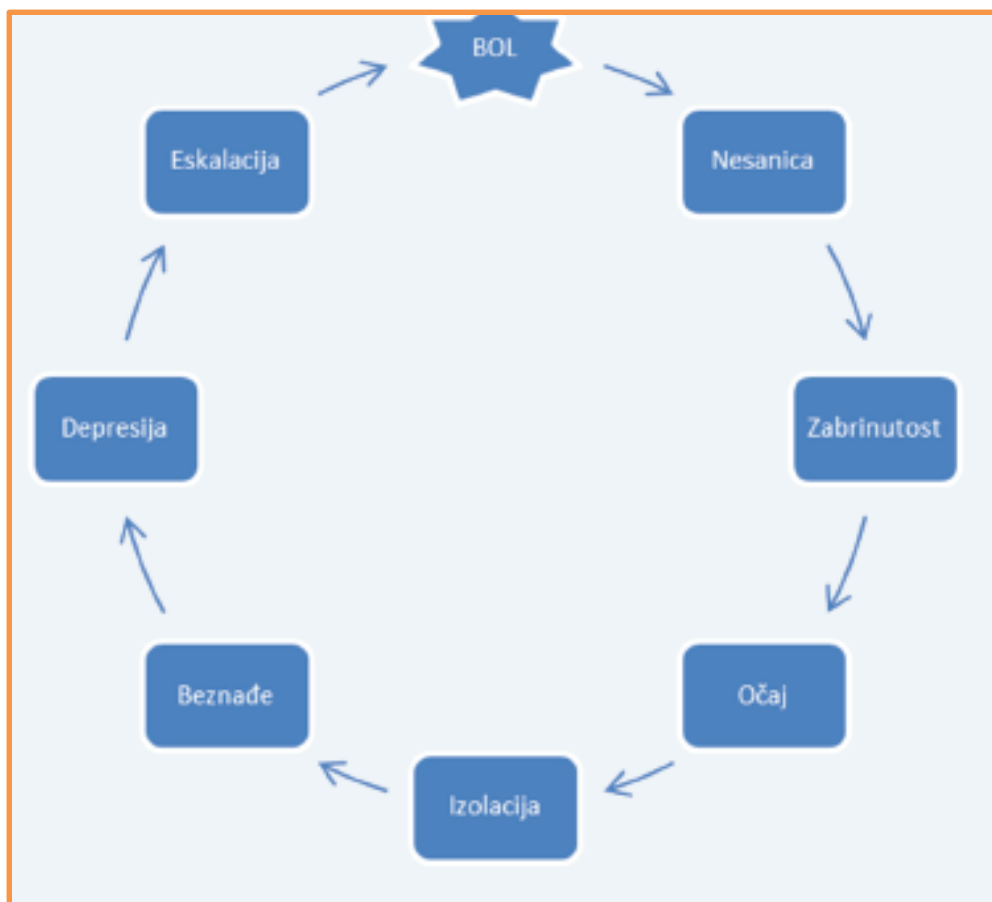
## Uzroci i posledice hroicnog kancerskog bola

UZROCI	POSLEDICE
Antineoplastična terapija (hemoterapija, hormonska terapija, imunotrapija, radiaciona terapija)	Mukozitis, neuropatije, enteritis, proktitis, cistitis, artralgiya, mialgiya, angina, difuzni koštani bol, Flare sindrom, palmar-plantar erythrodysesthesia
Procedure	Post lumbalne pukciona glavobolja, bol posle biopsije, bol posle terapijskih intervencija (na primer paracenteze, plasiranja torakalnog drena, plasiranja stenta, vascularne embolizacije)
Povezano sa oboljenjem	Krvarenje u tumor, patološke frakture, obstrukcija ili perforacija šupljeg organa, venska tromboembolija

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# Heliks bola



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## Hijerarhija opštih principa terapije

1	Individualna terapija za svakog bolesnika
2	Dati prednost kauzalnoj (uzročnoj) terapiji u odnosu na simptomatsku
3	Dati prednost loklnoj terapiji u odnosu na sistemsku
4	Primeniti sistemsku terapiju prema SZO "analgetskim stepenicama"
5	Usaglasiti terapiju i sa vodičima palijativne medicine
6	Od samog početka primeniti fizikalnu terapiju i psihološko savetovanje

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Početna evaluacija bola može započeti sa PQRST karakteristikama:

**P** (*Palliative factors* = Palijativni faktori): Šta utiče na smanjenje bola?

**Q** (*Quality* = Kvalitet): Opišite kakav je bol.

**R** (*Radiation* = Radijacija): Da li se širi?’

**S** (*Severity* = Jačina): Koliko je jak bol?

**T** (*Temporal* = Vremenski factor): Da li je stalno prisutan ili se povremeno javlja?

Dve najvažnije stvari koje dobijamo iz razgovora sa bolesnikom su opis bola i jačina bola.

