

ESF Exploratory Workshop on

# **The Future of Research in Sport Participation in the Lifespan (EW-SPiL)**

Rome, (Italy), September 14-17 2011

Convened by:  
**Laura Capranica, Romain Meeusen  
and Jan Cabri**

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## **SCIENTIFIC REPORT**

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## 1. Executive summary

Sport participation plays a crucial role in enhancing the establishment of a European citizenship, in the maintenance of healthy lifestyles in the lifespan and in increasing societal wellbeing. Conversely, European citizens are increasingly sedentary. The multi-facet structure of sport includes different scientific areas, actors and stakeholders, and specific priorities of practitioners in relation to their age, gender, motivation, health status, and cultural heritage. Up to now, scholars in the sociological, historical, economical, physiological, epidemiological, medical, ergonomical, biomechanical, psychological, pedagogical, and sport-specific technical areas engaged in sectorial research on the effects of sport participation. Unfortunately, this approach limited the potential transfer of findings among research areas and from the scientific community to public policies. Thus, the **“Exploratory Workshop on The Future of Research in Sport Participation in Europe”** (EW-SPIL) aimed to foster a novel, integrated and multidisciplinary approach to research through the understanding of highly complex language of different expertises.

To introduce the topic and to facilitate the exchanges of ideas, an EW-SPIL website was created. Furthermore, the participants were requested to use a SPIL template for their 15 minutes presentation and to send an abstract before the workshop. Finally, to have additional opportunities to reflect on the issues addressed during the workshop, the participants agreed to have their presentation recorded and posted on the EW-SPIL website. Although the EW-SPIL programme, the short curricula of participants and their abstracts were available on the website, each participant received a printed copy upon arrival.

The workshop was held at the University of Rome “Foro Italico” over 4 days and included the participation of 16 professors (Atkinson Greg, Avela Janne, Barreiros Joao, Cabri Jan, Capranica Laura, De Vito Giuseppe, Harahousou Yvonne, Heyman Elsa, Meeusen Romain, Millard-Stafford Mindy, Mussino Antonio, Pesce Caterina, Piacentini Maria Francesca, Porro Nicola, Silva Manuel, Sjogaard Gisela) from 11 countries (i.e., Belgium, Denmark, Finland, France, Greece, Ireland, Italy, Norway, Portugal, United Kingdom, and United States of America) and 6 scientific areas (i.e., Biomechanics, Exercise Physiology, Sport Psychology, Sport Sciences, Sport Sociology, and Statistics) related to sport sciences and 3 ESF rapporteurs from the Standing Committee for the European Medical Research Councils (Dr. Emmanuelle Wollman), Standing Committee for the Humanities (Prof. Dilek Barlas), and Standing Committee for Social Sciences (Dr. Katarzyna Zawalinska), respectively.

The participants met on Wednesday September 14 in the afternoon and during dinner they had the opportunity to informal exchanges of opinions on SPIL. On Thursday September 15 the convenors introduced the topic of the workshop and stressed the necessity of an inter-disciplinary exchange of ideas for future actions. After the convenors' introduction, Drs. Katarzyna Zawalinska, Emmanuelle Wollman and Dilek Barlas presented the ESF, its activities and future directions supporting the advancement of multi-disciplinary research at the European level. To enhance the scientific interaction among different expertises and scientific languages, participants offered the state-of-the-art in their field on a topic relevant to the workshop, addressing open questions and providing ideas for inter-disciplinary cooperation. At the end of the first day, participants attended a rehearsal of students participating in the performing group "Argonauti" of the University of Rome "Foro Italico" and the "Altavoce" chorus.

During the following days, presentations were integrated with informal and extensive discussion sessions, which allowed to envision possible new collaborative projects. The participants fully recognized the interdisciplinary mission of SPIL and the need to deepen the knowledge of the determinants of cultural trends, opportunities and barriers for sport participation in Europe. As a result of the discussion sessions, the participants decided to apply for collaborative projects related to the workshop as follow-up activities. Operationally, it was agreed to establish an innovative education framework to develop effective synergies and forms of interplay between researchers, practitioners, decision-makers, and entrepreneurs by preparing a preproposal for a COST Action on SPIL, which was submitted on September 28, 2011.

