

"Dunărea de Jos" University of Galați

Scientific Conference of Doctoral Schools

Perspectives and Challenges in Doctoral Research
14th Edition of SCDS-UDJG
11th and 12th of June 2026

BOOK OF ABSTRACTS



Dunărea de Jos” University of Galați

Doctoral School of Socio-Humanistic Sciences

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BOOK OF ABSTRACTS

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CONFERENCE PROGRAMME

THURSDAY – June 11, 2026

08:00-10:00	Invited plenary lectures
09:00-11:00	Participants registration
10:00-13:00	Invited lectures Oral presentations in concurrent sections
13:00-14:00	Lunch (building D - 1 st floor)
14:00-16:00	Oral presentations in concurrent sections
16:00-16:30	Coffee break (building D - 1 st floor)
16:00-18:00	Oral presentations in concurrent sections
18:00	Cultural evening

FRIDAY – June 12, 2026

09:00-10:30	Oral presentations in concurrent sections
10:30-11:00	Coffee break (building D - 1 st floor)
11:00-13:00	Posters session
11:00-13:00	Workshop
13:00-14:00	Awarding ceremony. Closing ceremony
14:00-15:00	Lunch (building D - 1 st floor)

ORAL PRESENTATIONS

SECTION 16: ADVANCED RESEARCH IN HUMAN MOTRICITY AND KINETOTHERAPY

OP.16.1.

THE EFFECTS OF STRUCTURED PHYSICAL ACTIVITY PROGRAMS ON NEUROMUSCULAR FUNCTION IN INDIVIDUALS WITH DOWN SYNDROME

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Abstract

This study examines the effects of structured physical activity programs on neuromuscular function in individuals with Down syndrome, a genetic condition frequently associated with muscular hypotonia, ligamentous laxity, and delayed motor development. The aim of the research is to highlight the role of motor interventions in improving neuromuscular parameters such as muscle strength, coordination, balance, and postural control. The methodology involves a review of the relevant literature and the implementation of an adapted physical exercise program conducted over a specified period on a group of participants diagnosed with Down syndrome. The interventions include aerobic, strength, and coordination exercises tailored to the functional level of the subjects. The results indicate a significant improvement in neuromuscular function following participation in regular physical activity programs, highlighting increases in muscle tone, postural stability, and movement execution capacity, as well as positive effects on functional autonomy and overall motor performance.

Keywords: Down syndrome, neuromuscular parameters, movement execution capacity, sport therapy physical exercise.

TECHNOLOGY USED TO MONITOR PHYSICAL TRAINING PROGRESS IN ROWING

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Abstract

The integration of technology in sports has fundamentally transformed how performance is monitored and analyzed. In rowing we use Kinvent plates and tendo devices to measure strength and power, and Tanita Pro for body composition analysis. Also we use lactate pro 2 for lactate. This paper presents research on the impact and implementation of technology in rowing performance and progress. The data are collected from a group of 50 elite athletes, both male and female. Measuring data with these devices is essential in rowing because it allows coaches and athletes to monitor physical performance objectively, accurately and consistently. Tools like Kinvent plates and Tendo devices help evaluate strength, power, speed of movement and muscular asymmetries, which are critical components of rowing performance. Tanita pro provides detailed body composition analysis, including muscle mass, fat percentage and hydration status, helping optimize training and recovery.

By using these technologies we can track rowers progress over time, individualize training programs, identify weakness or imbalances, reduce the risk of injury and overtraining, optimize performance before competitions.

In elite rowing where small differences can significantly influence results, accurate monitoring is essential for maximizing performance and maintaining athletes health.

Keywords: Kinvent, powerplates, sports technology, performance analysis, rowing, Tendo, Tanita

OP.16.3.

THE INFLUENCE OF USING THE DIGITAL WALL SYSTEM ON NEUROMOTOR COORDINATION AND REACTION SPEED IN U17 HANDBALL PLAYERS

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Abstract

Modern handball requires the use of training methods and means capable of meeting the increasing demands related to the development of athletes' motor and cognitive abilities. In this context, the integration of digital technologies into the training process represents a current direction of research, playing an important role in optimizing sports performance and individualizing training. The use of interactive assessment and training systems allows the objective monitoring of motor and cognitive parameters, providing relevant information regarding athletes' level of preparation and their ability to adapt to the specific demands of handball. The present paper aims to highlight the importance of using the Digital Wall system in the sports training process of U17 handball players, with emphasis on neuromotor coordination and reaction speed. Through the use of interactive technologies, the training process can become more dynamic, attractive, and efficient, contributing to the development of rapid reaction, movement coordination, and adaptation to game-specific visual stimuli. The integration of innovative systems into sports training may represent a modern direction for optimizing training in youth handball.

