

MEDICA MEDICINE + SPORTS CONFERENCE 2024: Longevity & Digital Diagnostics in Focus



150 years and beyond – what are the limits of human life expectancy?

The pursuit of immortality has always gripped the human imagination, fascinating us with ever-new possibilities for prolonging life. The 12th MEDICA MEDICINE + SPORTS CONFERENCE promises to be exciting in this respect. As a well-established part of MEDICA, the world's leading trade fair for medical technology and the healthcare business in Düsseldorf, this international sports medicine conference will contribute to the discussion and address the current state of research regarding the topic of longevity.

During the two-day conference on 13 and 14 November (dates for MEDICA 2024: 11–14 November), internationally renowned experts from the fields of sports medicine, sports science, physiotherapy as well as technical specialists will come together for an interdisciplinary dialogue concerning innovative approaches in prevention, performance medicine, regeneration and rehabilitation for both elite and health-promoting sports.

How biological age can be influenced

“It’s an algorithm that takes better care of me than I can myself”: this is how US “longevity guru”, entrepreneur and investor Bryan Johnson describes his rigorous programme to boost his own longevity, which also includes around a hundred different nutritional supplements. “Don’t die” seems to be Johnson’s motto. He himself won’t be in Düsseldorf, but the questions that his project raises will be:

How can we truly extend our lifespans – and what kind of things aren’t really helpful in this regard? What kind of diagnostics are worthwhile and what kind aren’t? The [MEDICA MEDICINE + SPORTS CONFERENCE](#) answers these questions.



Photo: Guided Innovation Tour through the exhibition halls for conference participants (© Constanze Tillmann).

The science of ageing: The most important factors affecting biological age and the role of digital diagnostics (fact and fiction)” is the title of a talk held by Dr Lutz Graumann, doctor of sports medicine, chiropractic and nutritional medicine and author of fitness books. This lecture will kick off the first day of the 12th MEDICA MEDICINE + SPORTS CONFERENCE. For Graumann, it seems obvious that lifestyle measures affect biological age. In his opening lecture, he explores how biological age can be measured in a multidimensional way and what is particularly constructive in this regard.

Sleeping well is a key factor

The effect of sleep on health is quite well documented. University lecturer Dr Alen Jugovic from the Harvard Medical School’s Department of Neurobiology will expound on this topic. For instance, sleep quality affects cognitive function, immune response and the prevention of chronic illness. Jugovic’s study on the negative influence of inadequate sleep on professional football players at Real Madrid attracted a lot of attention in this context.

The issue of which training to recommend will also be put to the test at the MEDICA MEDICINE + SPORTS CONFERENCE, of course. Epigenetics, the – mostly natural – changes to the DNA in the body’s cells and the associated long-term switching on and off of genes could provide an explanation for the long-term effects of physical activity. Professor Wilhelm Bloch of the Institute of Cardiology and Sports Medicine of the German Sport University Cologne deals with this topic. His conference presentation on Wednesday during MEDICA will go into the special role of epigenetics with regard to longevity.

Sport as an anti-inflammatory

Inflammation also plays a role in the ageing process. What can we do to reduce inflammation in the body? Dr Moritz Völker-Albert of MOLEQLAR analytics will tackle this topic in his lecture on epiproteomic analyses for customised training management in competitive and grassroots sport. Here, nutritional supplements come into play once again.

In any case, organs such as the liver and heart as well as tissue – for example adipose tissue – produce exerkines during physical activity, which could explain the anti-inflammatory effect of exercise. However, many questions regarding the signal pathways and forms of movement, intensity and duration of physical activity, for example, still remain unanswered. Dr Wouter Vints, a specialist in rehabilitation medicine at Maastricht University, will present the current state of knowledge in his lecture in the afternoon on 13 November (starting at 3 p.m.). In a session on the following morning (14 November), internationally renowned sport medicine specialist Dr Christian Schneider and Professor Oliver Werz, Department Head of the Chair of Pharmaceutical/Medicinal Chemistry at Friedrich Schiller University Jena, will demonstrate the new understanding of the connection between inflammation and peak performance.