## **2. Scientific content**

The first day opened with a welcome by Convenor **Prof. Laura Capranica** followed by the presentations of the ESF rapporteurs **Prof. Dilek Barlas**, **Emmanuelle Wollman**, and **Katarzyna Zawalinska**, who illustrated the aims, activities, and opportunities of the ESF Standing Committees for the Humanities, for the European Medical Research Councils, and for Social Sciences, respectively. Then, individual contributors offered presentations to help to focus the discussion in each session. These contributions are available at <http://ewspil.wordpress.com> and abstracts are presented in the Appendices to this report.

The Morning Session was related to *Sport Practice in Europe*. **Prof. Prof. Nicola Porro** (University of Cassino, Cassino, Italy) addressed the definition of sport and differences/similarities between competitive sport and sport for all. In particular, he provided a comprehensive picture of voluntarism and voluntary action in sport across

European countries. "Sports for all" has been described as an umbrella formula but a controversial issue emerged with three main organizational bodies (1) grassroots movements; (2) sport for citizenship associations (3) sport for everybody.

**Prof. Antonio Mussino** (University La Sapienza, Rome, Italy) presented possible advances in measuring sport participation in Europe, reporting the findings of the European COMPASS Project. In particular, he presented new models for sport participation inside and outside sport organizations and the post-modern pyramid of sport structures. The need for harmonization of indicators, sport-friendly environments, and knowledge of trends over time and effectiveness of specific strategies emerged. Then, differences between practical significance, statistical significance, and clinical significance were highlighted to ensure sound information on participation in sport and comparison between countries.

Ethical issues in performance enhance research were addressed by **Prof. Greg Atkinson** (Liverpool John Moores University). He presented the ethical principles and guidelines for the protection of human subjects according to the Belmont Report, and the ethical standards in Sport and Exercise Science Research and to the International Journal of Sports Medicine. Thus, the major flaws of sport research designs were presented, highlighting the necessity to learn from designs used in clinical research to determine a minimal worthwhile change (effect) in sports.

The Afternoon Sessions concerned the *Open Question in Paediatric and Geriatric Exercise Research*. **Prof. Joao Barreiros** (Technical University of Lisbon, Lisbon, Portugal) provided a historic introduction of motor learning and control (feedback, practice, self-organization, cognitive loading, error and variability). He argued that motor development has to be envisioned as different from the result of a given sequence or of biology and environment.

Addressing the issue of growth, maturation and talent, **Prof. Manuel Silva** (University of Coimbra, Coimbra, Portugal) illustrated the problems arising from the traditional analysis of maturation, which does not correspond to performance and talent. Thus, the need of a new approach to data collection and interpretation has been deemed necessary.

**Prof. Caterina Pesce** (university of Rome Foro Italico, Rome, Italy) pointed out individual differences in cognitive efficiency due to chronic sports participation. The need of research approaches moving from dose-response to quality-response was considered crucial. Mainly based on cross-sectional studies, the need of good intervention studies across Europe has been emphasized.

Prof. **Mindy Millard Stafford** (Georgia Institute of Technology, Atlanta, USA) provided an overview of the American prospective of sport participation in the lifespan. In considering that 17% of children in the US are obese, nutrition seems to be more relevant as intervention than physical activity. She reported that the American College of Sports Medicine (ACSM) is currently involved in defining new indications for researchers and practitioners on the effects of exercise on public health, in line with its tradition in publishing evidence based guidelines on exercise as medicine.

**Prof. Elsa Heyman** (Université de Lille, Ronchin, France) and Prof. Giuseppe De Vito (University College Dublin, Dublin, Ireland) addressed the effects of exercise on special populations (i.e., diabetic patients and older individuals affected by sarcopenia, respectively). In particular, Prof. Heyman highlighted barriers for physical activity in diabetic patients, who present low fitness levels and a high risk for hypoglycemia. In considering the growing occurrence of diabetic patients in western countries and the potential benefits of exercise programmes for this population, she encouraged new research approaches and intervention strategies.

**Prof. De Vito** illustrated the EU consensus on definition and diagnosis of sarcopenia. Presenting a multi-factorial aetiology, the need for development of practical and clinical definition of diagnostic criteria for age-related sarcopenia in relation to the beneficial effects of physical activity emerged.

**Prof. Romain Meeusen** (Vrije Universiteit of Brussel, Brussels, Belgium) illustrated the age-related development and decline of cognitive functions in relation to the effects of exercise. The potential benefits of acute and chronic physical activity on cognitive functions were highlighted in relation to new trends in exercise and brain research. Furthermore, problems in exercising in polluted environments were presented.