Keywords: handball, U17 players, Digital Wall, neuromotor coordination, reaction speed, digital training, sports performance, interactive technologies

EFFECTS OF DUAL-TASK TRAINING ON COGNITIVE-MOTOR PERFORMANCE IN BASKETBALL PLAYERS

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Abstract

Dual-task training, which involves the simultaneous execution of cognitive and motor tasks, has gained increasing attention as an effective strategy for improving athletic performance, particularly in sports requiring rapid decision-making and coordinated movement. In basketball, athletes are constantly required to process tactical information while performing complex motor actions such as dribbling, passing, shooting, and defensive positioning. This paper examines the effects of dual-task training on cognitive-motor performance in basketball players, focusing on key performance indicators including reaction time, attentional control, executive function, motor coordination, agility, and decision-making accuracy. Current evidence suggests that integrating cognitive demands into sport-specific motor training enhances neuromuscular adaptation, cognitive flexibility, and performance under game-like pressure conditions. Dual-task interventions may also improve players' ability to maintain technical execution while managing cognitive load, which is essential for competitive success. The findings highlight the potential of dual-task training as an innovative approach in basketball conditioning and skill development. However, training outcomes may vary depending on athlete experience, task complexity, and intervention design. Further research is needed to establish standardized protocols and evaluate long-term effects in different competitive populations.

Keywords: dual-task training; basketball; cognitive-motor performance; decision-making; reactiontime; executive function; motor coordination; athletic performance

OP.16.5.

EFFECTS OF A BLAZEPOD-BASED TRAINING PROGRAM ON EYE-HAND COORDINATION AND REACTIVE DRIBBLING PERFORMANCE IN JUNIOR FEMALE HANDBALL PLAYERS

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Abstract

The purpose of this study was to evaluate the effectiveness of a specific training program in improving the eye-hand coordination and inter-segmental hand coordination required for dribbling under reactive conditions in junior female handball players. The study involved implementing a specific training program using modern Blazepod technology over a 6-week period. Performance was assessed using a custom-designed test adapted with the help of modern Blazepod technology. The data obtained were statistically analyzed using descriptive statistics and the t-test for paired samples to determine the statistical significance of the differences between the two tests.

The results show an increase in the mean from 10.190 to 11.952 successful trials, indicating an improvement in eye-hand coordination and inter-segmental hand coordination. Statistical analysis revealed significant differences between the two tests ($p < 0.001$), and the effect size (Cohen's $d = 1.542$) indicated a very large impact of the intervention.

In conclusion, a specific training program utilizing modern technology significantly contributes to improving performance in terms of dribbling execution under dynamic, game-like conditions.

INTEGRATION OF MOTION SENSORS AND REAL-TIME FEEDBACK IN BIOMECHANICAL OPTIMIZATION AND MOTOR TECHNIQUE CORRECTION

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Abstract

Modern performance sport is directly influenced by the integration of advanced technologies into the training process, as these technologies play a crucial role in increasing training efficiency and optimizing the technical and tactical executions specific to each sports discipline. In this context, the use of motion sensors and real-time feedback systems represents an innovative approach to the evaluation and correction of motor technique, contributing to the improvement of biomechanical parameters and the enhancement of athletic performance. By using inertial sensors and digital motion analysis systems, essential execution parameters such as speed, force, acceleration, amplitude, and coordination of body segments were monitored in real time. Real-time feedback contributes to the development of neuromuscular control, increased technical precision, and improved motor response efficiency under specific training and competition conditions. The present paper aims to highlight the importance of biomechanical monitoring technologies in movement optimization and in the refinement of motor executions in performance sport.

Keywords: performance sport, motion sensors, real-time feedback, biomechanical optimization, neuromuscular control, sports performance, biomechanical monitoring

THE IBALL SMART BALL - ITS USE IN ROMANIAN HANDBALL

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Abstract

The integration of technology in team sports has fundamentally transformed how performance is monitored and analyzed. In handball, the introduction of the smart ball (iBall) represents a turning point in obtaining real-time kinematic and biometric data. This paper presents research on the impact and implementation of iBall technology specifically within the context of Romanian handball. Using quantitative analysis of data extracted from training sessions and official matches, the study investigates the temporal variability of key performance parameters among Romanian players. The investigation was systematic, focusing on essential data provided by the embedded sensors, such as throwing speed, trajectory, distance, and the exact point of impact. Statistical methods were applied to classify sample data sets in order to determine the variability of players' technical execution and to identify the key factors that optimize coaches' tactical decisions. This work highlights two major aspects: the first is the capacity of the iBall to provide instant, objective feedback for performance enhancement in national leagues; the second is its utility in adapting Romanian training methodologies to modern European standards. Research of this type is extremely useful because it demonstrates that the iBall is a vital resource for maximizing performance and modernizing contemporary Romanian handball.

