

Researchers study the adaptation of athletes to different climates

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Credit: Professor Aaron Coutts

The benefits of training in the heat are widely known in sports and exercise circles. Examples of positive physiological responses in heat training can translate to increased heat and pain tolerance, fluid retention

in the blood and a more efficient cardiovascular system.

With next year's Olympic Games held in tropical Rio De Janeiro, UTS human movement and sports scientists teamed up with the French National Institute of Sport, Expertise and Performance (INSEP) to study the adaptation of [athletes](#) to different climates, to assist French athletes prepare for the 2016 Summer Olympic Games.

According to Professor Aaron Coutts from the Faculty of Health, "the objective of this study was to learn the best ways to use the environment to help prepare for competition. This was important to INSEP, which has a long history in [training](#) elite athletes, and Olympic medallists."

In this study, Coutts and Associate Professor Rob Duffield collaborated with Professor Christophe Hausswirth and Yann Le Meur from INSEP to test two groups of triathletes based in Paris and Guadeloupe, a French island with comparable weather to Rio De Janeiro.

Over the course of three months, both UTS and INSEP monitored the athletes' physiological, perceptual, and psychological responses, including their wellbeing, nutrition, and training, and compared results between the heat group (Guadeloupe) and the base group (Paris).

Says Coutts, "In the Guadeloupe group, our triathletes trained in temperatures of around 30 degrees every day. When they returned home to Paris (which was around 10 degrees at the time), we continued to monitor their [performance](#), paying specific attention to how they maintained their performance benefits. For example, we noticed that after five days upon their return to Paris, we observed a moderate increase in performance, and after 12 days, a large increase in performance.

"From this study, we've learnt a lot about designing future heat training

camps to optimise athletic performance. This was a real study using real athletes, with practical applications that can translate into training programs right now."

The results of this study were presented at the INSEP Heat Stress and Sport Performance Conference held in France in June this year, a conference bringing together leading sports scientists, high performance centres and universities, coaches, athletes and students from around the world to share the latest developments in [heat](#) stress and performance.

Provided by University of Technology, Sydney

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