

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Kronične bolezni in vadba
Course title:	Chronic diseases and physical activity

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Kineziologija, magistrski/ Kinesiology, masters' study	Vse /all study fields	1	2

Vrsta predmeta / Course type Obvezni /obligatory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
Modul 1: 60	15	15		20	70	6
Modul 2: 60	15	15		70	20	6
Skupaj: 120	30	30		90	90	12

Nosilec predmeta / Lecturer: Izr.prof.dr. Edvin DERVIŠEVIĆ

Jeziki / Languages:	Predavanja / Lectures:	Slovenski /Slovene
	Vaje / Tutorial:	Slovenski / Slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

ni

Prerequisites:

non

Vsebina:

Content (Syllabus outline):

Študenti smeri Posebna telesna aktivnost poslušajo le modul 1.
Študenti smeri Kineziterapija poslušajo oba modula.

MODUL 1:

1. Srčno-žilne bolezni in vadba

- a. Odgovor in prilagoditve srčnih bolnikov na vadbo
- b. Vpliv določenih zdravil na odgovor srčnega bolnika na vadbo
- c. Ocena tveganja za vadbo srčnega bolnika
- d. Kontraindikacije in omejitve za vadbo srčnih bolnikov
- e. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov

2. Telesna aktivnosti pri sladkorni bolezni tip 1 in tip 2

- a. Telesna neaktivnost kot vodilni dejavnik tveganja za sladkorno bolezen tipa 2
- b. Telesna neaktivnost in povečano tveganje za kardiovaskularne zaplete pri tipu 2 diabetesa
- c. Preprečevanje tipa 2 diabetesa
- d. Učinki aerobne vadbe in vadbe za moč na glikemično kontrolo
- e. Vpliv aerobne vadbe in vadbe za moč na občutljivost na inzulin in kazalce kardiovaskularnega tveganja
- f. Mehanizem učinkovitosti telesne aktivnosti pri izboljšanju učinkov inzulina
- g. Telesna aktivnost in diabetes tipa 1 (kontrola glukoze in potreba po inzulinu, dieta in inzulinska terapija med telesno aktivnostjo)
- h. Kontraindikacije in omejitve za vadbo sladkornih bolnikov
- i. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za sladkorne bolnike

3. Osteoartritis in vadba

Modul 1:

1. **Cardiovascular disease and exercise**
 - a. Response and adjustment of cardiac patients to exercise
 - b. Influence of certain drugs on cardiac response to exercise in patients
 - c. The risk assessment exercise for heart patients
 - d. Contraindications and limitations of exercise cardiac patients
 - e. The overview of the structure of individual training programs
2. **Exercise diabetes type 1 and type 2**
 - a. Physical inactivity as a leading risk factor for type 2 diabetes
 - b. Physical inactivity and increased risk of cardiovascular complications in type 2 diabetes
 - c. Prevention of type 2 diabetes
 - d. Effects of aerobic exercise and strength training on glycemic control
 - e. The impact of aerobic exercise and strength training on insulin sensitivity and cardiovascular risk indicators
 - f. The mechanism of the effectiveness of physical activity in improving the effects of insulin
 - g. Exercise and Type 1 diabetes (glucose control and needs insulin, diet and insulin therapy during exercise)
 - h. Contraindications and limitations of exercise for diabetics
 - i. The overview of the structure of individual training programs for people with diabetes
3. **Osteoarthritis and Exercise**
 - a. Normal physiology and biomechanics of articular cartilage (in response to pre-load)
 - b. The mechanism of physiology and pathology of osteoarthritis
 - c. Osteoarthritis of the knee
 - d. Hip osteoarthritis
 - e. training in selected other forms of arthritis (rheumatoid arthritis, systemic

- a. Normalna fiziologija in biomehanika sklepnega hrustanca (odgovor na pre-obremenitev)
- b. Mehanizem nastanka in patološka fiziologija osteoartritis
- c. Osteoartritis kolena
- d. Osteoartritis kolka
- e. vadba pri izbranih drugih oblikah artritisa (revmatoidni artritis, sistemski lupus,)
- f. Metode izboljšanja compliance pacientov za vadbo
- g. Kontraindikacije in omejitve za vadbo bolnikov z osteoartritisom
- h. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za bolnike z osteoartritisom

4. Osteoporoza in vadba

- a. biomehanske lastnosti kosti: vpliv in pomen vadbe
- b. biomehanske lastnosti osteoporotične kosti in opredelitev pojma patološki zlom
- c. preprečevanje padcev pri bolnikih z osteoporozo
- d. Kontraindikacije in omejitve za vadbo bolnikov z osteoporozo
- e. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za bolnike z osteoporozo

