



BOOK OF ABSTRACTS

30th Annual Congress of the
EUROPEAN COLLEGE OF SPORT SCIENCE

1 - 4 July 2025 | Rimini, Italy
Jointly hosted by
University of Bologna | University of Padova

Edited by:

Marcora, S., Narici, M., Paoli, A., De Vito, G., Tsolakidis, E.,
Thompson, J.L., Ferrauti, A., Piacentini, M.F.

30th Annual Congress of the
EUROPEAN COLLEGE OF SPORT SCIENCE
1 - 4 July 2025
BOOK OF ABSTRACTS

Edited by:

Marcora, S., Narici, M., Paoli, A., De Vito, G., Tsolakidis, E.,
Thompson, J.L., Ferrauti, A., Piacentini, M.F.

ISBN 978-3-9818414-8-0



ECSS Platinum Partner since 2012

European College of Sport Science:

Book of Abstracts of the 30th Annual Congress of the

European College of Sport Science, 1 - 4 July 2025

Edited by Marcora, S., Narici, M., Paoli, A., De Vito, G., Tsolakidis, E., Thompson, J.L., Ferrauti, A., Piacentini, M.F..

ISBN 978-3-9818414-8-0

Copyright by European College of Sport Science

Conception, DTP: SporTools GmbH – Data management in sports

Corrections: Patera, K., Tsolakidou, A., Tsolakidis, S.

supported by

SPORTTOOLS
Data management in sports

Paul-Nießen-Str. 12, 50969 Cologne, Germany

www.SporTools.de

Organisation

CONGRESS PRESIDENTS

- Samuele Marcora - Congress President (ITA)
- Marco Narici - Congress Vice President (ITA)

ECSS EXECUTIVE BOARD

- Alexander Ferrauti - President (GER)
- Janice L. Thompson - President Elect (UK)
- Jørn Wulff Helge - Past President (DEN)
- Elke Grimminger-Seidensticker (GER)
- Andrew Jones (UK)
- Truls Raastad (NOR)

ECSS SCIENTIFIC BOARD

- Maria Francesca Piacentini - Chair (ITA)
- Markus Gruber - Co-Chair (GER)
- Maurizio Bertollo (ITA)
- Jafin Burniston (UK)
- Tim Cable (UK)
- Christian Couppé (DEN)
- Anne-Marie Elbe (GER)
- Peter Federolf (AUT)
- José González-Alonso (UK)
- Amelia Guadalupe Grau (ESP)
- Robert Lamberts (NED)
- Olivier Seynnes (NOR)
- Johannes Van Lieshout (NED)

ECSS SCIENTIFIC COMMITTEE

- Per Aagaard (DEN)
- Ignacio Ara (ESP)
- Leigh Breen (UK)
- Aaron Coutts (AUS)
- Sally Fenton (UK)
- Martino Franchi (ITA)
- Keith George (UK)
- Andrew Lane (UK)
- Pierre-Nicolas Lemyre (CAN)
- Uros Marusic (SVN)
- Ryoichi Nagatomi (JPN)
- Fernando Pareja Blanco (ESP)
- Dace Reihmane (LVA)
- Ramona Ritzmann (GER)
- Bart Roelands (BEL)
- Wolfgang Taube (SUI)
- Lex Verdijk (NED)
- Tobias Vogt (GER)

ECSS REVIEWING PANEL

- Julian Alcazar (ESP)
- Stephen Bailey (UK)
- Nick Ball (AUS)
- Bill Baltzopoulos (UK)
- Marco Beato (UK)
- Gregory Bogdanis (GRE)
- Matteo Bonato (ITA)
- Ulrike Burrmann (GER)
- Neil Cronin (FIN)
- Christopher Gaffney (UK)
- Dominic Gehring (GER)
- Daniel Green (AUS)
- Sidney Grospretre (FRA)
- Mette Hansen (DEN)
- Ilkka Heinonen (FIN)
- Kristin Jonvik (NOR)
- Jaak Jürimäe (EST)
- Pascale Kippelen (UK)
- Benedikt Lauber (SUI)
- Stefan Josef Lindinger (SWE)
- Jamie McPhee (UK)
- Fabian Möller (USA)
- David Morales-Álamo (ESP)
- Hannah Rice (NOR)
- Miriam Seyda (GER)
- Christopher Shaw (AUS)
- Ana Sousa (POR)
- Mike Stembridge (UK)
- Ian Taylor (UK)

ECSS ADMINISTRATION

- Thomas Giel - Managing Director (GER)
- Elena Jacobi - Vice Managing Director (GER)
- Elias Tsolakidis - Technical Director (GRE)
- Vinisha Prashant - Communications Manager (IND)
- Nicolas Puhe - Office Manager (GER)
- Pablo García González - Office Manager (ESP)
- Konstantina Patera - Congress Secretariat (GRE)

LOCAL SCIENTIFIC COMMITTEE

- Antonio Paoli - Co-Chair (ITA)
- Giuseppe De Vito - Co-Chair (ITA)
- Elena Barbieri (ITA)
- Laura Bragonzoni (ITA)
- Tatiana Moro (ITA)
- Ivan Malagoli Lanzoni (ITA)
- Silvia Fantozzi (ITA)
- Andrea Casolo (ITA)
- Marta Ghisi (ITA)
- Athanasios Pappous (ITA)

