



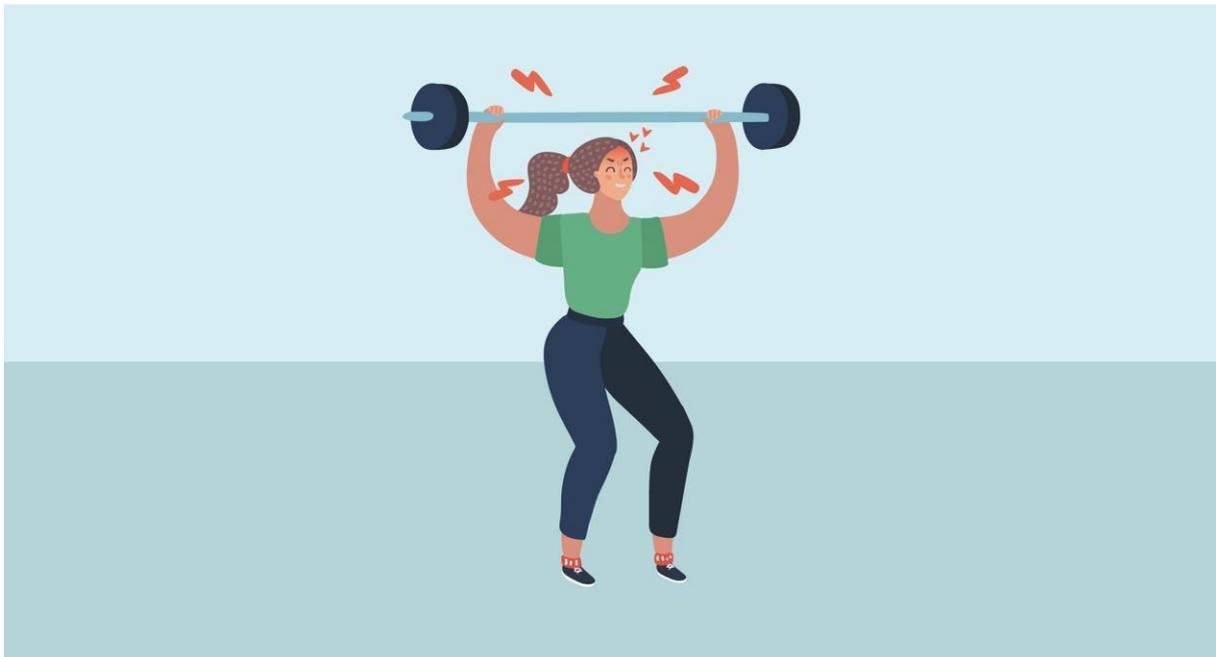
Inserm

La science pour la santé
From science to health

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Press information

Inserm: sport and health, a winning combination



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If there is one area with overwhelming scientific evidence for its health benefits, it is physical activity. Over the last few years, Inserm has become a world leader in the field of sport and health research. Here we provide an overview of recent work at the Institute to mark the [Sport Unlimitech festival](#) for sport and innovation, which is being held in Lyon from September 19-21, 2019, in partnership with Inserm.

Physical activity in the treatment of chronic disease

The crucial role played by physical activity in the care pathway and treatment of chronic disease was confirmed this year by an Inserm collective expert review that analyzed over 1800 scientific articles. This showed that appropriate physical activity is beneficial regardless of a person's disease, age, or health status. The expert review looked at the conditions for obtaining therapeutic benefit, and highlighted the importance of tailoring physical activity to suit the medical needs, abilities, and limitations of each individual.

Find out more about this [expert review and its recommendations](#)

Performance: is it all in the head?

From the study of emotions, to focus and movement, neuroscience is set to revolutionize sport. How can it improve sports performance? How can the muscles of the brain be built up to overcome its limitations and increase its power ever further? Neuroscientists are looking into the exact conditions most conducive to optimal concentration in elite sport. Inserm researcher Jean-Philippe Lachaux's work in this area uses results produced in the laboratory alongside the experiences of international athletes, obtained through so-called "explicitation" interviews. These interviews allow for detailed analysis—sometimes over several hours—of an athlete's mental life at a very specific moment of performance (such as saving a penalty, or during a climb).

Innovation in injury prevention

Sports injuries are a constant concern for millions of people, whether they practice extreme sports or team sports. How can they be better diagnosed? How can technology help athletes to protect themselves from injury? Led by Thierry Pozzo, Inserm researchers are now using artificial intelligence (AI) to improve sports training and rehabilitation after injury. This research group is developing solutions that use AI tools and a number of advances in cognitive science to support motor learning and relearning after injury, and sensory and motor rehabilitation.

Technology doping: an inevitable future?

Will technology transform athletes into superpowered machines? Will enhanced humans break new boundaries in performance? Advances in robotics make it possible to envisage overcoming disabilities, or even improving some functions in able-bodied individuals. But far from the "cyborgs" of popular imagination, the devices that are currently available (such as prosthetics, exoskeletons, and wearable robots) are a long way from making technology doping a reality. At present, they are useful only in very specific situations. Instead, the key issue for research is to advance understanding of human-robot interaction in order to improve the performance of existing devices, or to invent new ones. At Inserm, Agnès Roby-Brami's research focuses on human motor skills and motor disability, and in particular on assistance and rehabilitation robotic devices for patients with brain or spinal damage.

[More information on this project](#)

Beyond the body

From extreme situations to disability and elite performance, scientific research is constantly analyzing the body, its limitations, and its adaptability. It studies athletes who are pushing back the biological limitations of their bodies by using increasingly cutting-edge innovations. How far can they go? These questions lie at the heart of the work led by Samuel Vergès, Inserm researcher and coordinator of the "Expédition 5300" project. In early 2019 his team spent six weeks in the world's highest settlement, situated in Peru at an altitude of 5,300 m, to study how its inhabitants have adapted physiologically to extreme living conditions, but also to analyze the specific altitude-related health problems they face.

More information on [this project](#)

Also check out [the Body & Sport exhibition](#) at the Cité des sciences et de l'industrie, which is being held until January 2020 in partnership with Inserm.

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