Universitatea de Vest de la Timișoara

FACULTATEA DE
EDUCAȚIE FIZICĂ ȘI SPORT

FEFS

SHAPING LEADERS OF THE FUTURE

FEFSTIM 2026

THE 12TH INTERNATIONAL CONFERENCE OF UNIVERSITARIA CONSORTIUM

PHYSICAL EDUCATION, SPORT, PHYSICAL THERAPY AND ACTIVE LIVING

16–17 OCTOBER 2026 • TIMIȘOARA, ROMANIA

THE 12TH INTERNATIONAL CONFERENCE OF UNIVERSITARIA CONSORTIUM
16-17 OCTOBER 2026

„FEFSTIM: Physical Education, Sport, Physical Therapy and Active Living”

It is our great pleasure to invite you to participate in the FEFSTIM International Conference, held under the theme “Physical Education, Sport, Kinesiotherapy and Active Living”, which will take place in Timișoara, Romania, from October 15 to 17, 2026.

The conference is organized by the Faculty of Physical Education and Sport of the West University of Timișoara, in partnership with the Faculties of Physical Education and Sport of Babeș-Bolyai University in Cluj-Napoca and Alexandru Ioan Cuza University of Iași. This international scientific event represents one of the collaborative initiatives developed within the Universitaria Consortium, aiming to promote academic excellence, scientific research, and the exchange of best practices in the fields of physical education, sport, and health.

In parallel with the conference sessions, the Forum of Deans of the Faculties of Physical Education and Sport in Romania will also be held, providing an additional platform for academic dialogue and institutional cooperation.

We hope that this scientific event will offer participants the opportunity to engage with nationally and internationally recognized experts, exchange knowledge and professional experiences, and explore innovative research findings through scientific presentations, seminars, and workshops.

PÎRJOL Dan Ionuț

Dean

Faculty of physical education and sport

West University of Timișoara

SCIENTIFIC COMMITTEE

President

- Prof. PETRACOVSCHI Simona, Phd. Habil, West University of Timișoara, România

Members

- Prof. Stephen Sowulewski, Virginia Commonwealth University (VCU), United States of America
- Prof. Recep Gorgulu, Bursa Uludağ University, Turkey
- Prof. Alfonso Valero-Valenzuela, University of Murcia, Spain
- Prof. Eleonora Mileva, National Sports Academy "Vassil Levski", Sofia, Bulgaria
- Prof. PhD Beatrice Abalașei, Alexandru Ioan Cuza University of Iași, Romania
- Prof. PhD Sorin Buhaș, University of Oradea, Romania
- Prof. PhD Rareș Ciocoi-Pop, Babeș-Bolyai University, Cluj-Napoca, Romania
- Prof. PhD Adrian Cojocariu, Alexandru Ioan Cuza University of Iași, Romania
- Prof. PhD Germina Cosma, University of Craiova, Romania
- Prof. PhD Paul Florian Dragoș, University of Oradea, Romania
- Prof. PhD Carmen Ene-Voiculescu, Ovidius University of Constanța, Romania
- Prof. PhD Virgil Ene-Voiculescu, "Mircea cel Bătrân" Naval Academy, Constanța, Romania
- Prof. PhD Leon Gomboș, Babeș-Bolyai University, Cluj-Napoca, Romania
- Prof. PhD Dorina Florina Ianc, University of Oradea, Romania
- Prof. PhD Florin Valentin Leuciuc, Ștefan cel Mare University of Suceava, Romania
- Prof. PhD Ionel Melenco, Ovidius University of Constanța, Romania
- Prof. PhD Alina-Daniela Moanță, National University of Physical Education and Sport, Bucharest, Romania
- Prof. PhD Mihaela Oravițan, West University of Timișoara, Romania
- Prof. PhD Bogdan Almăjan, West University of Timișoara, Romania
- Prof. PhD Ligia Rusu, University of Craiova, Romania
- Prof. PhD Monica Stănescu, National University of Physical Education and Sport, Bucharest, Romania
- Prof. PhD Marius Stoica, National University of Physical Education and Sport, Bucharest, Romania
- Assoc. Prof. PhD Dan Iulian Alexe, Vasile Alecsandri University of Bacău, Romania
- Assoc. Prof. PhD Marius Alin Baciu, Babeș-Bolyai University, Cluj-Napoca, Romania
- Assoc. Prof. PhD Iuliana Boroș-Balint, Babeș-Bolyai University, Cluj-Napoca, Romania
- Assoc. Prof. PhD Dan Monea, Babeș-Bolyai University, Cluj-Napoca, Romania
- Assoc. Prof. PhD Marius Neculăeș, Alexandru Ioan Cuza University of Iași, Romania
- Assoc. Prof. PhD Ramona Ancuța Nuț, Babeș-Bolyai University, Cluj-Napoca, Romania
- Assoc. Prof. PhD Nicolae Horațiu Pop, Babeș-Bolyai University, Cluj-Napoca, Romania
- Assoc. Prof. PhD Oana Rusu, Alexandru Ioan Cuza University of Iași, Romania
- Assoc. Prof. PhD Martin Domokos, West University of Timișoara, Romania
- Assoc. Prof. PhD Emilian Tarcău, University of Oradea, Romania
- Assoc. Prof. PhD Elena Sîrbu, West University of Timișoara, Romania
- Assoc. Prof. PhD Șerban Gligor, West University of Timișoara, Romania

ORGANIZING COMMETTEE

President

- Lecturer PIRJOL Dan Ionuț, PhD, West University of Timișoara Romania - Dean

Members

- Assoc. Prof. PhD Nicoleta Mirică, West University of Timișoara Romania
- Assoc. Prof. PhD Adrian Nagel, West University of Timișoara Romania
- Assoc. Prof. PhD Cristian Negrea, West University of Timișoara Romania
- Assoc. Prof. PhD Sorin Brîndescu, West University of Timișoara Romania
- Assoc. Prof. PhD Eugen Bota, West University of Timișoara Romania
- Assoc. Prof. PhD Corina Pantea, West University of Timișoara Romania
- Assoc. Prof. PhD Csilla Grădinaru, West University of Timișoara Romania
- Lect. PhD Simona Tabără-Amânar, West University of Timișoara Romania
- Lect. PhD Cerasela Domokos, West University of Timișoara Romania
- Lect. PhD Denisa Bălănean, West University of Timișoara Romania
- Lect. PhD Nada Arseni, West University of Timișoara Romania
- Lect. PhD Ana Maria Vutan, West University of Timișoara Romania
- Lect. PhD Alina Lupu, West University of Timișoara Romania
- Lect. PhD Silvia Popescu, West University of Timișoara Romania
- Lect. PhD Andreea Dumitrescu, West University of Timișoara Romania
- Lect. PhD Gabriel Arnăutu, West University of Timișoara Romania
- Lect. PhD Hans Eric Reitmayer, West University of Timișoara Romania
- Lect. PhD Alexandru Boncu, West University of Timișoara Romania
- Lect. PhD Marcel Răsădean, West University of Timișoara Romania
- Lect. PhD Cosmin Strava, West University of Timișoara Romania
- Assist. PhD Oana Vionov, West University of Timișoara Romania
- Assist. PhD Carla Băloi, West University of Timișoara Romania
- Assist. PhD Ciprian Glazer, West University of Timișoara Romania
- Assist. PhD Nicolae Jurjiu, West University of Timișoara Romania
- Assist. PhD Candidate Ana Maria Păuțu, West University of Timișoara Romania
- Assist. PhD Candidate Octavian Popescu, West University of Timișoara Romania
- Assist. PhD Candidate Dragoș Neagu, West University of Timișoara Romania
- PhD Candidate Anita Zaro, West University of Timișoara Romania
- Admin. Liviu Coicea,West University of Timișoara Romania

FEFSTIM

TABLE OF CONTENT

ORAL PRESENTATION 1

1. Digital variable resistance and muscle hypertrophy: A critical narrative review 2

BĂLTĂREȚU Cristian[1*], IONIȚĂ Constantin[1], TUDOR Virgil[1] 2

2. Readiness, neuromuscular status and movement coordination in youth basketball shooting: a scoping review 3

CĂLIN Andi Florin[1*], PÎRJOL Ionuț[2], GROSU Emilia Florina[1], MONEA Dan[1] 3

3. Functional and Biomechanical Changes Following an Individualized Rehabilitation Programme in a Patient with Transfemoral Amputation: A Case Report 4

CÂNDEA Antonia-Ioana[1*], ENACHE Alexandru-Valentin[1**], CARACOSTEA Gabriela-Valentina[1], CIOCOI-POP Rareș Dumitru [1] 4

4. Functional Rehabilitation in Iatrogenically Induced Menopause Following Breast Cancer Therapy: A 24-Week Case Study 5

CÂNDEA Antonia-Ioana[1*], ENACHE Alexandru-Valentin[1*], CARACOSTEA Gabriela-Valentina[1**], CIOCOI-POP Rareș Dumitru[1] 5

5. Multidimensional profile of handball referees: Morphological, motor, functional, and cognitive-motor characteristics 6

CIOBANU Ștefan[1*], ABĂLAȘEI Beatrice- Aurelia[1] 6

6. Wushu Kungfu vs. Track and Field: Comparing resilience and risk-taking behavior across open and closed skill sports 7

CIUDOIU Ionuț-Alexandru[1*], STOICA Marius[1], PREDOIU Radu[1], DREVE Adina[1], GOZU Bogdan[2], MAKAROWSKI Ryszard[3] 7

7. Study on the Attitude of Physical Education Teachers Regarding the Integration of Children with Special Educational Needs in Mainstream Education: International Approaches in Specialized Literature 8

COTOS Florin[1*] 8

8. Residential Environment and Body Composition în Students With and Without Special Educație Needs: A Comparative Study 9

DAMASCHIN Andreea-Teodora[1*] 9

9. Clinical posturology in athlete training: assessment of functional imbalances, injury prevention, and performance optimisation 10

DRAGOMIR Maricela [1*], BÎRSĂȘTEANU Ștefan-Victor [2] 10

10. Craniosacral therapy versus therapeutic massage, both combined with physical therapy, in patients with neck pain: effects on pain, cervical posture, and neck disability - a randomized controlled trial with 3-month follow-up 11

DRĂGAN Anca Maria[1*], GLIGOR Șerban[2] 11

11. Relationship Between Occlusal Parameters and Running Cadence in Junior Athletes: A Pilot Study 12

GAMEN Luisa Cristiana[1*], ABALAŞEI Beatrice-Aurelia[1] 12

12. Freestyle wrestling exercises and strength outcomes in physical education students 13

GOZMAN Claudiu-Ciprian[1], PĂUNA Răzvan Dorel[1], POP Sergiu[1], ȘERBAN Radu-Tiberiu[1]* 13

13. Predictors of Return-to-Play Time after Badminton Injuries: A Clinical Physiotherapy Perspective 14

HARANGUȘ Paul-Cristian[1*], ALMĂJAN-GUȚĂ Bogdan[1] 14

14. Risk Factors Associated with Injury Anatomical Location in Badminton: A Cross-Sectional Analysis on Romanian Players 15

HARANGUȘ Paul-Cristian[1*], ALMĂJAN-GUȚĂ Bogdan[1] 15

15. Theoretical approaches to the use of physical preparation in developing combat strategies in U14 jiu-jitsu. 16

HART Bogdan-Alexandru[1]* 16

16. Weight cutting in female boxing: risks and implications for performance and health 17

JORNEAC Xenia[1]*, PETRACOVSCHI Simona[1] 17

17. Identification and Analysis of Leadership Styles within Sports Organizations. 18

MACRA-OȘORHEAN Maria Daniela[1], SZŐKE Hunor[1], BARTHA Velu-Sebastian[1]*, APOSTU Alina Paula[1], BOROS-BALINT Iuliana[1] 18

18. The Aesthetics of Fair-Play: Camil Petrescu and the Cultural Manifesto of Foot-Ball Magazine (1937) 19

NEDELEA Patricia[1]* 19

19. Association of the Infrasternal Angle with Shoulder and Hip Rotational Range of Motion in Recreationally Active Adults 20

POPA Vlad[1], BĂLAN Horațiu-Claudiu[1]*, CIOCOI-POP Dumitru Rareş[1] 20

20. Functional Recovery Following Burn Injury Through a Structured Physical Therapy Program: A Case Study 21

POPA Vlad[1*], CIOCOI-POP Dumitru Rareş[1], ILEA Narcisa Iasmina[1] 21

21. Relationship Between Hand-Eye Coordination and First-Serve Return Characteristics Across U12, U14 and U16 Junior Tennis Players 22

PRĂJESCU Marian-Petre[1]*, ABĂLAȘEI Beatrice-Aurelia[1] 22

22. The impact of a hybrid medical recovery protocol on associated cervical and lumbar disc herniation 23

PREDOIU Florin-Cătălin[1]* 23

23. Changes in Musculoskeletal Pain, Postural Alignment, and Plantar Parameters Following an Integrated Physical Therapy Programme in Romanian Border Police Officers 24

ROȘCA Andreea[1]*, UNGUREAN Bogdan-Constantin[2], COJOCARIU Adrian[2] 24

24. AI-Assisted Quantitative Ultrasound Assessment of Femoral Cartilage: The UNITA Cartilage AI Project 25

SÎRBU Elena[1]*, MALO-URRIÉS Miguel, PAROISSIN Christian, BUENO-GRACIA Elena, FANLO-MAZAS Pablo, ALBAROVA-CORRAL Isabel, CIUFFREDA Gianluca, PÉREZ-REY Jorge, RÍOS-ASÍN Izarbe, ROCHE-ALBERO Adrián, MORALES-HERNÁNDEZ Mario, GRACIA-TABUENCA Zeus, CASTILLO-MATEO Jorge,

ASÍN-LAFUENTE Jesús, AURENSANZ-CRESPO Adrián, BARRIO-TORRES Elsa, MARCÉN-GUTIÉRREZ Juan, CEBRIÁN-GUAJARDO Ana Carmen, LIQUET Benoît 25

25. Effects of a 12-Week Pilates Intervention on Neuromuscular Parameters and Motor Control in University Students: An OptoJump Analysis 26

STĂNESCU Rareș[1], COSMESCU Vlad[1]* 26

26. Exploring gender differences in bullying perpetration and victimization among primary school students 27

STICEA Andreea Maria[1]*, UNGUREAN Bogdan Constantin[1], COJOCARIU Adrian[1] 27

27. From Pilot Study to Larger Sample: Consistency of Video-Feedback Effects on Front-Crawl Learning 28

TOROK Gyurko[1], ZOLTAN Attila[1]*, SANDOR Iosif[1] 28

28. Effects of a neuromuscular training microdosing strategy on acceleration, linear sprint speed, and agility in U18 female rugby sevens players 29

TUDOSIU Elena[1]*, BADEA Dan[1], STOICA Marius[1] 29

29. Influence of Foot-Up and Foot-Back Techniques on Serve Jump Height in U12-U14 Junior Tennis Players 30

TUDURACHE Alexandru-Ilie[1]*, COJOCARIU Adrian[1], BUZATU Gabriel1 30

30. The individualized approach in the postoperative recovery of a handball player with a 3rd degree ankle spray – a case study 31

VUTAN Ana Maria,[1] PANTEA Corina[1], ȘTEFAN Raul[1]* 31

31. From student sports to institutional infrastructure: the development of sports facilities at the Polytechnic School of Timișoara, 1922–1930 32

ZARO Anita-Claudia[1]*, PETRACOVSCHI Simona[1] 32

32. Development and Validation of an Accelerated Rehabilitation Protocol in Anterior Cruciate Ligament Reconstruction Surgery Using the Internal Brace Technique 33

CONSTANTIN Elena [1], Consultant Orthopaedic Surgeon, ALBU Daniel-Emil [2], Lecturer, PhD, PÎRJOL Ionuț[3], Lecturer, PhD MONEA Dan [4] 33

POSTER PRESENTATION 34

1. Prone Bridge Test Performance in Adolescent Male Squash Players with Pre-Existing Scapular Dyskinesis: A Cross-Sectional Study 35

AHMED Muhammad Talha[1], TOMOZEI Răzvan[2], TANASĂ Anca-Raluca[2]*, MUSHTAQ Zeeshan[1], DUMITRU Iulian-Marius[2] 35

2. Volitional qualities and judo participation among people with Down syndrome 36

APOSTU Alina Paula[1], BACIU Marius-Alin[1]*, CONSTANTIN Larisa Andrea[1], ȘERBAN Radu-Tiberiu[1].. 36

3. Development of speed and coordination in primary school students through specific physical education activities 37

BOGHIU Raluca Elena[1]*, ENĂȘOAIE Alexandrina[2], ALEXE Dan Iulian[3] 37

4. Clinical and Functional Recovery Dynamics Following Surgical Rotator Cuff Repair: A Longitudinal Study 38

BOUARIU Bianca[1]*, ABALAŞEI Beatrice-Aurelia[2] 38

5. Effects of a montessori-based training program on motor performance in 10–12-year-old football players 39

CARP Ionuț Robert[1]*, STĂNESCU Monica[1] 39

6. Study on improving explosive strength parameters in soccer players through the use of alternating types of muscle contraction 40

CĂRĂBAȘ Ionică[1]*, DACICA Liliana[1] 40

7. Age-Related Differences in Short-Distance Sprint Performance in Youth Female Volleyball Players 41

COTEAȚĂ Maria-Andreea [1]*, TROFIN Petruț-Florin[2], PUNI Rareș-Alexandru[2], COJOCARU Adin-Marian[3], UNGUREAN Bogdan-Constantin [2] 41

8. Body Composition Differences across Age Groups in Youth Female Volleyball Players 42

COTEAȚĂ Maria-Andreea[1]*, Trofin Petruț-Florin[2], PUNI Rareș-Alexandru[2], COJOCARU Adin-Marian[3], UNGUREAN Bogdan-Constantin[2] 42

9. Effects of a Hippotherapy Intervention on Gross Motor Function in Children with Neuromotor Disorders: A Prospective Pre–Post Study 43

DINA Alexandru Mădălin[1*], GHEZEA Alexandra[2], MODAN Anca[3] 43

10. Coordinative abilities and attention in children aged 6-8 years: Effects of a six-month physical education intervention 44

DRĂGUȘIN Maria-Cristina[1]*, PREDOIU Radu[1], Bota Aura[1], MĂNESCU Dan Cristian[1], TUDOR Virgil[1] 44

11. Early Childhood Education: Developmental Theories and Curricular Approaches – A Literature Review 45

GHEZEA Alexandra-Ștefania[1]*, DINA Alexandru-Mădălin[1] 45

12. The impact of social media on the image of sports organizations 46

GHERMAN Alexandru Andrei[1]*, PALAGE Larisa[1], GOMBOȘ Leon[1] 46

13. The role of dance sport in improving self-image 47

GHIȚESCU Roxana-Emanuela[1]*, ZUIAC Silvia-Sorina 47

14. Physical development during the transition from U12 to U13 in soccer players: A seven-month longitudinal study 48

IONESCU Bogdan-Marian[1,2]*, NEMEȘ Raul-Alexandru[1,2] 48

15. Nutrition knowledge and dietary behaviors in amateur athletes: from information to practice 49

IONIȚĂ Constantin[1]*, STĂNESCU Monica[1], BĂLTĂREȚU Cristian[1] 49

16. Effects of a virtual swim trainer on pacing strategy and performance 50

JURESCHI (GHEORGHE) Andreea Natalia[1]*, VASILE Luciela[1] 50

17. Biomechanical Changes in 100-m Breaststroke Assessed Using the EO SwimBETTER® Wearable System 51

MAHDI Jari[1]*, VASILE Luciela Maria[2] 51

18. Effects of Dynamic Neuromuscular Stabilization on Lumbar Hyperlordosis, Core Stability, and Trunk Endurance in Sport-Active and Non-Sport Children: A Controlled Intervention Study 52

MANIU Dragoș Adrian[1], VĂDAN Anca Lucia[1]*, MOLNAR Barbara Terez[1], MANIU Emese Agnes[1] 52

19. Short-Foot and Neuromuscular-Control Training in Adolescents With Flexible Flat Feet: A Four-Month Pre–Post Study 53

MANIU Dragoș Adrian[1], VĂDAN Anca Lucia[1]*, TUSA Emese[1], MANIU Emese Agnes[1] 53

20. Effect gf High Intensity Intervals Training and Body Fat Composition on Aerobic Capacity Among Romanian Football Men Referees from The Second League 54

MONEA Dan[1], BACIU Marius Alin[1], GROSU Vlad Teodor[2], MANCINI Nicola[3*], NEGRU Ioan Niculaie[1] 54

21. Body Fat Percentage and Physical Fitness in University Sport Students: Associations with Eurofit and Aerobic Performance Tests 55

NEGRU Ioan Niculaie[1], NUȚ Ramona Ancuța[1]*, POP Nicolae Horațiu[1], POP Gabriela Maria[1], ALMOS Andras[1], POP Alexandra Cristina[1], SZABO Peter Zsolt[1] 55

22. Functional rehabilitation of the knee after anterior cruciate ligament reconstruction associated with meniscal repair – an evidence – based approach and clinical application 56

NICOLAE Albert[1], MOȚ Raluca[2]*, ALMAJAN GUTA Bogdan[2] 56

23. Physical Fitness in University Sport Students: Correlations Among Eurofit and Yo-Yo IR1 Performance Measures 57

NUȚ Ancuța Ramona[1], POP Nicolae Horațiu[1]*, NEGRU Ioan Niculaie[1], POP Gabriela Maria[1], ALMOS Andras[1], SZABO Peter Zsolt[1], POP Alexandra Cristina[1] 57

24. Optimization of Methods and Means for Developing Strength, Aerobic Capacity and Anaerobic Capacity in Senior Football Players during the Competitive Period. 58

ORMENIȘAN Septimiu Vasile[1], HÎMPEA Darius[1], BARTHA Velu-Sebastian[1]*, ȘANTA-MOLDOVAN Cristian-Ioan[1], BICHESCU Andrade-Ionuț[2] 58

25. Throwing Performance in School Handball: A Pilot Intervention in Female High-School Players 59

OSTAFE Albert[1]*, MANASSES Ildiko[2], BERBECARU Răzvan Andrei[3] 59

26. A study on optimizing the attacking phase in the triples event of football-tennis 60

PĂUNA Răzvan-Dorel[1], ȘERBAN Radu Tiberiu[1], POP Sergiu[1] 60

27. Evolution of Anthropometric and Motor-Performance Indicators in Female Basketball Players Aged 14–16 Years 61

PÎȘĂ (PIPEREA) Costina[1]* 61

28. From Intention to Action: Self-Education and Consistency in Recreational Sports Activities .. 62

PLĂSTOI Camelia Daniela[1]*, BÎCÂ Monica Delia[1], CHIVU Iacob Daniel[1], SAKIZLIAN Robert[1], CHIRIAC Bogdan[1] 62

29. Swimming as a Leisure Activity: Integrating Digital Technologies to Promote Well-Being and a Healthy Lifestyle 63

PLĂSTOI Camelia-Daniela[1], POPESCU Andreea[1]*, Sakizlian Denisa[1], CHEPEA Bogdan[1], GUȚĂ Eduard Leonard[1] 63

30. Body Composition in First-Year Sport Science Students: Associations Between BMI, Body Fat Percentage, and Estimated Visceral Fat 64

POP Nicolae Horațiu[1], NEGRU Ioan Niculaie[1]*, NUȚ Ramona Ancuța[1], POP Gabriela Maria[1], SZABO Peter Zsolt[1], POP Alexandra Cristina[1], ANDRAS Almos[1] 64

31. Comparative Study on Fitness Gym Training Adaptations in Former Athletes and Non-Athletes 65

POP Sergiu[1]*, PĂUNA Răzvan-Dorel[1], ȘERBAN Radu Tiberiu[1] 65

32. Humor, a Pedagogical Tool in Physical Education Lessons 66

ROHOZNEANU Dan-Mihai[1]*, BERNICU Răzvan-Andrei[2], BONDOC Andrei[3] 66

33. The Effects of Synergistic Training on Reaction Speed and Decision-Making in U12 Handball 67

RUSU Ion-Tudor[1]*, BULDUȘ Codruța[1], MONEA Dan[1] 67

34. Building Transferable Skills: The Case for Cross-Sport General Physical Preparation Programming 68

STOLOJAN Constantin[1], PLĂSTOI Camelia-Daniela[2]* 68

35. Effectiveness of Focused Extracorporeal Shock Wave Therapy in the Treatment of Plantar Fasciitis Associated with Calcaneal Spur: A Randomized Comparative Study 69

SZASZ Timea[1]*, Elena Sirbu[1], Mihaela Oravitan[1] 69

36. Optimizing Posture Through Volleyball-Specific Exercises in Middle School Students 70

ȘANTA Cristian[1]*, MĂRCUȘ Ramona[1], ORMENISAN Septimiu[1], MACRA-OȘORHEAN Maria[1], STRAVA Cosmin[2], PAȘCAN Adrian[1] 70

37. Comparative Analysis of MTB Cycling Potential: Case Study – Bistrița and Poiana Brașov 71

ȘTEFĂNESCU Leonida Horea[1], RUS Virgi[1], BÎCA Ioan[2] 71

38. Correlations between muscle mass, regional isometric strength, and vertical jump performance in adolescents 72

TROFIN Petruț-Florin[1]*, HONCERIU Cezar[1], COTEAȚĂ Maria-Andreea[1] 72

39. Long-term outcomes of pelvic floor rehabilitation for postpartum urinary incontinence: a two-case longitudinal study 73

VĂDAN Anca Lucia[1], MANIU Dragoș Adrian[1]*, FRĂSIE Andreea[1], MANIU Emese Agnes[1] 73

40. Analysis of Extracurricular Physical Activity Options Among Lower Secondary School Students 74

ZUIAC Silvia Sorina[1]*, GHITESCU Roxana Emanuela[1] 74

ORAL PRESENTATION

1. Digital variable resistance and muscle hypertrophy: A critical narrative review

BĂLTĂREȚU Cristian[1*], IONIȚĂ Constantin[1], TUDOR Virgil[1]

[1]*National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author: cristian.baltaretu@unefs.ro*

Introduction: digital systems can modify resistance during exercise, but programmable loading and sustained muscle growth represent different levels of evidence.