LOCAL ORGANISING COMMITTEE

- Rocco Di Michele - Chair (ITA)
- Martino Franchi - Head of Volunteers (ITA)
- Sandro Bartolomei - Head of Social Events (ITA)
- Ricardo Barbieri - Head of Media/Marketing (ITA)
- Matteo Cortesi – Head of Sponsorship (ITA)
- Erica Gobbi (ITA)
- Erika Ercolani (ITA)
- Shara Cattarozzi (ITA)
- Giovanni Martino (ITA)
- Silvia Pertegato (ITA)

Welcome to ECSS Rimini 2025

It is with great pleasure that we announce our hosting of the 30th ECSS Annual Congress in 2025 in the charming city of Rimini, through a collaboration between the Universities of Bologna and Padova. Above all, we are thrilled to bring the ECSS Annual Congress back to Italy after a span of 26 years, following the ECSS Congress held in Rome in 1999. At that time, there were no sport and exercise science programmes in Italian universities. Since then, sport science has developed quickly in Italy and we look forward to promoting it further by welcoming our colleagues across Europe and the rest of the world.

ECSS Rimini 2025 will take place at the Palacongressi di Rimini, a modern and attractive convention centre capable of accommodating over 9,000 attendees. This venue is conveniently located within walking distance of the city centre, hotels and the picturesque Adriatic seafront.

Rimini, with its origins dating back to 268 BC as the Roman Ariminum, boasts a captivating historic centre adorned with ancient Roman monuments, renaissance squares and architectural wonders. The city is home to churches embellished with treasures and works of art, allowing visitors to immerse themselves in its rich history. Additionally, Rimini proudly hosts the Federico Fellini Museum, dedicated to the world-famous film director who was born in the city.

The city's seafront stretches over 15 kilometres, offering access to 250 seaside resorts, cycle paths and sports facilities. Rimini is also renowned for its vibrant nightlife, featuring some of Italy's most famous venues. Rimini also serves as the nucleus of the Wellness Valley, established in 2003. This initiative aims to transform the Romagna region into a leading hub for knowledge and culture related to wellness and the quality of life. This mission aligns seamlessly with the ECSS's objective of disseminating high-quality, innovative science that makes a meaningful impact within the sports science community and society at large.

The Universities of Bologna and Padova have collaborated closely with the ECSS Scientific Board to deliver an outstanding scientific programme. This programme will encompass recent advancements in muscle biology, physiology and biophysics, as well as topics such as inactivity and aging, motor control, nutrition, physical activity and health, performance in extreme environments, exercise and sports medicine, psychology and social sciences. In addition, applied sports sciences, including Olympic winter sports, motorsports, football, cycling and other endurance sports, will also be addressed, along with physical performance of military personnel. A particular emphasis will be given to promote a multidisciplinary and interdisciplinary approach within sport science to break the barriers that often divide the biomedical and the psychosocial sciences applied to sport and physical activity.

We eagerly anticipate welcoming you to Rimini, where we can exchange knowledge within the ECSS scientific community in the vibrant, joyful and lively backdrop of this beautiful city along the Adriatic riviera.

Yours in Sport Science,

The ECSS Rimini 2025 Organising Team
Prof Samuele Marcora (Congress President)
University of Bologna

Prof Marco Narici (Congress Vice President)
University of Padova

Table of Contents

ORGANISATION	3
WELCOME TO ECSS RIMINI 2025	6
TABLE OF CONTENTS	7
TUESDAY, 1 JULY 2025.....	18
12:00 - 13:15	18
OP-PN17 PHYSIOLOGY AND METHODOLOGY OF MUSCLE ADAPTATION TO EXERCISE	18
IS-BM01 NEUROMOTOR STABILITY CONTROL AND INTER-TASK GENERALISATION IN IRREGULAR HUMAN GAIT	20
IS-MH01 REDS PREVENTION: NAVIGATING BARRIERS AND HARNESSING OPPORTUNITIES	22
IS-EX01 ECSS-ECSS EXCHANGE SYMPOSIUM – TECHNOLOGY SUPPORT IN FOOTBALL YOUTH PERFORMANCE PROGRESSION IN THE MILLENNIUM ERA	23
GSSI	24
OP-AP01 CYCLING I	26
OP-BM13 SPORTS TECHNOLOGY MARKER LESS	29
OP-MH01 HIT	32
OP-MH20 AEROBIC EXERCISE AND CANCER.....	35
OP-PN11 NUTRITION I - AMINO ACIDS AND PROTEIN II	38
OP-SH01 ATHLETE PSYCHOLOGY	41
OP-PN16 RESPIRATORY / PULMONARY PHYSIOLOGY	43
OP-MH19 PHYSIOTHERAPY	46
OP-MH37 LIFESTYLE.....	49
13:30 - 14:45	51
IS-SH01 ECSS-FEPSAC INVITED SYMPOSIA-PSYCHOLOGICAL FIRST AID: WELFARE STRATEGIES AT MAJOR SPORTS EVENTS	51
OP-PN19 EXERCISE AND ENERGY INTAKE.....	52
IS-MH02 INTERNATIONAL PERSPECTIVE ON HOW PA IMPACTS MOTHER, CORD, & BABY METABOLOME & INFLAMMATION.....	54
OP-PN01 PHYSIOLOGY OF FATIGUE I	56
IS-PN01 HUMAN SKELETAL MUSCLE PLASTICITY STUDIED WITH SINGLE-NUCLEI RNA SEQUENCING AND NOVEL SPATIAL PROTEOMIC APPROACHES.....	59
OP-AP02 RUNNING I	60
OP-BM01 MOTOR CONTROL	63
OP-BM21 NEUROMUSCULAR FATIGUE	66
OP-MH21 PHYSICAL TRAINING IN CANCER PATIENTS.....	68
OP-PN12 METABOLOMICS AND HEALTH	71
OP-PN18 NUTRITION II - CAFFEINE	74
OP-MH39 CARDIOVASCULAR DISEASE	77
OP-MH38 METABOLIC FLEXIBILITY	79