Keywords: iBall, smart ball, sports technology, performance analysis, handball

QUANTITATIVE MANAGEMENT AND EXCELLENCE IN SPORT: ANALYTICAL PERSPECTIVE ON SPECIALIZED LITERATURE

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Introduction: In today's sports landscape, success is no longer just a result of raw talent, but also of rigorous management. Research on quantitative management has shown that employing complex quality criteria and scientific approaches is essential for sports organizations to reach their goals and support athlete development. **Scope:** This paper aims to explore the mechanisms through which financial resources are transformed into sports performance. The central objective is to understand how specialized literature reflects the correlation between invested budgets and competitive results. **Method:** The investigation was conducted between November 2025 and February 2026, through an in-depth analysis of academic publications released between 2000 and 2025. The selection targeted prestigious databases such as Scopus, ScienceDirect, Web of Science, Ebsco, CrossRef, and ProQuest, adhering to the CNATDCU standards for Sports Science in Romania. Additionally, Google Scholar and Index Copernicus were consulted to ensure a broad perspective on the subject. **Results:** The search process yielded an impressive initial set of 743 relevant sources. Following a rigorous filtering process based on inclusion criteria specific to management and performance, 58 reference articles were selected, providing concrete data on budgetary structure and organizational efficiency in sports. **Discussions:** The analysis indicates that sports organizations have begun adopting advanced frameworks such as the Balanced Scorecard or Total Quality Management, tailored to their unique needs. Particular attention is given to Data Envelopment Analysis (DEA), which allows clubs to measure how efficiently they convert resources into victories. Interestingly, while elite clubs show a strong correlation between investments and success, mid-tier clubs often surprise with remarkable financial efficiency. Strategic management and investment in young talent remain central pillars in this balance between economics and performance. **Conclusions:** The study's findings highlight a paradigm shift: sports clubs are migrating from traditional statistics toward complex data analytics used in marketing and strategic decision-making. There is a clear trend toward integrating technology to evaluate performance through a mix of sporting and non-sporting indicators, thus providing a comprehensive view of an organization's success.

Keywords: sports management, state clubs, public budget, sports performance, forecasting algorithm, financial efficiency, transparency

OP.16.9.

THE INFLUENCE OF DECISION-MAKING PROCESSES ON THE EFFICIENCY OF SET PIECES IN SMALL-SIDED FOOTBALL

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Abstract:

This study investigates the influence of decision-making processes on the effectiveness of set pieces in small-sided soccer, within the context of the spatial and temporal constraints specific to this type of sporting activity. The research is based on the hypothesis that performance in the execution of set pieces is not determined exclusively by the level of technical and tactical training, but also by the quality of the cognitive processes involved in the perception, analysis, and rapid selection of game solutions.

The methodology used is mixed, integrating video analysis of official competitive-level matches, the evaluation of decision-making behavior in standardized set-piece situations, and the application of specific tests to determine reaction time and decision-making speed in a sample of players. In addition, the differences between athletes' levels of experience are analyzed in relation to the effectiveness of choices made under time pressure.

Preliminary results indicate a significant relationship between the speed and accuracy of the decision-making process and the effectiveness of set plays, evidenced by an increase in the success rate of plays and an improvement in the quality of offensive actions. Furthermore, it is found that systematic exposure to variable game situations contributes to the development of adaptability and decision-making flexibility. The research conclusions emphasize the importance of integrating cognitive training into the athletic training process, highlighting its role in optimizing performance in set pieces and increasing game efficiency under dynamic conditions.

Keywords: decision-making processes, small-sided soccer, set pieces, performance, cognitive training

OP.16.10.

CHARACTERISTICS OF BODY SCHEMA IN RELATION TO THE LEVEL OF LATERALITY DEVELOPMENT IN CHILDREN AGED 10–12 YEARS

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The presenting author: Alexandru-Ștefan Radu

Abstract

This study investigates the characteristics of body schema in relation to the level of laterality development in children aged 10 to 12 years, a critical stage for the consolidation of psychomotor structures. Body schema, as an integrated representation of the body, and laterality, as an expression of functional dominance, contribute to the efficient organization of motor and cognitive behavior. The research adopts a correlational design and aims to identify the relationships between the level of body schema development and the degree of laterality stabilization. The sample consists of school-aged children assessed through specific psychomotor tasks. The analyzed indicators include spatial orientation, body awareness, motor coordination, and type of laterality. The results indicate significant correlations between the two variables, showing that stable laterality is associated with a better-structured body schema. Children with non-homogeneous laterality demonstrate lower psychomotor performance. The conclusions highlight the need to integrate activities targeting body schema and laterality development into educational contexts, in order to support harmonious development and prevent learning difficulties.

Keywords: body schema, laterality, psychomotor development, children aged 10–12 years.

