



10 godina ADAS
10 years of ADAS

Prvi kongres o prevenciji dopinga u sportu First Congress on Prevention of Doping in Sport



20 godina UMSS
20 years of SMAS

**PROGRAM I KNJIGA SAŽETAKA
PROGRAMME AND ABSTRACT BOOK**

Beograd, 07. 07. 2015

REZULTATI ZASNOVANI NA ZNANJU



PRONAĐITE NA SAJTU ADAS

www.adas.org.rs



SUPLEMENTI

ZAHTEV ZA MIŠLJENJE O SUPLEMENTU

Od 2012. godine ADAS je izdao više stotina mišljenja o prisustvu zabranjenih supstanci u deklarisanim sastavu suplemenata. Ukoliko kao sportista želite sa smanjite rizik od doping pozitivnog rezultata usled upotrebe različitih preparata, nađite ovo mišljenje na sajtu ADAS i popunite zahtev. Pošto je sportista uvek odgovora za sve što unese u svoj organizam, čak i kada su u pitanju zabranjene supstance koje nisu deklarisane u sastavu preparata, sportistima se savetuje da ne koriste suplemente ako postoji bilo kakva sumnja u njegov sastav ili kontaminaciju.

ZAHTEV ZA MIŠLJENJE O LEKU

Svi sportisti koji podležu doping kontroli i koji moraju da koriste određeni lek zbog medicinskog stanja ili trenutne bolesti, trebalo bi prvo da popune zahtev za mišljenje o leku na sajtu ADAS. U najkraćem roku dobiće odgovor da li se u sastavu leka nalazi ili ne nalazi supstanca koja je na Listi zabranjenih doping sredstava. Kada je potrebno, sportista će biti savetovan da krene u proceduru odobravanja Izuzeća za terapeutsku upotrebu (TUE), što je i učinjeno u prethodnom periodu kada je ADAS primio preko 50 zahteva za mišljenje o leku.



TUE

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ADAS omogućava svim zainteresovanim distributerima i proizvođačima dijetetskih suplemenata prisutnih na domaćem tržištu, testiranje njihovih proizvoda na prisustvo supstanci sa Liste zabranjenih doping sredstava. Nalepnica „DOPING FREE“, koja se nalazi na testiranim preparatima označava da se u njima ne nalaze doping supstance iz grupe anaboličkih steroida i stimulansa. Broj reference na nalepnici proverava se na sajtu ADAS, što možete učini za oko 10 suplemenata koji su do sada testirani u okviru ovog programa.



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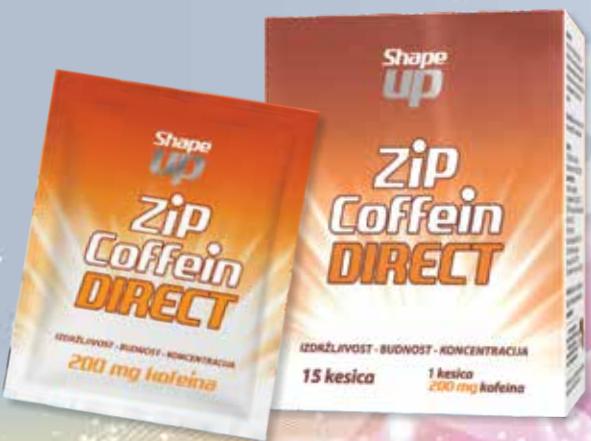
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MALOPRODAJNI OBJEKTI U BOSNI I HERCEGOVINI

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OVLASĆENE PRODAVNICE

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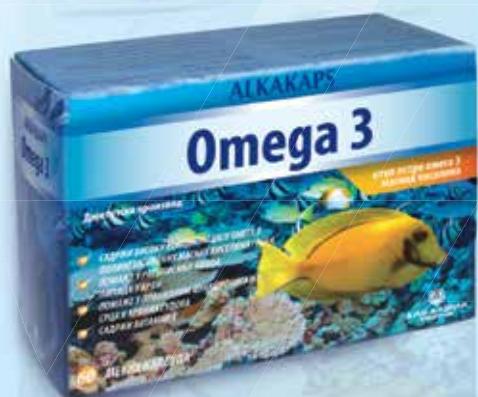
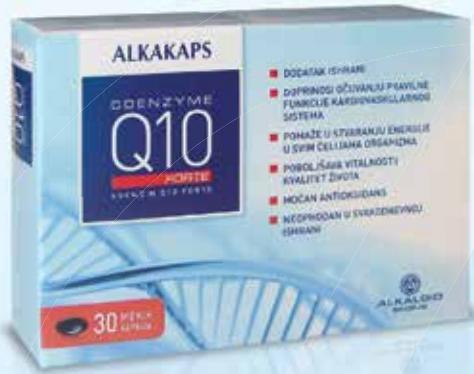
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Ništa na ovom svetu nije besplatno. Sticanje znanja je najteži izazov sa kojim se čovek može suočiti.

Karlos Kastaneda

Nothing in this world is free. Obtaining knowledge is hardest of challenges a man can face.

Carlos Castaneda

Poštovani prijatelji,

Usvajanjem novog svetskog Antidoping kodeksa 2015, očigledno je da su se pravila promenila. Čuvena fraza „Jedna veličina odgovara svima“ više ne važi. Shvatanje da ne treba sve sportove da testiramo na isti način, da „više ne znači bolje“ i da je neophodno da se promeni stil rada nije samo plod novih pravila, već različitog pristupa u borbi protiv dopinga. Kako je rekao Endi Parkinson, doskorašnji šef antidoping agencije Velike Britanije, potrebni su nam novi ljudi ili moramo da menjamo sebe. Čini mi se da u ovoj fazi mnogo više znače ljudi i njihova percepcija dopinga, nego nove analitičke metode.

Posle decenije uspešnog organizovanja Antidoping seminara postoje razlozi da se započne sa mnogo širim ciklusom edukacije, gde će predavači iz različitih oblasti predstaviti svoje viđenje antidoping borbe u sportu. Želja nam je da Prvim kongresom o prevenciji dopinga u sportu skupimo na jednom mestu praksu i nauku, sportske radnike i istraživače, kao i da damo mogućnost da stručnjaci iz drugih oblasti predstave svoj pogled na sprečavanje dopinga u sportu.

Kongresno iskustvo ADAS i UMSS je garancija da će sve biti dobro organizovano i da će se svi učesnici osećati prijatno i dobrodošlo. S obzirom da većinu današnjih kongresa prati visoka cena registracije, odlučili smo da ona kod nas ne postoji, tako da svi koji žele mogu i da učestvuju. Naučni odbor, u kome će biti i naše kolege iz regionala će razmotriti sve dostavljene apstrakte i izabratи najbolje.

Konačno, Beograd predstavlja za mnoge izazovnu destinaciju, a razlog više je žurka povodom 20 godina postojanja Udruženja za medicinu sporta Srbije i 10 godina Antidoping agencije Republike Srbije. Biće nam čast ako prihvate naš poziv, dođete u Beograd, predstavite svoje rezultate i proslavite jubileje sa nama.

Srdačno,

Doc. dr Nenad Dikić

Predsednik Kongresa

Dear coleagues,

After the New 2015 World Antidoping Code, it is obvious that the rules were changed. The famous phrase "One size fits all" is no longer valid. Understanding that we do not need all sports to be tested in the same way, that "more does not mean better" and that it is necessary to change the style of work is influenced by the new rules, but also a different perception of doping. Final, as said Andy Parkinson, former Head of the Anti-doping agencies of the United Kingdom, we need new people, or we have to change ourselves. It seems to me that at this stage people and their perception of doping means more than a new analytical method.

After decade of successful organization Anti-doping seminars there are reasons to start with a much wider form of education, where lecturers from different spheres will present their viwew of the anti-doping fight in the sport. Idea is that the First Congress on the prevention of doping in sport gather in one place practice and science, sports workers and researchers, as well as to give an opportunity to other experts to present their views on the prevention of doping in sport.

The Congress experience of SMAS and ADAS will help that everything be well organized and that everybody feels good. Given that most of the nowadays conferences turned the event with high attendance fees, we decided that there is no registration fee and to all who may wish to attend. Scientific Committee, which will make our friends and colleagues from the region, will consider all submitted abstracts and select the best for presentation.

Finally, Belgrade represents for many a challenging destination and one more reason for coming is jubilee party honored to 10 years of ADAS and 20 years of SMAS. We will be honoured if you accept our invitation, come to Belgrade, present your results and spend time with us.

Ass. Prof. dr. Nenad Dikic, MD, PhD

Congress President

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7. JUL 2015

vreme / time	Opis / Description
8:30	Registracija / Registration
09:45	Otvaranje / Openning
10:00	I sesija – Originalni radovi / I session - Orginal papers
11:30	Kafe pauza / Coffee break
12:00	II sesija Povrede antidoping pravila iz ugla pravnih eksperata / II session Anti-doping rules violations from the perspective of legal experts
13:30	Ručak / Lunch break
14:00	III sesija - Sportska farmakologija / III session – Sports Pharamcology
15:30	Kafe pauza / Coffee break
16:00	Svečana sesija povodom 20 godina Udruženja za medicinu sporta Srbije i 10 godina Antidoping agencije Republike Srbije / The jubilee session on the occasion of 20 years of Sports Medicine Association of Serbia and 10 years Anti-Doping Agency of Serbia

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DETALJAN SADRŽAJ PO SESIJAMA

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I SESIJA – ORIGINALNI RADOVI

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Dr Srđan Radojević. Diplomirao je 2005. godine na Univerzitetu u Beogradu, Medicinski fakultet. Od 2007. do 2012. godine radio kao lekar opšte prakse. 2012. počeo specijalizaciju iz radiologije. Od 2007. doping kontrolor u ADAS.

Dr. Srdjan Radojevic. Graduated in 2005. at the Belgrade University, School of Medicine. From 2007. till 2012. General Practitioner. 2012. started specialization in radiology. From 2007. Doping Control Officer in ADAS.

1. RUPTURA AHIOVE TETIVE

Srđan Radojević. Antidoping agencija Republike Srbije

Tetive su vezivna tkiva koja prenose snagu sa mišića na kosti, takođe kao amortizeri štite mišiće od povreda. Ahilova tetiva je naveća, najdeblja i najača tetiva u ljudskom telu. Ova tetiva prenosi energiju sa moćnih mišića lista na stopalo olakšavajući hod i trčanje – (prostire se od m gastrocnemius i m.soleus do pripoja na tuberositas calcanei). Ahilova tetiva nema pravi sinovijalni omotač već paratenon (viscerálni i parijetalni).

U današnje vreme ultrazvuk (UZ) i magnetna rezonanca (MRI) su metode koje nam pomažu u dijagnostici i opisu promena na Ahilovoj tetivi. MRI može da prikaže patologiju tetrici do detalja ali je veoma skupa i nije široko dostupna metoda. UZ je brza, relativno jeftina, sigurna, neinvazivna i široko dostupna metoda.

Najčešće promene na Ahilovoj tetrici su bursitis retrocalcanea achilli, peritendinitis, tendinitis, i ruptura. Tipična slika tendinitisa je fuziformni hipoeohogeni edem tetrici bez prekida kontinuiteta vlakana sa pozitivnim dopler signalom. Hipoehogena tečnost koja okružuje Ahilovu tetricu uz pozitivan dopler signal ukazuje na peritendinitis.

Ruptura Ahilove tetrici se najčešće vezuje za sportske povrede uzrokovane pretreni-

ranjem. U modernom sportu anabolički steroidi su najčešće zloupotrebljene supstance – preko 50%. Istraživanja na miševima i pacovima '80. godina su pokazale da anabolički steroidi remete normalnu formaciju kolagenskih vlaka, nekoliko dana posle aplikacije, značajno smanjujući nivo prolyl 4-hydroxylase i galactosylhydroxylysyl glucosyltransferase (oba enzima su uključena u sintezu kolagena). To dovodi do rigidnosti tetrici koja može da apsorbuje manju količinu energije i kad na to dodamo steroidom ojačan mišić – RUPTURA. Ruptura može biti parcijalna i kompletна. UZ pokazuje hypoehogeno ili anehogeno polje koje odgovara rupturi.

Simbol zloupotrebe anaboličkih steroida u NFL-u Lyle Alzedo je završio karijeru 1984. Godine sa kompletnom rupturom Ahilove tetrici.

RUPTURE OF ACHILLES TENDON

Srđan Radojević. Antidoping agency of Serbia

Tendons are connective tissues that transmit the force produced by muscle to bone and also prevent muscle damage by acting as shock absorbers. The Achilles tendon is the single largest, thickest and strongest tendon in the human body . This tendon transmits the force of powerful calf muscles to foot facilitating walking and running – (origin from gastrocnemius and soleus muscles and insertion on calcaneal

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tuberosity). The Achilles tendon does not have a true synovial sheath but instead has a paratenon (visceral and parietal layers).

The current imaging modalities that are helpful in describing abnormalities are Ultrasound (US) and Magnetic Resonance Imaging (MRI). MRI can illustrate the tendon pathology in details but very expensive and it is not widely accessible. Ultrasonography is a quick, relatively inexpensive, safe, non-invasive and widely accessible imaging technique for tendon assessment.

Common conditions of the Achilles tendon include retrocalcaneobursitis, peritendinitis, tendinitis, and rupture. Tendinitis typically appears as fusiform hypoechoic swelling of the tendon without disruption of the fibers with positive Doppler signal. Hypoechoic fluid surrounding the Achilles tendon with positive Doppler signal indicates peritendinitis.

Rupture of the Achilles tendon are commonly associated with overuse sports injuries and can bring a sports career to a premature end. In modern sport anabolic steroids are the most abused substances – over 50%. Studies of mice and rats in the '80s showed that anabolic steroids disrupt normal collagen fibril formation in tendons within a few days after administration, significantly decreasing prolyl 4-hydroxylase and galactosylhydroxylysyl glucosyltransferase (both enzymes of collagen biosynthesis). The result is a stiffer tendon that absorbs less energy and when we add one extreme lift with a steroid strengthened muscle – RUPTURE. Rupture can be partial and complete. Ultrasound shows abnormally hypoechoic or anechoic areas in tendon which correspond to the tear.

The symbol of anabolic steroid abuse in NFL Lyle Alzado ended his career in 1984 because of complete rupture of the Achilles tendon.



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2. UPOTREBA LOKALNIH KORTIKOSTEROIDNIH INJEKCIJA U SPORTU: DA LI JE OPRAVDANA ILI NE?

Tamara Stojmenović^{1,2}, Nenad Dikić^{1,2}, Marija Andelković^{1,2}, Milica Vukašinović-Vesić^{1,2}

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Uvod

Najčešće povrede u sportu obično uključuju oštećenja mekotkivnih struktura. Periarikularne burze, uz povrede mišića, tetiva i ligamenata često se leče kortikosteroidnim injekcijama u cilju što bržeg smanjenja bola i povratka u igru. Iako ovakva vrsta lečenja može obezbediti sportisti brži i lakši oporavak nakon povrede, neadekvatna i nekritična primena kortikosteroida potencijalno može dovesti do ozbiljnih neželjenih efekata koji se moraju uzeti u obzir, naročito u periodu pred takmičenje. U želji da pomognemo u zauzimanju stava da li, kada i na koji način je opravданo primeniti infiltraciju kortikosterodima u lečenju mekotkivnih povreda, analizirali smo objavljene rezultate relevantnih istraživanja u pogledu ove vrste terapije.

Diskusija

Lekari sportske medicine moraju biti sve-sni različitih kortikosteroidnih agenasa i njihovih farmakoloških karakteristika, mogućih kratkoročnih i dugoročnih neželjenih efekata, kao i adekvatnih načina primene ovih lekova. Osim toga, iako se primenjuju lokalno, višak kortikosteroida koji se ne zadrži u samom tkivu apsorbuje se u sistemsku cirkulaciju, što dovodi sportiste u rizik od doping pozitivnog rezulta-ta. Shodno tome, neophodno je izuzeće za terapeutsku upotrebu (TUE) koje mora biti odobreno od strane nacionalne ili internacionalne anti-doping agencije.

Nekritična primena kortikosterodnih injekcija potencijalno vodi ka različitim neželjenim efektima uključujući slabljenje i rupturu tetiva i ligamenata, izražen bol nakon infiltracije, atrofiju mekog tistema i potkožnog masnog tkiva, uz hipopigmentaciju kože. Slabljenje i ruptura tetiva/ligamenata predstavljaju najozbiljnije neželjene posledice koje se javljaju usled ne-inflamatorne degeneracije kolagena, separacije mišićno-tetivne spojnica i pojavе sinovijalnog fibrinoznog eksudata.

Primena korikosteroida izaziva degeneraciju kolagena koji postaje fibrilan, omogućavajući nastanak trakcione povrede u predelu mišićno-tetivne veze. Najčešće su rupture plantarne fascije i Ahilove tetive, ali nisu retke ni rupture drugih tetiva, uključujući tetivu kvadricepsa, patelarni ligament, tetivu tricepsa, kao i pripoj ekstenzora u predelu lateralnog epikondila. Dokazano je da administracija kortikosteroida direktno u tetivu ima neželjene efekte koji dovode do lakše rupture tetive, nekroze kolagena, smanjene otpornosti na istezanje i dugoročnih strukturnih promena tetive.

Određene studije pokazale su i postojanje miotoksičnih efekata u vidu opsežnih mišićnih lezija, a nakon primene intramuskularnih kortikosteroidnih injekcija. Pored toga, česta intraartikularna aplikacija kortikosteroida može uzrokovati pad vijabilnosti hondrocyta, čime se izaziva hondrotoksičnost i posledična destrukcija hrskavice. Ređe neželjene, ali moguće posledice neadekvatne i nekrtične upotrebe kortikosteroida su: infekcije, vaskularne povrede i pojave neuritisa.

Zaključak

Uzimajući u obzir sve moguće neželjene efekte koji mogu da ugroze zdravlje i karijeru sportista, kortikosteroidne injekcije treba primenjivati samo onda kada svi ostali nehirurški načini lečenja (rehabilitacija, odmor, primena leda, fizikalne terapije i oralnih anti-inflamatornih lekova) nisu dali rezultate. Učestala upotreba ovih lekova se ne preporučuje: ne primenjivati više od 3 injekcije, i to uvek u razmaku od nekoliko nedelja, i samo ukoliko je prva doza dovela do smanjenja simptoma. Treba izbegavati primenu infiltracije kortikosteroidima odmah nakon povrede, pred samo takmičenje i ukoliko je prisut-

na akutna infekcija. Savetuje se periten-dinozna primena leka. Na kraju, ukoliko je kortikosteroidna blokada izbor lečenja, neophodno je imati odobren TUE kako bi se izbegla mogućnost doping pozitivnog rezultata.

LOCAL CORTICOSTEROID INJECTIONS IN SPORT: WHETHER THEIR USE IS JUSTIFIED OR NOT?

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Introduction

The most common injuries in sport usually involve soft tissue damages. Periarticular bursae, together with muscle, tendon and ligament injuries are often treated with corticosteroid injections in order to provide quick pain relief and an earlier return to play. Although this type of treatment can provide athletes faster and easier recovery after injury, inadequate and unreasonable use of corticosteroids has potentially serious side effects that must be considered, especially in the pregame setting. In order to help decide whether, when and in what way is justified to administrate corticosteroid injection to treat a soft tissue damage, we have analyzed the results of relevant published studies on the use of corticosteroids in the treatment of sports injuries.

Discussion

The sports medicine physicians should be aware of the various corticosteroid agents and their pharmacologic characteristics, possible short and long term complications, and the proper way of medicine administration. Furthermore,

even though administrated locally, excess corticosteroid not retained by local tissue is absorbed into the systemic circulation, which puts athletes at risk of a positive doping result. Accordingly, a Therapeutically Use Exemption (TUE) is required and has to be approved by National or International Anti-doping Agency.

Unreasonable administration of corticosteroid injections potentially leads to various side effects including tendon and ligament weakening or rupture, post-injection pain flare, soft tissue and subcutaneous fat atrophy, and skin hypopigmentation. Tendon/ligament weakening and rupture are the most significant side effect due to non-inflammatory degeneration of collagen, separation of the myotendinous junction, and synovial fibrinous exudate. Injected corticosteroid causes collagen degeneration which becomes fibrillary, permitting a traction injury to occur at the myotendinous junction. The most commonly reported ruptures involve the plantar fascia and Achilles tendon, although ruptures of other tendons have been reported, including quadriceps tendon, patellar tendon, triceps, and lateral epicondyle extensor attachment. It is proven that injections of corticosteroids administrated directly into tendons have adverse effects that can facilitate tendon rupture, collagen necrosis, decreased tensile strength, and long-term structural changes.

Furthermore, certain studies showed muscle toxic effects in terms of extensive muscular lesions due to intramuscular corticosteroid injections. In addition, frequent intraarticular administration of corticosteroids can cause certain decrease of chondrocyte viability, which causes chondrotoxicity and consequent cartilage destruction. Less common side effects include infection, vascular injury, and post-injection neuritis.

Conclusion

Considering all the possible side effects that may jeopardize athletes health and long term career plans, corticosteroid injections should be used only after other nonsurgical treatments (i.e., exercise, rest, ice, physical therapy, oral anti-inflammatory medications) have failed. In addition, frequent application of this treatment method is not recommended: no more than 3 injections should be used, always spaced several weeks apart, with repeat injections given only if previously injections provided relief. Corticosteroids given immediately after injury, just before a competition, or in the presence of infection should be avoided. Peritendinous drug administration is advised. Finally, if the corticosteroid injection is the choice of treatment, approved TUE is essential in order to avoid a possible doping positive result.

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3. STAVOVI O DOPINGU KOD FUDBALERA

JasminaTimic, Katedra za Bromatologiju, Farmaceutski Fakultet Univerziteta u Beogradu

Postizanje vrhunskih sportskih performansi prestiz je svakom sportistu. Mnogo brojni faktori uticu na pobedu pocev od: treninga, adekvatne ishrane, odgovarajuće suplementacije kao i stroge kontrole upotrebe nedozvoljenih sredstava u cilju postizanja najboljih rezultata. Doping predstavlja uzimanje lekova ili nedozvoljenih sredstava od strane sportista pre takmicenja ili za vreme takmicenja, sa ciljem povecanja ucinka u sportu. Sve je vise slucajeva koriscenja dopinga u razlicitim vrstama sportova. Izvreno je anketiranje 15 fudbalera lokalnog fudbalskog kluba iz Srbije starosti 17 do 34 godine. Svi ispitnici bave se profesionalno fudbalom razlicit vremenski period - u trajanju od 13 do 25 godina. Pitanja su bila vezana za dnevne obroke, suplementaciju i stavove o dopingu u sportu. Na pitanje da li zive sami troje je odgovorilo negativno. Dva ispitnika hranu priprema samostalno, ostatak se hrani u restoranu. Broj obroka u toku dana koji imaju iznosio je od 3 do 4. Svi ispitnici odgovorili su negativno na

pitanja vezana za konzumiranje cigareta, alkohola i lekova protiv bolova, a samo jedan ispitnik - da alkohol konzumira ponекад. Na pitanje da li su culi za Doping, potvrdan odgovor bio je kod svih ispitnika. Definisali su ga kao „nedozvoljeno sredstvo“. Lekove za bol ne koristi svega 20% ispitnika. Ostatak ih uzima po potrebi. Jedan ispitnik odgovorio je negativno na pitanje vezano za suplementaciju u sportu. Najcesce korisceni suplementi su vitaminsko - mineralni kompleksi, i to u 90% slucajeva. Potom slede aminokiseline, proteini i glutamin koji koristi cetvrtna ispitnika, a karnitin koristi jedan ispitnik. 50% fudbalera culo je od lekara za ove preparate, 25% - od farmaceuta , dok su ostali naveli da su se za ove suplemente informisali preko trenera , nutricioniste ili prijatelja. 40% ispitnika ove preparate nabavilo je preko kluba, dok su ostali odgovorili da su ih kupili u apoteci. Svi su negativno odgovorili na pitanje da li su ikada korisili doping i smatrali da se nedozvoljena sredstva ne smeju koristiti u cilju postizanja boljih performansi. 45% anketiranih radilo je doping kontrolu. Svi su odgovorili pozitivno na pitanje „Da li znate dovoljno o dopingu“ a kao izvor informisanja naveli su internet , tv ili su culi licno

od prijatelja. 60% njih dodatno se edukuje u vezi toga. Zaključak je da sprovodenje Doping Kontrole nije bilo zadovoljavajuće. Fudbaleri generalno koriste suplemente i to najčešće vitamine i minerale - za porast otpornosti organizma. Koriste ih najčešće po preporuci lekara. Sa svim posledicama dopinga su upoznati, stava su da se ne sme koristiti i vise od 50% ispitanika dodatno se edukuje vezano za nedozvoljena sredstva.

ATTITUDES ABOUT DOPING AT FOOTBALL PLAYERS

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Reaching the top sports performance is a matter of prestige to every athlete. Numerous factors have an impact on victory : training, adequate nutrition, proper supplementation and strict control of using illegal substances in order to achieve the best results. Doping means taking medication or illegal substances by the athletes, before competition and during the competition, with the aim of increasing the impact of the sport. 15 players of the local football club from Serbia aged 17 to 34 years were interviewed. All subjects are playing professional football different time period - a period of 13 to 25 years. The questions were related to the daily meals, supplements and attitudes about doping in sport. They were asked if they live alone, and three of them responded negatively. Two examinees prepare food on their own, the rest of them are taking food in restaurant. Number of meals during the day that have ranged from 3 to 4. All respondents responded negatively to questions related to consumption of cigarettes, alcohol and painkillers, and only one

participant consume alcohol occasionally. When they were asked did they hear of the doping, the affirmative response was observed in all subjects. They defined it as "illegal substance". Only 20 % of respondents do not use drugs for pain. Other athletes are taking them if it is necessary. One respondent replied negatively to the question related to supplementation in sport. The most commonly used supplements are vitamins and minerals, in 90% of cases. The next commonly used supplements are amino acids, proteins and glutamine which uses a quarter of respondents, and carnitine used one respondent. 50% of the players had heard from a doctor for these products, 25% - from pharmacists, while others stated that they were informed of these supplements through trainers, nutritionists and friends. 40% of these drugs were purchased from the club, while others responded that they had bought them at the pharmacy. All football players responded negatively to the question whether they have ever used doping and they consider that it must not be used in order to achieve better performance. 45% of respondents made the doping test. All responded positively to the question "Do you know enough about doping" as a source of information led the Internet, TV or have heard personally from a friend. 60% of them additionally educated about it. The conclusion is that the implementation of doping control was not satisfactory. Football players generally use supplements, mostly vitamins and minerals - to increase resistance of their body and prevent disease. Supplements are recommended by the doctor. They are acquainted with all the consequences of doping with attitude that they should not use it. More than 50% of players have further education related to illegal agents.