OP-MH36 RESPIRATORY DISEASE	81
WEDNESDAY, 2 JULY 2025	84
08:00 - 09:15	84
IS-EX02 JSPFSM-ECSS EXCHANGE SYMPOSIUM: NEW PERSPECTIVE OF EXERCISE-COGNITION INTERACTION	84
OP-AP09 TRAINING AND TESTING I - RUNNING.....	85
IS-MH03 RECENT EFFORTS BY THE INTERNATIONAL SKI AND SNOWBOARD FEDERATION (FIS) TO REDUCE THE RISK OF INJURY IN COMPETITIVE SNOW SPORTS FOR THE WINTER OLYMPIC GAMES IN MILANO CORTINA, ITALY.....	87
OP-PN02 RESISTANCE TRAINING AND NUTRITION	88
IS-PN02 POWER, BREATH, AND BEAT: EXPLORING FEMALE MUSCULAR, PULMONARY, AND CARDIOVASCULAR PHYSIOLOGY	91
OP-AP03 TEAM SPORTS I.....	92
OP-BM02 NEUROMUSCULAR PHYSIOLOGY I	95
OP-MH02 CLINICAL POPULATION GROUPS	98
OP-PN13 MOLECULAR BIOLOGY OF EXERCISE AND DISEASES.....	101
OP-MH04 WEIGHT LOSS I	103
OP-SH12 MENTAL HEALTH AND WELL-BEING IN ATHLETES.....	106
OP-PN22 CARDIOVASCULAR PHYSIOLOGY I	108
OP-PN21 GUT AND MICROBIOME	111
OP-MH40 EXERCISE THERAPY / BEDREST.....	114
09:30 - 10:45	116
OP-AP10 TEAM SPORTS II - FATIGUE AND RECOVERY	116
IS-BM02 THE POWER OF ECCENTRIC CONTRACTIONS ON MUSCLE ADAPTATION, REMODELING, AND FUNCTION IN OLD AGE: THE POSITIVES OF NEGATIVES.....	119
IS-MH04 WHY IS ELITE ATHLETE ORAL HEALTH SO POOR AND WHAT CAN WE DO TO REVERSE THE PERFORMANCE IMPACTS?	121
OP-PN03 ENDURANCE PHYSIOLOGY I	122
OP-AP06 TALENT IDENTIFICATION	125
OP-AP04 WINTER SPORTS	127
OP-BM03 SPORTS INJURY	130
OP-BM14 GAIT.....	133
OP-PN20 HYPOXIA AND BRAIN	136
OP-MH05 WEIGHT LOSS II	139
OP-SH02 PSYCHOLOGY I - MENTAL FATIGUE	141
OP-MH42 SEDENTARY BEHAVIOUR	144
OP-PN23 IMMOBILISATION AND BED REST	146
OP-SH03 PHILOSOPHY AND ETHICS	149
11:00 - 12:15	152
IS-EX03 ACSM-ECSS EXCHANGE SYMPOSIUM: LACTATE METABOLISM	152
IS-BM03 BIOMECHANICAL AND PHYSIOLOGICAL TRADE-OFFS IN SPRINT AND ENDURANCE PERFORMANCE: LESSONS FROM THE ANIMAL KINGDOM TO HUMAN ATHLETES	153
OP-PN25 THERMOREGULATION	154

OP-PN04 FEMALE PHYSIOLOGY	157
OP-AP12 TRAINING AND TESTING II - MATURITY, RELATIVE AGE AND PERFORMANCE	160
OP-AP05 RESISTANCE TRAINING	163
OP-AP11 TEAM SPORTS III - BASKETBALL	165
OP-MH03 SPORTS MEDICINE AND ORTHOPEDICS I	168
OP-BM15 CORTICOSPINAL RESPONSES	170
OP-SH11 MENTAL HEALTH	173
OP-MH18 HEALTH AND FITNESS - CHILDREN	176
OP-PN14 MOLECULAR BIOLOGY AND BIOCHEMISTRY I - OMICS AND TRAINING	179
OP-MH35 ANKLE INJURIES	181
OP-SH13 PHYSICAL EDUCATION I	184
13:15 - 14:30	187
OP-PN15 ENDURANCE PHYSIOLOGY II	187
OP-PN27 MUSCLE DAMAGE AND REPAIR	190
IS-AP02 FEMALE HEALTH AND MENSTRUAL CYCLE RESEARCH; DO WE NEED TO CHANGE OUR APPROACH? A CALL FOR ACTION	192
IS-BM07 THE AGING BRAIN IN MOTOR CONTROL AND BALANCE LEARNING: FROM MOLECULES TO NEURONS AND NETWORKS	194
IS-PN03 FROM SEA TO SPACE - HUMAN PHYSIOLOGY AND PERFORMANCE IN THE EXTREME ENVIRONMENTS UNDERWATER, HIGH-ALTITUDE, AND WEIGHTLESSNESS	195
OP-AP13 TRAINING AND TESTING III - INTERVAL / SPRINT TRAINING	197
OP-BM04 NEUROMUSCULAR PHYSIOLOGY II	199
OP-AP08 MACHINE LEARNING IN TEAM SPORTS	202
OP-AP07 COMBAT SPORTS	205
OP-PN26 MIXED PHYSIOLOGY - SLEEP, BRAIN AND BLOOD BIOMARKERS	208
OP-SH14 DECISION MAKING	210
OP-AP43 RUNNING II - ULTRA AND LONG DISTANCE	213
OP-PN24 MOLECULAR BIOLOGY AND BIOCHEMISTRY II	216
OP-SH22 SOCIOLOGY I	219
14:45 - 16:00	221
IS-AP01 NAVIGATING THE PERCEPTION OF TIME IN SPORT: PSYCHOLOGICAL AND PHYSIOLOGICAL INSIGHTS	221
OP-PN28 PHYSIOLOGY OF FATIGUE II	222
OP-PN05 PHYSIOLOGY	225
IS-BM04 NEURAL MODULES IN THE CONTROL OF MOVEMENT: ASSESSING THE UTILITY OF EMG RECORDINGS	228
OP-AP14 TEAM SPORTS IV - RUGBY AND AUSTRALIAN FOOTBALL	229
OP-MH22 RESISTANCE TRAINING IN OLDER ADULTS	231
OP-BM16 SPORTS BIOMECHANICS	233
OP-PN06 NUTRITION III - AMINO ACIDS AND PROTEIN I	236
OP-PN29 CARDIOVASCULAR PHYSIOLOGY II	239
OP-AP44 SPORTS EQUIPMENT	242
OP-SH10 PHYSICAL ACTIVITY PROMOTION IN CHILDREN	244
OP-SH21 FEMALE SPORT AND PHYSICAL ACTIVITY	247