DESMODROMIC MODEL FOR THE ANALYSIS AND OPTIMIZATION OF TECHNICAL ELEMENTS IN FIGURE SKATING

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Abstract:

This paper presents a narrative review of the literature relevant to the theoretical grounding of a desmodromic model for the analysis and optimization of technical elements in figure skating. The analysis is structured around five complementary domains: the biomechanics of jumps and the critical phases of execution, neuromuscular control and sensory integration, the morpho-functional determinants of technical efficiency, injury risk mechanisms, and modern technologies for the objective analysis of movement. The literature shows that the successful execution of multi-rotation elements depends not only on flight height, but also on the generation of angular momentum at take-off, the reduction of the moment of inertia during the aerial phase, postural control, and the mechanics of controlled landing. Performance is further influenced by vestibular adaptation, intersegmental coordination, and individual morpho-functional characteristics, which condition both technical efficiency and tolerance to loading. At the same time, the increasing technical difficulty of contemporary figure skating intensifies the need for objective monitoring, load management, and injury prevention. Recent advances in 3D reconstruction, markerless video analysis, inertial sensors, and instrumented equipment allow for more precise evaluation of the phases of the jump, rotational speed, flight time, and landing impact. Overall, the literature supports a shift from fragmented observation toward an integrative framework that connects movement mechanisms, measurable indicators, technical decision-making, and injury prevention.

The proposed desmodromic model is conceived as an integrative biomechanical framework for the evaluation and optimization of technical execution in figure skating in the early stages of training, without implying the rigid application of the same technical solution to all athletes, since performance development requires the progressive adaptation and individualization of execution according to each athlete's specific characteristics.

Keywords: figure skating, biomechanics, jump analysis, neuromuscular control, motion analysis, injury prevention

OP.16.12.

PHYSICAL TRAINING OF MINISTRY OF INTERNAL AFFAIRS PERSONNEL FROM A MANAGERIAL PERSPECTIVE

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Abstract

Physical training occupies an important place in the professional activity of personnel within the Ministry of Internal Affairs, as many service tasks require physical effort, prompt reaction, and the ability to act effectively in demanding operational situations. Adequate physical preparation may support the fulfilment of professional duties, improve operational efficiency, and reduce occupational risks. In this context, the present study analyses how physical training is perceived and supported at the managerial level, based on the opinions of Ministry staff members holding leadership positions.

The research has a descriptive character and is currently in the data collection stage. Empirical data are being gathered through a questionnaire addressed to managers and decision-makers at different hierarchical levels. The questionnaire examines the role of physical training in professional activity, its organization and implementation, the institutional resources allocated to it, the relevance of physical assessments, and their use in managerial decision-making.

The study also considers managerial views on the need to update existing physical training strategies and to strengthen this field as part of professional development within the institution. The expected findings may contribute to identifying practical directions for improving the organizational and managerial framework of physical training within the Ministry of Internal Affairs.

Keywords: physical training, institutional management, Ministry of Internal Affairs, physical assessment, optimization, management staff.

OP.16.13.

THERAPEUTIC BENEFITS OF PHYSICAL EXERCISE IN OPTIMIZING NEUROMUSCULAR FUNCTION IN INDIVIDUALS WITH DOWN SYNDROME

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Abstract

Physical activity is considered an essential component of therapeutic interventions for individuals with neuromotor developmental disorders, playing an important role in supporting and optimizing neuromuscular function. In the case of individuals with Down syndrome, a genetic condition characterized by muscular hypotonia, ligamentous laxity, joint instability, and delayed motor development, such interventions are particularly important for reducing functional limitations and increasing the level of autonomy. Down syndrome is frequently associated with deficits in postural control, movement coordination, and motor performance, aspects that significantly influence overall functional capacity. In this context, structured physical activity issued as a therapeutic strategy that can promote positive neuromuscular adaptations and support motor development processes. Exercise programs typically include aerobic training, strength exercises, coordination tasks, and activities aimed at balance and postural control. These interventions are individualized according to each participant's functional abilities and are characterized by a gradual progression in intensity, ensuring both safety and effectiveness of the training process, contributing to improved neuromuscular outcomes.

Keywords: therapeutic intervention, optimizing neuromuscular function, therapeutic strategy, sport therapy, training process.

OP.16.14.

AQUATIC PLYOMETRIC TRAINING AS AN INNOVATIVE COMPONENT OF CONTEMPORARY CONDITIONING PROGRAMS: EFFECTS OF A HIIT-TABATA APPROACH ON NEUROMUSCULAR ADAPTATION

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ABSTRACT:

Aim: This study aimed to investigate the neuroadaptations and neuromuscular performance changes induced by a 6-week aquatic plyometric high-intensity interval training (HIIT-Tabata) protocol. The intervention addressed the contemporary necessity for time-efficient, high-yield functional training modalities capable of optimizing physical performance while minimizing mechanical impact and joint stress.

