

Project Snapshot

Company: Altitude Centre
Business: Altitude training for elite pro-sport and the mountaineering field
Project: Investigating the effects of manipulating simulated altitude training

Health and Social

Fitness from thin air

It's not every day you get to meet David Beckham but for KTP Associate Rachel Turner it just all part of the job...

"Now-a-days people are always looking for the next best thing, how they can be fitter, faster, stronger and healthier" says Rachel Turner, KTP Associate at The Altitude Centre. With a degree in sports science and a PhD in Altitude Physiology under way Rachel was looking for her next big challenge. "Up until 5 months ago I had been very focused on my academic studies," admits Rachel, "but entering into a KTP programme meant not only throwing myself into a full time job as an Altitude Specialist but also peeling back the layers of everything else a KTP offers, like specific business experience and enrolling onto the CIM Diploma in Management."

This KTP project at The Altitude Centre is investigating the effects of manipulating simulated altitude training to validate its use for enhancing sea level sporting performance, as well as altitude performance. Altitude training has been widely used in the endurance athlete population, the main scientific investigation based around length of exposure, but Rachel's project focuses on intermittent sports such as hockey, football, tennis etc, the high intensity sports that have mostly disregarded. "For us it has been about how we can design algorithms within training protocols which enhance those specific adaptations we are looking for, such as improved repeated sprint performance" says Rachel.

The technology that has been developed by The Altitude Centre is now very popular in both the elite pro-sport and the mountaineering field. The importance of pre-acclimatisation before going to altitude is now recognised as something that will directly improve performance. What the centre actually provides is a machine or chamber that produces air similar to what you will find at real altitude, plus the expertise to optimize the use of these products most effectively. "The basic idea is that you are preparing your body for the stresses of altitude. When you are at altitude there is less oxygen and your body has to work much harder in all capacities to just do the normal everyday stuff let alone run a desert marathon for example," explains Rachel

There are different types of training you can do, either inside a chamber/tent system or with the machine (hypoxicator), "what we do is effectively mechanically deliver a mountain to the user either in a space or via a mask, you can sleep, exercise or just sit and complete a passive programme," comments Richard Pullan, Director at The Altitude Centre.

Up until now in order to reap the benefits of altitude training athletes have been expected to train at real altitude involving regular travel to mountainous regions, at high cost. Athletes embark on these camps to not only undertake exercise at altitude but also to sleep in order to achieve the sought after physiological adaptations linked with altitude exposure. However these long periods of high altitude can cause real problems for some athletes,

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(who are potentially more sensitive to the low oxygen environment) resulting not only in extreme fatigue but in some cases illness. "Part of my work is to establish strategies of optimum altitude in order to individualise each programme so that we can investigate how different people are affected by altitude and how we can best match their training intensity to the altitudes we prescribe ? allowing them to train optimally," explains Rachel.

The human performance academic team at London South Bank University have enabled The Altitude Centre to develop the scientific research that backs up the protocols and training they prescribe to individuals. Jo Bowtell, lead academic on this project says, "We are starting to generate high quality data that will be used to develop evidence based hypoxic training protocols. In addition this partnership is leading to many other exciting opportunities both for LSBU and The Altitude Centre, including working for the England Football team to test players in hypoxia prior to the World Cup in South Africa, a winning combination all round!" LSBUs impact into the project provides the support the company needs for what it does, which is extremely important to the longevity of the company. Richard says "we are creating a formula that we can use to our competitive advantage, to offer a better service and put more science behind what we do."

The KTP is going exceedingly well just 5 months in and turnover is expected to double over the duration of the project. Since the start of the KTP the Altitude Centre has created a 'Reps' qualification, an industry standard for personal trainers. The company are not only going to use this for their own advantage, training Altitude Centre staff, but also sell it on to personal trainers. These massive benefits are convincing the Altitude Centre to take on a second KTP with the LSBU Business faculty developing remote coaching software.

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