5. Možganska kap in vadba

- a. velikost problema in vpliv možganske kapi na nevro-mišične funkcije
- b. mehanizmi motoričnega okrevanja po možganski kapi
- c. pomen vadbe za izboljšanje motoričnega nadzora pri bolnikih po možganski kapi
- d. vadba za moč in vzdržljivost
- e. poseben pomen vadbe za ataksijo in druge koristi vadbe pri bolnikih po možganski kapi
- f. Kontraindikacije in omejitve za vadbo bolnikov po možganski kapi

lupus)

f. Methods of improving patient compliance to exercise

g. Contraindications and limitations to exercise in patients with osteoarthritis

h. The overview of the structure of

individual exercise programs for patients with osteoarthritis

4. Osteoporosis and Exercise

a. biomechanical properties of bone: the influence and importance of exercise

b. biomechanical properties of osteoporotic bone, and the definition of pathologic fracture

c. Prevention of falls in patients with osteoporosis

d. Contraindications and limitations to exercise in patients with osteoporosis

e. The overview of the structure of individual training programs for patients with osteoporosis

5. Stroke and exercise

a. size of the problem and the impact of stroke on neuromuscular function

b. mechanisms of motor recovery after stroke

c. the importance of exercise to improve motor control in patients after stroke

d. exercise for strength and durability

e. special importance of exercise for ataxia and other benefits of exercise in patients after stroke

f. Contraindications and limitations to the exercise of stroke patients

g. The overview of the structure of individual training programs for stroke patients.

Module 2

6. Asthma and exercise

a. respiratory muscles and breathing techniques

b. with exercise-induced bronchospasm (EIB)

c. Asthma and Sports

- g. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za bolnike po možganki kapi.

MODUL 2

6. Astma in telesna aktivnost

- a. dihalne mišice in tehnike dihanja
- b. s telesno aktivnostjo povzročeni bronhospazem (EIB)
- c. astma in šport
- d. Kontraindikacije in omejitve za vadbo bolnikov z astmo
- e. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za bolnike z astmo

7. Nevromišične bolezni (NMB) in vadba

- a. fiziološke in funkcionalne posledice NMB (bolezni sprednjega roga hrbtenjače, perifernih živcev, nevromišičnega stika in skeletne mišice; distrofije, spinalna mišična atrofija, amiotrofična lateralna skleroza, myasthenia gravis)
- b. vzroki zmanjšane nevromišične zmogljivosti pri NMB
- c. vpliv vadbe za moč in vzdržljivost na NMB
- d. Kontraindikacije in omejitve za vadbo bolnikov z NMB
- e. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za bolnike z NMB

8. Telesna aktivnosti in debelost

- a. Vloga telesne neaktivnosti pri pridobivanju telesne teže in razvoju debelosti
- b. epidemiološki dokazi
- c. fiziološki mehanizmi povezanosti med telesno aktivnostjo in energetska bilanco
- d. telesna aktivnost kot del zdravljenja debelosti (izguba teže, vzdrževalni programi po končani načrtni izgubi teže, strategije izboljšanja in

- d. Contraindications and limitations to exercise in patients with asthma
- e. The overview of the structure of individual training programs for patients with asthma

7. Neuromuscular disease (NMB) and exercise

- a. physiological and functional effects of NMB (anterior horn of spinal cord disease, peripheral nerves, neuromuscular junction and skeletal muscle, dystrophy, spinal muscular atrophy, amyotrophic lateral sclerosis, myasthenia gravis)
- b. causes of reduced neuromuscular performance in NMB
- c. impact exercise for strength and durability in NMB
- d. Contraindications and limitations to exercise in patients with NMB
- e. The overview of the structure of individual training programs for patients with NMB

8. Physical activity and obesity

- a. Role of inactivity in weight gain and obesity development
- b. epidemiological evidence
- c. physiological mechanisms of the relationship between physical activity and energy balance
- d. physical activity as part of treatment for obesity (weight loss maintenance programs after intentional weight loss and strategies for improving physical activity levels)

9. Mental illness and exercise

- a. the role of exercise in mental patients
- b. changes in brain function in connection with the exercise of mental patients
- c. Contraindications and limitations to the exercise of mental patients
- d. The overview of the structure of individual training programs for the mentally ill.

povečanja stopnje telesne aktivnosti)

9. Duševne bolezni in vadba

- a. vloga vadbe pri duševnih bolnikih
- b. spremembe možganske funkcije v povezavi z vadbo duševnih bolnikov
- c. Kontraindikacije in omejitve za vadbo duševnih bolnikov
- d. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za duševne bolnike.