Aim: to appraise the relevance of digitally controlled resistance studies to hypertrophy and identify conditions for meaningful comparisons with conventional training.

Materials and methods: a critical narrative review combined a preassembled research collection with targeted Europe PMC and publisher searches, updated on 21 September 2026. Twenty-five publications from 2017–2026 were selected. Six digital or electrically controlled device studies were examined by sample, exposure, comparator and outcome. No quantitative pooling or formal risk-of-bias assessment was performed.

Results: two acute studies examined muscle activity and loading behaviour. Four interventions lasting six or ten weeks investigated performance, and three also reported increased regional lean mass. Their comparators included alternative motorized modes, flywheel training or no training. These findings support adaptations to specific programmes, but do not isolate a hypertrophic advantage of digital control over conventional resistance. General training evidence indicates that completed volume, effort, movement range and outcome definition affect interpretation.

Conclusions: motorized resistance can support effective training, while superiority for muscle hypertrophy remains unestablished in the selected evidence. A useful comparison must link the active loading mode to completed training exposure and a prespecified outcome. Regional lean mass, local muscle size and neuromuscular activity should be interpreted as distinct endpoints.

Keywords: digital resistance; muscle hypertrophy; eccentric overload; electromyography; resistance training

2. Readiness, neuromuscular status and movement coordination in youth basketball shooting: a scoping review

CĂLIN Andi Florin[1]*, PÎRJOL Ionuț[2], GROSU Emilia Florina[1], MONEA Dan[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*
[2]*Faculty of Physical Education and Sport, West University of Timișoara, Timișoara, Romania*

**Corresponding author:* andi.calin@ubbcluj.ro

Introduction: Subjective wellness, heart rate variability (HRV) and the countermovement jump (CMJ) are widely used to monitor basketball players, but their relation to movement coordination and shooting in youth players has not been mapped.

Aim: To map studies that measured two or more of these domains in the same youth basketball players and to identify evidence gaps.

Materials and methods: This scoping review followed JBI guidance and PRISMA-ScR. PubMed/MEDLINE, Scopus, Web of Science and OpenAlex were searched from inception to September 2026, and two reviews were hand-searched. Eligible studies involved players with a mean age under 19 years and measured at least two of the following together: wellness, HRV, jump performance, shooting kinematics or coordination, and shooting performance. Studies applying a fatigue protocol before one of these outcomes were also eligible. Data were charted into an evidence map.

Results: Of 1,207 records, 67 studies were included. Shooting was measured in 53 studies, jump performance in 33, coordination or kinematics in 24, induced fatigue in 22, wellness in 10 and HRV in 6. The most studied links were coordination–shooting (22 studies), jump–shooting (21) and fatigue–shooting (17). Wellness, HRV and CMJ responded to load but were weakly inter-related. No study related wellness or HRV to coordination or shooting. Only two studies quantified movement variability, ten included players aged 13 years or younger and five followed players over time.

Conclusions: In youth basketball, readiness and shooting have been studied separately. Coaches should not assume that wellness, HRV or CMJ scores predict shooting accuracy until this link is tested. Future studies should monitor readiness, CMJ, free-throw kinematics and accuracy repeatedly in the same players, including players aged 12–13 years.

Keywords: heart rate variability; countermovement jump; kinematics; free throw; athlete monitoring

3. Functional and Biomechanical Changes Following an Individualized Rehabilitation Programme in a Patient with Transfemoral Amputation: A Case Report

CÂNDEA Antonia-Ioana[1]*, ENACHE Alexandru-Valentin[1], CARACOSTEA Gabriela-Valentina[1], CIOCOI-POP Rareș Dumitru [1]**

[1]*Department of Physical Therapy and Theoretical Disciplines, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

***Corresponding author:alexandru.enache@ubbcluj.ro*
**These authors contributed equally to this work*

Lower-limb amputation can affect mobility through interacting functional, biomechanical, and clinical constraints. This case report describes changes recorded after an individualized rehabilitation programme in a 60-year-old man with type 2 diabetes mellitus and right transfemoral amputation.

Approximately three months after surgery, he received a modular transfemoral prosthesis with a silicone liner, a fixed-mechanism knee, and a prosthetic foot. He then completed 24 supervised sessions delivered twice weekly over 12 weeks.

The programme progressed from supine mobility and strengthening to sitting control, transfers, supported standing, weight shifting, and assisted prosthetic walking. Functional mobility was assessed with the Amputee Mobility Predictor with Prosthesis (AMPPro) at baseline and after the programme. Complementary outcomes included BTS P-WALK measures during quiet standing, K-Pull measurements of isometric hip flexion, extension, and abduction force on the intact left limb, and joint range of motion measured by goniometry. One measurement was available at each assessment, and changes were summarized descriptively. AMPPro increased from 6 to 21 points. Body-barycenter ellipse area decreased from 394.97 to 316.37 mm^2 (19.90%). Intact-limb peak hip force increased by 46.34% in flexion, 15.09% in extension, and 19.05% in abduction. Intact-knee flexion increased by 10°, its extension deficit decreased by 10°, and hip flexion increased by 10°.

Gains were concentrated in transfers, supported standing, gait initiation, and basic stepping, whereas step continuity, cadence variation, obstacle negotiation, and stair climbing remained limited. The single-case, single-trial design does not establish that the programme caused these changes.

Keywords: transfemoral amputation; prosthetic rehabilitation; Amputee Mobility Predictor; postural control; muscle strength

4. Functional Rehabilitation in Iatrogenically Induced Menopause Following Breast Cancer Therapy: A 24-Week Case Study

CÂNDEA Antonia-Ioana[1]*, ENACHE Alexandru-Valentin[1]*, CARACOSTEA Gabriela-Valentina[1], CIOCOI-POP Rareș Dumitru[1]**

[1]*Department of Physical Therapy and Theoretical Disciplines, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

***Corresponding author: gabriela.caracostea@ubbcluj.ro*
**These authors contributed equally to this work*

Introduction: Adjuvant oncological therapies for breast cancer, including bilateral oophorectomy, cytotoxic chemotherapy, and radiotherapy, can induce iatrogenic menopause.

Aim: This case report recorded within-person functional, muscular, and cardiorespiratory changes following a physical therapy program in a breast cancer survivor experiencing treatment-induced menopause.

Methods: A 47-year-old female, three years post-induced menopause following bilateral mastectomy, axillary lymphadenectomy, chemotherapy, radiotherapy, and endocrine therapy, participated in a 24-week, two-stage exercise protocol based on the Frequency, Intensity, Time, Type principle (FITT). Assessment of muscle mass was performed using dual-energy X-ray absorptiometry (DXA) and Manual Muscle Testing (MMT). For Functional Capacity and Lower Limb Endurance, the 30-second Chair-Stand Test was utilized. Joint mobility was assessed via goniometry, and cardiovascular capacity was evaluated using the Ruffier test. Stage 1 (week 1-8) included diaphragmatic breathing, mobility, and stabilization exercises. Stage 2 (week 9-24) incorporated progressive multijoint resistance exercises and low-volume plyometric tasks. Outcome measures recorded at baseline and week 24 included the 30-second Chair-Stand Test, MMT, the Ruffier Index, and goniometric joint mobility.

Results: BMI and skeletal muscle index (SMI) were measured at baseline (23.3 kg/m² and 5.75 kg/m², respectively). In comparison with initial values, the patient's performance improved as followed: 12 to 25 rep (+13 rep) for the 30-second Chair-Stand, 8.0 to 3.3 (-4.7 points) for the Ruffier Index, 4− to 4+ to 5 or 5− at week 24 for muscle groups. The range of motion measurements remained within baseline functional limits goniometrically.

Conclusion: Over the 24-week intervention, increases in lower-limb repetitions and MMT grades, alongside a decrease in the Ruffier Index, were observed in this patient. As an uncontrolled single-case report without post-intervention DXA reassessment, these findings describe observed individual trajectory changes without demonstrating statistical efficacy or causal inference.

Keywords: breast cancer survivor; exercise therapy; functional performance; treatment-induced menopause; rehabilitation

5. Multidimensional profile of handball referees: Morphological, motor, functional, and cognitive-motor characteristics

CIOBANU Ștefan[1*], ABĂLAȘEI Beatrice- Aurelia[1]

[1]*Faculty of Physical Education and Sports, "Alexandru Ioan Cuza" University of Iași, Iași, Romania*

Corresponding author: stefanmciobanu16@gmail.com

Introduction: Handball officiating requires the integration of physical, physiological, and cognitive-motor capacities. However, these dimensions are often examined separately, limiting an integrated understanding of referee characteristics.

Aim: This study aimed to develop a multidimensional characterization of handball referees by examining morphological, motor, functional, and cognitive-motor characteristics.

Materials and methods: Thirty-two referees (26 men, 6 women; age: 30.59 ± 10.75 years; refereeing experience: 7.31 ± 6.94 years) from northeastern Romania were assessed, including 7 National League, 13 divisional, and 12 junior-level officials. Body composition, 5-, 10-, and 20-m sprint performance, change-of-direction ability, spirometric parameters, heart-rate response to exercise, reaction time, and handball-specific decision-making were evaluated. Analyses were descriptive, with results reported for the total sample and separately by sex; no inferential comparisons between sexes were performed.

Results: Skeletal muscle mass was 37.60 ± 7.35 kg and phase angle 6.35 ± 1.50°. Sprint times were 1.156 ± 0.133, 1.983 ± 0.179, and 3.335 ± 0.317 s over 5, 10, and 20 m, respectively, while change-of-direction time was 9.066 ± 0.936 s. FVC was 4.82 ± 1.47 L and MVV 127.95 ± 33.08 L/min. Heart rate increased from 80.25 ± 5.10 bpm pre-exercise to 135.75 ± 17.73 bpm during exercise and decreased to 119.00 ± 17.59 bpm post-exercise. Mean reaction time increased from 527.47 ± 80.83 ms pre-exercise to 588.28 ± 94.35 ms post-exercise, while decision-making performance averaged 6.13 ± 1.41 correct responses out of 10. Sex-specific descriptive results were reported separately.

Conclusions: The findings provide an integrated profile in which body composition, locomotor capacity, cardiorespiratory function, reaction performance, and decision-making represent complementary dimensions of officiating. Their combined assessment may support comprehensive referee evaluation, monitoring, and the development of training strategies addressing the multidimensional demands of handball officiating.

Keywords: officiating; acceleration; cardiorespiratory function; reaction time; decision-making

6. Wushu Kungfu vs. Track and Field: Comparing resilience and risk-taking behavior across open and closed skill sports

CIUDOIU Ionuț-Alexandru[1]*, STOICA Marius[1], PREDOIU Radu[1], DREVE Adina[1], GOZU Bogdan[2], MAKAROWSKI Ryszard[3]

[1]*National University of Physical Education and Sport, Bucharest, Romania*
[2]*University of Bucharest, Romania*
[3]*University of Applied Sciences in Elblag, Poland*

**Corresponding author: ionut120220@yahoo.com*

Introduction: Resilience supports athletic performance and coping with adversity. Risk-taking may be instrumental (goal-oriented) or stimulating (thrill-seeking). Closed-skill sports involve predictable environments, while open-skill sports require rapid adaptation.

Aim: The aim of our study is to investigate resilience and risk-taking behavior in the context of open (wushu kungfu practitioners) and closed (athletics practitioners) skills.

Matherials and methods: The study was conducted between December 2024 and April 2025 and included 38 athletes aged 18 to 32, of whom 14 were track and field athletes (just male) and 24 were wushu kung fu practitioners (17 male and 7 female), all members of sports clubs in Romania. The inclusion criterion was at least one year of competitive experience. The Brief Resilience Scale and the Romanian version of the Makarowski Instrumental and Stimulating Risk Questionnaire were used, administered in collaboration with psychologist Dr. Radu Predoiu. The questionnaires were administered online via the Google Forms platform. The data were statistically analyzed to identify differences among athletes based on their performance level and the discipline they practice. The research adhered to applicable ethical principles.

Results: The results did not reveal any statistically significant differences or correlations regarding resilience and risk-taking behavior based on sport discipline, athletic performance, competitive experience, or gender. Furthermore, among sprinters, performance in the 100-meter dash did not correlate significantly with the psychological variables investigated.

Conclusions: Resilience and risk-taking behavior do not differ significantly based on sport type, performance level, gender, or competitive experience, although certain trends suggest subtle differences in risk-taking patterns.

Keywords: sport psychology, sport performance

7. Study on the Attitude of Physical Education Teachers Regarding the Integration of Children with Special Educational Needs in Mainstream Education: International Approaches in Specialized Literature

COTOS Florin[1]*

[1]*Faculty of Physical Education and Sport, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author: cotosf@yahoo.com*

The inclusion of children with Special Educational Needs (SEN) in school physical education is decisively influenced by teachers' attitudes, professional training, and the school context. International literature indicates a general acceptance of the principle of inclusion, but also persistent difficulties in its practical implementation.

This study aimed to synthesize the attitudes of physical education teachers toward the integration of students with special educational needs (SEN) into mainstream education, as well as to identify the factors that act as barriers or facilitators.

The study represents a narrative review, analyzing 15 studies published between 2004 and 2025 in the international specialized literature. The analysis includes studies on the attitudes of physical education and sports teachers regarding the inclusion of students with special educational needs in mainstream schools, studies with results related to attitudes, self-efficacy, experiences, barriers, or institutional support. Studies not directly related to school physical education, inclusion, or the perspective of teachers, as well as duplicate sources, were excluded from the analysis. The selection was thematic, and the analysis involved comparing the results and grouping them into conceptual categories.

The results show that the majority of physical education teachers generally exhibit positive attitudes toward the principle of inclusion, but practical implementation remains a significant challenge. Attitudes are influenced by multiple factors, including professional training, previous experience with children with special educational needs, the type and severity of the disability, perceived self-efficacy, institutional support, and available resources. The main barriers identified include the lack of adequate training, insufficient resources, overcrowded classes, and limited institutional support. The key facilitators are continuous professional training, direct experience with people with disabilities, collegial and administrative support, as well as adapted material resources.

Keywords: Special Educational Needs (SEN), physical education and sports teachers, mainstream education

8. Residential Environment and Body Composition în Students With and Without Special Educație Needs: A Comparative Study

DAMASCHIN Andreea-Teodora[1]*

[1]*Faculty of Physical Education and Sport, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author: damaschinandreeateodora@gmail.com*

Introduction: Body composition represents a multidimensional indicator of somatic development and health during childhood and adolescence. Its assessment becomes particularly relevant in students with special educational needs (SEN), considering the potential interaction between individual characteristics, physical activity opportunities, lifestyle factors and environmental context. Rural and urban environments may differ with respect to access to physical activity facilities, educational and health resources, transportation, recreational opportunities and socioeconomic conditions, potentially contributing to differences in anthropometric and body-composition profiles.

Aim: The present study aimed to comparatively analyze selected anthropometric and body-composition parameters in students with SEN according to their rural or urban environment of origin and to determine whether statistically significant differences existed between the two groups.

Materials and methods: A quantitative, observational, cross-sectional comparative study was conducted on 103 students with SEN aged 11–14 years. The sample comprised 49 students from rural areas and 54 from urban areas, recruited from nine schools. Body composition was assessed using bioelectrical impedance analysis with a TANITA MC-580 device. The analyzed parameters were body weight, height, body mass index (BMI), fat mass, muscle mass and skeletal muscle mass (SMM). Data distribution was examined separately for the two environmental groups. Independent-samples *t* tests were applied to normally distributed variables, whereas the Mann–Whitney *U* test was used for variables that did not meet the normality criterion. Statistical significance was established at $p < 0{,}05$.

Results: Statistically significant differences were identified between rural and urban participants for all investigated parameters. Urban students presented higher mean height (1.638 vs. 1.582 m; $p = .006$), muscle mass (41.631 vs. 36.989 kg; $p = .009$), and SMM (24.813 vs. 22.079 kg; $p = .010$). Significant differences were also identified for body weight ($U = 822.500$, $Z = -3.305$, $p = .001$), BMI ($U = 918.500$, $Z = -2.671$, $p = .008$), and fat mass ($U = 774.000$, $Z = -3.626$, $p < .001$), with higher descriptive values observed in the urban group.

Conclusions: The findings support the research hypothesis within the investigated sample and indicate significant rural–urban differences across anthropometric, adiposity-related and muscular parameters in students with SEN. The simultaneous presence of higher values for fat mass, BMI, muscle mass and SMM in the urban group suggests a multidimensional anthropometric profile rather than a difference attributable solely to adiposity. Because of the cross-sectional design, the findings should be interpreted as group differences and associations rather than causal effects of the environment. Further longitudinal and intervention studies incorporating physical activity, dietary behavior, socioeconomic characteristics and access to adapted physical education are warranted.

Keywords: special educational needs; body composition; rural environment; urban environment; body mass index; skeletal muscle mass; adapted physical education; adolescents.

9. Clinical posturology in athlete training: assessment of functional imbalances, injury prevention, and performance optimisation

DRAGOMIR Maricela [1]*, BÎRSĂȘTEANU Ștefan-Victor [2]

[1]*Faculty of Physical Education and Sport, Dunarea de Jos University of Galati, Romania*
[2]*Faculty of Medicine, Victor Babes University of Medicine and Pharmacy, Timisoara, Romania*

**Corresponding author:* maricela.dragomir@ugal.ro

Introduction: athletic performance depends not only on strength, endurance, and technical proficiency, but also on the nervous system's ability to integrate visual, vestibular, and somatosensory information in order to maintain stability and adapt rapidly to movement demands. In this context, clinical posturology may complement the athlete's functional assessment by identifying sensory, neuromuscular, and biomechanical imbalances that may affect sport-specific movement.

Aim: this paper aims to highlight the role of integrated postural assessment in individualising athletic training, preventing injuries, and optimising performance.

Materials and Methods: a narrative review of the literature was conducted on postural control, static and dynamic stability, sensory integration, neuromuscular training, and their relationships with athletic performance and injury risk. The principal clinical and instrumental methods applicable to athletes are presented: assessment of body alignment, balance and single-leg stance tests, dynamic postural control assessment, baropodometry, stabilometry, and three-dimensional postural analysis. These findings should be interpreted in relation to the athlete's injury history, the specific demands of the sport, and sport-specific functional tests.

Results: integrated assessment may identify weight-bearing asymmetries, inefficient postural strategies, proprioceptive deficits, and impaired neuromuscular control that may lead to compensatory patterns and overuse. Individualised interventions based on sensorimotor, proprioceptive, and neuromuscular exercises may improve stability, coordination, and the efficiency of sport-specific movement. However, no isolated postural parameter can reliably estimate injury risk or athletic performance.

Conclusions: integrating clinical posturology into athlete assessment provides a functional and interdisciplinary perspective that can assist in identifying compensatory patterns, adapting training programmes, and monitoring rehabilitation. Assessment should be multimodal, dynamic, and specific to the sport, and its findings should be interpreted alongside clinical and functional data.

Keywords: clinical posturology, athlete, postural control, balance, injury prevention, athletic performance.

10. Craniosacral therapy versus therapeutic massage, both combined with physical therapy, in patients with neck pain: effects on pain, cervical posture, and neck disability - a randomized controlled trial with 3-month follow-up

DRĂGAN Anca Maria[1]*, GLIGOR Șerban[2]

[1]*Faculty of Geography, Turism and Sport, University of Oradea, Romania*
[2]*Faculty of Physical Education and Sport, West University of Timișoara, Romania*

**Corresponding author: anca.dragan.@uoradea.ro*

Introduction. Neck pain is a common musculoskeletal condition that negatively affects functional status. CranioSacral Therapy (CST) is a non-invasive manual therapy proposed as a complementary approach for reducing pain.

Aim. To compare CST plus physical therapy with therapeutic massage plus physical therapy on pain intensity, cervical posture and neck disability in patients with neck pain, and to determine whether therapeutic effects were maintained three months after the intervention.

