



**UNIVERSITY OF PÉCS**  
Faculty of Health Sciences

# **SPORT- AND HEALTH SCIENCES**

notebooks

1st International Basketball Conference -  
New Frontiers in Sport Science and Practice

**ABSTRACTS**

2022, Volume 6 - issue 1



**Centre for Basketball  
Methodology and Education**



## **SPORT- AND HEALTH SCIENCES NOTEBOOKS**

### **1st International Basketball Conference - New Frontiers in Sport Science and Practice**

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## MESSAGE FROM THE ORGANISING COMMITTEE

When a dream becomes reality

As director of basketball operations and founder of National Basketball Academy, I am the proudest and happiest man on Earth to have been able to organize the 1st International Basketball Conference at our Centre for Basketball Methodology and Education. The title of the conference (New frontiers in sports science and practice) says it all – although the magical game of basketball continues to be one of the most popular and widespread sports in the world, it looks like the basketball of the second decade of the third millennium has not much common – apart from the basket and the ball – with the game invented by Dr. James Naismith one and a half century ago. That is why I decided to bring about this conference by inviting the most brilliant minds of the game from overseas and Europe – so much has changed since the inception of basketball that it seemed unavoidable the talk about the new tendencies that have been recognized lately and will happen for sure in the near future.

Such a broad-spectrum scientific congress – covering both fields of physiology, biomechanics, and psychology, pedagogy, training theory, sports analytics and management – can not only bring new impulses and knowledge for the scientific basketball community, but also for the players

and coaches being in the frontline of the game daily. When a few months ago the idea of the conference was brought up, not many of us thought it possible to welcome such dignitaries and legends of the international basketball community as Geno Auriemma, the American university coach of all time, Ettore Messina, boasting of multiple Euroleague titles as a coach and having been the assistant to the legendary Gregg Popovich of the San Antonio Spurs or Sonja Vasic-Petrovic, MVP of last year's European Championship, just to mention one of her countless titles. But thanks to the tireless work of my colleagues we were able to stage this groundbreaking congress, hopefully the first of many such events to come.

**Dr. László Rátgéber, PhD, habil.**

Master Coach  
Associate Professor at University of Pécs and at University of Physical Education, Budapest  
Professional and Strategic Director of National Basketball Academy in Pécs  
Director of the Center for Basketball Methodology and Education



## MESSAGE FROM FIBA EUROPE

### World class basketball hardware and software

On behalf of FIBA Europe it was a great pleasure and privilege to be part of this groundbreaking conference at probably the best equipped Centre for Basketball Methodology and Education of our old continent. Having stepped on the same stage – either virtually or physically – with legendary coaches, theoreticians and players like Geno Auriemma, Pini Gershon, László Németh, Ettore Messina, Sonja Vasic or Kornél Dávid was a huge honour.

The title of the conference – New frontiers in sports science and practice – was not just an empty slogan but in fact we ventured into uncharted territories of the beautiful game of basketball. And in doing so we tried to figure out what basketball will be like in a few years or decades.

For sure the future of basketball is exciting and promising. The game is becoming faster and faster, the players bigger and stronger and the court seems smaller and smaller. Sixty years ago a slam dunk was a curiosity whereas nowadays men's basketball is played above the rim.

In order to be able to research the future of basketball we need scientific centers like this one at the National Basketball Academy in Pécs. The hardware is given, the software – in the form of brilliant lecturers – was also here, so the result was an unforgettable and exciting conference. I am

more than certain that we have made a big contribution to the theory of the game of basketball.

#### **Michael Schwarz**

FIBA Head of NF / Sport / Coaching Europe, FIBA

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# Plenary Presentations' ABSTRACTS



MINISTRY  
OF HUMAN CAPACITIES



**Centre for Basketball  
Methodology and Education**



# THE CLASH OF SPORT SCIENCE AND PRACTICE AND THE INTEGRAL PERFORMANCE SYSTEM

Dr. László Rátgéber, PhD, habil.

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Professional and Strategic Director of National Basketball Academy in Pécs  
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The gap between sport science and practice has been the subject of many debates over the last couple of years. Although it is understood that sport science can have an important impact on performance enhancement, there is still a general consensus that the transfer of sport science knowledge into coaching is poor. Given this apparent problem, we must “clash” this two field to each other and pressure them to find a common ground where both respect the other and work for one common goal, to augment athlete’s performance.

The landscape of the modern professional and elite sport has changed extremely in recent years. Clubs has gained an interest in creating athlete-centered systems such as Integral Performance System, which includes multidisciplinary team of experts that is synchronized and led by a leader, usually the head coach, to maximalize individual and team performance. Since the margin between winning and losing is small, yet the margin between budgets is often very large, such environments use all factors surrounding athlete’s performance, health, and well-being to gain advantage over the opponent.

In order to bridge the gap between sport science and practice and improve its impact on a professional and elite sport setting, better communication based on trust and mutual respect is needed. Coaches must live up to the challenge and be managers of training technologies, whereas sport scientists must also comprehend what coaches require. Priorities must be understood, sport science is a tool, a very valuable one, yet it is only a tool. Coaches must learn to use this tool to enhance not just themselves but their athletes as well.

We have reached the point where success depends only on human factor. The fantastic equipment, infrastructure development, scientific support is not for comfort, but for

hard work. Nothing, absolutely nothing can replace hard work. Technology is rocketing rapidly and it is a very long road from coaches’ notebook to performance analysis, yet the education must be fastened. If sport science and practice will uncover a common ground, and learn to function together, the future looks very bright.

**Keywords:** sport science, practice, integral performance system, performance enhancement

# FIBA EUROPE – COACHING - COACHES DEVELOPMENT

Michael Schwarz

FIBA Head of NF - Sport / Coaching Europe

What are the components of being a good coach? It is one of the most important and at the same time the most difficult questions to answer. Coaches are often very verbal, dominant, aggressive. However, players need clear instructions, clear direction on what to do. In the absence of this, they fall apart. They need a leader. Shouting coaches create conflict. Successful coaches, on the other hand, build a very strong relationship with their players. The basketball coaching profession is moving in this positive direction of cooperation. The components of "being a good coach":

- **Trust:** if a player believes in a coach, he follows, he is 100% behind him, he will do everything in a harsh situation, the coach can ask for up to 110%.
- **Empathy:** the coach must be able to put himself in the place of the player, he must be able to pay attention to them. You can learn methods, but empathy is in you, it comes from within. If you care about the other one.
- **Self-assurance:** the coach believes in his approach, concept and decisions. It needs to be distinguished from self-confidence, which is a learning ability that can be developed with a lot of practice, for example. Self-assurance is one of the key components of the "good coach" phenomenon.
- **Passion:** the player knows immediately whether basketball is the coach's life or just a job.
- **Leadership:** This is also a gift, although there are areas that need and can be learned. The coach can become a leader through the example shown.
- **Coach Skillset** is made up of several elements. 1.) we form a common voice through **communication**. Feedback should be given instead of criticism. Using the sandwich method, we focus on what we want to achieve together by relying on our strengths 2.) **Listening** to the player helps to build a relationship and the coach can also learn a lot from it. Dialogue instead of monologue 3.) **Analytical skills** are a learning skill pack that helps the coach be able to interpret the situation and react in a fraction of a second 4.) The coach's **ability to plan and organize**. A website was created to improve this.

The coach needs to be focused on training as well, not just the match. He and his staff need to be organised 5.) **Technical skills** refer to the use of the device. One of the most important things is the proper use of the game board and its symbols so that the player really and what the coach wants 6.) **Psychological skills** help the coach to resolve tensions within the team and must ensure that players understand his message 7.) **Knowledge of the game** because the coach needs to know what he is talking about.

Especially at the lower levels, you need to know this knowledge because the coach works alone, without a staff. And on a higher level, you need to be able to tell the professionals what you want. A coach needs to be able to rely on his coaching philosophy. It can't be a good replica of the most successful coach. Being a coach is a profession you need to be able to describe. And being a youth coach is also a profession. To support this, the FECC's exclusive 3-level training program was created by FIBA.

**Keywords:** coaching, self-assurance, leadership, skillset, FECC

# THE EVOLUTION OF MEN'S BASKETBALL AND PREDICTION OF ITS FUTURE TRENDS

Geno Auriemma

Head Coach at UConn Huskies

Basketball has evolved a lot in recent years. The real turning points were the role of the post player, widening the lanes, adding the three point line and now the rule changes of the game has become less physical. If we look at current player trends, they invest less energy in defense and more in transition offense. Modern technology, sports science and sport professionals from different areas play a much bigger role in players development. Talent identification should be part of the commitment to study. Players receive all the professional help they need to improve their performance and learn a healthy and professional lifestyle, therefore they are expected to be also committed to learning. The NIL rules provides that NCAA college athletes have the opportunity to benefit from their name, image and likeness. These external circumstances may or may not distract NCAA players from their performance what we will see in the coming years. The coaching professional has become more difficult by the fact that owners have performance-centric expectations. Young coaches need to find a way to teach kids how to play the game while being successful which will follow. Coaches also need to deal with ego management while retaining the role of the coach and making decisions that are best for the team.

Coaches have to adapt to the changes of the game. As players become more physical and can play in more positions, the style of play and the fundamentals that European basketball has given to the world of basketball must be maintained. Prevention, rehabilitation, and training methods have also changed. With the help of technology and measurements, we can get a lot of data about the current condition and load capacity of the players. Also the athlete's precisely planned daily routine helps shape the player's work ethic and athlete lifestyle. The easier part of coaching is the technical and strength & conditinal training of the player. However, mental preparation also requires a new kind of approach, as children's values change. It is also the job of the coach to gain insight into the lives of today's children and help them

prepare mentally. Managing the egos become much more difficult and become a full-time job for a coach. Coaches has to make some decisions that their players not going to like, and those decisions can't be based on players how are going to feel about it. They must make their decisions based on what is the best for the team. The coach should help the player find a way to be well-balanced on the court. For a very well skilled player, such as Dorka Juhász, who plays in UCONN, this path leads to development and become a better player. Young coaches also have to figure out what is the difference between teaching basketball and winning the games. Coaching and teaching basketball is different. For a coach how to teach the kids play basketball in a proper way, even at the age of 17-18 years should be more important than just running set plays. In Europe, young and talented players are forced to the bench due to foreigners and because of the pressure on coaches for results, while in America they have a continuous opportunity to play in the university championship. Although European players are more skilled between the ages of 16 and 18, this gap will soon vanish somehow. Dual career model should be an important part of talent development. The importance of sport and study must be equal. Many athletes have shorter careers during which time their priority is just focused on their sport performance. They need to provide themselves with the opportunity for a post sport career.

A basketball coach has a number of tasks to face in managing the talents. Modern sports science can help, however, there are tasks like educating and teaching an athlete that should not be based on data. A young coach has to face many challenges due to the changing world, so needs to be up-to-dated and consistent in his profession, following the change of basketball and scientific trends in a daily bases.