Methods: A mixed sample of physically active subjects aged 18–30 was recruited via a rigorous stratification process using a Google Forms screening tool. Following screening and base line eligibility tracking, participants underwent a pre-test/post-test experimental design. Anthropometric profiling was conducted using a TANITA bioelectrical impedance analyzer. Neuromuscular performance and reactive power changes were quantified using Counter movement Jump (CMJ) and Drop Jump (DJ) tests from a 40 cm drop height. Additionally, the force-generating capacity and rate of forced development (RFD) of the soleus musculature were evaluated via isometric testing on a specialized HUR force plate. The 6-week training protocol consisted of 5 complete sets of 5 distinct exercises with a 20 s maximal effort to 10 s passive recovery ratio.

Conclusions: The 6-week aquatic plyometric intervention successfully validated this hybrid methodology as an advanced performance paradigm rather than a mere rehabilitation tool. By significantly attenuating peak structural impact forces without compromising neuromuscular motor unit recruitment, the protocol induced substantial gains in explosive and reactive power output. The integration of hydro-mechanical resistance and specialized interval training provided an optimal equilibrium between structural tissue protection and physiological strain, offering a functional strategy to prevent training monotony and reduce muscle damage within modern, fast-paced sports environments.

Keywords: Agility, Aqua-plyometrics, HIIT-Tabata, Neuroadaptations, Stretch-shortening cycle.

2.POSTERS

SECTION 16: ADVANCED RESEARCH IN HUMAN MOTRICITY AND KINETOTHERAPY

PP.16.1.

THE ROLE OF TRAINING ROBOTS IN ENHANCING STROKE PRECISION AND RELIABILITY IN TABLE TENNIS

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Abstract

The integration of advanced technologies in high-performance sports has redefined the methods for monitoring and analyzing technical execution. In table tennis, the training robot plays a fundamental role in achieving perfect stimulus repeatability, allowing for the isolation and refinement of stroke parameters. This paper analyzes, from a theoretical and methodological perspective, the role of the training robot in enhancing the precision and reliability of basic strokes among cadet players. Based on a review of specialized literature and modern training principles, the paper investigates how controlling variables (speed, spin, placement) optimizes the motor learning process. The research highlights the robot's ability to eliminate human error, accelerating stroke automation and the early diagnosis of positioning errors. The study concludes that integrating robotic technology is a vital methodological resource for aligning Romanian table tennis with international performance standards.

Keywords: table tennis, training robot, sports technology, stroke reliability, methodology.

THE RELATIONSHIP BETWEEN MUSIC AND BODY MOVEMENT, THE INFLUENCE OF MUSIC ON AEROBIC AND ANAEROBIC EFFORTS IN HIGH SCHOOL STUDENTS

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Abstract

In the context of the significant increase in the number of people practicing physical exercise, the interest of researchers in the field of motor sciences has increasingly focused on the analysis of factors that can influence physical performance. Among them, music represents an external stimulus with a potential impact on both physiological and psychological parameters, as well as on motor performance. The specialized literature highlights the fact that, during repeated submaximal efforts (e.g., jogging), music can reduce the subjective perception of fatigue through the dissociation mechanism, facilitating the orientation of attention to external stimuli and diminishing the focus on the sensations generated by the effort. Also, the synchronization between the musical rhythm and the movements performed can optimize motor coordination and energy efficiency, thus contributing to the improvement of physical performance. The purpose of this paper was to analyze, among high school students, the effects of different types of music on physiological parameters (heart rate, systolic and diastolic blood pressure, body temperature, subjective perception of fatigue), as well as on performance parameters (maximum, average and minimum power) under conditions of submaximal and maximal effort.

Keywords: high school students, sports technology, music and intelligence, performance analysis

**TECHNICAL ELEMENTS IN FIGURE SKATING: BIOMECHANICAL,
FUNCTIONAL AND TECHNOLOGICAL FOUNDATIONS**

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Abstract: Competitive figure skating is a complex motor context in which the efficient execution of technical elements depends on the interaction between the biomechanics of the critical phases of movement, neuromuscular control, sensory integration, morpho-functional characteristics, and environmental constraints. This paper is a documentation report and synthesizes the specialized literature on the mechanics of impulse, rotation, and landing, the role of vestibular and postural adaptations, the influence of the morpho-functional profile on movement control and injury risk, and the contribution of modern motion-analysis technologies, including optical capture, 3D reconstruction, markerless methods, and inertial sensors. The analysis highlights the need to move from fragmented approaches to an integrative framework in which technical performance is interpreted through cause-and-effect relationships between the phases of the element and through the use of objective evaluation indicators. In this context, the grounding of a desmodromic model is proposed as a theoretical support for technique optimization, training monitoring, and injury-risk reduction in figure skating.