Materials and Methods. Thirty patients with neck pain were randomly allocated, using a computer-generated list, to an experimental group receiving CST plus physical therapy (n = 15) or a control group receiving therapeutic massage plus physical therapy (n = 15). Outcome assessors were not blinded to group allocation. Over four weeks, participants received 12 physical therapy sessions plus 12 CST or massage sessions. Pain intensity was assessed with the Wong-Baker FACES® Pain Rating Scale, cervical posture with the craniovertebral angle (CVA) measured by goniometer, and neck disability with the Neck Disability Index (NDI), at baseline, post-intervention and three-month follow-up. Between-group differences were analysed with independent-samples t-tests ($p < 0.05$).

Results. Post-intervention, the experimental group showed lower pain intensity (−1.87 points), lower NDI scores (−16.06 points) and a larger CVA (+11.74°) than the control group (all $p < 0.001$). At three months, differences persisted for pain intensity (−3.00 points), NDI (−16.54 points) and CVA (+9.80°) all $p < 0.001$).

Conclusions. In this small randomized trial (n = 30), adding CST to physical therapy was associated with greater improvements in pain, neck disability and cervical posture than therapeutic massage plus physical therapy, with differences still present at three months. These preliminary findings require confirmation in larger trials with blinded assessment and longer follow-up.

Keywords: CranioSacral Therapy, physical therapy, cervical pain, cervical posture, neck disability

11. Relationship Between Occlusal Parameters and Running Cadence in Junior Athletes: A Pilot Study

GAMEN Luisa Cristiana[1]*, ABALAŞEI Beatrice-Aurelia[1]

[1]*Faculty of Physical Education and Sports, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author: Email for corresponding author: luisa.gamen@uaic.ro*

Introduction: Dental occlusion has been increasingly considered in relation to neuromuscular control and sports performance. However, its potential association with running biomechanics remains insufficiently explored, particularly in adolescent athletes.

Aim: This pilot study aimed to investigate the relationship between selected occlusal parameters and maximum running cadence in Junior II athletes.

Materials and methods: The study included 37 athletes aged 16–17 years (15 boys and 22 girls). Dental assessment focused on three occlusal parameters: overjet, overbite, and dental midline deviation. Maximum running cadence was recorded as a biomechanical indicator of running performance. Associations between occlusal characteristics and maximum cadence were examined using correlation analysis, followed by multiple linear regression to assess their combined and individual contributions.

Results: Maximum running cadence was negatively correlated with overjet ($r = -0.378$, $p = 0.011$), overbite ($r = -0.389$, $p = 0.009$), and dental midline deviation ($r = -0.427$, $p = 0.004$). The multiple regression model was statistically significant ($F(3,33) = 6.767$, $p = 0.001$) and accounted for 38.1% of the variance in maximum cadence ($R^2 = 0.381$; adjusted $R^2 = 0.325$). When the predictors were considered simultaneously, dental midline deviation remained significantly associated with maximum cadence ($\beta = -0.418$, $p = 0.005$), whereas overjet and overbite did not retain statistical significance.

Conclusions: The findings indicate an inverse association between selected occlusal characteristics and maximum running cadence in the investigated athletes. Dental midline deviation showed the most consistent relationship with cadence. Given the pilot nature of the study and the limited sample size, further research involving larger samples is needed to confirm these findings.

Keywords: dental occlusion; running cadence; dental midline deviation; biomechanics; junior athletes; sports performance.

12. Freestyle wrestling exercises and strength outcomes in physical education students

GOZMAN Claudiu-Ciprian[1], PĂUNA Răzvan Dorel[1], POP Sergiu[1], ȘERBAN Radu-Tiberiu[1]*

[1]*Department of Sports Games, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author:* radu.serban@ubbcluj.ro

Introduction: Exercises derived from freestyle wrestling may provide varied strength tasks for physical education students, but outcomes from small programmes require cautious interpretation.

Aim: To compare changes in strength-related performance after a six-week wrestling-derived circuit programme with changes in a usual-activity control group.

Materials and methods: Twenty students aged 12–13 years (17 boys and 3 girls) completed a controlled pre–post study. The exercise group comprised 8 boys and 2 girls, while the control group comprised 9 boys and 1 girl. Participants were allocated by drawing lots within pairs formed according to body mass. Both groups completed initial and final assessments of handgrip strength, flexed-arm hang, standing long jump, squats, half-rope climbs and push-ups. Handgrip readings were recorded on the dynamometer's pound-force scale and converted to kilogram-force; no other outcome values were altered.

Results: Mean handgrip strength increased from 27.62 to 34.65 kgf in the exercise group and changed from 27.94 to 27.90 kgf in controls. The exercise group also improved in flexed-arm hang, standing long jump, squats, half-rope climbs and push-ups. Between-group comparisons of change favoured the exercise group across all six outcomes, with Holm-adjusted p values below 0.001. All participants completed the study, and no injuries or other adverse events were reported.

Conclusions: The exercise group showed greater recorded improvements across all six performance tests than the usual-activity control group. Given the small sample and the fact that several assessment tasks were also practised during the programme, the findings should be interpreted cautiously and confirmed in larger studies.

Keywords: physical education; freestyle wrestling; muscular fitness; adolescents; circuit training

13. Predictors of Return-to-Play Time after Badminton Injuries: A Clinical Physiotherapy Perspective

HARANGUȘ Paul-Cristian[1*], ALMĂJAN-GUȚĂ Bogdan[1]

[1]*Department of Physiotherapy and Special Motor Skills, Faculty of Physical Education and Sport, West University of Timisoara, Romania*

**Corresponding author: paul.harangus02@e-uvt.ro*

Introduction: Time lost from sport after a musculoskeletal injury is a key clinical outcome in physiotherapy and sports-rehabilitation practice, yet the relative contribution of treatment pathway, injury location and pre-injury recovery habits to return-to-play (RTP) time is rarely quantified together in racket-sport athletes.

Aim: To identify clinical and behavioral predictors of RTP time (weeks away from play) after badminton injury in Romanian players, and to build a multivariable model of RTP duration.

Materials and methods: Retrospective questionnaire data from 119 Romanian badminton players (71 male, 48 female, mean age 28.04 ± 13.04); they reported the number of weeks away from play after their most severe injury (SD=15.2, median=4). Kruskal-Wallis, Mann-Whitney U, Spearman correlation and multiple linear regression on RTP time were used.

Results: RTP time differed significantly by injury type ($H(4)=23.74$, $p<.001$), with median times of 4 weeks for tendinous/overuse, 8.5 weeks for ligament/meniscal, 2 weeks for muscular, 6 weeks for spinal pain/disc. RTP time differed strongly by treatment pathway ($H=65.13$, $p<.001$): no treatment/continued playing (median=0 weeks), rest only (median=3), physiotherapy (median=6), surgery (median=26); all pairwise contrasts were significant ($p<.001$-$.0005$). RTP time also differed by injury location ($H=6.93$, $p=.031$), with lower-limb injuries showing the longest time. Pre-injury self-reported mobility ($p=.030$) and age ($p<.001$) correlated significantly with RTP time; pre-injury use of stretching as a recovery method was associated with shorter time ($p=.003$).

Conclusions: Treatment pathway, age and pre-injury mobility are strong, largely independent predictors of RTP time after badminton injury, supporting individualized rehabilitation planning that accounts for age-related healing capacity and baseline joint mobility, in addition to the injury type itself.

Keywords: return-to-play, badminton, physiotherapy, injury, recovery time

14. Risk Factors Associated with Injury Anatomical Location in Badminton: A Cross-Sectional Analysis on Romanian Players

HARANGUȘ Paul-Cristian[1*], ALMĂJAN-GUȚĂ Bogdan[1]

[1]*Department of Physiotherapy and Special Motor Skills, Faculty of Physical Education and Sport, West University of Timisoara, Romania*

**Corresponding author: paul.harangus02@e-uvt.ro*

Introduction: Badminton demands rapid multidirectional footwork, explosive lunges, jumps and repetitive overhead striking, which exposes the lower limb, upper limb and spine to distinct mechanical loads. While the global epidemiology of badminton injuries is often described, the relationship between physical preparedness, lifestyle factors and the anatomical location of the most severe injury has received little attention in badminton players.

Aim: To examine whether pre-injury self-reported physical preparedness (strength, speed, endurance, technique, mobility), recovery-related lifestyle variables (hydration, sleep, nutrition) and situational factors (playing surface, triggering movement) are associated with the anatomical location of the most severe badminton injury.

Materials and methods: A retrospective questionnaire was completed by 119 Romanian badminton players (71 male, 48 female, mean age 28.04 ± 13.04); the respondents reported the location of their most severe injury (lower limb n=77, upper limb n=29, spine n=13). Kruskal-Wallis tests, Mann-Whitney U post-hoc comparisons and chi-square tests of association were used.

Results: Self-rated hydration ($H=7.60$, $p=.022$) and sleep duration ($H=6.64$, $p=.036$) differed significantly across injury-location groups, with the spine-injury group reporting lower hydration and sleep than the upper-limb group ($p=.011$ and $p=.017$, respectively). Playing surface ($\chi^2=13.33$, $p=.010$), court zone ($\chi^2=20.59$, $p<.001$), and triggering movement ($\chi^2=149.06$, $p<.001$) were significantly associated with injury anatomical location. Tendinous/overuse injuries were the most frequently reported injury category and involved both upper- and lower-limb conditions. Ligamentous/meniscal injuries were prominently associated with lunging and jumping, while tendinous/overuse injuries were frequently associated with the racket-arm hitting action ($\chi^2(20)=81.37$, $p<.001$). Physical-preparedness scores did not differ significantly across groups.

Conclusions: Situational and lifestyle variables, rather than the level of physical preparedness, were the strongest correlates of injury location in this sample, suggesting that daily routine (sleep, hydration), playing-surface exposure and specific movement training deserve more attention in badminton injury-prevention programmes.

Keywords: badminton, injury location, hydration, sleep, sports medicine

15. Theoretical approaches to the use of physical preparation in developing combat strategies in U14 jiu-jitsu.

HART Bogdan-Alexandru[1]*

[1]*Doctoral School, National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author:* ristea.bogdan@yahoo.com

Introduction: Physical training supports the execution and repetition of technical actions in jiu-jitsu. Its strategic value depends on how athletes apply their capacities during combat. At U14 level, the interpretation of physical performance must take biological development and training experience into account.

Aim: The study aims to establish a theoretical basis for using physical training to develop combat strategies at U14 level. Its objectives are to identify relevant physical demands, examine developmental differences and propose links between physical assessment, strategic options and technical and tactical performance.

Materials and methods: The narrative review included eight publications from 2011 to 2022: empirical studies, reviews, consensus statements and a theoretical contribution. The sources addressed the demands of jiu-jitsu, youth development and the transfer of training to performance.

Results: The literature describes the intermittent nature of the demands and the relevance of strength, muscular endurance and explosive strength in jiu-jitsu. Findings from adult populations do not constitute training norms for U14 athletes. Research involving young participants associates development and anthropometric characteristics with strength performance, without demonstrating effects on strategy. The proposed theoretical framework links physical capacities to the maintenance of dominant grips, positional control, transitions and repeated actions, and proposes indicators for examining their effectiveness in combat.

Conclusions: Physical tests should be combined with video analysis of defined combat situations, examining successful guard passes, positional recoveries and the maintenance of control. Interpretation should take technical proficiency, experience and the level of opposition into account. The strategic value of physical training in U14 jiu-jitsu should be assessed through its application in positional control, transitions and repeated technical actions. Strategy individualisation should be based on physical capacities, technical proficiency, training experience and biological development. Strategies should be reassessed throughout development, while a varied technical repertoire should be maintained. Combining regular physical assessments with video analysis could support adjustments to training and strategic choices, with consideration given to the level of opposition and combat conditions. The proposed theoretical framework links physical profiles with technical and tactical behaviour, however, its effectiveness requires empirical verification in U14 samples.

Keywords: Jiu-jitsu; physical training; combat strategies; U14 athletes; biological development.

16. Weight cutting in female boxing: risks and implications for performance and health

JORNEAC Xenia[1]*, PETRACOVSCHI Simona[1]

[1]*Faculty of Physical Education and Sport, West University of Timișoara, Timișoara, Romania*

**Corresponding author: xenia.jorneac93@e-uvt.ro*

Introduction: Weight classification in combat sports often leads female athletes to resort to rapid weight loss methods to gain a competitive advantage, introducing profound physiological and psychological risks.

Aim: This paper analyzes the methods, perceptions and physical and psychological impacts of weight management in contact sports, with a particular focus on female boxing.

Materials and Methods: A narrative review was conducted using Google Scholar and Web of Science databases without temporal restrictions. Search terms targeted female combat sports, rapid weight loss and physiological risks. Open-access, peer-reviewed studies in English focusing on female fighters were included, while male-only cohorts were excluded, yielding 5 representative studies for synthesis.

Results: Synthesis shows that female pugilists frequently practice severe caloric restriction, carbohydrate elimination and induced dehydration to make weight. Rapid weight loss severity directly correlates with low energy availability risk, elevating susceptibility to Relative Energy Deficiency in Sport (REDs) and the Female Athlete Triad. Severe weight cutting impairs neuromuscular power, reaction time and mood without guaranteeing competitive success. These unguided practices are heavily driven by sport culture and coach influence.

Conclusions: Based on the synthesized literature, aggressive weight loss appears to induce metabolic suppression, endocrine disruption and psychological stress without guaranteeing competitive success, emphasizing the need for evidence-based nutrition and structural regulatory reform. However, given the small number of included studies and the qualitative nature of the review, these conclusions must be interpreted cautiously as preliminary indicators rather than definitive population-wide trends.

Keywords: rapid weight loss, sports nutrition, acute dehydration, combat sports

17. Identification and Analysis of Leadership Styles within Sports Organizations.

MACRA-OȘORHEAN Maria Daniela[1], SZŐKE Hunor[1], BARTHA Velu-Sebastian[1]*, APOSTU Alina Paula[1], BOROS-BALINT Iuliana[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: barthavelu@gmail.com*

Introduction: Beyond technical and tactical preparation, the coach shapes athletes' motivation, confidence and psychological well-being. The coach–athlete relationship is therefore considered an essential factor for both athletic performance and athletes' well-being.

Aim: To examine how coaching leadership behaviors, as perceived by athletes, are associated with the quality of the coach–athlete relationship.

Materials and methods: The research was conducted on a sample of 48 athletes (24 men, 24 women) aged 18 to 37 years from different sports disciplines, using a quantitative, descriptive, and correlational design. Data were collected through an online questionnaire distributed via Google Forms. Coaching leadership was assessed with the short version of the Leadership Scale for Sport, covering training and instruction, democratic behavior, authoritarian behavior, social support and positive feedback. The coach–athlete relationship was assessed with the Coach–Athlete Relationship Questionnaire (CART-Q), covering closeness, commitment and complementarity. Data were analyzed with descriptive statistics, Pearson correlations and multiple linear regression.

Results: Democratic leadership was positively associated with relationship quality ($r = 0.53$, $p < 0.001$), and authoritarian leadership was negatively associated with it ($r = -0.52$, $p < 0.001$). Social support showed the strongest association with relationship quality ($r = 0.77$, $p < 0.001$), followed by positive feedback ($r = 0.60$, $p < 0.001$); together, these two behaviors explained 64.4% of the variance in relationship quality ($R^2 = 0.644$, $F(2, 45) = 40.78$, $p < 0.001$), with social support as the stronger predictor.

Conclusions: Athletes who perceive their coaches as more democratic, supportive and encouraging through positive feedback report a closer and more stable relationship with them, while authoritarian behavior is associated with a poorer relationship. These associations should be interpreted with caution, as the sample was small ($N = 48$) and drawn from many different sports.

Keywords: Coaching leadership, coach–athlete relationship, democratic leadership, social support, positive feedback.

18. The Aesthetics of Fair-Play: Camil Petrescu and the Cultural Manifesto of Foot-Ball Magazine (1937)

NEDELEA Patricia[1]*

[1]*Faculty of Music and Theater, West University of Timisoara, Timisoara, Romania*

**Corresponding author: patricia.nedelea@e-uvt.ro*

Introduction: this paper offers an unexpected perspective on the interwar writer Camil Petrescu: that of a football fan and sports commentator.

Pseudonyms and the Publication: N. Grămătic, Ion Răscoală, and others at the helm of *Foot-Ball*. In 1937, Camil Petrescu launched this weekly magazine, which he practically wrote by himself using multiple pseudonyms. The subtitle is highly suggestive and connects perfectly with your teaching curriculum: *"a weekly magazine for cultivating clean play in sports, art, literature, and social life."* For him, football was not vulgar entertainment, but an extension of ethics and civilization.

The Local Connection: Camil Petrescu was a fanatic supporter of Ripensia Timișoara (the first professional football team in Romania). The actress Jeni Acterian (along with other contemporary testimonies) recounted how Camil used to take her to the stadium, where they would jump up and down and throw their hats in the air during Ripensia's matches. This detail will create an extraordinary local connection with the audience in Timișoara and with the sport in general.

Football as a Dramatic Spectacle: Camil Petrescu analyzed game tactics in the same manner he analyzed a theatrical play or the structure of a modern novel. He saw in football a rigorous geometry of space, an art of collective synchronization, and a supreme test of human authenticity and fair-play.

Materials and methods: the proposed methodology combines critical textual analysis, comparative study, and visual analysis of Camil Petrescu's publication alongside another periodical with a rich history in sports journalism: *Gazeta Sporturilor*. The study utilizes issues from the same year and the exact same publication days (october-november 1937).

I have consulted the Babeș-Bolyai University (UBB) archives in Cluj-Napoca and the Arcanum database in Budapest, and my comparative analysis will focus on these simultaneously published issues (October–December 1937). Specifically, I examine issues 1–7 of the weekly magazine *Foot-Ball* and the issues of the daily *Gazeta Sporturilor* published on those corresponding days. I will discuss the structure of each publication, their references to the same sporting events, the presence or absence of visual elements, as well as their headlines and subheadings.

I intend to incorporate these visual materials into the PowerPoint presentation I am currently preparing, and potentially into the article itself (if necessary, I will request formal permission from the administrators of both archives).

Keywords: sports journalism, interwar football, fair-play, performance aesthetics, culture

19. Association of the Infrasternal Angle with Shoulder and Hip Rotational Range of Motion in Recreationally Active Adults

POPA Vlad[1], BĂLAN Horațiu-Claudiu[1]*, CIOCOI-POP Dumitru Rareş[1]

[1]*Faculty of Physical Education and Sport, Babeş-Bolyai University of Cluj-Napoca, Romania*

**Corresponding author:* horatiubalan@yahoo.com

Introduction: The infrasternal angle (ISA) reflects lower thoracic morphology and may be related to peripheral joint mobility. However, evidence regarding its association with shoulder and hip rotational range of motion (ROM) remains limited. Identifying such associations may be relevant to biomechanical and movement assessment by providing additional information on the relationship between thoracic morphology and peripheral joint mobility.

Aim: This study examined the association between ISA and passive internal and external rotational ROM of the shoulder and hip in recreationally active adults.

Materials and methods: Thirty recreationally active adults (15 women and 15 men) participated in this cross-sectional study. ISA and passive shoulder and hip internal (IR) and external rotation (ER) were measured using a universal goniometer. Associations between ISA and ROM were assessed using Spearman's rank correlation coefficient. A Bonferroni-adjusted significance threshold of $\alpha = 0.0125$ was applied to the four primary correlations. Secondary exploratory analyses examined the consistency of associations across sexes.

Results: ISA was strongly negatively associated with shoulder ER ($\rho = -0.793$, $p < 0.001$) and moderately to strongly negatively associated with hip ER ($\rho = -0.661$, $p < 0.001$). Both associations remained significant after Bonferroni correction and showed the same negative direction in women and men. ISA was not associated with shoulder IR ($\rho = 0.146$, $p = 0.443$). A positive association between ISA and hip IR ($\rho = 0.403$, $p = 0.027$) did not remain significant after correction for multiple comparisons.

Conclusions: Larger ISA values were associated with lower external rotational ROM at both the shoulder and hip, whereas associations with internal rotation were not consistent. These findings suggest a direction-specific relationship between lower thoracic morphology and peripheral rotational mobility. Given the cross-sectional design and limited sample size, ISA should be considered an associated morphological characteristic rather than a predictor of peripheral ROM.

Keywords: infrasternal angle; range of motion; shoulder rotation; hip rotation; thoracic morphology

20. Functional Recovery Following Burn Injury Through a Structured Physical Therapy Program: A Case Study

POPA Vlad[1*], CIOCOI-POP Dumitru Rareş[1], ILEA Narcisa Iasmina[1]

[1]*Faculty of Physical Education and Sport, Babeş-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: vlad.popa@ubbcluj.ro*

Introduction: Burn injuries may result in long-term functional impairments due to reduced joint mobility, muscle weakness, scar formation and contractures, with subsequent effects on independence and quality of life. Structured rehabilitation is therefore an important component of post-burn recovery.

Aim: This case study aimed to describe the functional evolution of an adult patient following burn injury during a four-month structured physical therapy program.

Materials and methods: A 37-year-old male firefighter who sustained thermal burns affecting 40% of the total body surface area participated in a four-month rehabilitation program performed five times per week. The intervention progressed from massage and passive mobilization to passive-active and active exercises, proprioceptive neuromuscular facilitation, resistance training and general physical reconditioning. Range of motion, spinal mobility, muscle strength and burn-specific quality of life using the Burn Specific Health Scale-Brief (BSHS-B) were assessed before and after rehabilitation.

Results: Improvements were observed across all assessed functional parameters. Shoulder flexion increased from 112° to 153° on the right and from 120° to 157° on the left, while the initial 30° bilateral elbow extension deficit was completely resolved. Upper-limb muscle strength improved to grade 5 at the final assessment, and the BSHS-B score increased from 34 to 121 points. At the end of rehabilitation, the patient had regained functional independence and returned to his previous occupational activity.

Conclusions: The patient demonstrated substantial improvements in joint mobility, muscle strength and burn-specific quality of life during the structured rehabilitation program. This case illustrates the potential contribution of early, progressive physical therapy as part of multidisciplinary post-burn rehabilitation.

Keywords: burn injury; physical therapy; rehabilitation; range of motion; functional recovery

21. Relationship Between Hand-Eye Coordination and First-Serve Return Characteristics Across U12, U14 and U16 Junior Tennis Players

PRĂJESCU Marian-Petre[1]*, ABĂLAȘEI Beatrice-Aurelia[1]

[1]*Faculty of Physical Education and Sport, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author:* marian.prajescu2402@gmail.com

Introduction: hand–eye coordination may contribute to tennis performance because returning serve requires rapid visual information processing and the organization of an appropriate motor response under substantial temporal constraints. However, its relationship with specific first-serve return characteristics in junior tennis players remains insufficiently understood.

Aim: this study aimed to examine the association between hand–eye coordination and first-serve return velocity, in-court percentage, and return depth on the forehand and backhand sides in U12–U16 junior tennis players. It was hypothesized that better hand–eye coordination would be significantly associated with better first-serve return characteristics.