10. Vadba in rakave bolezni

- a. pomen vadbe pri preprečevanju rakavih bolezni
- b. mehanizmi delovanja vadbe pri preprečevanju rakavih bolezni
- c. rak dojke in širokega črevesa in danke in vadba
- d. Kontraindikacije in omejitve za vadbo rakavih bolnikov
- e. Prikaz strukturiranosti in uspešnosti posameznih vadbenih programov za rakave bolnike.

10. Exercise and cancer

- a. the importance of exercise in preventing cancer
- b. mechanisms of exercise in preventing cancer
- c. breast cancer and colon and rectum, and exercise
- d. Contraindications and limitations of exercise for cancer patients
- e. The overview of the structure of individual training programs for cancer patients.

Temeljni literatura in viri / Readings:

- Walter R. Frontera, David M. Slovik, David M. Dawson. Exercise in Rehabilitation Medicine, 2nd Edition, HumanKinetics, 2006
- Gormley J, Hussey J. Exercise therapy prevention and treatment of disease, Blackwell publishing, 2005
- Ustrezni pregledni znanstveni članki iz znanstvenih revij (po dogovoru z nosilcem oz. posameznimi izvajalci) (Review relevant scientific articles in scientific journals)

Cilji in kompetence:

Cilji predmeta so:

- Študenti poznajo temeljna znanstvena izhodišča za telesno aktivnost pri pogostejših kroničnih boleznih.
- Študenti poznajo ključne vzroke, klinično sliko in posledice različnih kroničnih bolezni (študent mora biti sposoben na kratko opredeliti različne kronične bolezni)
- Študenti podrobno in praktično razumejo omejitve pri vadbi pri posameznih kroničnih boleznih (osrednji namen)

Objectives and competences:

Objectives of the course are:

- Students know the fundamental scientific basis for physical activity in the most common chronic diseases.
- Students know the root causes, clinical presentation and consequences of various chronic diseases (student must be able to briefly define the various chronic diseases)
- Students understand the detailed and practical limitations of the exercise for certain chronic diseases (core objectives)

- predmeta)
- Študenti poznajo temeljne cilje pri vadbi pri posameznih kroničnih boleznih
 - Študenti poznajo na dokazih temelječe potencialno učinkovite vadbene programe
 - Študenti so sposobni komuniciranja s strokovnjaki medicinske stroke

- Students know the basic objectives of the exercise of certain chronic diseases
- Students know the evidence-based potentially effective training programs
- Students are able to communicate with experts in the medical profession

Predvideni študijski rezultati:

- Znanje in razumevanje:
- Okvirno poznavanje epidemiologije, etiologije ter klinične slike različnih kroničnih boleznih
 - Poglobljeno poznavanje omejitev pri vadbi različnih kroničnih boleznih
- Poglobljeno poznavanje potencialno učinkovitih vadbenih programov

Intended learning outcomes:

- Knowledge and understanding:
- Framework knowledge of the epidemiology, etiology and clinical features of various chronic diseases
 - Deep knowledge of various restrictions on the practice of chronic disease
- In-depth knowledge of potentially effective training programs

Metode poučevanja in učenja:

- predavanja in seminarske naloge
- predavanja so zasnovana kot mini simpoziji, kjer sodeluje več povabljenih predavateljev.

Learning and teaching methods:

- Lectures and seminars
- Lectures are designed as mini-symposia, attended by several invited speakers.

Delež (v %) /

Weight (in %)

Načini ocenjevanja:

Assessment:

<p>Način (pisni izpit, ustno izpraševanje, naloge, projekt)</p> <ul style="list-style-type: none"> • Izpita posameznih modulov sta lahko ustni ali pisni, za pozitivno skupno oceno (na smeri Kinezioterapija) pa morata biti oba pozitivna. • Za vpis zaključne ocene mora biti seminarska naloga ocenjena z oceno opravi. • Ocenjevalna lestvica: od 1 do 5 negativno in od 6 do 10 pozitivno. 		<ul style="list-style-type: none"> • Examination of the individual modules can be oral or written, for a positive overall assessment (in the direction Kinesiotherapy) but they must be positive. • To enter the final grade must be assessed by coursework assessment task. • Grading: 1 to 5 negative and 6 to 10 positive.
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Reference nosilca / Lecturer's references:

DERVIŠEVIĆ, Edvin, BILBAN, Marjan, VALENČIČ, Vojko. The influence of low frequency electrostimulation and isokinetic training on the maximal strength of m. quadriceps femoris. *Isokinet. exerc. sci.*, 2002, vol. 10, no. 4, str. 203-209, graf. prikazi. [COBISS.SI-ID [1802161](#)]

DERVIŠEVIĆ, Edvin, HADŽIĆ, Vedran. Športne poškodbe v Sloveniji. *Šport (Ljublj.)*, 2005, letn. 53, št. 2, str. 2-9, priloga, tabele, graf. prikazi. [COBISS.SI-ID [2443441](#)]

HADŽIĆ, Vedran, SATTler, Tine, MARKOVIĆ, Goran, VESELKO, Matjaž, DERVIŠEVIĆ, Edvin. The isokinetic strength profile of quadriceps and hamstrings in elite volleyball players. *Isokinet. exerc. sci.*, 2010, vol. 18, no. 1, str. 31-37, tabele. [COBISS.SI-ID [3791537](#)]

DERVIŠEVIĆ, Edvin, HADŽIĆ, Vedran. Influence of sex on the sports injuries rate among slovenian top athletes. *Br. j. sports med.*, June 2005, vol. 39, no. 6, 1 str. <http://www.bjsportmed.com>. [COBISS.SI-ID [2399153](#)]

KONDRIČ, Miran, MATKOVIĆ, Branka R., FURJAN-MANDIĆ, Gordana, HADŽIĆ, Vedran, DERVIŠEVIĆ, Edvin. Injuries in racket sports among Slovenian players = Ozljede kod slovenskih igrača u sportovima s reketom. *Coll. antropol.*, 2011, vol. 35, no. 2, str. 413-417, tabele, graf. prikaz. [COBISS.SI-ID [4077745](#)]

HADŽIĆ, Vedran, SATTler, Tine, TOPOLE, Eva, JARNOVIČ, Zoran, BURGER, Helena, DERVIŠEVIĆ, Edvin. Risk factors for ankle sprain in volleyball players: a preliminary analysis. *Isokinet. exerc. sci.*, 2009, vol. 17, no. 3, 155-160, tabeli. [COBISS.SI-ID [3666097](#)]

DERVIŠEVIĆ, Edvin, HADŽIĆ, Vedran, KARPLJUK, Damir, JARNOVIČ, Zoran, BORKO, Marko. Ahilarna tendinopatija. *Šport (Ljublj.)*, 2005, letn. 53, št. 2, str. 25-28, priloga, ilustr. [COBISS.SI-ID [2444721](#)]

DERVIŠEVIĆ, Edvin. Prevencija u sportu. V: SMAJLOVIĆ, Nusret (ur.). *Zbornik naučnih i stručnih radova-dodatak*. Sarajevo: Univerzitet, Fakultet sporta i tjelesnog odgoja, 2007, str. 71-75. [COBISS.SI-ID [3040945](#)]

DERVIŠEVIĆ, Edvin. Preprečevanje in rehabilitacija poškodb mišic zadnje lože stegna pri športnikih. V: DERVIŠEVIĆ, Edvin (ur.), HADŽIĆ, Vedran (ur.), VIDMAR, Jože (ur.), ČOH, Milan (ur.), VESELKO, Matjaž (ur.). Simpozij z mednarodno udeležbo Prevencija in rehabilitacija športnih poškodb____ [2005]. *Zbornik predavanj*. Ljubljana: Fakulteta za šport, [2005?], str. 41-43. [COBISS.SI-ID [2615217](#)]

DERVIŠEVIĆ, Edvin, HADŽIĆ, Vedran. The influence of acupuncture and low-frequency electrostimulation on pain, mobility and muscle strength in the painful shoulder syndrome. V: XXVII FIMS World Congress of Sports Medicine, 5-9 June, 2002 - Budapest, Hungary. *Abstracts*. Budapest, Hungary: s.n., 2002, str. 48. [COBISS.SI-ID [2142641](#)]

HADŽIĆ, Vedran, SATTler, Tine, PUSTIVŠEK, Suzana, DERVIŠEVIĆ, Edvin. Strength profile of external and internal shoulder rotators in elite volleyball players. V: *Prevention, performance, return to play, return to function : book of abstracts*. Düsseldorf: German medical science, 2011,

str. 130-131. <http://www.egms.de/en/meetings/esm2011/11esm102.shtml>, doi:
[10.3205/11esm102](https://doi.org/10.3205/11esm102). [COBISS.SI-ID [4117937](https://nbn-resolving.org/urn:nbn:de:hbz:5:1-411793-p0011-7)]