**Keywords:** basketball, basketball evolution, talent management, sports science

# HOW TO SELECT PLAYERS FOR TOP EUROPEAN TEAMS?

Pinhas "Pini" Gershon

Maccabi Tel Aviv

To create a successful basketball team a good coach needs to select successful players. Most of the coaches make the mistake to select players considering just their numbers and compare statistics. It is recommended to select players by their possessions. In top teams players must have had experience to play in final four if they want to succeed and the player must fit in the system he/she will play in. Moreover, players' ego play an important role, is he/she ready to give the last ball to a team mate can determinate the success.

High level team management can easily afford to buy top players. But a holistic view is required to select the best players to the best roles. Most importantly the selection of the player has to be "live", the coach has to see his/her behavior, not only athletic and technical skills.

Today's winning team select big and tall guards. They play the so called 180% play method which is made of 40% of 3 points, 60% of 2 points and 80% from the line. To be successful, a team always plays fast game, after defense rebound the shot to score must be hit in 16 seconds. The coach has to see and analyze how fast the player is in getting the ball and shooting, in one single motion.

Once selected players are in their position many considerations need to be done:

- Never copy a play that works for another team
- Need players that want to play for the team
- Respect the coach and his methods
- Quality coach can recognize when to play high tempo or slow tempo and when to apply a smart player or athletic player
- A player has to have an iconic personality for the city or for the country, has to be an example for others, for children
- Coach must help player to reach their target and it makes the team better. Good player makes good decisions
- Top player can play even 3 times a week with no injuries, complains, can play with focus under pressure

-Important how players behave in the locker room after looses

**Keywords:** selection, playing system, personality, success, behavior

# THE EVOLUTION OF BASKETBALL AND GUIDELINE FOR YOUNG COACHES

Ettore Messina

Head Coach of Olympic Milano

The athleticism is the key in today's basketball. Players are becoming more physical and stronger therefore the way the game is being played is constantly changing. Messina assumes that long distance shot skills will develop the most in the near future while mid-range shots and pull-up jump shots completely lost from the game. In the past, the team consisted of coaches and players. Now a complete staff including sport scientists are in charge for the development of players. Studying recovery, sleeping habits, work load, load management and minutes limitations has become indispensable for planning. Through sports science, we can better develop players in all levels, but we need to balance the physical, tactical and mental preparations. Due to the calendar and competition system, accurate planning and daily routine are essential, the most important part of which mental recovery. In addition, the essential part of coaching is to develop the teaching system. Coaches has to learn how to lead a team or player from point A to B to C.

Technical elements we used to teach such as pull-up jump shot, jumper, one-two dribble, change of direction pull-up are lost and just a very few players are capable to shoot a mid-range shot off the dribble. Every Euroleague team has at least one player with a long distance shooting range, therefore in addition who can dribble and pass would be a very valuable player. Individual teaching is probably going to that way where we extend the shooting range of players. Coaches had to change their training schedule due to the decreased game load. While in the past rest was never considered as part of the practice, now sport science has to take this into account as well. Although to build mental toughness it's necessary that players are going throw hard work even in extreme situations. In youth basketball where fewer games played, coaches must build mentality and train players who are tired because of adaptation terms. In youth program there is less to be concerned about training load than coordinating the three levels of development. No part of the coaching profession can be neglected in teaching

players. Physical, tactical and mental development must be achieved in equal proportions because each is consequence of the other. The lack of coordination of the calendar is a huge problem for regular preparation. The efficient way is planning the daily program of players. Team practices, individual practices, strength and conditioning, nutrition, recovery has to be planned next to which mental recovery is a very important part of a weekly routine. Coaches are fed by the energy of a young player who trains with more energy and more desire than others. However players must understand that they must earn the trust of the coach. Coaches are afraid of losing as well as players therefore they only going to get played when players are able to get pushed during practices and earn the trust of the coach. Because of so many informations about the world of basketball, clinics and videos, coaches has to be capable to select and pick up those things that feed their system and philosophy. They need to create challenges to players that can be overcome and find the difficulty level for every individual. Steps during the teaching process can not be changed or skipped. Coaches has to coach step by step from A to B to C otherwise it creates confusion for the players.

Coaching basketball has become a very complex job. To learn and do that in a professional way, must have a knowledge about characteristics of modern basketball, the ability how to manage coaching staff and sport scientists. To develop the right program and teach the right things to kids, coaches must go and watch practices and ask questions from other coaches having more experience of their profession.

**Keywords:** basketball, coaching points, coaching methodology

# THE EMERGENCE OF A SPORTS SCIENCE APPROACH TO SUPPORT PRACTICAL WORK

Prof. Dr. h.c. Lajos Mocsai

Chair of the Board of Trustees of the University of Physical Education

The lecture links the practice of handball with sports science in order to develop the sport based on this synthesis. The coaching profession is changing and evolving, the work of a coach is already assisted by 6-8-10 professionals. However, the responsibility of the coach remained. The interpretive framework of the lecture is the need to broaden the view of the sport. An interdisciplinary link between sport and other cultural fields needs to be established.

The **development model** is a model that realizes coaching ideas and philosophy. Performance diagnostics should be used to help the athlete develop. It predicts future performance, points out whether training work, training technique, technology are appropriate. It helps to filter out practical solutions that are no longer relevant.

In order to establish the success of **the athlete and the team**, it is necessary to identify the medical data sets, the biometric data sets. It is important to be aware that the athlete is not always rational in his decisions, and analytics will not be able to explain all the results and performance. Complex areas of activity, control and feedback should also be examined independently.

The **individual performance** of an athlete is influenced by measurable factors also. Based on this, it is necessary to develop a development-preparation model to determine the ideal zone for maximum performance and to achieve the appropriate state of consciousness. Physiotherapy, rehabilitation and preventive procedures must also be planned and measured. Health monitoring is essential.

Collaboration with science also provides support for doing the right work. In addition to examining the player's suitability for a given position, it is also necessary to biomechanically determine key moments and describe the state of consciousness of peak performance. It is necessary to examine the athlete's in-game abilities, measure training and match performance. Performance physiological and metabolic energy results should be analyzed.

**Sports analytics** focuses on the performance of the players,

the interactions between the players, the individual and group-level states of consciousness with the help of the applied algorithms, visualization methods and data analysis tools. The tools of the measurements are complex, the use of statistical methods, the examination of decision-making processes, the application of probability predictions, and telemetry following the performance of players stand out.

**Keywords:** sports analytics, measurable factors, development model

# THE JOURNEY AND ITS STATIONS FROM A PLAYER'S POINT OF VIEW

Sonja Vasic

Three-time Euroleague Champion Player

I started playing basketball at the age of seven. I loved to play and was only interested in the sheer joy of the game. In the outstanding moments of my career, I always tried to recall that joy that I play for.

big step because I had to live a different lifestyle than before. This is the biggest shift for a young player. Until then, I dominated my age group, it was easy to think of myself as the best. But I had to fight for my place in Barcelona. This period was the time of my first mental struggle. I had to play with an attitude that wasn't natural for me yet. I've learned that sometimes I have to step back to see who I am.

I had to switch at the end of the season. Bourges seemed like the perfect choice. Stable club with a structured game system. It was easy for me to fit in. I played in the Euroleague for the first time. Then I made myself aware of how does the system run. Bourges has shown me how important it is to choose the environment in which you live. Choosing a club is a critical choice.

Then I received my first serious contract offer from Spartak Moscow, but I was not ready for such a step yet. However, the family council voted. The club was a turning point in my career. It wasn't that a small team, where I am the best player. Accepting the contract I took a risk but I wanted to be the best. In the beginning, I observed and followed the mentality and training of the stars. I tried to gather most of the knowledge and experience. But I was injured twice in a short time, on the same leg with the same injury. The first recovery was faster and more successful than expected. In my second year, I was able to pick up the yarn where I lost it, but I was injured again towards the end of the season. At the age of twenty, this was my second serious injury. I didn't see the future, but the club trusted me, and I believed I could come back, even if I had a 30% chance of reaching pre-injury levels. But we did our job. This period strongly shaped my mentality, my work ethic. It helped me through things, which then

fueled my self-confidence. I was talented, but the work was what got me to where I finally stopped playing. The six years I spent in Moscow gave me the best experience. As a young player, I was 10th in line, I got little playing time. Then, like a handball player, they were setting me up just to defend. Then I became the first replacement, later a member of the starting five, and over time a leader. I learned that even the smallest role in a team is important, progress is a process, and that you need to be able to work with different people. In the three years spent in Prague, I could unfold. It was a very well organized club that knew me as a person as well. It was the first time, when I worked with a sports psychologist together, for example on treating my maximalism.

During my two seasons in Dynamo Kursk, I kept looking for the answer, why I do it when I do not find joy. So I transferred to Girona, where the team was very happy with each other's success. I played twice in the WNBA. I didn't go back because of the differences in the contract, but if anyone has the opportunity, be sure to go. You have to experience this completely different environment.

It was a pleasure and pride for me to play for the national team, and I could experience that it's a lot harder to stay on top than getting there.

**Keywords:** teamwork, mental power, work attitude, progress is a process, joy

# TURNING POINTS OF WORLD'S BASKETBALL AND BASKETBALL IN 2030 – ROUND TABLE

Prof. Dr. Sc. Igor Jukic<sup>1</sup>, Sonja Vasic<sup>2</sup>, Michael Schwarz<sup>3</sup>, Fabio Fossati<sup>4</sup>, Janez Drvaric<sup>5</sup>

<sup>1</sup>Advisor at Euroleague Players Association, <sup>2</sup>Three-time Euroleague Champion Player

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<sup>5</sup>FIBA Europe Instructor

World around basketball has changed in many ways in the last 50 years. Players with their new ideas and athletic skills on one side, coaches' and scientists' development on the other side introduced new rules and cancelled old ones in the game. For deeper understanding and to predict what basketball will be in 2030 see the main topics that can be analyzed and compared.

- What new rules can improve basketball game?
- How we can adjust competition schedule to protect players and improve the game?
- Which tactical factors will make difference in 2030?
- How to secure players health and availability for training and game?
- In which technical elements we expect the greatest opportunities for improvement in 2030?
- What mental profile of players will dominate in 2030?

Specialists recommend that modifying the zero step rule could generate new formulas, directions and scoring possibilities in the game. Epidemiology says that the main factors that shorten a player's career are lower limb injuries. Mostly muscle damage, spine and trunk injuries for male players, for females more ankle and knee injuries dominate. Visualization has become a useful and proven method to accelerate recovery time after injury as integration of traditional healing process. All head coaches concord that intensifying competition schedule can be harmful for players. Travel management plays an important role, many teams prefer to travel back right after the game to help recovery at home. Referee quality level is considered high.

Leadership types can generate a new set up in the team though personal program adjustment is required. Team chemistry refers a special relationship among players and the coach, more familiar and emotionally related. New and adjusted technical elements will be present in the game, in-

dividual decision making is extremely important just as skill training methodology. The pace will be faster than in the previous years. Mental health is a hot issue for top players. Personality, intellect, emotions, mental training and lifestyle play all an important role for future champions that mainly need to be resilient and mentally flexible.

In modern basketball and in elite sports a winning coach has to specialize him/herself.

First remember to be good teachers and educators. As a coach the most important thing is to have a relationship with the players. And remember that players are human beings.

