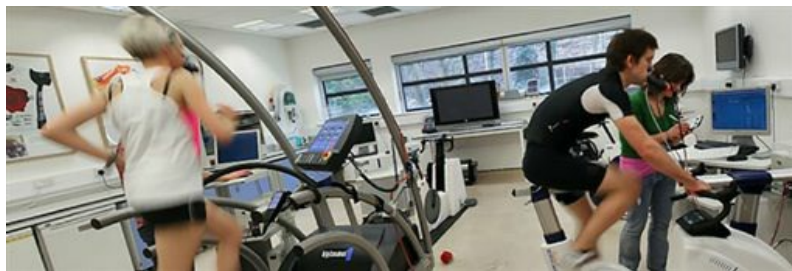


## Facilities and resources

The Exercise Metabolism Research Group manages the Human Performance Laboratory where our integrative studies of human participants take place. These labs include the following:



### Human Performance Laboratory

This lab is composed of 2 rooms and includes Lode cycle ergometers, Oxycon-Pro indirect calorimeters, treadmills and large video screens for time trial simulations used in performance measurements. This is where the majority of our resting and exercise-based studies take place, in addition to our training studies investigating the benefits of different modes of training. The lab also includes areas to perform invasive procedures such as blood sampling, muscle biopsies and infusion of metabolic tracers.

[Take the virtual 360° tour of this lab \(/facilities/human-performance-lab/about/virtual-tour.aspx\)](/facilities/human-performance-lab/about/virtual-tour.aspx)

### Environmental Chamber

This lab allows us to modify temperature and humidity to investigate fuel and fluid supply at non-ambient temperatures in relation to performance. More recently we have investigated the regulation of appetite in response to variations in temperature.

### Strength Training Laboratory

A fully equipped gym with state of the art Cybex equipment allows the measurement of muscle strength, and allows us to perform training studies to investigate the beneficial effects of resistance training. We also perform studies on the effect of dietary protein on rates of muscle protein synthesis.

### Body Composition Laboratory

Housing the Dual-energy X-Ray Absorptiometry (DXA) scanner, this laboratory allows us to analyse body composition and bone density in different groups and in response to exercise and/or dietary interventions. This is also used by elite sports teams and athletes to monitor body composition throughout the course of a season.

### Research Kitchen

This allows us to prepare specific meals and diets for participants taking part in our research studies.

Our analytical laboratories include HPLC; Cobas Mira; Protein analysis (SDS-Page and Western blotting); real time PCR; ELISA; and Luminex equipment to measure inflammatory cytokines. The state-of-the-art Mass Spectrometry Laboratory contains an IRMS and 2 GC-MS for studies using stable isotope tracers in man to quantify all aspects of fuel metabolism, protein synthesis and doubly labeled water enrichment (fluid transport and energy expenditure) and is supported by 2 members of trained technical personnel. The histology lab contains all the facilities to prepare histological samples and includes a darkroom with an immunofluorescence microscope with full image analysis software.