Materials and methods: thirty-three junior tennis players (U12, n = 16; U14, n = 5; U16, n = 12) participated in this cross-sectional correlational study. Due to the limited and unequal age-group sizes, participants were analyzed as a pooled sample, and age was not statistically controlled. Hand–eye coordination was assessed using the Alternate Hand Wall Toss Test (AHWTT). Each participant completed 20 forehand and 20 backhand returns against flat serves delivered by the same former professional player at age-adapted velocities. Return velocity was measured in km/h using Kinovea software. Pearson's or Spearman's correlations were applied according to data distribution.

Results: AHWTT (Alternate Hand Wall Toss Test) performance was positively associated with forehand return velocity ($\rho = .705$, $p < .001$), backhand return velocity ($r = .671$, $p < .001$), and forehand in-court percentage ($r = .553$, $p = .001$). No significant associations were observed with forehand return depth ($\rho = .326$, $p = .064$), backhand in-court percentage ($r = .045$, $p = .803$), or backhand return depth ($\rho = -.008$, $p = .964$).

Conclusions: the hypothesis was partially supported, with the most consistent associations observed for return velocity. However, given the small sample, unequal age-group distribution, pooled analysis, and absence of statistical control for age, these findings should be interpreted cautiously and should not be generalized across junior age categories. Larger, age-balanced studies controlling for age are required to confirm these relationships.

Keywords: hand–eye coordination; serve return; junior tennis; return velocity; perceptual-motor performance.

22. The impact of a hybrid medical recovery protocol on associated cervical and lumbar disc herniation

PREDOIU Florin-Cătălin[1]*

[1]*Doctoral School, Faculty of Physiotherapy, National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author:* catapredoiu0204@yahoo.com

Introduction: The current study evaluates the efficacy of an innovative rehabilitation program designed for individuals aged 35 to 50 who have been diagnosed with cervical and lumbar disc herniation. In a modern professional context dominated by prolonged static office positions that favour anterior projection of the head and the erasure of physiological lumbar lordosis, the study proposes a multidisciplinary approach that extends beyond the traditional boundaries of the physiotherapy office. The study's goal is to determine the efficiency threshold of the recovery regimen used, as well as to assess how well it eliminates functional restrictions caused by chronic pain.

Aim: The aim of this study is to establish and evaluate a comprehensive hybrid medical rehabilitation protocol designed to restore functional capacity and reduce pain in sedentary patients presenting associated cervical and lumbar disc herniation, by systematically integrating supervised clinical physical therapy with autonomous workplace ergonomics and wearable biofeedback technology

Materials and method: A prospective, parallel-group comparative clinical study was conducted over 6 months at FizioKineto Clinic Medica on 40 sedentary office workers aged 35–50 years ($N = 40$; 20 men, 20 women; mean age 45.86 ± 4.12 years), recruited consecutively as outpatients, with MRI- or CT-confirmed concomitant cervical and lumbar disc herniation and baseline NDI and ODI scores ≥ 40% (patients with neurosurgical emergencies, spinal surgery, spinal neoplasms or infections, recent fractures, or severe comorbidities were excluded). Participants formed an Experimental Group ($n = 20$) and a Control Group ($n = 20$). Both groups followed the same supervised physical therapy program (50-minute sessions: 5 per week in weeks 1–4, 3 per week in weeks 5–12, 2 per week in weeks 13–24) based on analytical stretching, proprioceptive neuromuscular facilitation (PNF), and active stabilization exercises. The Control Group received standard passive ergonomic recommendations; the Experimental Group additionally wore a smart inertial (IMU) postural sensor with vibrotactile biofeedback (alert at >20° of forward flexion sustained for ≥ 7 s) and performed 2-minute active breaks every 2 hours. The Neck Disability Index (NDI), the Oswestry Disability Index (ODI), and active lumbar flexion range of motion (ROM, in degrees, dual digital inclinometers) were assessed at baseline (T_0), 3 months (T_1), and 6 months (T_f). Data were analyzed using two-way repeated-measures ANOVA with Bonferroni post-hoc comparisons and Student's *t*-tests ($\alpha = 0.05$).

Results: After 6 months of intervention, the Experimental Group showed a significantly greater reduction in disability indices compared to the Control Group (NDI: 12.4 ± 2.2% vs. 31.1 ± 3.4%; ODI: 14.1 ± 1.9% vs. 36.5 ± 3.9%; $p < 0.001$). Active lumbar flexion range of motion (ROM, in degrees) increased significantly by 87.3% across the entire sample (from 24.5° ± 3.1° at baseline to 45.9° ± 3.9° at the final assessment, $p < 0.001$). Sensor logs from the Experimental Group showed a 67.6% decrease in hourly postural deviation alerts by the second month, confirming rapid neuromotor adaptation. The decrease in disability scores (NDI and Oswestry) confirms that well-structured medical rehabilitation in the 35-50 age group not only eliminates symptoms but also restores functional independence to the patient, lowering professional absenteeism and significantly improving quality of life.

Keywords: hernia, protocol, posture correction devices

23. Changes in Musculoskeletal Pain, Postural Alignment, and Plantar Parameters Following an Integrated Physical Therapy Programme in Romanian Border Police Officers

ROȘCA Andreea[1]*, UNGUREAN Bogdan-Constantin[2], COJOCARIU Adrian[2]

[1]*Doctoral School in Sports and Physical Education Science, Faculty of Physical Education and Sports, Alexandru Ioan Cuza University of Iasi, Romania,*
[2]*Faculty of Physical Education and Sports, Alexandru Ioan Cuza University of Iași, Romania*

** Corresponding author: kinetoterapeutandreearosca@gmail.com*

Introduction: Functional postural malalignment is associated with musculoskeletal pain and changes in plantar characteristics, with potential implications for global biomechanical function. However, changes in these outcomes following rehabilitation programmes remain insufficiently understood.

Aim: To evaluate changes in pain intensity, postural alignment, and plantar parameters following an 8-week integrated physical therapy programme and to examine post-intervention associations among these outcomes in Border Police officers with functional postural malalignment.

Material and Methods: Forty Border Police officers with functional postural malalignment were randomly selected using a computer-generated procedure and completed an 8-week integrated physical therapy programme in a prospective single-group before-after pilot intervention study. Pain intensity, postural alignment, and plantar parameters were assessed at baseline and immediately after the intervention. Changes were analyzed using Wilcoxon signed-rank tests, and post-intervention associations using Spearman correlations with Holm–Bonferroni correction.

Results: Significant reductions in cervical and lumbar pain intensity and significant changes in craniovertebral angle, forward shoulder angle, pelvic tilt, knee flexion angle, C7–L1 thoracic spine length, Clark index, KY factor, and Alpha and Beta angles were observed (all $P<.001$), with large effect sizes ($r=0.815–0.877$). Gamma angle and Wejsflog index did not change significantly. Six post-intervention correlations remained significant after Holm–Bonferroni correction. Cervical pain was associated with craniovertebral angle ($r_s=-0.649$) and forward shoulder angle ($r_s=0.680$), while lumbar pain was associated with forward shoulder angle ($r_s=0.534$) and pelvic tilt ($r_s=0.526$). Craniovertebral angle was inversely associated with forward shoulder angle ($r_s=-0.600$), and forward shoulder angle was positively associated with pelvic tilt ($r_s=0.584$).

Conclusions: The programme was associated with reductions in pain intensity and significant changes in postural alignment and selected plantar parameters. Post-intervention associations highlight the potential value of a multidimensional approach to postural assessment and rehabilitation.

Keywords: postural malalignment; physical therapy; musculoskeletal pain; rehabilitation; occupational health; Border Police.

24. AI-Assisted Quantitative Ultrasound Assessment of Femoral Cartilage: The UNITA Cartilage AI Project

SÎRBU Elena[1]*, MALO-URRIÉS Miguel, PAROISSIN Christian, BUENO-GRACIA Elena, FANLO-MAZAS Pablo, ALBAROVA-CORRAL Isabel, CIUFFREDA Gianluca, PÉREZ-REY Jorge, RÍOS-ASÍN Izarbe, ROCHE-ALBERO Adrián, MORALES-HERNÁNDEZ Mario, GRACIA-TABUENCA Zeus, CASTILLO-MATEO Jorge, ASÍN-LAFUENTE Jesús, AURENSANZ-CRESPO Adrián, BARRIO-TORRES Elsa, MARCÉN-GUTIÉRREZ Juan, CEBRIÁN-GUAJARDO Ana Carmen, LIQUET Benoît

[1]*Faculty of Physical Education and Sport, West University of Timişoara, Timişoara, Romania*
[2]*Universidad Zaragoza*

**Corresponding author:* elena.sirbu@e-uvt.ro

Introduction: Musculoskeletal ultrasound provides a non-invasive, accessible and cost-effective method for assessing superficial articular structures. However, evaluation of femoral cartilage remains highly dependent on operator experience and conventional measurements, limiting standardisation and reproducibility. Quantitative image analysis combined with artificial intelligence may provide objective imaging biomarkers and facilitate the clinical implementation of ultrasound-based cartilage assessment.

Aim: The UNITA CartilageAI project aims to develop and clinically validate an AI-assisted ultrasound framework for quantitative assessment of femoral trochlear cartilage, with particular application to knee osteoarthritis and inflammatory arthritis.

Materials and methods: A multicentre translational project is being conducted within the UNITA alliance, integrating clinical, imaging, engineering and statistical expertise. The project comprises: (1) development and optimisation of quantitative ultrasound image-processing methods; (2) standardisation of image acquisition and assessment protocols; (3) evaluation of healthy participants and patients with knee osteoarthritis and inflammatory arthritis; and (4) development of artificial intelligence methods for automated cartilage identification, segmentation and quantitative characterisation. Technical performance, reliability and clinical validity will be assessed across participating centres.

Results: The project is expected to establish a standardised multicentre ultrasound protocol for femoral cartilage assessment and determine the feasibility of AI-assisted segmentation and quantitative characterisation. The resulting framework is intended to improve objectivity and reproducibility compared with conventional operator-dependent assessment and to provide preliminary evidence supporting discrimination between healthy and pathological cartilage. The project targets progression from technology readiness level (TRL) 4 to TRL 6 through validation and demonstration in clinically relevant environments.

Conclusion: UNITA CartilageAI represents a multidisciplinary approach combining musculoskeletal ultrasound, quantitative image analysis and artificial intelligence. The project may contribute to more objective, accessible and reproducible assessment of femoral cartilage and provide a foundation for future clinical implementation in knee osteoarthritis and inflammatory arthritis.

25. Effects of a 12-Week Pilates Intervention on Neuromuscular Parameters and Motor Control in University Students: An OptoJump Analysis

STĂNESCU Rareș[1], COSMESCU Vlad[1]*

[1]*National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author: cosmescu.vlad36@gmail.com*

Introduction: Integrating Pilates into physical education promotes functional movement and stability, yet objective evidence regarding its lower-limb functional adaptations remains limited.

Aim: To evaluate the effects of a 12-week Pilates intervention on lower-limb explosive power, reactive stiffness, and dynamic stability compared to a control group.

Materials and methods: A controlled trial was conducted with 70 university students aged 18–23 years (60 females, 10 males) allocated to an experimental group (n = 35; 12-week Pilates training, 2 sessions/week) and a control group (n = 35). Lower-limb performance was assessed pre- and post-intervention using an optical photocell system across four functional tests: Countermovement Jump (CMJ), Hopping/Stiffness, 15-second Ski Test, and 30-second March-in-Place

Results: The Pilates group achieved significantly greater net improvements than controls in CMJ height (+6.38 cm, $p < 0.001$) and flight time (+0.064 s, $p < 0.001$). Significant superior adaptations were also recorded in dynamic hopping height (+4.39 cm, $p = 0.005$) and Ski Test agility (jump height: +1.12 cm, $p = 0.002$; flight time: +0.038 s, $p < 0.001$; verticality: +0.718, $p = 0.009$). In contrast, March-in-Place parameters showed no significant differential change between groups ($p > 0.05$).

Conclusion: A 12-week Pilates intervention enhances lower-limb explosive power, reactive elastic properties, and multidirectional stability, demonstrating that core stabilization transfers effectively to dynamic neuromuscular performance.

Keywords: vertical jump, reactive strength, hopping test, physical conditioning

26. Exploring gender differences in bullying perpetration and victimization among primary school students

STICEA Andreea Maria[1]*, UNGUREAN Bogdan Constantin[1], COJOCARIU Adrian[1]

[1]*Faculty of Physical Education and Sport, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author: sticea_andreea@yahoo.com*

Introduction. Bullying constitutes a significant problem in educational settings. Previous research has yielded inconsistent findings regarding overall gender differences in bullying perpetration and victimization. Findings also vary across physical, verbal and social forms. Clarifying these patterns may provide a more accurate understanding of gender-specific patterns among primary school students.

Aim. This study aimed to examine gender differences in bullying perpetration and victimization among primary school students.

Materials and methods. The research had a cross-sectional design. A total of 352 fourth-grade students (174 boys and 178 girls), aged 10-11 years, selected through convenience sampling from seven schools in Iași, participated in the study. Students′ involvement in bullying and victimization was assessed using the Romanian version of the Adolescent Peer Relations Instrument–Bully/Target (APRI-BT). IBM SPSS Statistics version 20 was used to perform the statistical analyses.

Results. No statistically significant differences were found between boys and girls in total bullying perpetration ($p = 0.351$) and total victimization ($p = 0.080$). However, the results revealed statistically significant differences in the specific forms of these two dimensions of bullying. Boys reported significantly higher levels of physical bullying ($p < 0.001$), verbal bullying ($p = 0.015$) and physical victimization ($p = 0.030$). Girls reported a significantly higher level of social bullying ($p = 0.006$). No statistically gender differences were found in verbal victimization ($p = 0.875$) and social victimization ($p = 0.070$).

Conclusions. An exclusive focus on total bullying perpetration and victimization scores may obscure significant differences between boys and girls in the specific forms of bullying perpetration and victimization. The findings highlight the importance of assessing physical, verbal and social forms separately and may inform the development of school-based intervention programs targeting the specific patterns identified among boys and girls.

Keywords: peer aggression, fourth graders, self-report assessment.

27. From Pilot Study to Larger Sample: Consistency of Video-Feedback Effects on Front-Crawl Learning

TOROK Gyurko[1], ZOLTAN Attila[1]*, SANDOR Iosif[1]

[1]*Faculty of Physical Education and Sport, Babeş-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: zoltan.torok1@ubbcluj.ro*

Introduction Kinovea-assisted video feedback has been examined in isolated experimental phases, but whether its effects are reproduced when the same protocol is applied to a larger sample has rarely been documented.

Aim. This study compared a pilot experiment (24 children) with an extended experiment (108 children), both evaluating the same 36-hour front-crawl instructional protocol, to determine whether the pattern of changes associated with Kinovea-assisted video feedback was consistent across phases.

Materials and methods. In the pilot phase, 24 beginner swimmers (9-10 years) were divided into a classic-instruction group (GEC, n=12) and a video-feedback group (GEV, n=12). In the extended phase, 108 swimmers of the same age were divided into a classic group (GCC, n=54) and a video group (GCV, n=54). M1 was assessed after 18 hours and M2 after 36 hours. Heart rate after 50 m, 50-m time and Kinovea technical score were analysed. In addition to within- and between-group tests, favourable change scores were calculated (M1-M2 for heart rate and time; M2-M1 for Kinovea score) and analysed using a 2 x 2 ANOVA with phase (pilot vs. extended) and feedback condition (classic vs. video) as factors.

Results. Across phases, change scores were more favourable in the video-feedback condition for heart rate ($F(1,128)=11.11$, $p=.001$), 50-m time ($F(1,128)=16.57$, $p<.001$) and Kinovea score ($F(1,128)=30.48$, $p<.001$). The phase-by-feedback interaction was not significant for heart rate ($p=.206$), 50-m time ($p=.920$) or Kinovea score ($p=.805$), providing no evidence that the classic-versus-video change difference varied between the pilot and extended phases.

Conclusions. The larger sample reproduced the direction of the pilot findings. The change-score analysis supports the consistency of the outcome pattern associated with Kinovea-assisted video feedback, while not constituting a formal equivalence test.

Keywords: swimming; Kinovea; video feedback; motor learning; reproducibility.

28. Effects of a neuromuscular training microdosing strategy on acceleration, linear sprint speed, and agility in U18 female rugby sevens players

TUDOSIU Elena[1]*, BADEA Dan[1], STOICA Marius[1]

[1]*National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author: elena.tudosiu@icloud.com*

Rugby sevens is characterized by high neuromuscular demands resulting from repeated accelerations, sprinting, and rapid changes of direction performed under high-intensity intermittent conditions. In youth athletes, microdosing neuromuscular stimuli may represent an effective strategy for integrating small volumes of high-intensity exercise systematically throughout the training microcycle.

This study aimed to investigate the effects of a neuromuscular training microdosing strategy on acceleration, linear sprint speed, and change-of-direction ability in U18 female rugby sevens players.

Twenty U18 female rugby sevens players participated in the study. Neuromuscular performance was assessed using 10 m, 30 m, and 100 m sprint tests and the 505 test to evaluate change-of-direction ability. Performance was assessed before and after an intervention based on microdosed speed and agility stimuli. Mean values, standard deviations, percentage changes, and the statistical significance of pre–post differences were calculated.

Performance improved across all tests following the intervention. Mean 10 m sprint time decreased from 2.075 ± 0.106 s to 2.002 ± 0.095 s, corresponding to a 3.52% improvement. The 30 m sprint time decreased from 5.087 ± 0.202 s to 4.926 ± 0.195 s (3.16%), while the 100 m sprint time decreased from 14.924 ± 0.622 s to 14.539 ± 0.621 s (2.58%). In the 505 test, mean time decreased from 2.428 ± 0.071 s to 2.341 ± 0.061 s, representing a 3.57% improvement. All pre–post differences were statistically significant ($p < 0.001$).

Systematically integrating low-volume neuromuscular stimuli was associated with improvements in acceleration, linear sprint speed, and change-of-direction ability in U18 female rugby sevens players.

The greatest percentage improvements were observed in the 505 and 10 m tests, suggesting potential benefits for physical qualities relevant to high-intensity actions in rugby sevens. Microdosing may therefore represent a practical strategy for organizing neuromuscular training within the training microcycle.

Keywords: Rugby sevens, microdosing, neuromuscular training, acceleration, sprint, agility, change of direction, U18.

29. Influence of Foot-Up and Foot-Back Techniques on Serve Jump Height in U12-U14 Junior Tennis Players

TUDURACHE Alexandru-Ilie[1]*, COJOCARIU Adrian[1], BUZATU Gabriel1

[1]*Doctoral School of Sport Science and Physical Education, Faculty of Physical Education and Sport, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author: tudurachealexandru@yahoo.com*

Introduction: From a biomechanical perspective, the serve is a complex action involving a coordinated sequence of movements of the lower limbs, pelvis, trunk, upper limb, and racket.

Aim: This study aimed to compare jump height during the tennis serve between junior players using the Foot-Up technique and those using the Foot-Back technique across three serve types: flat, slice, and spin.

Materials and Methods: This comparative study included 42 competitive tennis players with at least two years of competitive experience, aged 10–11 years (U12 category) and 12–13 years (U14 category), comprising 24 boys and 18 girls. Of these, 25 used the Foot-Up technique and 17 used the Foot-Back technique. Jump height during the serve was assessed using the Desmotec E.Board system. For each player and serve type, the mean of 10 trials was calculated and used as the statistical unit of analysis. Between-group differences were assessed using an independent-samples t-test, with statistical significance set at $p < 0.05$.

Results: During the flat serve, Foot-Up players achieved significantly greater jump heights than Foot-Back players (9.3 ± 4.7 cm vs. 7.2 ± 1.4 cm). For the slice serve, the corresponding values were 8.2 ± 3.5 cm and 6.3 ± 1.8 cm, while for the spin serve, they were 8.3 ± 3.2 cm and 7.5 ± 1.9 cm. Differences for the slice and spin serves were not statistically significant.

Conclusions: The Foot-Up technique was associated with significantly greater jump height only during the flat serve. Overall, the findings do not support the general superiority of the Foot-Up technique. Furthermore, segmental coordination is considered more decisive for serve effectiveness than jump height. The choice of foot stance should be individualized according to the junior player's technical proficiency, coordination, and biomechanical characteristics.

Keywords: lower limbs; flat; slice; spin

30. The individualized approach in the postoperative recovery of a handball player with a 3rd degree ankle spray – a case study

VUTAN Ana Maria,[1] PANTEA Corina[1], ȘTEFAN Raul[1]*

[1]*Faculty of Physical Education and Sport West University of Timișoara, Timisoara, Romania*

**Corresponding author: raul.stefan04@e-uvt.ro*

Introduction: A grade III ankle sprain is a severe injury of the ligamentous structures of the ankle joint, commonly encountered among athletes and associated with joint instability, functional impairment, and an increased risk of recurrence. During sports activities involving jumping, rapid changes of direction, and single-leg support, the ankle joint is exposed to considerable biomechanical stress, requiring a comprehensive therapeutic approach, particularly in severe injuries treated surgically.

Aim: The aim of this study was to evaluate the effectiveness of a physiotherapy program based on mobility, muscle strengthening, and proprioceptive exercises in the functional recovery of the ankle joint following surgical treatment of a grade III ankle sprain.

Materials and Methods: This case study involved a 17-year-old female handball player diagnosed with chronic lateral instability of the left ankle who underwent surgical treatment. The rehabilitation program lasted 24 weeks and was divided into three progressive phases. Patient assessment included goniometric measurements, manual muscle testing, muscle circumference measurements, and functional performance tests, which were performed periodically to monitor the patients progress throughout the rehabilitation process.

Results: The results demonstrated a significant improvement in ankle joint mobility, complete recovery of the muscle strength, and an increase in muscle mass in the affected limb. Furthermore, functional testing revealed enhanced explosive force production, improved dynamic stability and neuromuscular control, as well as the achievement of functional symmetry between the lower limbs. Functional test results and minimal differences in limb symmetry tests serve as criteria for returning to the field.

Conclusions: The implementation of a progressive and individualized physiotherapy program proved to be effective in restoring ankle function following the surgical treatment of a grade III ankle sprain. The integration of neuromuscular exercises and the use of objective assessment methods contributed to the restoration of joint stability and facilitated a safe return to sports participation.

Keywords: ankle sprain, physiotherapy, postoperative rehabilitation, joint stability, proprioception, functional performance.

31. From student sports to institutional infrastructure: the development of sports facilities at the Polytechnic School of Timișoara, 1922–1930

ZARO Anita-Claudia[1]*, PETRACOVSCHI Simona[1]

[1]*Faculty of Physical Education and Sport, West University of Timisoara, Timisoara, Romania*

**Corresponding author: anita.zaro99@e-uvt.ro*

Introduction: In the interwar period, student sports in Romanian higher education grew alongside the availability of suitable facilities. At the Polytechnic School of Timișoara, this context led to the need for dedicated sports infrastructure.