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4. STAV PREMA DOPINGU I SUPLEMENTACIJI KOD SPORTISTA REKREATIVACA

*Svetlana Dramičanin, Marija Anđelković, Nenad Dikić
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Cilj

Ispitati kakav stav sportisti koji se rekreativno bave sportom imaju prema dopingu i suplementaciji, koje supstance koriste, zašto ih koriste i kolika je obaveštenost sportista rekreativaca o zabranjenim supstancama i njihovom uticaju na zdravlje.

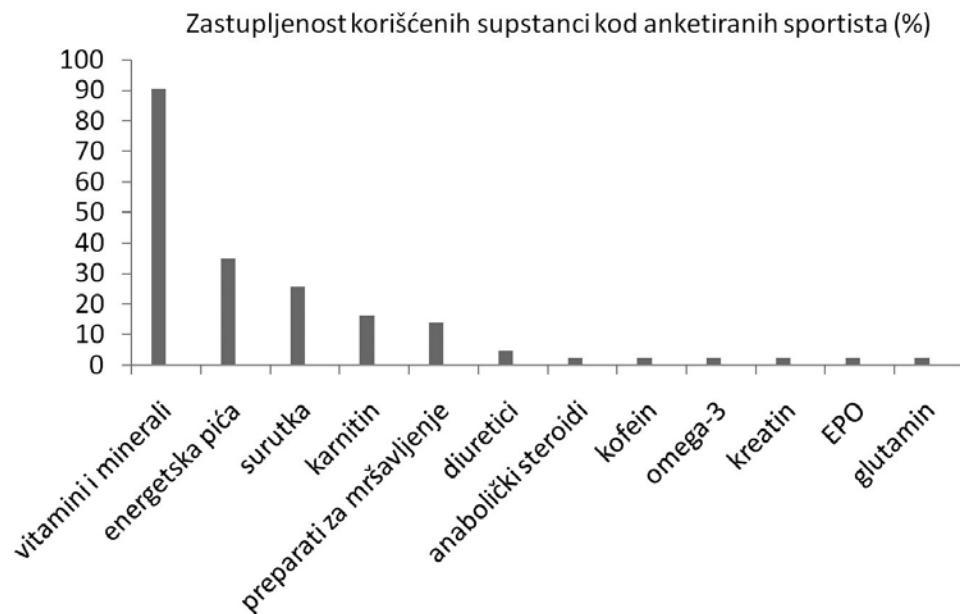
Materijal/metode

Napravljen je i korišćen anonimni upitnik sastavljen od 31 pitanja, koji je sadržao pitanja o osnovnim podacima ispitanika (pol, uzrast, obrazovanje, zaposlenost), o korišćenim preparatima i supstancama, kao i pitanja o stavu ispitanika prema dopingu. Uzorak je činilo 70 sportista rekreativaca oba pola (uslov: redovno bavljenje sportskom aktivnošću do 10 sati nedeljno).

Rezultati

Upitnik je ispravno popunilo svih 70 ispitanika (74,3% osoba muškog pola i 25,7% osoba ženskog pola). Prosečan uzrast ispitanika je 36,7 godina i najviše njih ima fakultetsko obrazovanje (61,4%). Najzastupljeniji sportovi medju ispitanim sportistima rekreativcima su vežbanje u teretani (38,6%) i trčanje (32,9%). Njih 37,1% trenira više sportova. Alkohol povremeno konzumira 61,4% ispitanika. Više od polovine ispitanika (61,4%) koristi neku od supstanci u cilju poboljšanja sportskih performansi i/ili izgleda. Njih 55,8% koristi kombinaciju dve ili više takvih supstanci.

Od ukupno 70 ispitanika, njih dvanaestoro (17,1%), od toga 7 muškaraca i 5 žena je izjavilo da je bar jednom koristilo doping sredstvo. Prosečan uzrast sportista rekreativaca koji su izjavili da su koristili neko doping sredstvo je 34 godine. Gledano po sportovima, najveći procenat anketiranih koji su izjavili da su koristili neko doping sredstvo je među onima koji se bave trčanjem (8 od ukupno 23 sportista koji se bave trčanjem, tj. 34,8%).



Ukupno 70% svih anketiranih sportista rekreativaca je izjavilo da poznaje osobu koja koristi doping sredstvo, a njih 88,6% bi pristalo da se testira od strane Antidoping agencije na nedozvoljena sredstva. Iako 55,7% ispitanika navodi da je dovoljno obavešteno o dopingu, njih 62,9% navodi da nije nikad posetilo sajt Antidoping agencije Republike Srbije.

Zaključak

Rezultati ovog ispitivanja ukazuju na to da postoji potreba za nalaženje strategije u borbi protiv dopinga u rekreativnom sportu, kao i potreba da se edukacija o prevenciji dopinga i upotrebi supstanci za poboljšanje performansi i izgleda sprovodi među sportistima rekreativcima nezavisno od njihovog uzrasta, obrazovanja i sporta kojim se bave.

ATTITUDE TOWARDS DOPING AND SUPPLEMENTATION AMONG RECREATIONAL ATHLETES

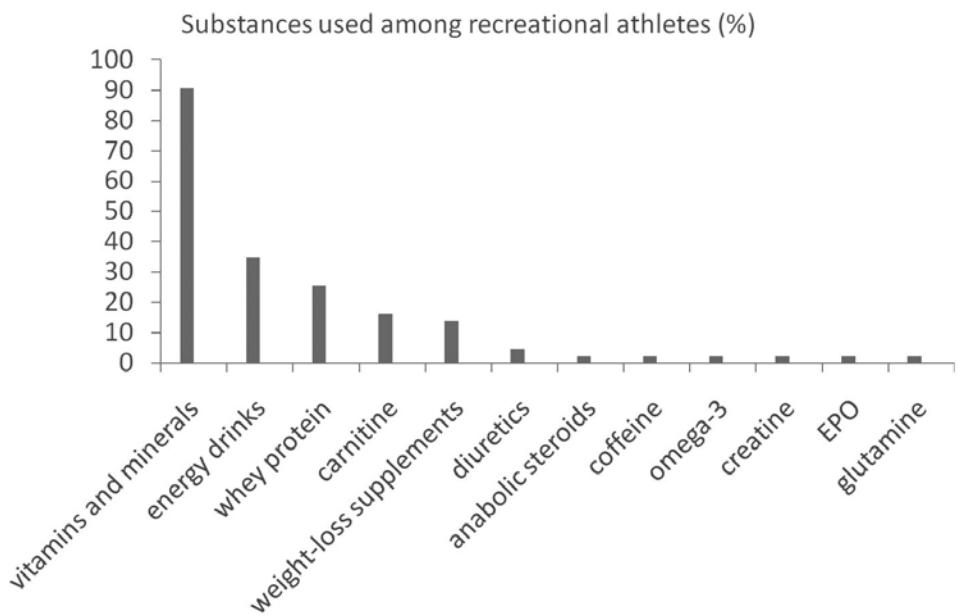
Svetlana Dramicanin, Marija Anđelković, Milica Vukašinović Vesic, Nenad Dikic. Antidoping Agency of Serbia

Objective

To examine what is the attitude towards doping and supplementation among recreational athletes, what substances do they use, why, and how much do they know about prohibited substances and their impact on health.

Materials/methods

A self-administered, anonymous questionnaire was designed and used. The questionnaire consisted of 31 questions: general data (gender, age, employment, education), questions about used substances and about athletes' attitudes towards doping. The sample consisted of 70 recreational athletes, both men and women, who trained up to 10 hours per week.



Results

The questionnaire was completed by all 70 athletes (74,3% of men and 25,7% of women). The average age of the athletes was 36,7 years, and 61,4% had a university degree. The most trained sports among them were gym exercising (38,6%) and running (32,9%), and 37,1% of athletes trained more than one sport. Alcohol is moderately consumed by 61,4% of athletes. More than half (61,4%) of all recreational athletes is using substances in order to enhance their sports performances and/or body image, and 55,8% is using a combination of two or more of these substances.

Of all 70 participants, 12 athletes (17,1%, 7 men and 5 women) stated that, at least once, they used doping. Average age in this group was 34 years. Most of them have trained running (23 athletes in total

listed running as their recreational sport; eight of them (34,8%) stated that they used doping). 70% of all recreational athletes who completed the questionnaire said that they know someone who uses doping. 88,6% of athletes are willing to be tested by Anti-doping Agency of Serbia (ADAS). 55,7% of recreational athletes said that they know enough about doping, but 62,9% have never visited ADAS website.

Conclusions

Results of this analysis pointed out the need for finding strategy against doping use in recreational sport, and the need for education on doping prevention and use of substances in order to improve sports performances and body image among recreational athletes, no matter their age, education or sports discipline.



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5. UVOĐENJE BIOLOŠKOG PASOŠA U DOPING KONTROLU SPORTISTA U SRBIJI

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Uvod

Doping kontrola se zasniva na detekciji zabranjene supstance ili metabolita u uzorcima sportista na efikasan način. Ograničenja postoje kada sportista uzima

zabranjene supstance u određenim periodima ili u malim dozama. Osim toga, nove supstance ili modifikacije zabranjenih supstanci nekada se teško mogu otkriti konvencionalnim analitičkim merenjima. Međutim u poslednjih nekoliko godina, uvođenje ABP, dopunjaje tradicionalni antidoping program.

Metodologija: Statistička metoda

Uzorci krvi sportista sakupljeni na takmičenju ili van takmičenja mogu biti analizirani u laboratoriji za krvni doping sportista akreditovanoj od strane Svetske

Ukupan broj ABP uzoraka analiziranih po godini (WADA)

godina	ABP analizirani uzorci	%
2009	6,082	-
2010	6,610	9%
2011	10,795	63%
2012	18,223	69%
2013	23,877	31%

antidoping agencije. Laboratorija može analizirati doping uzorce i izdavati jedino u saglasnosti sa Internacionallnim standardom laboratorije (ISL). Laboratorija za

doping sportista omogućava praćenje određenih parametara krvi sportista u okviru biološkog pasoša sportiste (Athlete Biological Passport, ABP).

Rezultati

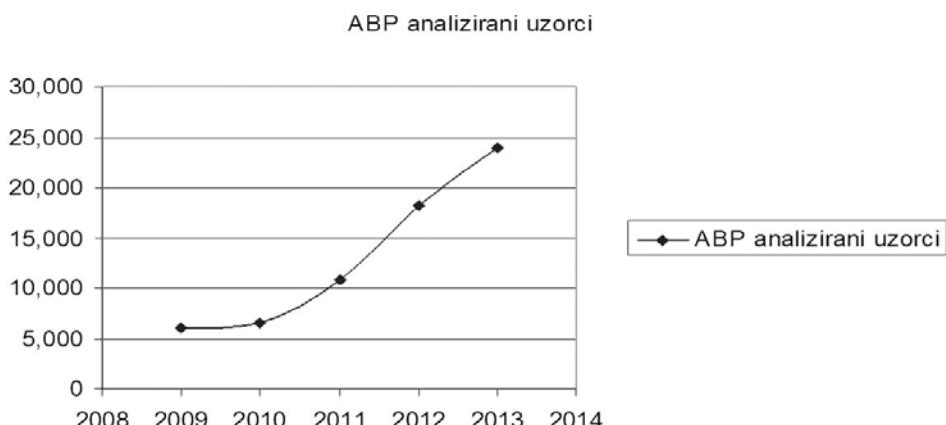
Cilj ABP u okviru anti-doping programa je identifikacija dopingovanih sportista korišćenjem specifičnih testova i tumačenje podataka u okviru biološkog pasoša. Hematološki modul uključuje testove za stimulirajuće agense eritropoeze (ESAs) i homologne transfuzije krvi (HBT). Za steroidni modul, korišćenje izotopa masene spektrometrije (IRMS) za detekciju endogenih steroida

Zaključak

Uvođenjem biloškog pasoša u doping kontrolu sportista u Srbiji, povećao bi se broj analiza krvi sportista, formirao bi se tim kvalifikovanih ljudi koji bi bio zadužen za unapređenje biološkog pasoša sportista, a svakako i mogućnost otkrivanja doping pozitivnih sportista.

Ključne reči

biološki pasoš, doping kontrola, sportisti



INTRODUCTION OF BIOLOGICAL PASSPORT TO THE DOPING CONTROL OF ATHLETES IN SERBIA

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Introduction

Doping control is based on the detection of prohibited substances or metabolites in samples of athletes in an efficient manner. There are limitations when athletes take prohibited substances in certain periods or in small doses. In addition, new substances or modifications of prohibited

substances are sometimes difficult to be detected by conventional analytical measurements. However, in recent years, the introduction of ABP complements traditional anti-doping program.

Methodology: Statistical methods

Blood samples of athletes that are collected during the competition or out of competition can be analyzed in the laboratory for blood doping athletes accredited by the World Anti-Doping Agency (WADA). The laboratory can analyze doping samples and issue them only in accordance with International Standards Laboratory (ISL). Laboratory that deals with doping of athletes enables monitoring of certain

blood parameters of athletes based on the biological passport of athletes (Athlete Biological Passport, ABP).

Total ABP Samples Analyzed per year (WADA).

Results

The aim of ABP within the anti-doping program is to identify athletes who use

doping substances by using specific methods and interpretation of the data within the biological passport. Hematologic module includes tests for erythropoiesis-stimulating agents (ESAs) and homologous blood transfusion (HBT). For steroid module, using the isotope mass spectrometry (IRMS) for detection of endogenous steroids.

Ukupan broj ABP uzoraka analiziranih po godini (WADA)

godina	ABP analizirani uzorci	%
2009	6,082	-
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2013	23,877	31%

Conclusion

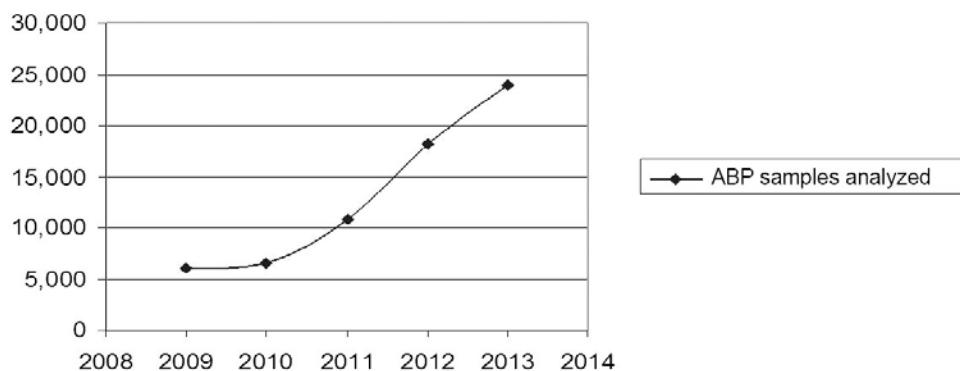
With the introduction of biological passport to the doping control of athletes in Serbia, the number of blood tests athletes would increase, also there would be a possibility for creating teams of qualified people who would be responsible for im-

proving the athletes biological passports, and certainly the chances for detecting doping positive athlete would be greater.

Keywords

biological passport, doping control, athletes

Total ABP samples





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Dr. **Biljana Vitošević** is an Associate Professor in the Department of Biological and medical subjects at the Faculty of Sport and Physical Education, University of Kosovska Mitrovica. Her primary research interests include the physiology and cellular and molecular aspects of the exercise.

6. GENI I SPORTSKA PERFORMANSA: MANIPULACIJA VS. MULTIPLA APLIKACIJA

Biljana Vitošević, Fakultet za sport i fizičko vaspitanje, Leposavić, Univerzitet u Kosovskoj Mitrovici

Napredne tehnike molekularne biologije i dobro poznavanje molekularnih mehanizama ćelijskih funkcija, s jedne strane i otkrivanje gena odgovornih za fizičke karakteristike Projektom Humanog Genoma s druge strane, stvorena je platforma za novu vrstu dopinga – genski doping. Cilj genskog dopinga je modifikacija aktivnosti gena ojačavanjem, slabljenjem ili blokiranjem njihove ekspresije i predstavlja zloupotrebu genske terapije. Fiziološki targeti za strategije genskog dopinga kod sportista su skeletni mišići, snabdevanje kiseonikom, snabdevanje energijom, pa bi primarni geni kandidati bili eritropoetin gen (EPO), IGF1 (insulinu sličan faktor rasta 1), VEGF (vaskularni endotelijalni faktor rasta), miostatin gen, PPAR δ (peroxisome proliferator-activated receptor delta), ACE (angiotenzin converting enzyme), ACTN3 (alpha actinin 3), endorfini itd. Međutim, unošenje gena putem virusnih ili vektora nevirusne prirode može da indukuje ozbiljne probleme sa zdravljem koji uključuju imuno odgovore, onkogene efekte kao rezultat transgene integracije u genom ili nekontrolisanu transgenu ekspresiju, kao i

dugoročne nepredvidljive efekte. Tome treba dodati i etičku neopravdanost genskog dopinga jer ugrožava zdravlje sportiste, a i narušava duh samog sporta i fer plej igre.

Sa druge strane post-genomska era nas obavezuje da individualnu genetsku informaciju što efikasnije iskoristimo za poboljšanje zdravlja čoveka, pa se ona prevodi u nutrigenomiku, kineziogenomiku i druge visoko specijalizovane grane personalizovane medicine iz grupe tzv. omiks nauka (proteomiks, metabolomiks i sl.), koje nalaze primenu i u sportu. Jasni kriterijumi i graničice u anti-doping pravilima i propisima su ti koji mogu spreciti svaki vid zloupotrebe omiks-baziranih informacija u vid nutritivnog dopinga.

Ključne reči

genski doping, nutrigenomika, kineziogenomika

GENES AND SPORTS PERFORMANCE: MANIPULATION VS. MULTIPLE APPLICATIONS

BiljanaVitosevic, Faculty for sport and physical education, Leposavic, University of Kosovska Mitrovica

Advanced techniques in molecular biology and a good knowledge of the molecular mechanisms of cell function in one hand,

1. KONGRES O PREVENCICI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

and discovering the genes responsible for the physical characteristics within the Human Genome Project on the other hand, created a platform for a new kind of doping - gene doping. The objective of gene doping is a modification of the activities of gene function by strengthening, weakening or blocking their expression and by so abusing of the gene therapy. Physiological targets for gene doping strategies in athletes are skeletal muscle, oxygen supply, energy supply, so the primary candidate genes were gene erythropoietin (EPO), IGF1 (insulin-like growth factor-1), VEGF (vascular endothelial growth factor), myostatin gene, PPAR δ (peroxisome proliferator-activated receptor delta), ACE (angiotensin converting enzyme), ACTN3 (alpha actinin 3), endorphins etc. However, the introduction of genes via viral or non-viral vectors can induce serious health problems including immune responses, oncogenic effects as a result of transgenic integration into the genome or uncontrolled

transgene expression, as well as long-term unpredictable effects. We must add the ethical unjustified of the gene doping because it imperils the health of athletes and violates the spirit of sport and fair play of the game.

On the other hand, the post-genomic era obliges us to make the individual genetic information as efficiently as possible we use to improve human health, so it translates into nutrigenomics, kinesiogenomics and other highly specialized branch of personalized medicine from a group omics sciences (proteomics, metabolomics etc.) which can be applied in sports. Clear criteria and limits in the anti-doping rules and regulations are the ones who can prevent any kind of abuse omics-based information into some kind the nutritional doping.

Keywords

gene doping, nutrigenomics, kinesiogenomics



Dušan Antić. Magistar farmaceutskih nauka. Više od 13 godina u struci. Kao aktivni sportista (više od 23 godine), veoma sam zainteresovan za sportsku suplementaciju i doping. Iz tog razloga sam poslednjih 10-ak godina često prisutan na kongresima i predavanjima koji se bave ovim temama. Oženjen sam i otac jedne čerke.

Dusan Antic. Master degree in pharmacy, working for 13 years as a pharmacist. As an athlete (for 23 years), I am very interested in subjects such as sports supplements and doping. That is the main reason why I have visited conferences and lectures on those subjects for last 10 years. I am married and father of one daughter.

7. PSEUDOEFEDRIN - POTENCIJALNI RIZIK OD DOPINGA U SPORTU

Dušan Antić

Glaxosmithkline, Novi Beograd

Pseudoefedrin je supstanca iz grupe dekongestiva. Koristi se kao lek za lečenje nazalne kongestije, kao i kongestije sinusa i Eustahijeve tube, izazvane prehladom, gripom, alergijom ili nekom drugom disajnom tegobom. Pored toga, pseudoefedrin je i stimulans i iz tog razloga se nalazi na Listi zabranjenih supstanci i metoda u sportu, u grupi S6. Stimulansi. Do 2004. godine se nalazio na Listi, nakon toga biva skinut, da bi se od 2010. godine ponovo pojavio na Listi zabranjenih supstanci. Zabranjen je na takmičenju (In-Competition), sa koncentracijom u urinu većom od 150 µg/ml.

Prema zvaničnoj statistici WADA, u periodu 2010-2013. godine kod ukupno 46 sportista je u uzorku pronađen pseudoefedrin. Kazne su bile u rasponu od 1 meseca do čak 4 godine. Najviše zastupljen sport je bio bicikлизам, zatim slede atletika, odbojka, fudbal, američki fudbal, trijatlon, hokej na ledu i drugi (izvor: The Anti-doping Database).

U velikom broju slučajeva sportisti ne uzimaju pseudoefedrin u svrhu dopinga, već radi ublažavanja simptoma prehlade i gri-

pa (u kombinovanim preparatima sa antihistaminicima, analgeticima i/ili antireumaticima). U Srbiji se u periodu 2009-2015. povećao broj kombinovanih preparata sa pseudoefedrinom dostupnih u apotekama (od 7 na 13). U istom periodu, u grupama ATC klasifikacije R01B (Nazalni preparati - nazalni dekongestivi za sistemsku primenu) i R06AB (Antihistaminici za sistemsku primenu - supstituisani alkilamini), među kombinovanim preparatima koji se koriste za otklanjanje simptoma prehlade i gripa, preparati sa pseudoefedrinom čine 40-50% ukupne potrošnje lekova. S obzirom da su i sportisti podložni prehladama i gripu, velika je verovatnoća da su jedan deo izdatih preparata sa pseudoefedrinom i oni uzeli.

Ukoliko sportista nema lizuće radi terapeutске upotrebe (TUE), u slučaju da bude pozvan na doping kontrolu i nađu mu u uzorku pseudoefedrin, prema kodeksu Svetske antidoping agencije, sportista bi bio kriv za učinjenu povredu antidoping pravila, bez obzira da li je znao za to ili je bilo iz neznanja. Zato je veoma važno da se podigne svest sportista o pseudoefedrinu (ali i o mnogim drugim supstancama koje su lako dostupne u apotekama) kroz različite vidove edukacija, da ne bi došlo do nenamernog doping pozitivnog rezultata.

PSEUDOEPHEDRINE - POTENTIAL RISK OF DOPING IN SPORT

Dušan Antić, Glaxosmithkline, Novi Beograd

Pseudoephedrine is a decongestant drug which is used to treat nasal and sinus congestion, or congestion of the Eustachian tubes that drain fluid from inner ears. Besides that, pseudoephedrine is also a stimulant and that was the main reason why WADA Prohibited List put pseudoephedrine in group 6. Stimulants. It was prohibited until 2004 when pseudoephedrine was taken off the List and later WADA reintroduced pseudoephedrine to the 2010 Prohibited List. For last 6 years, it is prohibited In-Competition when its concentration in urine is greater than 150 micrograms per milliliter.

According to the official statistics of WADA, 46 athletes tested positive for the banned substance pseudoephedrine in period 2010-2013. They were suspended from 1 month to 4 years. Those athletes participated in variety of sports, e.g. cycling, athletics, volleyball, American football, soccer, triathlon, ice hokey etc. (source: The Anti-doping Database).

In many cases, athletes do not use a pseudoephedrine with the purpose of doping,

but for relieving cold or flu symptoms (in combination with antihistamines, analgesics and/or antirheumatics). In Serbia in period 2010-2015, the number of products containing pseudoephedrine has increased (from 7 to 13). In the same period, combinations with pseudoephedrine, which belong to ATC classification groups R01B (Nasal preparations – nasal decongestants for systemic use) and R06AB (Antihistamines for systemic use – substituted alkyl amines), have almost a half of consumption of all products in mentioned groups. Since athletes also can get cold or flu, there is a great chance that some of those combinations with pseudoephedrine athletes use as well.

Without Therapeutic Use Exemption (TUE), according to WADA anti-doping Code, an athlete is always held responsible for breaking an anti-doping rule, regardless of whether they were familiar with it or it was done out of ignorance.

All things considered, it is very important to raise awareness of the athletes on pseudoephedrine (but also many other substances which are easily available in the pharmacies) through various forms of education, to avoid unintentional doping positive result.



Snežana Đorđević, PhD. Radi u Odeljenju za toksikološku hemiju Nacionalnog centra za kontrolu trovanja Vojnomedicinske akademije u Beogradu kao specijalista toksikološke hemije i kao Docent na predmetu Medicinska hemija na Medicinskom fakultetu Univerziteta odbrane. Objavila je dve monografije, 34 originalna rada u celini u nacionalnim i međunarodnim časopisima, kao i 83 sažetaka na domaćim i međunarodnim skupovima. Član je Farmaceutskog društva Srbije, Farmaceutske komore, Udruženja toksikologa Srbije i EUROTOX-a.

