

The Football Exchange

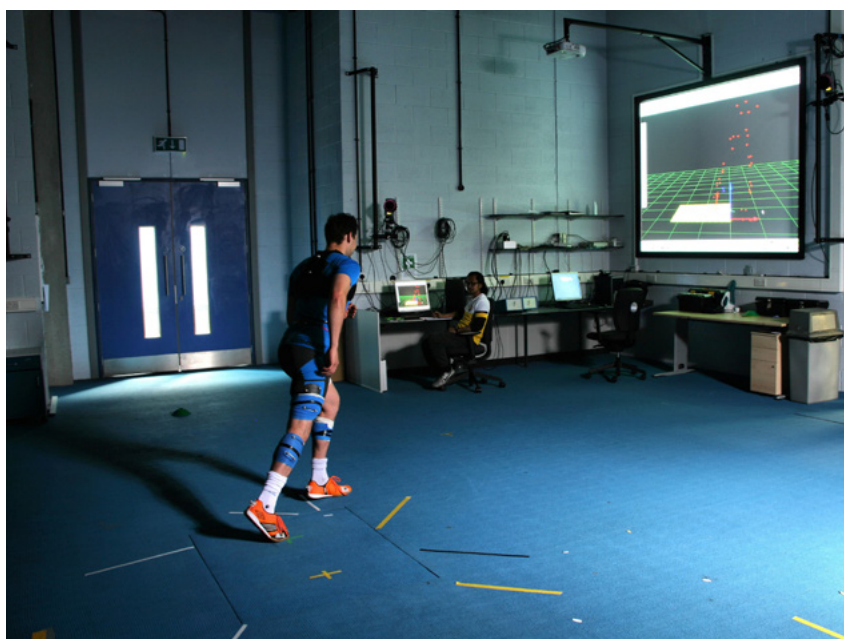
Be informed by world-class research, education and enterprise solutions

Liverpool John Moores University's School of Sport and Exercise Sciences has been named the sixth best department in the world according to the Academic Ranking of World Universities (ARWU) for the Sports Sciences subject area, highlighting the School's global research influence. The results also show the School ranked as the second best department in the UK and the third best in Europe.



For over 20 years, Liverpool John Moores University (LJMU) has led the way in fostering a scientific approach towards the training, preparation and development of players, coaches and teams in elite level professional football.

Our world-leading scientific enquiry places the Football Exchange as the foremost organisation to support the football industry through world-class research, high quality education and applied enterprise solutions.



The Football Exchange works with a wide range of clients, from clubs and governing bodies through to commercial enterprises and community schemes in the following areas.

Physiology of preparation and performance



Research activity and applied knowledge/experience within areas, such as applied exercise physiology, paediatric exercise science, chronobiology, cardiovascular physiology and muscle physiology and cell biology, provide the foundation for expert opinion on strategies to optimise the preparation and performance of elite players.

Our projects have included evaluations of the training strategies used by elite teams (at both junior and senior level), the influence of different training programmes on muscle adaptation, the genetic impact on injury and performance, identifying effective recovery strategies following training and games, informing acclimatisation strategies, and the assessment of the extent to which factors such as nutrition and supplements can modify performance.

Match and performance analysis

Match and performance analysis has seen a significant growth in professional sport, particularly football. There are constant demands for new knowledge and technology, and professional education pathways. We have undertaken research, consultancy and education projects with several Premier League clubs, national associations and governing bodies such as UEFA. Our work has been integral in the validation of industry leading tracking technology (e.g. STATS LLC, formerly Prozone) and a recent Knowledge Transfer Partnership with STATS LLC has led to the development of an innovative tactical profiling and playing styles product. Our bespoke education portfolio is developing and inspiring a new generation of performance analysts and providing professional development for those already involved in the game.

Data analytics

Football increasingly relies on the analysis and interpretation of measurement data to monitor and profile players. Working with a number of elite football organisations we develop risk and performance models, make use of structure finding algorithms combined with rigorous failure time models and advanced visualisation methods, in order to systematically analyse complex databases within the areas of player performance (match analysis, player recruitment, risk management) and injury risk. This information is made available to sport specialists in a way that is informative and readily understood in order to maximise impact in the field.

Psychology of human behaviour

The Football Exchange has substantial experience and expertise in providing elite level applied sport psychology support within professional football. We have been working strategically and operationally at a number of Premier League clubs for the past 15 years. The team has experience in the design, implementation and evaluation of culturally bespoke psychological development programmes at youth and senior levels within clubs. We provide individual and group psychological support to players up to and including first team levels.

Performance biomechanics

The biomechanics research group has an established profile in athlete rehabilitation assessment, football boot testing, evaluating artificial turf and training load quantification using accelerometers. This work has involved multiple Premier League football teams and funding support from both manufacturers (e.g. Umbro, Reebok and New Balance) and governing bodies (FIFA and UEFA).

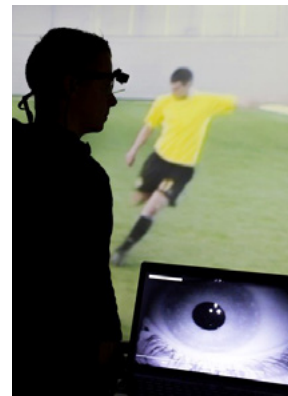
The unique biomechanics laboratory facilities and expertise enables us to inform injury management, product design and technological development. We are also engaged in work with elite football players in terms of soccer skills. This ongoing work hopes to explore the best options in terms of biofeedback training geared towards skill development (e.g. ball kicking for distance).

Performance nutrition

The team behind the Football Exchange has considerable experience in delivering performance nutrition support at both club and international level, ranging from Academy to first teams.

The support is based upon a strong nutrition research culture, allowing the team to develop research driven, cutting-edge support. For example, we have utilised doubly labelled water to measure energy expenditure in Premier League footballers and performed muscle biopsy studies to quantify glycogen utilisation. This research has directly informed the advice given to elite players, clearly evidencing our bench-top to pitch-side approach to performance nutrition.

Psychology of skill and expertise



Working with Premier League clubs and other experts in football, the Football Exchange examines what factors make players 'elite' – e.g. anticipation and decision making; what mechanisms underpin their expert performances – e.g. gaze behaviours and movement kinematics; and how did they become experts – e.g. metacognition and practice history questionnaires.

The team's expertise also encompasses working with coaches and supporting their practice activities and instructions – such as feedback to efficiently and effectively develop players' skills.

Education

LJMU runs a number of world-class undergraduate and postgraduate educational programmes housed within the award-winning, state-of-the-art Tom Reilly Building at LJMU's the City Centre Campus. View our courses here: www.ljmu.ac.uk/about-us/faculties/faculty-of-science/school-of-sport-and-exercise-sciences/courses

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