**Keywords:** competition, mindset, tactics, skills, rules



## TALENT IDENTIFICATION

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The current performance of a young person as it does give you some useful information but it can't predict the future. Understanding what will be important and having some idea about how to develop key skills. Everyone has a unique set of characteristics. The presentation highlights those important factors what coaches must rely on and develop further. The session's focus is general but mentions sport specific (basketball) issues also. The lecturer outlines the talent identification three main points. The select, the detect and the perfect stages. Research tells us that successful athletes embrace challenges, are good at overcoming setbacks, listen and learn from feedback and take ownership of their own development. The author accentuate the importance of scrutinising the mindset together with physical tests. There does not seem to be a clear set of variables that consistently predict future success.

After selection development patterns vary among individuals and different components progress at dissimilar rates. We must have a plan after detecting the talent. Coaches must have an instruction ready for every basic attribution categories.

**Keywords:** Detect, Mind Set, The path to follow, Considerations

# TALENT ID AND SELECTION CRITERIA FOR TOP BASKETBALL ACHIEVEMENTS

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Modern basketball is characterized by top performances of the best players. Given the complexity of the game, there are a number of player characteristics that determine success and differentiate between teams and individuals. In order to create conditions for achieving top results in senior basketball, it is necessary to perform the appropriate identification of talents, who would, through appropriate development training programs, have greater opportunities to achieve top performance.

Adequate approach to the process of identifying talent in basketball has many benefits: efficient training process, creating competitive environments in which children can progress faster, creating a database, profiling successful basketball players, reducing costs, education of coaches... The process of identifying talent must be made by experts from different kinesiology areas, whose synthetic opinion should be relevant for the selection of future basketball players. The formation of selective criteria from different anthropological fields is the first task in the process of detecting and identifying talents in basketball. What are the visible and hidden features that distinguish a child with greater potential? How to make selective criteria? How to develop selected children and turn their potential into real quality for top basketball achievements? These are just some of the questions that this paper will try to answer. In order to form selective criteria, it is necessary to consider the development of basketball as a sport, possible changes in the rules of the game, individual characteristics of children and compare them with the profile of a successful basketball player in certain positions in the game. It is a complex process, which should include testing the potential of children in several kinesiological areas: morphology, physical abilities, technical-tactical skills, psychological abilities and skills, and to make the final choice based on synthetic opinion according to strict criteria.

The definition of the term talent in basketball, as well as the manner of realization of long-term talent development pro-

grams is a complex process, because a large number of characteristics are hidden in the early periods of development. The program for the development of identified talents is the next task, which must be compatible with the anatomical and physiological development of children, opportunities for the acquisition of new basketball skills and stages in psychological maturation.

**Keywords:** talent identification, top basketball achievements, basketball player's profiling

## TALENT ID – ROUND TABLE

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Who are the future champions? How do we find and identify them? What variables predict future success? These are important questions for scientists, coaches and managers, as well.

The topic of talent identification (ID) and selection has many open questions. Several aspects of TALENT ID are discussed such as physical, technical, mental and tactical qualities; early indicators and selection criteria at different age groups; similarities and differences at national and international levels (EUROLIGA, NBA).

We conclude that no set of variables exist for TALENT ID, however there are significant factors to take into account: (1) results of basketball analysis; (2) results of lab testing; (3) outcome of a complex test battery; (4) mental set.

Successful scouting includes measuring physical properties (body size, body type, strength etc), psychological variables (e.g., confidence, extrinsic and intrinsic motivation, work ethics, information-processing and learning style, decision-making, coachability, concentration), as well as demographic features (e.g., gender differences, chronological and biological age), environmental factors such as socio-cultural background (e.g., family background, coaching style, team objectives and team philosophy).

# EFFECTS OF CREATINE SUPPLEMENTATION ON MUSCLE MASS AND PERFORMANCE

Dr. Darren G. Candow, PhD

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Creatine is a compound naturally synthesized in the kidneys and liver from reactions involving the amino acids arginine, glycine and methionine. Alternatively, creatine can be supplemented in the diet through commercially manufactured dietary products. Upon ingestion, creatine enters circulation and travels to demanding tissues such as skeletal muscle. The vast majority of evidence-based research indicates that creatine supplementation (primarily when combined with resistance training) increases measures of muscle mass and performance (primarily strength).

While the mechanisms explaining these effects are not fully known, there is evidence that creatine can increase cell swelling (intracellular water retention), high-energy phosphate metabolism, myogenic transcription factors and satellite cells, growth factors and protein pathways involved in muscle protein synthesis. In addition to these purported anabolic processes, emerging research suggests that creatine has anti-inflammatory and anti-catabolic properties which may increase recovery from exercise. Over time, these anabolic and anti-catabolic properties may help explain the greater increases in muscle mass and performance from creatine supplementation. The timing of creatine ingestion does not appear to play a major role in these adaptations. Furthermore, creatine causes no greater adverse effects compared to placebo.

**Keywords:** creatine, resistance training, muscle mass, strength, safety

# DESIGNING THE “360° PERSONAL JACKET” FOR BASKETBALL PLAYERS

Dr. Igor Jukic, PhD

Full professor at University of Zagreb, Faculty of Kinesiology, Croatia

An elite basketball player has a large number of characteristics that are in synergy with each other. The optimal levels of development of individual characteristics, as well as their mutual harmonization, are achieved by an integrated and personalized system of sports preparation. The basic task of sports preparation is to enable players and teams to achieve the best sports performance in their competition and to protect their health. Sports coaches, strength and conditioning coaches, psychologists, medical doctors, physiotherapists, nutritionists, and sports analysts form multidisciplinary teams that base their work on interdisciplinary synchronization.

All sports professionals are interested in developing new procedures to improve basketball performance. In this sense, sport sciences can greatly help to improve athletic performance.

The 360° Personal Jacket Performance System aims to enable the maximal use of all personal potentials of players in basketball in order to improve the performance of the team. With the whole structure and organization of a personalized approach to improving player performance, the main protagonist of this system of work (the 360° Personal Jacket Performance System) is the player. The player's understanding of the need for such a system, strong motivation, self-discipline, and commitment are the key prerequisites for the success of this system. This way of thinking and behaving gives the player the opportunity to stay healthy, improve their competitive performance, and prolong their career.

**Keywords:** basketball, player, personal program

# MANAGING TEAM SPORT ATHLETES IN THE NEW ERA: PERSONAL HEALTH & PERFORMANCE STUFF FOR ENHANCED TEAM PERFORMANCE

Dr. Marko Stojanovic, PhD

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The individual treatment of elite athletes has become a hot topic in team sports training methodology lately, with new technologies allowing monitor athletes during both individual and collective behaviours. In addition, the excess of information for athletes to be managed is extremely high with an increasing consequence of athletes being supported by personal health & performance stuff.

We searched Pubmed, WWW for information's regarding team sport athletes and their training routines

Individualization in team sport athletes has been recognized as a new trend in training methodology, with clear implication of team sport athletes creating their personal Health & performance stuff. Generally, this stuff is organized around strength & conditioning coach or sport scientist, but also frequently include rehab-coach , nutritionist and medical expert. It is evident that sport club recognized this modern trend, with clear intention to work closely with stuff members in order to provide best possible climate for top level performance.

Personal Health & Performance stuff is new trend in team sport athlete management, and because of its positive effects on overall performance, is likely a trend which is going to stay.

# BASKETBALL PLAYER DEVELOPMENT IN INDIVIDUAL PRACTICE SESSIONS

Janez Drvaric

International Mentor Coach at Ratgeber Academy, Pecs, Hungary

In basketball, skill development is the most important foundation for success. Coaches should make effort to succeed in growing up complete players who master the basketball fundamentals. They must have the knowledge of the fundamentals from the technical and from the tactical point of view. We must teach players “how to” (the technique), and “why to” & “when to” (the individual tactics) of the fundamental.

When the players reach the age of fifteen, they already have some basketball experience, although there are remarkable individual differences among players. Some players master basic fundamentals better than others. Coaches working with 15-18 year-olds, should understand these differences, assessing the particular resources and needs of each player to decide the goals and the contents of the practice sessions.

It is often difficult in team practice sessions to improve the skills and techniques of each individual player and this is often best done in an individual practice. Individual practices are generally shorter than a team practice sessions and should include both offensive and defensive techniques and individual tactics.

Some guidelines to assist with preparing and conducting individual sessions are:

1. Make it contested or as “game-like” as possible.
2. Change what needs to be changed and leave the rest alone.
3. Repetition.
4. Intensity is more important than time spent.
5. Be specific.

Player development is the key to improving your players and also your team. Keep your players exited about getting better. Create a workout that challenges, instructs, and prepares your players getting better. You can't baby your players and making them happy, but you have to find a way to keep them focused and challenged in the workout. Get your

point across as simplistic as you can.

**Keywords:** player development, individual practice, basketball skills, techniques, individual tactics

## PERSONALIZED JACKET – ROUND TABLE

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There are significant differences between worst scenarios in game and average demand. This leads to injuries prevalence (much more muscle injuries in case of professionals!). We need to individualize the training programs. With new technologies we can measure all the loads, even rehab processes, so we know when a player is ready to come back.

Travel management, family issues, financial and social issues influence the sport preparation.

As often players spend more time with the coach than with their parents, therefore coaches should not focus only on skill training. It is a great responsibility to give rules to the players. Being a coach is a mission.

The biggest challenge is to find balance between individual and team needs. First move is to define players' profiles: health, gender and age, fitness, body size, training and learning ability, capability for recovery, lifestyle and welfare, mindset, skill profile. During team practice there is no time to work individually, we need to do it before or after practice based on understanding and respecting individual needs.

High-performance system in basketball has to be structured. How we organize the structure is the key to success. This is the reason why "personal jacket" has to be established. It starts with testing and measurement. Using and making questions we can understand individual needs better. Always need to ask our players about their feeling, about the session, the load. We need to gather feed-backs. Decentralized testing means that the environment influences the validity of the extracted data. It's important to examine players in their home environment.

Personal program design for every single player requires additional time. This interdisciplinary approach gives result in protecting health and improving performance of players. Design a personal matrix helps to have a holistic picture what happens with the player. It means collecting data from his/her performance analysis, health, strength and conditioning, mental training, nutrition, recovery and lifestyle.

Specific micro-dosing training can be introduced, sessions of 10-15 early in the morning in case of poor facility condition of the gym. It is also possible to connect two trainings and work-out for 2.5 hours. Other possibility is to train out of the court. The main task is to maintain homeostasis, stabile state of player. Holistic approach and holistic decision making makes the difference.

Intellectual load and emotional load is a huge part of the monitoring process. We tend to think only the physical efforts and forget about the personal/emotional component. Scientist have to know what the coach needs, on other hand, science is the safest way coaches can have to improve skills and avoid injuries.

Long-term solution for player development is the key for growing new champions. Multi-sports education, multi-lateral physical development, movement vocabulary and physical literacy are required. Early specialization can be a limitation for players. From a human being we establish an athlete, then we build a player and then we make a winner. We need to control parents who push hard in early specialization.