Snezana Djordjevic, PhD. Works in Department of Toxicological Chemistry, National Poisoning Control Centre, Military Medical Academy, Belgrade as specialist of toxicological chemistry and as Ass. Professor of Medicinal Chemistry

in Medical Faculty, University of Defence. As an author she has two monographs, 34 original articles published in national and international journals and 83 summaries at domestic and international conferences. She is a member of the Pharmaceutical Society of Serbia, Pharmaceutical Chamber, Serbian Association of Toxicologists and EUROTOX.

8. KOFEIN I SPORT: DA ILI NE? PRIKAZ SLUČAJA AKUTNOG TROVANJA KOFEINOM

Snežana Đorđević, Marko Antunović, Nataša Perković Vučević, Jasmina Jović Stošić

Nacionalni centar za kontrolu trovanja, Vojnomedicinska akademija, Beograd

Kofein je prirođni alkaloid i najpotentniji je stimulans iz grupe metilksantina. Može se naći u velikom broju namirnica (kafa, čaj, čokolada, gazirana pića) i u malom procentu u OTC preparatima.

Kofein je stimulans koji svoje dejstvo ostvaruje inhibicijom fosfodiesteraze i adenozinskih receptora što dovodi do oslobođanja noradrenalina, a kao krajnji rezultat dolazi do stimulacije kardiovaskularnog i centralnog nervnog sistema.

Sportisti često posežu za stimulansima u želji za postizanjem što boljih rezultata. Od 2004. kofein se ne nalazi na listi zabranjenih supstanci Svetske antidoping agencije,

zbog čega je upotreba kofeina kod profesionalnih sportista od tada povećana.

U ovom radu prikazan je slučaj aktunog trovanja profesionalnog bodibildera nakon ingestije 2 g kofeina u cilju postizanja boljih sportskih rezultata. Neposredno nakon ingestije sportista je imao tegobe u vidu lupaњa srca, osećanja treperenja tela, mučnine i povraćanja, uz krvni pritisak 300/60 mm Hg stuba i puls 150 otkucaja/min. Po priјemu u Toksikološku ambulantu Nacionalnog centra za kontrolu trovanja Vojnomedicinske akademije izmerena je koncentracija kofeina u serumu od 18,81 mg/L (toksična koncentracija manja od 10mg/L). Tretman trovanja podrazumevao je primenu simptomatske medikamentozne terapije (IPP, benzodiazepinske sedative, antiemetike, β-blokatore). Nakon 7 sati koncentracija u serumu pacijenta bila je 7,6 mg/L. Pacijent je stabilizovan i otpušten sa klinike.

Poznato je da bodibilderi koriste različite supstance kako bi poboljšali fizičku spremnost. Kofein, naizlgled bezopasan stimu-

Ians, može dovesti do ozbiljnih trovanja ponekad čak i sa letalnim ishodom, zbog čega treba savetovati oprezno korišćenje ovih preparata.

CAFFEINE AND SPORT: YES OR NO? CASE REPORT OF ACUTE CAFFEINE POISONING

Snežana Đorđević, Marko Antunović, Nataša Perković Vukčević, Jasmina Jović Stošić

National Poison Control Centre, Military Medical Academy, Belgrade

Caffeine is a natural alkaloid and it is the most potent stimulant from the group of methylxanthine. It can be present in many types of food (coffee, tea, chocolate, carbonated beverages) and in a small percentage in the OTC preparations.

Caffeine is a stimulant that takes the effect by inhibiting of phosphodiesterase and adenosine receptors, that leads to the release of noradrenaline. The final result is stimulation of the cardiovascular and central nervous system.

Athletes often reach for stimulants in an effort to achieve better results. Since 2004, caffeine is not on the list of prohibited substances of World Anti-Doping Agency,

which is the reason why is use of caffeine increased in professional athletes.

This article describes a case of acute poisoning of a professional bodybuilder after ingestion of 2g of caffeine to achieve the better sport results. Immediately after ingestion the athlete had problems in the form of heart palpitations, fluttering sensation all over body, nausea and vomiting, with blood pressure of 300/60 mm Hg and pulse of 150 beats/min. After reception in the Outpatient Department of National Poison Control Centre, Military Medical Academy, concentration of caffeine in serum was 18.81 mg/L (toxic concentration is lower than 10mg/L). Treatment of poisoning involved applying of symptomatic treatment drug therapy (PPI, benzodiazepine sedatives, anti-emetics, β -blockers). After 7 hours, the concentration of caffeine in the patients' serum was 7.6 mg/L. The patient was stabilized and discharged from the Clinic.

It is known that bodybuilders use various substances to improve physical fitness. Caffeine, seemingly harmless stimulant, can lead to serious poisoning, sometimes even with a fatal outcome, therefore the careful use of these preparations should be advised.



Sandra Radenović, doktor socioloških nauka. Docent Katedre društveno - humanističkih nauka Fakulteta sporta i fizičkog vaspitanja BU. Sandra Radenović je odbranila doktorsku tezu pod nazivom 'Odnos lekar-pacijent' u paradigmu integrativne bioetike' 2011. godine na Odeljenju za sociologiju Filozofskog fakulteta BU. Autorka je brojnih radova i knjiga: Oblici rasizma u Srbiji nakon petooktobarskih promena (2001-2006), Akadem-ska misao, Beograd (Radenović, Sandra S., 2008); Bioetika i medicina-Odnos lekar-pacijent u paradigmu integrativne bioetike, Akadem-ska knjiga, Novi Sad (Radenovic, Sandra, 2012); Sport i društvo – Sociologija sa sociologijom sporta. Sociologija sporta, Fakultet sporta i fizičkog vaspitanja BU, (Radenović, Sandra, 2014). Od 2009. godine je član Organizacionog odbora Lošinjskih dana bioetike. Član je uredništva časopisa JAHR, Evropskog časopisa za bioetiku. Sandra Radenović je potpredsednik Bioetičkog društva Srbije i jedan od njegovih osnivača. Član je Međunarodnog foruma nastavnika (IFT) Uneskove katedre za bioetiku.

Sandra Radenović, PhD. Assistant professor at the Department of Social Sciences and Humanities, Faculty of Sport and Physical Education University of Belgrade. In 2011 Sandra Radenović defended the doctoral thesis under the title „Relationship patient-physician within the Integrative Bioethics Paradigm“ at the Department of Sociology, Faculty of Philosophy University of Belgrade. She is the author of the numerous papers and the books: Forms of Racism in Serbia after The 5th October Overthrow (2001-2006), Akadem-ska misao, Beograd (Radenović, Sandra S., 2008); Bioethics and Medicine-Relationship physician-patient in the Integrative Bioethics Paradigm, Akadem-ska knjiga, Novi Sad (Radenovic, Sandra, 2012); Sport and Society-Sociology with Sociology of Sport. Sociology of Sport, Fakultet sporta i fizičkog vaspitanja BU, (Radenović, Sandra, 2014). From 2009 she is the member of the Organization Committee of The Lošinj Days of Bioethics. She is the member of the editorial board of JAHR, European Journal of Bioethics. Sandra Radenović is the Vice-president of The Bioethics Society of Serbia and one of its founders. Professor Radenović is the member of the International Forum of Teachers (IFT) of the UNESCO Chair in Bioethics.

9. POTPUNO SAMI U OVOM BEZUMLJU, POČETAK JEDNE VELIKE TRAGEDIJE ZA NAŠU KULTURU, UMETNOST I SPORT.

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Fakultet sporta i fizičkog vaspitanja¹, Antidoping agencija Republike Srbije²

Uvod

Naslov je samo parafraza otvorenog pisma Milene Dravić upućenog javnosti koje se odnosilo na medijsko razapinjanje Drag-

na Nikolića, čija je teška bolest poslužila žutoj i ne samo žutoj štampi da zabavlja javnost. Zbog toga je naša čuvena glumica izbrisala aplikaciju 'Blica' i 'Kurira' sa mobilnog telefona. Međutim, ovo se dešava ne samo najboljim glumcima koje naša zemlja ima, već i najboljim sportistima. Dešava se svima u kontekstu proizvodnje permanentnog senzacionalizma i tabloidizacije medija.

Materijal

Analizirali smo članke u elektronskim medijima o slučaju Nikole Rađena. Radna hipo-

teza je da novine nisu objektivno pisale i da su se služile različitim stepenom neistine.

Rezultat

Pet (5) izabranih elektronskih medija je objavilo više od 100 napisa o doping pozitivnom slučaju Nikole Rađena u periodu od dve nedelje. Samo u dva članka je pomenu ta činjenica da: „Ono što mnogima u sportskim krugovima smeta je to što je Nikoli Rađenu u medijima i pre odluke FINA presuđeno, što je stavljen na stub srama. Smatra se da vrhunski sportista, koji je proneo slavu Srbije, to nije zasluzio.“ ('Večernje novosti', 17.05.2015). Činjenica da se svaki dobromerni novinar mogao podsetiti u Vikipediji šta je Rađen doneo srpskom sportu, većinu nije omela u procesuiranju. Na koji način razmotriti činjenicu da niko nije spomenuo da je Nikola Rađen doneo Srbiji 17 medalja sa velikih takmičenja (termin koji se koristi za Olimpijske igre, svetska i evropska prvenstva, Univerzijadu i Mediteranske igre), od toga 2 sa Olimpijskih igara?

Zaključak

Etika srpskog novinarstva je ozbiljno doveđena u pitanje i/ili da opet citiramo Milenu Dravić: „Da li su svi ovi ljudi koji nama droma čine ovoliko zlo potomci tih strelačkih vodova?“ Naš pokušaj da utičemo na novinare nije urođio plodom, jer novinari pišu uglavnom ono što diže njihov tiraž i tako proizvode visok stepen senzacionalizma i tabloidizacije medija, ali i 'tabloidizaciju svesti' 'običnih' ljudi. Uprkos postojanju Etičkog kodeksa novinara Srbije, kreiranje senzacionalizma i tablodizacije jeste kreiranje jedne velike tragedije za našu kulturu, umetnost i sport.

Ključne reči

doping, senzacionalizam, tabloidizacija, mediji, etika

COMPLETELY ALONE WITHIN INSANITY – THE BEGINNING OF A GREAT TRAGEDY FOR OUR CULTURE, ART AND SPORT

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Introduction

The title is just a paraphrase of the open letter to the public that Milena Dravić wrote because of the media crucifixion of Dragan Nikolić, which serious disease served tabloids and not only tabloids to entertain the public. Because of that, our famous actress deleted mobile application for 'Blic' and 'Kurir'. However, it happens not only to the best actors that our country has, but also to its best athletes. It happens to everyone in the context of production of permanent sensationalism and tabloidization of the media.

Material

We analyzed the articles in the electronic media regarding the case of Nikola Rađen. A working hypothesis is that newspaper did not write objectively and that newspaper used different degrees of falsehood.

Result

Five (5) selected electronic media published more than 100 articles regarding the positive doping case of Nikola Rađen in the period of two weeks. Only in two articles is mentioned the fact that: "The thing that bothers many individuals in sports circles is the fact that before the official FINA decision, the media passed judgment on Nikola Rađen, the media put him on the pillory. Top athlete who spread the fame of Serbia did not deserve it." ('Večernje novosti', 17.05.2015). The

fact that every well-intentioned journalist could recall via Wikipedia what Rađen brought to the Serbian sport, did not prevent the prosecution. How to consider the fact that no one mentioned that Nikola Rađen brought to Serbia 17 medals from major competitions (a term used for the Olympic Games, World and European championships, Universiade and Mediterranean Games), 2 from Olympic Games.

Conclusion

Ethics of Serbian journalism is seriously endangered and/or we are going to quote Milena Dravić again: "Are all these people who do evil to two of us descen-

dants of those firing squads?" Our attempt to influence journalists was not successful, because journalists write mainly what rises the printing and thus they produce a high degree of sensationalism and tabloidization of the media, but also 'a tabloidization of consciousness' of 'ordinary' people. Despite the existence of the Code of Ethics of Journalists in Serbia, creating of sensationalism and tabloidization is creating of great tragedy for our culture, art and sport.

Key words

doping, sensationalism, tabloidization, media, ethics

II SESIJA – POVREDE ANTIDOPING PRAVILA IZ UGLA PRAVNIH EKSPERATA

**II SESSION – ANTI-DOPING
RULES VIOLATIONS FROM THE
PERSPECTIVE OF LEGAL EXPERTS**

10. SVEDOČENJE – NIKOLA RAĐEN / TESTIMONY – NIKOLA RADJEN



Marko Perović, asistent Pravnog fakulteta Univerziteta u Beogradu. Osnovne studije završio sa prosečnom ocenom 9,97. Školske 2011/2012 upisao doktorske studije za Građansko-pravnu oblast. Za asistenta za Građanskopravnu užu naučnu oblast – predmet Obligaciono pravo izabran januara 2012. god. U toku je izrada doktorske disertacije sa temom „Solidarnost dužnika u obligacionim odnosima“. Pored asistentskih dužnosti, obavljao dužnost sekretara Katedre za Građansko pravo. Autor više od 10 radova. Govori i piše francuski i engleski jezik.

Marko Perovic, Assistant on Faculty of Law, University of Belgrade. He graduated with an average mark of 9.97. In 2011/2012 school year he has enrolled in doctoral studies in the field of Civil Law. For assistant at the department of Civil Law he is elected on January 2012. He is doing a doctoral dissertation on the topic "Solidarity among debtors in Obligations". In addition to duties of Assitant, he served as the Secretary of the Department of Civil Law. Author of more than 10 papers. He speaks and writes French and English.

11. NAJVEĆA KONTROVERZA DOPINGA – SLUČAJ LENSA ARMSTRONGA

Marko Perović, Pravni fakultet, Univerzitet u Beogradu

U svetu modernog i sve više pragmatičnog i materijalnog sveta sa vrlo diskutabilnim i šarolikim pogledima na ideju pravičnosti i fer pleja po skoro svakom aktuelnom pitanju, pa tako i po pitanju sporta, slučaj Lensa Armstronga predstavlja samo još jedan u nizu onih primera koji služe kao opomena vremenu u kome se nalazimo.

Međutim, nažalost takve opomene nisu naznaka nekih boljih vremena, nego po svemu sudeći predstavljaju jednu režiranu ili namerno odabranu predstavu slike sveta kako bi trebalo da zaista izgleda, dok realnost govori potpuno suprotno. Metaforično rečeno, ništa više do belih fleka na crnom zidu.

Sasvim konkretno, da ne bude nikakve zabune, naravno da sve ono za šta se sed-

mostruki osvajač „Trke oko Francuske“ (Tour de France) tereti i treba da odgovara i granica zakonske i moralne rigoroznosti u ovakvim i sličnim slučajevima mora da bude krajnja, ali ovaj slučaj otvara pitanja uzroka i posledice. Zar je zaista moguće da se jedan pojedinac optužuje kao glavni organizator jednog od najsofisticiranih doping sistema, a da u to nije uključen na primer njegov tim? Da li je profit i materijalni stav koji preovladava na svetu kako smo malopre rekli, dovoljan da se okrene glava onda kada ne treba, a isto tako da se usmeri pogled tamo gde i kada treba, kada interes to zahteva?

Ova kao i mnoga druga pitanja biće razmatrana u ovom radu, jer ovaj slučaj na jedan način pokazuje najbolje odnos uzroka i posledice jednog sistema u svetu koji razume se da se preslikava i na sportsku sferu.

Jer, ako čitav sistem učestvuje u stvaranju jedne sportske arene gde se surovo zahtevaju najbolji rezultati koji donose profit, a sve to se prekriva jednim tankim plaštrom

fer pleja, a sa druge strane se na svaki indirektnačin sportisti navode na doping kako bi se u krajnjoj liniji opravdao profit, onda se zaista postavlja pitanje odgovornosti koja bi u ovakvim slučajevima morala biti solidarna.

THE BIGGEST DOPING CONTROVERSY – THE CASE OF LANCE ARMSTRONG

Marko Perović, Faculty of Law, University of Belgrade

In the light of modern and more pragmatic and material world with very dubious and colorful views on the idea of fairness and fair play on almost any current issue, and so on sport as well, Lance Armstrong case presents just one of many cases of those which serve as a warning to the time in which we live in.

However, unfortunately these kinds of warnings are not an indication of more promising times ahead of us, but apparently it represents the staged or deliberately chosen images of how the world should actually look like, while the reality tells us quite the opposite. Metaphorically speaking, nothing more like white patches on the black wall.

Quite specifically, so there be no mistake, of course all these things that seven-time

winner of "Racing around France" (Tour de France) is charged and should correspond to the boundaries of legal and moral rigorousness in this specific or some other similar cases must be extreme, but this case raises questions of cause and effect. Is it really possible that an individual accused of being the main organizer of one of the most sophisticated doping systems, and that his team is not included, at all. Is the profit and material attitude that prevails in the world as we mentioned just a moment ago, is enough to turn heads when you don't need, and also to direct the view of where and when you need, when interests require it?

These and many other questions will be discussed in this paper, because this case is on one specific way showing the best relationship of cause and effect in a system of the world that is mapping to the sports sphere.

Because if the whole system is participating in the creation of a sports arena, which requires brutally the best results that could generate the highest possible profit, and all that overlaps a thin mantle of fair play, on the other hand, athletes are indirectly induced on doping allegations so it could justify the profit. At the end this theory raises the question of responsibility that in such cases should be consolidated.



Nenad Đurđević rođen je 1957. godine i redovni je profesor Pravnog fakulteta Univerziteta u Kragujevcu. Predaje obligaciono pravo i sportsko pravo i objavio je veliki broj radova iz ovih oblasti prava. Direktor je Centra za sportsko pravo Prvnog fakulteta u Kragujevcu. Učestvovao je u izradi svih važećih zakona i podzakonskih akata u oblasti sporta u Republici Srbiji, uključujući i Zakon o sprečavanju dopinga u sportu. Obavljao je veliki broj funkcija u organizacijama u oblasti sporta u Republici Srbiji. Trenutno je potpredsednik Upravnog odbora Antidoping agencije Republike Srbije, predsednik Stalnog sportskog arbitražnog suda pri Sportskom savezu Srbije i član Disciplinskog suda Košarkaškog saveza Srbije.

Nenad Djurdjevic was born in 1957. He is a full professor of the Faculty of the Law, University of Kragujevac.

He is lecturing Contract Law and Sports Law and he has published a number of papers in these areas of Law. He is a Director of the Center for Sports Law at the Faculty of Law in Kragujevac. He participated in the drafting of all applicable laws and regulations in the field of sport in the Republic of Serbia, including the Law on the prevention of doping in sport. He has held a number of sport functions in the Republic of Serbia. Currently he is the Vice President of the Board of Anti-Doping Agency of Serbia, the President of the Permanent Court of Arbitration for Sport at the Sports Association of Serbia and member of the Disciplinary Tribunal of the Basketball Federation of Serbia.

12. UTICAJ STEPENA KRIVICE SPORTISTE NA IZRICANJE ZABRANE UČEŠĆA NA TAKMIČENJIMA ZBOG POVREDE ANTIDOPING PRAVILA – SLUČAJEVU MARINA ČILIĆA I VIKTORA TROICKOG

Nenad Đurđević, Pravni fakultet, Univerzitet u Kragujevcu

Sastavni deo borbe protiv dopinga u sportu jeste i sistem sankcija koje pogađaju sportiste koji ne poštuju propisane zabrane vezane za borbu protiv dopinga. Jedan je od najspornijih i najdiskutovanijih problema dopinga u sportu je pitanje dužine zabrane učešća sportiste na takmičenjima i drugim aktivnostima u sportu, osim učešća u programima antidoping obrazovanja. Svetski antidoping kodeks usvaja pravilo tzv. „strog

odgovornosti“ (strict liability). Prema tom pravilu, prekršaj antidoping pravila počinjen je uvek kada se zabranjena supstanca nađe u telesnom uzorku sportiste. Obaveza je svakog sportista da se lično uveri da bilo koji medikament, zamena za medikament ili bilo koji drugi preparat ne sadrži zabranjenu supstancu. Sportistu ne opravdava ni činjenica da mu je, na primer, određeni „kontaminiran“ preparat prepisao lekar ili dao lični trener. Međutim, iako se utvrđivanje da li je došlo do prekršaja antidoping pravila zasniva se na „strogoj odgovornosti“, izricanja sankcije zabrane učešća na takmičenjima nije automatsko. Dužina zabrane učešća na takmičenju zavise od postojanja krivice, odnosno stepena krivice. Sportista ima mogućnost da izbegne ili umanji kaznu zabrane učešća na takmičenjima ako dokaže da nije kriv, odnosno odgovoran za propust ili

nemar, odnosno da je postupao bez značajnog propusta ili nemara (nehata). Kada će to biti slučaj, bliže je pojašnjavano brojnim odlukama Arbitražnog suda za sport u Lozani (CAS). Problem je posebno izražen u situaciji kada je propisana sankcija određena u većem vremenskom rasponu.

Slučajevi hrvatskog tenisera Marina Čilića i srpskog tenisera Voktora Troickog iz 2013. godine izazvali su brojne kontraverze u hrvatskoj i srpskoj sportskoj javnosti, koja je skoro bez izuzetka bila na strani ovih tenisera, smatrajući da su im izrečene kazne prestroge, imajući u vidu njihovu krivicu za povrede antidoping pravila koja su im stavljenе na teret. Autor u radu analizira kriterijume iz Svetskog antidoping kodeksa i Antidoping programa Međunarodne teniske federacije za odmeravanje kazne zabrane učešća sportista na takmičenjima zbog povrede antidoping pravila sa stanovišta krivice sportiste. U radu se posebno ukazuje da je proces u slučaju Čilić pred ITF nezavisnim antidoping sudom i pred Međunarodnim arbitražnim sudom za sport u Lozani poslužio da se od strane CASa detaljnije precizira mehanizam i kriterijumi za odmeravanje kazne zabrane učešća, u situaciji kada je za određenu sporну povredu antidoping pravila propisan raspon kazne od 0 do 24 meseca.

Ključne reči

doping, sportista, krivica, CAS, zabrana učešća na takmičenjima, tenis

IMPACT OF ATHLETE'S GUILT ON BAN NOT TO PARTICIPATE IN THE COMPETITION BECAUSE OF ANTI-DOPING RULES VIOLATION - CASES MARIN CILIC AND VIKTOR TROICKI

Nenad Djurdjević, Faculty of Law, University of Kragujevac

An integral part of the fight against doping in sport is a system of sanctions that afflict athletes who do not respect the regulations related to the fight against doping. One of the most controversial problems of doping in sport is a matter of the length of ineligibility of the athlete in competitions and other sport activities, except the one concerning the anti-doping education. World Antidoping Code adopted the rule of so-called "Strict liability". According to that rule, the anti-doping rules violation was committed whenever a prohibited substance is found in a sample of the athlete. It is each athlete responsibility to secure himself that any medicine, supplement or any other product does not contain a prohibited substance. Athlete does not justify the fact that he got, for example, a certain "contaminated" product prescribed by a physician or sport personal. However, although the determination of anti-doping rules violation rules is based on the "strict liability", imposing a sanction is not automatic. Length of the ban on participation in the competition depends on the existence of guilt, or the degree of guilt. The athlete has the possibility to avoid or lessen the ban if he/she proves not guilty or responsible for the omission or negligence, or that he acted without significant omission or negligence. When will that be the case, closer be described by numerous decisions of the Court of Arbitration for Sport in Lausanne (CAS). The problem is particularly interesting in a

situation where the prescribed sanction is determined in a larger time span.

Cases of Croatian tennis player Marin Cilic and Serbian tennis player Viktor Troick of 2013 caused numerous controversies in Croatian and Serbian sports public opinion, which has almost consistently been on the side of the players, considering that they had imposed too strict penalties, relating to their guilt for anti-doping rules violation. The author analyses the criteria of the World Anti-Doping Code and the Anti-Doping Program of the International Tennis Federation for ineligibility of the

athletes for anti-doping rules violation from the point of the guilt. The paper in particular analyse the Cilic case in front of ITF independent anti-doping tribunal and the Court of Arbitration for Sport in Lausanne in order to specifies the mechanism and criteria for sentencing ineligibility, in a situation where a particular disputed anti-doping rules violation prescribed sentencing range from 0 to 24 months.

Keywords

doping, athletes, guilt, CAS, ban participation in competitions, tennis

III SESIJA – SPORTSKA FARMAKOLOGIJA

III SESSION – SPORTS PHARMACOLOGY



Vladimir Jakovljević, redovni profesor Fakulteta medicinskih nauka Univerziteta u Kragujevcu i specijalista kliničke fiziologije. Njegova glavna polja naučnog interesovanja i istraživanja su fiziologija kardiovaskularnog sistema i fiziologija fizičkog opterećenja. Iz oblasti fiziologije fizičkog opterećenja, pogotovo uloge oksidaciono-redukcionalnih procesa u njemu objavio je 15-tak radova u vodećim inostranim časopisima, kao i jedno poglavlje u inostranoj monografiji. Pored svog nastavnog i naučno-istraživačkog rada, Prof. Jakovljević skoro 20 godina radi sa vrhunskim sportistima, a u njegovoj biografiji najznačajnije mesto zauzimaju uloga šefa medicinske ekipе RK „Partizan“ od 2007. godine, kao i lekara ženske rukometne reprezenatacije Srbije od 2011. godine. U tom periodu su obe sportske ekipе ostvarile mnogo značajnih rezultata (RK „Partizan“ 3 titule državnog prvaka, 4 nacionalna kupa, 3 superkupa, 2 učešća u Ligi šampiona; ženska rukometna reprezenatacija Srbije 4. mesto na Evropskom šampionatu 2012. i srebrna medalja na Svetskom šampionatu 2013. godine).

Vladimir Jakovljević, Full Professor of Faculty of Medical Sciences, University of Kragujevac and specialist of clinical physiology. His main fields of scientific research and studies are physiology of the cardiovascular system and the physiology of exercise. In the field of exercise physiology, especially the role of oxidation-reduction processes he has published about 15 papers in leading international journals, as well as a chapter in the foreign monograph. In addition to his teaching and scientific research, Prof. Jakovljevic is nearly 20 years working with top athletes. In his biography, most important are the role of the head of the medical team of handball team "Partizan" from 2007, as well as team doctors of national women handball team of Serbia since 2011. During this period, both teams achieved many significant results. Handball club "Partizan" won 3 times the State Championship, 4 National Cups, 3 Super Cups, 2 times they participated in the Champions League; women handball national team of Serbia have won 4th place at the European Championship 2012 and 2nd place (silver medal) at the World Championship 2013).

