

Effective recovery in competitive sports

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RUB researchers have been analysing which recovery strategies are effective after sport. Credit: RUB, Damian Gorczany

In a joint project, Bochum-based researchers headed by Prof Dr Alexander Ferrauti and Prof Dr Michael Kellmann studied the best possible regeneration measures for athletes after strenuous training and competition phases. Using blood tests, questionnaires and performance

tests, they compared the effects different recovery measures have on top athletes and investigated if effective regeneration strategies for specific types of sport do exist. Their results are meant to help athletes and coaches choose different recovery measures in practice.

Athletes as test subjects

The research team visited top [athletes](#) in their training camps and Olympic centres. Participants included the German weightlifters and the men's national volleyball team. Using motoric tests such as jump tests, the researchers from Bochum documented the performance capacity of athletes shortly after an intensive training session and after the recovery phase. If an athlete recovers very well, he will jump more efficiently than immediately after training. Thus, the researchers were able to analyse if and in what way performance increases following different regeneration strategies. In addition to performance tests, the researchers conducted blood tests after training sessions and regeneration periods. One factor is increased levels of the muscle enzyme creatine kinase in the blood. This enzyme is an indicator of delayed onset muscle soreness. Delayed onset muscle soreness is caused by miniscule injuries in muscle cells. It takes several days for the enzyme levels to fall.

Rowing, massage or ice bath

Recovery strategies that were evaluated in the course of the project included active recovery, for example by sport specific cooling down activities or a light rowing exercise. Other measures such as massage, ice bath or simple relaxation were likewise analysed. Conclusion: A recovery strategy that can be universally recommended does not exist. "Regeneration is a highly individual process," says Kellmann. Each athlete should choose the measure that he or she prefers and that is best suited to their respective type of sport.

Applicable practical know-how

In the project "Management of Regeneration in Elite Sports – Regman", the researchers from Bochum collaborate with Prof Dr Mark Pfeiffer (University of Mainz) under the auspices of Prof Dr Tim Meyer (Saarland University). The project was proposed by organisations such as the German Olympic Sports Confederation and is funded by the German Bundesinstitut für Sportwissenschaft.

After project closure at the end of 2016, the Bochum-based scientists intend to continue researching into [regeneration](#) management. "We plan to set up a toolbox with measures for different types of sport," says Kellmann. Such a toolbox is supposed to help evaluate different strategies with regard to individual types of sport. It will thus enable athletes and coaches to choose specific measures best suited for their purpose.

Provided by Ruhr-Universitaet-Bochum

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