Keywords: figure skating, biomechanics, jump analysis, neuromuscular control, motion analysis, injury prevention

PARTICULARITIES OF ORGANIZING THE CONTENT AND STRUCTURE OF THE PRE-COMPETITIVE TRAINING MESOCYCLE IN WRESTLERS

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Abstract

The specificity of structuring the preparation stage largely depends on the level of sports mastery, the age, and the gender of the wrestlers. The effectiveness of managing the training system is, in many respects, determined by the correctness of the structural-systematic approach used in the analysis of wrestlers' training activity.

The organization of competitive exercises must be structured in such a way that each subsequent variation of the model brings the athlete closer to the planned performance outcome. For this purpose, several intermediate competitive starts may be used without causing excessive psychological pressure.

The regime of subsequent competitions can be modeled through the reproduction of the content and structural characteristics of pre-competitive microcycles. The competition regime model should include the alternation of activity and rest according to the anticipated preliminary and final competition days, as well as the specific characteristics of each day during the competition period. This model may constitute the so-called competitive microcycle model, which, based on its principal parameters, reproduces the determined competitive microcycle.

The modification of external conditions for future competitions is carried out based on the analysis of competitive particularities and the competition environment, as well as through the transfer of pre-competitive preparation into geographical and climatic conditions similar to those in which the competitions will take place.

Another important methodological tendency specific to the pre-competitive preparation stage is the application of exercises with a well-defined purpose, combined with factors outside training sessions and competitions. At the same time, issues related to the selective improvement of certain components of special preparation, the support of recovery processes, and the increase in the degree of automation in the execution of technical-tactical combination can be addressed.

Keywords: pre-competitive stage, microcycles, planning, pedagogical control, management.

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SCIENTIFIC AND METHODOLOGICAL FOUNDATIONS FOR PLANNING AND IMPLEMENTING THE PRE-COMPETITIVE PREPARATION OF ATHLETES

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Abstract.

By analyzing the pre-competitive preparation process of the athlete as a transition from an initial state of readiness to another specific state required for achieving the planned performance result, it can be stated that the accomplishment of this preparation requires a certain spectrum of conditions. One of the primary conditions is the full knowledge of the parameters of the athlete’s state of readiness at the beginning of the analyzed period, as well as the anticipation of the state that must be achieved by the end of this period.

The second condition may be considered the establishment of the group of the most unstable and informative indicators, together with the methods used to control their dynamics, determined through the comparison of the athlete’s accumulated and current state of preparation.

In fact, the fundamental stage in the structure of implementing the pre-competitive preparation process is represented by the development of training process plans and the management of methodological and scientific support plans for this preparation, based on an optimal regime individualized for each athlete.

The effectiveness of the developed plans is determined by the success of implementing the specialized preparation process, through the periodic monitoring of the athletes’ state of readiness and the necessity of adjusting training programs accordingly.

Keywords: planning, microcycles, pre-competitive stages, control indicators, training regime.

EARLY SELECTION OF CHILDREN AND ADOLESCENTS FOR WRESTLING PRACTICE

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Abstract

In most publications by various authors regarding the assessment of wrestlers' preparation or their selection for wrestling practice, only certain aspects of the mentioned problems are revealed, while recommendations are proposed for testing procedures, the processing of control standards, and the means of evaluating the obtained results.

The methodological standards concerning the basic principles of orientation and selection in wrestling are inconsistent with the existing theoretical conception, which may later be improved by other researchers through the implementation of complex experiments conducted over a longer period of time.

Although there are sufficiently well-argued generalizing studies regarding this issue, its solution cannot be considered fully clarified as long as selection programs do not exclusively use important predictive parameters.

The use of a large number of strength and speed-strength tests as indicators for early selection demonstrates the insufficient authenticity of the selection process, since these qualities are the most trainable within sports preparation.

Considerable divergences have been identified between the fundamental concepts proposed by leading theoreticians in the field of wrestling and the practical requirements of this sport, a fact that leads to numerous mistakes in the implementation of the selection process and to coaches' lack of confidence in the effectiveness of existing selection programs.

Keywords: early selection, biological age, preparation stage, motor qualities, psychological qualities.

THEORETICAL ASPECTS OF SPORTS ORIENTATION AND THE SELECTION OF CHILDREN AND ADOLESCENTS FOR SPORTS PRACTICE

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Abstract

The issue of sports selection must be approached comprehensively through the application of biological, pedagogical, and psycho-sociological research methods. Instructional research methods allow the assessment of the level of development of physical abilities and the technical preparation of the investigated subjects. Medical and biological research provides information regarding morpho-functional characteristics, the condition of analytical systems, and the level of physical development of athletes. Based on psycho-sociological research methods, the psychological characteristics of individuals practicing sports can be identified, as well as their interest in sports activity.

The development of certain functions and qualitative characteristics is marked by heterochronization, which determines the existence of substantial differences in the structure of sports abilities during different periods of training. This aspect of the problem is particularly important in the contemporary tendency toward the renewal and development of high-performance athletes.