Aim and objectives: This paper explores the evolution of sports facilities at the Polytechnic School of Timișoara between 1922 and 1930. The main objectives are to identify references to student athletics in institutional sources, trace the process from initial requests for sports fields to their development, and document the resulting infrastructure by 1930.

Materials and methods: The study employs qualitative research based on source triangulation—analyzing archival records, yearbooks, press articles, and secondary literature. The qualitative content analysis focused on references to sports initiatives, development works, and spatial organization.

Results: Early archival documents demonstrate the need for sports spaces, while by 1930, records confirm the completion of a football field with a surrounding track and two tennis courts (19 × 38 m each) on the southwestern campus.

Discussion: The findings reveal a transition from basic access needs to the systematic creation of specialized sports facilities.

Conclusions: Between 1922 and 1930, student athletics became increasingly integrated with institutional infrastructure, marking a shift towards organized and specialized spaces.

Limitations: The research is limited by the scope of accessible archival materials, which may omit informal or undocumented developments.

Keywords: higher education athletics, infrastructure development, archival research, interwar Romania, sports campus planning

32. Development and Validation of an Accelerated Rehabilitation Protocol in Anterior Cruciate Ligament Reconstruction Surgery Using the Internal Brace Technique

CONSTANTIN Elena [1], Consultant Orthopaedic Surgeon, ALBU Daniel-Emil [2], Lecturer, PhD, PÎRJOL Ionuț[3], Lecturer, PhD MONEA Dan [4]

[14] Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania
[2] Regina Maria Hospital Cluj-Napoca, Romania
[3] Faculty of Physical Education and Sport, West University of Timișoara, Timișoara, Romania

**Corresponding author*: constantinelena94@yahoo.com

Introduction: Anterior cruciate ligament (ACL) injury represents one of the most common and complex pathologies of the knee joint, being frequently encountered among athletes, as well as the general population. The ACL plays an essential role in maintaining knee stability, especially during rotational and deceleration movements, and its tears can lead to severe functional instability. This condition requires a rigorous clinical evaluation and a personalized therapeutic plan, depending on the severity of the lesion and the patient's lifestyle.

Aim: Post-surgical rehabilitation protocols provide standardized recommendations to improve patient safety, reduce medical errors, and optimize functional recovery according to each patient's needs (Popescu, 2022; Guyatt et al., 2015).

Materials and method: Assessments will be performed using KINEO MULTISTATION, which enables both evaluation and muscle development of the operated limb. The study will compare two graft types used in ACL reconstruction, focusing on the benefits of InternalBrace augmentation. Data will be collected, analyzed, and interpreted to optimize rehabilitation, daily functioning, and return to sport.

Results: The recorded results can open new research directions and can serve as an informational foundation for developing projects or support programs for those concerned (ACL reconstruction using autologous graft augmented with the InternalBrace system).

Evaluation of the biomechanical and biological benefits of InternalBrace augmentation regarding the primary stability of the reconstruction and graft protection during the initial phases of healing; Correlation of this surgical method with an accelerated rehabilitation protocol, allowing for a faster return to physical activities without compromising the integrity of the reconstruction;

Through this research, the goal is to optimize the protocol for an accelerated recovery in the treatment of ACL injuries, in accordance with the principles of regenerative medicine, superior biomechanical fixation, and early return to sports activity. And at the same time, accelerating patient recovery.

Keywords: ACL reconstruction, InternalBrace, Recovery, Athletes, Protocol.

POSTER PRESENTATION

1. Prone Bridge Test Performance in Adolescent Male Squash Players with Pre-Existing Scapular Dyskinesis: A Cross-Sectional Study

AHMED Muhammad Talha[1], TOMOZEI Răzvan[2], TANASĂ Anca-Raluca[2]*, MUSHTAQ Zeeshan[1], DUMITRU Iulian-Marius[2]

[1] *Faculty of Rehabilitation Sciences, Lahore College of Physical Therapy, LMDC, Lahore, Pakistan*
[2] *Faculty of Physical Education and Sport, Alexandru Ioan Cuza University of Iași, Iași, Romania*

**Corresponding author: anca.tanasa@uaic.ro*

Introduction: Prone Bridge Test (PBT) performance remains insufficiently characterised in adolescent male squash players with pre-existing scapular dyskinesis (SD), limiting comparison across testing protocols.

Aim: To characterise PBT performance and examine its associations with age, body mass index (BMI), and squash experience.

Material and Methods: This descriptive cross-sectional study included 203 male squash players aged 13-19 years, recruited by convenience sampling from four sports facilities. Pre-existing clinically identified SD was used solely as an eligibility criterion. Each participant completed three PBT trials, with the individual score calculated as the mean holding time across the three trials. Data were analysed using descriptive statistics and tests of normality. Associations between PBT performance, age, BMI, and squash experience were assessed using two-tailed Spearman's rank correlation coefficients, with statistical significance set at $p \leq 0.05$. Analyses were performed using IBM SPSS Statistics 20.

Results: Mean PBT performance was 49.18 ± 17.15s (95% CI: 46.80-51.55), with a median of 47.34 s and values ranging from 23.57 to 99.62s. No statistically significant associations were found between PBT performance and age ($\rho = -0.004$; $p = 0.958$), BMI ($\rho = -0.047$; $p = 0.506$), or squash experience ($\rho = 0.098$; $p = 0.164$).

Discussion: PBT performance showed considerable inter-individual variability, without statistically significant associations with the variables examined. This suggests that PBT performance should be interpreted at the individual level rather than solely in relation to age, BMI, or years of squash experience. The cross-sectional design, convenience sampling, and absence of a comparison group without SD limit the generalisability of the findings and preclude attributing PBT performance to the presence of SD.

Conclusions: PBT performance showed considerable inter-individual variability, while age, BMI, and squash experience were not significantly associated with performance in the present sample. These findings provide a descriptive profile of prone-bridge endurance in this population.

Keywords: squash; adolescent athletes; Prone Bridge Test; trunk muscular endurance; scapular dyskinesis.

2. Volitional qualities and judo participation among people with Down syndrome

APOSTU Alina Paula[1], BACIU Marius-Alin[1]*, CONSTANTIN Larisa Andrea[1], ȘERBAN Radu-Tiberiu[1]

[1]*Department of Sports Games, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author:* marius.baciu@ubbcluj.ro

Introduction: Volitional qualities refer here to behavioural tendencies related to persistence, self-control, initiative and regulation of responses when facing difficulty. Adapted judo provides situations in which such behaviours may be expressed, although evidence in people with Down syndrome remains limited.

Aim: To compare guardian-rated volitional quality scores across non-sport participants, beginner judo practitioners and competitive judo practitioners.

Materials and methods: This cross-sectional study included 35 individuals aged 17–43 years recruited through adapted-judo networks in Romania. Legal guardians completed a literature-informed, study-specific 20-item questionnaire covering persistence, attention, initiative, self-control and behavioural regulation. The instrument was developed for this study and had not undergone formal external validation; sex data were not available in the analytic dataset. Participants were classified as non-sport (n = 16), beginner judo (n = 8) or competitive judo (n = 11). Following data verification, total scores were compared using the Kruskal–Wallis test and Dwass–Steel–Critchlow–Fligner pairwise comparisons.

Results: Median total scores were 59, 73.5 and 77 in the non-sport, beginner and competitive groups, respectively. The overall comparison yielded $H(2) = 6.144$, $p = 0.0463$. No pairwise comparison reached statistical significance (non-sport vs competitive, $p = 0.0529$; non-sport vs beginner, $p = 0.3685$; competitive vs beginner, $p = 0.4778$). Cronbach's alpha for the corrected 20-item score was 0.947. A sensitivity analysis excluding the corrected record yielded $H(2) = 5.392$, $p = 0.0675$.

Conclusions: Guardian-rated scores differed across participation categories at the omnibus level, but no specific pairwise contrast was statistically significant and the sensitivity result crossed the nominal significance threshold. The cross-sectional design does not establish that judo caused differences in volitional qualities.

Keywords: proxy ratings; perseverance; self-control; behavioural regulation; adapted sport

3. Development of speed and coordination in primary school students through specific physical education activities

BOGHIU Raluca Elena[1]*, ENĂȘOAIE Alexandrina[2], ALEXE Dan Iulian[3]

[1] *Secondary School No. 2 Jilava, Ilfov, Romania*
[2] *Vasile Conta Secondary School, Iași, Romania*
[3] *Department of Physical and Occupational Therapy, "Vasile Alecsandri" University of Bacău, Romania*

**Corresponding author:* boghiu.raluca.elena@gmail.com

Introduction. Physical education plays an important role in the harmonious development of primary school students, with speed and coordination representing essential components of motor competence. Age-appropriate motor activities may provide favorable conditions for improving movement efficiency and supporting motor skill development.

Aim. The study aimed to examine changes in speed and coordination following the systematic use of specific physical education activities among third- and fourth-grade students.

Materials and methods. The study involved 64 third- and fourth-grade students (31 girls and 33 boys) and included initial and final motor assessments. The intervention incorporated dynamic games, relay races, applied movement courses, and specific exercises adapted to the students' age. Motor performance was assessed using the 25 m sprint, 5×5 m shuttle run, successive rope jumping with displacement, and vertical target throwing tests. Data were analyzed using descriptive statistical indicators.

Results. Improvements were observed across all four motor tests. Depending on grade and sex, 25 m sprint times decreased by 0.12–0.18 s, while 5×5 m shuttle-run times decreased by 0.28–0.34 s. Performance in vertical target throwing increased by 0.64–0.79 successful throws, and distance covered during successive rope jumping increased by 0.59–1.21 m. Thus, improvements were observed in both speed-related and coordination-related tasks across the investigated groups.

Conclusions. The systematic integration of dynamic games, relay races, applied movement courses, and specific motor tasks into physical education lessons was associated with improvements in speed and coordination among the participating third- and fourth-grade students. These findings support the practical use of varied, age-appropriate motor activities within primary school physical education.

Keywords: physical education; speed; coordination; primary school students; motor development

4. Clinical and Functional Recovery Dynamics Following Surgical Rotator Cuff Repair: A Longitudinal Study

BOUARIU Bianca[1]*, ABALAŞEI Beatrice-Aurelia[2]

[1]*Faculty of Physical Education and Sports, Alexandru Ioan Cuza University of Iași, Romania*

**Corresponding author:* biancaboariu6@gmail.com

Introduction: Rotator cuff tears (RCTs) are among the most common musculoskeletal conditions associated with pain and disability of the shoulder in the general population. Postoperative functional recovery following rotator cuff repair is a progressive process characterized by changes in pain, joint mobility, muscle strength, and patient-perceived function. Longitudinal assessment of these parameters allows characterization of recovery dynamics and examination of the relationship between objective clinical outcomes and patients' perception of recovery.

Aim: This study aimed to longitudinally assess clinical and functional recovery during the first 6 months following surgical rotator cuff repair and to investigate the relationship between objective recovery parameters and patient-perceived function.

Materials and Methods: A prospective longitudinal study was conducted in 20 patients who underwent surgical rotator cuff repair, followed by a structured four-stage rehabilitation program. Pain intensity was assessed using the Numeric Rating Scale (NRS), range of motion by goniometry, muscle strength using the Medical Research Council (MRC) scale, and patient-perceived function using the QuickDASH questionnaire. Assessments were performed at 7 weeks, 4 months, and 6 months postoperatively.

Results: Range of motion improved significantly, with flexion increasing from 76.7° at 7 weeks to 170.3° at 6 months, abduction from 39.2° to 164.05°, and extension from 18.9° to 48.3° (all $p < 0.001$). Pain decreased from a median of 8.0 at 3 weeks to 1.0 at 6 months ($p < 0.001$), while muscle strength increased from 3 to 5 ($p < 0.001$). QuickDASH scores decreased from 68.18 at 7 weeks to 21.05 at 6 months ($p < 0.001$). Pain was significantly correlated with QuickDASH at 4 months ($r_s = 0.665$; $p = 0.001$) and 6 months ($r_s = 0.710$; $p < 0.001$).

Conclusions: The results demonstrated progressive improvement in pain, mobility, muscle strength, and patient-perceived function during postoperative recovery. Pain showed a significant association with patient-perceived function at 4 and 6 months postoperatively.

Keywords: Rotator cuff, postoperative, rehabilitation.

5. Effects of a montessori-based training program on motor performance in 10–12-year-old football players

CARP Ionuț Robert[1]*, STĂNESCU Monica[1]

[1]*National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author: robertcarp330@gmail.com*

Introduction: The development of young athletes requires training strategies that integrate physical development with age-appropriate educational principles. Child-centred approaches encourage autonomy, active involvement, decision-making, and experiential learning, complementing conventional sports instruction.

Aim: This study examined the effects of a Montessori-inspired pedagogical approach integrated into football practice on selected motor-performance components in players aged 10–12 years.

Materials and methods: The study included 40 male football players aged 10–12 years (mean age: 12 years), divided into a traditional training group (n = 20) and a Montessori-inspired group (n = 20). Participants were assessed at baseline and after approximately five months of training. Motor performance was evaluated using the L Test, the Zig-Zag test with the ball, and the 10 m Sprint. Sprint time was measured manually using a stopwatch, following the same testing procedure for all participants. Data distribution and homogeneity of variance were examined using the Shapiro–Wilk and Levene tests. Between-group comparisons were performed using the Mann–Whitney U test, while within-group changes were assessed using the Wilcoxon signed-rank test. Effect sizes were expressed using rank-biserial correlation (r_rb), with statistical significance set at $\alpha = .05$.

Results: At baseline, the groups showed comparable performance. Following the intervention, significant between-group differences emerged. In the Zig-Zag test with the ball, final mean times were 10.4 s in the traditional group and 9.4 s in the Montessori-inspired group ($U = 2$, $p < .001$, r_rb = .99). In the 10 m Sprint, final mean times were 2.79 s and 2.23 s, respectively ($U = 42.5$, $p < .001$, r_rb = .79). Within-group analyses indicated significant improvements between initial and final assessments ($p < .05$).

Conclusions: Integrating Montessori-inspired pedagogical principles into youth football practice was associated with improvements in motor performance, particularly agility and acceleration. These findings support investigation of child-centred strategies as a complement to performance-oriented youth training.

Keywords: child-centred pedagogy; experiential learning; physical development; change of direction; movement skills; sports education

6. Study on improving explosive strength parameters in soccer players through the use of alternating types of muscle contraction

CĂRĂBAȘ Ionică[1]*, DACICA Liliana[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Resita Center, Romania*

**Corresponding author: ionica.carabas@ubbcluj*

Introduction: In football, athletic performance is essential for a team's success, and players need to be able to perform quick and powerful movements, high jumps, and rapid changes of direction. These skills are directly influenced by the players' explosive strength and jumping ability. One of the most effective training methods is triphasic training, developed by Cal Dietz and Ben Peterson, which offers an innovative and systematic approach to developing these skills by alternating phases of eccentric, isometric, and concentric muscle contractions. Implementing this method in football training can lead to significant improvements in player performance, helping achieve better results in competitions, as well as preventing injuries, improving muscle recovery, all of which are essential for maintaining long-term performance.

Aim: The research aims to investigate the effectiveness of using the Triphasic Training method in the effort to improve explosive strength in football players, thus providing a solid scientific basis for coaches and specialists in the field. This will help develop more effective and personalized training programs that meet the specific needs of team athletes

Materials and methods: The triphasic training method can be incorporated into soccer workouts to improve players' explosive strength and jumping ability, which are key for their performance on the field. For example, eccentric exercises are useful for developing strength and control in jumps and sprints, while the isometric phase helps enhance stability and control in game positions. Using the OptoJump equipment in assessments, which is an innovative analysis and measurement system used in high-performance sports to evaluate and optimize athletic performance. It's designed to capture the key parameters that define an individual's performance level and physical condition.

Results: The results obtained from the tests show a significant improvement in the athletes' explosive strength and jumping ability, suggesting that the triphasic training method was effective in enhancing athletic performance.

Conclusions: The Triphasic Training method has shown significant efficiency in improving explosive strength and jumping ability in the athletes tested, making it a useful way to boost the sports performance of soccer players.

Keywords: explosive strenght, soccer players, triphasic training

7. Age-Related Differences in Short-Distance Sprint Performance in Youth Female Volleyball Players

COTEAȚĂ Maria-Andreea [1]*, TROFIN Petruț-Florin[2], PUNI Rareș-Alexandru[2], COJOCARU Adin-Marian[3], UNGUREAN Bogdan-Constantin [2]

[1] *Doctoral School of Sport Science and Physical Education, Faculty of Physical Education and Sport, "Alexandru Ioan Cuza" University of Iași, Iași, Romania*
[2] *Department of Physical Education and Sport, Faculty of Physical Education and Sport, "Alexandru Ioan Cuza" University of Iași, Iași, Romania*
[3] *Faculty of Physical Education and Sport, Spiru Haret University, Bucharest, Romania*

**Corresponding author: coteatamariaandreea00@gmail.com*

Introduction. Short-distance sprint performance is an important component of the physical performance profile of female volleyball players, supporting rapid movements and court positioning. Understanding age-related differences may contribute to more objective physical evaluation.

Aim. This study aimed to analyze differences in sprint performance over 5, 10, 15, and 20 m among U13, U15, and U17 female volleyball players.

Materials and methodes. The study included 69 female youth volleyball players (*U13*: 23 girls, 159,5 ± 7,8 cm, 53,61 ± 11,41 kg; *U15:* 28 girls, 166,7 ± 5,613 cm, 58,09 ± 10,21 kg; *U17:* 18 girls, 165,9 ± 7,107 cm, 62,54 ± 10,27 kg). Sprint times were recorded using the Dashr timing gate system. Between-group differences were analyzed using one-way analysis of variance (ANOVA), followed by Tukey's post-hoc test. Statistical significance was set at $p < 0.05$.

Results. No significant differences were identified at 5 m ($p = 0.1389$), whereas significant overall differences were observed at 10 m ($p = 0.0164$), 15 m ($p = 0.0054$), and 20 m ($p = 0.0047$). Post-hoc comparisons revealed significantly faster times in U15 than U13 at 10 m ($p = 0.0126$), 15 m ($p = 0.0037$), and 20 m ($p = 0.0074$). U17 also recorded significantly faster times than U13 at 20 m ($p = 0.0254$). No significant differences were identified between U15 and U17 at any distance.

Conclusions. Age-group differences in sprint performance depended on sprint distance, without progressive improvement from U13 to U17. The cross-sectional design and the lack of biological maturation assessment represent limitations of this study. These findings highlight the practical importance of assessing multiple sprint distances and considering age-related differences when evaluating sprint performance and planning training programs for young female volleyball players.

Keywords: volleyball, sprint, speed, acceleration, youth

8. Body Composition Differences across Age Groups in Youth Female Volleyball Players

COTEAȚĂ Maria-Andreea[1]*, Trofin Petruț-Florin[2], PUNI Rareș-Alexandru[2], COJOCARU Adin-Marian[3], UNGUREAN Bogdan-Constantin[2]

[1]*Doctoral School of Sport Science and Physical Education, Faculty of Physical Education and Sport, "Alexandru Ioan Cuza" University of Iași, Iași, Romania*
[2]*Department of Physical Education and Sport, Faculty of Physical Education and Sport, "Alexandru Ioan Cuza" University of Iași, Iași, Romania*
[3]*Faculty of Physical Education and Sport, Spiru Haret University, Bucharest, Romania*

**Corresponding author: coteatamariaandreea00@gmail.com*

Introduction. Body composition represents a relevant dimension of the morphological profile of female volleyball players and may exhibit distinct characteristics across the developmental stages of youth sport participation.

Aim. This study aimed to compare body mass index (BMI), body fat percentage, and muscle mass percentage among U13, U15, and U17 female volleyball players.

Materials and methods. The study included 69 female volleyball players (*U13:* n = 23, 159.5 ± 7.8 cm, 53.61 ± 11.41 kg; *U15:* n = 28, 166.7 ± 5.61 cm, 58.09 ± 10.21 kg; *U17:* n = 18, 165.9 ± 7.11 cm, 62.54 ± 10.27 kg). Body composition was assessed using the Omron BF511 bioelectrical impedance monitor before training, following at least two hours without food intake. Age-group differences were analyzed using ANOVA/Tukey or Kruskal–Wallis/Dunn tests, according to data normality ($p < 0.05$).

Results. BMI did not differ significantly between groups ($p = 0.085$), with values of 21.00 ± 3.95 kg/m^2, 20.89 ± 3.51 kg/m^2, and 22.69 ± 3.14 kg/m^2 for U13, U15, and U17, respectively. Body fat percentage differed significantly ($p = 0.031$), with values of 24.36 ± 8.55%, 23.97 ± 7.52%, and 29.61 ± 5.30%, respectively. U17 had higher body fat percentage than U15 ($p = 0.036$). Muscle mass percentage also differed significantly ($p = 0.0006$), with values of 33.05 ± 2.70%, 34.16 ± 2.70%, and 30.97 ± 2.26%, respectively. U17 had lower muscle mass percentage than U13 ($p = 0.036$) and U15 ($p = 0.0004$).

Conclusions. Body composition differences were indicator-specific, with significant differences involving U17 players. The absence of biological maturation assessment limits the interpretation of these age-group differences. The findings support assessing individual body composition indicators rather than relying exclusively on BMI.

Keywords: volleyball, anthropometry, adiposity, muscle, youth.

9. Effects of a Hippotherapy Intervention on Gross Motor Function in Children with Neuromotor Disorders: A Prospective Pre–Post Study

DINA Alexandru Mădălin[1*], GHEZEA Alexandra[2], MODAN Anca[3]

[1]*Renew Institute, Clinica Recumed, Romania*
[2]*National University of Physical Education and Sport, Bucharest, Romania*
[3]*Audiologos, Romania*

**Corresponding author: alexandrudina.ma@gmail.com*

Introduction: Hippotherapy uses the multidimensional movement of the horse as a therapeutic stimulus and may contribute to postural control, balance, coordination, and gross motor function in children with neurological and neurodevelopmental conditions. However, evidence remains heterogeneous, particularly in paediatric populations with diverse diagnoses.

Aim: The aim of this study was to assess changes in gross motor function following a structured hippotherapy intervention in children aged 4–7 years with heterogeneous neurological and genetic conditions associated with motor impairment.

Materials and methods: Twenty children aged 4–7 years with cerebral palsy, Prader–Willi syndrome, Williams syndrome, MEF2C- and CACNA1A-related disorders, severe traumatic brain injury, and other neurodevelopmental conditions participated in the study. Participants underwent 10 individual 30-minute hippotherapy sessions, delivered once weekly. Gross motor function was assessed before and after the intervention using the Gross Motor Function Measure-88 (GMFM-88). Because of the diagnostic heterogeneity of the sample, a single functional classification system was not applicable across all participants. Data distribution was assessed using the Shapiro–Wilk test, and pre–post differences were analysed using the Wilcoxon signed-rank test.