OP-SH20 PSYCHOLOGY II - MIXED SESSION I	249
OP-MH41 INTERVENTIONS I	252
16:30 - 17:30	255
CP-AP01 TRAINING AND TESTING I - MIXED	255
CP-AP02 STATISTICS AND ANALYSES I - TEAM SPORTS.....	260
CP-AP04 SPORTS EQUIPMENT	263
CP-AP05 SPORTS TECHNOLOGY / MONITORING I	268
CP-API0 COACHING I - TEAM SPORTS.....	272
CP-API3 COACHING II - MIXED	275
CP-API5 INDIVIDUAL SPORTS.....	280
CP-API6 COMBAT SPORTS AND STRENGTH	284
CP-API7 HANDBALL, VOLLEYBALL AND FOOTBALL.....	289
CP-API8 POWER AND STRENGTH I	293
CP-AP21 FOOTBALL	298
CP-AP24 SWIMMING.....	302
CP-AP30 TRAINING AND TESTING II - MIXED.....	306
CP-BM01 BIOMECHANICS AND MOTOR CONTROL - MIXED.....	309
CP-BM04 MUSCLE AND TENDON MECHANICS	314
CP-BM10 JUMPING AND SQUATING I.....	319
CP-BM14 KINEMATICS	324
CP-BM16 BIOMECHANICS - MIXED	327
CP-MH01 HEALTH AND FITNESS I - MIXED	332
CP-MH02 SPORTS MEDICINE AND REHABILITATION - MIXED	338
CP-MH03 SPORTS MEDICINE	342
CP-MH04 AGEING I	346
CP-MH05 CANCER I.....	350
CP-MH06 CARDIOVASCULAR HEALTH.....	355
CP-MH08 EXERCISE DURING PREGNANCY / OBESITY.....	360
CP-SH05 PHYSICAL ACTIVITY PROMOTION I.....	365
CP-PN01 MUSCLE METABOLISM	367
CP-PN02 SEX DIFFERENCES AND THE FEMALE ATHLETE.....	373
CP-PN03 PHYSIOLOGY AND NUTRITION - MIXED	377
CP-PN11 HYPOXIA, PHYSIOLOGY AND HIGH ALTITUDE	380
CP-PN12 MOLECULAR SIGNALING.....	386
CP-SH01 SOCIAL SCIENCES - MIXED	390
CP-SH09 PHYSICAL EDUCATION I.....	396
CP-SH18 MENTORING / COACHING I - MIXED	401
CP-SH20 PSYCHOLOGY I - MIXED	405
CP-SH21 PSYCHOLOGY II - MIXED	410
17:45 - 19:00	413
PS-PL01 DSD- AND TRANS-ATHLETES IN THE FEMALE CATEGORY: SCIENTIFIC AND ETHICAL CONTROVERSIES.....	413