# Unidimenzionalne skale bola

## Numerička skala (NRS)

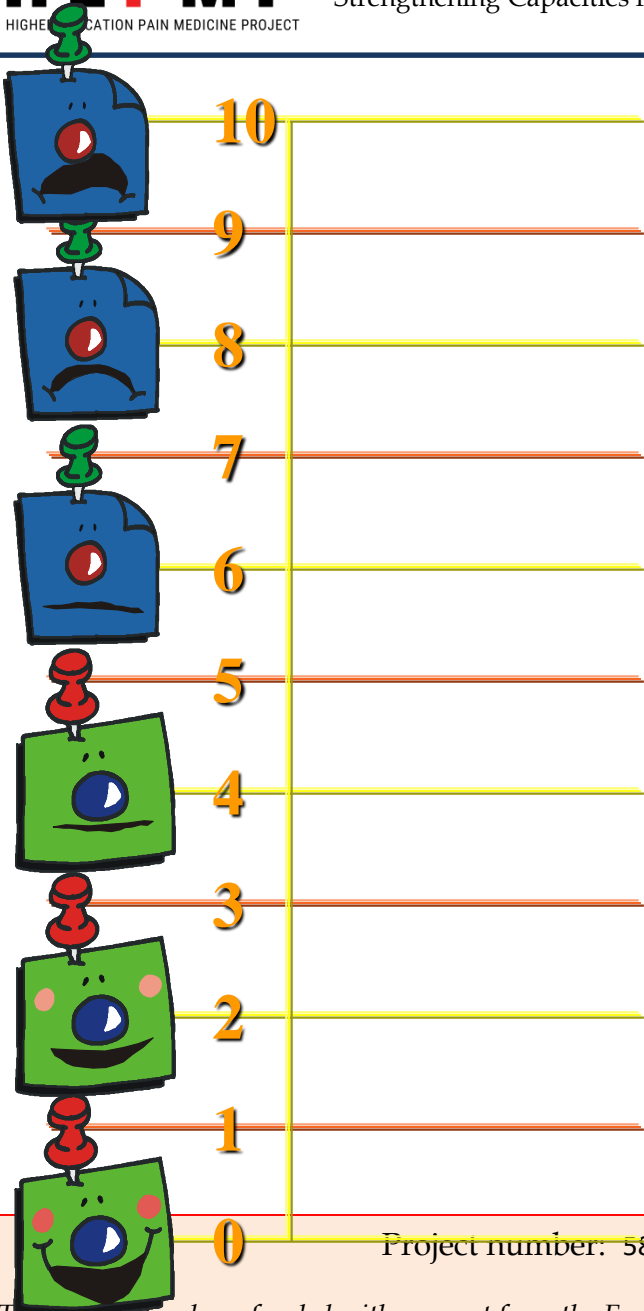


## Verbalno opisna skala (SDS)



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# Unidimensionalne skale bola