Results: Total GMFM-88 scores increased from 60.08 ± 16.91 before the intervention to 63.98 ± 15.81 after the intervention, corresponding to a mean improvement of 3.90 points (Wilcoxon $W = 0$, $p < 0.001$; rank-biserial correlation, $r_{rb} = 1.00$). Improvements were also observed in the Standing dimension (+4.85 points) and in Walking, Running and Jumping (+4.70 points). All 20 participants showed higher post-intervention GMFM-88 scores.

Conclusions: Following the 10-session hippotherapy intervention, participants showed improvements in gross motor function, suggesting a potential beneficial association between hippotherapy and motor outcomes in this heterogeneous paediatric population. However, the absence of a control group precludes causal inference.

Keywords: hippotherapy; GMFM-88; neuromotor disorders; children; gross motor function.

10. Coordinative abilities and attention in children aged 6-8 years: Effects of a six-month physical education intervention

DRĂGUȘIN Maria-Cristina[1]*, PREDOIU Radu[1], Bota Aura[1], MĂNESCU Dan Cristian[1], TUDOR Virgil[1]

[1]*National University of Physical Education and Sports, Bucharest, Romania*

**Corresponding author:* dragusin.cristina15@yahoo.com

Introduction: Early primary school represents an important period for motor and cognitive development, during which structured physical activity may support both coordinative performance and attentional processes.

Aim: This study investigated the effects of a six-month structured motor intervention integrated into physical education lessons on coordinative abilities and focused attention in children aged 6–8 years.

Materials and methods: A controlled pre–post design included 118 pupils from preparatory and first-grade classes (58 experimental, 60 control).The experimental group participated twice weekly in 50-minute physical education lessons, with 35 minutes devoted to progressively structured coordinative tasks. Seven assessments evaluated hand-eye coordination, dynamic balance, static balance (Flamingo), spatio-temporal coordination (Square Test), spatial orientation and body rotation (Matorin), agility (5 × 5 m shuttle), and focused attention/visual processing speed (Pieron). Statistical analysis included Shapiro–Wilk and Levene tests, paired- and independent-samples t-tests, and Cohen's *d*, with significance set at $p < .05$.

Results: The experimental group showed significant pre–post improvements in most assessed outcomes, whereas dynamic balance remained unchanged. The clearest intervention-related differences were observed for hand-eye coordination, static balance, and agility: these outcomes improved significantly in the experimental group and showed significant between-group differences at post-test (all $p < .001$). Focused attention also improved significantly within the experimental group ($p < .001$); although the control group had higher scores at baseline ($p = .018$), the between-group difference was no longer significant at post-test ($p = .356$). Significant pre–post improvements were also observed in the experimental group for the Square and Matorin tests ($p < .001$), although no significant between-group differences were found at post-test.

Conclusions: The intervention improved several coordinative abilities and focused attention, although effects differed across outcomes, supporting the value of systematically structured motor tasks within school physical education.

Keywords: hand-eye coordination; postural balance; agility; visual processing speed; motor performance, primary school children

11. Early Childhood Education: Developmental Theories and Curricular Approaches – A Literature Review

GHEZEA Alexandra-Ștefania[1]*, DINA Alexandru-Mădălin[1]

[1]*National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author: ghezea_alexandra@yahoo.com*

Introduction: Early childhood education is an essential stage for the child's multidimensional development, in which the cognitive, socio-emotional and motor dimensions are in a dynamic relationship. The quality of the educational environment, play, movement and age-appropriate learning experiences can contribute complementarily to its development.

Aim: The paper aims to synthesize the literature on developmental theories and curricular approaches in early childhood education and to highlight their implications for the development of the preschool child.

Material and methods: A narrative review of the literature was carried out. The identification of the specialized literature was carried out between June and July 2026, through the PubMed and Google Scholar databases, but also by consulting academic sources and institutional documents. Early childhood was operationalized as the preschool period, corresponding approximately to the age of 4–6/7 years. The analysis included 16 scientific articles, academic papers and institutional documents relevant to the topic addressed. The inclusion criteria aimed at open access to sources, addressing the following directions – early education, child development, developmental theories and curricular perspectives, as well as the publication of sources in the period 2010–2026, except for theoretical reference works.

Results: The reviewed literature highlights the importance of child-centered approaches grounded in constructivist and sociocultural theories. Play, including guided play, can support learning and cognitive development, and physical activity and motor experiences are associated with both motor development and cognitive and self-regulation processes. The quality of early childhood education and curriculum characteristics also contribute to socio-emotional and cognitive development.

Conclusions: Age-appropriate, flexible and theoretically grounded curricular approaches can integrate play, movement, interaction and active learning as complementary elements of the multidimensional development of the preschool child.

Keywords: Preschool child, physical activity, motor development, play, active learning

12. The impact of social media on the image of sports organizations

GHERMAN Alexandru Andrei[1]*, PALAGE Larisa[1], GOMBOȘ Leon[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: alexandru.gherman@ubbcluj.ro*

Introduction: Social media has become a central instrument for building the public image, notoriety, sponsor relationships and fan loyalty of sports organizations.

Aim: To describe respondents' social media consumption patterns and their perceptions of how online communication shapes the image of sports organizations, and to test whether these patterns and ratings differ from chance or neutral expectations.

Materials and methods: Eighty-seven respondents (71.3% female, 28.7% male; largest age group 22–23 years) completed a 21-item online questionnaire. Categorical items were analysed with chi-square goodness-of-fit tests against an equal distribution; five-point Likert-type items were tested against the neutral midpoint (one-sample t-tests; $\alpha = .05$).

Results: Daily social media use ($\chi^2(3, N = 87) = 23.76$, $p < .001$), frequency of following organizational pages ($\chi^2(3) = 12.36$, $p = .006$) and preferred content type ($\chi^2(3) = 46.29$, $p < .001$) differed significantly from chance. Ratings of social media's importance for organizational success ($M = 4.24$), its influence on image ($M = 4.13$) and its contribution to notoriety ($M = 4.24$), sponsor attraction ($M = 4.54$) and fan loyalty ($M = 4.45$) were all significantly above neutral (all $t(86) > 9$, $p < .001$). False or unverified information was identified as the most damaging factor (64.4%; $\chi^2(3) = 73.05$, $p < .001$).

Conclusions: Respondents perceive social media as a strategic instrument for the image, notoriety, sponsor attractiveness and fan loyalty of sports organizations, with information accuracy as its main vulnerability. The association between usage frequency and supporter involvement remains to be tested on individual-level data.

Keywords: online communication; brand notoriety; fan loyalty; sponsorship; public perception

13. The role of dance sport in improving self-image

GHIȚESCU Roxana-Emanuela[1]*, ZUIAC Silvia-Sorina

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: roxana.ghitescu@ubbcluj.ro*

Introduction: Dance has existed across all cultures as a fundamental form of human expression and stands out as a dynamic activity that integrates artistic expression, structured movement and social interaction. Dance promotes mental and physical well-being and provides a means of self-expression, enhancing self-confidence în a society where concern about body image are strongly influenced by the media.

The *aim* of this study is to analyze the impact of sport dance on improving self-image. Dance contributes to body confidence and self-perception through expressive movements, rhythmic precision, and partnership-based coordination.

Materials and methods: The study was conducted over a period of seven months and was based on a questionnaire applied to 35 participants, male and female, aged between 16 and 20 years who had either previously participated in or were currently attending sport dance classes. The questionnaire included 16 structured questions targeting dance participation, frequency, emotional effects and psychological perceptions related to self-image and emotional well-being. The responses will be quantified using descriptive statistics (percentages) to identify general trends regarding improvements in self-image among the participants.

Results: With a percentage of 86%, the findings indicate that dance brings joy, relaxation, and an overall positive mood to the majority of participants. It is an activity associated with well-being, enjoyment, and freedom of expression. The practice of sport dance involves not only coordination and training, but also posture, stage presence, body control, and social interaction, all of which contribute to the development of a balanced and positive self-image.

Conclusions: The results obtained provide a coherent picture of the important role that sport dance plays in personal development. Young people perceive dance as an activity that supports the development of self-esteem, emotional balance, and a more positive attitude toward oneself.

Keywords: sport, positive attitude, questionnaire, physical activity.

14. Physical development during the transition from U12 to U13 in soccer players: A seven-month longitudinal study

IONESCU Bogdan-Marian[1,2]*, NEMEȘ Raul-Alexandru[1,2]

[1]*Faculty of Physical Education and Sports, Babeș-Bolyai University, Cluj-Napoca, Romania*
[2]*FC Universitatea Cluj Academy, Romania*

**Corresponding author: bogdan.marian.ionescu@stud.ubbcluj.ro*

Introduction: Meeting contemporary soccer's escalating physical demands requires an athletic foundation built from an early age, guided by the Youth Physical Development and Long-Term Player Development models.

Aim: To evaluate the seven-month evolution of physical parameters in soccer players transitioning from U12 to U13 under integral soccer training.

Materials and methods: Of 40+ players, 24 (11.7 ± 0.28 years) completed testing in February and September 2026 (dropouts: absence, illness, injury or club departure). Tests: body mass, height, BMI, countermovement jump (CMJ), free-arm CMJ (FJ), Drop Jump (DJ), 10 and 20 m sprints and 4 modified T-tests. Weekly training comprised 3 × 90′ (U12) and 4 × 90′ plus 30′ pre-training (rope jumping, mobility, bodyweight strength) (U13), plus one match, combining running/jumping drills, ball coordination and explosiveness drills (30′) with technical-tactical work (55′) . Paired t-tests ($p < 0.05$), Cohen's dz and Δ% were applied.

Results: Significant improvements occurred in 10 m sprint (2.15 ± 0.09 vs. 1.95 ± 0.08 s, $p < 0.001$), 20 m sprint (3.69 ± 0.15 vs. 3.52 ± 0.15 s, $p < 0.001$), DJ (1.44 ± 0.48 vs. 1.90 ± 0.42, $p < 0.001$) and T-test with ball to the left (11.68 ± 0.73 vs. 11.18 ± 0.64 s, $p = 0.003$) and right (11.53 ± 0.58 vs. 11.15 ± 0.58 s, $p < 0.001$). No significant changes occurred in CMJ ($p = 0.534$), FJ ($p = 0.066$) or T-test without ball ($p > 0.80$). Height (149.3 ± 7.21 vs. 154.3 ± 8.23 cm) and body mass (41.3 ± 6.78 vs. 44.4 ± 8.48 kg) increased, while BMI remained stable.

Conclusions: Integral soccer training in the coordination phase appears to support U12–U13 players' physical development, although, without a control group, growth effects cannot be excluded.

Keywords: youth, soccer, LTPD.

15. Nutrition knowledge and dietary behaviors in amateur athletes: from information to practice

IONIȚĂ Constantin[1]*, STĂNESCU Monica[1], BĂLTĂREȚU Cristian[1]

[1]*National University of Physical Education and Sports, Bucharest, Romania*

**Corresponding author:* ionita_constantin88@yahoo.com

Nutrition knowledge is relevant to the design of integrated exercise and nutrition programs, but its relationship with everyday dietary behavior requires careful examination. This paper explores how nutritional understanding relates to dietary practices among adult recreational athletes and considers implications for practical nutrition education. A focused narrative synthesis draws on recent empirical and review literature, with attention to meal planning, nutrition around exercise, information sources, and barriers to applying recommendations. Evidence from amateur endurance athletes identifies uneven knowledge of recovery nutrition, particularly quantitative carbohydrate recommendations, alongside differences in reported dietary practices and access to professional guidance.

Broader athlete literature highlights practical food skills, time constraints, and access to reliable advice as factors that may influence implementation. However, findings from competitive or younger populations require cautious interpretation when applied to adult recreational sport. Methodological limitations also affect conclusions: self-reported practices do not necessarily represent measured dietary intake, while composite scores that combine knowledge and behavior can obscure the distinction between these constructs.

Observational associations therefore cannot establish that increasing knowledge alone produces sustained dietary change. These findings suggest that nutrition education should address both factual understanding and the practical conditions in which food choices are made. The paper proposes an educational approach combining assessment of knowledge and habits, practical meal-planning skills, and individually relevant goals within integrated exercise programs. Future studies should assess knowledge and dietary behavior separately and examine whether educational gains translate into sustained improvements in dietary practices. This perspective provides a rationale for nutrition support tailored to amateur athletes' daily routines and training demands.

16. Effects of a virtual swim trainer on pacing strategy and performance in 200 m freestyle junior and youth swimmers

JURESCHI (GHEORGHE) Andreea Natalia[1]*, VASILE Luciela[1]

[1]*National University of Physical Education and Sports, Bucharest, Romania*

**Corresponding author: njureschi@gmail.com*

Introduction: visual feedback systems are increasingly used in swim training to help athletes regulate their race pace, yet their effect on race outcomes in developing swimmers remains underexplored.

Aim: This study examined the effect of a 12-week training program using a Virtual Swim Trainer (VST), an underwater LED pacing system, on 200 m freestyle performance, pace distribution, and physiological indicators in junior and youth swimmers.

Materials and methods: nineteen competitive swimmers om two existing training squads werw assigned by squad to an experimental group (n=10) that completed the VST program, o a control group (n=9) that followed the same training without VST. Both groups completed pre and post testing, including a timed 200 m freestyle split into four 50 m segments and a progressive land-based effort test on an adapted rowing ergometer (with a swim-bench), with power output, blood lactate, heart rate, and estimated VO2max recorded.

Results: ANCOVA, adjusted for baseline values, showed a significant effect of the VST program on final 200 m time ($p = 0.043$) and on a slowing index reflecting pace distribution across the race ($p = 0.036$), with the experimental group showing better speed maintenance in the second half of the race. Maximal blood lactate was significantly lower in the experimental group after adjustment ($p = 0.006$), although a mixed model tracking lactate across the full effort test did not confirm this
effect, and no significant change was found for VO2max.

Conclusions: visual pacing feedback appears to influence how junior swimmers distribute effort during a race, rather than their underlying aerobic capacity.

Keywords: visual feedback, LED guidance system, race management, sports technology

17. Biomechanical Changes in 100-m Breaststroke Assessed Using the EO SwimBETTER® Wearable System

MAHDI Jari[1]*, VASILE Luciela Maria[2]

[1]*Doctoral School, National University of Physical Education and Sport, Bucharest, Romania*
[2]*National University of Physical Education and Sport, Bucharest, Romania*

**Corresponding author: jari12m@hotmail.com*

Introduction: Wearable sensors enable biomechanical assessment during unrestricted swimming and may reveal athlete-specific changes beyond performance time. In breaststroke, mechanical output, stroke rate, force orientation, and stroke-cycle organization interact to influence performance. Longitudinal assessment of these variables may therefore provide additional information on individual biomechanical adaptation.

The aim of this study was to examine longitudinal changes in upper-limb biomechanics during 100-m breaststroke using the EO SwimBETTER® wearable system.

Materials and methods: Five male competitive breaststroke swimmers, aged approximately 21-33 years during the 2025 assessments, completed standardized 100-m trials in April and September 2025 using the EO SwimBETTER® wearable system. Bilateral hand power, stroke rate, stroke-phase organization, and device-derived force-field distribution—the relative distribution of sensor-estimated force across leftward, propulsive, rightward, hand-drag, and downward components—were assessed. Each trial comprised four 25-m lengths, treated as repeated measurements within each swimmer and averaged for longitudinal comparison. Given the small sample, analysis emphasized individual changes, with group values summarized descriptively. Swimmers continued competitive preparation between assessments, including an 8-week breaststroke-specific mesocycle.

Results: The swimmers showed heterogeneous longitudinal responses. Bilateral hand power increased in three swimmers, was redistributed between hands in one, and decreased in one. Stroke rate decreased bilaterally in four swimmers, but lower stroke rate coincided with increased power only in some cases. Force-field distribution and stroke-phase organization also changed differently among swimmers.

Conclusions: Longitudinal breaststroke adaptations differed among swimmers, supporting combined interpretation of mechanical output, stroke rate, force orientation, and stroke-cycle organization for athlete-specific biomechanical monitoring.

Keywords: breaststroke; swimming biomechanics; wearable sensors; hand power; stroke rate

18. Effects of Dynamic Neuromuscular Stabilization on Lumbar Hyperlordosis, Core Stability, and Trunk Endurance in Sport-Active and Non-Sport Children: A Controlled Intervention Study

MANIU Dragoș Adrian[1], VĂDAN Anca Lucia[1]*, MOLNAR Barbara Terez[1], MANIU Emese Agnes[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author:* anca.vadan@ubbcluj.ro

Introduction: Lumbar hyperlordosis is a frequent postural deviation during childhood and adolescence that may negatively influence lumbopelvic biomechanics, trunk function, and musculoskeletal health. Dynamic Neuromuscular Stabilization (DNS), based on developmental kinesiology principles, has been proposed as an approach to improve physiological stabilization and lumbopelvic control. However, evidence regarding its effectiveness in children with lumbar hyperlordosis, particularly in relation to habitual sports participation, remains limited.

Aim: This study investigated the effects of a 16-week DNS intervention on anterior pelvic tilt, lumbar lordosis, and trunk function in children aged 10–14 years with lumbar hyperlordosis and examined whether regular participation in organized sports influenced intervention outcomes.

Materials and methods: Ninety children with clinically confirmed lumbar hyperlordosis were assigned to three groups matched for age, sex, and BMI: Sport-DNS (DNS intervention combined with regular sports participation), Non-sport DNS (DNS intervention without structured sports participation), and Control (usual activities without DNS intervention). The DNS program consisted of supervised 45-minute sessions performed three times weekly for 16 weeks. Primary outcomes included anterior pelvic tilt measured with a digital inclinometer and lumbar lordosis assessed using a validated smartphone-based measurement method. Secondary outcomes included core stability (lumbopelvic control) evaluated by the Leg Lowering Test and trunk extensor endurance assessed using the Biering–Sørensen Test. Measurements were obtained at baseline and after 16 weeks.

Results: Both DNS groups demonstrated significant pre–post improvements across all outcomes ($p < .05$): in the Sport-DNS and Non-sport DNS groups, respectively, the mean anterior pelvic tilt decreased from an initial 18.25° to a final 16.25° and from 20.54° to 18.63°, mean lumbar lordosis decreased from 66.19° to 53.12° and from 66.09° to 57.49°, mean Leg Lowering Test values increased from 32.25° to 40.25° and from 28.00° to 33.90°, and mean Biering–Sørensen endurance increased from 174.75 s to 202.25 s and from 97.90s to 139.91s, whereas the control group showed no significant pre–post changes in any outcome (all $p > .05$). Significant post-intervention differences were also found between the Sport-DNS and Control groups and between the Non-sport DNS and Control groups (both $p < .05$) for all outcomes. Post-intervention pelvic tilt was lower, closer to normal values in the Sport-DNS than Non-sport DNS group, The sport group also showed greater improvement in lumbar lordosis and lumbopelvic control, whereas the non-sport group showed a larger absolute increase in trunk extensor endurance.

Conclusions: A 16-week DNS intervention improved lumbopelvic alignment and trunk function in children with lumbar hyperlordosis. Regular sports participation appeared to enhance treatment responsiveness, supporting the potential integration of DNS into pediatric rehabilitation programs targeting sagittal plane postural abnormalities.

Keywords: Dynamic Neuromuscular Stabilization; lumbar hyper lordosis; anterior pelvic tilt; lumbopelvic control; core stability; children; sports participation.

19. Short-Foot and Neuromuscular-Control Training in Adolescents With Flexible Flat Feet: A Four-Month Pre–Post Study

MANIU Dragoș Adrian[1], VĂDAN Anca Lucia[1]*, TUSA Emese[1], MANIU Emese Agnes[1]

[1]*Faculty of Physical Education and Spor,t Babeş-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author:* anca.vadan@ubbcluj.ro

Introduction: Flexible flat feet are common during childhood and adolescence and may be associated with altered foot posture, impaired postural control, and reduced lower-limb function. Exercise interventions targeting the intrinsic foot muscles and neuromuscular control may provide a practical approach for improving foot and lower-limb function in adolescents with flat feet.

Aim: The aim of this study was to investigate the effects of a four-month exercise program combining short-foot exercises and neuromuscular-control training on foot posture, balance, and calf-muscle function in adolescents with flat feet.

Materials and methods: Thirty-five students aged 12–14 years with flat feet participated in a four-month exercise intervention. The program combined progressive short-foot exercises designed to activate and strengthen the intrinsic foot muscles with neuromuscular-control, balance, and lower-limb exercises. Participants were assessed before and after the intervention. Foot posture was evaluated using the Feiss Line test and Navicular Drop Test. Static postural control was assessed using the Flamingo Balance Test, dynamic balance using the Y-Balance Test, and calf-muscle functional capacity using the Calf Raise Test. Pre- and post-intervention measurements were statistically compared.

Results: Significant improvements were observed across all assessed outcomes following the four-month intervention. Statistically significant pre–post differences were found for the Feiss Line test, Navicular Drop Test, Flamingo Balance Test, Y-Balance Test, and Calf Raise Test ($p < 0.001$ for all outcomes).

Conclusions: A four-month exercise program combining short-foot exercises with progressive neuromuscular-control training was associated with significant improvements in foot posture, static and dynamic balance, and calf-muscle functional performance in adolescents aged 12–14 years with flat feet. These findings support the potential value of combining intrinsic-foot-muscle training with neuromuscular exercises in exercise-based management of adolescent flat feet. Nevertheless, the single-group pre–post design and absence of a control group limit causal interpretation, and controlled studies are needed to confirm these findings.

Keywords: flat feet; short-foot exercise; neuromuscular control; balance; adolescents;

20. Effect gf High Intensity Intervals Training and Body Fat Composition on Aerobic Capacity Among Romanian Football Men Referees from The Second League

MONEA Dan[1], BACIU Marius Alin[1], GROSU Vlad Teodor[2], MANCINI Nicola[3*], NEGRU Ioan Niculaie[1]

[1] *Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*
[2] *Faculty of Automotive, Mechatronics and Mechanical Engineering, Technical University of Cluj-Napoca, Romania*
[3] *Department of Education and Sport Sciences, Pegaso Telematic University, Naples, Italy*

**Corresponding author:* nicola.mancini@unipegaso.it

Introduction: In recent years, interest in the body composition of athletes has increased substantially.

Aim: We were interested how body fat index may influence football referees' performance in specific aerobic endurance tests.

Materials and methods: 28 male football referees, (34.21 ± 4.38) years, took part in this study. The Tanita BC-601 instrument was used to assess subcutaneous fat layer. A paired sample T-Test was used for comparing the outcomes on body fat index. The Pearson's correlation coefficient is used for Body Fat index and YO-YO Intermittent recovery test. The p values used was $p \leq 0.05$. The program was implemented between November 2023 and March 2024, with three training sessions per week. During the HIIT sessions, the volume of HIIT was similar to that of an official game.