And what are the benefits of training the brain? Professor Claudia Voelcker-Rehage of the University of Münster will address this topic on the first day of the conference (13 November) and touch upon the concept of neuroplasticity. In addition, Professor Thorben Hülsdünker of LUNEX in Luxembourg will also cover the principles of brain training from the perspective of sports and neuroscience. In short, the 12th MEDICA MEDICINE + SPORTS CONFERENCE will provide extensive insight into the state of knowledge on the subject of longevity and what factors constitute major or minor influences on lifespan for each of us.

The future of competitive sport with high-tech and expertise

Of course, the event in Düsseldorf will also feature “classic” issues of sports medicine, such as how to achieve outstanding athletic performance while preventing injuries as far as possible. The Californian “P3” project is considered visionary for its performance measurement. Eric Leidersdorf is its Director of Biomechanics and heads assessment and research initiatives that use force plates and 3D motion capture technology in order to develop individualised training programmes. “Peak Performance Project – Optimising performance based on experience working with more than 800 NBA players” is the title of his talk, which he will hold at the conference session on Thursday morning, 14 November. After Dr Christian Schneider and Professor Oliver Werz have discussed the importance of inflammation in peak performance, Professor Patrick Wahl of the German Sport University Cologne will explain how metabolic and neuromuscular profiling can be used to individually customise training for swimmers.

Professor Sascha Schmidt will be taking a look at the future of competitive sport on the same conference day at noon (starting at 12 noon). Will avatars compete against each other instead of humans at some point in future? Even if this is unlikely to happen any time soon, the influence of technology on various sports and their rules is expected to grow significantly. This can be illustrated using the example of development in football, as reported by experts in a survey conducted by Schmidt.

Training with your digital twin

High performance and prevention (using technical innovations) will also touch upon in the following session on Thursday, 14 November starting at 2 p.m., which will focus on big data and the use of artificial intelligence. As part of a study, Professor Yael Nets of the Academic College Wingate in Israel used smartphone monitoring of training to individually customise exercises for older people and improve their motor skills in everyday life. With sufficient data, digital twins can also be created to optimise training. Here, Professor Patrick Wahl of the German Sport University Cologne will outline the current state of affairs in his conference presentation entitled “On the road to decision support and digital twins – diagnostics, monitoring and training in the age of artificial intelligence”.

In addition, data from devices used close to the body, known as wearables, can be used to optimise performance not only during training, but also in competitions. Professor Moritz Schumann, a specialist for sports medicine and exercise therapy at the Chemnitz University of Technology, will discuss the “transparent patient” and the “development of an ecosystem for real-time monitoring of remote training sessions with wearable devices”. Professor Bettina Wollesen of the University of Hamburg, Vice President of the German Association of Sports Science, will address prevention with adaptable and age-appropriate exoskeletons. These could help people to continue exercising even at an advanced age. The following session will showcase further innovations that are likely to cause a stir in the coming years.

Get active in the MEDICA SPORTS HUB

Professional visitors at MEDICA 2024 can also get active themselves at the MEDICA SPORTS HUB in Hall 4 and try out innovations from the areas of Health & Fitness Monitoring, Training, Regeneration and the Pro Sports Corner on site. Everyone will have the opportunity to test new training methods on site, have their body fat and muscle mass determined on a scale or regenerate in an oxygen chamber. Access to the MEDICA SPORTS HUB's activity area is available on all days of MEDICA, and there will be a programme of keynote speeches and panel discussions on stage every hour on the hour between 11 a.m. and 4 p.m.



Photo: Learning, training and networking - all this is possible at the MEDICA SPORTS HUB in Hall 4 (© Constanze Tillmann/ Messe Düsseldorf).

Direct link to information about the MEDICA SPORTS HUB: <https://www.medica-tradefair.com/msh2>.

You can find all the information of the programme and on participating in the MEDICA MEDICINE + SPORTS CONFERENCE, which has been accredited as a continuous training event by the Medical Association for 11 years, online here: <https://www.medica-tradefair.com/mmsc2>.

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