13. ULOGA SPORTSKOG LEKARA: POGLED SA KATEDRE NA SPORTSKI TEREN

Vladimir Lj. Jakovljević, Katedra za fiziologiju, Fakultet medicinskih nauka, Univerzitet u Kragujevcu

Skoro dvadesetogodišnje radno iskustvo u sportskoj medicini, kao i više od deset godina u rukovođenju Katedrom za poslediplomsko usavršavanje iz sportske medicine mi delom daje za pravo da mogu da prezentujem određene svakodnevne probleme sa kojima se svaki sportski lekar može

sresti u svom radu. Edukacija u sportskoj medicini je jedan veoma delikatan problem, koji u našoj zemlji, na žalost, lebdi u vazduhu od svog formiranja. Ovu lepu i intrigantnu granu medicine do kraja ne prihvata ni medicina, ni sport. Za medicinu ona je godinama bila oaza za ne baš najbolje i ne baš najvrednije lekare, koji su više vremena provodili prateći sport, a ne medicinu. S druge strane, zahvaljući oskudnom obrazovanju naših sportskih radnika, oni često nisu bili u stanju, ili nisu hteli, da razlikuju lekara od fizioterapeuta ili tehničara i, shodno tome, da mu daju adekvatnu ulogu

u stručnom štabu bilo koje sportske ekipe.

Teoretski i praktično to nije tako i to je nešto čemu naša Katedra teži od kada ja imam zadovoljstvo da njome rukovodim. Jer, bez adekvatne i dobre edukacije, sam sportski lekar ne može biti pripremljen za ono što ga očekuje u njegovoј kasnijoj praksi, a to je da bude jedan visokosofisticarni specijalista opšte medicine, sa adekvatnim znanjem: fiziologije i to njenog najtežeg dela – fiziologije napora, interne medicine, ortopedije, ishrane, dopinga, kao i da istovremeno bude jedna vrsta psihologa i pedagoga. Ovo poslednje dve komponente nisu ni malo zanemarljive, s obzirom da su lekari i fizioterapeuti u sportskim ekipama obično spona između stručnog štaba, uprave i igrača, kao i da je našim sportistima i sportskim radnicima generalno potrebna temeljna edukacija iz svih oblasti koje sam napomenuo.

Pored edukativne note, naš tim je u poslednjih 5 godina dao solidne rezultate i u istraživanjima iz ove oblasti, jer, kao što je rekao Paracelsus: „Nije poenta samo lečiti, nego lečiti i istraživati“. Deset radova u prestižnim časopisima iz oblasti fiziologije napora daju nam za pravo da kažemo da smo dali određeni doprinos u ovoj naučnoj oblasti.

ROLE OF THE SPORTS DOCTOR: THE VIEW FROM THE SPORTS MEDICINE CATHEDRA TO THE SPORTS FIELD

Vladimir Lj. Jakovljević, Cathedra of Physiology, Faculty of Medicine, University of Kragujevac

Nearly twenty years of experience in sports medicine, as well as more than ten years in the management of the Cathedra of postgraduate training in sports medicine gives me the right to be able to present certain everyday problems which every sports physician may encounter in their work. Education in sports medicine

is a very delicate issue, which is in our country, unfortunately, hanging in the air since its establishment. This beautiful and intriguing branch of medicine is not accepted fully neither by medicine neither by sports. In medicine, it has for years been an oasis for not so good and not so respected doctors, who have spent more time following the sport, not the medicine of sport. On the other hand, thanks to the limited education of our sports officials, they often were unable, or unwilling, to distinguish a doctor from physical therapist or technician and, consequently, to give them proper role in the sport entourage of any sports team.

Theoretically and practically it should not be like that. Thus, our Cathedra is working to change that from the moment I had the pleasure run. Because, without adequate and good education, a sports physician can not be prepared for what waits him in practise, which is to be one highly sophisticated general medicine specialist, with adequate knowledge of physiology and its hardest part – exercise physiology, internal medicine, orthopedics, nutrition, doping, and at the same time be a kind of psychologist and teacher. The latter two components are not at all negligible, since doctors and physiotherapists in sports teams are usually link between the coaches, club managemnet and players. Secondly, our athletes and sport entourage generally require a basic education in all mentioned areas.

Beyond education in the past 5 years, our team has given solid results in research in this area because, as Paracelsus said: “It is not the point only to cure humans, but to cure and research.” Ten papers in prestigious journals in the field of exercise physiology give us the right to say that we made a contribution in this field of science.



Biljana Stojanović, PhD. Specijalistički rad iz Ispitivanja i kontrole lekova odbranila je 2008. godine. Angažovana je u i izvođenju teorijske i praktične nastave u okviru dodiplomske i poslediplomske nastave na Farmaceutskom fakultetu Univerziteta u Beogradu. Koautor je udžbenika za praktičnu nastavu: Farmaceutska analiza, praktikum, Beograd, 2010. Recenzent je u 20 časopisa sa SCI liste, kao i u 1 časopisu nacionalnog značaja. Po pozivu, bila je gostujući urednik časopisa Chromatographia za specijalni broj pod nazivom Chemometrcs in Chromatography koji je izšao 2013. godine. Do sada je publikovala 81 naučni rad od kojih je 75 štampano časopisima sa SCI liste. Autor je 4 pogлавља u monografijama međunarodnog značaja. Učestvovala je sa 5 usmenih izlaganja na skupovima međunarodnog i nacionalnog značaja. Pored toga, ima 106 publikacija saopštenih na skupovima međunarodnog i nacionalnog značaja. Ekspert je Agencije za lekove i medicinska sredstva Crne Gore i Agencije za lekove i medicinska sredstva Srbije, kao i tehnički ekspert Akreditacionog tela Srbije. Član Saveza farmaceutskih udruženja Srbije i član Uredništva časopisa Arhiv za farmaciju.

Biljana Stojanovic PhD. 2008 she finished specialization in Investigation and quality control of drugs. For the best masther thesis, in 2005, she got annual prize from Chamber of Commerce and Industry of Serbia. She is actively participating in practical and theoretical studies for both undergraduate and postgraduate studies at University of Belgrade, Faculty of Pharmacy. She is a coauthor of the book for practical studies – Pharmaceutical Analysis, Belgrade, 2010. She is reviewer in 20 scientific journals from SCI list as well as in one journal of national interest. She was a guest editor by invitation in Chromatographia for the special issue Chemometrcs in Chromatography, printed in 2013.Untill the present day, she published 81 scientific papers from which 75 papers were printed in journals from the SCI list. She is an author of 4 chapters in books of international importance. She participated with 5 oral presentations at symposia of international and national significance. Besides those, she has 106 publications announced at symposia of international and national significance. She is an expert for Medicines and Medical Devices Agency of Serbia as well as for Medicines and Medical Devices Agency of Montenegro, but also she is a technical expert for the Accreditation body of Sebia. She is the member of Pharmaceutical Association of Serbia and the member of Editorial bord of the Archive for Pharmacy journal.

14. SPORTSKA FARMACIJA U SLUŽBI VRHUNSKOG REZULTATA

Biljana Stojanović, Darko Ivanović, Univerzitet u Beogradu – Farmaceutski fakultet, Katedra za analitiku lekova

U današnje vreme postizanje vrhunskog rezultata u sportu gotovo da je nemoguće bez dobrog poznавања наčina ishrane

sportista, praćenja biohemijskih i hematoloških parametara, lekova koje koriste u terapiji, kao i bez poznавања sistema kontrole dopinga. Uzimajući u obzir kompleksnost celog sistema, kao i činjenicu da je za postizanje željenog rezultata potreban timski rad u kome učestvuje veliki broj profesija, ovde je izdvojena kao po-

sebno značajna uloga farmaceuta. Veštine i znanja koja su neophodna farmaceutu da bi sa punim pravom bio deo tima koji prati jednog sportistu ili celu ekipu objedinjene su u Sportskoj farmaciji. U ovoj disciplini, farmaceut ima sledeće uloge: savetodavnu i edukativnu u prevenciji dopinga, rad u kontrolnim laboratorijama (analiza materijala – sakupljanje, čuvanje i priprema uzoraka, skrining testovi i primena različitih instrumentalnih metoda za kvalitativnu i kvantitativnu analizu), zatim pravilno dizajniranje dijete, primena lekova, snabdevanje lekovima, kao i praćenje i analiza uticaja lekova na biohemijske i hematološke parametre. Svaka od ovih uloga je kompleksna i zahteva posebna znanja koja se stiču kroz različite predmete, ali se u okviru Sportske farmacije objedinjuju u jednu svrshodnu celinu koja daje farmaceutu odgovarajuća znanja i kompetentnost. Kroz Sportsku farmaciju osposobljavaju se farmaceuti za primenu stečenih znanja u praćenju korišćenja lekova u sportu, poznavanju zakonske regulative u oblasti sporta i sankcionisanju dopinga, prevenciji i kontroli dopinga, edukaciji sportista i rekreativaca o upotrebi i zloupotrebi lekova. Stečenim znanjima farmaceut može dati svoj doprinos kao pojedinac, učestvujući u različitim nivoima edukacije u rekreativnom i u profesionalnom sportu, ali i kao deo tima koji brine o zdravlju sportista. Takođe, posebno je značajno da se prikaže na koji način se farmaceuti mogu uključiti u sportsku farmaciju, uzimajući u obzir iskustva koja postoje širom sveta. S obzirom na multidisciplinarnost koja je ovde posebno naglašena, jasno je da edukacija ima poseban značaj, jer podrazumeva angažovanje stručnjaka iz različitih oblasti farmacije, čime se i dodatno potvrđuje značaj u uloga Sportske farmacije.

SPORTS PHARMACY IN THE SERVICE OF THE ACHIEVEMENT OF THE HIGH LEVEL RESULTS

Biljana Stojanović, Darko Ivanović, University of Belgrade,
Faculty of Pharmacy, Department of Drug Analysis

In recent times, achieving the high level results in sport is almost impossible without adequate knowledge of the athlete's diet, of the drugs that are used in therapy and doping control system, but also without monitoring biochemical and hematological parameters. Taking into account complexity of the whole system, as well as the fact that the desired results require team work of many professions, this paper emphasizes the importance of the role of pharmacist. The knowledge and skills which are necessary for a pharmacist to be a part of the team that follows an individual athlete or the whole team are incorporated in Sports pharmacy. In this discipline, pharmacist has the following roles: consulting and educating with the aim of doping prevention, work in control laboratories (sample analysis – collection, storage and sample preparation, screening tests and application of different instrumental methods for qualitative and quantitative analysis), then adequate designing of the diet, drug application and supply, as well as monitoring and analysis of drug impact on biochemical and hematological parameters. Each of these roles is complex and requires special knowledge which can be acquired through different courses, but are all gathered in Sports pharmacy into one purposeful whole, which gives adequate knowledge and competence to a pharmacist. Through Sports pharmacy pharmacists are being trained for the application of gained knowledge in monitoring of drug consumption in sport, education of professional and recreational

sportsmen about use and abuse of drugs, also they are informed about legislation in the field of sport as well as sanctioning of doping, prevention and control of doping. With gained knowledge, a pharmacist can give its contribution as an individual by participating in different levels of education in recreational and professional sport, but also as the part of the team that takes care about athlete's health. Furthermore, it is of great importance to show how phar-

macists can be included in Sports pharmacy, taking into consideration experiences that exist throughout the world. Taking into consideration multidisciplinary of Sports pharmacy which is especially emphasized in this paper, it is clear that education has special significance, because it means engagement of specialists from different fields of pharmacy, which is another confirmation of importance and role of Sports pharmacy.



Dr **Marija Andelković** radi u Antidoping agenciji Republike Srbije od 2008. godine na poziciji samostalnog savetnika za RTG i TUE. Na Olimpijskim igrama (OG) u Vankuveru 2010. godine bila je u timu Svetske antidoping agencije gde je sprovodila edukaciju sportista iz oblasti dopinga i suplementacije, dok je na OG u Londonu 2012. godine bila doping kontrolor u ženskom fudbalu. U toku pisanja ovog apstrakta takođe sprovodi doping testiranje na prvim Evropskim olimpijskim igrama u Azerbejdžanu. Završila je dvogodišnji kurs Međunarodnog Olimpijskog komiteta za sportsku ishranu. Više od četiri godine vodi Centar za sportsku ishranu i suplementaciju. Trenutno se nalazi na doktorskim studijama iz sportske medicine i na specijalizaciji iz kliničke farmakologije. Aktivan je član Udruženja za medicinu sporta Srbije.

Dr. **Marija Andjelkovic** works in Anti-Doping Agency of Serbia from 2008 at the position of W/A and TUE manager. During the Olympic Games (OG) in Vancouver in year 2010 she was on the WADA team in charge for Athlete Outreach program and education in the field of doping and supplementation, while at the OG in London in 2012 she was a doping control officer in women's football. During the writing of this abstract she is also conducting doping controls at the first European Olympic Games in Azerbaijan. She completed a two-year course organized by International Olympic Committee and got diploma in sport nutrition. Over four years, she leads the Centre for sports nutrition and supplementation. He is currently at PhD in sports medicine and at the specialization in clinical pharmacology. She is an active member of the Sports Medicine Association of Serbia.

15. ODGOVORNOST „SPORT ENTOURAGE“ – DRUGA STRANA MEDALJE

Marija Andelković¹, Milica Vukašinović Vesić¹, Bojan Vajagić¹, Nenad Dikić¹, Radan Stojanović²

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Stručni tim sportiste tj. „sport entourage“ je pojam koji postoji duži niz godina, ali mu je u novom Antidoping kodeksu dat smisao koji u prvi plan ističe odgovornost! Pri tome se misli na odgovornost svih osoba koje okružuju sportistu i učestvuju u postizanju njegovog uspeha i osvajanju medalja. Jedna od najznačajnijih izmena antidoping Kodeksa koji je stupio na snagu 2015 godine, tiče se upravo definisanja

uloge stručnog tima sportiste u procesu povrede različitih antidoping pravila. Novim Kodeksom se od nacionalnih federacija zahteva da usvoje i primene pravilnike koje obavezuju „sport entourage“ da poštuju antidoping pravila i da snose odgovornost ukoliko ih prekrše. Prepoznato je da medicinsko i/ili paramedicinsko osoblje ima značajnu, ponekad presudnu ulogu u uspehu sportiste, pa su zato jasno uključeni u odredbe Kodeksa.

Publikacija Udruženja za medicinu sporta Srbije iz 2008. godine „Timski doktor - karička koja nedostaje“, najbolje opisuje da je najveći problem u Srbiji vezano za medicinski stručni tim taj što on često uopšte i ne postoji. Prisustvo timskog doktora je i danas ostala „privilegija“ određenih klubova, a najveći broj njih angažuje lekare „po potrebi“ za takmičenja ili pripreme.

Sportisti su često oslojeni na fizioterapeute kao jedine osobe medicinskog tima koje mogu da ih savetuju po različitim pitanjima. Kada ne postoji pomoć ni lekara ni fizioterapeuta, sportista savet prilikom kupovine lekova i/ili suplemenata traži od farmaceuta u apoteci, pri čemu uvek postoji neizvesnost u pogledu prepoznavanja nedozvoljenih supstanci.

Odsustvo uređenog sistema medicinske podrške, nedovoljna edukacija i slaba motivacija dovode do toga da medicinski „sport entourage”, za koji se uvek podrazumeva da pruža značajnu podršku, na kraju napravi i značajne greške. Tako smo do sada u Srbiji imali zabeležen slučaj prepisivanja terapije za hipertenziju koja je u sebi sadržala diuretik nakon čega je sportista bio doping pozitivan, zatim slučaj pozitivnog nalaza stimulansa koji se resorbovao nakon „terapijske” primene kapi za nos koja je savetovana od strane stomatologa, do toga da je sportista na savet lekara, ali bez recepta, u državnoj apoteci kupio od farmaceuta magistralni lek sa efedrinom na koji je i bio doping pozitivan. Odgovornost zdravstvenih radnika zahtevana je u svim navedenim situacijama, ali je samo prvi slučaj okončan do kraja. Antidoping agencija Republike Srbije se svrstava u redak broj agencija u regionu koja je procesuirala greške zdravstvenih radnika.

Međutim, najveći problem se ne krije u situacijama u kojima je greška stručnog tima doveća do doping pozitivnog rezultata, već upravo u svakodnevnoj borbi sportista da dobiju ispravan savet i odgovarajuću edukaciju.

Dok se javnost u svetu zadovoljava otkrivanjem imena lekara, fizioterapeuta i/ili farmaceuta koji su učestovali u sistemskom dopingovanju kao što je to slučaj sa dr Viktorom Kontem, dr Eufemianom

Fuentes ili npr.doktorima iz slučaja Lens Amstronga, odnos Antidoping agencije Republike Srbije prema greškama zdravstvenih radnika je drugačijeg karaktera. U Srbiji se već godinama pre svega vodi borba za edukaciju i odgovornost! Edukacija sportista, svih sportskih radnika i medicinskog „sport entouraga” je važna zbog preuzimanja odgovornosti za lečenje i prepisivanje terapije koja sportistu može da košta karijere. U prilog tezi da se mora raditi više govori i podatak da za deset godina postojanja ADAS u Srbiji postoji prijavljenih samo 185 Izuzetaka za terapeutsku upotrebu (TUE), dok neke druge antidoping agencije beleže taj broj na godišnjem nivou. Posebno je pitanje opravdanosti davanja sistemskih kortikosteroida kao najčešće terapije za koju je zahtevan TUE, koje se i dalje zasniva na stručnosti i ekspertizi medicinskog tima.

Sa željom da se sportistima dodatno pomogne i olakša uzimanje terapije bez rizika po doping pozitivan rezultat, ADAS je na svom sajtu aktivirao Mišljenje o prisustvu zabranjenih doping supstanci u leku koji je za dve godine popunilo samo 40 sportista, dok je Mišljenje o prisustvu zabranjenih doping supstanci u suplementu popunilo više od 100 sportista. Samo su u retkim situacijama lekari popunili ovo mišljenje, iako su mnoga istraživanja pokazala da u malom procentu poznaju Listu zabranjenih supstanci.

Kada sportista osvoji medalju, na postolju često ne postoji dovoljno mesta za sve članove stručnog tima koji žele sa njim da dele taj uspeh. Druga strana medalje govori o suprotnom - kada se otkrije da je sportista doping pozitivan napuštaju ga svi oni koji su delili tron sa njim. Doping pozitivan sportista najčešće ostaje sam u borbi za koju je ishod neizvestan a osuda javnosti velika i nemilosrdna. Situacija

je još teža ako je nastala usled greške i/ili neznanja lekara, fizioterapeuta ili farmaceuta. Zato pozivamo sve članove medicinskog „sport entourage“ na odgovornost ne samo za učinjeno, već i za sve što nije učinjeno s njihove strane u cilju edukacije i prevencije dopinga u sportu.

RESPONSIBILITY OF “SPORT ENTOURAGE” - THE OTHER SIDE OF THE MEDAL

Marija Andjelkovic¹, Milica Vukasinovic Vesic¹, Bojan Vajagic¹, Nenad Dikic¹, Radan Stojanovic²

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“Sports Entourage” is a concept that has existed for many years but with the new World Anti-Doping Code gives the sense that places an emphasis on responsibility! This refers to the responsibility of all the people that surround an athlete and participate in the achievement of its success and winning medals. One of the most significant changes in the World Anti-Doping Code which entered into force in 2015, concern the definition of the role of Athlete Support Personnel in the various anti-doping rule violation. The new Code required from the national sport federation to adopt and implement regulations that obligate “sport entourage” to respect the anti-doping rules and be held responsible if they break. It is recognized that medical and / or paramedical staff has significant, sometimes crucial role in the success of the athletes, so they are clearly included in the Code.

Sports Medicine Association of Serbia published publication in year 2008 called “Team doctor - the missing link”, which

describes authentically the biggest problem in Serbia related to the medical expert team – it often does not exist. The presence of a team doctor has remained the “privilege” of certain clubs, and most of them engage physicians “on demand” for competition or training. Athletes often rely on physiotherapists as the only person in medical team that can advise them on various issues. When there is no help from doctors or physiotherapists, athletes search advice from pharmacist when he is purchasing drugs and / or supplements and there is always uncertainty about the recognition of prohibited substances.

The absence of a medical support system, insufficient education and poor motivation have led to fact that medical “sport entourage,” which always implies that provides significant support, in the end made significant mistakes. So far, we recorded in Serbia a case of prescribing drug for hypertension that contained a diuretic after which the athlete was doping positive, then the case of a positive finding of stimulants which was reabsorbed after the “therapeutic” application of nose drops, advised by the dentist, to the fact that the athletes bought from pharmacists the ephedrine main drug on medical advice but without a prescription, on which he was doping positive after. The responsibility of health professionals was required in all of these situations, but only the first case completed by the end. Anti-doping Agency of Serbia is among the rare number of agencies in the region that prosecuted the errors of health workers.

However, the biggest problem is not hiding in situations where the fault of the athlete support personal led to doping positive result, but in the daily struggle of athletes to get the correct advice and appropriate education.

1. KONGRES O PREVENCICI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

While the world public reveals the names of doctors, physiotherapists and / or pharmacists who participated in systematic doping as is the case with Dr. Victor Conte, Dr. Fuentes Eufemianom or doctors from Lance Armstrong case, the relationship between Anti-Doping Agency of Serbia towards mistakes of health professionals has a different character. In Serbia, for years we primarily struggle for education and responsibility! Education of athletes all sports and medical professionals in "sport entourage" is important because of taking responsibility for treating that can cost athlete of his career. The fact that justifies the need to be done more is revealed in information that for ten years of ADAS existence, in Serbia has been reported only 185 therapeutic use exemptions (TUE), while other Anti-Doping Agency recorded that number on annually basis. In particular, the question of justification for giving systemic corticosteroids, the most common treatment for which the TUE is required, is still based on the expertise of the medical team.

With the idea to further help the athletes and facilitate the drug treatment without risking the doping positive result, ADAS on put on its website "Opinion of pres-

ence of prohibited doping substances in the drugs" that is for two years, completed only 40 athletes, while the "Opinion of the presence of prohibited doping substances in the supplement" completed more than 100 athletes. Only in rare situations doctors completed these opinions, although many studies have shown that a small percentage of them are familiar with prohibited list.

When an athlete wins a medal often there are not enough places for all members of support personal on the podium in sharing that success with him. The other side of the medal speaks about the contrary – when the athlete is doping positive, all those who shared the throne with him just disappears. Doping positive athlete is usually left alone in the fight for which the outcome is uncertain and the public criticism is huge and ruthless. The situation is even worse if it is caused by faulty and / or ignorance of doctors, physiotherapists and pharmacists. We therefore call for responsibility of all members in the medical "sport entourage" not only for what they have done, but for all that hasn't been done was done by them in order to educate and prevent doping in sport.

**SVEĆANA SESIJA POVODOM 20 GODINA
UDRUŽENJA ZA MEDICINU SPORTA
SRBIJE I 10 GODINA ANTIDOPING
AGENCIJE REPUBLIKE SRBIJE**

**THE JUBILLE SESSION ON THE
OCCASION OF 20 YEARS OF SPORTS
MEDICINE ASSOCIATION OF SERBIA
AND 10 YEARS ANTI-DOPING AGENCY
OF SERBIA**



Slobodan Živanić, PhD, Prof. specijalista medicine sporta. Predsednik i osnivač Udruženja za medicinu sporta Srbije (UMSS). Počasni predsednik Sekcije za sportsku medicinu SLD i UMSS. Predavao na Medicinskom fakultetu u Beogradu, Medicinskom fakultetu u Novom Sadu, Fakultetu sporta i fizičkog vaspitanja u Beogradu, Visokoj školi za sport i zdravstvo, Školi sportske medicine Evropskog centra za mir i razvoj (ECPD), Školi sportske medicine Udruženja ljekara sportske medicine Republike Srpske, Regionalnim seminarima sportske medicine Međunarodnog olimpijskog komiteta (MOK). Član EFSMA, FIMS, ECSS i BSMA.

Autor knjiga: Aerobna sposobnost, Osnove monitoringa srčane frekvencije u sportu i rekreaciji, Sportskomedicinski pregled – metodologija i preporuke i Sportska medicina.

Slobodan Živanic, PhD, Prof, sports medicine specialist. President and founder of the Sports Medicine Association of Serbia (SMAS). Honorary Chairman of the Section on Sports Medicine SLD and SMAS. He has lectured at the Faculty of Medicine in Belgrade, Faculty of Medicine in Novi Sad, Faculty of Sport and Physical Education in Belgrade, College of Sports and Healthcare, School of Sports Medicine of the European Centre for Peace and Development (ECPD), the School of Sports Medicine Association of doctor of sports medicine of the Republic of Srpska, regional seminars of sports medicine under auspices of International Olympic Committee (IOC). Member EFSM, FIMS, ECSS and BSMA.

Author of books: Aerobic capacity, Fundamentals of monitoring heart rate in sport and recreation, Sportsmedical examination- methodologies and recommendations and Sports Medicine.



Zdeslav Zdenko Milinković, redovni profesor ortopedije. Specijalista ortopedске hirurgije i traumatologije, direktor spinalnog centra Milinković. Od 1973 godine lekar Specijalne ortopedsko hirurške bolnice Banjica, višegodišnji načelnik odeljenja, idejni tvorac, osnivač i upravnik Spinalnog centra Banjica. Gostujući profesor u SAD, Italiji, Grčkoj, Rumuniji, Bugarskoj, Turskoj, BiH, Sloveniji, Crnoj Gori i Austriji.

Član Svetskog udruženja ortopeda i traumatologa (SICOT), član, osnivač i prvi predsednik Spine Expert Group, član i osnivač Evropskog udruženja za deformacije kičme (ESDS), član Spine Society of Europe, počasni član Turskog ortopedskog udruženja, počasni član Srpskog ortopedsko traumatoloskog udruženja (SOTA), Predsednik Udruženja za medicinu sporta Srbije.