THURSDAY, 3 JULY 2025	416
08:30 - 09:45	416
IS-SH02 FROM THE PITCH TO THE LAB AND BACK AGAIN: IDENTIFYING, UNDERSTANDING AND DEALING WITH THE VARIOUS EFFECTS OF FATIGUE ON SPORT AND EXERCISE PERFORMANCE	416
OP-AP15 TEAM SPORTS V - CHANGE OF DIRECTION AND JUMPING	417
IS-PN04 DIGITAL HEALTH EXERCISE INTERVENTIONS FOR PRIMARY AND SECONDARY CARDIOVASCULAR DISEASE PREVENTION: INNOVATIONS FROM 3 EUROPEAN COUNTRIES	419
OP-AP16 TRAINING AND TESTING IV - POWER AND STRENGTH: SPORT-SPECIFIC ASPECTS	420
OP-BM17 RUNNING III	423
OP-BM05 MUSCLE TENDON FUNCTION	426
OP-MH23 ENDURANCE TRAINING IN OLDER ADULTS	429
OP-PN30 HYPOXIA AND TRAINING	431
OP-PN07 NUTRITION IV - VITAMIN D AND OTHER SUPPLEMENTS	434
OP-MH06 WEIGHT LOSS III	437
OP-AP17 SWIMMING I - STRENGTH TRAINING	439
OP-AP18 COACHING I - PSYCHOLOGY	441
OP-MH44 CARDIOVASCULAR DISEASE AND DISFUNCTION	443
OP-MH07 ORTHOPEDICS	446
10:00 - 11:15	448
OP-PN31 PHYSIOLOGY OF FATIGUE III	448
OP-AP22 POWER AND STRENGTH I - POST-ACTIVATION PERFORMANCE ENHANCEMENT	451
IS-MH06 DIVERSITY IN MECHANISMS UNDERLYING IMPAIRMENTS TO EXERCISE AND RECOVERY IN TYPE 1 DIABETES	454
IS-BM05 CYCLIC PROPULSION IN SPORTS	455
OP-AP23 TEAM SPORTS VI - FEMALE FOOTBALL	456
IS-AP03 OPTIMISING THE WARFIGHTER: APPLYING SPORT SCIENCE IN THE MILITARY CONTEXT	458
OP-MH24 FITNESS AND COGNITION IN OLDER ADULTS	459
OP-BM18 MUSCLE DISUSE AND AGEING	462
OP-PN08 NUTRITION V - SUPPLEMENTS AND SUPERFOODS	464
OP-AP21 TRAINING AND TESTING VI - COGNITIVE PERFORMANCE AND COORDINATION	467
OP-AP19 TRAINING AND TESTING V - HYROX, CROSSFIT AND ROWING	470
OP-MH11 MENTAL DISABILITIES	473
OP-SH04 SOCIOLOGY II - GENDER	475
OP-SH15 PHYSICAL EDUCATION II	478
11:30 - 12:45	481
PS-PL02 MECHANISMS OF HUMAN SKELETAL MUSCLE HYPERTROPHY: SORTING THE WHEAT FROM THE CHAFF ...	481
13:45 - 15:00	482
OP-PN33 PHYSIOLOGY OF FATIGUE IV	482
OP-PN34 CARBOHYDRATES	485
OP-AP24 SWIMMING II - RECOVERY AND SLEEP	487
IS-BM06 EXERCISE AND THE CENTRAL NERVOUS SYSTEM: MECHANISMS, PERFORMANCE, AND THERAPY	490

OP-AP20 TRAINING AND TESTING VII - MIDDLE AGE AND OLDER ADULTS	491
OP-PN32 HYPOXIA AND ENVIRONMENT.....	494
OP-MH26 PHYSICAL ACTIVITY AND BODY COMPOSITION IN CHILDREN	497
OP-AP42 STATISTICS AND ANALYSES I - ENDURANCE SPORTS	499
OP-PN09 NUTRITION VI - MIXED	502
OP-SH16 MENTORING / COACHING	505
OP-MH13 SPORTS CARDIOLOGY.....	508
OP-MH12 EPIDEMIOLOGY I.....	510
OP-SH05 PHYSICAL EDUCATION III.....	513
OP-SH23 SOCIOLOGY III	515
15:15 - 16:30	518
IS-MH05 EFFORT AND ITS PERCEPTION: CURRENT KNOWLEDGE AND PERSPECTIVES	518
OP-PN35 ENERGY METABOLISM.....	519
IS-PN05 EFFECTS OF ENVIRONMENTAL HEAT STRESS ON HUMAN PERFORMANCE AND HEALTH ACROSS THE LIFECOURSE	522
OP-AP26 CYCLING II	523
OP-BM06 RATE OF FORCE DEVELOPMENT	526
OP-PN10 NUTRITION VII - KETOGENIC.....	529
OP-MH27 MIXED SLEEP / PHYSICAL ACTIVITY PERFORMANCE ACROSS THE LIFESPAN.....	530
OP-BM19 MOTOR LEARNING AND VARIABILITY.....	533
OP-AP27 SPORTS TECHNOLOGY IN RUNNING	536
OP-MH45 PHYSICAL ACTIVITY PROMOTION I.....	538
OP-MH14 DISABILITIES AND REHABILITATION	541
OP-SH17 PHYSICAL ACTIVITY PROMOTION II.....	544
OP-AP25 PERFORMANCE ANALYSIS IN INDIVIDUAL SPORTS.....	546
OP-SH06 SPORT MANAGEMENT AND LAW I.....	549
17:00 - 18:15	552
OP-AP31 TEAM SPORTS VII - TALENT SUPPORT AND YOUTH TRAINING	552
OP-AP30 RUNNING III - APPLIED PHYSIOLOGY	555
IS-MH07 EMERGING PERSPECTIVES IN EXERCISE ONCOLOGY: INSIGHTS FROM EXERCISE-INDUCED CANCER SUPPRESSION TO PRAGMATIC IMPLEMENTATION EXERCISE ONCOLOGY: NEW INSIGHTS	557
OP-BM07 NEUROMUSCULAR PHYSIOLOGY III - AGEING.....	559
IS-PN06 SEX DIFFERENCES IN HEMODYNAMICS AND OXYGEN TRANSPORT DURING MAXIMAL, SUPRAMAXIMAL, AND TIME-TRIAL EXERCISES: INSIGHTS FROM NORMALIZATION STRATEGIES AND THERMODILUTION MEASUREMENTS	561
OP-AP29 POWER AND STRENGTH II - CLUSTER SETS AND LOWER LIMBS.....	562
OP-BM20 CORTICAL ACTIVITY.....	565
OP-MH29 METABOLIC SYNDROME AND DIABETES I.....	568
OP-MH28 PARKINSONS DISEASE	570
OP-SH18 PSYCHOLOGY III - MOTIVATION	573
OP-MH15 AGEING I.....	576
OP-AP28 STATISTICS AND ANALYSES II - TEAM SPORTS	578