The structure of sports activity in each discipline is highly complex and includes numerous aspects, which demonstrates the necessity of studying all the important factors influencing the success of this activity in an integrated manner.

The determination of sports abilities must be carried out comprehensively through the application of different research methods that allow the obtaining of objective data regarding the main aspects of athletes' preparation.

Keywords: selection, morphological qualities, sports training, physical development, psychological characteristics.

THE ROLE OF SPORTS TRAINING IN THE DEVELOPMENT OF COGNITIVE PROCESSES INVOLVED IN DECISION-MAKING IN ADOLESCENTS

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Abstract

Sports training is increasingly recognized not only as a means of physical development but also as a context that stimulates essential cognitive processes. Decision making represents a key component, particularly in dynamic environments such as team sports. This paper aims to examine the role of sports training in the development of cognitive processes involved in decision-making among adolescents. The research focuses on how regular participation in organized sports activities contributes to the improvement of cognitive functions such as attention, information processing, and adaptability. Data were collected from a sample of adolescents engaged in structured training programs using a questionnaire assessing self-perceived decision-making abilities and related cognitive processes. The findings suggest that adolescents involved in sports training demonstrate higher levels of cognitive engagement in decision-making situations, highlighting the potential of sports training for cognitive development.

Keywords: sports training, decision-making, cognitive processes, adolescents, attention, cognitive development.

CURRENT THEORETICAL ASPECTS REGARDING THE IMPROVEMENT OF AGILITY AND TECHNICAL SKILLS IN HANDBALL PLAYERS

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Abstract

In modern sports, characterized by high intensity, rapid decision-making, and complex game dynamics, agility and technical skills represent essential components of performance, particularly in team sports such as handball. Recent scientific literature highlights that agility should be understood not only as a physical ability, but as a multidimensional construct involving cognitive, perceptual, and neuromuscular processes. The purpose of this study is to provide a comprehensive theoretical analysis of the main factors contributing to the development of agility and technical skills in handball players, with a particular focus on the integration of modern technologies in the training process. The research is based on a bibliometric and documentary analysis of scientific articles published between 2020 and 2025, identified in international databases such as Web of Science, Scopus, PubMed, and Google Scholar.

The results indicate a significant increase in the use of digital technologies, including inertial measurement units (IMU), GPS/LPS systems, video analysis, and artificial intelligence, for monitoring performance and optimizing training processes. These technologies enable objective quantification of external and internal training loads, facilitate individualized training programs, and improve motor learning through real-time feedback.

Furthermore, the study emphasizes the importance of psychological and cognitive factors, such as motivation, attention, and decision-making, in the development of agility, especially in young athletes (U16). The integration of digital feedback systems contributes not only to performance enhancement but also to injury prevention and long-term athlete development.

In conclusion, modern handball training requires an interdisciplinary and data-driven approach, where technology, sport science, and psychology interact to optimize performance and support the development of young athletes.

Keywords: agility, handball, sports performance, wearable technology, motor skills, training monitoring

THE ROLE OF THE “SPORT FOR ALL” PROGRAMME IN THE PHYSICAL TRAINING SYSTEM OF EMPLOYEES OF THE MINISTRY OF INTERNAL AFFAIRS

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Abstract

The “Sport for All” programme represents an important component of the sports activities carried out within the Ministry of Internal Affairs, playing a significant role in maintaining health, encouraging participation in physical exercise, promoting active recreation, and strengthening collaborative relationships within professional teams. In the context of institutions with special status, maintaining an optimal level of physical fitness among all personnel becomes an operational necessity, not merely a recreational objective.

The aim of this article is to highlight the role of this programme in supporting the multilateral physical training of employees of the Ministry of Internal Affairs by capitalising on sports activities with formative, recreational, and practical-applied value. The study has a documentary and analytical character and was conducted through the examination of normative and institutional provisions concerning the “Sport for All” activity.

The analysis shows that this programme is organised through training sessions, competitions, sports games, practical-applied tests, and cultural-sporting events, adapted to the specific characteristics of the subdivisions, available facilities, and seasonal conditions. Through its content, “Sport for All” contributes to the prevention of sedentary behaviour, the development of motor culture, the active use of leisure time, and the strengthening of team spirit.

Therefore, the programme may be regarded as a complementary means of maintaining occupational health and consolidating collective cohesion within the Ministry of Internal Affairs.

Keywords: Sports for All, physical training, institutional management, Ministry of Internal Affairs, sports activities, health, professional training.