Lekar sportskog društva Partizan, lekar Davis i Fed Cup tima i Predsednik zdravstvene komisije Teniskog saveza Srbije, član zdravstvene komisije Olimpijskog komitata Srbije. Član zdravstvene komisije Fudbalskog saveza Srbije. Predsednik zdravstvene komisije Biciklističkog saveza Srbije.

Autor i koautor u 16 knjiga objavljenih na našem i engleskom jeziku. Objavio i saopštilo preko 260 stručnih radova.

Reprezentativac Beograda, Srbije i Jugoslavije u rukometu u pionirskoj i omladinskoj konkurenциji. Seniorski prvak Beograda, Srbije i Jugoslavije u karateu. Nosioc crnog pojasa 5 dan u karateu, licencirani trener i internacionalni sudija u karateu.

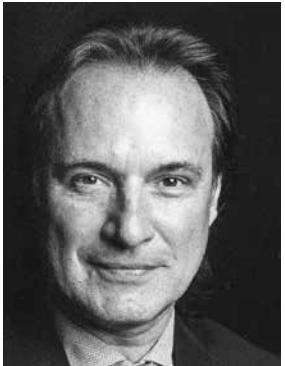
Zdeslav Zdenko Milinković, professor of orthopaedics. Specialist of orthopaedic surgery and traumatology and Director of Spinal Center Milinkovic. Since 1973 Physician of Special Orthopaedic Surgical Hospital Banjica, Head of the department, creator, founder and manager of the Spinal center Banjica. Visiting professor in the United States, Italy, Greece, Romania, Bulgaria, Turkey, Bosnia and Herzegovina, Slovenia, Montenegro and Austria.

Member of the International Society of Orthopaedic Surgery and Traumatology (SICOT), founding member and the first president Spine Expert Group, a founding member of the European Spinal Deformity Society (ESDS), member of the Spine Society Of Europe, Honorary Member Of Turkish Orthopaedic Association, Honorary Member Of Serbian Orthopaedic Trauma Association (SOTA), President Sports Medicine Association of Serbian (SMAS).

Doctor of Sports association of Partizan, Doctor of Davis And Fed Cup Team And Medical Commission Chairman of Tennis Association of Serbia, member of health commission of Olympic Committee of Serbia. Member of Medical Commission of the Football Association of Serbia. Chairman of Medical Commission Cycling Federation of Serbia.

Author and co-author of 16 books published on Serbian and English language. He has presented over 260 abstracts and papers.

Member of pioneer and youth handball team of Belgrade, Serbia and Yugoslavia. Senior champion of Belgrade, Serbia and Yugoslavia in karate. He has the five-degree black belt in karate and he is a licensed trainer and international judge in karate.



Nenad Dikić je predsednik odbora za doping kontrolu ADAS i docent na Fakulteta za fizičku kulturu i menadžment u sportu, Univerziteta Singidunum, Beograd. Predsednik odbora doping kontrolora Antidoping agencije Republike Srbije, UEFA doping kontrolor, potpredsednik Medicinskog saveta FIBA Europe, Predsednik Antidoping komisije Internacionalne asocijacije za planinarenje i penjanje (UIAA), Predsednik TUE komisije Internacionalne asocijacije za skijanje na vodi (IWWF) i član TUE komisije International Handball Federation. Dr Dikić je bio generalni sekretar Udruženja za medicinu sporta Srbije 10 godina (UMSS / SMAS), član Medicinske komisije Olimpijskog komiteta Srbije 8 godina, član Izvršnog odbora Balkanske asocijacije sportske medicine 8 godina (BSMA), član odbora za nauku i edukaciju Evropske federacije sport-sko-medicinskih asocijacija 8 godina (EFSMA) i Evropskog koledža sportskih nauka 8 godina (ECSS). Član je skupštine Internacionalne federacije sportske medicine (FIMS). Takodje, je bio je Predsednik 10. Evropskog koledža sporstkih nauka i FIBA Anti-doping simpozijuma na Eurobasketu 2005.

Završio je specijalizaciju iz interne medicine i baromedicine, a trenutno se nalazi na specijalizaciji iz Kliničke farmakologije. Magistirao je iz oblasti kardiologije i reumatologije ne temu reumatske groznice. Doktorirao je iz sportskog menadžmenta. Osnivač je Jugoslovenskog udruženja za ultrazvuk srca, Mreže za pomoć roniocima (Divers Alert Network), Udruženja za sportsku kardiologiju Srbije, Centra za sportsku ishranu i suplementaciju. Autor je 40 knjiga, nekoliko popularnih izdanja od čega jednog filma i CD-roma i velikog broja stručnih članaka i radova.

Nenad Dikic is the President of the Doping control board of ADAS and Assistant Professor at the Faculty of Physical Education and Sports Management, Singidunum University, Belgrade. He is UEFA and FIFA doping control officer, Vice President of the Medical Council of FIBA Europe, President of the Anti-Doping Commission of the International mountaineering and climbing federation (UIAA), President of the TUE committee of the International wakeboard and waterski federation (IWWF) and member of International Handball Federation (IHF). He was Secretary General of Sports Medicine Association of Serbia 10 years, a member of the Medical Commission of the Olympic Committee of Serbia 8 years, member of the Executive Committee of the Balkan Association of Sports Medicine (BSMA) 8 years, a member of the Board of Science and Education of the European Federation of Sportsmedicine Associations (EFSMA) 8 years and the European College of Sport Science (ECSS) 8 years and member of the Assembly of the International Federation of Sports Medicine (FIMS). Also, he was President of the 10th Congress of European College of Sports Science and the FIBA Anti-Doping Symposium on Eurobasket 2005.

He completed his residency in internal medicine cardiology and hyperbaric medicine and he is currently specializing Clinical Pharmacology. His master's degree is in cardiology and rheumatology regarding rheumatic fever and PhD in sports management. He is the founder of the Yugoslav Association of Echocardiography, the Divers Alert Network for Balkan, the Sports Cardiology Association of Serbia and the Centre for sports nutrition and supplementation. Author of 40 books, several popular editions, film about handicap scuba diving, CD-ROM about hyperbaric medicine and a large number of scientific abstracts and papers.

U znak sećanja / In Honour



Dr **Milutin Ivković** (1906-1943), lekar dermatolog, legendarni desni bek i kapiten fudbalske reprezentacije Jugoslavije. Učesnik Svetskog prvenstva u Montevideu. Glavni urednik mesečne revije za sport Mladost. Kao aktivnog učesnika pokreta otpora u Beogradu uhapsio ga je Gestapo i streljao u Jajincima. Njegovo ime danas nosi Dom zdravlja Palilula.

Dr. **Milutin Ivković** (1906-1943), dermatologist, the legendary right-back and captain of the Yugoslav national team. Participant of World Cup in Montevideo. The chief editor of the monthly sports magazine Mladost. As an active participant in the resistance movement in Belgrade he was arrested by the Gestapo and shot in Jajinci. The Institution of primary health care Palilula still bears his name.



Prof. dr **Vojislav Arnovljević** (1895-1989), kardiolog, redovni član SANU, direktor Propedeutičke klinike i dekan Medicinskog fakulteta u Beogradu (1946-1948). Dojen srpske kardiologije i dugogodišnji predsednik Jugoslovenskog kardiološkog društva. U mnogobrojnim publikacijama isticao je zdravstveni značaj telesnog vežbanja i sporta. Objavio prvi stručni članak iz oblasti sportske medicine u Srbiji pod nazivom „Uticaj sporta na srce“ u listu Pravda 1931. godine. Organizovao nastavu sportske medicine na Medicinskom fakultetu u Beogradu.

Prof. **Vojislav Arnovljević** (1895-1989), cardiologist, a full member of SANU, director of the Clinic of Propaedeutics and dean of the Medical Faculty in Belgrade (1946-1948). He was the doyen of Serbian cardiology and longtime president of the Yugoslav Society of Cardiology. In numerous publications he emphasized the importance of physical exercise and sport. He published the first expertly written article in the field of sports medicine in Serbia entitled "The Impact of Sport on the Heart" in the newspaper Pravda in 1931. He organized the classes of sports medicine at the Medical Faculty in Belgrade.



Prof. dr **Vojin Smoldlaka** (1912-2002), prvi lekar u Srbiji koji je medicinu sporta odabrao kao profesionalno opredeljenje, prvi specijalista sportske medicine u našoj sredini, prvi doktor nauka i profesor u ovoj oblasti na Medicinskom fakultetu i Fakultetu za fizičku kulturu u Beogradu i na Vojnomedicinskoj akademiji. Dugogodišnji član Izvršnog odbora FIMS i generalni sekretar X konгреса FIMS. Redovni profesor Medicinskog fakulteta Državnog univerziteta u Njujorku. Autor velikog broja monografija, udžbenika i knjiga koje su značajno doprinele afirmaciji i unapređenju medicine sporta u okvirima savremene medicinske nauke.

Prof. **Vojin Smoldlaka** (1912-2002), the first physician in Serbia who selected the Sports Medicine as a professional orientation, the first sports medicine specialist in our country,

the first doctor of science and professor at the Medical Faculty, the Faculty of Physical Education in Belgrade and the Military Medical Academy. A longtime member of the Executive Committee of FIMS and the Secretary General of the 10th Congress of FIMS. Tenured professor at the Faculty of Medicine of the State University of New York. Author of numerous monographs, textbooks and books that significantly contributed to the promotion and advancement of sports medicine in the framework of modern medical science.



Prof. dr Mihailo Andrejević - Andrejka (1898-1989), internista, gastroenterolog, profesor Medicinskog fakulteta u Beogradu. Levo krilo BSK u periodu od 1911. do I svetskog rata. Vođa fudbalske reprezentacije Jugoslavije na Svetskom prvenstvu u Montevideu. Jedan od inicijatora osnivanja Tuškovog fonda. Predsednik Jugoslovenskog nogometnog saveza (1937-1941). Osnivač i prvi predsednik Sekcije za sportsku medicinu SLD, prvi predsednik Udruženja sportskih lekara Jugoslavije. Od 1938. godine, punih 40 godina član izvršnog odbora FIFA, a kasnije počasni član FIFA i FIMS. Organizator i učesnik velikog broja kongresa i stručnih skupova u oblasti medicine sporta u zemlji i inostranstvu.

Prof. Dr. **Mihailo Andrejević - Andrejka** (1898-1989), an internist, a gastroenterologist, a professor at the Medical Faculty in Belgrade. Left wing of the BSK from 1911 to the First World War. The leader of the Yugoslav national team at the World Cup in Montevideo. One of the founders of the Tuško fund. The president of the Yugoslav Football Federation (1937-1941). The founder and first president of the Sports Medicine Section of SLD, the first president of Sports Physicians Association of Yugoslavia. Starting in 1938, for 40 years he was a member of the executive committee of FIFA, and later a honorary member of FIFA and FIMS. He organized and participated in a large number of conferences and professional meetings in the field of sports medicine in the country and abroad.



Prof. dr Dragan Jović (1931-1992), profesor fizijatrije i sportske medicine na Medicinskom fakultetu u Beogradu. Osnivač i prvi šef Katedre za sportsku medicinu na Medicinskom fakultetu u Beogradu. Osnivač i prvi direktor Instituta za sportsku medicinu u okviru Jugoslovenskog zavoda za fizičku kulturu i medicinu sporta. Organizovao zdravstvenu zaštitu u masovnom sportu u Beogradu preko mreže od 16 sportskih ambulanti u svim sportsko-rekreativnim centrima.

Prof. **Dragan Jović** (1931-1992), professor of physical therapy and sports medicine at the Medical Faculty in Belgrade. The founder and first head of the Department of Sports Medicine at the Medical Faculty in Belgrade. The founder and first director of the Institute of Sports Medicine within the Yugoslav Institute of Physical Culture and Sports Medicine. He organized mass sport medical care in Belgrade through a network of 16 clinics located in all sports and recreational centers.

16. Dvadeset godina UMS - od prvih koraka do međunarodnih priznanja

Slobodan Živanić, Zdeslav Milinković, Nenad Dikić

Udruženje za medicinu sporta Srbije

Kratak pregled razvoja sportske medicine u Srbiji

Prvi organizovani lekarski pregledi sportista u Beogradu započeli su još 1925. godine, dakle tri godine pre osnivanja Internationalne federacije sportske medicine (FIMS), nakon tragičnog događaja na jednoj fudbalskoj utakmici odigranoj 1924. godine¹. Tada je Beogradski loptački podsavez doneo odluku o obaveznim lekarskim pregledima svojih članova dva puta godišnje. Preglede su obavljali lekari volonteri u neuslovnim prostorijama podsaveza, a za finansiranje nabavke sanitetskog materijala i dežurstava korišćena su sredstva iz Tuškovog fonda. Zato se može smatrati da od 1925. godine počinje razvoj moderne sportske medicine u Srbiji.

Kako se zbog nerедовне uplate članarina posle nekoliko godina ovaj fond postepeno ugasio, tadašnji predsednik zdravstvenog odbora Beogradskog loptačkog podsaveza dr Milutin Ivković – Milutinac obratio se za pomoć prof. dr Vojislavu Arnovljeviću, upravniku Interne propedevtičke klinike u Beogradu. Ovaj je kao veliki prijatelj sporta na svojoj klinici 1936. godine osnovao prvu sportsku ambulantu i za šefa imenovao dr Lazara Stanojevića. U ovoj ambulanti, po-

¹Tokom utakmice između reprezentacija Beograda i Donje Austrije održane 25. juna 1924. godine, golman našeg tima Lajoš Šenfeld zvani Tuško dobio je udarac u levu slabinu, posle čega je pao kao gromom pogoden. Prenet je u bolnicu, gde je operisan, ali je podlegao povredi zato što mu je prsla od tropске malarije uvećana slezina. Ova smrt je uzbudila sportski Beograd, pa su lekari članovi klubova započeli da pregledaju igrače, da dežuraju na utakmicama i da organizuju zdravstvene sekcije pri klubovima. Kasnije je osnovan ‘Tuškov fond’ s ciljem zdravstvenog i socijalnog osiguranja igrača. (Iz autorizovanog rukopisa prof. dr Vojin Smoljaka, Njujork 1990).

red nekolicine odabranih lekara, kasnije istaknutih profesora Medicinskog fakulteta u Beogradu, radio je i tada mladi medicinar dr Vojin Smoljaka, koji će izrasti u doajena moderne sportske medicine u Srbiji.

Sportska ambulanta je radila dva puta nedeljno po dva sata sve do početka Drugog svetskog rata. Pregledi su bili besplatni. Sastojali su se od uzimanja ličnih podataka, anamneze, pregleda celog tela, rendgenskog pregleda pluća i srca, uzimanja ortodijagrama srca, izvođenja stres-testa koji se sastojao od 20 čučnjeva sa stolicom u rukama, laboratorijskog pregleda krvi i urina i po potrebi uzimanja elektrokardiograma. Fudbaleri se nisu mogli takmičiti bez pregleda koji su bili obavezni dva puta godišnje, i bez dozvole i potpisa lekara ove ambulante. Tokom rada ambulante (1936–1941) pregledano je oko 2000 fudbalera i manji broj drugih sportista.

Neposredno nakon oslobođenja 1945. godine, na inicijativu prof. dr Mihajla Andrejevića – Andrejke, u okviru Srpskog lekarskog društva formirana je Sekcija za „fiskulturnu“ (sportsku) medicinu. (U to vreme u SLD je bilo samo 12 specijalističkih sekcija.) Od pedesetih godina u većim gradovima u Srbiji počinje osnivanje ambulanti i dispanzera sportske medicine. Zahvaljujući angažovanju prof. dr Smoljake u međunarodnim asocijacijama, 1954. godine Beograd dobija organizaciju X kongresa FIMS, koja je uspešno realizovana. Godine 1959, po ugledu na zemlje istočnog bloka, i kod nas je uvedena specijalizacija „fiskulturne“ medicine, a 1970. godine na Medicinskom fakultetu u Beogradu formirana je Katedra za „fiskulturnu“ (sportsku) medicinu.

U međuvremenu je osnovano Udruženje za sportsku medicinu Jugoslavije (USMJ) koje je okupljalo članove sekcija i udruženja za sportsku medicinu iz svih republi-

ka SFRJ. USMJ je bio član međunarodne asocijacije (FIMS), a od 1971. i Balkanske asocijacije sportske medicine (BSMA). Od 1963. godine pod uredništvom prof. dr Alojzija Šefa u Ljubljani počinje da izlazi prvi jugoslovenski stručni časopis *Športnomedicinske objave* na srpskohrvatskom jeziku, kao organ USMJ. U Opatiji je 1968. godine održan Prvi kongres sportskih lekara Jugoslavije. Godine 1971. zalaganjem prof. dr Dragana Jovića, u okviru Jugoslovenskog zavoda za fizičku kulturu (JZFK) formira se Institut za medicinu sporta kojem je, pored ostalog, poveren stručni nadzor nad radom svih ambulanti i dispanzera sportske medicine u Srbiji. Institut je bio podeljen na tri odeljenja: za zdravstvenu zaštitu (1) u vrhunskom sportu, (2) u republičkom i gradskom sportu i (3) u rekreativnom sportu. Godine 1973. u Nišu je održan Treći kongres BSMA.

Krajem sedamdesetih godina objavljene su dve izvanredne monografije dr Vesne Đurđević, *Ergometrija i Sportsko srce*, koje su uz niz prevedenih publikacija² i održanih skupova značajno unapredile nivo stručnog rada u ovoj oblasti. Do početka devedesetih godina prošlog veka u Srbiji je razvijena mreža sportskih ambulanti i dispanzera u okviru domova zdravlja, kadrovska osposobljena da zadovolji potrebe za ovim vidom zdravstvene zaštite. Sportska medicina se izučavala na četiri medicinska fakulteta u Srbiji: u Beogradu, Novom Sadu, Nišu i Kragujevcu, na kojima su organizovani programi specijalizacije. Početkom devedesetih u Srbiji je bilo više od 100 specijalista sportske medicine, ali njihova distribucija nije bila ravnomerna. Od ukupnog broja aktivnih (90), više od polovine (48) ovih specijalista je radilo u Beogradu.

²Andersen K.L... *Osnovi testiranja fizičkim naporom*, 1974, Cooper K. *Aerobik*, 1973, Zaciorski V. *Fizička svojstva sportista*, 1975, Mellerovicz... *Trening*, 1974. i dr.

Godine ratova i sankcija zaustavile su razvoj sportske medicine u Srbiji. Udruženje sportske medicine Jugoslavije više nije postojalo, Sekciji sportske medicine SLD pretilo je gašenje zbog neaktivnosti, članstvo u međunarodnim asocijacijama je prekinuto zbog neuplaćivanja članarina, prisustvo naših predstavnika na međunarodnim skupovima svedeno je na sporadično, nekoliko ambulanti sportske medicine je zatvoreno, a osoblje prebačeno u dispanzere medicine rada i ambulante opšte medicine. Novi Zakon o sportu promovisan tokom devedesetih omogućio je da lekari bez adekvatne edukacije, čak i bez lekarskih pregleda, mogu da izdaju uverenja o takmičarskoj sposobnosti sportista. To je uticalo na drastično smanjenje broja pregleda u ambulantama i dispanzerima za sportsku medicinu, a u Ministarstvu zdravlja raspravljalo se i o ukidanju ove specijalnosti, Instituta za sportsku medicinu i celokupne mreže specijalizovanih ustanova.

U takvim uslovima u Institutu za medicinu sporta formiran je Inicijativni odbor za reorganizaciju rada Sekcije za sportsku medicinu SLD, kao i za zaustavljanje razgradnje decenijama stvaranog sistema i institucija za zaštitu zdravlja sportista. Na vanrednoj izbornoj skupštini Sekcije održanoj 6. 11. 1993. godine izabранo je novo predsedništvo Sekcije. Za predsednika je izabran dr Slobodan Živanić, a za sekretara dr Ljiljana Radivojević. Pored oživljavanja rada Sekcije i očuvanja statusa medicine sporta u sistemu zdravstvene zaštite, jedan od prioritetsnih zadataka novog rukovodstva bilo je formiranje udruženja sportskih lekara s kolegama iz Crne Gore, koje bi kao legitimni naslednik Udruženja za sportsku medicinu Jugoslavije (USMJ) obnovilo svoje članstvo u Balkanskoj i Međunarodnoj asocijaciji sportske medicine (FIMS). U tom cilju određena je tročlana delegacija Sekcije (dr Živa-

nić, dr Stajić, dr Perunović) za pregovore s delegacijom Društva sportskih ljekara Crne Gore (dr Lalatović, dr Čelebić, dr Čarapić). Sastanak je održan početkom 1995. godine u Kolašinu. Utvrđen je nacrt statuta nove organizacije – Udruženja za medicinu sporta Jugoslavije (USMJ), ovog puta sa samo dve zemlje članice i zakazana je osnivačka skupština u Beogradu.

Osnivanje i prve godine rada Udruženja za medicinu sporta Srbije

Tokom razgovora u Kolašinu postalo je jasno da sekcija SLD kao jedini oblik organizovanja sportskih lekara nije adekvatna za rešavanje mnogih problema koji stoje na putu očuvanja i razvoja medicine sporta u Srbiji. Naime, Sekcija nije imala pravni subjektivitet, što joj je ograničavalo mogućnost samostalnog nastupanja i udruživanja s drugim srodnim asocijacijama iz oblasti fizičke kulture, kao i zaključivanja zakonom dozvoljenih delatnosti. Za razliku od sekcije SLD, udruženje predstavlja pravno lice, registrovano je kod nadležnog državnog organa i ima svoj žiro račun. Pored toga, sekcija SLD je usko strukovna asocijacija, dok je udruženje adekvatniji okvir za organizovanja predstavnika srodnih struka i profesija.

Članove Sekcije u to vreme uglavnom su činili specijalisti medicine sporta. Među njima je preovladavalo mišljenje da Sekcija za sportsku medicinu pripada samo ovoj specijalnosti i da je zdravstvena zaštita sportista isključivo njihov delokrug rada, što je bilo u koliziji sa samom definicijom medicine sporta kao multidisciplinarne oblasti, ali i sa praksom u drugim zemljama Evrope i sveta.

Imajući to u vidu, Predsedništvo Sekcije pokrenulo je inicijativu za osnivanje Udruženja za medicinu sporta Srbije s idejom da ono, kao što je praksa u zapadnim zemljama, pored lekara specijalista ove grane okuplja i lekare drugih specijalnosti kao i osobe

drugih profesija angažovanih u zdravstvenoj zaštiti učesnika u sportu. Takvo Udruženje u oblasti medicine sporta, za razliku od drugih jugoslovenskih republika, u Srbiji do tada nije postojalo. Definisani su osnovni ciljevi udruživanja koji će biti ugrađeni u prvi Statut UMSS: (1) unapređenje i promocija sportskomedicinske nauke i prakse, (2) sprovođenje zdravstvene zaštite učesnika u sportu, (3) zaštita profesionalnih interesa i prava zdravstvenih radnika angažovanih u medicini sporta i (4) saradnja s regionalnim i drugim nacionalnim asocijacijama medicine sporta u svetu.

Osnivačka skupština Udruženja za medicinu sporta Srbije, zajedno s godišnjom skupštinom Sekcije za sportsku medicinu SLD, održana je 11. 3. 1995. u sali MEDIFARMA u Bačvanskoj ulici bb u Beogradu³. Skupštini je prisustvovalo 65 sportskih lekara iz svih delova Srbije. Nakon usvajanja odluke o osnivanju Udruženja za medicinu sporta Srbije (USMS) i usvajanja nacrta Statuta USMS, izabrano je 30 članova Skupštine koji su registrovani kao osnivači Udruženja. Predloženo je da u cilju racionalizacije članovi Predsedništva Sekcije istovremeno predstavljaju i Upravni odbor Udruženja⁴ i da se u početku sastanci Sekcije i Udruženja održavaju istovremeno, što je aklamacijom prihvaćeno. Tako je za predsednika Udruženja imenovan dr Slobodan Živanić, a za sekretara dr Ljiljana Radivojević. Sekretar Udruženja dr Ljiljana Radivojević ovlašćena je da izvrši upis u Registrar udruženja Srbije nakon obavljenih svih neophodnih radnji vezanih za upis.

³U okviru istog skupa, uz prisustvo četvorice delegata iz Crne Gore, održana je i Osnivačka skupština „novog“ Udruženja za medicinu sporta Jugoslavije (USMJ).

⁴Članovi prvog Upravnog odbora UMSS: dr Slobodan Živanić, dr Ljiljana Radivojević, dr Vladimir Jorga, dr Božica Suzić-Todorović, dr Nikola Stajić, dr Dušan Ugarković, dr Dragoljub Đorđević, dr Sulejman Čolak, svi iz Beograda, dr Srđan Soldatović iz Novog Sada, dr Radomir Đurašković iz Niša, dr Danilo Nikolić iz Zaječara i dr Ruždija Radončić iz Prištine.

Konačno, rešenjem Ministarstva unutrašnjih poslova Republike Srbije, Sekretarijata u Beogradu, Udrženje za medicinu sporta Srbije upisano je u Registar društvenih organizacija – udruženja građana, pod rednim brojem 165, dana 22. 03. 1995. godine. Kao osnovni sadržaj aktivnosti navedeno je unapređenje sportskomedicinske nauke i prakse. Za sedište Udrženja prijavljena je adresa Republičkog zavoda za sport – Beograd, Kneza Višeslava 72.

