

Development of sports medicine in the International Olympic Committee

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When the senior author (LE) started as Head of Scientific Activities of the Medical and Scientific Department in the International Olympic Committee (IOC) in October 2007, the Mission statement of this new IOC development was to:

- ▶ Develop the IOC's medical and scientific activities to position the IOC as the primary reference in sports medicine and sports science.
- ▶ Increase the positioning of the IOC on the protection of athletes' health by developing research and education in sports medicine.
- ▶ Act as the interface between the scientific community on the one hand (universities, research institutes,

scientific societies) and the sporting community on the other hand (National Olympic Committees (NOCs), International Federations (IFs)).

17 years later, many projects have been accomplished as part of this mission. This commentary summarises the various programmes and initiatives implemented by the IOC Medical and Scientific Department over nearly two decades.

RESEARCH: THE MAIN SOURCE OF KNOWLEDGE Surveillance

Understanding injury epidemiology is a prerequisite and the basis for injury prevention.¹ Thus, we introduced the first full-fledged injury surveillance in the Beijing 2008 Summer Olympics.² This study was the first to collect all athlete injury data, not only from the Organising Committee's polyclinic and medical stations but also directly from the NOCs' medical staff, to

present a complete picture of the epidemiology of injuries occurring at the Olympics. Two years later, in the Vancouver 2010 Winter Olympics, we broadened its scope to also include all athlete illnesses³ and since then the surveillance studies have been an inherent part of both the Olympic Games⁴⁻⁹ and the Youth Olympic Games.¹⁰⁻¹³ The two latest papers from Tokyo 2020⁸ and Beijing 2022⁹ shed light on how COVID-19 and accompanying countermeasures impacted the athletes' injuries and illnesses. Fundamentally, we consider this research to be the underpinning of much of our work and expect it to directly inform subsequent prevention initiatives. The most recent development expands the scope to give more attention to and better elucidate athlete mental health problems.¹⁴

IOC and IFs

In addition to research at Games time, we collaborate with the IFs to address specific athlete safety issues in their sports. As one of many examples, this is highlighted by our research on the safety of boxers following the decision of the IF in 2013 to remove head guards for male boxers,¹⁵⁻¹⁷ and, more recently, our ongoing research aiming to reduce injury rates in ski and snowboard big air, slopestyle and cross through optimising design and engineering of the jumps and courses.¹⁸⁻²¹

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Since 2016, the IOC has funded 45 research projects with more than US\$3 million from the IOC Medical and Scientific Research Fund for the Protection of Athletes' Health through Prevention of Injury and Illness in Sport.²² This fund was created to help researchers conduct studies in injury and illness prevention, as well as to support research topics aligning with the IOC medical and scientific priorities, such as safeguarding, mental health, concussion and transgender athletes.

IOC Olympian Health Cohort

One such project is the IOC Olympian Health Cohort, which is a long-term cohort study aiming to improve knowledge about athlete health across an athlete's life cycle and after they retire from elite sport.²³ The study started recruitment in Tokyo 2020 and will continue recruiting and running for 15–20 years to provide valuable insights into long-term athlete health.

IOC Research Centres

Finally, one of our main research initiatives is the IOC Research Centres for Prevention of Injury and Protection of Athlete Health, which we established in 2009.²⁴ These centres are recognised for their research, educational and clinical expertise in sports medicine and are selected by independent reviewers and awarded an annual grant for a period of 4 years. With the research centres, the IOC promotes injury and disease prevention and the improvement of the physical and mental health of the athlete through:

- ▶ Long-term research programmes on injury and disease prevention.
- ▶ Collaboration between individuals, institutions and organisations to improve athlete health.
- ▶ Implementing applied, ongoing and novel research and development within the framework and long-term priorities of the IOC Medical and Scientific Commission.
- ▶ Knowledge translation mechanisms to share and convert research results into concrete actions to protect the health of the athletes.
- ▶ Safeguarding in sports through research and clinical surveillance.

These 11 IOC research centres widely publish on prevention across all sports from the elite level to the grassroots and are leading the way in translating new scientific knowledge into injury and illness prevention practice.