IMPACT OF HIGH-INTENSITY TRAINING ON CARDIOVASCULAR HEALTH IN ELITE ATHLETES: A SYSTEMATIC REVIEW OF BENEFITS AND RISKS

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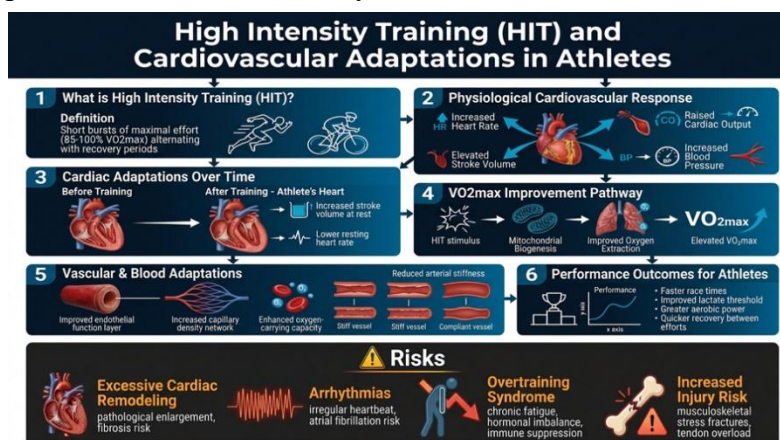
Abstract

High-intensity training (HIT) represents a central component of training programs in elite athletics, primarily due to its well-established role in enhancing key physiological determinants of performance. Previous research has consistently shown that HIT improves maximal oxygen uptake (VO_{2max}), stroke volume, and heart rate recovery, all of which are critical for competitive success (Lundby et al., 2017; Weston et al., 2019). However, increasing attention has been directed toward the potential cardiovascular risks associated with repeated exposure to high-intensity exercise.

This systematic review, conducted in accordance with PRISMA guidelines, aims to synthesize evidence published between 2017 and 2024 regarding both the beneficial and adverse cardiovascular effects of HIT in elite athletes. The available data suggest that, although HIT induces favorable cardiovascular adaptations, it may also be linked to acute events such as arrhythmias and transient myocardial injury (Schauer et al., 2019; Garcia et al., 2020), as well as longer-term structural changes, including myocardial fibrosis and atrial remodeling (Patterson et al., 2020; Anderson et al., 2021).

Overall, the findings emphasize the need for individualized training strategies, regular cardiovascular screening, and continuous monitoring of physiological markers, such as heart rate variability, in order to mitigate potential risks. Achieving an appropriate balance between performance enhancement and long-term cardiovascular health remains a key consideration in elite athletic training.

Keywords: high-intensity training; athletic performance; cardiovascular health; elite athletes; arrhythmias; myocardial adaptation; heart rate variability



*Figure 1. Conceptual overview of cardiovascular adaptations and risks associated with high-intensity training in elite athletes.

Adapted from current literature.

ANALYSIS OF THE INFLUENCE OF TRAINING SURFACES ON SPORTS PERFORMANCE

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Abstract

This paper presents research on the influence of different training surfaces on athletic performance. The investigation analyzed multiple studies concerning the biomechanical and physiological effects of training on sand, hard, and sprung surfaces. Using systematic reviews, meta-analyses, and experimental data from plyometric and sprint training programs, key performance parameters such as sprint speed, jump height, and muscle damage were evaluated. The study highlights the importance of surface stiffness and compliance in modifying leg stiffness, energy efficiency, and injury risk during training. Two major factors were emphasized: the mechanical adaptations athletes develop when training on varied surfaces and the practical implications for optimizing performance and reducing injury. This work synthesizes findings from a broad range of research and underscores the need for tailored training regimens based on surface characteristics. Such comprehensive analysis is valuable for coaches, athletes, and sports scientists aiming to improve performance outcomes through surface-specific training interventions.

Keywords: raining surfaces, athletic performance, biomechanical adaptations, sprinting.



THE INFLUENCE OF THE SCHOOL SOCIO-EDUCATIONAL ENVIRONMENT ON MOTOR DEVELOPMENT IN MIDDLE SCHOOL STUDENTS

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Abstract

The present paper analyzes the influence of the school socio-educational environment on the motor development of middle school students through a review of specialized literature published between 2013 and 2023. The study highlights the importance of physical activity during childhood and adolescence, emphasizing its role in the development of motor skills, health maintenance, and the formation of positive behavioral traits. The paper examines the relationships between motor development, school climate, educational opportunities, family background, and socio-economic conditions. Particular attention is given to the differences between urban and rural environments regarding access to sports infrastructure, participation in physical activities, and educational resources. The review also explores the role of physical education in the development of motor competence and healthy lifestyles, as well as the implications for public health and educational policies. Furthermore, the paper identifies several research gaps, especially concerning the limited number of studies conducted in Eastern European contexts and the insufficient use of integrated motor, physiological, and psycho-social indicators. The findings suggest that the socio-educational environment significantly influences students' motor development and that schools play an essential role in promoting active and healthy lifestyles among adolescents.

Keywords: motor development, socio-educational environment, physical activity, middle school students, physical education