In the process of basketball coaching, three relevant aspects are: prepare and protect the body, provoke and stabilize the mind and learn and improve the movement. As a team is made of individuals, remember first to be a player development coach. Secondly, without discipline, we can't teach anything to our players. The "one size fits all" model never works in non of the sports.

**Keywords:** individual development, testing, mindset, multi-sports, holistic approach.



## NEW TRAINING TECHNOLOGIES

Vladimir Bankovic

Strenght and Conditioning Coach of the Serbian Women Volleyball National Team

Technology is the application of knowledge to practical aims of human life or to changing and manipulating the human environment and to make life easier and work more productive. Technology focuses on making things happen. Technology can help us to realize that we can train in a different manner to change the technology of our training for introducing more skill elements into the playing. It helps not only in monitoring but also in educating players to have proper lifestyle for high performance needs.

Gathering data has become essential in every high performance sport to get exact timing and bring players in perfect shape. With all data available analysis is on three levels:

- Phenomenological model consist in the coach language, the analysis of game or training and theology, which is video recording and analysis of statistics.
- Performance model calls attention for multidisciplinary approach, deeper analysis of performance, analysis of game and training such as Kinexon, Catapult, Polar, post event, monitoring of training (AMS, contact mates, bioimpedance scales) and implementing new training technologies according to the needs of particular sports.
- Physiological model requires multidisciplinary approach and deeper analysis of performance, the analysis usually done in laboratory, and moreover deeper analysis of qualities we need to investigate.

Unluckily technology and monitoring has created non-equal playing conditions where teams with higher financial possibilities could improve their playing but others not. We have to keep in mind that simplicity often guarantees more results than sophisticated equipment and truly, we have new equipment but measuring the same material we had 20 years ago. Technology has changed periodization model because the amount of loads and games don't permit us to follow old models. We can be successful only if we find the key to success.

**Keywords:** data analysis, multidisciplinary approach, performance, monitoring, equal playing

# HIGH INTENSITY INTERVAL PRACTICE IN BASKETBALL

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Playing basketball or any other sport at the highest levels requires an elevated level of athleticism that can only be achieved through dedicated training. The demands placed on athletes in the game are intense, and so should be linked to your training. A method of training that has gained much popularity for its quick gains in muscle strength, fat burning, and stamina building capabilities is High Intensity Interval Training (HIIT).

Basketball training involves a multi-faceted approach to improving Basketball IQ players. HIIT, as the name entails, is a grouping of different cardio workouts done as fast and as hard as you can. Intense cardio exercises are performed for short periods, often only lasting 10-60 seconds per individual workout. When grouped in a series of 4-10 intense, anaerobic exercises, these form a circuit. The goal is to complete a circuit as quickly as possible with minimal rest time in between the individual workouts or lower intensity exercises. One reason HIIT is so popular with players is that high-intensity interval training holds the ability to improve body composition and increase overall fitness, all while shorting training time. In other words: Bigger Gains in Less Time. While it's true that HIIT will drastically decrease your workout time, the difficulty level is, well, intense.

The overall goal is to "hit" a point of complete exhaustion. Typically, athletes attempt to get to 80% of their maximum heart rate for one to ten minutes. HIIT is all about maximizing your time and effort. It requires you to work at the height of your ability, but only for a short period of time. The key to HIIT is alternating short bursts of all-out intensity with short periods of rest.

HIIT is fast, flexible and fun. Improved cardiovascular health. Pushing yourself into an anaerobic zone, where it feels like your heart is beating out of your chest, can actually improve your aerobic and anaerobic endurance. Lastly, HIIT has the potential to improve cognitive performance in young chil-

dren, promising to improve performance in school.

**Keywords:** high-intensity, basketball practice, efficient training, top performance

## NEW TRAINING TECHNOLOGIES IN TEAM SPORTS

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Technologies in sports industry are constantly developing  
Modern sport is developing so rapidly that technologies used in sports have to constantly follow it as well.

These new technologies are not only helping to optimize athlete's performance but also makes the sport competition more interesting for the fans.

Both screening/tracking and measurement methods are used to fulfill several tasks. Most important are: player's individual development, team profiling and injury prevention and management.

The wide range of performance improving methods including GPS or LPS systems, force transducers, dynamometers together with vision or recovery/sleep tracking systems have great effects.

Movement analyses systems have a great influence on injury reduction and new physical therapy technologies make the post injury treatment accelerated and extremely effective.

That great technology improvement is extremely important in modern sport. However, it means nothing without experts who are able to recognize and apply correct interpretation of collected results. It is not enough just to make measurements, we need to understand them, in sport specific way translate them into the "coaching" language.

Starting from athletes, coaches, managers and finally fans, sport technology makes it easier to enjoy the sport they love.

**Keywords:** sport technology, performance, injury prevention and management, results interpretation

## NEW TRAINING TECHNOLOGIES – ROUND TABLE

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<sup>6</sup>EHF Champions League winner handball coach

We are in transition using new technologies and can make parallel concepts and similarities in basketball and handball. At Hungarian Győri ETO woman handball team one goal was established: win all the time. To reach that level teamwork, authentic coaching and professional circumstances (private jet, great environment for recovery) were guaranteed. Because of too many games the team philosophy had to change. Application of 2 preparation training was introduced, one as conditioning and one as a recovery training in 2x1 hour session.

In Polish national basketball team checking the level of players and define goals were the main important factors. Too much use of technology became the enemy of the coaches, so simplicity was introduced as a tool for preparation. With all the new technology the main problem still hasn't been solved: getting weaker and players of 13-14 years with serious injuries. With movement analysis tracking system, we got the conclusion that quality and quantity is 20% lower during training than in the game. That is why faster intervals at maximum speed were applied to copy the game during the training sessions.

In the Serbian National team, we realized the importance of follow-up players in their clubs, to understand how much they work-out, how much of external load is used. We aim to do even more sport-specific trainings. We understood that mental loading enhances physical load during a match. With the use of new technology, we can calculate recovery time better.

We believe in the usefulness of hard work. Even periodization has been changed. The amount of load and games don't permit the classical models because there is no time to wait for supercompensation. New mental approach of coaches

using new technologies by making new personal skills, then work on capacities. To avoid burn-out symptoms at young age, need to respect chronological age/biological age/training age. Always start teaching about quality then capacity. For development time is needed.

Ego and personality is always an additional quality of the team. Coaches are models for young generation. It's a mistake to have high expectations from the youth. The role of the coach is to give advices for leisure time, beyond training and school. Remember, not even the best technology is able to substitute a coach.

It is important to use new technologies but first we must use our brain and improve ourselves and the communication with the players. We can be successful only if we find the key to success.

**Keywords:** authentic coaching, simplicity, movement analyzing, burn-out symptoms, success

# CREATINE AND GUANIDINOACETIC ACID: A NEW NUTRITIONAL COMBO FOR IMPROVING TISSUE BIOENERGETICS IN SPORT AND BEYOND?

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Although creatine has an excellent efficacy and safety profile, several constraints might limit its application, including a finite capacity of energy-demanding tissues to store creatine, down-regulation of creatine transporter (SLC6A8) after prolonged intake, and relatively high proportion of non-responders (~ 25%). Guanidinoacetic acid (GAA), a direct precursor of creatine, might be superior than creatine to boost tissue creatine in the brain and muscle yet few constraints might limit its applicability as a solely administered dietary supplement. However, a combination of creatine and GAA might be superior than individual compounds, with recent studies shown beneficial effects in both clinical and athletic environment.

**Keywords:** Muscle; Brain; Exercise Performance; Creatine; Guanidinoacetic acid.

# PECULIARITIES OF THE SPORTS ACADEMY MODEL – ROUND TABLE

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The roundtable discussion wants to show the cross-section of academic functioning, the system on which professional sport relies. The highest quality is the expectation not only at the professional level but also in young athletes' development. Without it, there will be no proper outcome. With the Hungarian academic system, the state administration is looking for what are the federal directions or guidelines that it should support. In the Hungarian academic system, category III. deals only with sport-specific training. Category II. in addition to training, it also undertakes dormitory maintenance. Category I also provides public education.

Anyone who is **mentally** fine can reach the level of a professional sport. Both physical and mental factors are important in the selection. LTAD has a major role to play in socializing in sports and working with parents. Sports-specific training is based on this. Pedagogy has long been involved in school-parent-sports training collaboration. The aim is to reconcile school education and sports training with achieving the highest level of knowledge. Characters need to be nurtured, whether they are players or members of the staff. They need to be taken more seriously because they are able to take risks in a stake situation. Finding them is not an easy thing to do. Not everyone needs to be made the same.

There needs to be a **selection** that provides the best talent for academies. When choosing a talent, we think in concept. But it's a question of whether I have a concept as a coach and I'm looking for a player for that, or we're looking for a talent to make a good player out of it. Professional work between the ages of 7 and 14 before the academy is still inadequate.

**Admission:** The aim of the academies is to educate as many players as possible who can be integrated into the adult front line. If they get out into the international market, stand their ground. 3-4 out of 100 players will be successful. To help integrate, the upper age groups were recorded by

sport: U19 in football, U21 in handball, and U23 in basketball. It is important to be given an opportunity among adults to perform in a sharp situation. If club leaders do not incorporate them, academic work will be lost. But the athlete also has a responsibility. The final age group of all these three sports' academies compete under adults.

Judging whether we have good coaches varies from sport to sport. The coach now **works with professional staff**. The role of the integrator is with the coach, who also makes the final decision. This collaboration and its leadership must be learned.

**Keywords:** selection, integration, professional staff, academy model



# Poster Presentations' ABSTRACTS



MINISTRY  
OF HUMAN CAPACITIES



**Centre for Basketball  
Methodology and Education**



## MODERNIZATION OF BASKETBALL POSITIONS

Glória Benkő

Professional sports are more than just an experience, it is also a job and offers success for athletes. It is not just about mental and physical health, but also about pushing their boundaries. Measuring performance is important because it encourages them to get the best result possible. Sports analytics deal with the processing and evaluation of data so that athletes can use the results to prevent injuries, time their best form for the competition, or make the best tactical decisions. The industry has proven particularly successful in team sports, including basketball.

Basketball is a team sport, played by two teams of five. Every player is given a label that is meant to describe what that player should do on the court. There are 5 of these labels and we call them positions. These labels are decided first by the player's physical size. If he is big and strong, then he is going to be a center, if he is small and fast then point guard. This process is far from scientific even though it has a big impact on coaches' decisions with regards to playing time, and general managers' approaches to acquiring new players.

Basketball has recently been considered more of a "position-less" sport. Most of the players can play on 3-4 posts. In my thesis I implement a system instead of the one currently used, based on physical properties, which gives us a more accurate description of the player. My goal is for two players with the same tag to have similar styles, but that does not necessarily mean they have the same effectiveness.

With this new system, I would like to help the conscious development of players and the work of coaches in the future. Which ultimately, it contributes to making the Hungarian basketball more effective.

**Keywords:** basketball, clustering, data mining, sportanalytics

# NEW TRENDS IN GAME DEMANDS AND TRAINING PRACTICE IN MODERN BASKETBALL: A SYSTEMATIC REVIEW

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The present study aims to review and organize current academic literature about modern basketball and it also intends to find the main aspects that have changed over the past couple of years. The current results contribute to a greater understanding of new trends in game demands and training practice in basketball.