Results: Our first test data show that there is a negative statistical relationship ($p = 0.003$) between body fat index and endurance (yo-yo intermittent recovery level 1 test). The same is revealed by the final test, a negative statistical relationship ($p = 0.002$) between body fat index and endurance (yo-yo intermittent recovery level 1 test). There is a statistically significant difference ($p = 0.04$) between the results of the first specific aerobic endurance test and those of the second specific aerobic endurance test. Limitations of the study: Lack of a control group, the modest improvement in the Yo-Yo test cannot be attributed with certainty to the HIIT program. Nutrition, training volume were not monitored.

Conclusions: The participants in this study showed an improvement in their body fat index. The exercise program achieved its goal, i.e., a statistically significant difference between the results of the first test and those of the second test ($p = 0.04$). There is a statistically negative correlation between the body fat index and the scores of the specific aerobic endurance tests.

Keywords: body fat, stamina, program, endurance

21. Body Fat Percentage and Physical Fitness in University Sport Students: Associations with Eurofit and Aerobic Performance Tests

NEGRU Ioan Niculaie[1], NUȚ Ramona Ancuța[1]*, POP Nicolae Horațiu[1], POP Gabriela Maria[1], ALMOS Andras[1], POP Alexandra Cristina[1], SZABO Peter Zsolt[1]

[1]*Department of Individual Sports, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: ramona.nut@ubbcluj.ro*

Introduction. Body composition may be associated with physical performance, particularly in activities that require moving one's body mass.

Aim: The aim of this study was to examine the relationships between body fat percentage (BF%) and performance in tests of explosive strength, agility, muscular endurance, handgrip strength, and intermittent running ability.

Methods. 98 students participated in the study, 64 male and 34 female students, with a mean age of 20.05 ± 3.52 years. BF% was determined using a body composition analyzer based on bioelectrical impedance analysis (BIA) technology. Physical performance was assessed using the standing long jump, 10 × 5 m shuttle run, 30-s sit-up test, and handgrip dynamometry, together with the Yo-Yo Intermittent Recovery Test Level 1 (IR1). Pearson and Spearman correlations were used to examine links between body fat and the students' various motor abilities.

Results. Pearson or Spearman correlation coefficients were used, according to variable distribution, to examine the relationships between BF% and physical performance. The strongest association noted is BF% and standing long jump performance. A significant negative correlation was found between the 30-s sit-up test and BF% and it was significantly associated with all the physical performance measures examined. BF% was negatively associated with standing long jump performance ($r = -.651$, $p < .001$), 30-s sit-up performance ($r = -.315$, $p = .002$), left-hand grip strength ($r = -.407$, $p < .001$), and right-hand grip strength ($\rho = -.414$, $p < .001$). A positive association was found between BF% and the time recorded in the agility test ($\rho = .461$, $p < .001$), indicating that higher BF% values correspond to longer completion times. Yo-Yo IR1 performance was negatively associated with BF% ($\rho = -.630$, $p < .001$).

Conclusions. The results revealed significant associations between BF% and all the physical performance measures examined. The strongest relationships were observed for the standing long jump and Yo-Yo IR1. As this was a cross-sectional study, the findings describe associations and do not establish causal relationships.

Keywords: students, body mass, explosive strenght, hand grip

22. Functional rehabilitation of the knee after anterior cruciate ligament reconstruction associated with meniscal repair – an evidence – based approach and clinical application

NICOLAE Albert[1], MOȚ Raluca[2]*, ALMAJAN GUTA Bogdan[2]

[1]*Physiothera Clinic, Timisoara, Romania*
[2]*Faculty of Physical Education and Sport, West University of Timișoara, Timișoara, Romania*

**Corresponding author: raluca.mot01@e-uvt.ro*

Introduction: Anterior cruciate ligament (ACL) rupture is a frequent sports injury, particularly in disciplines involving jumping, pivoting, and rapid changes of direction, such as handball. When associated with meniscal injury, surgical treatment must be followed by a structured rehabilitation program aimed at restoring knee function and facilitating a safe return to sport.

Aim: This study aimed to evaluate the functional recovery of an elite handball athlete following ACL reconstruction combined with medial meniscal repair and to highlight the role of individualized physiotherapy and objective functional assessment throughout rehabilitation.

Material and methods: The study involved a 16-year-old female elite handball player who sustained a near-complete ACL rupture associated with a posterior horn tear of the medial meniscus. Surgery was performed on September 1, 2025, using a quadriceps autograft for ACL reconstruction and meniscal repair through the All-Inside technique. Rehabilitation followed an individualized, criteria-based protocol adapted to biological healing stages and the functional demands of handball. Recovery was monitored using goniometry, the Visual Analog Scale (VAS), quadriceps circumference, proprioceptive assessment, and functional hop tests. The Limb Symmetry Index (LSI) was used to quantify interlimb differences.

Results: Progressive improvements were observed in the athlete's knee range of motion, pain, muscle symmetry, and neuromuscular control. At seven months postoperatively, LSI values exceeded 90% in all assessed functional tests, indicating substantial recovery of lower-limb strength and dynamic stability. The athlete subsequently progressed to sport-specific activities and team training without pain or instability.

Conclusions: This case study demonstrates substantial functional recovery following ACL reconstruction and meniscal repair within an individualized, criteria-based rehabilitation program. Objective functional assessment, particularly LSI-based testing, provided useful information for monitoring interlimb recovery and supporting progression toward sport-specific activities. However, the findings are limited to a single athlete and should not be generalized to the wider population. Further studies involving larger samples and longer-term follow-up are required to determine the effectiveness and generalizability of this rehabilitation approach.

Keywords: ACL reconstruction; meniscal repair; rehabilitation; handball; return to sport.

23. Physical Fitness in University Sport Students: Correlations Among Eurofit and Yo-Yo IR1 Performance Measures

NUȚ Ancuța Ramona[1], POP Nicolae Horațiu[1]*, NEGRU Ioan Niculaie[1], POP Gabriela Maria[1], ALMOS Andras[1], SZABO Peter Zsolt[1], POP Alexandra Cristina[1]

[1]*Department of Individual Sports, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: nicolae.pop@ubbcluj.ro*

Introduction: Examining correlation among field-based fitness tests may help describe how different aspects of physical performance are associated in university sport students.

Aim: This study examined the correlations between lower-body explosive performance, trunk muscular endurance, speed/change-of-direction performance, and intermittent endurance performance in university sport students.

Materials and methods: This cross-sectional study included 98 students (64 men, 34 women), with a mean age of 20.05 ± 3.52 years, completed the following three Eurofit tests: standing broad jump (SBJ), 30-s sit-up test, and 10 × 5 m shuttle run, as well as the Yo-Yo Intermittent Recovery Test Level 1 (Yo-Yo IR1). Normality was assessed using the Shapiro–Wilk test. Pearson's correlation coefficient was used for the SBJ and sit-up pair, whereas Spearman's rank correlation coefficient was used for pairs involving the non-normally distributed shuttle run or Yo-Yo IR1 variables. Statistical significance was set at $p \leq .05$. Correlations were also examined separately in men and women.

Results: All six correlations were statistically significant ($p < .001$). The SBJ test correlates positively with both the 30-second sit-up performance ($r = .542$) and the Yo-Yo IR1 performance ($\rho = .698$), and negatively with the 10 × 5 m shuttle run time ($\rho = -.594$). The 30-s sit-up performance correlates positively with the Yo-Yo IR1 performance ($\rho = .580$) and negatively with the shuttle run time ($\rho = -.472$). The shuttle run time also correlates negatively with the Yo-Yo IR1 performance ($\rho = -.579$). The strongest correlation is noted between SBJ and Yo-Yo IR1. All six correlations also reached the unadjusted significance threshold in each sex group.

Conclusions: Performance across the four tests was significantly correlated, with the strongest correlation observed between SBJ and Yo-Yo IR1. Given the cross-sectional design, these associations do not establish causal relationships.

Keywords: horizontal jumping; trunk muscular endurance; change-of-direction ability; intermittent endurance; field-based assessment.

24. Optimization of Methods and Means for Developing Strength, Aerobic Capacity and Anaerobic Capacity in Senior Football Players during the Competitive Period.

ORMENIȘAN Septimiu Vasile[1], HÎMPEA Darius[1], BARTHA Velu-Sebastian[1]*, ȘANTA-MOLDOVAN Cristian-Ioan[1], BICHESCU Andrade-Ionuț[2]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*
[2]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Reșița Center, Romania*

**Corresponding author: velu.bartha@ubbcluj.ro*

Introduction: Modern professional football requires players to sustain high-intensity efforts throughout the entire match, demanding a superior physiological profile. This study investigates an integrated training methodology, based on microcycle periodization, aimed at optimizing strength, aerobic power, and anaerobic capacity in senior footballers.

Aim: To assess how a structured, technology-monitored training plan, with content adapted to playing position and match-day proximity, can support physical performance during the competitive season, compared with standard training.

Materials and methods: An intervention group of four senior players (23–27 years) followed the structured program for 16 weeks (6 precompetitive, 10 competitive) at Viitorul Cluj football club, with training load monitored by K-Sport GPS technology. Control group of four teammates followed the club's standard training over the same period. Training content in the intervention group was organized by proximity to match day (MD) and by playing position, with MD-3 sessions targeting aerobic power through high-speed running and MD-2 sessions targeting speed and decision-making. Both groups were assessed before and after the period on Countermovement Jump (CMJ) height, 5 m and 30 m sprint times, and the 30-15 Intermittent Fitness Test (30-15 VIFT).

Results: Compared with the control group, the intervention group showed significantly greater improvements in 5 m sprint (+0.06 vs +0.01 s, $p = 0.008$), 30 m sprint (+0.07 vs +0.01 s, $p = 0.005$) and 30-15 VIFT (+0.60 vs −0.28 km/h, $p < 0.001$); the difference in CMJ gain (+4.75 vs +2.25 cm) did not reach significance ($p = 0.084$).

Conclusions: In this small sample, the structured, position-specific microcycle was associated with greater gains in sprint and intermittent aerobic performance than standard training during the competitive period. Given the very small groups (n = 4 each), these findings should be considered preliminary and confirmed in larger samples.

Keywords: Football, microcycle, GPS monitoring, competition.

25. Throwing Performance in School Handball: A Pilot Intervention in Female High-School Players

OSTAFE Albert[1]*, MANASSES Ildiko[2], BERBECARU Răzvan Andrei[3]

[1]*Liceul "Regina Maria Dorohoi",*
[2]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*
[3]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania, Bistrița Center, Romania*

**Corresponding author: ostafealbertefs@gmail.com*

Introduction: Throwing accuracy is an important component of handball performance and may be influenced by technical execution, playing experience, and training conditions.

Aim: The aim of this pilot study was to investigate changes in throwing accuracy following a technical training program implemented within a high-school-level female handball team.

Materials and methods: Ten female students aged 15–18 years, members of the handball team of "Regina Maria" High School in Dorohoi, Romania, participated in the study. Participants had heterogeneous previous experience in school-level handball, without performance-level handball backgrounds. Approximately ten specific training sessions were conducted between mid-March and mid-May 2026. Each included 30–40 minutes of exercises focused on throwing technique and accuracy. Five throwing tests were performed before and after the intervention, with ten attempts per test. Performance was evaluated using a target net with different scoring areas, recording an accuracy score and the number of valid goals. Data were analysed descriptively using pre- and post-intervention mean values and percentage changes.

Results: In the 7-m throw, mean accuracy score increased by 48.9%, and valid goals increased by 41.9%. In the 6-m jump throw, accuracy increased by 20.2% and valid goals by 26.5%. In the 9-m jump throw, accuracy decreased by 11.5%, while valid goals increased by 42.9%. The largest changes were observed in the 6-m jump throw following a change of direction, with increases of 120.9% in accuracy and 89.7% in valid goals. In the wing throw, accuracy remained almost unchanged (+0.5%), while valid goals increased by 34.5%.

Conclusions: Positive changes in throwing performance were observed following the intervention, particularly in valid goals, while changes in target-placement accuracy were task-dependent. Given the small sample, heterogeneous playing experience and absence of a control group, these findings should be considered preliminary.

Keywords: throwing accuracy; technical training; target placement; motor skills; skill acquisition.

26. A study on optimizing the attacking phase in the triples event of football-tennis

PĂUNA Răzvan-Dorel[1], ȘERBAN Radu Tiberiu[1], POP Sergiu[1]

[1]*Babeș-Bolyai University of Cluj-Napoca, Faculty of Physical Education and Sport (ROMANIA)*

Corresponding author: razvan.pauna@ubbcluj.ro

Introduction: Football-tennis is a non-Olympic net sport played with the foot, head, chest or knee. Its triples event is the most spectacular, owing to the near-constant presence of the block, yet its attacking phase has rarely been studied.

Aim: To classify the attacking techniques used in the triples event and to identify the factors and tactical patterns associated with successful attacking actions, to inform training.

Materials and methods: A questionnaire was applied to 8 senior attacking players from the five top-ranked teams of the Romanian National Championship. A notational analysis was conducted on five matches of the 2011 championship between the two highest-ranked teams (eight players, forming the core of the national squad). Each attacking action was coded by technique, court zone (six zones adapted from volleyball), outcome and block contact, and analysed with chi-square tests.

Results: Of 302 attacking actions, 52.3% produced a direct point, 28.8% were retrieved by the defense and 18.9% went out. Outcome was significantly associated with technique ($p < .001$, Cramér's $V = 0.36$) and court zone ($p < .001$), but not with team. The cut ball on the opposite side of the attacker was the most effective technique (88.5% success), whereas the long cross-court diagonal functioned mainly as a safety action (21.7%). Net-zone attacks succeeded in 57.1% of cases versus 3.7% from the back zone, and no attack that touched the block produced a direct point.

Conclusions: Attacking success depends mainly on technique choice and on attacking close to the net, supported by precise setting and by the attacker's height relative to the blocker. Training should prioritise setter precision, net-zone finishing and the cut ball technique. Given the small sample (two teams, one season), these findings are indicative of elite Romanian football-tennis rather than generalisable.

Keywords: nohejbal, net sports, notational analysis, tactical patterns, performance analysis.

27. Evolution of Anthropometric and Motor-Performance Indicators in Female Basketball Players Aged 14–16 Years

PÎȘĂ (PIPEREA) Costina[1]*

[1]*Doctoral School of Social Sciences and Humanities, Sports Science and Physical Education, University of Craiova, Craiova, Romania*

**Corresponding author: pisa.costina.j6b@student.ucv.ro*

Introduction: Physical preparation is an essential component of youth basketball training, supporting the development of speed, explosive power, change-of-direction ability, and aerobic endurance. Systematic monitoring of these indicators can provide relevant information on players' physical development.

Aim: This study aimed to describe the evolution of selected anthropometric and motor-performance indicators in female basketball players aged 14–16 years following a structured annual training programme.

Materials and methods: The study included 12 female basketball players from Alexandria School Sports Club, Teleorman County-Romania. The players followed a 47-week annual programme comprising 320 training sessions and approximately 530 hours of training. The programme included physical (35%), technical (30%), tactical (25%), theoretical (4%), and psychological (6%) preparation. Assessments were conducted before (T1) and after (T2) the monitored period using anthropometric measurements and four motor-performance tests: 20-m sprint, vertical jump, adapted T-test, and Beep Test.

Results: Descriptive analysis showed favourable changes in all motor-performance indicators. Mean 20-m sprint time decreased from 3.46 to 3.40 s, vertical jump increased from 32.46 to 36.40 cm, adapted T-test time decreased from 6.57 to 6.40 s, and Beep Test performance increased from 7.45 to 8.40 levels. Mean height, body mass, and arm span also increased, while BMI slightly decreased.

Conclusions: The results indicate favourable descriptive changes in the monitored physical and anthropometric indicators. Systematic assessment may support the monitoring of physical development in youth female basketball. However, the findings should be interpreted cautiously, considering normal growth and biological maturation and the descriptive nature of the available data.

Keywords: youth athletes, explosive power, aerobic endurance, motor performance.

28. From Intention to Action: Self-Education and Consistency in Recreational Sports Activities

PLĂSTOI Camelia Daniela[1]*, BÎCÂ Monica Delia[1], CHIVU Iacob Daniel[1], SAKIZLIAN Robert[1], CHIRIAC Bogdan[1]

[1]*Health and Motricity Department, Faculty of Medical and Behavioral Sciences, "Constantin Brâncuşi" University of Târgu Jiu, Târgu Jiu, Romania*

**Corresponding author: cami_plastoi@yahoo.com*

Engaging consistently in recreational sports activities remains a persistent challenge for many individuals, despite widespread awareness of the health benefits associated with regular physical activity.

This paper investigates the gap between intention and actual behavior in recreational sports participation, focusing on the role of self-education as a mechanism for bridging this divide and sustaining long-term consistency.

The analysis draws on examples from four popular recreational activities, swimming, skiing, handball, and football, to illustrate how self-directed learning shapes engagement across individual, seasonal, and team-based sporting contexts. Drawing on behavioral and motivational theories, including self-determination theory and models of habit formation, the study examines how participants acquire knowledge about technique, training principles, goal-setting, and self-regulation outside formal coaching structures, and how this self-education influences adherence to recreational sports activities over time.

Particular attention is given to the psychological processes underlying the transition from intention to action, such as planning, self-monitoring, and overcoming barriers like limited time, seasonal constraints (as in skiing), or the need for group coordination (as in handball and football). The paper explores self-education resources used by recreational athletes, including online tutorials, mobile applications, community forums, and informal peer learning, assessing their effectiveness for both individual activities like swimming and team-based ones like football and handball.

The role of intrinsic versus extrinsic motivation is discussed in relation to long-term consistency, highlighting how self-education fosters autonomy and competence that reinforce continued participation. Challenges of self-directed learning are also critically examined, including misinformation, inconsistent guidance, and lack of professional feedback, with activity-specific risks noted, such as safety concerns in skiing or technical errors in swimming. Practical implications are offered for participants and organizations supporting self-education across diverse recreational sports activities, concluding with directions for future research.

Keywords: recreational sports activities, self-education, behavioral consistency, motivation, swimming, skiing, handball, football

29. Swimming as a Leisure Activity: Integrating Digital Technologies to Promote Well-Being and a Healthy Lifestyle

PLĂSTOI Camelia-Daniela[1], POPESCU Andreea[1]*, Sakizlian Denisa[1], CHEPEA Bogdan[1], GUȚĂ Eduard Leonard[1]

[1]*Department Health and Motricity, Faculty of Medical and Behavioral Sciences, "Constantin Brâncuşi" University of Târgu Jiu, Târgu Jiu, Romania*

**Corresponding author: andreeaungureanu91@yahoo.com*

Introduction: Swimming remains one of the most beneficial forms of recreational sports activity, helping to maintain an optimal state of health for all age groups. Its practice in this form is increasingly influenced by the fast pace of daily activities, the interest in novelty, and competition from sedentary digital entertainment.

The *aim* of this paper is to evaluate how digital technologies can be integrated into swimming practiced as a leisure activity to stimulate motivation, engagement, and long-term adherence to physical exercise in water, thereby promoting well-being and a healthy lifestyle.

Materials and methods: The subjects were adults aged between 32 and 55, from different professions, who practice swimming at a beginner level twice a week. The methods included observation and monitoring of swimming activity, analysis of data from digital devices and mobile applications, and assessment of participants' perceptions of motivation, engagement, and their experience. The digital tools were wearable devices monitoring heart rate and exertion, mobile applications turning session progress into a game-like experience (gamification), and online applications providing visualization of stroke technique and opportunities for interaction with other swimmers. Potential disadvantages of using technology were also analyzed, such as excessive dependence on devices, risk of injury associated with self-imposed personal goals, and concerns about data privacy.

Results: The results showed increased interest in swimming as a recreational activity, improved physical fitness, a sense of well-being, and the adoption of a healthy lifestyle.

Conclusions: Integrating digital technologies into the activity of recreational swimmers significantly improved the swimming experience and encouraged continuity of the activity, making it more attractive, easier to quantify, and socially connected. The use of digital technologies also helped strengthen the role of swimming in maintaining and promoting well-being and a healthy lifestyle among practitioners.

Keywords: aquatic exercise; wearable devices; mobile applications.

30. Body Composition in First-Year Sport Science Students: Associations Between BMI, Body Fat Percentage, and Estimated Visceral Fat

POP Nicolae Horațiu[1], NEGRU Ioan Niculaie[1]*, NUȚ Ramona Ancuța[1], POP Gabriela Maria[1], SZABO Peter Zsolt[1], POP Alexandra Cristina[1], ANDRAS Almos[1]

[1]*Department of Individual Sports, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author:* ioan.negru@ubbcluj.ro

Introduction. Body mass index (BMI) is commonly used to assess weight status but it does not distinguish between fat mass and fat-free mass, nor does it describe fat distribution. Using it alongside body fat percentage (BF%) and estimated visceral fat may provide a more complete body composition profile of university students.

Aim. This study aimed to characterize BMI, BF%, and estimated visceral fat levels, and to examine the associations between these indicators in first-year sport science students.

Materials and Methods. This cross-sectional study included 187 students (108 men and 79 women), with an average age of 19.74 ± 2.72 years. Body composition was assessed using an OMRON KARADA Scan BF511 bioelectrical impedance analysis device. Normality was evaluated using the Shapiro-Wilk test. As all three variables deviated significantly from normality ($p < .05$), Spearman correlations were calculated separately by sex.

Results. Based on sex-specific BF% reference ranges, 23.0% of participants were below the reference range, 50.8% were within the reference range, and 26.2% were above the reference range. Overall, 65.2% had a BMI within the normal weight category, while 95.7% had an estimated visceral fat level within the optima reference range. BF% was associated with estimated visceral fat in men ($\rho = .817$) and women ($\rho = .658$), and with BMI in men ($\rho = .843$) and women ($\rho = .738$). BMI showed the strongest association with estimated visceral fat in both men ($\rho = .925$) and women ($\rho = .860$); all $p < .001$.

Conclusions. BMI, BF%, and estimated visceral fat levels were all positively associated in both sexes, with the largest coefficients observed between BMI and estimated visceral fat. These indicators describe related aspects of body composition, although their correlation do not establish their interchangeability.

Keywords: bioelectrical impedance analysis; sex differences; weight status; adiposity.

31. Comparative Study on Fitness Gym Training Adaptations in Former Athletes and Non-Athletes

POP Sergiu[1]*, PĂUNA Răzvan-Dorel[1], ȘERBAN Radu Tiberiu[1]

[1]*Department of Individual Sports, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: seriu.pop@ubbcluj.ro*

Introduction: the increasing popularity of fitness centers has transformed physical activity into an organized and accessible form of exercise for the general population. Former athletes represent a particular category of gym users, due to their previous exposure to systematic training and higher levels of motor experience.

Aim: this study was to comparatively analyze the physiological and psycho-social adaptations to fitness training in former athletes and non-athletes. The research included 60 participants (30 former athletes and 30 non-athletes), engaged in a standardized 12-week fitness training program. Variables such as body mass index (BMI), physical performance indicators (strength and endurance), and self-perceived well-being were assessed.

Results: indicate significantly better initial performance in former athletes, but similar relative improvements in both groups after the intervention. The findings support the role of structured physical activity in improving health-related outcomes, regardless of training history.