S obzirom na to da Udrženje *de facto* nije imalo svoje prostorije, sastanci Upravnog odbora i Skupštine su održavani na različitim mestima, najčešće u zdanju SLD u ulici Džordža Vašingtona, na VMA ili u „starom“ DIF-u, dok je arhiva čuvana u prostorijama predsednika na VMA. Na početku bilo je važno obezbediti administrativne pretpostavke za pravni subjektivitet: otvoriti račun, izraditi pečat i amblem, verifikovati potpise odgovornih, učlaniti se u Sportski savez Srbije i sl. Veliki problem predstavlja je nedostatak finansijskih sredstava. I posle učlanjenja u Sportski savez odobrena sredstva za rad Sekcije su bila neredovna i simbolična. Slično je bilo i sa članarinom i donacijama sponzora. Ilustracije radi, izveštaj Nadzornog odbora na Izbornoj skupštini održanoj 10. 06. 2000. god, na poziciji *Prihodi* izgledao je ovako:

Prihod:

1. Saldo iz ranijih godina	1.683,00
2. Članarina u 1999. god.	600,00
3. Dotacija Ministarstva sporta u 1999. god.	2.000,00
4. Članarina u 2000. god.	600,00
5. Sponzorstvo firme MEDEKON	1.500,00
6. Sponzorstvo CEPTER banke	1.500,00
	—
Ukupno (dinara)	7.883,00

Međutim, za razliku od prethodnih godina, u 2001. godini Udrženje je kao član Sportskog saveza Srbije dobito prvu značajniju finansijsku podršku Republičkog ministarstva za prosvetu i sport u iznosu od 67.000 dinara, što je konačno omogućilo da se ozbiljnije započne realizacija planiranih aktivnosti.

I pored svih teškoća, tokom prvih sedam godina rada USMS je: (1) sa kolegama iz Crne Gore, formirao i registrovao „novi“ USMJ, (2) uz pomoć sponzora obnovio članstvo USMJ u međunarodnim strukovnim asocijacijama, (3) izradio Statut i adresar članova Udrženja, (4) uključio se u Sportski savez Srbije, gde je na osnovu godišnjih planova aktivnosti mogao da konkuriše za sredstva iz budžeta Ministarstva sporta, (5) održao više stručnih skupova širom Srbije, od kojih se posebno izdvajaju oni održani u Vrdniku, Zaječaru, Nišu, Leskovcu, Kragujevcu i u Beogradu (6) učestvovao u organizaciji i realizaciji X kongresa Balkanske asocijacije sportske medicine (BSMA) 1995. godine u Beogradu, (7) uz podršku sponzora obezbeđio učešće šestoro članova Udrženja na Osmom evropskom kongresu FIMS-a u Granadi 1995. godine, (8) nakon javne rasprave izradio je nacrt Pravilnika o zdravstvenoj zaštiti učesnika u sportu, u cilju uspostavljanja jedinstvene metodologije rada u sportskomedicinskoj zdravstvenoj zaštiti, (9) brojnim intervencijama u Ministarstvu zdravlja i Predsedništvu Sportskog saveza izborio se za održiv status ove oblasti medicine kao i za određene izmene u nacrtu Zakona o sportu, (10) na osnovu anketiranja ostvario uvid u organizaciju, opremljenost, kadrovske sastav i obim rada u svim ambulantama i dispanzerima koji se nalaze u mreži ustanova za sportskomedicinsku zdravstvenu zaštitu, (11) u okviru zacrtane izdavačke delat-

1. KONGRES O PREVENCICI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

nosti, objavio prvu stručnu monografiju *Aerobna sposobnost* 1999. godine, čiji su autori (S. Živanić, M. Vanović, R. Mijić, R. Dragojević) članovi Udruženja različitih specijalnosti.

Udruženje je ostvarilo visok nivo saradnje s udruženjima sportskih lekara u Crnoj Gori i Republici Srpskoj. U okviru toga, predsednik UMSS je na poziv predsednika Društva sportskih ljekara Crne Gore izradio dokument pod nazivom „Strategija razvoja medicine sporta u Crnoj Gori“, koji je usvojen kao zvanični program Ministarstva zdravlja i sporta Crne Gore. U Republici Srpskoj započela je rad Škola sportske medicine, s predavačima iz našeg Udruženja, koja se redovno održavala jednom godišnje i bila obavezna za sve lekare zapoštene u sportskim ambulantama.

Tokom 2000. godine u Zavodu za medicinu sporta i u 11 dispanzera i 8 ambulanti sportske medicine širom Srbije obavljeno je više od 100 000 sistematskih pregleda učesnika u sportu i oko 80 000 drugih pregleda i intervencija, i pored brojnih kadrovske, i posebno materijalnih problema. Rezultati sprovedene ankete su pokazali da je osnovna medicinska oprema najvećim delom bila amortizovana, zastarela ili je nedostajala i da su smeštajni uslovi u mnogim ambulantama bili nezadovoljavajući. Ovi podaci poslužili su kao osnov za određene zahteve koje je Udruženje kao koordinator sportskomedicinske zaštite u Srbiji postavljalo Sportskom savezu i Ministarstvu prosvete i sporta.

Počevši od 2000. godine, stasava grupa ambicioznih mlađih sportskih lekara (dr Sanja Mazić, dr Nenad Dikić, dr Sergej Ostojić, dr Sead Malićević) kojima je ukazano puno poverenje i omogućeno učestovanje u kreiranju i sprovođenju politike daljeg razvoja Udruženja. (Na Izbornoj

skupštini održanoj 10. 06. 2000. godine dr Sanja Mazić i dr Sergej Ostojić izabrani su u Upravni odbor Udruženja)⁵. Ovo se ubrzo odrazило na povećanje obima i kvaliteta rada. Već početkom 2000. godine pod uredništvom dr Sergeja Ostojića pokrenut je prvi broj informatora *Sportska medicina*, preko kojeg su svi članovi Udruženja mogli da se upoznaju s aktivnostima Upravnog odbora, kalendarom naučnih i stručnih događaja u zemlji i inostranstvu kao i najnovijim saznanjima u oblasti medicine sporta. Informator je na početku štampan na samo četiri stranice, da bi ubrzo bio uključen u međunarodni sistem serijskih publikacija ISSN i do 2003. godine prestarao u stručni časopis koji u elektronskoj formi izlazi četiri puta godišnje.

Na Godišnjoj skupštini održanoj februara 2002. mlade kolege pokreću inicijativu da se Udruženje kandiduje za organizaciju Desetog kongresa Evropskog koledža sportskih nauka (ECSS). Već u julu iste godine, posle temeljnih priprema, naša delegacija predvođena dr Nenadom Dikićem i dr Sanjom Mazić (u kojoj su bili i predstavnici Sava Centra) odlazi na sastanak Izvršnog komiteta ECSS u Atinu, gde u konkurenciji mnogo većih i bogatijih gradova (Lisabona, Lozane i Moskve) uspeva da se izbori za organizaciju X kongresa ECSS 2005. godine u Beogradu.

Nakon dobijanja organizacije X kongresa ECSS ukazala se potreba za izmenom Statuta Udruženja po ugledu na statute evropskih asocijacija i da se sastav Upravnog odbora popuni ljudima koji su najzaslužniji za dobijanje ovog Kongresa i koji su pokazali da raspolažu sposobnošću i

⁵Članovi Upravnog odbora UMSS izabrani na Skupštini održanoj 10. 06. 2000. godine: dr Slobodan Živanović, predsednik, dr Branka Nikolić, sekretar, članovi: dr Božica Suzić-Todorović, dr Nikola Stajić, dr Sanja Mazić, dr Sergej Ostojić, svi iz Beograda, dr Milovan Erić iz Kragujevca, dr Vukosav Borko iz Novog Sada, dr Dragan Petrović iz Niša, dr Radoslav Bećejac iz Kikinde i dr Jovan Zlatković iz Zaječara.

kompetentnošću da podnesu teret organizovanja ovakvog skupa. Ove promene, među kojima je najznačajnija izbor dr Nenada Dikića za generalnog sekretara Udruženja, realizovane su na Godišnjoj skupštini UMSS održanoj 10. 9. 2002. u zgradji starog DIF-a. Na istom sastanku odlučeno je da se razdvoje aktivnosti Sekcije i Udruženja i da ubuduće ove organizacije funkcionišu samostalno u okviru svojih nadležnosti utvrđenih statutima.

Od tada aktivnosti Udruženja počinju da se odvijaju ubrzanom, do tada nezamislivom dinamikom, pre svega zahvaljujući inicijativama i angažovanju novih članova Upravnog odbora, koji su na sebe preuzeли najveći deo tereta rada i odgovornosti. I upravo zbog te drastične razlike u obimu, dinamici i kvalitetu rada, dvadesetogodišnja istorija Udruženja za medicinu sporta Srbije može se podeliti na dva dela; prvi, od osnivanja do 2002. godine, koji karakteriše borba za opstanak i očuvanje prethodno dostignutog i drugi, od 2003. godine, kada Udruženje dostiže punu ekspanziju i afirmaciju na svim područjima rada u zemlji i inostranstvu.

Godine ekspanzije i afirmacije Udruženja za medicinu sporta Srbije

Rad UMSS od 2002. do 2015. karakterisala je pre svega želja da se edukacija svih učesnika u sportu podigne na najviši mogući nivo. Dobijanje organizacije 10. Kongresa Evropskog koledža sportskih nauka nije bio samo najveći kongresni događaj u srpskoj medicini u poslednjih 20 godina već i velika prekretnica radu UMSS. Naime, kongresne aktivnosti su postale redovne i naizmenično su svake godine organizovani kongresi sportske medicine i sportskih nauka i kongresi o dijetetskim suplementima. Konačno, i kongres o prevenciji dopinga u sportu je proizašao iz velikog isku-

stava i rada mnogih članova Udruženja za medicinu sporta Srbije tokom poslednje decenije.

Prvi korak novog rukovodstva Udruženja bio je organizovanje Prvog srpskog kongresa medicine sporta i sportskih nauka. Kongres je održan 2003. godine u Sava centru i odvijao se kroz 8 sesija, više seminara i radionica. Okupio je 250 stručnjaka iz ovih oblasti, a u okviru usmene i poster prezentacije prikazana su 103 rada. U stručnom smislu kongres je u potpunosti ispunio očekivanja. Međutim, on je za nas predstavljao i test za procenu sopstvenih mogućnosti u okviru priprema za organizovanje mnogo većeg skupa – 10. kongresa Evropskog koledža sportskih nauka. Neki istaknuti članovi na koje smo najviše računali u pripremi ovog kongresa nisu ispunili očekivanja i preuzete obaveze i oni su se vremenom potpuno povukli. Drugi, uglavnom mlađi, iskoristili su ukazanu šansu. Preuzeli su svu odgovornost i odricanja, unevši u svoj rad mnogo kreativnosti i entuzijazma.

Deseti, jubilarni kongres Evropskog koledža sportskih nauka je svakako bio jedan od najvećih naučnih i stručnih skupova ikada održan u Beogradu i Srbiji. Na Kongresu je bilo 1100 učesnika, od toga 1000 stranaca iz 52 zemlje. Među njima su najmnogobrojniji bili učesnici iz Velike Britanije (83), Japana (67), Grčke (63), Italije (62) i Nemačke (61), ali je bilo i onih iz najudaljenijih zemalja – Australije (17) i Novog Zelanda (3). Svi najveći eksperți u oblasti sportskih nauka tih dana imali su zajedničku adresu – Beograd, Sava Centar. Izlaganja su se istovremeno odvijala u 15 paralelnih sesija, sve sale Sava Centra bile su angažovane punim kapacetetom, kao i svi beogradski hoteli i turističke agencije. I sve je besprekorno funkcionalo. Ovakav rezultat zahtevao je izuzetno angažo-

vanje sada već iskusne ekipe, pre svega Predsednika Kongresa dr Nenada Dikića koji je bio alfa i omega cele manifestacije, zatim profesora Sergeja Ostojića, predsednika naučnog odbora Kongresa, dr Sanje Mazić, mlade doktorke Marije Dabetić ali i uigranog tima iz Sava Centra: Natalije Jurčević, Nenada Deneša i Zorice Tornjanski. Pored uspeha u organizaciji, Kongres je pokazao da članovi UMSS raspolažu značajnim stručnim i naučnim potencijalom. Kroz ukupno 100 radova iz Srbije ostvaren je zapažen doprinos u razmeni znanja i iskustava s kolegama iz inostranstva.

Nakon 10. Kongresa Evropskog koledža sportskih nauka, Udruženje za medicinu sporta je organizovalo još tri kongresa sportske medicine i sportskih nauka. Na svakom od njih u proseku je bilo po 300 učesnika s ukupno 40 do 50 prikazanih radova. Ukupno pet kongresa sportske medicine i nauke (2003, 2005, 2008, 2010, 2012) pokazalo je da Srbija ima sportske stručnjake koji sprovode istraživanja i koji prate najsvremenije trendove u medicini sporta.

Početak sprovođenja prvih doping kontrola u Srbiji je uticao na sve značajnije razmišljanje o dijetetskim suplementima u sportu. Saradnja s Katedrom za bromatologiju Farmaceutskog fakulteta je samo doprinela da se otpočne sa serijom Kogresa o dijetetskim suplementima. Na ukupno 4 kongresa (2007, 2009, 2011, 2013) predstavljeno je skoro 200 originalnih apstrakta pred više od 1500 učesnika. Tandem prof. dr Sladana Šobajić i dr Nenad Dikić je uspešno kopredsedavao svim kongresima i značajno uticao na to da se o dijetetskim suplementima više i stručnije govori. Upravo su saznanja na ovim kongresima doprinela tome da u 2015. organizujemo Prvi kongres o prevenciji dopinga u sportu.

Pored kongresa, značajna paralelna aktivnost je bila okrenuta izdavačkoj delatnosti. Objavljeno je preko 25 izdanja (računajući i knjige sažetaka sa kongresa), mnoga bilingvalno na srpskom i engleskom jeziku, jer je prepoznat značaj predstavljanja aktivnosti UMSS kolegama i partnerima iz inostranstva. Sva izdanja UMSS se nalaze na Internet sajtu www.smas.org gde svi članovi mogu da ih čitaju bez ograničenja.

Mnoge knjige su poslužile za organizovanje kurseva i seminara za članove UMSS i ostale zainteresovane sportske radnike. Tako je prevodom *Timskog priručnika za lekare* organizованo 15 kurseva koje je u proseku pohađalo po 15 lekara. Slično je bilo i sa knjigom *Sportskomedicinski pregled – metodologija i preporuke*, koja je poslužila za seriju seminara i konačno prihvatanje činjenice da EKG mora da bude sastavni deo pregleda. Neke od knjiga su postali udžbenici na raznim fakultetima sporta i fizičke kulture, dok je knjiga *Sportska medicina* specifično napisana kao udžbenik za Visoku sportsku i zdravstvenu školu i Fakulteta za fizičku kulturu i menadžment u sportu Univerziteta Singidunum. Knjiga *Metabolički fitnes* je dobila godišnju evropsku nagradu Tanite, a knjiga *Zdravo srce za sve* poslužila je kao uputstvo velikom broju ljudi da se izbore s gojaznošću i bolestima srca i krvnih sudova. Konačno, prevodom knjige *Praktična sportska ishrana* dobili smo jedinstveni udžbenik za edukaciju o sportskoj ishrani i suplementaciji.

Spisak izdanja u periodu od 2002. do 2015. godine:

1. *Umetnost aerobika* (2002), Nenad Dikić
2. *Telesne masti i zdravlje* (2003), Nenad Dikić (urednik), Sergej Ostojić i Sanja Mazić
3. *Monitoring srčane frekvencije u sportu i rekreaciji* (2003), Nenad Dikić i Slobodan Živanić
4. *Priročnik za klupske lekare (FIMS)* (2004), preveli: Nenad Dikić (urednik) i Sanja Mazić

5. *Sportskomedicinski pregled: metodologija i preporuke* (2005), Nenad Dikić (urednik), Sergej Ostojić, Slobodan Živanić, Sanja Mazić
6. *Iznenadna srčana smrт u sportu* (2005) Nenad Dikić (urednik), Sergej Ostojić, Aleksandar N. Nešković, Tatjana Potpara, Marija Dabetić, Bosiljka Vujišić-Tesić, Jelena Stepanović, Jelena Suzić, Alja Vlahović-Stipac, Ana Đorđević-Dikić, Vojislav Giga, Siniša Gradinac, Miodrag Ostojić, Sanja Mazić
7. *100 pitanja o dopingu* (2007), Nenad Dikić
8. *Paralimpiski sport* (2007), Nenad Dikić
9. *Putovanje na velike visine* (2008), preveli: Nenad Dikić (urednik) i Milica Sinobad
10. *Bela knjižica – timski doktor karika koja nedostaje* (2009), Nenad Dikić (urednik)
11. *Druga strane medalje* (2009), Nenad Dikić (urednik) i Marija Midžović
12. *Praktična sportska ishrana* (2009), preveli: Nenad Dikić (urednik), Vera Blaženčić Mladenović, Brizita Đorđević, Sanja Mazić, Milka Popović, Dragan Radovanović, Slađana Šobajić, Slobodan Živanić, Marija Andelković, Jelena Oblaković Babić, Nenad Radivojević i Siniša Vujić
13. *Sportska medicina u pitanjima i odgovorima* (2010), Zdeslav Milinković (urednik), Vesna Stračević i Nenad Dikić (kourednici)
14. *Sportska kardiologija – klinički slučajevi* (2010), Nenad Dikić (urednik), Jelena Stepanović, Ana Đorđević Dikić, Vojislav Giga, Nenad Radivojević
15. *Trans masti* (2011), Nenad Dikić i Marija Andelković
16. *Zdravo srce za sve* (2014), Nenad Dikić (urednik), Ivana Nedeljković, Ana Đorđević Dikić, Vojislav Giga, Tamara Stojmenović, Marija Andelković, Ivana Baralić Milica Vukašinović Vesić
17. *Sportska fiziologija* (2014), preveli: Nenad Dikić (urednik), Marija Andelković, Tamara Stojmenović, Ivana Baralić i Milica Vukašinović Vesić
18. *Metabolički fitness* (2014), Nenad Dikić i Marija Andelković

Pokretačka snaga svih izdanja bio je dr Nenad Dikić, ali ono što je mnogo važnije jeste učestvovanje velikog broja saradnika i autora, od toga značajnog broja mlađih, koji se danas uspešno bave ne samo sportskom medicinom, već i drugim oblastima medicine, uz istovremeno bavljenje istraživanjem, organizacijom i menadžmentom u institucijama u kojima rade. UMSS je time na najbolji način demonstrirao dok-

trinu timskog rada i razvijanja sopstvenih kadrova i istraživača.

Tako je dr Marija Dabetić postala uspešni pedijatar, a dr Jelena Suzić, dr Nenad Radićević i dr Jelena Oblaković Babić su pre red specijalizacije iz interne medicine postali internacionalni doping kontrolori. Svi su objavili značajan broj radova i nastavili istraživanje u medicini, a jedan broj njih je nastavio da organizuje edukativne skupove, što smatramo ekvivalentnim svim njihovim uspesima. Pored toga, veliki broj članova je radio ili rade kao doping kontrolori. Upravo je to i doprinelo činjenici da su prve doping kontrole sprovedene tri godine pre osnivanja Antidoping agencije Republike Srbije od strane Udruženja za medicinu sporta Srbije. I danas najiskusniji doping kontrolori dolaze iz UMSS, a mediciinski deo ADAS čine članovi UMSS dr Marija Andelković, dr Milica Vukašinović Vesić i dr Nenad Dikić.

Multispecijalistički pristup UMSS je iskorisćen u drugim aktivnostima. Dr Marija Andelković s dr Verom Blaženčić Mladenović, Milkom Popović, Brižitom Đorđević, Ivanom Baralić, Zoranom Jovanovićem i Nenadom Dikićem osniva Centar za sportsku ishranu i suplementaciju (CIS). Novonastalo stručno udruženje ne samo da je odmah prepoznato u svetu sporta, već je za kratko vreme postalo mesto okupljanja naših najboljih sportista koji traže savet o ishrani i suplementaciji, ali i pouzdan partner Antidoping agenciji Republike Srbije. Pored toga, ekspertiza članova CIS pomogla je oko analize i davanja saveta o lekovima i suplementima koje sportisti uzimaju. CIS je do sada organizovao 12 PanSport seminara i otpočeo dvogodišnju školu Sportske ishrane i suplementacije kao i dvogodišnji internet kurs iz iste oblasti. Upravo je CIS promovisao novi edukativni centar UMSS u Kralja Milana 60, koji

je specifično uređen za edukaciju, ali i kao izložbeni prostor.

Nakon 15 godina na mesto predsednika, prof. dr Slobodanu Živaniću je jednoglasno dodeljena funkcija počasnog predsednika, a na mesto predsednika dolazi prof. dr Zdeslav Milinković, jedan od naših najboljih ortopeda, dugogodišnji direktor Spinalnog centra Ortopedske bolnice Banjica i veliki sportista. Činjenica je da je UMSS oduvek posebno cenio lekare koji poznaju i vole sport upravo je izborom prof. dr Zdeslava Milinkovića potvrđena na pravi način. Kao rukometaš i karatista, prof. Milinković je bio državni reprezentativac, a zatim je, pošto je završio medicinu, nastavio da se usavršava na oba polja. Kako drugačije nazvati briljantnu karijeru ortopeda i timskog doktora KK Partizana, Dejvis i Fed kup reprezentacije. Upravo ove dve poslednje uloge se spajaju kada naš tenis doživjava punu afirmaciju i osvaja titule najboljih na svetu.

Prof. Milinković je nastavio da podržava sve aktivnosti UMSS, a posebno istraživačke projekte, od kojih je većinu takođe podržalo Ministarstvo omladine i sporta. Iako Udruženje za medicinu sporta nije prevashodno istraživačka i edukativna ustanova, u svakom trenutku je sprovodilo neki projekt ili podržavala specijalizaciju ili doktorat nekog od članova. Trenutno se pod pokroviteljstvom UMSS privode kraju eksperimentalni delovi dva doktorata posvećena intoleranciji na hranu i probioticima u sportu. Time je na najbolji mogući način potvrđen stav Izvršnog odbora UMSS da jedino stalnim usavršavanjem možemo da sarađujemo, budemo ravnopravni i prihvaćani od partnera iz Evrope i sveta. Treba istaći nekoliko projekata koji su nastali upravo na toj osnovi: Procena hidriranosti košarkaša, Kurs sportske ishrane i suplementacije, Procena ukupnog psihofizičkog zdravlja i preventivni pristup kod pripadnika specijalne antiterorističke jedinice (SAJ) i projekat *Ispravi se i vežbaj*.

Projekat Procena hidriranosti košarkaša nastao je saradjnjom sa FIBA Evropa koja je prvi put dozvolila jednoj istraživačkoj ustanovi da direktno na takmičenju, na Evropskom prvenstvu u košarci, sproveđe istraživanje. Kuriozitet nije bio samo analiziranje osam nacionalnih reprezentacija u realnom vremenu tokom takmičenja, već i u finalnom rezultatu, što je iskorišćeno da se u regulativi FIBA Evrope unaprede preporuke o hidraciji košarkaša.

Internet kurs sportske ishrane nastao je nakon dve godine rada dr Marije Andelković na master programu Sportske ishrane i suplementacije u okviru Međunarodnog olimpijskog komiteta. Osim što je Marija dobila diplomu MOK, kao jedina van anglosaksonskog govornog područja, uspeala je da kurs adaptira i predstavi članovima UMSS. Naš kurs je upravo na polovini druge godine predavanja i polovini prve godine *online* testova. I time je UMSS demonstrirao da dobri odnosi s kolegama iz inostranstva, ali i želja za učenjem i znanjem, unapređuju sportsku medicinu u Srbiji.

Poseban projekat koji želimo da pomenemo jeste projekat izveden u saradnji s pripadnicima specijalne antiterorističke jedinice, čime je pokazano da sportska medicina može značajno da pomogne i u onim oblastima koje nisu vezane striktno za postizanje sportskog rezultata. Značaj istraživanja svakako potvrđuje i izlaganje sažetka na Američkom koledžu sportske medicine 2015.

Na kraju, originalni projekat prof. Milinkovića *Ispravi se i vežbaj* poslednjih godina doživljava kulminaciju kako po broju naših najboljih sportista koji ga podržavaju,

tako i po broju učesnika na kojima je sproveden. Preventivnom delovanju se uvek pridavalo mnogo pažnje i ovaj projekat najbolje pokazuje koliko je važno da deca i mlađi pravilno i redovno vežbaju ne samo da bi postigli rezultate, već i da bi bili zdravi. Ukupna aktivnost u samo ova četiri projekta pokazuje multispecijalistički pristup i širinu rada UMSS.

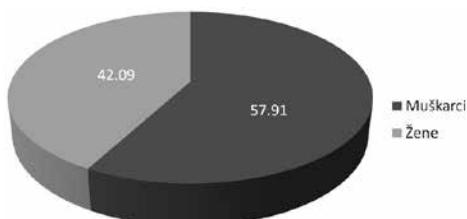
Udruženje za medicinu sporta Srbije je u 2015. godini dobilo 1000. člana

Međutim, najveću snagu Udruženja za medicinu sporta Srbije ne predstavljaju kongresi i publikacije, već članstvo. U svojoj 20. godini postojanja UMSS beleži 1000. člana i pobedu ideje da Udruženje treba da bude mesto za sve one koje okuplja medicina sporta u svakodnevnom radu ili multispecijalističkom istraživanju. Činjenica da je među članovima veliki broj trenera, instruktora, farmaceuta, profesora fizičke kulture, ali i lekara svih specijalnosti govori u prilog tome koliko je sportska medicina raznolika i kompleksna.

Profesija	
Lekar - ostale specijalizacije	188
Student	129
Sportski trener/instruktor	80
Farmaceut/dipl. farmaceut	69
Ostala zanimanja	68
Profesor/nastavnik fizičke kulture	66
Ostala tehničko/tehnološka zanimanja	39
Fizioterapeut/viši fizioterapeut	33
Profesor	26
Ekonomista	25
Menadžer/rukovodilac	25
Lekar - kardiolog	20
Sportista	18
Učenik	15
Lekar - spec. sportske medicine	13

Personalni trener	13
Lekar - spec. higijene	11
Nutricionista - dijetetičar	10
Lekar - hirurg/neurohirurg/hirurg-ortoped	9
Nastavnik/predavač	9
Nezaposlen	9
Lekar - biohemičar	8
Lekar - internista	8
Docent	7
IT stručnjak	7
Lekar - spec. fizikalne medicine	7
Direktor	6
Medicinski tehničar	6
Asistent	5
Fizijatar	5
Lekar - dijetetičar	5
Novinar	5
Preduzetnik	5
Stomatolog	5
Viši dijetetičar - nutricionista	5
Lekar - pedijatar	4
Veterinar	4
Arhitekta	3
Hemičar	3
Istraživač	3
Klupski lekar	3
Penzioner	3
Psiholog	3

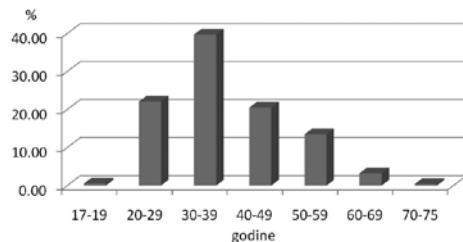
Distribucija po polu je očekivana, mada je našim skupovima uvek više žena.