## Pain faces scale

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McGill Pain Questionnaire

PATIENT'S NAME		DATE	TIME	AM/PM			
PPI 5 (1-10) (0) (11-20) (1-20)		A	E	M	PROX	PPI	
1 FLICKERING QUIVERING PULSING THROBING BEATING POUNING	11 TIRING EXHAUSTING				BRIEF MOMENTARY TRANSIENT	RHYTHMIC PERIODIC INTERMITTENT	CONTINUOUS STEADY CONSTANT
2 JUMPING FLASHING SHOOTING	12 SICKENING SUFFOCATING						
3 PRICKING BORING DRILLING STABBING LANCINATING	13 FEARFUL FRIGHTFUL TERRIFYING						
4 SHARP CUTTING LACERATING	14 PURISHING GRUELLING CRUEL VICIOUS KILLING				<p>E = EXTERNAL I = INTERNAL</p>		
5 PINCHING PRESSING GNAWING CRAMPING CRUSHING	15 WRETCHED BLINDING						
6 TUGGING PULLING WRENCHING	16 ANNOYING TROUBLESOME MISERABLE INTENSE UNBEARABLE				<p>COMMENTS:</p>		
7 HOT BURNING SCALDING SEARING	17 SPREADING RADIATING PENETRATING PIERCING						
8 TINGLING ITCHY SMARTING STINGING	18 TIGHT NUMB DRAWING SQUEEZING TEARING						
9 DULL SORE HURTING ACHING HEAVY	19 COOL COLD FREEZING						
10 TENDER TAUT RASPING SPLITTING	20 NAGGING NAUSEATING AGONIZING DREADFUL TORTURING						
	PPI 0 NO PAIN 1 MILD 2 DISCOMFORTING 3 DISTRESSING 4 HORRIBLE 5 EXCRUCIATING						

Reproduced with permission from R. Melzack.

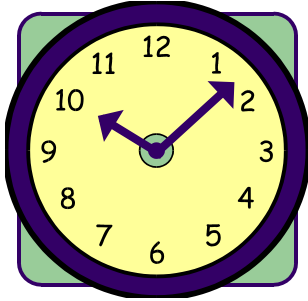
# Multidimensionalna skala bola

## “McGill-ova skala”

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*oralno*  
*“po satu”*  
*“princip stepenica”*  
Individualni pristup  
Obraćanje pažnje na detalje

# Farmakoterapija hroničnog kancerskog bola- principi SZO

Jaki opioidi  
+/- koanalgetici



## SZO Princip stepenica

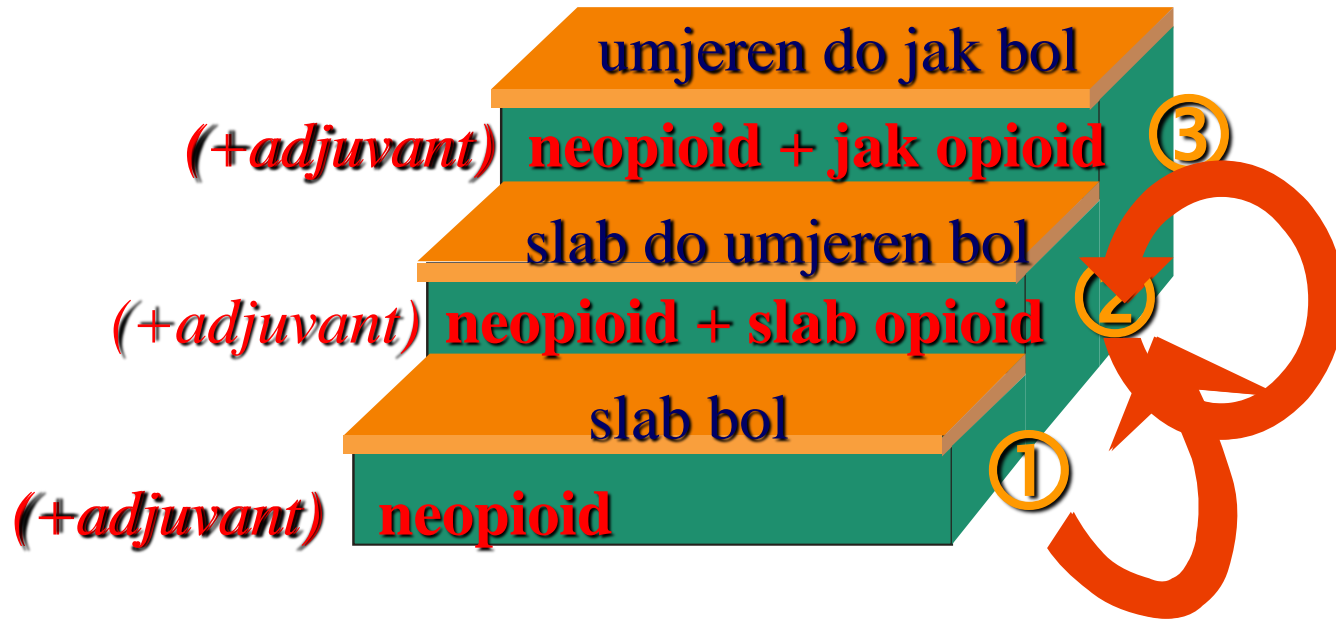
procjenjena jačina bola određuje izbor analgetika