The current study was carried out following the systematic review principles. Initially, a structured search was carried out in four electronic databases such as PubMed, SportDiscus, Cochrane and Google Scholar which all considered to be high quality databases. The initial database generated 17,661 studies. Duplicate removal cut out a great number of studies, 3120 abstracts and titles were left out for assessment. Out of these citations only 126 documents allowed full-text review. Following a second-stage screening of studies, 90 met the principles for suitability based on inclusion and exclusion criteria. At the end of the process a total of 24 studies were chosen for the present systematic review. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) flowchart summarized the number of studies identified, assessed, and included in the study.

There has been a substantial growth in publications considering basketball game demands and training practices in the last years. The present review classified three areas of studies surveyed. Studies were reviewed and categorized accordingly: game demands (n=10), physical demands (n=8), training demands (n=10). There are studies which were used in more than one category. The majority of the studies surveyed both sexes (n= 16), while a small percentage showed male samples only (n= 8), no studies were chosen with exclusively female results. The systematic review contained seniors (n= 20), youths (U20-U18, n= 1), as well as adolescents (U16-U14, n= 3).

A huge shift has been grasped in the way the game is being played and the consequences are coming from this new style of basketball. Studies exploring new trends in basketball become essential, firstly to understand this "new game" and secondly to apply the knowledge into the training pro-

cess. This study may be of great interest to basketball coaches and instructors, as it contributes to better understanding of this new game and to subsequent improvement of training programs. Coaches should use these findings to i) design modern game and training scenarios, ii) take advantage of being aware of where the game is headed iii) implement new strategies to achieve the ultimate goal, winning!

**Keywords:** systematic review, game demands, physical demands, training demands

## SUCCESSFUL COACHES AS LEADERS

Dr. Lili Kassay, PhD

associate professor at Eötvös Lóránd University, Faculty of Education and Psychology, Hungary

Screenwriters in Hollywood movies prefer to choose a story set around the hectic moments of the lives of a team, a star player, a coach. Condensed into a few hours, the challenge of the critical situations, the choices of actors, the complexity of interests, the defining characteristics of the stakeholders, the history of the development of the characters they shape, the causes and consequences of the situation are revealed. These films are favorably used as illustrations by business leadership programs. They help you recognize, understand, highlight and learn situations, roles, alternatives, mindsets, mentalities, everything a success-oriented leader strives to master - through the story of a successful coach.

In addition to the knowledge and skills needed to achieve peak performance, the business world seeks to uncover the secrets of applying them. They try to understand the quality of leadership that makes many competing egos willing to work together, to make a joint effort. Facing new challenges - and each match is another test - requires successful adaptation from both leaders and team members. However, "dictating" leadership action can become counterproductive in extreme situations where unexpected, hitherto unknown solutions can bring success. But where is the subtle boundary within which coaching instruction and beyond which the player's own decisions and solutions lead to victory? In which situations has to be the relationship hierarchical, when and for what period does it become rather partnership? What can start with the business leadership trainer's statement that "A consciously modest leader encourages surprising performance"?

To map the leadership performance of successful coaches, we examine the applicability of the interpretive framework developed by Itay Talgam and Steven Kotler for the business community. We attempt to validate the applicability of models describing leadership performance through semi-structured in-depth interviews with coaches of various women's and men's teams under the age of 18 (23).

Defining a valid research framework can help us discover

the factors that lead to success that differentiate between coaches as leaders in addition to the required sports professional knowledge.

**Keywords:** leadership, coaches as leaders, solutions lead to victory, counterproductivity

# APPROACHING THE RECOVERY OF GROIN PAIN IN ATHLETES

Igor Kovačić

PhD student at Doctoral School of Health Sciences, University of Pécs

Groin pain in athletes has a bad reputation in sports medicine: intimidating, confusing and complex. Because of the uncertainties, it is often compared to the Bermuda triangle. All experts in this field agree that history and clinical examination remain the cornerstone for diagnosing athletes with groin pain. This does not mean that imaging has no role, but it should be done complementary to full clinical examination.

This work aims at analyzing the academic literature regarding groin pain in athletes and providing an overview of the treatment as well as rehabilitation of this injury. To define a comprehensive framework for the causes of groin pain in athletes is hard, among the main diagnoses are:

- adductor-related – so far the most common entity of groin pain
- iliopsoas-related – isolated is uncommon, mostly present align with adductor
- inguinal-related – is defined as recognizable pain on palpation of the inguinal canal
- pubic-related – the least common clinical entity by research

The treatment protocol depends on a lot of factors, such as clinic image, cause, age, sex, period, type of sports etc. Treating groin pain most of the time includes reducing the pain with physiotherapy and ROM exercises. Strengthening certain muscle groups, mostly adductor muscles, plays a big role in the process, especially eccentric exercises that show the best results in recovery.

In conclusion, groin pain can cause a lot of problems for professional athletes. Recovery and return to playing sport without any pain can require a lot of time, will and patience from the player to the coaches. Despite using preventive strategies, as hip injuries cannot be simply prevented, focus also should be put on increasing strength on several muscle groups: abdominal, adductor and hip-pelvic muscles because the imbalance of these can be the main source of pain.

**Keywords:** groin pain, recovery protocol, treatment

# THE COMPARISON OF THE EFFICIENCY OF PROPRIOCEPTIVE TRAINING AND STABILIZING STRENGTH TRAINING AMONG BASKETBALL PLAYERS

Hanna Krikler

Physiotherapist at Rátgéber Basketball Academy, Pécs, Hungary

In many cases, joint instability and improper balance can lead to injuries. To improve and prevent this, several methods and trainings are used today. In my research I examine and compare two forms of exercise: the effectiveness of proprioceptive training and stabilizing strength training, regarding joint stability, static and dynamic balance.

The participants of this research are the members of the team of PEAC-Pécs Women's Basketball Club (University basketball team), myself included. The 20 persons who participated in the research were randomly divided into two different groups: a proprioceptive training group (10 persons) and a stabilizing strength training group (10 persons). By proprioceptive training a dynair was used as an unstable surface, and by stabilizing strength training an elastic band and bar-bells were used as counterweights. I conducted a survey before starting the exercise programme, then 10 weeks later, after finishing the programme. For measuring stability I used the FMS test (deep squat, crossing obstacles, lunge, strain stability test, and push-ups). I measured dynamic balance with the Star Excursion Balance Test (SEBT), and the static balance with the Flamingo Balance Test.

Overall, by the FMS tests both groups showed significant improvement trends ( $p < 0.05$ ), except for crossing obstacles with left foot. Both groups made a significant progress in dynamic balance as well ( $p < 0.05$ ), and the same happened to static balance which have been measured with the Flamingo Balance Test ( $p < 0.05$ ).

By the end of the ten-week-long exercise programme it has been proved that both proprioceptive training and stabilizing strength training increase the stability of the ankle joint. Proprioceptive training effectively improves dynamic balance indeed. However, it has not been clearly answered if stabilizing strength training really improves the stability of the ankle joint - although in stabilizing the core musculature it proved more effective than proprioceptive training.

In conclusion, both forms of exercise can be well applied during rehabilitation and for achieving proper balance and stability, but they can be useful as preventive exercises during training sessions as well.

**Keywords:** proprioceptive training, stabilizing strength training, joint stability, balance

# RESILIENCE – A BUILDING BLOCK OF MENTAL TOUGHNESS

Anett Lábadi

Sport Psychologist at Rátgéber Basketball Academy, Pécs, Hungary

It has long been researched which psychological characteristics play a role in peak performance. One of the outstanding characteristics is resilience. Due to the complexity of the concept, both its definition and measurement are difficult. In general, resilience is a set of processes that enables good outcomes in spite of serious threats (Masten, 2001). There are a number of evidence-based protective factors that contribute to resilience: optimism, effective problem solving, faith, sense of meaning, self-efficacy, flexibility, impulse control, empathy, close relationships and spirituality, among others (Masten & Reed, 2002). In sport context, resilience is reflected in situations where the athletes have to face difficulties during their career, such as in case of an injury or extreme challenges. Although these situations are stressful, they are necessary in a sense, as resilience can develop when athletes find themselves in a situation full of challenges, difficulties and stress. As a result, they can experience successful adaptation over time, and use this positive experience in situations later on. Thus, the level of resilience influences performances and success (Holt & Dunn, 2004).

**Keywords:** resilience, peak performance, adaptability, success

# CHALLENGES TO THE OPERATION OF THE RÁTGÉBER BASKETBALL ACADEMY DURING THE FIRST THREE WAVES OF THE COVID EPIDEMIC

Anikó Lukács

Managing Director at Rátgéber Basketball Academy

The Rátgéber Basketball Academy developed its operational responses to the challenges of the Covid epidemic, in compliance with and taking into account the restrictive measures of the central government and the guidelines of the Hungarian Basketball Association. Adaptation aims to maintain health, create appropriate conditions for professional work and, last but not least, ensure the mental well-being of players during a radical change in the dormitory and public education frameworks.

The research sought to answer the question of „in which areas and to what extent the required change management achieved its goal according to the stakeholder groups?”. The coaches shared their experiences in a self-administered questionnaire. The parents of the players completed a questionnaire that collected data on dormitory changes. The aspirations of the Rátgéber Basketball Academy were revealed through in-depth interviews by the dormitory and facility managers.

The dormitory measures meant serious restrictions, which the parents and children acknowledged and tried to comply with. The dormitory restriction of personal relationships was very difficult for the players to experience. The coaches perceived the facility management's efforts to ensure the right conditions. Each wave has hindered work and player development to varying degrees.

Players experienced the first three waves of the epidemic mentally differently. There is an even greater need for sports psychological support than before. The professional communication between the coaches and the dialogue between the coaches and the professionals responsible for the operation of the facility and the dormitory was a key element of change management.

**Keywords:** Basketball, Covid epidemic, change management, dormitory operation, sports facility

# PERFORMANCE MONITORING AND MATCH LOAD ANALYSIS AMONG ELITE YOUTH BASKETBALL PLAYERS

Dóra Nagy, Dr. László Rátgéber, PhD, habil., Dr. Alexandra Makai, PhD, Szilvia Kovács,  
Evelin Derkács, Prof. Dr. Pongrác Ács PhD, habil.

University of Pécs, Faculty of Health Sciences

Performance diagnostic systems are essential tools for measuring performance, optimizing training load, and preventing injury. The rapidly evolving microtechnology, the simplification of the application and recording of LPS systems, allow these systems to be used on a daily basis. There is a lot of research in the academic literature on the physical requirements of different ball games, but there are few studies on the matches of junior basketball players.

Knowledge of the physical demand for basketball matches is essential for training planning optimization, providing coaches with an indication of how much external and internal load their players need during training to be prepared for matches.

Our study aimed to record and analyze the match load of players of different ages and genders using the Kinexon system.

Using the Kinexon LPS system, we recorded match data for two men (U18 and U23) and two women (U15 and U16) teams between October and December 2021. The parameters examined were distance travelled per minute, speed, acceleration, deceleration, jump-related variables, power heart rate, player load, and Trimp (16 parameters in total). In addition, descriptive statistical methods and mathematical-statistical analysis (paired t-test and Anova test  $p \leq 0.05$ ) were used to describe match load, map gender-specific differences in matches, and identify gender and age group differences.