OP-SH19 IDENTITY AND GENDER	581
OP-SH07 SPORT MANAGEMENT AND LAW II	582
18:30 - 19:30	585
CP-AP03 STATISTICS AND ANALYSES II - FOOTBALL	585
CP-AP06 SPORTS TECHNOLOGY / MONITORING II	590
CP-AP11 COACHING III - RUNNING AND BIATHLON	594
CP-AP14 COACHING AND TRAINING IN YOUTH ATHLETES	597
CP-AP19 POWER AND STRENGTH II	601
CP-AP22 BASKETBALL	605
CP-AP26 RUNNING	608
CP-AP28 HIIT, AGILITY AND FATIGUE	614
CP-AP31 TRAINING AND TESTING III - MIXED	618
CP-BM02 MOTOR LEARNING AND MOTOR CONTROL I	623
CP-BM06 GAIT	627
CP-BM08 SPORTS BIOMECHANICS	631
CP-BM09 UPPER LIMB BIOMECHANICS	634
CP-BM11 JUMPING AND SQUATING II	639
CP-BM15 FATIGUE	643
CP-MH11 CARDIOVASCULAR AND NEUROLOGICAL DISEASES	648
CP-MH12 CANCER II	653
CP-MH13 AGEING II	656
CP-SH08 PHYSICAL EDUCATION II	661
CP-MH15 PARALYMPIC ATHLETES	665
CP-MH16 AGEING III - COVID-19	669
CP-MH17 PHYSICAL ACTIVITY / INACTIVITY AND MENTAL DISABILITIES	672
CP-MH18 ADOLESCENTS / CHILDREN	677
CP-SH11 PSYCHOLOGY III - COGNITION	682
CP-PN04 EXERCISE BIOMARKERS	686
CP-PN05 ENERGY RESTRICTION	691
CP-PN06 SUPPLEMENTS	696
CP-PN07 RESPIRATION AND GAS EXCHANGE	700
CP-PN08 ENDURANCE, INTERVAL TRAINING AND CAFFEINE	706
CP-PN09 SLEEP, FATIGUE AND EXTREME EXERTION	710
CP-PN10 NUTRITION AND PERFORMANCE	715
CP-SH13 PSYCHOLOGY IV - INTERVENTION	720
CP-PN14 CARDIOVASCULAR PHYSIOLOGY TRAINING	724
CP-PN15 OMICS	729
CP-PN16 MUSCLE AND BONE	733
CP-PN17 THERMOREGULATION TRAINING AND PERFORMANCE	739
CP-SH06 PHYSICAL ACTIVITY PROMOTION II	744
CP-SH16 PSYCHOLOGICAL WELL-BEING	748

CP-SH19 PSYCHOLOGY V - MENTAL HEALTH.....	752
CP-SH22 PSYCHOLOGY AND SOCIOLOGY - MIXED	755
FRIDAY, 4 JULY 2025.....	760
08:00 - 09:15	760
IS-AP04 ADVANCING PERFORMANCE: THE APPLIED USE OF WEARABLE TECHNOLOGIES IN SPORTS SCIENCE	760
IS-BM08 BRAIN & BODY BOOTCAMP: REVOLUTIONIZING FITNESS WITH EXERGAMES!.....	761
OP-AP33 CYCLING III	762
OP-AP36 RECOVERY AND PERFORMANCE ENHANCEMENT	765
OP-AP32 POWER AND STRENGTH III - LOAD VELOCITY APPROACHES	768
OP-AP34 COACHING II - TEAM SPORTS.....	771
OP-AP35 RUNNING IV - TRAIL.....	773
OP-BM08 AGEING II.....	776
OP-MH30 METABOLIC SYNDROME AND DIABETES II.....	779
OP-MH08 INJURY PREVENTION	782
OP-SH08 PSYCHOBIOLOGY.....	784
OP-MH17 POST-SURGICAL RECOVERY	787
OP-SH24 CHILDREN AND BODY IMAGE.....	789
OP-MH09 SPORTS MEDICINE AND ORTHOPEDICS II.....	791
09:30 - 10:45	794
IS-AP05 INVESTIGATING THE CAUSES OF FATIGUE IN ENDURANCE ACTIVITIES: SOCIETAL BENEFITS, PHYSIOLOGICAL MARKERS, AND INTERDISCIPLINARY APPROACHES.....	794
OP-AP37 BLOOD FLOW RESTRICTIONS	795
OP-AP38 WEARABLE TECHNOLOGIES	798
OP-BM09 NEUROMUSCULAR ADAPTATIONS TO EXERCISE	800
IS-PN08 UNRAVELING DIETARY PROTEIN SOURCES FOR SKELETAL MUSCLE HEALTH AND PERFORMANCE: FROM WORKOUTS TO WELLNESS	803
OP-BM12 BALANCE.....	805
OP-AP39 SWIMMING III - PERFORMANCE TESTING.....	808
OP-MH25 SARCOPENIA / DYNAPENIA / POWERPENIA	811
OP-AP40 MIXED SESSION - FROM POWERLIFTING TO HRV	813
OP-MH32 EPIDEMIOLOGY II.....	816
OP-MH31 NEUROLOGICAL DISEASES.....	819
OP-MH10 SPORTS MEDICINE AND ORTHOPEDICS III.....	821
OP-SH25 ANXIETY AND STRESS	824
OP-SH09 SOCIOLOGY IV - AGEING.....	826
11:00 - 12:00	829
CP-AP07 SPORTS TECHNOLOGY - MIXED	829
CP-AP08 STATISTICS AND ANALYSES III - PERFORMANCE	832
CP-AP09 STATISTICS AND ANALYSES IV - MIXED	837
CP-API2 COACHING IV - ELITE ATHLETES.....	841

