

Case Study Loughborough University

Compact clinical chemistry for sports science research

Sports science research laboratories have increasing requirements for reliable and easy to use clinical chemistry analysers. Additionally, a compact system that provides same day results is the practical solution to expensive outsourcing.

The ABX Pentra 400 clinical chemistry analyser can undertake many different assays and, as an open system, this also enables researchers to adapt it to their own particular needs. This case study demonstrates how the ABX Pentra 400 is ideal for intuitive operation by a number of teams in the School of Sport and Exercise Sciences at Loughborough University providing validated and reproducible results for a variety of exercise and health studies.

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Dr David Stensel,
Director of Postgraduate Studies,
School of Sport and
Exercise Sciences,
Loughborough University

Researchers at Loughborough University, School of Sport and Exercise Sciences, have recently installed an ABX Pentra 400 clinical chemistry analyser from HORIBA ABX to assist in studies into many areas of exercise, health and nutrition. Such study areas include the affects of exercise on risk markers for cardiovascular disease. Already the analyser is proving its worth by saving labour time and delivering fast and accurate analytical results for a variety of human metabolites and biomarkers.

Prior to the installation of the ABX Pentra 400, it was recognised by the University that a modern, bench top analyser was required by various researchers to process a high volume of study samples in a short space of time. Further key requirements, in addition to the accuracy and reliability of results, was a system that was robust and easy to use due to a high number of different users, largely PhD students.

"Due to the nature of our work, which involves intense study periods where we freeze and batch study samples prior to intense periods of analysis, we did not need a large high throughput analyser," explained Dr David Stensel, Director of Postgraduate Studies at the School of Sport and Exercise Sciences. "What was essential though was a reliable, intuitive analyser with low coefficients of variation, both within and between batches, the ABX Pentra 400 has definitely met these requirements."

The University also had confidence in the new technology behind the ABX Pentra 400 prior to purchase. "During the procurement process we were able to gain positive third party input from a variety of sources



The ABX Pentra 400 in use for exercise and health studies at Loughborough University

including a Department of Health Evaluation Report¹ on the analyser, as well as a number of current users who all gave positive responses on their experiences with the ABX Pentra 400. This, in addition to the very responsive and efficient dealings that we had with HORIBA ABX, gave us the confidence that we were making the right decision." Since its installation, a key contributing factor to the reliability of the ABX Pentra 400 has been the technical support team at HORIBA ABX. "I can't speak highly enough of the customer service and support of HORIBA ABX, they have never been anything other than helpful and have always responded very rapidly when we have needed them," added Dr David Stensel.

The degree of automation delivered by the new analyser has also provided labour savings and enabled analyses to be undertaken far quicker than when carried out manually. In addition, researchers have found accuracy of results has

been better than by hand, whilst also finding that more analyses can be carried out on a single blood sample as the analyser uses smaller amounts of blood.

Typical analyses currently being undertaken on the ABX Pentra 400 by researchers at Loughborough include: postprandial triacylglycerol (TAG), glucose, non-esterified fatty acids (NEFA) and C-Reactive Protein (CRP). Many studies have been undertaken to look at the effects of bouts of exercise on concentrations of these parameters within the blood and the subsequent implications on cardiovascular disease risk.

Due to the flexibility of the system, more parameters can be measured as required. This is particularly pertinent since the School of Sport and Exercise Sciences at Loughborough will soon move to new centralised laboratories where more users will have access to the ABX Pentra 400 for Exercise and Health studies.

Analysis Anywhere

HORIBA Medical (the new name for HORIBA ABX)
Kyoto Close, Moulton Park, Northampton NN3 6FL
Tel: 01604 542650 • Fax: 01604 542651 • Email: feedback.hduk@horiba.com
www.horiba-abx.com/uk