Keywords: fitness training, former athletes, non-athletes, physical activity, body mass index

32. Humor, a Pedagogical Tool in Physical Education Lessons

ROHOZNEANU Dan-Mihai[1]*, BERNICU Răzvan-Andrei[2], BONDOC Andrei[3]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Resita Center, Romania*
[2]*Suceava Sports High School, Romania*
[3]*Traian Lalescu National College, Reșița, Romania*

**Corresponding author: dan.rohozneanu@ubbcluj.ro*

Introduction. Physical education represents a specific educational context in which motor learning is closely related to affective, cognitive and social processes. The teacher contributes to shaping the classroom climate, humor being a pedagogical resource whose effects depend on the type, purpose and manner of use.

The aim of this theoretical study was to analyze the potential role of humor in physical education lessons, paying attention to motivation, participation, perceived competence and the teacher-student relationship.

Materials and methods. A theoretical and exploratory literature review was conducted from the Web of Science and Google Scholar databases using combinations of keywords related to humor, motivation, and self-determination theory in physical education (PE), covering the period 2000–2026. The following were considered eligible for inclusion: (a) studies and synthesis papers on humor in education; (b) research on motivation in EF; and (c) works relevant to teacher-student interaction. Exclusion criteria: (a) purely popularizing materials; and (b) material in which the term "humor" is mentioned only tangentially. The selected literature was thematically analyzed based on four dimensions: (1) the pedagogical functions of humor; (2) the relationship between humor, motivation, and participation; (3) the relationship between humor, perceived competence, and teacher-student interaction; and (4) the potential risks associated with inappropriate, offensive, or derogatory humor.

Results. The theoretical synthesis indicates that humor can contribute to the creation of a positive socio-emotional climate, facilitate communication, reduce tension and increase student attention and engagement – provided it is relevant, inclusive and appropriate to the learning context. However, humor that targets students' physical appearance, motor skills, or individual mistakes can have the opposite effect, amplifying embarrassment, undermining perceptions of self-competence, or compromising psychological safety.

Conclusions. Humor should not become an educational goal in itself; rather, it should remain a secondary communication and pedagogical resource that supports learning and participation.

Keywords: pedagogical resource, teacher-student relationship, socio-emotional climate

33. The Effects of Synergistic Training on Reaction Speed and Decision-Making in U12 Handball

RUSU Ion-Tudor[1]*, BULDUȘ Codruța[1], MONEA Dan[1]

[1]*Doctoral School of Physical Education and Sport, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: ion.rusu@ubbcluj.ro*

Introduction: the preadolescent stage (ages 10–12) represents a critical window of neuroplasticity fordeveloping executive control, visual-perceptual skills, and spatial-temporal positioning in youth sports.

Aim: this pilot randomized controlled trial evaluated the feasibility and efficacy of a 12-week synergistic multi-pillar integrated training program (PAI) focused on executive functions, selective reaction speed, anticipation, and engagement distance (ED) management in junior handball players.

Materials and methods: twenty-four junior handball players (U12, age 11.0 ± 0.3 years) were randomly assigned via simple randomization (1:1 ratio) into an Intervention Group (IG, n = 12; 12-week PAI warm-up module, 36 × 20-min sessions) and a Control Group (CG, n = 12; traditional warm-up). Pre- (T0) and post-intervention (T1) assessments evaluated six neuro-biomechanical pillars: selective reaction time (digital timing), Stroop executive interference (PEBL), CMJ jump height (Chronojump), Flamingo balance, proxemic positioning (Metrica), and anticipation accuracy (Kinovea -50 ms temporal occlusion paradigm).

Results: compared to CG, the IG demonstrated significant improvements across all parameters (p < .001). Selective reaction time decreased from 455.0 ± 35.0 ms to 381.67 ± 24.53 ms (vs. CG Post: 434.17± 12.22 ms; $\eta p^2 = .41$), Stroop interference dropped from 15.0 ± 2.5 s to 8.37 ± 1.23 s (vs. CG Post: 14.31± 1.27 s; $\eta p^2 = .38$), and anticipation accuracy increased from 55.0% to 67.92 ± 4.40% (vs. CG Post: 57.33± 2.26%; $\eta p^2 = .35$). Strong Spearman synergistic correlations emerged between reaction gain and decision intuition ($\rho = .75$, p < .001) and Stroop inhibition and proxemic positioning ($\rho = -.72$, p < .001).

Conclusions: the 12-week PAI module is highly feasible, safe, and superior to traditional training, delivering a 0.5–0.8 m tactical spatial advantage in managing engagement distance. However, given the pilot nature and small sample size (n = 24), these preliminary neurobiomechanical adaptations require cautious interpretation and validation in larger multicenter groups.

Keywords: executive functions, engagement distance, dual-task, anticipation accuracy, neuroplasticity.

34. Building Transferable Skills: The Case for Cross-Sport General Physical Preparation Programming

STOLOJAN Constantin[1], PLĂSTOI Camelia-Daniela[2]*

[1]*LUMORA Association, Gorj, Romania*
[2]*Health and Motricity Department, Faculty of Medical and Behavioral Sciences, "Constantin Brâncuşi" University of Târgu Jiu, Târgu Jiu, Romania*

**Corresponding author: cami_plastoi@yahoo.com*

Many parents and coaches worry that lifting weights can hurt young athletes or slow their growth or even stunt. Research does not support this, it's more a fear that has been passed down through generations to this point. Let's take everyday activities like running and jumping or even a heavy backpack on their way to school that put more force on a young body than a well-balanced strength program does.

Young developing athletes already deal with these forces through normal movement, so structured training is a safe way to help them manage load, rather than an added risk. Studies show that resistance training lowers the risk of sports injury, promotes bone health and supports athletes to move better. To this point, a 4-week General Physical Preparation (GPP) program was created for junior athletes in tennis, handball, baseball and other sports with similar high-demand patterns.

The program is built around two simple ideas: progress should come from better movement quality before adding weight and games help keep young athletes motivated to repeat the movements enough to improve.

The program includes rotational medicine ball throws to build ballistic power similar to a tennis serve or a handball throw, split-squats and lunges to match the heavy deceleration and multi directional footwork, shoulder and scapular exercises to handle the intense demands of throwing and striking, COD and agility drills along sides straight-line sprints to better match the reactive nature of these sports, and also training for the non-dominant side to reduce the muscle imbalances caused by playing one sided sports. The goal of this program is to give coaches a simple and practical way to apply general physical preparation for junior athletes, help them acquire transferable skills within sports with matching athletic demands.

Keywords: transferable skills; athletes; training.

35. Effectiveness of Focused Extracorporeal Shock Wave Therapy in the Treatment of Plantar Fasciitis Associated with Calcaneal Spur: A Randomized Comparative Study

SZASZ Timea[1]*, Elena Sirbu[1], Mihaela Oravitan[1]

[1]*Faculty of Physical Education and Sport, West University of Timişoara, Timişoara, Romania*

**Corresponding author: timea.szasz87@e-uvt.ro*

Introduction: plantar fasciitis associated with calcaneal spur is a common cause of chronic heel pain, affecting mobility and foot function. Focused extracorporeal shock wave therapy (f-ESWT) represents a non-invasive therapeutic option; however, the optimal treatment protocol requires further investigation.

Objective: to compare the effectiveness of f-ESWT applied exclusively to the calcaneal spur with that of a combined protocol targeting both the calcaneal spur and the plantar fascia in reducing pain and improving foot function.

Materials and Methods: this randomized comparative study included 10 patients with chronic plantar fasciitis and radiographically confirmed calcaneal spur, allocated into two equal groups. Group 1 (n = 5) received f-ESWT applied exclusively to the calcaneal spur, whereas Group 2 (n = 5) underwent a combined protocol in which f-ESWT was applied to both the calcaneal spur and the plantar fascia. Both groups received five treatment sessions at five-day intervals. Assessments were performed before and after treatment using the Foot Function Index (FFI), including the total score and the pain, difficulty, and disability subscales. Data were analyzed using repeated-measures ANOVA.

Results: the total FFI score decreased from 34.74 to 20.20 in Group 1 and from 42.14 to 9.20 in Group 2. The Time × Group interaction was statistically significant for the total FFI score ($p = 0.033$; $\eta^2p = 0.455$) and for the pain subscale ($p = 0.002$; $\eta^2p = 0.721$), indicating a greater improvement in the group receiving the combined protocol. The mean reduction in the total FFI score was 14.5 ± 9.52 points in Group 1 and 32.9 ± 12.8 points in Group 2. For the difficulty ($p = 0.168$) and disability ($p = 0.884$) subscales, differences in changes over time between the groups were not statistically significant.

Conclusions: combined application of f-ESWT to the calcaneal spur and plantar fascia was associated with a significantly greater reduction in pain and total FFI score compared with treatment applied exclusively to the calcaneal spur. These findings are preliminary and require confirmation in studies with larger sample sizes, control groups, and long-term follow-up.

Keywords: plantar fasciitis; calcaneal spur; focused extracorporeal shock wave therapy; f-ESWT; Foot Function Index; pain; functional recovery

36. Optimizing Posture Through Volleyball-Specific Exercises in Middle School Students

ȘANTA Cristian[1]*, MĂRCUȘ Ramona[1], ORMENISAN Septimiu[1], MACRA-OȘORHEAN Maria[1], STRAVA Cosmin[2], PAȘCAN Adrian[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*
[2]*Faculty of Physical Education and Sport, West University of Timisoara, Timisoara, Romania*

**Corresponding author: cristian.santa@yahoo.com*

Introduction: The pubertal growth spurt frequently brings about brief musculoskeletal discrepancies in middle schoolers, largely because rapid skeletal elongation can outpace the development of core muscle groups. This biological vulnerability is heavily compounded by modern school habits, where hours of classroom sitting and high screen times lead to a rising incidence of functional postural deviations during early adolescence.

Aim: This study examines the preventative and corrective impact of a targeted, 12-week volleyball exercise program designed to enhance sagittal and frontal spinal alignment, functional trunk control, and lower limb tracking in a school-aged cohort.

Material and methods: A prospective 12-week pedagogical project followed 58 middle school students, split into Group A (5th grade, N = 28, mean age 11.6 years) and Group B (6th grade, N = 30, mean age 12.4 years). The physical intervention consisted of 24 bi-weekly training sessions (45–50 minutes each) built around multi-directional footwork drills, core activation pathways, and fundamental volleyball ball-handling tasks. We tracked three distinct parameters across baseline (\(T_{1}\)), intermediate (\(T_{2}\)), and final (\(T_{3}\)) testing stages: 1) Global Postural Alignment, quantified through a 10-point somatoscopic sheet grading six bodily segments using a 0–2 point scale; 2) Spine and Posterior Chain Mobility, evaluated in centimeters via the standard Finger-to-Floor Flexibility Test; and 3) Postural Static Endurance, assessed using a timed 30-second defensive ready-stance hold scored on a 0–2 basis to track knee valgus/varum resistance and abdominal/lumbar stabilization.

Results and conclusions: Post-program screenings showed a clear, progressive turnaround across all tracked variables. Group A's mean global postural score rose from a baseline of 6.75 points to a final average of 9.00 points, while Group B progressed from 6.97 points to 9.30 points (measured against a 10-point scale maximum). Spinal mobility tests mirrored this progress, with the mean finger-to-floor distance moving from an initial deficit of -4.2 cm to a positive reach of +1.5 cm in Group A, and from -3.8 cm to +2.1 cm in Group B. Regarding static endurance, structural stability during the stance hold shifted entirely from a baseline medium profile to an optimal, high-endurance performance tier. Categorically, severe alignment issues were completely cleared; the percentage of students reaching the optimal postural grouping expanded from 0% at baseline to 86.2% of the entire sample (50 out of 58 children) at the final check. In conclusion, embedding structured volleyball mechanics within physical education programs offers a highly viable, active, and non-invasive preventative path to reverse adolescent postural decline and secure balanced musculoskeletal growth.

Keywords: Postural alignment; Volleyball drills; Middle school; Lower limb tracking; Preventative physical therapy

37. Comparative Analysis of MTB Cycling Potential: Case Study – Bistrița and Poiana Brașov

ȘTEFĂNESCU Leonida Horea[1], RUS Virgi[1], BÎCA Ioan[2]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*
[2]*Faculty of Geography, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: leonida.stefanescu@ubbcluj.ro*

Introduction: mountain biking (MTB) is a complex motor practice, at the intersection of sport, active tourism and outdoor education, becoming a relevant indicator of how natural spaces are valued in a contemporary context.

Aim: this paper proposes a comparative analysis of the MTB cycling potential between two representative areas in Romania: the municipality of Bistrița and the Poiana Brașov resort. The methodology used is analytical- descriptive and is based on documentary analysis and interpretation of data from digital and community sources.

Results: highlight the existence of two distinct development models: an emerging model, characterized by accessibility and extensive use of natural resources (Bistrița), and a consolidated model, defined by specialized infrastructure and tourism integration (Poiana Brașov).

Conclusion: underline the need to develop a hybrid model for the Bistrița area, which integrates the educational and community dimension with elements of tourism organization and capitalization.

Keywords: mountain biking, outdoor education, sport tourism, regional development, bike park, accessibility, sustainability

38. Correlations between muscle mass, regional isometric strength, and vertical jump performance in adolescents

TROFIN Petruț-Florin[1]*, HONCERIU Cezar[1], COTEAȚĂ Maria-Andreea[1]

[1]*Faculty of Physical Education and Sports, Alexandru Ioan Cuza University of Iași, Romania*

**Corresponding author: trofin.florin@uaic.ro*

Introduction. Adolescence is characterized by rapid changes in body composition and neuromuscular development, which can influence motor performance.

Aim. To evaluate the relationships between muscle mass percentage, regional isometric strength, and lower-limb vertical jump performance in male and female adolescents.

Methods. This cross-sectional study included 49 untrained participants (21 girls and 28 boys; aged 15-18 years) from eastern Romania. Body muscle mass percentage, handgrip strength (HGS), isometric hip adduction strength, isometric forearm rotation strength, as well as isometric strength in horizontal flexion and extension of the upper limbs were evaluated. Lower limb explosive performance was assessed using the Squat Jump (SJ), Countermovement Jump (CMJ), and Abalakov Jump protocols. Measurements were performed using bioimpedance technology, dynamometry, and the Just Jump contact platform. Associations were analyzed according to gender and the evaluated muscle group. Associations were analyzed using Pearson's correlation coefficient, with statistical significance set at $p < 0.05.

Results. In boys, muscle mass percentage was moderately and positively associated with vertical jump height across all three tests. Furthermore, the results support the utility of HGS as an indicator of general strength among boys. In girls, HGS was moderately associated with hip adduction strength ($r = 0.69$). In both genders, the vertical jump tests showed strong correlations with each other ($r > 0.86$). In girls, upper limb horizontal flexion and extension were significantly associated with each other, whereas in boys these variables showed associations with HGS and forearm rotation strength.

Conclusions. In the analyzed sample, the relationships between body composition, isometric strength, and explosive performance differed according to gender. The group of boys exhibited a muscle mass percentage associated with vertical jump performance, with HGS showing associations with more parameters than in girls. These results suggest that HGS may have utility as a practical indicator of general strength in the boys included in the study.

Keywords: neuromuscular development; handgrip dynamometry; lower limb explosiveness; body composition; countermovement jump

39. Long-term outcomes of pelvic floor rehabilitation for postpartum urinary incontinence: a two-case longitudinal study

VĂDAN Anca Lucia[1], MANIU Dragoș Adrian[1]*, FRĂSIE Andreea[1], MANIU Emese Agnes[1]

[1]*Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: dragos.maniu@ubbcluj.ro*

This longitudinal two-case study examined whether the observed changes after a structured pelvic floor rehabilitation protocol were maintained one year after completion of treatment. Two primiparous women, aged 28 and 32 years and assessed at 8 and 12 weeks postpartum, respectively, presented with urinary incontinence without pelvic organ prolapse or fecal incontinence.

The intervention consisted of 24 physiotherapy sessions delivered twice weekly for 12 weeks, combining pelvic floor strengthening, Kegel and Pilates-based exercises, bladder awareness and retraining, biofeedback and selected physical-therapy modalities (NMES, TENS, short-wave therapy, ultrasound, galvanic stimulation, dry needling).

Outcomes were assessed at baseline, 6 weeks, 12 weeks and one year after completion of treatment using clinical and urodynamic examination, cough and sneeze stress tests, the Valsalva maneuver, a voiding diary, functional testing (Timed Up and Go, adapted for 10 m) and symptom/pain measures (VAS). At baseline, both participants showed poor pelvic floor control; stress leakage was present during sneezing in both and during coughing in one participant. By 12 weeks, both participants achieved high pelvic floor control (sustain ≥5 s and release pelvic floor contraction on command), stress leakage was absent, both women could comfortably maintain approximately three-hour voiding intervals without nocturnal awakening, and pain (rated 2/10 and 3/10 on a VAS at baseline) had resolved.

These outcomes were maintained at the one-year follow-up. Within the limitations of a two-case design without a control group, the findings suggest that an individualized 12-week pelvic floor rehabilitation protocol may be associated with durable functional and continence-related benefits after childbirth.

40. Analysis of Extracurricular Physical Activity Options Among Lower Secondary School Students

ZUIAC Silvia Sorina[1]*, GHITESCU Roxana Emanuela[1]

[1]*Department of Physical Therapy and Theoretical Disciplines – Reșița Center, Faculty of Physical Education and Sport, Babeș-Bolyai University, Cluj-Napoca, Romania*

**Corresponding author: silvia.zuiac@ubbcluj.ro*

Introduction: This paper aims to systematically and practically analyze the options for engaging in physical activities outside of school among lower secondary school students, considering the importance of movement in their physical, psychological, and social development. The research is descriptive-analytical in nature and seeks to identify the actual circumstances regarding how students engage in physical activities outside school hours, as well as the factors that influence this engagement.

The aim of the research was to evaluate the level of participation in physical activity among students and to contribute to the development of an exercise program tailored to their needs.

Materials and Methods: The study was conducted at "Traian Lalescu" National College in Reșița between November 2024 and May 2025, involving 150 students from grades V to VIII. The methods used included reviewing specialized literature, applying a questionnaire, performing statistical analysis, and graphically representing the data.

Results: The analysis of the responses revealed that most students are interested in physical activities, but participation varies depending on access to facilities, family support, and available free time.The most popular activities are dancing, running, and team sports. Although teachers and coaches play a central role in motivating students, a significant percentage of children still practice sports rarely or not at all. Students expressed a desire for more extracurricular activities, especially outdoors, but also in well-equipped sports facilities. The main factors influencing participation are free time, sports infrastructure, and accessibility (transportation, costs).

Conclusions: This research highlighted the need for adapted educational and sports programs that would stimulate the involvement of students in regular physical activities.

Keywords: sports programs, teachers and coaches' movement, free time

Universitatea de Vest de la Timișoara

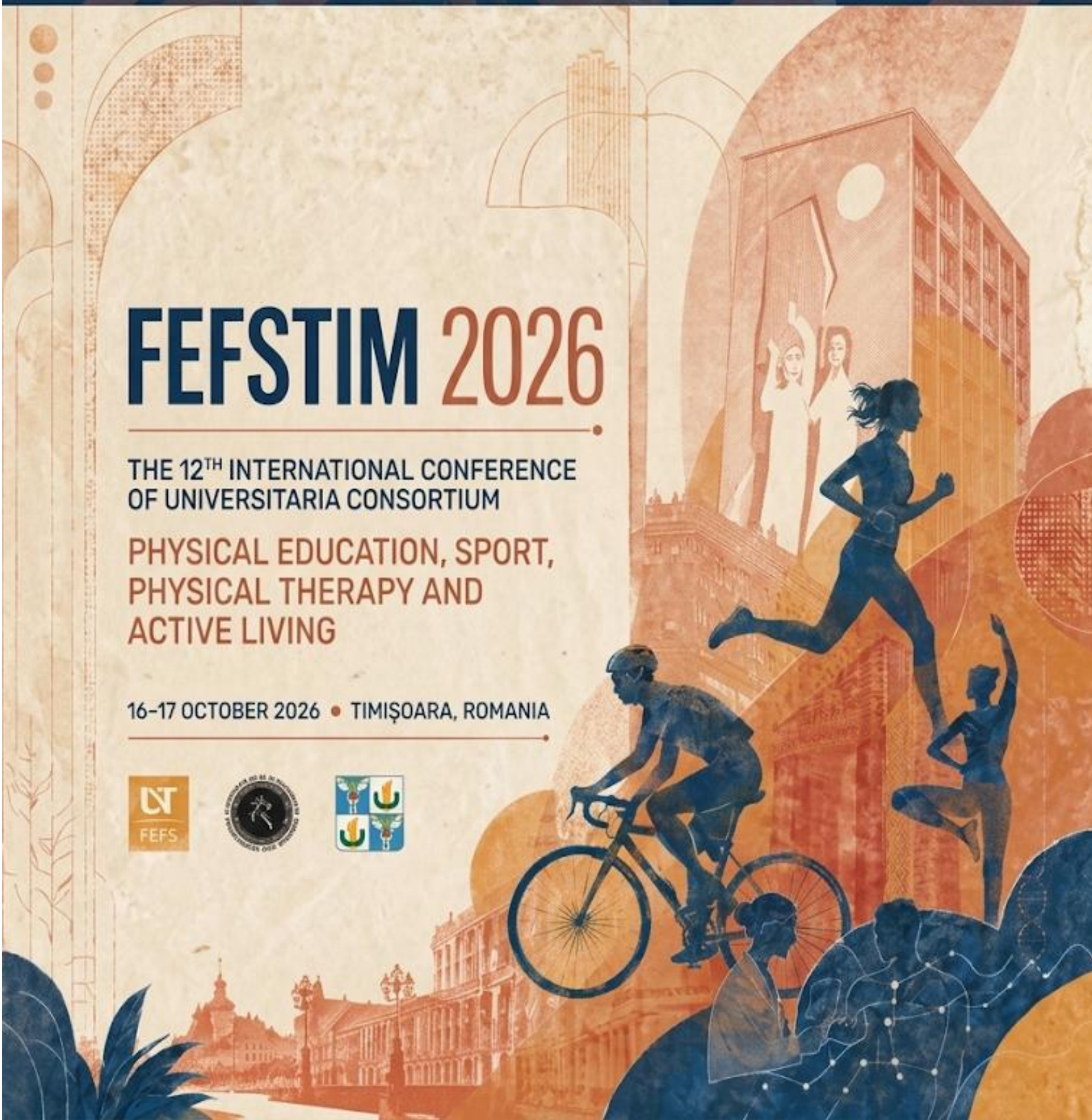
FACULTATEA DE
EDUCAȚIE FIZICĂ ȘI SPORT

FEFS

SHAPING LEADERS OF THE FUTURE

FEFSTIM 2026

THE 12TH INTERNATIONAL CONFERENCE OF UNIVERSITARIA CONSORTIUM

PHYSICAL EDUCATION, SPORT, PHYSICAL THERAPY AND ACTIVE LIVING

16–17 OCTOBER 2026 • TIMIȘOARA, ROMANIA