CP-AP20 POWER AND STRENGTH III.....	845
CP-AP23 CYCLING	850
CP-AP27 BODY COMPOSITION AND AGEING	855
CP-AP29 YOUTH FOOTBALL	860
CP-AP32 TRAINING AND TESTING IV - MIXED	864
CP-AP33 HOCKEY, ICE HOCKEY AND WARM-UP	869
CP-BM03 MOTOR LEARNING AND MOTOR CONTROL II.....	873
CP-BM12 RUNNING BIOMECHANICS	878
CP-BM13 NEUROMUSCULAR PHYSIOLOGY	882
CP-BM17 PERCEPTION AND BALANCE - MIXED.....	888
CP-BM18 MUSCLE / TENDON AND EXERCISE - MIXED.....	891
CP-MH10 PHYSICAL ACTIVITY / INACTIVITY.....	895
CP-MH20 MILITARY PERFORMANCE AND REHABILITATION	900
CP-MH21 PHYSICAL ACTIVITY PROMOTION III	903
CP-MH22 TRAINING VASCULAR AND CARDIOMETABOLIC HEALTH	909
CP-MH23 TRAINING IN OLDER ADULTS	912
CP-MH24 INJURIES IN YOUNG ATHLETES	917
CP-MH25 WARM-UP AND RECOVERY	921
CP-MH26 SARCOPENIA / OSTEOPOROSIS	925
CP-MH27 SPORTS MEDICINE AND ORTHOPEDICS - KNEE, ANKLE, FOOT.....	928
CP-MH28 EPIDEMIOLOGY OF INJURY	933
CP-MH29 LIFESTYLE.....	937
CP-MH30 INFLAMMATION AND HORMONES.....	941
CP-MH31 EXERCISE THERAPY	944
CP-SH07 PHYSICAL EDUCATION III	948
CP-MH33 HEALTH AND FITNESS II - MIXED	952
CP-MH34 HEALTH AND FITNESS III - MIXED	955
CP-MH35 HEALTH AND FITNESS IV - MIXED.....	959
CP-PN18 CARDIOVASCULAR PHYSIOLOGY	963
CP-PN19 NUTRITION HEALTH AND METABOLISM	968
CP-PN20 AMINO ACIDS AND PROTEINS.....	973
CP-PN21 HYDRATION AND NUTRITIONAL PRACTISES	977
CP-PN23 THERMOREGULATION TOOLS AND MECHANISMS	982
CP-SH10 MENTORING / COACHING II - ELITE ATHLETES.....	987
CP-SH14 PSYCHOLOGY VI - STRESS AND ANXIETY	990
CP-SH23 PSYCHOLOGY - MIXED, SOCIOLOGY AND SPORTS MANAGEMENT	994
13:00 - 14:15	999
IS-PN07 WHEN AGEING MUSCLES LOSE THEIR NERVE: THE NEUROPROTECTIVE EFFECTS OF EXERCISE	999
IS-AP06 BREATHING MONITORING IN SPORT AND EXERCISE: MECHANISMS, APPLICATIONS AND TECHNOLOGICAL SOLUTIONS	1000
OP-BM10 NEUROMUSCULAR FUNCTION ACROSS THE MENSTRUAL CYCLE	1001
OP-AP45 COACHING III - ENDURANCE SPORTS.....	1003

IS-PN09 ENERGY INTAKE LIMITATIONS IN ATHLETES: FROM CALORIC RESTRICTION TO TIME RESTRICTED EATING ..	1006
OP-BM11 SPRINTING	1007
OP-AP41 TRAINING AND TESTING VIII - FATIGUE.....	1010
OP-AP46 SENSOR TECHNOLOGY AND MONITORING.....	1013
OP-MH43 INTERVENTIONS II	1015
OP-MH34 MIXED-EXERCISE THERAPY / PREGNANCY.....	1018
OP-MH16 RETURN TO PLAY	1021
OP-MH33 INFLAMMATION	1023
OP-SH26 PSYCHOLOGY IV - MIXED SESSION II.....	1026
OP-SH27 PHYSICAL ACTIVITY AND HEALTH.....	1029
16:15 - 17:30	1031
PS-PL03 EXERCISE SCIENCE AND MEDICINE IN THE ERA OF INCRETINS AND EXERCISE MIMETICS.....	1031
E-POSTER	1034
PP-UD01	1034
BIOMECHANICS	1034
COACHING	1052
DISABILITIES.....	1058
HEALTH AND FITNESS.....	1060
MENTORING/COACHING	1112
MOLECULAR BIOLOGY AND BIOCHEMISTRY	1113
MOTOR LEARNING AND MOTOR CONTROL.....	1115
NEUROMUSCULAR PHYSIOLOGY.....	1120
NUTRITION	1124
PHYSICAL ACTIVITY PROMOTION.....	1134
PHYSICAL EDUCATION AND PEDAGOGICS.....	1139
PHYSIOLOGY.....	1147
PHYSIOTHERAPY.....	1161
PSYCHOLOGY	1165
SOCIOLOGY	1179
SPORT MANAGEMENT AND LAW	1179
SPORT TECHNOLOGY.....	1185
SPORTS MEDICINE AND ORTHOPEDICS.....	1190
STATISTICS AND ANALYSES.....	1201
TRAINING AND TESTING	1206
AUTHORS INDEX	1232

countries that have been in the top ten at the last four Summer Olympics, we examined the Global Innovation Index of these countries. For the Netherlands, strong growth was identified: both in sport performance and in innovation capacity.