Gender comparison showed significantly better outcomes for men at all speed parameters (max acceleration, max deceleration, speed max), intensity parameters (distance/min, accumulated acceleration load/min, sprint/min) and power parameters (power/mass max, power/mass average). In contrast, the girls achieved significantly higher total distance travelled and a higher number of accelerations and decelerations and higher TRIMP values. In addition, the comparison by age groups was significantly higher for girls

in the U16 age group, in the number of accelerations and decelerations, and the Trimp, while the younger's player load was significantly higher. Among boys, the average power per minute and the average speed was significantly higher in the older age group, while there was a statistically considerable difference in the values of player load, sprint/min, distance travelled per minute and heart rate values.

Based on performance diagnostic measurements with the Kinexon LPS system, there are significant differences in match load between age groups and genders. The performance indicators that can be measured in a match also depend on the tactics and the opponent. But based on the trends revealed in the research, it can be stated that which variables dominate during the maturation of players and where to put focus in development. A comparison of the genders reveals that the characteristics of the match are different, which is worth considering when planning the training load. Further extensive data collection is needed to draw more accurate conclusion, and additional analysis of each position's data is required to optimize the training to an even higher standard.

**Keywords:** performance diagnostics, LPS, basketball match, youth basketball



# ASSESSING HAMSTRING-TO-QUADRICEPS STRENGTH RATIO OF CAUCASIAN YOUTH FEMALE BASKETBALL PLAYERS – EXPERIENCES AT SOPRON HORNETS SPORTS ACADEMY

Kata Tóth<sup>1,2</sup>, Szilvia Czirják<sup>2</sup>, Dr. Tamás Sterbenz, PhD, habil.<sup>1</sup>

<sup>1</sup>Sport Economics and Decision Making Research Center, Hungarian University of Physical Education and Sport Science, Budapest, Hungary <sup>2</sup>Sopron Hornets Sports Academy, Sopron, Hungary

The quadriceps (Q) and hamstring (H) muscle groups have prominent role in basketball, as they generate substantial amount of force and actively stabilize the knee during lower limb movements. The stabilizer function can only be fulfilled if the strength ratio of these muscle groups (HQR) falls within an optimal range. Deviation from this range is associated with increases risk of non-contact lower limb injuries, among which the most frequently occurring is the anterior cruciate ligament tear. Female players have additional anatomical (valgus knee) and functional (menstrual cycle dependent laxity) factors, that make them more susceptible to instability of the knee, thus active stabilization is superior in their case. With assessing HQR, players with increased risk of injury can be recognized and personalized training program can be designed for them. However, due to the unique features of our target population, obstacles emerged during the measurement and evaluation process. Previous studies suggest that in case of youth basketball players, reliability of consecutive HQR measurements should be considered. Regarding evaluation, no reference intervals are available in the literature that would be suitable for our population. Thus, in our study we aim to determine the test-retest reliability of repeated HQR measurements and to construct a reference interval of HQR for Caucasian female youth basketball players.

21 Caucasian female youth basketball players, 16±2 years of age participated in the study. Concentric HQR was measured on two occasions (June and August) using an isokinetic dynamometer (Humac NORM, CSMi, Stoughton, MA, USA) set at 60°/s angular velocity, between 20-100° range of motion of the knee. Test-retest reliability was characterized with Pearson correlation coefficient. Reference interval was constructed using percentile method: 2.5th and 97.5th percen-

tile for the lower and upper boundaries, respectively.

Test-retest reliability of HQR measurement between the two occasions appeared low ( $r=0.51$ ) on the dominant side, and questionable ( $r=0.66$ ) on the non-dominant side. Reference interval was formulated from data of the second measurement, resulting in the optimal range falling between 50.3% and 86%.

Deficient test-retest reliability revealed the importance of familiarization for HQR measurements. Sufficient time should be assigned to the acquisition of the measurement protocol for the players, while data obtained from the first measurements shall not be used for decision making. Reference interval appeared to be wide, which can be due to the low sample size and considerable variation of coefficient (16%). Hence, we intend to build a national database, supplemented with a lower extremity injury register, in order to establish an accurate reference interval for identifying players with increased risk of injury.

**Keywords:** isokinetic dynamometer, HQ ratio, concentric contraction, test-retest reliability, reference interval

# MEASURING VIRTUAL REALITY-INDUCED SPORTS STRESS IN BASKETBALL PLAYERS

Melinda Trpkovici, Dr. Alexandra Makai, PhD, Dr. Csaba Melczer, PhD, Dóra Nagy, Evelin Derkács, Dr. Kata Morvay-Sey, PhD, habil., Dr. László Rátgéber PhD, habil.,  
Prof. Dr. Pongrác Ács, PhD, habil.

University of Pécs, Faculty of Health Sciences, Hungary

Anxiety is one of the most common problems among athletes. Sports psychologists have suggested a number of different stress management techniques over the years, but one of the most successful is "stress inoculation" training (SIT), which is increasingly used to reduce anxiety and improve athletic performance.

The sample consisted of the players of the NKA UNIVERSITAS PEAC Women's Basketball Club (N = 10, average age: 18.90 ± 4.20). As a measure, we used the Athlete's Anxiety Questionnaire, which can measure the anxiety in a match situation and determining the degree of concentration and self-confidence experienced in a match. Furthermore, in the virtual reality we created, we placed athletes in a sport environment that contained stress factors.

Our results show that the sport stress situation created in virtual reality triggers the same level of stress responses from athletes as athletes experience in a match. There was no significant difference between the scores of the test completed after VR and the total score of the test completed after the match ( $p > 0.05$ ).

Based on the results, we can conclude that the sports stress situation created by virtual reality can cause the same amount of stress from athletes compared to the match, so it can be useful for improving athletes' stress management and can be a huge advantage in the process of sports psychological preparation.

**Keywords:** athlete anxiety, self-confidence, concentration, virtual reality, sports psychology

# COMPARISON OF OPEN AND CLOSED KINETIC CHAIN THIGH MUSCLE STRENGTHENING PROGRAM AMONG AFTERGROWTH BASKETBALL PLAYERS

Dorottya Varga

Physiotherapist at Rátgéber Basketball Academy  
University of Pécs, Faculty of Health Sciences, Hungary

The aim of our study was to measure and compare the effectiveness of the open and closed kinetic chain strengthening programs with the help of a 12 week training program.

Examination time: August – December 2021. The sample size: 29 (n = 29). Participants: youth athletes of the Rátgéber Basketball Academy. Test methods: 1) isometric muscle strength test of knee flexors and extensors; 3) lower limb dynamic balance test. Statistical tests used: paired sample t test, one-way analysis of variance, Bonferroni post hoc test.

Quadriceps muscles strength was significantly improved in all groups ( $p < 0.001$ ). In the hamstrings muscle group, significant results were also obtained ( $p < 0.05$ ), except in the mixed exercise group, for the left leg ( $p = 0.098$ ). The results of Y-balance test showed a significant improvement ( $p < 0.05$ ), except for one direction in the mixed group (left postero-lateral  $p = 0.108$ ). The difference between the groups: quadriceps muscles is not significant between mixed and closed, it is significant between mixed and open and closed and open ( $p < 0.05$ ). For hamstrings muscles, the difference was significant only in closed and open-chain exercises ( $p < 0.05$ ). There was no significant difference between the mixed and closed kinetic chain exercises in either direction of the Y-balance test, but in all cases between the mixed and open and closed and open-chain groups it was significant ( $p < 0.05$ ), except for the left foot postero-medial side ( $p = 0.156$ ;  $p = 1.000$ ).

All three groups developed significantly after the program, however, the groups performing closed kinetic chain exercises and mixed exercises developed significantly more, so these exercises proved to be more effective.

**Keywords:** open kinetic chain, closed kinetic chain, lower limb dynamic balance, knee extensors, knee flexors



**DR. LÁSZLÓ RÁTGÉBER, PHD, HABIL.**



Centre for Basketball Education and Methodology



## Master coach, associate professor at UP-FHS, UPE

The most successful coach in Hungarian basketball, **the holder of nine Hungarian championship titles and nine Hungarian Cup victories. EuroLeague winner with Spartak Moscow.** He is the only Hungarian professional who could lead both national teams.

He is a founding member of the FIBA Elite Coaches Committee. László Rátgéber was voted coach of the year in Yugoslavia, winning the same title nine times in Hungary and 2011 in Turkey. **In 2009, he was voted the best women's basketball coach in Europe.** He has also coached Europe and the world national team twice. In addition to his associate professorship and scientific work, **he is the professional and strategic director of the National Basketball Academy of Pécs, the Department of Excellence, chairman of the board of trustees, director of the Center for Basketball Methodology and Education, and master coach.** Number of his publications is more than 70, independent citations 92, all citations 113, IF 30. **13th January 09:30**



**Michael Schwarz**

**FIBA Europe**

He holds a senior position at FIBA Europe National Federations of Sport/Coaching. He is the coordinator of FIBA Europe Coaching Certificate program. The FECC program was created in order to enhance the knowledge of European basketball coaches in the area of the development of young talent.

**13th January 10:00**



Foto: xing.com



**Geno Auriemma**

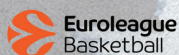


## UConn Huskies head coach

Entering his 37th season in 2021-22, Geno Auriemma has redefined the meaning of success in the University of Connecticut women's basketball program. During his illustrious tenure, Auriemma has transformed the Huskies into an unmatched program of excellence, which includes **11 NCAA Championships, 21 Final Fours, and 6 perfect seasons.** **He was inducted into the Naismith Memorial Basketball Hall of Fame and the Women's Basketball Hall of Fame in 2006.** Geno Auriemma also served as head coach of the U.S. Women's National team for eight years, **leading Team USA to the 2012 and 2016 Olympic gold medals.** **He also led the United States to gold in the 2010 and 2014 FIBA World Championships.**

**13th January 11:00**

Foto: Wikimedia Commons, Chairman of the Joint Chiefs of Staff



**Pinhas „Pini” Gershon**

**Maccabi Tel Aviv**

Pini Gershon is one of the greatest coaches in Israeli and European basketball history, with a great personality and unique style. **As head coach of Maccabi Tel Aviv, he is a two-time Euroleague champion (2004, 2005), an eight-time Israeli League winner (1993, 1999-2001, 2004-2006, 2009), eight-time Israel Cup winner (1996, 1999-2001, 2004-2006, 2010).** In 1993 he became the best coach in the Israel League, **and in 2005 he was voted the best coach in Euroleague.**

