

COOL RECOVERY

"RAM 2014" winner with track record Axel Fehlau shows that cool recovery is the key to win.

Mobile Recovery Systems with Physiological Cooling Effect

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"I'll jump into an ice bucket and stay there for three days", a player commented an energy consuming football match of the German and Algerian National Teams during the 2014 FIFA World Cup. But not only football players require recovery. Most sports activities show higher competition frequencies and only professionals who perfectly regenerate will keep pace with the top.

Cold water is first choice

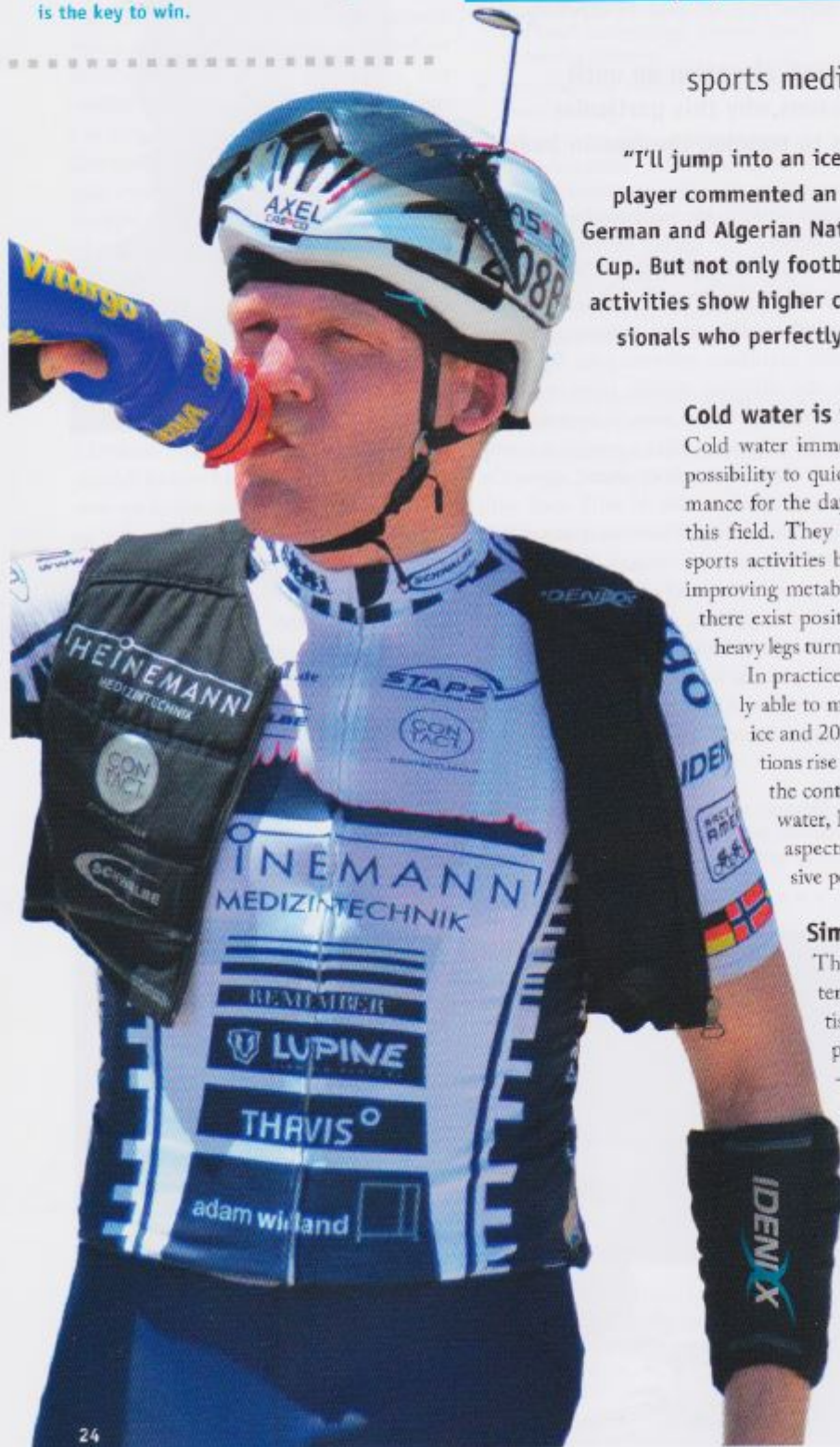
Cold water immersions such as the "ice bucket" represent one possibility to quickly recover the body back to maximum performance for the days after. Various studies have been published in this field. They confirm better recovery through cooling after sports activities because cooling is said to accelerate recovery by improving metabolism. Additionally, scientists also assume that there exist positive effects on micro injuries of the muscles and heavy legs turn "lighter". Thus muscular problems can be reduced. In practice, individual athletes and a lot of teams are hardly able to manage the logistics of this method. 20–50 kg of ice and 200 L of water are required per bucket. Many questions rise with regard to the right temperature, transport of the containers, suitable location, off-site transport of the water, hygienic questions and staffing shortages. These aspects turn the supposedly simple measure into a massive personal and financial effort on the long run.