Godine starosti članova su takođe interesantne, jer pokazuju da se najveći broj članova

1. KONGRES O PREVENCICI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

nalazi u dobu kada se najviše uči (20-29 godina) ili kada se ljudi najviše usavršavaju (30-39 godina). Možemo da budemo ponosni na to što smo generacijama omogućili da dobiju prave i pravovremene informacije na srpskom jeziku i što smo im omogućili da imaju odgovarajuću literaturu.



I na kraju, ako pogledamo raspodelu po mestu življenja, možemo videti da i pored toga što je najveći broj članova iz Beograda u velikoj meri pokrivamo celu teritoriju Srbije, ali takođe imamo i značajan broj članova iz zemalja bivše Jugoslavije.

Mesto stovanja	
Beograd	371
Centralna Srbija (bez BG)	142
Vojvodina (bez NS)	87
Novi Sad	47
Bosna i Hercegovina	25
Crna Gora	25
Republika Makedonija	18
Republika Hrvatska	6
Kosovo	3
Republika Slovenija	3

Udruženje za medicinu sporta Srbije je dočekalo punoletstvo ili još bolje prvih 20 godina kao velika, moderna, stručna i kompetentna organizacija koja po mnogim parametrima predstavlja lidera među strukovnim organizacijama. Međutim, UMSS nikad nije imao želju da se poredi, već da radi i napreduje za dobrobit svih svojih članova. Nadamo se da će buduće generacije nastaviti da rade odlučno i stručno i da će Udruženje za medicinu sporta Srbije dočekati još mnogo jubileja.

TWENTY YEARS OF SMAS – FROM THE FIRST STEPS TO INTERNATIONAL RECOGNITION

Slobodan Zivanic, Zdeslav Milinkovic, Nenad Dikic

Sports Medicine Association of Serbia

A short overview of the development of sports medicine in Serbia

The first organized medical examinations of athletes in Belgrade started back in 1925, three years before establishment of the International Sports Medicine Federation (FIMS) and after the tragic event at a football game played in 1924⁶. Belgrade football subfederation made a decision to perform mandatory medical examinations of its members twice per year. The examinations were performed by volunteer doctors in less than ideal working conditions on the premises of the subfederation, and the purchases of medical supplies were financed from the Tusko fund. Therefore, it can be considered that the development of modern sports medicine in Serbia began in 1925.

Due to irregular payments of membership fees, in a few years the Tusko fund gradually extinguished. The president of the health committee of the Belgrade football subfederation Milutin Ivkovic - Milutinac asked for the help of prof. Dr. Vojislav Arnovljevic, Director of Internal Propaedeutic Clinic in Belgrade. As a great supporter of sport he founded the first sports clinic at his institution in 1936. Dr. Lazar Stanović

⁶During the match between Belgrade and Lower Austria held on June 25, 1924, our team goalkeeper Lajoš Šenfeld called Tuško, after being struck on the left flank, fell down as if he were hit by lightning. He was transferred to a hospital, where he underwent surgery, but he died of ruptured spleen, enlarged by tropical malaria. His death excited the sport circles of Belgrade. Club doctors began examinations of players, allocating doctors at matches and organizing health sections at the clubs. Later the Tuško fund was founded to support the health care and insurance of players. (From the authorized manuscripts of Prof. Dr. Vojin Smidlaka, New York 1990.)

jević was appointed as the chief. In this clinic, in addition to few physicians, all of them later prominent professors of the Medical Faculty in Belgrade, there worked a young medical doctor Vojin Smidlaka, who would later become the doyen of modern sports medicine in Serbia.

This sports clinic worked twice a week for two hours until the beginning of World War II. Examinations were free. They consisted of collecting of personal data, medical history, physical examination, X-ray examination of heart and lungs, the stress test which consisted of 20 squats carrying a chair in hand, laboratory examination of blood and urine tests and, if necessary, electrocardiogram. Football players could not compete without these examination (which were performed twice a year) and without permission and signature of the doctor. During the work of the Clinic (1936-1941) 2000 players were examined, as well as a small number of other athletes.

Immediately after the liberation in 1945, at the initiative of prof. Dr. Mihajlo Andrejević - Andrejka, a "gymnasium" (sports) medicine Section was formed within the Serbian Medical Society. (At the time, the SLD consisted of only 12 specialist sections.) From the 1950's sports medicine clinics and dispensaries were established in the major cities in Serbia. Thanks to the efforts of Prof. Dr. Smidlaka in FIMS, in 1954 Belgrade got the organization of the 10th Congress of FIMS, which was carried out successfully. In 1959, following the example of Eastern Block countries, specialization of "gymnasium" medicine was introduced in Serbia, and in 1970 at the Medical Faculty in Belgrade the Department of "gymnasium" (sports) medicine.

Meanwhile, the Sports Medicine Association of Yugoslavia (SMAJ) was established

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in order to bring together the members of clubs and associations of sports medicine from all Yugoslav republics. SMAY was a member of the International Association (FIMS) since 1971, as well as the Balkan Association of Sports Medicine (BSMA). Since 1963, under the editorship of Professor Dr. Alojzije Sef in Ljubljana, the first Yugoslav journal Sportnomedicinske objave was published in Serbo-Croatian. The first congress of sports physicians of Yugoslavia took place in Opatija in 1968. In 1971, due to the efforts of Prof. Dr. Dragana Jovic, within the Yugoslav Institute of Physical Education (YIPE), the Institute of Sports Medicine was formed, entrusted, among other things, with professional supervision of all clinics and sports medicine dispensaries in Serbia. The Institute was divided into three departments: for sports health care at the (1) top level, (2) at the Republic and city level, and (3) at the recreational level. The Third Congress of BSMA was held in Nis in 1973.

In the late 1970's, two remarkable monographs by Dr. Vesna Djurđević were published, Ergometry and Sports heart, as well as a series of translated publications and meetings held, which significantly improved the level of professional work in this area. By the beginning of the 1990's Serbia had developed the network of sports clinics and dispensaries in health centers, with adequate staff to meet the needs of this type of health care. Sports medicine was studied at four medical faculties in Serbia: Belgrade, Novi Sad, Nis and Kragujevac. In the early 1990's, there were more than 100 sports medicine specialists in Serbia, but their distribution was uneven. Of the total number of the active specialists (90), more than half (48) worked in Belgrade.

Years of war and sanctions have impeded the development of sports medicine in

Serbia. Sports Medicine Association of Yugoslavia no longer existed; Sports Medicine Section of SLD was about to be closed down due to inactivity. The memberships in various international associations were terminated for non-payment of membership fees. The presence of our representatives at international meetings was reduced to sporadic. Several sports medicine clinics were closed, and the staff was moved to general medicine departments. The new Sports Law, which was passed in 1990's, enabled the doctors without adequate education, even without medical examinations, to issue athletes the certificates of competitive ability. This resulted in a drastic reduction of number of sports medicine clinics and dispensaries, and the Ministry of Health discussed the closure of these specialties, the Institute of Sports Medicine and the entire network of specialized institutions.

In such conditions, the Institute of Sports Medicine established the Preparatory Committee for the reorganization of the work of the Sports Medicine Section of SLD, as well as for stopping the degradation of the systems and institutions of health protection of athletes, which had been built for decades. At the Special electoral Section assembly held on November 6th, 1993 the new presidency of the Section was elected. Dr. Slobodan Živanović was elected as the president and Ljiljana Radivojević as the secretary. In addition to reviving the work of the Section and the preservation of the status of sports medicine in the health care system, one of the priority tasks of the new management was the formation of the Association of sports physicians with colleagues from Montenegro, which would legitimately succeed the Sports Medicine Association of Yugoslavia and renew its membership

in the Balkan Sports Medicine Association and the International Association of Sports Medicine (FIMS). In order to achieve this, the three-member delegation (Dr. Zivanic, Dr. Stajic, Dr. Perunovic) was determined by the Section for talks with a delegation of the Sports doctors of Montenegro (Dr. Lalatovic, Dr. Celebic, Dr. Carapic). The meeting was held in early 1995 in Kolasin. The participants determined the draft statute of the new organization - Sports Medicine Association of Yugoslavia, this time with only two member states, and scheduled its Founding Assembly in Belgrade.

The establishment and the first years of the Sports Medicine Association of Serbia

During the talks in Kolasin it became clear that a section of SLD as the only form of organization of sports physicians was inadequate for solving the many problems that stood in the way of protection and development of sports medicine in Serbia. The Section did not have legal authority, which limited its ability to manage cooperation with other similar associations in the field of physical culture, as well as to perform legally permitted activities. Unlike the section of SLD, the Association represented a legal entity, registered by state authorities, and had its own bank account. In addition, the section of SLD was a specialized professional association, while the Association had a more adequate framework for the organization of representatives of related occupations and professions.

Members of the Section at the time were mainly specialists of sports medicine. Among them the prevalent opinion was that Section of Sports Medicine belonged only to the specialty of sports medicine and that the health care of athletes belonged exclusively in their scope of work,

which was in conflict with the definition of sports medicine as a multidisciplinary field, but also with the practice in other countries in Europe and the world.

With that in mind, the Presidency of the Section launched an initiative for the establishment of Sports Medicine Association of Serbia with the idea that, as is the practice in Western countries, in addition to medical specialists of this industry, it should also gather other medical specialists, as well as members of other professions involved in the health care of participants in sports. Such an association in the field of sports medicine, unlike the other Yugoslav republics, Serbia had never had. The main objectives of association were defined and incorporated in the first Statute of SMAS: (1) the improvement and promotion of sports science and practice, (2) the implementation of health care for participants in sport, (3) protection of professional interests and rights of health care workers involved in medicine and sport and (4) cooperation with regional and other national associations of sports medicine in the world.

Founding Assembly of the Sports Medicine Association of Serbia, together with the annual assembly of the Sports Medicine Section of SLD took place on March 11th, 1995 in the hall of MEDIFARM in Bacvanska street in Belgrade⁷. Assembly was attended by 65 sports physicians from all parts of Serbia. Following the adoption of the decision on the establishment of the Sports Medicine Association of Serbia (SMAS) and the adoption of the draft Statute of SMAS, 30 members of the Assembly were elected to be registered as founders of the Association. It was suggested that in

⁷Within the same meeting, with the presence of four delegates from Montenegro, the Constituent Assembly of the "new" Sports Medicine Association of Yugoslavia was held.

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order to rationalize efforts and resources, members of the Presidency of the Section should also double as the Board members of the Association⁸, and that in the beginning the meetings of the Section and the Association should be held at the same time, which was accepted by acclamation. Thus Dr. Slobodan Zivanic was appointed as the president of the Association and Ljiljana Radivojevic as the secretary. Secretary Ljiljana Radivojevic was authorized to carry out the registration of Association after completion of all the necessary actions related to registration.

Finally, by the decision of the Belgrade Secretariat of the Ministry of Internal Affairs of the Republic of Serbia, the Sports Medicine Association of Serbia was entered as number 165 in the Register of social organizations – citizens' associations, on March 22nd, 1995. The basic activities of the Association were defined as "improving sports science and practice". The headquarters of the Federation was at the address of the Republic Institute for Sport - Belgrade, Kneza Viseslava 72.

Since the Association de facto had no seat of its own, meetings of the Board and General Assembly were held in various places, mostly in the SLD building in George Washington street, the MMA or in the "old" DIF, while the archives were kept in the office of the President of the MMA. At the beginning it was important to provide administrative conditions for legal subjectivity: to open an account, make a seal and logo, verify the signatures of the authorized officials, join the Sports Association of Serbia and so on. The big problem was

⁸The members of the first Board of Directors of SMAS: Slobodan Zivanic, Ljiljana Radivojevic, Vladimir Jorga, Dr. Bozica Suzic-Todorovic, Dr. Nikola Stajic, Dr. Dusan Ugarkovic, Dragoljub Djordjevic, Sulejman Colak, all from Belgrade, Dr. Srdjan Soldatovic from Novi Sad, Dr. Radomir Djuraskovic from Nis, dr Danilo Nikolic from Zajecar and Dr. Ruzdja Radoncic from Pristina.

the lack of financial resources. Even after joining the Sports Association of Serbia, the state funds approved for the Section were symbolic and paid at irregular intervals. It was similar with membership fees and donations from sponsors. To illustrate, here is the report of the Supervisory Board at the Election Assembly held on June 10th, 2000. these were the revenues:

Revenues:

1. The balance from previous years	1683.00
2. Membership fees in 1999	600.00
3. The grant of the Ministry of Sport in 1999	2,000.00
4. Membership fees in 2000	600.00
5. Sponsorship from company MEDEKON	1,500.00
6. Sponsorship from Zepter bank	1,500.00

Dinars 7883.00

However, unlike previous years, in 2001, being a member of the Sports Association of Serbia, the Association received the first significant financial support from the Serbian Ministry of Education and Sports in the amount of 67,000 dinars, which finally allowed it to begin a more serious implementation of the planned activities.

Despite all the difficulties, during the first seven years SMAS achieved the following: (1) with colleagues from Montenegro, it formed and registered the "new" SMAY, (2) with the help of sponsors it renewed membership in international federations, (3) it prepared the Statute and address book of members of the Association, (4) it became a member of the Sports Association of Serbia, which made it eligible for funding from the budget of the Ministry of Sports, based on the annual plans of activ-

ities, (5) it organized several expert meetings throughout Serbia, with particular emphasis on those held in Vrdnik, Zajecar, Nis, Leskovac, Kragujevac and Belgrade (6) it took part in the organization and implementation of the 10th Congress of the Balkan Association of Sports Medicine (BSMA) in 1995 in Belgrade, (7) with the support of sponsors it ensured the participation of six members of the Association at the Eighth European Congress of FIMS in Granada in 1995, (8) after a public debate it drafted the Regulations on health care participants in sport, in order to establish a uniform methodology of work in sports medicine health care, (9) through a number of interventions with the Ministry of Health and the Presidency of the Sports Association of Serbia it fought for the sustainable status of this field of medicine as well as for some amendments to the draft law on sport, (10) on the basis of the survey it achieved an insight into the organization, equipment, personnel composition and scope of work in all clinics and dispensaries located in the network of institutions for Sports Medicine health care (11) as a part of the planned publishing activity, it published the first expertly written monograph Aerobic fitness in 1999, whose authors (S. Zivanic M. Vanovic, R. Mijić, R. Dragojevic) were members of the Association of different specialties.

The Association achieved a high level of cooperation with associations of sports physicians in Montenegro and the Republic of Srpska. In this context, the President of SMAS, at the invitation of the President of the Society of Sports Doctors of Montenegro, prepared the document entitled "Sports medicine development strategy in Montenegro", which was adopted as the official program of the Ministry of Health and Sport of Montenegro. In the Republic

of Srpska the School of Sports Medicine began its meetings, with lecturers from our Association, regularly held once a year and compulsory for all doctors working in sports clinics.

In 2000 the Institute of Sports Medicine and 11 dispensaries and 8 sports medicine clinics throughout Serbia carried out more than 100,000 medical examinations of participants in sport, and about 80,000 other examinations and interventions, despite numerous personnel, and especially financial problems. The survey results showed that the basic medical equipment was largely amortized, outdated or missing and that the accommodation conditions in many clinics were unsatisfactory. These data were used as the basis for specific requests, which the Association as a coordinator of Sports protection in Serbia sent to the Sports Association of Serbia and the Ministry of Education and Sports.

As of 2000, a group of ambitious young sports physicians appeared (Dr. Sanja Mazic, Dr. Nenad Dikic, Dr. Sergej Ostojic, Dr. Sead Malićevic) who have been shown a lot of confidence and allowed to participate in creating and implementing policies for further development of the Association. (On Election Assembly held on June 10th, 2000 Dr. Sanja Mazic and Dr. Sergej Ostojic were elected to the Board of the Association.)⁹ This was soon reflected in the increase in the volume and quality of work. Already in early 2000 under the editorship of Dr. Sergej Ostojic the first issue of the journal Sports Medicine was published, offering information to all members of the Association about

⁹Members of the Board of SMAS elected at the Assembly held on June 10th, 2000: Slobodan Zivanic, President, Dr. Branko Nikolic, Secretary, members: Dr. Bozica Suzic-Todorovic, Dr. Nikola Stajic, Dr. Sanja Mazic, Dr. Sergej Ostojic, all from Belgrade, Milovan Eric from Kragujevac, Dr. Borko Vukosav from Novi Sad Dr. Dragan Petrović from Nis, Dr. Radoslav Becejac from Kikinda and Dr. Jovan Zlatkovic from Zajecar.

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the activities of the Board, a calendar of scientific and professional events at home and abroad as well as the latest findings in the field sports medicine. The information was printed at the beginning on only four pages and was quickly included in the international system of ISSN and by 2003 it evolved into a professional journal in electronic form which is published four times a year.

At the Annual General Meeting held in February 2002, young colleagues took the initiative to apply the Association for the organization of the 10th Congress of the European College of Sport Sciences (ECSS). Already in July the same year, after thorough preparation, our delegation led by Dr. Nenad Dikic and Dr. Sanja Mazic (which included the representatives of Sava Center) attended the meeting of the Executive Committee of the EMCC in Athens, where in the competition of much larger and wealthier cities (Lisbon, Lausanne and Moscow) they managed to get the organization of the 10th Congress of ECSS 2005 in Belgrade.

After receiving the organization 10th ECSS Congress, there arose the need to amend the Statute of the Association in order to model it after the statutes of European associations and so that the membership of the Board would include the people who were most responsible for the preparation of this Congress and who have shown to have the ability and competence to bear the burden of organizing such a gathering. These changes, among which the most important was the choice of Dr. Nenad Dikic as the General Secretary of the Association, were carried out at the Annual General Assembly of SMAS held on September 10th, 2002 in the building of the Old DIF. At the same meeting it was decided to separate the activities of the

Section and the Association, so that in the future these organizations would operate independently within their competences defined by their respective statutes.

Since then, the activities of the Association started to take fast, previously unimaginable pace, mainly due to the initiatives and involvement of the new members of the Board of Directors, who assumed most of the burden of work and responsibility. And because of drastic differences in the scope, rate and quality of work, the twenty-year long history of Sports Medicine Association of Serbia can be divided into two parts; first, from its establishment to 2002, which was characterized by the struggle for survival and the preservation of previous achievements, and second, since 2003, when the Association reached full expansion and recognition in all areas of its work in the country and abroad.

Years of expansion and affirmation of Sports Medicine Association of Serbia

SMAS work from 2002 to 2015 was characterized above all by the desire to educate all participants in the sport to the highest level possible. Getting the organization of the 10th Congress of the European College of Sport Sciences was not only the largest conference event in Serbian medicine in the last 20 years, but also a major milestone of SMAS works. The congress activities became regular and alternately each year there were organized congresses of sports medicine and sports sciences and congresses of dietary supplements. Finally, the Congress on Prevention of Doping in Sport, which came about as the result of great experience and the work of many members of the Sports Medicine Association of Serbia during the last decade.

The first step of the new leadership of the Association was to organize the First

Congress of Serbian Sports Medicine and Sports Sciences. The Congress was held in 2003 in Sava Centre and carried out through 8 sessions, seminars and workshops. It brought together 250 experts in the field, and within the framework of oral and poster presentations 103 abstracts were presented. From the professional point of view, the Congress has fully met the expectations. However, for us it represented also a test for the assessment of our own capabilities in the context of preparations for the organization of a much larger event – the 10th Congress of the European College of Sport Sciences. Some prominent members, which were most counted upon in the preparation of this Congress, did not meet the expectations nor fulfilled commitments, and they eventually retreated completely. Other, mostly younger, took advantage of the chance they were given. They took all the responsibility and sacrifice, putting a lot of creativity and enthusiasm in their work.

The 10th Anniversary Congress of the European College of Sport Sciences was certainly one of the largest scientific and professional events ever held in Belgrade, Serbia. The Congress had 1,100 participants, of which 1,000 were from 52 foreign countries. Among them the most numerous were participants from the United Kingdom (83), Japan (67), Greece (63), Italy (62) and Germany (61), but there were also those from distant countries – Australia (17) and New Zealand (3). All the greatest experts in the field of sport sciences in those days had a common address – Belgrade, Sava Center. Presentations were held simultaneously in 15 parallel sessions, all rooms of Sava Center were engaged at full capacity, as well as all Belgrade hotels and travel agencies. And everything worked flawlessly. Such a result required a great effort on the part

of the now experienced team, especially on the part of the Congress President Dr. Nenad Dikic who was the alpha and omega of the event, then Dr. Sergej Ostojic, President of the Scientific Board, Dr. Sanja Mazic, young Dr. Marija Dabetic, as well as the experienced team of Sava Center, including Natalija Jurićevic, Nenad Denes and Zorica Tornjanski. In addition to the successful organization, the Congress has shown that members of SMAS display a significant professional and scientific potential. Through a total of 100 abstracts from Serbia a notable contribution was achieved in the exchange of knowledge and experiences with colleagues from abroad.

After the 10th Congress of the European College of Sports Sciences Sports Medicine Association has organized three congresses of sports medicine and sports science. On each of them, on average, there were 300 participants with a total of 40 to 50 abstracts presented. A total of five Congresses of Sports Medicine and Sciences (2003, 2005, 2008, 2010, 2012) has shown that Serbia has sports experts who conduct research and who follow the latest trends in sports medicine.

Beginning of the first doping controls in Serbia has influenced the thinking about dietary supplements in sport. Cooperation with the Department of Bromatology of the Faculty of Pharmacy only contributed to the organisation of a series of Congresses on dietary supplements. A total of 4 congresses (2007, 2009, 2011, 2013) presented nearly 200 original abstracts by more than 1500 participants. The tandem of prof. Dr. Sladjana Sobajic and Dr. Nenad Dikic successfully co-chaired all these congresses and significantly influenced the number and quality of discussions about dietary supplements. It was precisely the knowledge accumulated through these

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conferences that contributed to the organization of the First Congress on the prevention of doping in sport 2015.

In addition to the Congress, an important parallel activity was in the realm of publishing. Over 25 books were published (including Abstract books from congresses), many bilingual in Serbian and English, recognizing the importance of presenting the activities of SMAS to colleagues and partners from abroad. All editions of SMAS can be found on the web site www.smas.org and all members can read them online without any restrictions.

Many books were used as basis for courses and organizing seminars for members of the SMAS and other interested sports workers. Thus, after the translation of Team physician handbook we have organized 15 courses, which were attended in average by 15 doctors each. It was similar with the book Sportsmedicine review – Methodology and recommendations, which served for a series of seminars and final acceptance of the fact that the ECG must be an integral part of the review. Some of the books became textbooks at various faculties of sport and physical education, and the book Sports medicine was specifically written as a textbook for High school of sports and health and the Faculty of Physical Education and Sports Management at the University Singidunum. Book Metabolic Fitness has received the annual European prize Tanita, and the book Healthy Heart for All served as a guide to many people to deal with obesity and heart disease. Finally, the translation of the book Practical sports nutrition provided a unique textbook for education on sports nutrition and supplementation.

List of published books from 2002 to 2015:

1. Art of Aerobic (2002), Nenad Dikic
2. Body fat and health (2003), Nenad Dikic (ed.), Sergej Ostojic i Sanja Mazic

3. Herat rate monitoring in sport and fitness (2003), Nenad Dikic i Slobodan Zivanic
4. Team Physician Manuel (FIMS) (2004), translated: Nenad Dikic (ed.) i Sanja Mazic
5. Sports medicine examination: methodology and recommendations (2005), Nenad Dikic (ed.), Sergej Ostojic, Slobodan Zivanic , Sanja Mazic
6. Sudden Cardiac Death in Sport (2005) Nenad Dikic (ed.), Sergej Ostojic, Aleksandar N. Neskovic, Tatjana Potpara, Marija Diabetic, Bosiljka Vujsic-Tesic, c, Jelena Suzic, Alja Vlahovic-Stipac, Ana Djordjevic Dikic, Vojislav Giga, Sinisa Gradinac, Miodrag Ostojic, Sanja Mazic
7. 100 questions about doping (2007), Nenad Dikic
8. Paralympic sport (2007), Nenad Dikic
9. Travel to high altitude (2008), translated: Nenad Dikic (ed.) i Milica Sinobad
10. White book – team doctor a missing link (2009), Nenad Dikic (ed.)
11. Both side cleans (2009), Nenad Dikic (ed.) i Marija Midzovic
12. Practical sport nutrition (2009), translated: Nenad Dikic (ed.), Vera Blazencic Mladenovic, Brizita Djordjevic, Sanja Mazic, Milka Popovic, Dragan Radovanovic, Sladjana Sobajic, Slobodan Zivanic, Marija Andjelkovic, Jelena Oblakovic Babic, Nenad Radivojevic i Siniša Vujić
13. Sports medicine i questions and answers (2010), Zdeslav Milinković (ed.), Vesna Stračević i Nenad Dikić (co-ed.)
14. Sports cardiology – clinical cases (2010), Nenad Dikic (urednik), Jelena Stepanovic, Ana Djordjevic Dikic, Vojislav Giga, Nenad Radivojevic
15. Trans fat (2011), Nenad Dikic i Marija Andelkovic
16. Healthy heart for all (2014), Nenad Dikic (ed.), Ivana Nedeljkovic, Ana Djordjević Dikic, Vojislav Giga, Tamara Stojmenovic, Marija Andjelkovic, Ivana Baralic and Milica Vukasinovic Vesic
17. Sports physiology (2014), translated: Nenad Dikić (ed.), Marija Andelkovic, Tamara Stojmenovic, Ivana Baralic i Milica Vukasinovic Vesic
18. Metabolic fitness (2014), Nenad Dikic i Marija Andelkovic

The driving force behind all these publications was Dr. Nenad Dikic, but what is more important is the participation of a large number of contributors and authors, many of them young, who are today suc-

cessfully practicing not only sports medicine but also other areas of medicine, while also working as researchers, organization experts and managers in the institutions in which they work. Thus, SMAS has best demonstrated the doctrine of teamwork and of the development of its own staff and researchers.