**13th January 12:00**

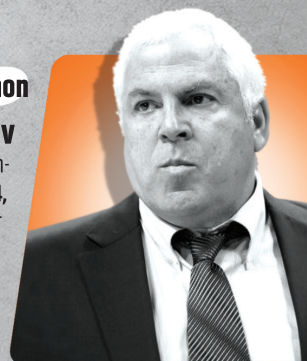


Foto: Getty Images



**Ettore Messina**



## Olimpia Milano

Ettore Messina is a well-respected figure in the international basketball community and is considered one of the greatest European basketball coaches of all time. **As head coach, he won four EuroLeague championships (1998, 2001, 2006, 2008).** He is a six-time Italian champion, an eight-time Italian Cup winner, a six-time Russian champion and a two-time Russian Cup-winning coach. He was inducted into the Italian Basketball Hall of Fame in 2008, the Russian VTB United League Hall of Fame in 2019 and the **FIBA Hall of Fame in 2021.** He is one of the rare coaches who has worked in the NBA as a European, previously with the Los Angeles Lakers and then **from 2014 to 2019 with the San Antonio Spurs as assistant coach to Gregg Popovich.** Since 2019, he has been the head coach of the Italian Olimpia Milano, a **true coaching legend.**

**13th January 13:00**

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Centre for Basketball Education and Methodology



MINISTRY OF HUMAN CAPACITIES



Foto: nba.com

## ALOJZ MILOSAVLJEVIC



### Portland Trail Blazers

The 2021-22 season marks Lojze Milosavljevic's eighth year as an International Scout with the Portland Trail Blazers. **With 22 years of NBA experience, Milosavljevic spent six seasons as an international scout for the Atlanta Hawks prior to joining the Trail Blazers.** He also served for eight seasons as an international scout with the Seattle SuperSonics. Milosavljevic has more than 18 years of coaching experience, including two years as the head coach of the Slovenian Under-16 National team, six years as an assistant for the Slovenian Junior National Team and two years as an assistant for the Slovenian National Team. **13th January 15:00**



## PROF. DR. H.C. LAJOS MOCSAI

### Chair of the Board of Trustees of the University of Physical Education

As the head coach of the Hungarian women's handball team, he won silver medal in the Olympic Games and World Championship, first and third place in European Championship. He is European Champion Clubs' Cup winner and multiple winner of the EHF Cup Winners' Cup. He won the Hungarian Championship and Hungarian Cup several times, both with women's and men's handball teams. He is the Honorary President of Hungarian Handball Association and the former Rector of University of Physical Education, Budapest. **13th January 16:00 am**



Foto: Testnevelési Egyetem



Foto: Getty Images

## SONJA VASIC



### Three-time Euroleague Champion player

Sonja Vasic is a legendary Serbian basketball player who managed to stay on the highest level for many years. **Sonja is a three-time Euroleague champion (2009, 2010, 2015), a two-time FIBA Europe Super Cup Women champion (2009, 2015), a three-time Czech League champion (2015, 2016, 2017), and one-time French League champion (2008). Sonja also played in the WNBA, she was drafted by the San Antonio Silver Stars in 2009, later played for Chicago Sky and Phoenix Mercury. Sonja was part of the Serbian Women's national team for years and won two Eurobasket titles (2015, 2021), in 2021 she was named MVP of the tournament.** She also won a bronze medal in the 2016 Rio de Janeiro Games with the national team. In 2007 Sonja earned Europe Young Player of the Year Award, **in 2018 she was EuroLeague MVP and she also earned two-times Serbian Player of the Year Award (2016, 2019).** Sonja was the flag bearer of her country in the opening ceremony of the Tokyo Olympic Games, where the Serbian women's national team finished in 4th place. After 17 years of successful professional basketball in the USA and Europe, multiple medals, championships, league and national titles, she decided to finish her outstanding sports career after the Tokyo 2020 Olympic Games. She continues to be a true inspiration to young players, a true legend. **13th January 17:30**



## PROF. DR. SC. IGOR JUKIĆ

### Sport scientist, member of ELPA performance advisory board

University professor, international lecturer and **high-performance specialist in sport.** He is founder (2003) and current secretary general of European Physical Conditioning Association. From 1994 - 2006 Igor worked with the Croatian national senior and youth basketball teams. **He won a gold medal with the U18 team at the Eurobasket championship in 1996, and silver medal with the U20 team at the World championship in 2001.** In period 2016/18 he was Head of performance in Baskonia-Alaves group (Spain, Basque Country) where he established unique high performance system (BAL). Furthermore, Igor was personal performance specialist of many internationally top level team sport players. His scientific and professional work have been published in more than 200 papers related to sports science and high performance in sport. In 2011 he founded Biotrening Ltd., company related to high performance in sport, which support many top-level players and teams around the globe. **He is co-founder and member of ELPA Performance Advisory Board.** **13th January 18:00**



ELPA



Centre for Basketball Education and Methodology



MINISTRY OF HUMAN CAPACITIES



## DR. NÉMETH LÁSZLÓ



### Former head coach of the national team of England, Great-Britain and Iceland

Dr. László Németh has huge experience as a performance and excellence coach, but lately well known as an academic. **He has coached Premier Division basketball teams in five different countries - winning national titles in four - and coached three different Senior Men National Teams around the globe including England/GB between 1994-2004.** In 2006 he was elected to the president of the Hungarian Basketball Federation. He was involved in Olympic Games, Asian Games, Universiade, Games of Small Nations, Pan Arab Championships, European and World Championships, Gulf Championships, Scandinavian Championship. He brings a wealth of experience to audiences from the competitive end of sport. **Laszlo is the author of the book Basketball published by Crowood press in the skills of the games series.** He lectures coach education courses for National Governing Bodies around the world. As an academic he lectured performance and excellence coaching at UCLAN, and Chichester University for undergraduates. **14th January 09:00**



## ASSOC. PROF. PH. D. NENAD TRUNIĆ

### FIBA Europe lecturer, member of the coaching team of the Serbian Men's National Basketball Team

**He is currently a member of the coaching team of the Serbian national men's basketball team,** Professor at Singidunim University in Belgrade, the **lecturer of FIBA Europe Coaching Certificate Program and FIBA Europe Coaching Clinic,** and the deputy director of sport at Rátgéber Academy. As a basketball player, he won two silver medals in the U16 and U18 European Championships. He has won several European and world championship places with the Serbian national team during his coaching career. Then he became the coordinator of the youth programs of the Serbian and then the Iranian Basketball Association. He is the author of „Basic Basketball Skills” and „Training young basketball players of different age categories”.

**14th January 09:00**



## KORNÉL DÁVID



### Milwaukee Bucks

127-time national team player. **He is the first and still the only Hungarian basketball player who played in NBA.** He played at Chicago Bulls, Cleveland Cavaliers, Toronto Raptors and Detroit Pistons. He is **currently international scout of the 2020/21 season's champion Milwaukee Bucks.** He was elected among the immortal basketball players of Hungary.

**14th January 09:00**



## DR. DARREN CANDOW, PHD, CSEP-CEP,

### Sport Scientist, Associate Professor at University of Regina

Darren Candow is a Full Professor and Associate Dean-Graduate Studies and Research in the Faculty of Kinesiology & Health Studies, University of Regina. Dr. Candow supervises the Aging Muscle and Bone Health Laboratory and serves on the editorial review board for the Journal of Aging and Physical Activity, Journal of the International Society of Sports Nutrition, and Biogerontology. **He has produced 87 peer-refereed publications in high quality journals, his research papers have been cited more than 4300 times (h-index of 36, i10-index of 49).** Dr. Candow also serves as the Chief Scientific Officer for TDF Sports. His current research projects are timing of creatine supplementation during resistance-exercise on muscle and bone biology.

**14th January 10:30**



Foto: Reginal Egyetem



**PROF. DR. MARKO STOJANOVIC**



**Sport scientist, strength and conditioning specialist,  
University of Novi Sad**

Marko Stojanovic, full professor at Faculty of Sport and Physical Education, University of Novi Sad, Serbia. He has authored more than 50 scientific papers in high impact journals. He has been sport scientist for Romanian man basketball national team, soccer national team of Serbia, V.C "Vojvodina"- Novi Sad, F.C." Partizan" Belgrade, F.C."Olimpija"- Ljubljana.

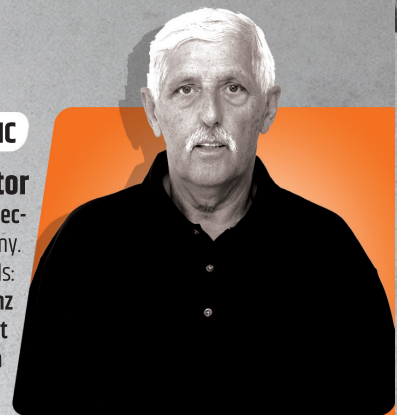
14th January 09:00



**JANEZ DRVARIC**

**FIBA Europe instructor**

He is an internationally recognized basketball expert and an excellent trainer. He is the permanent lecturer of FIBA Europe Coaching Certificate, and an international mentor coach at Ratgeber Academy. Previously, as an assistant and head coach of the Yugoslavian National Team he won several medals: 1st, 2nd and 3rd place at the European Cadet Championship, with the National team he was bronze medalist in 1984 Los Angeles, and silver medalist in 1988, in Seoul Olympic Games. His greatest club success as a head coach was the winning of European Cup Winners' Cup in 1987 with Cibona Zagreb, with the legendary player Drazen Petrovic. He has also been working as a FIBA instructor for many years, holding many great lectures and seminars all over Europe. 14th January 09:00 am



**FABIO FOSSATI**



**Mental coach of Virtus Bologna**

Currently Fabio Fossati is the mental coach for Virtus Segafredo Bologna (Italy Basketball Champion 2020/2021), he is a teacher at the University of State of Brescia, FIBA Europe Coaching Certificate Program instructor, mentor coach of Ratgeber Akademy. He works as a television Sport Commentator for RAI (National Italian Television), Sky, Sportitalia. As a head coach he is a three-time Italian Championship, two-time Italian Cup winner, four-time Italian Supercup winner.

As a professional basketball coach he lead the Camerun national team, Swizerland national team, Bangladesh National team. In 2021 the FIP (Federazione Italiana Pallacanestro), recognition to his work, awarded him the title of „Allenatore Benemerito“, which ranks him among the most distinguished professionals. 13th January 09:30 am



**VLADIMIR BANKOVIĆ**

**Strength and conditioning coach of the Serbian Women  
Volleyball National Team**

An excellent strength and conditioning specialist, who has achieved outstanding results in several sports during his career. He can be proud of several world-class victories and prizes as a strength and conditioning specialist of Serbian Women Volleyball National Team Serbia: 2 Olympic medals (2016, Rio de Janeiro 2nd place, 2021, Tokyo 3rd place), 2 World championship medals (2008, Japan 3rd place, 2018, 1st place), 5 European championships medals (2011, Belgrade 1st place, 2015 Holland-Belgium 3rd place, 2017 Azerbaijan 1st place, 2019, Turkey 1st place, 2021 Serbia 2nd place), 4 European Volleyball League medals (2009, 2010, 2011 Turkey 1st place, 2012 Czech Republic 3rd place). His experience at National teams is also remarkable in several sports, as he worked with the Man's junior National handball team Serbia and Montenegro (9th place at World Championship), Women senior Handball National Team Serbia and Montenegro (9th place at World Championship) and Women Handball National Team Serbia and Montenegro (2nd place in Mediterranean Games). He finished 1st place in Hungarian Championship and Cup with Pick Szeged Handball Team, more time Championship winner and Cup winner, and 2nd place at CEV Cup with Volleyball Club Red Star.