Simple system required

Therefore, an easy-to-use and portable cooling system has been developed together with sports scientists, sport medicine specialists and physiotherapists. It provides an individual, easy, rapid and – most important – mobile way of effective and professional cooling in the "hot phase" directly after strenuous sports activities.

Optimized Recovery

The IdeniX[®] repower cooling suit covers heat sensitive areas as the upper body, the forearms, legs and the head thus providing "body cooling" in seconds. The unique characteristics of the material allow choosing a target temperature of



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10–20°C depending on the requirements. This is the temperature range which proved the most positive results during studies. To achieve a synergetic effect – published in studies – the product uses variable velcro® for compression.

Thus, the time and energy consuming process for immediate recovery required

by the athletes or players is kept as low as possible. Furthermore, comfort and convenience are increased what significantly improves acceptance of the method.

The first tests with boxers and professionals of winter sports gave positive results. At an Olympic training center a test was carried out with internationally successful female ice skaters. In the test, the performance of the skaters with cooling and without cooling was compared at a given level.

For cooling purposes, the cooling system for upper body, forearms, upper and lower legs was applied with a starting temperature of 10°C.

Proven cooling effect

Heart frequency and lactate values were determined. The phases of activity and rests were consistently altered on the bicycle ergometer. During the test, the exercise load had increased for the skaters because at the end already four stress phases (24 min.) had to be compensated by the athlete.

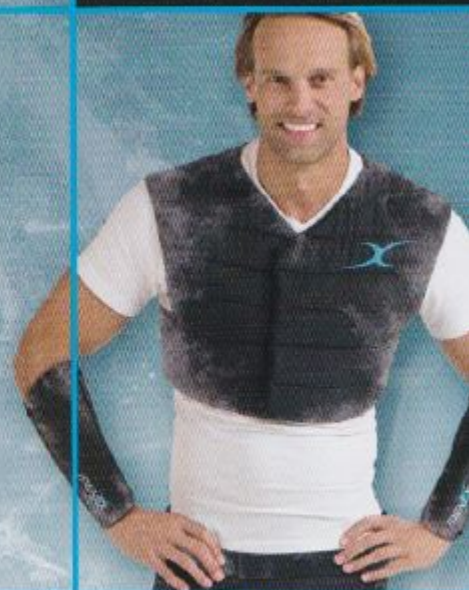
Previous tests had shown a continuously increasing heart rate of more than 200 and lactate values in a two-digit range at the end of the test. The application of cooling during the second phase of the test resulted in lower heart rates and lactate values on a level which is comparable to the beginning of the test.

Summary

Fast recovery is important all over the year at any season. Therefore, this cooling method is always recommended when the body requires professional recovery after strenuous sports exercise to be in best shape for the next challenge.

The cooling system can easily be used immediately after the sports activity or after showering in order to cool down and reduce sweating. Professionals wearing the cool down system are even able to perform TV interviews directly after championships as impressively demonstrated by Arjen Robben after a game of the 2014 World Cup.

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Tab.1: Performance Diagnostics

Lactate levels on initiate level after stress test by cooling upper body, legs and arms

Time	Lactate (mmol)	HF	Phase	Cooling
0 min	1.50	51	Rest period	No
6 min	3.00	157	Exercise	No
12 min	2.10	85	Rest period	No
18 min	2.60	167	Exercise	No
24 min	1.50	89	Rest period	Yes
30 min	2.60	162	Exercise	No
36 min	1.80	91	Rest period	No
42 min	2.40	165	Exercise	Yes
48 min	1.50	91	Rest period	yes