

Impact template (REF3a)

Institution:	University of Northumbria at Newcastle
Unit of Assessment:	26 – Sport and Exercise Sciences, Leisure and Tourism
<p>a. Context</p> <p>The UoA has been active in promoting and supporting research impact from before the date of the last assessment. Significant University investment led to an increase in staff and PGR student FTEs and the creation of a £30 million sports complex allowing full integration of research, teaching, innovation and knowledge transfer in sport. These investments have further increased our capacity to translate research into impact in the following areas:</p> <ul style="list-style-type: none"> • <i>Health and welfare impact:</i> for example: educating coaches, athletes and medical practitioners in correct identification and diagnosis of respiratory conditions as well as medication administration, thus improving the treatment and pulmonary health of athletes. • <i>Commercial impact:</i> for example: performance and recovery enhancement through nutritional intervention with athletes resulting also in a positive economic impact on sales of Montmorency cherry juice in the UK and USA. • <i>Impact on professional services:</i> shaping coach education provision in collaboration with National Coaching bodies to ensure a good “fit” with coaching provision and sporting level ie. entry level through to elite performers. • <i>Public engagement:</i> we seek to promote and inform good quality public debate on the issues above and have demonstrable success at targeting press and broadcast media in combination with more localised interactive science and arts festivals, broadcasts and events. <p>Overall, we adopt a research model that places engagement with service users; with the public, national sporting bodies and industry at the heart of the research process. Such an approach enhances the relevance of the research itself, enables effective dissemination and provides a key mechanism for knowledge transfer.</p> <p>b. Approach to impact</p> <p>Developing strong and sustainable relationships with research users and beneficiaries is a central feature of research across this UoA. These relationships have ensured that high-quality research influences policy and practice across a range of high-profile UK and international sporting organisations, businesses and individuals. Further, we work closely with these partners to ensure that the research drives change in, inter-alia, the management and preparation of the high performance athlete, the content and delivery of coach education and the sports nutrition industry. The fruits of investment in, and engagement with, external partnerships can be seen in all impact case studies. In particular, we have achieved significant impact in three key domains:</p> <p><i>Impact on health and welfare of athletes:</i> A strategic purpose of our research is optimising the health of the high-performing athlete. Examples of our impact activities in this area include 1) Establishing the benefits of monitoring in athletes with diabetes, where a recent project in partnership with Diabetes UK (West) resulted in new monitoring guidelines for athletes. This project was also widely reported in the press and broadcast media – influencing public awareness about the condition - and delivered commercial benefits to Medtronic, a global leader in diabetes technology (see below). 2) Developing new guidelines and protocols for the treatment and diagnosis of exercise-induced asthma in athletes, improving not only short-term athletic performance and wellbeing but also positively impacting upon the future pulmonary health of the athlete (Ansley, Robson-Ansley); 3) work on lower limb biomechanics and post-operative recovery following surgery, conducted in collaboration with Gateshead Health NHS Foundation Trust and disseminated to relevant healthcare professionals through a seminar series hosted in partnership with the Trust (St Clair Gibson); and 4) a portfolio of projects on athlete nutrition that has led to improved performance and enhanced athlete recovery (see case study). This work has been widely reported in the media and has also had strong commercial impact (see below). This research work sits alongside a range of consultancy contracts with elite teams (e.g. premier ship football, Sunderland AFC, Newcastle United FC) where Northumbria researchers provide advice to applied practitioners in respect of nutritional programmes and where researchers have partnered with significant, large-scale sporting events in order to access meaningful data that can lead to performance and health benefits e.g. assessing the hydration status and drinking behaviour of</p>	

Impact template (REF3a)

runners participating in the Great North Run (2010) or quantifying the benefits of monitoring glucose levels in diabetic cyclists completing a 2,100 km event across Europe.

Commercial impact: Again, our aim is to develop productive and sustained partnerships with industry and work with these partners to deliver effective change. Examples include 1) a BBSRC CASE studentship in partnership with GlaxoSmithKline (GSK) that identified the most effective interventions to reduce exercise-induced inflammatory response (Robson-Ansley); 2) collaborative projects with a range of food and drink manufacturers (e.g Masterfoods, Cherry Active, Beneo) assessing the influence of a variety of sports drinks and other nutritional products on performance (Stevenson, St. Clair Gibson, Howatson) that has had policy and economic impact in terms of industry R&D strategy and global product sales (see Case Study); 3) a partnership with the Dairy Council which has resulted in Northumbria academics delivering invited talks at a series of public engagement initiatives set up by the UK and Irish Dairy Councils about the efficacy of milk on appetite regulation and recovery from exercise. This work has led to PGR funding to investigate the influence of dairy products on appetite regulation in overweight and normal weight adolescents and research collaborations with the dairy industry (Arla Foods, Fonterra).