The second day included two Morning Sessions, concerning *Sport Performance and Movement Analysis in the Lifespan*, respectively. **Prof. Laura Capranica** (University of Rome Foro Italico, Rome, Italy) illustrated the different meanings of competition in the lifespan in relation to individual, regional, national and international expectations. Presenting positive and negative aspects related to competitive settings in the lifespan, she emphasized the need of a multi-dimensional approach to the study of competitive sport and gender-related research.

Starting from barriers and motivation to sport participation in adults and older individuals, **Prof. Maria Francesca Piacentini** (University of Rome Foro Italico, Rome, Italy) presented research on master athletes, considered as a benchmark for successful ageing.

Although an increasing participation in competitive sports has been reported, the difficulty of adult and older athletes to combine daily life (i.e., family and working) and training has been underlined. Furthermore, she advocated the need of specific guidelines for training in advancing years, especially considering the limited technical and social support provided to senior athletes.

**Prof. Yvonne Harahousou** (University of Thrace, Komotini, Greece) illustrated the psycho-social influences of sport competition in older years. Competitive sports participation of older adults has been presented in relation to the lifespan developmental theory of selective optimization with compensation. In considering that involvement in senior sport contributes to reduce feelings of isolation and provides a full engagement in life, the need of social support and public strategies has been highlighted.

Regarding movement analysis in the lifespan, **Prof. Jan Cabri** (Norwegian School of Sport Sciences, Oslo, Norway) illustrated the biomechanical principles, modeling, simulation and measurement applied to human performance, and to the pathogenesis and recovery of injuries. The contribution of biomechanical studies to the quantitative and qualitative aspects of exercises in sport and rehabilitation contexts has been presented. He also addressed open questions related performance improvement, injury prevention in different context (home, work, exercise, sport) and physical conditions (health, sub-clinical, and clinical).

**Prof. Gisela Sjøgaard** (University of Southern Denmark, Odense, Denmark) focused on problems related to sport participation in the working population, which is becoming increasingly sedentary. Considering the work site a perfect area to promote exercise and sport, the need of specific programs and facilities to be introduced in a social context has been underlined. Furthermore, cross-national studies with interdisciplinary approaches on optimal training programs and motivational strategies have been foreseen.

In considering that physical activity patterns tend to change with advancing years, **Prof. Janne Avela** (University of Jyväskylä, Jyväskylä, Finland) presented the difficulties to identify changes in motor control and muscular function solely attributable to the aging process. He emphasized the importance to maintain an active lifestyle throughout the lifespan (including also strenuous, strong and fast muscular contractions) to increase balance control and regain balance after a dynamic standing perturbation.

The presentations provided a sound ground to stimulate enthusiastic debate for group discussions on new multidisciplinary research approaches in Europe. Participants showed an outstanding ability to interact and to generate new research ideas. Being involved

in different research fields strongly linked to the formation of PhD students, they agreed on the mission to promote interdisciplinary and international collaborative research, and to transfer new knowledge into society.

### **3. Assessment of the results, contribution to the future direction of the field, outcome**

Key researchers from across Europe with a common interest in promoting sport participation contributed to the success of this multi-disciplinary workshop. During the discussions a high level of cooperation allowed to move easily from the presented research topics to future research actions. To accomplish identified open questions, sources of funding were discussed with the help of ESF representatives. Continued networking within ESF has been considered crucial. Thus, brainstorming sessions highlighted key areas of future cooperation and it was decided that the following action to pursue would be the preparation of a COST preproposal. Thus, an outline of the COST preproposal was envisioned during the final session of the workshop and further work has been carried out during the next two weeks by email. To advance scientific knowledge on the understanding of the most effective strategies for sport participation and prevention of sport dropouts, SPIL preproposal was focused on the promotion of educational and discussion platforms by organizing working groups, research exchanges, training programs, and conferences on themes of public interest in education, health, and sport. Scientific community, policy makers, educational personnel, industrial developers, and practitioners in the field of sport will be the target populations to provide a sound background for recommendations, best practices, and strategies for the enhancement of sport participation in relation to different populations, ages and genders.