EDUCATION AND TRANSLATION OF KNOWLEDGE

IOC Medical and Scientific Commission publications

In addition to the research and science, education has been a key priority. The IOC Medical and Scientific Commission publication series (consisting of encyclopaedia, handbooks and manuals) has been running since 1988 when the first Encyclopaedia of Sports Medicine was published.²⁵ We are currently transitioning these series to an electronic platform to be launched in 2025, but all the books published to date are freely available on our website, offering a wealth of information and knowledge about sports medicine and science.²⁶

British Journal of Sports Medicine Injury Prevention and Health Protection

In 2009, we increased the reach of our education when we entered a partnership with the British Journal of Sports Medicine (BJSM), introducing the Injury Prevention and Health Protection (IPHP) issues,²⁷ aiming to collect and disseminate the latest research and practical knowledge on athletes' health protection to NOCs, IFs, athlete entourages and all stakeholders caring for athletes around the world. We publish four BJSM IPHP issues per year as an important channel with worldwide reach, with 60 issues released since the start.

IOC World Conference on Prevention of Injury & Illness in Sport

Some of you will recently have attended the IOC World Conference on Prevention of Injury & Illness in Sport, which was held in Monaco this spring. This was the seventh edition of the conference, and the fifth since the IOC took over the leadership in 2011. Through a combination of keynote lectures, symposia, workshops, head-to-head debates and abstract sessions, a diverse faculty and group of participants from around the world met to share and discuss the latest science to inform healthcare providers and sport scientists and to foster new collaborations. We will follow up this success with the next IOC World Conference in 2027.

Courses

The annual Advanced Team Physician Course addresses current issues in sports medicine through real-life cases, with participants and faculty members discussing and interacting around

clinical conundrums facing team physicians working with elite athletes. The IOC course on the Cardiovascular Evaluation of Olympic Athletes is also running annually, and in 2024, we will advance this further with an additional course dedicated to athlete respiratory health.²⁸ To increase our education reach, we have continuously developed our online distance-learning offerings through expansion of the IOC Diploma and Certificate programmes which comprises courses on Sports Nutrition, Sports Medicine, Sports Physical Therapies, Mental Health in Elite Sport and Drugs in Sport.²⁶ Most recently, two new courses on Safeguarding Essentials for Young Athletes and Athlete Allies have been launched under the leadership of the IOC Safe Sport unit established in the IOC Medical and Scientific Department.²⁹ Altogether, over 2300 people from around the world have graduated from these programmes since they started.

IOC Consensus Meetings

Following feedback and new information about the reach and impact of IOC consensus statements, we aim to continuously develop and improve the IOC consensus meetings^{30 31} and are holding one or two meetings annually. Since the first consensus meeting in 2002, we are proud of the 45 consensus statements to date. The goal of these statements is to address current issues in sports science and sports medicine and provide direction and recommendations for evidence-informed practice, sport regulations and rules, and new research. Experts from around the world work for 1–2 years on literature reviews, synthesising the evidence and preparing the statement which culminates in a 3-day consensus meeting. Our recently published consensus statements include relative energy deficiency in sport,³² concussion in sport,³³ heat³⁴ and acute respiratory illness,^{35 36} and in the current issue, we feature the latest statement on the health, safety and sustainability of elite youth athletes competing at the Olympic Games³⁷ This will be followed later this year by a consensus on safeguarding of athletes, and further in the pipeline are meetings on injury prevention in female athletes (2024) and exercise during pregnancy and postpartum (2025; an update of our 2016–2018 statements on the same topic), both essential to our ongoing focus on female athlete health.

THE INDISPENSABLE KEY TO ATHLETE HEALTH: THE COMMUNITY

Through all these initiatives, the IOC aims to demonstrate leadership in the field of sports medicine and sports science to allow elite and recreational athletes to safely participate in sport. However, it is you, the healthcare providers and researchers in the community who are the fundamental driving force behind all of these outcomes—from the NOC medical staff reporting athlete health problems throughout the Olympic Games to the faculty and participants of our meetings and conferences; the editors and authors of the books, journals, research papers and grant applications; the researchers in academia and the practitioners on the ground working with athletes of all levels to implement the latest knowledge to prevent and treat injury.

Sharing in the success of these initiatives, we are grateful to all of you who selflessly devote time to support the athletes and protect their health. We look forward to our continued work together to develop new initiatives promoting the health and safety of athletes in the future.

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