14th January 09:00



Centre for Basketball  
Education and Methodology



MINISTRY  
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## DR. LUKASZ TRZASKOMA, PHD



### Strength and conditioning specialist

Dr. Lukasz Trzaskoma, Phd is an associate professor at the Department of Kinesiology, University of Physical Education, Budapest, doctor of Sport Physiotherapy, head of the youth strength and conditioning program at the Hungarian Basketball Federation. He obtained his doctoral degree in Physical Rehabilitation at the University of Physical Education, Warsaw. He is the author of several national and international publications, books and book excerpts. The internationally recognized excellent Polish specialist trains many sport teams, Olympians and elite athletes.

14th January 14:00



## GÁBOR DANYI

**EHF Champions League winner handball coach**  
As a second coach and later as head coach of Győri Audi ETO KC, he is a five-time EHF Champions League winner. He holds the trophy of the Hungarian Cup, and won the Hungarian Championship seven times. Together with Elek Gábor, they led the female National Handball Team; then, he worked as the team's head coach.

14th January 14:00



Foto: nso.hu



## PROF. DR. SERGEJ OSTOJIC



### Sport Scientist, Full Professor at the Department of Nutrition and Public Health, University of Agder, Norway, Full Professor of Medicine at the University of Novi Sad

He is currently working as a full professor at the Department of Nutrition and Public Health, University of Agder, Norway, as a Full Professor of Medicine at the University of Novi Sad, Head of Applied Bioenergetics Lab, Vice-Dean for Science at the Faculty of Sport and Physical Education (University of Novi Sad), Adjunct Professor at the University of Belgrade School of Medicine, and advisor of ELPA (Euroleague Players Association). He has been appointed as Visiting Professor at the University of Zagreb, the University of Central Florida, the University of Rome, and the University of Pécs.

Sergej M. Ostojic received his PhD in Medical Sciences (2003) at the University of Belgrade, with CME and postdoc education includes training in mitochondrial medicine (Mayo Clinic College of Medicine and Science), and nutrition, obesity and metabolism (Harvard Medical School and Harvard University T.H. Chan School of Public Health).

**He has authored and co-authored 273 peer-reviewed articles in multidisciplinary journals, 120+ invited lectures and conference abstracts; 12 book chapters, and 4 textbooks. He earned over 8,800 citations on his account so far, with H-index 28 (SCOPUS).** He has been the recipient of internationally competitive research grants including the WADA, NSCA International Award and the European Commission, and many industrial endowments. He holds 6 patents and patent applications in the US, UK, EU, and Japan. 14th January 15:30



EMBERI ERŐFORRÁSOK  
MINISZTERIUMA



## DR. SÁNDOR SÁFÁR

### Ministerial Commissioner, Ministry of Human Resources

Assistant professor at the Training Theory and Methodology Research Center of the University of Physical Education, Budapest. Ministerial Commissioner, responsible for carrying out tasks related to the operation of state sport academies. In addition to his scientific work, he is strength and conditioning coach at the Hungarian Football Association. He is a former long-jump athlete, with two national championship titles, five national championship silver-medals and three bronze-medals.

14th January 16:00



Centre for Basketball  
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Foto: NEKA

**TAMÁS MOCSAI**



### General Manager of the National Academy of Handball

Former handball player playing 190-times in Hungarian National Handball Team. Two-times Hungarian Champion, two-times Hungarian Cup winner, EHF Cup winner, EHF Cup Winners' Cup Final-Four participant, player of the Hungarian National Handball Team achieving 4th place at the Olympics. He was playing in the the Bundesliga, the German National Championship, which is considered the toughest championship in the World, for more than 10 years. Holder of the Cross of Merit of the Hungarian Republic. The general manager of the National Academy of Handball and the mayor of Felsőmocsolád. **14th January 16:00**



**DEZSÓ LISZKAI**

### Director of Puskás Ferenc Football Academy

Having several diplomas and professional qualifications in sport science, he worked as a Youth coach at Győri ETO FC, where he has been the director of Youth development for many years. **He is a senior instructor in Hungarian Football Association, and as a National Team coach, he is working for the development of Hungarian football.** He has taken part in many professional study trips around the world. He is currently the director of Puskás Ferenc Football Academy.

**14th January 16:00**



Foto: Puskás Akadémia



Foto: FIBA basketball / Rébay Viktor

**IVKOVIC STOJAN**



### Hungarian Men's Basketball National Team head coach

As a player and also as a head coach, Stojan Ivkovic won several times the Hungarian Championship and Hungarian Cup. **He has been the head coach of Hungarian men's basketball team for ten years. During this period, the National Team has qualified twice in a row for the participation in the European Championship,** which recently has occurred 52 years ago. Under his leadership, the National Team finished in the top 16, winning two games after 48 years. His name is related to supporting and growing up several youth basketball players. **Recognizing his work, the Hungarian Coaches Association awarded him the title of master coach in 2020.**

**14th January 16:00**



**NORBERT SZÉKELY**

### Hungarian Women's Basketball National Team head coach

For the third time since 2017, he is the head coach of the Hungarian Women's basketball National Team. **In 2019, he led the team to the 7th place in the European Championships.** As the head coach of the U20 women basketball national team, he won a silver medal in the European Championships. **As the head coach of Sopron, he has won five league and five cup victories, and in 2009 he headed the team to the EuroLeague Final Four.**

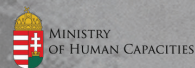
**14th January 16:00**



Foto: FIBA basketball / Rébay Viktor

Participation in the conference is free of charge if you register till 31st December 2021.

[www.ksmk.hu](http://www.ksmk.hu)



# PROGRAM

National Basketball Academy  
74/1. Megyeri Street, Pécs, 7632

## THURSDAY (January 13)

8:00-9:00 Registration

9:00-9:30 Opening Ceremony

**Michael Schwarz** – Head of NF & Sport/  
Coaching Europe, FIBA

**Ferenc Szalay** – President, Hungarian  
Basketball Federation

**Dr. Sándor Sáfár, PhD** – Ministerial  
Commissioner, Ministry of Human Resources

**Dr. Tamás Sterbenz, PhD habil.** – Rector of  
University of Physical Education

**Prof. Dr. Attila Miseta** – Rector of  
University of Pécs

9:30-10:00 The Clash of Basketball Science &  
Practice. The Integral High-performance System –

**Dr. László Rátgéber, PhD, habil.**

10:00-11:00 FIBA Europe –  
Coaching & Coaches Development –

**Michael Schwarz**

11:00-11:45 The New Era of Women's Basketball –  
the Pros and Cons of the Modern Game –

**Geno Auriemma**

11:45-12:00 Coffee Break

12:00-13:00 How to Select Players for Top  
European Teams? –

**Pinhas "Pini" Gershon**

13:00-13:45 The Evolution of Men's Basketball  
& Prediction of its Future Trends –

**Ettore Messina**

13:45 - 15:00 Lunch Break

15:00-16:00 International Scouting in NBA –

**Alojz Milosavljevic**

16:00-17:00 The Presence of Sport-Scientific  
Approach in the Support of Practical Work

**Prof. Dr. h. c. Lajos Mocsai**

17:00 - 17:30 Coffee Break

17:30-18:00 Plenary Chat –

**Sonja Vasic**

18:00-19:30 **TURNING POINTS OF WORLD'S  
BASKETBALL AND BASKETBALL IN 2030** –

Roundtable Discussion:

**Prof. Dr. Sc. Igor Jukić, Sonja Vasic,  
Michael Schwarz, Pinhas "Pini" Gershon**

## FRIDAY (January 14)

8:00-9:00 Registration

9:00-10:30 **TALENT ID** – Roundtable Discussion:

**Dr. László Németh**

*Assoc. Prof. Nenad Trunić, PhD*

*Alojz Milosavljevic*

*Kornél Dávid*

10:30-11:00 Effects of Creatine Supplementation  
on Muscle Mass & Performance –

**Dr. Darren Candow, PhD, Csep-Cep**

11:00-11:30 Coffee Break

11:30-13:00 **PERSONALIZED JACKET** –  
Roundtable Discussion:

**Prof. Dr. Sc. Igor Jukić**

*Prof. Dr. Marko Stojanovic*

*Janez Drvaric*

*Fabio Fossati*

13:00-14:00 Lunch Break

14:00-15:30 **NEW TRAINING TECHNOLOGIES** –  
Roundtable Discussion:

**Vladimir Banković**

*Assoc. Prof. Nenad Trunić, PhD*

*Dr. Lukasz Trzaskoma, PhD*

*Gábor Danyi*

15:30-16:00 Creatine and Guanidinoacetic Acid:  
A New Nutritional Combo for Improving Tissue  
Bioenergetics in Sport and Beyond? –

**Prof. Dr. Sergej Ostojic**

16:00-17:30 **HUNGARIAN ACADEMY MODEL** –  
Roundtable Discussion:

**Dr. Sándor Sáfár, PhD**

*Tamás Mocsai*

*Dezső Liszkai*

*Stojan Ivkovic*

*Norbert Székely*

17:30-18:00 Presentation of the Selected Abstracts

18:00-18:15 Closing Ceremony –

**Dr. László Rátgéber, PhD, habil.**

# CENTER FOR BASKETBALL METHODOLOGY AND EDUCATION

According to the decision of the Hungarian Government, the Rátgéber Academy was awarded the title of the Center for Basketball Methodology and Education which started its operation on January 1, 2021. The primary goal of the Methodology Center is to offer support for talented athletes, to provide elite training and education for basketball academies at the highest possible professional level. To achieve this goal, the Hungarian sports academies and the Hungarian Basketball Federation must cooperate constructively.

"In youth education, the training structure needs to be steered in a direction that meets the requirements of the 21st century. In order to achieve this goal, it is necessary to think together, to designate a common direction and path, which would enable to raise the level and quality. This requires the "gray matter" that sports academies represent! With the management of the Methodology Center a value-base must be created, guidelines must be defined that will take the complete youth education in the right direction" - Dr. Sándor Sáfár, PhD (Ministerial Commissioner, Ministry of Human Resources).

"We all have to work together, we need to help each other because we depend upon each other. But we should seek cooperation not only within basketball, we also have to be open to a closer relationship with the methodological centers of handball and football as well. Our task is to make product out of intellectual output! All the resources have been given to apply the accumulated theoretical knowledge into practice: not only we need to catch up with other sports nations, but we must show new ways and new directions!" - Dr. László Rátgéber, PhD, habil. (director, Center for Basketball Methodology and Education).

The Methodology Center has set many goals and tasks. Among the main objectives are: providing a scientific background of sport performance and sport development, advocacy of the sports academies, establishing constructive cooperation with institutions of higher education (University of Physical Education, University of Debrecen, University of Pécs and University of Sopron), sport organizations, the Hungarian Basketball Federation, and professional committees. In order to raise the level of the quality of basketball, our main tasks include to carry out sports science research, to provide quality assurance of professional materials, to control them, to collect and provide feedback, thus to create PRODUCT FROM INTELLECTUAL OUTPUT.



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## NOTES

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## NOTES

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