ukoliko se bol pojačava, prelazi se na sljedeću analgetsku stepenicu

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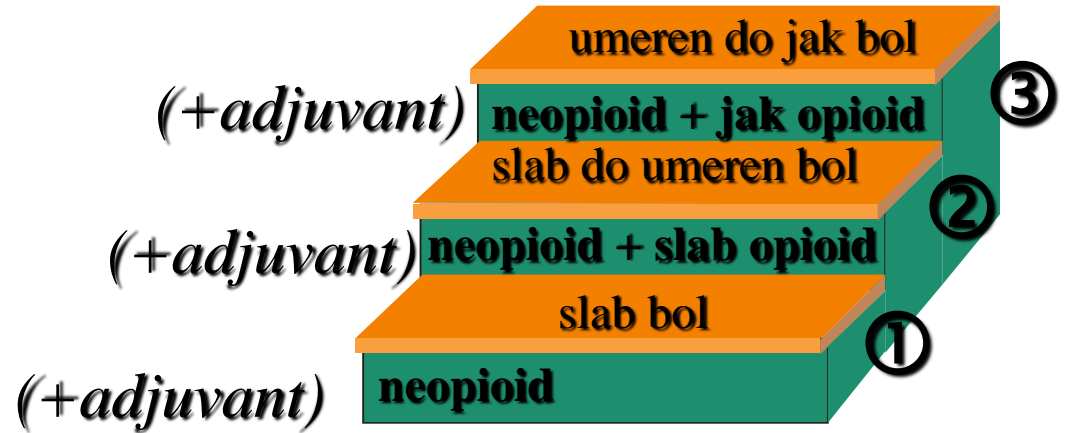
# Stepenasta farmakoterapija WHO



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# Adjuvanti



1. Antidepresivi
2. Antikonvulzivi
3. Lokalni antestetici
4. Neuroleptici
5. Kortikosteroidi
6. Mišićni relaksanti
7. Bisfosfonati

- koanalgetici
- za tretman neželjenih dejstava
- ne daju se rutinski
- indikovani kod specifičnih potreba pacijenata

# Farmakoterapija bola prema WHO

## 1. Neopioidni analgetici

(NSAID-diklofenak, indometacin; ibuprofen, ketoprofen, naproksen, piroksikam...)

- ## 2. Opioidi
- slabi - tramadol, kodein, dihidrokodein
  - jaki - agonisti
    - parcijalni agonisti
    - agonist-antagonist

## 3. Adjuvanti

*Potrošnja opioida je mjera standarda liječenja hroničnog bola!*

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# NEOPIOIDNI ANALGETICI

-za blage bolove

**OPREZ !**

-nekritička upotreba

-neopravdano visoke doze

-neželjena dejstva (GIT tegobe)

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# Kada opiodi?

- **nezadovoljavajući efekat neopioidnih analgetika**



## OPIOIDNA TERAPIJA

- smanjenje bola u 80% slučajeva
- treba da spriječi napad bola
- jednostavno doziranje
- terapija se određuje za svakog pacijenta ponaosob

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# JAKI OPIOIDI

## AGONISTI

**Morfin,**

**Transdermalni fentanil**

**Metadon**

**Oksikodon**

**Hidromorfon**

## PARCIJALNI AGONISTI

**Buprenorfin**

## MJEŠOVITI AGONISTI/ANTAGONISTI

**Pentazocin**

**Butorfanol**



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# OPIOIDI PROTIV BLAGIH I UMERENIH BOLOVA

“slabi opioidi”

lijek	pojedinačne doze (mg/p.o.)	interval doziranja (h)
<b>kodein</b> (lek izbora SZO)	<b>30 - 60</b>	<b>4</b>
<b>tramadol</b>	<b>50 - 100*</b>	<b>4 – 6, 12*</b>

\*odnosi se na formulacije sa produženim dejstvom

## Ljekovi “2. stepenice” nisu farmakološki neophodni

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# I..... cetvrta stepenica !



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*Dobar ljekar liječi bolest; Veliki ljekar liječi pacijenta u bolesti.*  
–Sir William Osler, oko 1900



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