Impact on delivery of professional services: We work in partnership with a number of national governing bodies for sports, UK Sport, and the English Institute of Sport and we are well represented on UK and international bodies in coach education, with a member of our researcher/practitioner team named as 'UK Coach Educator of the Year' in 2012. Our aim is to use these partnerships to impact on practising sport scientists, coaches, and the wider sport community. We have a strong portfolio of CPD activity, drawing vitally on our research, in partnership with British Equestrian, British Judo, British Rowing, England Netball, the Lawn Tennis Association and contribute to the syllabus and delivery of the International Olympic Committee Sports Nutrition Diploma and International Society of Sports Nutrition Diploma. We have recently been allocated funding to continue embedding research-informed continuing professional education courses for coaches in line with our 'one size *doesn't* fit all' strategy. Internationally, research conducted with the International Netball Federation on 'global perceptions of sport coaching expertise' has directly contributed to the development of a global coach education framework, which is currently being piloted in six African countries to address support structures that meet the needs of the diverse audience.

Public Engagement: We have a strong profile in bringing sport research into the public arena, encouraging debate and stimulating a wider interest in key issues. Some examples of this are detailed in the case studies, but our approach is to disseminate research widely through the press and broadcast media and foster debate and discussion through interactive presentations and demonstrations. Examples include a 'healthy living MOT' stand and exhibition entitled 'Milk: Nature's sports drink' at the British Science Festival (in collaboration with the Dairy Council and Muller-Wiseman) and a showcase at the Newcastle Science Festival (2011) on 'designer bodies' at the International Centre for Life. Northumbria University has a strategic partnership with this highly popular science museum, and sport researchers are involved in exhibitions programmed throughout the year. We also have a strong profile in arts collaboration. For example, we provided research input to work by Ballet Lorent that enjoyed a national tour in 2008/9 and which was showcased as a solo piece in Channel 4's Random Acts series (broadcast in May 2012). A more recent arts collaboration led to a short film, 'Exhaustion', premiered at the AV Arts Festival during the 2012 Olympics.

c. Strategy and plans

Impact is a core aspect of research activity and will continue to be a strategic priority for the Unit. All staff members within the UoA are supported to ensure impact throughout the research lifecycle from inception, planning, delivery of the project to post-completion activities, with University support for impact at a number of levels. Firstly, within the UoA two dedicated Impact Champions (academic) and one Public Engagement and Impact Manager (support) signpost appropriate training, broker relationships and highlight engagement opportunities. At University level, Research and Business Services (RBS) promotes impact through a network of dedicated Business Development Managers who help staff access and build relationships with external companies and

Impact template (REF3a)

provide bespoke support around innovation and commercialisation opportunities. Corporate Relationship Management software is used across the university to facilitate interactions and collaborations with external organisations, including local authorities, schools, NHS trusts, social enterprises and industry.

Such work will be developed further through faculty-led plans for the provision of a 'clinical exercise physiology and wellness' centre and mobile outreach clinics designed to promote excellence in research and professional practice. They will draw upon clinically-related exercise physiological research at Northumbria and provide a vehicle to drive further engagement with the regional stakeholders, and others both nationally and internationally. The Centre, principally housed within the newly-built sporting and laboratory facilities at Northumbria, will be used to conduct healthy lifestyle programmes for clinical and subclinical populations within the region with the aim of improving health status. All will be underpinned by evidence-based research conducted at Northumbria. We plan to extend this into direct clinical settings, strengthening established links within the NHS and regional NHS trusts to have a direct impact on patients with lifestyle-related conditions e.g. metabolic, cardiac and pulmonary conditions as well as optimising the health of patients prior to surgery to promote post-operative recovery.

d. Relationship to case studies

The case studies of impact presented by this UoA demonstrate successful partnerships developed through mutually-beneficial outcomes from the research.

In the *tart cherry* case study demonstrating the efficacy of Montmorency tart cherry juice on aspects of athlete recovery, there is a clear synergy between positive outcomes of commissioned research, increased sales of cherry juice and subsequent adoption of this functional food as a recovery strategy for high performance international athletes. This three-way relationship is continuing to flourish with further industry-based investment in research leading to a recently fully-funded PhD studentship examining further applications of cherries and two funded part-time PhD studentships with the English Institute of Sport examining adjunct aspect of performance.

In the *exercise-induced asthma* case study highlighting the importance of the methods of diagnosis for elite performers, impact results from the evaluation and understanding of asthma symptoms and control in professional soccer players who have screened positive for exercise-induced asthma (EIA) identified through the mobile testing facility. As EIA is poorly diagnosed and may act as a barrier for participation in physical activity, screening for EIA and assessment of lung function will be included in the suite of tests available within the proposed clinical exercise and wellness centre as well as within the mobile outreach clinics.

We are committed to strengthening and deepening our research impact by ensuring and continuing to grow relationships between UoA staff, the public, NHS and charities as well as international industrial partners.