Discussion: Examining the Olympic Movements effectiveness based on sports innovation requires a systemic approach when considering organisational culture, leadership, the global market environment and technological developments. Firstly, the relationship between the picture presented by the innovation composite indicators of each country and the evolution of the countries sport performance. Also of importance is the typical operating model of each country: the role of the state and the business world.

Reference

Tjørndal, A. (2017): Sport innovation: Developing a typology. *European Journal for Sport and Society*, 14(4), 291-310.

Project no.MEC_R 149389 has been implemented with the support provided by the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund, financed under the MEC_24 funding scheme.

THE SOCIAL, COMMUNITY, AND SPORTING IMPACT OF MEDIUM AND SMALL-SIZED SPORTS EVENTS: EVIDENCE FROM THE ITALIAN NATIONAL UNIVERSITY CHAMPIONSHIPS

FALESE, L., ROSSINI, L.

UNIVERSITY OF CASSINO AND SOUTHERN LAZIO

INTRODUCTION: Medium and small-sized sports events promote community engagement, social cohesion, and local economic benefits. While large-scale events like the Olympics receive extensive attention, smaller events remain underexplored despite their socio-economic potential. This study examines the 2022 Italian National University Championships (CNU), which attracted 2500 university athletes, assessing its influence on local spectators sense of belonging, community pride, motivation to be physically active, and satisfaction.

METHODS: A structured questionnaire was administered to 221 local spectators, measuring variables such as service satisfaction, community pride, motivation to be physically active, and sense of belonging. Correlation and regression analyses identified key predictors of community connection and engagement.

RESULTS: Higher satisfaction with event services correlated with overall satisfaction ($r = 0.511$, $p < 0.01$), while excitement for competitions also positively influenced satisfaction ($r = 0.598$, $p < 0.01$). Sense of belonging was strongly associated with event satisfaction ($r = 0.551$, $p < 0.01$) and community pride ($r = 0.548$, $p < 0.01$). Attending the event as spectators motivated individuals to be more physically active, indicating a positive sporting impact. Negative experiences ($r = -0.261$, $p < 0.05$) reduced satisfaction, but the association with logistical difficulties was weak ($r = -0.091$). Regression analysis confirmed pride in the host city as a significant predictor of belonging (Coef. = 0.238, $p = 0.046$), while motivation to engage in future community events emerged as the strongest factor (Coef. = 0.592, $p = 0.000$). Security concerns also positively influenced belonging (Coef. = 0.388, $p = 0.012$), while environmental concerns had an adverse effect (Coef. = -0.446, $p = 0.009$).

Discussion and CONCLUSION: The findings of this study reinforce the idea that medium and small-scale sports events, when effectively managed, can have lasting positive social impacts, particularly in terms of community engagement, sporting impact and pride. Satisfaction with event logistics and participants perceptions of security measures enhanced personal enjoyment and level of engagement. Managing negative effects and controlling undesirable impacts, such as environmental concerns and disruptions, is crucial to maintaining benefits. Future studies should continue exploring how different types of stakeholders perceive social impacts, how strategies can be developed to maximize the positive outcomes and the role of sustainable practices in maximizing social and environmental benefits.

Our findings offer valuable insights for event organizers, policymakers, and stakeholders seeking to optimize sports events for community and social development minimizing dissatisfaction and promoting environmentally sustainable practices.

THE PHENOMENON OF ABUSE IN HUNGARIAN SPORTS THROUGH COACHES' EXPERIENCES

SZEKERES, D.1, NOVÁK, J.2, DÓCZI-VÁMOS, G.2, SOÓS, I.3

HUNGARIAN UNIVERSITY OF SPORTS SCIENCE

Diána Szekeres, János Novák, Gabriella Dóczi-Vámos, István Soós: The Phenomenon of Abuse in Hungarian Sports Through Coaches' Experiences

INTRODUCTION: The topic of child protection in the Hungarian sports world has only come into focus in recent years due to changes in the social environment and the unresolved scandals that have come to light. Since 2017 January 1st, all national sports federations in Hungary are required to implement an ethics and child protection code. In 2022, a comprehensive project titled "Child, Youth, and Professional Protection in Sports" was launched, aiming to understand Hungarian sports culture and the sports family through a multidisciplinary approach.

METHODS: The research project, which incorporates sociological, legal, pedagogical, and psychological aspects, attempted to identify the social, organizational, and individual risk factors of becoming a victim. This presentation shows the experiences of the primary data collection phase of the project, derived from a survey conducted among coaches, with a particular focus on the different forms of abuse. Responses were collected from 64 sports, at different levels of sport, from various age groups, both genders, and all counties in Hungary, resulting in the organization of responses from a total of

supported by



ISBN 978-3-9818414-8-0