## 4. Final programme

### Wednesday 14 September 2011

Afternoon *Arrival*  
20.30 *Welcome dinner, informal at **Restaurant Cuccuruccù***

### Thursday 15 September 2011

09.30-09.50 **Welcome by Convenor**  
**Prof. Laura Capranica** (University of Rome Foro Italico, Rome, Italy)

09.50-10.20 **Presentation of the European Science Foundation (ESF)**  
**Dr. Emmanuelle Wollman** (ESF Standing Committee for the European Medical Research Councils - EMRC)  
**Prof. Dilek Barlas** (ESF Standing Committee for the Humanities - SCH)  
**Dr. Katarzyna Zawalinska** (ESF Standing Committee for Social Sciences -SCSS)

10.20-10.50 *Coffee / Tea Break*

**10.50-13.30 Morning Session: Sport Practice in Europe**

10.50-11.15 **Definition of Sport: Differences and Similarities Between Competitive Sport and Sport for All**  
**Prof. Nicola Porro** (University of Cassino, Cassino, Italy)

11.15-11.40 **Possible Advances in Measuring Participation in Sports: Is COMPASS Project Still Effective?**  
**Prof. Antonio Mussino** (University La Sapienza, Rome, Italy)

11.40-12.05 **Ethical Issues Are Inherent in Research Design and Data Analysis in Performance Enhancement Research**  
**Prof. Greg Atkinson** (John Moore University, Liverpool, United Kingdom)

12.05-12.30 **Discussion**

12.30-14.30 *Lunch*

**14.30-15.45 Afternoon Session: Open Question in Paediatric Exercise Research**

14.30-14.55 **Motor Learning and Motor Development: A Special Emphasis in Children's Motor Behavior**  
**Prof. Joao Barreiros** (Technical University of Lisbon, Lisbon, Portugal)

14.55-15.20 **Growth, Maturation and Talent**  
**Prof. Manuel Silva** (University of Coimbra, Coimbra, Portugal)

15.20-15.45 **Toward Equality-Response Relationship in Exercise Cognition Research Across the Lifespan**  
**Prof. Caterina Pesce** (University of Rome Foro Italico, Rome, Italy)

15.45-16.15 *Coffee / tea break*

**16.15-19.00 Afternoon Session: Open Question in Geriatric Exercise Research**

16.15-16.40 **The American Perspective of Sport Participation in the Lifespan**  
**Prof. Mindy Millard Stafford** (Georgia Institute of Technology, Atlanta, USA)

16.40-17.05 **Metabolic and Hormonal Adaptation and Dysfunction in Active Diabetic Patients: From Childhood to Adulthood**  
**Prof. Elsa Heyman** (Université de Lille, Ronchin, France)

17.05-17.30 **Sarcopenia its Assessment and How it's Correlates with Functional Performance in the Older Individuals**  
**Prof. Giuseppe De Vito** (University College Dublin, Dublin, Ireland)



- 17.30-17.55      **Exercise and the Brain in the Lifespan**  
**Prof. Romain Meeusen** (Vrije Universiteit of Brussel, Brussels, Belgium)
- 17.55-19.00      **Discussion**
- 20.00              *Dinner*

## Friday 16 September 2011

- 09.00-10.15      Morning Session: Sport Performance in the Lifespan**
- 09.00-09.25      **Sport Competitions in the Lifespan**  
**Prof. Laura Capranica** (University of Rome Foro Italico, Rome, Italy)
- 09.25-09.50      **Master Athletes: A Benchmark for Successful Ageing**  
**Prof. Maria Francesca Piacentini** (University of Rome Foro Italico, Rome, Italy)
- 09.50-10.15      **Sport Competition in Later Life and its Psycho-social Influences on Aging Well.**  
**Prof. Yvonne Harahousou** (University of Thrace, Thrace, Greece)
- 10.15-10.45      *Coffee / Tea Break*
- 10.45-12.40      Morning Session: Movement Analysis in the Lifespan**
- 10.45-11.15      **The Role of Biomechanics in Daily Sport Activities**  
**Prof. Jan Cabri** (Norwegian School of Sport Sciences, Oslo, Norway)
- 11.15-11.40      **Exercise Training in Worklife for Health**  
**Prof. Gisela Sjogaard** (University of Southern Denmark, Odense, Denmark)
- 11.40-12.05      **The Role of Muscular Function in the Lifespan Activities**  
**Prof. Janne Avela** (University of Jyvaskyla, Jyvaskyla, Finland)
- 12.05-12.40      **Discussion**
- 12.40-14.30      *Lunch*
- 14.30-16.30      Afternoon Session: New Multidisciplinary Approaches from Youth to Adulth Sport Research: Form Field to Laboratory Studies**
- Group discussion*
- MODERATOR:*  
**Prof. Joao Barreiros** (Technical University of Lisbon, Lisbon, Portugal)  
**Prof. Laura Capranica** (University of Rome Foro Italico, Rome, Italy)
- 16.30-17.00      *Coffee / Tea Break*
- 17.00-19.00      Afternoon Session: New Multidisciplinary Approaches from Adult to Senior Sport Research: Form Field to Laboratory Studies**
- Group discussion*
- MODERATOR:*  
**Prof. Romain Meeusen** (Vrije Universiteit of Brussel, Brussels, Belgium)  
**Prof. Jan Cabri** (Norwegian School of Sport Sciences, Oslo, Norway)
- 20.00              *Dinner*