Thus Dr. Marija Dabetic become successful paediatrician, while Dr. Jelena Suzic, Dr. Nenad Radivojevic and Jelena Babic Oblakovic besides specializing in internal medicine became international doping control officers. All of them published many papers and continued research in medicine, and some continued with the organization of educational meetings, which are considered equivalent to all their successes. Furthermore, a large number of members worked or they are working now as doping control officers. This contributed to the fact that the first doping controls were performed three years before the establishment of the Antidoping Agency of Serbia by the Sports Medicine Association of Serbia. Today the most experienced doping control officers come from the SMAS and medical part of ADAS consists of SMAS members Dr. Marija Andjelkovic, Dr. Milica Vukasinovic Vesic and Nenad Dikic.

Multispeciality approach of SMAS is used in other activities. Dr. Marija Andjelkovic together with Dr. Vera Blazencic Mladenovic, Milka Popovic, Brizita Djordjevic, Ivana Baralic, Zoran Jovanovic and Nenad Dikic established the Center for Sports Nutrition and Supplementation (CIS). This new professional association was immediately recognized in the world of sports, and soon it also became a meeting place for our best athletes who are looking for advice on nutrition and supplementation, as well as a reliable partner Antidoping Agency of

the Republic of Serbia. In addition, the expertise of members of the CIS has helped them to analyse and provide advice on medications and supplements taken by athletes. CIS has organized 12 Pansport Seminars and began a two-year school of sports nutrition and supplementation, as well as a two-year online course in the same field. It is the CIS who promoted the new educational center of SMAS in Kralja Milana Street 60, specifically adapted for education, but also as a gallery.

After 15 years as president, Prof. Dr. Slobodan Zivanic was unanimously given the title of honorary president, and the President became Prof. Zdeslav Milinkovic, one of our best orthopedists, a longtime director of Spinal Center of the Orthopedic Hospital Banjica and a great athlete. It is a fact that the SMAS always particularly appreciated doctors who know and love the sport, and the choice of Prof. Dr. Zdeslav Milinkovic that fact was strongly confirmed. As a handball and karate fighter Prof. Milinkovic was a member of the respective national teams, and then, after he completed his medical studies, he continued to improve in both fields. His career of orthopedist and team doctor of KK Partizan and the Davis and Fed Cup teams is nothing short of brilliant. It was these last two roles converging when our tennis flourished and won the title of best in the world.

Prof. Milinkovic has continued to support all activities of SMAS, especially research projects, most of which are also supported by the Ministry of Youth and Sport. Although the Sports Medicine Association is not primarily a research and educational institution, at any given time a project is being implemented or a specialization or doctorate of some of the members supported. Currently, un-

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der the auspices of the SMAS the experimental parts of two doctorates are being finalized, dedicated to food intolerance and probiotics in sports. This is the best possible way to confirm the opinion of the Executive Board of SMAS that only through continuous education we can cooperate, be equal and widely appreciated by partners from Europe and the world. It should be pointed out that several projects were created precisely on this bases: Assessment of Hydration of Basketball Players, Course of Sports Nutrition and Supplementation, Assessment of Total Psychological and Physical Health and Preventive Approach among Members of the Special Anti-Terrorist Unit (SAJ) and the project Straighten Up and Exercise.

Project Assessment of Hydration of Basketball Players emerged in cooperation with FIBA Europe, which for the first time allowed a research institution to operate directly during the competition at the European Basketball Championship. The curiosity was not only analysing eight national teams in real time during the competition, but also that the final results of the analysis were used to improve FIBA Europe recommendations about hydration of basketball players.

Online Course of Sports Nutrition was developed after Dr. Marija Andjelkovic finished two years of the master program Sports Nutrition and Supplementation Course as part of the International Olympic Committee educational program. Not only has this earned the Diploma of the IOC for Dr. Andelkovic, as the only participant outside of the English-speaking world, but she also managed to adapt the course and present it to the members of the SMAS. Currently the course is in its 2nd year of lectures and the 1st year of online

tests. Finally, with this SMAS demonstrated that good relations with colleagues from abroad, but also a desire for learning and knowledge, promote sports medicine in Serbia.

A special project that we want to mention is the project performed in co-operation with the members of the Special Anti-Terrorist Unit, which demonstrated that sports medicine can significantly help also in areas not strictly related to achieving sports results. The importance of this research certainly is confirmed by its presentation at the American College of Sports Medicine in 2015.

In the end, the original project of prof. Milinkovic Straighten Up and Exercise last year experienced the peak in the number of our best athletes supporting it, as well as in the number of participants exercising. Much attention has always been paid to preventive work. This project amply demonstrates how important it is that children and young people should exercise properly and regularly not only to achieve results, but also to be healthy. Overall activity in just these four projects shows the multispecialty approach and significance of SMAS work.

Sports Medicine Association of Serbia was joined by its 1000th member in 2015

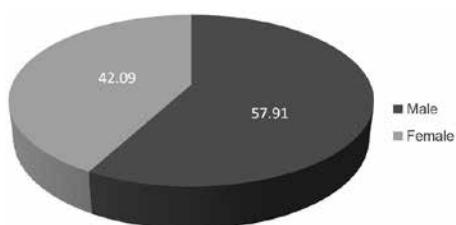
However, the greatest strength of the Sports Medicine Association of Serbia lies not in the congresses and publications, but in its membership. In its 20th year of existence SMAS recorded its 1000th member and the victory of the idea that the Association should be a place for all those gathering in sports medicine in everyday work or multispecialty research. The fact that among the members of SMAS there are many coaches, instructors, pharmacists, professors of physical education, but

also doctors of all specialities shows just how diverse and complex Sport Medicine Association of Serbia is.

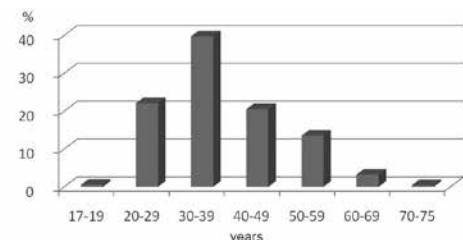
Profession	
Medical doctor – other specialisation	188
Student	129
Coach/instructor	80
Pharmacist	69
Other professions	68
Professor of physical education	66
Other technical professions	39
Physiotherapist	33
Professor	26
Economist	25
Manager	25
Cardiologist	20
Athlete	18
Pupil	15
Specialist of sports medicine	13
Personal trainer	13
Specialist of hygiene	11
Nutritionist	10
Surgeon	9
Teacher	9
Unemployed	9
Biochemist	8
Specialist of internal medicine	8
Ass. Professor	7
IT manager	7
Specialist of physical medicine	7
Director	6
Medical technician	6
Assistant	5
Technician	5
Medical doctor - nutritionist	5
Journalist	5
Contractor	5
Dentist	5

Nutritionist high school	5
Paediatrician	4
Vet	4
Architect	3
Chemist	3
Researcher	3
Team doctor	3
Pensioner	3
Psychologist	3

The distribution by gender is as expected, although on SMAS meetings there are always more women present.



Age of the members is also intriguing. It shows that the largest numbers of members are in an age when people learn the most (20-29) or when people improve their knowledge the most (30-39). We can be proud to have made it possible for generations to receive true and timely information in Serbian and to make them available the corresponding Serbian literature.



And finally, if we look at the geographical distribution of our membership, we can

1. KONGRES O PREVENCICI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

see that despite the fact that the large number of our members comes from Belgrade, we largely cover the whole territory of Serbia, and we also have significant number of members in the countries of former Yugoslavia.

Mesto stanovanja	
Belgrade	371
Central Serbia (without BG)	142
Vojvodina (without NS)	87
Novi Sad	47
Bosnia and Herzegovina	25
Montenegro	25
Macedonia	18
Croatia	6
Kosovo (Serbia)	3
Slovenia	3

Sports Medicine Association of Serbia has reached the legal age or, even better, its first 20 years as a large, modern, professional and competent organization and by many parameters it is the leader among professional organizations. However, the SMAS never had a desire to be compared, but to work and prosper for the benefit of all its members. We hope that the future generations will continue to work decisively and professionally and that the Sports Medicine Association of Serbia will welcome more jubilees.



Milica Vukašinović Vesić je diplomirala na Medicinskom fakultetu Univerziteta u Beogradu. Specijalista je medicine sporta i na završnoj je godini doktorskih studija na Katedri za eksperimentalnu i primjenju fiziologiju sa sportskom medicinom. Trenutno zaposlena na poziciji direktora Antidoping agencije Republike Srbije.

Milica Vukašinović Vesic graduated from the Faculty of Medicine, University of Belgrade. Sports medicine specialists and she is on the final year of doctoral studies in the Department of Experimental and Applied Physiology with sports medicine. Currently employed as a Head of Anti-Doping Agency of the Republic of Serbia.

17. DESET GODINA ANTIDOPING AGENCIJE REPUBLIKE SRBIJE, REZULTATI ZASNOVANI NA ZNANJU

Milica Vukašinović-Vesić, Marija Andelković, Bojan Vajagić, Borislav Jakovljević, Mirko Stefanović, Miloš Cvjetićanin, Nenad Dikić

Antidoping agencija Republike Srbije

Antidoping agencija Republike Srbije je osnovana 2005. godine. U periodu pre toga doping kontrole u Srbiji su sproveđene pod okriljem Udruženja za medicinu sporta Srbije.

Prvi Zakon o sprečavanju dopinga u sportu donet je 2005. godine a Srbija je bila jedna od prvih država u svetu koja je imala poseban Zakon za borbu protiv dopinga u sportu. Srbija je 2009. godine ratifikovala Međunarodnu konvenciju protiv dopinga u sportu i time preuzeła obavezu da preduzme „dalje i jače akcije usmerene ka eliminaciji dopinga u sportu“. Međunarodna konvencija o dopingu upućuje na jedinstvenu primenu osnovnih odredbi Svetskog antidoping kodeksa u svim zemljama potpisnicama konvencije. Svetski antidoping kodeks iz 2009. je u procesu revizije pretrpeo značajne izmene tako da je 1. januara 2015. godine na snagu stupio novi svetski antidoping kodeks. Obzirom na značajne izmene koje je doneo novi svetski antidoping kodeks a na obavezu koju smo kao zemlja preuzeli potpisivanjem Međunarodne kon-

vencije bila je neophodna i izmena Zakona o sprečavanju doping u sportu. Tako je u oktobru 2014. godine donet novi Zakon o sprečavanju dopinga u sportu.

U periodu od osnivanja do 1. juna 2015. godine Antidoping agencija Republike Srbije sprovedla je ukupno 5535 doping kontrola od čega 3028 doping kontrola na nacionalnim takmičenjima. Od testiranih 3028 nacionalnih sportista 53 sportista je bilo doping pozitivno, a koristili su 70 različitih zabranjenih supstanci. Doping pozitivni sportisti su bili iz 22 od ukupno testiranih 60 različitih sportova. Najveći broj doping pozitivnih je u rvanju 7, nakon toga bodibilding i rukomet sa po 6 sportista zatim slede 5 u boksu, 4 u atletici, 3 u košarci, 2 u dizanju tegova, ragbiju 13, američkom fudbalu, kik boksu i bicikлизму i po 1 u karateu, veslanju, kajaku, tenisu, fudbalu, hokeju na ledu, džudou, streljaštvu, bobu, džokeju. Tokom deset godina postojanja imali smo pored prisustva zabranjene supstance u telesnom uzorku spotiste i 3 druge povrede antidoping pravila kao što su ometanje doping kontrole, davanje doping sredstava sportisti kao i pokušaj korišćenja i posedovanje zabranjenih supstanci. Što se tiče procentualne raspodele između grupa supstanci na koje su sportisti bili doping pozitivni ona se gotovo ne razlikuje od one na svetskom nivou. Naime, 48,57% od svih prisutnih supstanci na koje su sportisti bili doping pozitivni su

1. KONGRES O PREVENCIJI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

anabolički steroidi, 18,57% kanabinoidi, 15,71% su stimulansi, 14,29 % su diuretici i 1,43% beta blokatori i beta 2 agonisti.

Antidoping agencija od 2008. godine sprovodi i doping kontrole konja jer smatramo da zaštita životinja treba da bude važan segment našeg delovanja. U periodu od 2008. do 1. juna 2015. godine sproveli smo 338 doping kontrola konja a od broja testiranih 28 je bilo doping pozitivno. Kuriozitet kod doping kontrole konja je da se svaka supstanca koja se nadje u njihovom organizmu smatra dopingom te smo u tom smislu imali doping pozitivne na sledeće supstance: fenilbutazon, fluniksin, diklofenak, triamcinolone acetonid, kofein, heptamadol, teofilin, furosemid, dexametazon, ketorolak, oksifenbutazon, salicilna kiselina, mentol, lidokain, 3 hidroksilidokain.

U trenutku kada je osnovana Antidoping agencija Republike Srbije smatralo se da u Srbiji ne postoji problem dopinga i da se srpski sportisti ne dopinguju. Međutim, broj otkrivenih doping pozitivnih slučajeva jasno govori u prilog činjenici da taj problem postoji ali i da se tokom godina broj doping pozitivnih sportista smanjiva zahvaljujući, pre svega, upornom radu na edukaciji ne samo sportista, već i ostalih sportskih radnika.

Smatrajući da je edukacija jedini pravi put za smanjenje doping pozitivnih slučajeva u Srbiji Antidoping agencija Republike Srbije je u prethodnih deset godina održala 9 antidoping seminara, 4 kongresa o dijeteskim suplementima, 12 Pansport seminara ili u proseku 1 predavanje nedeljno za sve učesnike u sportu i 2 edukacije godišnje za 350 najboljih sportista stipendista Ministarstva omladine i sporta. Pored toga Antidoping agencija Republike Srbije je objavila i veliki broj knjiga među kojima su i „Sto pitanja o dopingu“ i „Druga strana medalje“ koja po-

kušava da objasni pojavu dopinga iz drugog ugla, iz perspektive umetnika gde neki od njih govore u prilog činjenici da dopinga ima i u drugim oblastima društva. Upravo zahvaljujući kontinuiranoj edukaciji uspeли smo da kroz godine unazad smanjimo broj doping pozitivnih sportista i ukažemo im, ne samo, na etičke probleme već, što je i mnogo značajnije, na štetne posledice po zdravlje koje uzimanje doping supstanci ima. Dok smo u 2010. godini imali 4% doping pozitivnih sportista u odnosu na broj testiranih, taj procenat u 2014. iznosi 1%.

Antidoping agencija je prepoznata po svom kvalitetnom radu ne samo u Srbiji već i u svetu i o tome govori podatak da ima svoje predstavnike u velikom broju međunarodnih organizacija. Treba naglasiti da je Srbija u periodu od 2008. do 2012. imala svog predstavnika u Upravnom odboru Svetske antidoping agencije. Danas Antidoping agencija Republike Srbije ima člana ad hoc grupe Saveta Evrope za probleme dopinga, potpredsednika medicinske komisije FIBA Evrope, predsednika Antidoping komisije Svetske planinarske federacije, predsednika komisije za terapeutска izuzeća Svetske federacije za skijanje na vodi i vejk bord, člana TUE komisije međunarodne rukometne federacije, 4 licencirana UEFA doping kontrolora, 1 FIFA doping kontrolora, 2 doktora supervizora FIBA Evrope, 2 doping kontrolora svetske planinarske federacije, 1 komesara za doping Evropske atletske federacije.

TEN YEARS OF THE ANTI-DOPING AGENCY OF SERBIA, RESULTS BASED ON KNOWLEDGE

Milica Vukasinovic-Vesic, Marija Andjelkovic, Bojan Vajagić, Borislav Jakovljević, Mirko Stefanović, Milos Cvjeticanin, Nenad Dikic

Anti-doping Agency of Serbia

Anti-doping Agency of Serbia was founded in 2005. In period before, doping controls had been performed under umbrella of the Sports Medicine Association of Serbia.

First Law on Prevention of Doping in Sport was adopted in 2005 and Serbia was one of the first countries in the world, which had special Law on Prevention of Doping in Sport. In 2009, Serbia ratified the International Convention against doping in sport and thus assumed the obligation to take "further and stronger action aimed at the elimination of doping in sport". International Convention on Doping refers to a single application of the basic provisions of the World Anti-Doping Code in all countries, which signed Convention. World Anti-Doping Code from 2009 underwent significant changes in the process of revision, so on January 1st 2015 a new World Anti-doping Code came into force. Having in mind significant changes brought by the new World Anti-Doping Code and the obligation that we have as a country taken over by signing the International Convention, changes to the Law on Prevention of Doping in Sport were necessary. So, in October 2014, new Law on the Prevention of Doping in Sport was adopted.

In the period from its establishment until June 1st, 2015, Anti-Doping Agency of Serbia conducted a total number of 5535 doping controls out of which 3028 doping control at national competitions. From 3028 tested national athletes, 53 of them were doping positive, and they used 70

different banned substances. Doping positive athletes were from 22 of the tested 60 different sports. The highest number of doping positive athletes were in wrestling 7, then bodybuilding and handball with 6 athletes, followed by 5 in boxing, 4 in athletics, 3 in basketball, 2 in weightlifting, rugby 13, American football, kick boxing and cycling and 1 in karate, rowing, kayaking, tennis, football, ice hockey, judo, shooting, bobsleigh, jockey. During ten years of existence, we had, despite the presence of a prohibited substance in a athletes sample, 3 other anti-doping rule violations, such as obstruction of doping control, giving doping substances to athletes and attempt to use and possession of prohibited substances. As for the percentage distribution between the groups of substances for which the athletes were doping positive there is no difference from those at the global level. Namely, 48,57% of all the substances on which athletes were positive doping were anabolic steroids, 18,57% cannabinoids, 15.71% were stimulants, 14,29 % diuretics, 1.43 % beta-blockers and beta-2-agonists.

Anti-Doping Agency, since 2008, conducts doping control of horses because we believe that animal welfare should be an important part of our work. In the period from 2008 to June 1st, 2015, we conducted 338 doping controls and the out of that number of tested horses 28 were doping positive. The curiosity in doping control of horses is that each substance found in their organism is considered doping and having that in mind we had the following positive doping substances: phenylbutazone, flunixin, diclofenac, triamcinolone acetonide, caffeine, heptaminol, theophylline, furosemide, dexamethasone, ketorolac, oxyphenbutazone, salicylic acid, menthol, lidocaine, 3 hidroksilidokain.

1. KONGRES O PREVENCICI DOPINGA U SPORTU / 1. CONGRESS ON PREVENTION OF DOPING IN SPORT

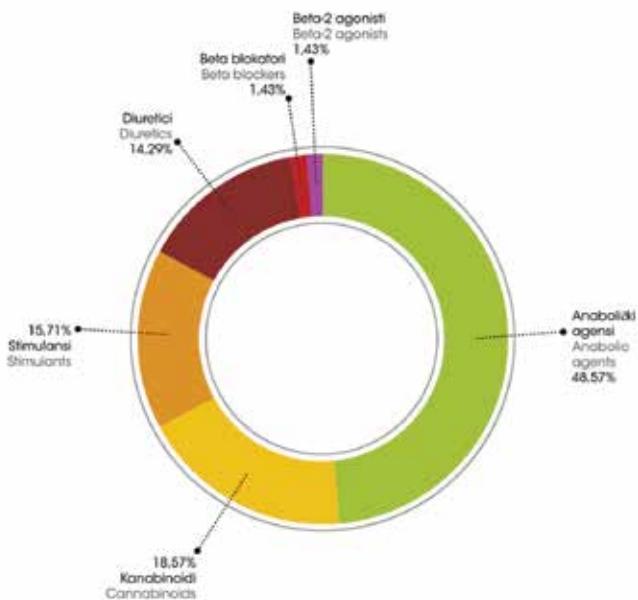
At the time when the Anti-Doping Agency of Serbia had been founded, it was considered that in Serbia there is no problem of doping and that the Serbian athletes do not use doping substances. However, the number of positive doping cases detected clearly supports the fact that this problem exists but, also, that over the years the number of positive doping athletes decreased due primarily to the persistent work on education not only of athletes, but also other sports officials.

Considering that education is the only proper way to decrease number of the positive doping cases in Serbia, Anti-Doping Agency of Serbia in the past decade held 9 anti-doping seminars, 4 congresses on dietary supplements, 12 Pansport seminar or an average of one education each week for all participants in sport and 2 education annually for 350 best athletes with scholarship from the Ministry of Youth and Sports. In addition, Anti-Doping Agency of Serbia published a large number of books including "Hundred questions about doping" and "Both side cleans" which tries to explain the emergence of doping from a different angle, from the perspective of the artist, where some of them testifies to the fact that doping is also found in other areas of society. Thanks to continuing education, we have managed over the years to reduce the num-

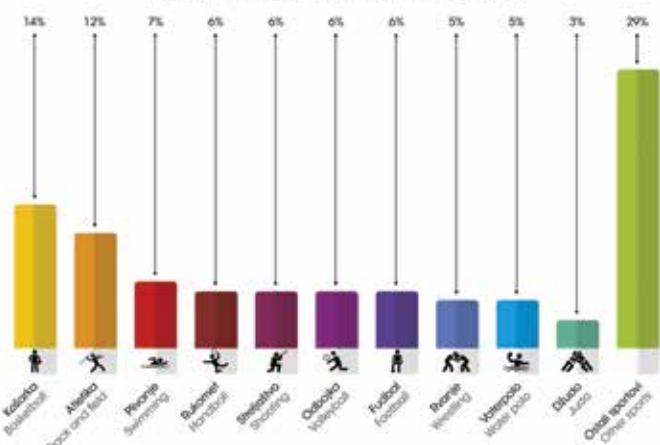
ber of doping positive athletes and point to them, not only on the ethical problems but, more and more significant, the adverse health effects that taking doping substances have. While in 2010, we had 4% doping positive athlete in relation to the number of tested, the percentage in 2014 was 1%.

Anti-doping agency has been recognized for its quality work not only in Serbia but also in the world and fact that it is represented in a number of international organizations shows that. It should be stressed that Serbia in the period from 2008 to 2012 had a representative on the World Anti-Doping Agency Foundation board. Today Anti-doping Agency of Serbia has a member of CAHAMA and Monitoring group of the Council of Europe, Vice President of Medical Council of FIBA Europe, the President of the Anti-Doping Commission of International Mountaineering and Climbing Federation, President of the TUE Commission of the International Wakeboard and Water Ski Federation and a member of the TUE Commission International Handball Federation, 4 licensed UEFA doping control officers, one of FIFA doping control officer, 2 supervising doctors of FIBA Europe, two doping control officers of International Mountaineering and Climbing Federation, one Commissioner for doping of the European Athletics.

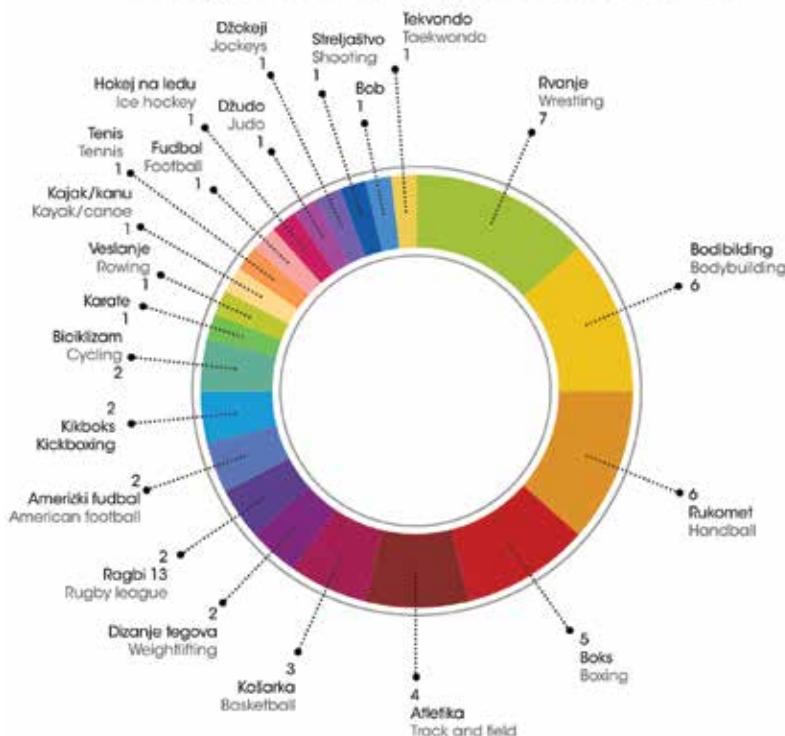
Zastupljenost nedozvoljenih supstanci 2006-2015 Share of illegal drugs 2006-2015



Kontrolisani sportisti po sportovima 2006-2015 Tested athletes by discipline 2006-2015



Doping pozitivni slučajevi po sportovima 2006-2015
Doping positive cases by discipline 2006-2015





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L-karnitin je aminokiselina koja se prirodno javlja u organizmu i ima vitalnu ulogu u metabolizmu masti. Obezbeđuje dobro zdravlje i visok intenzitet energije, pomaže oslobođanju nagomilanih masti, a ove masti svojim sagorevanjem obezbeđuju energiju. L-karnitin je takođe poznat po svojoj osobini da pomaže u trenucima kada je potrebna maksimalna snaga, a pomaže i pri otklanjanju upale mišića.

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Ketoni maline izgledaju kao tanki kristali koji se tope u ustima i sadrže brojne bioaktivne sastojke, koje obezbeđuju energiju, podržavaju zdravlje organizma i korisni su kao podrška termogenezi i oksidaciji telesnih masti.



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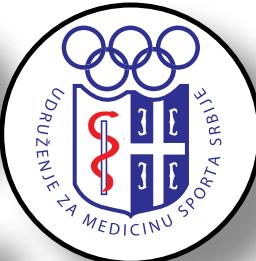




Udruženje za medicinu sporta Srbije

sports medicine association of Serbia

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