## Saturday 17 September 2011

- 09.00-11.00      Morning Session: Future collaborative activities**
- 11.00-11.30      *Coffee / Tea Break*
- 11.30-12.30      Morning Session: Future actions and terms**
- 12.40-14.30      *Farewell Lunch*
- 14.30              *Departure*

## 5. Final list of participants

### Convenor:

1. **Laura CAPRANICA** Department of Human Movement and Sport Science, University of Rome "Foro Italico", Roma, Italy

### Co-Convenors:

2. **Jan CABRI** Department of Physical Performance, Norwegian School of Sport Sciences, Oslo Norway
3. **Romain MEEUSEN** Department of Human Physiology and Sports Medicine, Faculty of Physical Education and Physical Therapy, Vrije Universiteit of Brussel, Belgium

### ESF Representatives:

4. **Dilek BARLAS** University of Koç, Rumelifeneri Yolu, Istanbul, Turkey
5. **Emmanuelle WOLLMAN** Département Sciences de la Vie, Centre National de la Recherche Scientifique (CNRS) Paris, France
6. **Katarzyna ZAWALINSKA** European Integration Department, Institute of Rural and Agricultural Development, Polish Academy of Sciences, Warsaw, Poland

### Participants:

7. **Greg ATKINSON** School of Sport and Exercise Sciences, Liverpool John Moores University, Liverpool, United Kingdom
8. **Janne AVELA**  
Department of Biology of Physical Activity, University of Jyväskylä, Neuromuscular Research Center, Jyväskylä, Finland
9. **Joao BARREIROS** Department of Movement Sciences, Faculty of Human Kinetics, Technical University of Lisbon, Portugal
10. **Giuseppe DE VITO** Institute for Sport and Health, University College Dublin, Dublin, Ireland
11. **Yvonne HARAHOUSOU** Department of Physical Education & Sport Sciences, Democritus University of Thrace, University Campus, Komotini, Greece
12. **Elsa HEYMAN** Faculté des Sciences du Sport et de l'Education Physique, University de Lille, Ronchin, France
13. **Mindy MILLARD-STAFFORD** Exercise Physiology Laboratory, School of Applied Physiology, Georgia Institute of Technology, Atlanta, GA, United States
14. **Antonio MUSSINO** Department of Applied Statistics, Faculty of Statistics, University of Rome La Sapienza, Rome, Italy
15. **Caterina PESCE**  
Department of Human Movement and Sports Science, University of Rome Foro Italico, Rome Italy
16. **Maria Francesca PIACENTINI** Department of Human Movement and Sports Science, Università degli Studi di Roma Foro Italico, Rome, Italy
17. **Nicola PORRO** Faculty of Sport Sciences, University of Cassino, Cassino Italy

18. **Manuel SILVA** Faculty of Sport Sciences and Physical Education, University of Coimbra, Coimbra, Portugal

19. **Gisela SJOGAARD** Institute of Sport Sciences and Clinical Biomechanics, Faculty of Health Sciences, Odense, Denmark

## **6. Statistical information on participants**

### Age bracket:

Participants were aged from 32 to 67, with an average age of 52 years and a standard deviation of 9 years.

### Countries of origin:

Italy (5) – 31%

Portugal (2) – 14%

Belgium (1) – 6%

Denmark (1) – 6%

Finland (1) – 6%

France (1) – 6%

Greece (1) – 6%

Ireland (1) – 6%

Norway (1) – 6%

United Kingdom (1) – 6%

United States of America (1) – 6%

### Gender:

Over a total of 16 participants, 7 (44%) were female and 9 (56%) were male

### Scientific specialty:

Sport Sciences (6) – 37%

Exercise Physiology (4) – 25%

Biomechanics (2) – 13%

Statistics (2) – 13%

Sport Psychology (1) – 6%

Sport Sociology (1) – 6%