



ANNUAL REPORT 2022

WITH YOU 100%

INTRODUCTION

It gives us great pleasure to share the Institute of Sport, Exercise and Health (ISEH) 2022 annual report with our team, our partners and our friends.

As the world emerged from the terrible spectre of the pandemic over the past year, the ISEH (as with many organisations) focused on re-establishing 'business as usual' and advancing our clinical, academic and educational plans and work streams. As confidence and a sense of 'normality' have returned, patients, students and colleagues have come back in force, and 2022 has been an exciting and busy year with our team taking significant strides forward in progressing our work programmes across a number of areas.

This year our ISEH team has continued to grow with new valuable additions across our clinical, academic and educational streams. This year's intake of new undergraduate and Masters students at ISEH has significantly increased, tripling in size in the case of our undergraduate programme - illustrating the growing esteem and reputation of the ISEH courses. Working with UCL, we have expanded our education faculty with Professors Courtney Kipps and Eleanor Tillet fronting the Sports MSc Programme, Dr Hara Trouli leading the Performing Arts programme, and Dr Flaminia Ronca leading our undergraduate programmes.

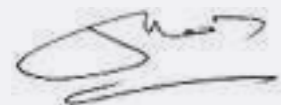
Our academic and research programme has continued to bloom over the last 12 months, with Professor Mark Hamer growing his research team and increasing the ISEH's academic contribution in the field of population health. Colleagues from across the organisation have led on a range of exciting new research projects investigating different aspects of elite sport, in particular Prof. Mathew Wilson and Dr Paul Read have collaborated with the governing bodies of football and rugby to establish a ground-breaking study investigating the effects of concussion on professional players in these sports.

The ISEH clinical services have also expanded and improved in 2022, with new specialist clinics established to better manage the needs of our patients. Along with these new clinics, we have appointed a number of new world-class clinicians to provide the highest quality of care to maintain and grow the clinical reputation of the ISEH.

The ISEH is based on a collaboration with our key partners, and it is pleasing to see that these relationships have only been enhanced over the past year, with partners working deeper and more meaningfully together across a range of ISEH-led projects. The English Institute of Sport has worked closely with HCA to improve the clinical services at ISEH for EIS funded athletes, UCLH are treating more NHS patients at ISEH than ever-before, UCL's courses at ISEH are going from strength-to-strength, and all ISEH partners have been supporting UCL with their new potential facility plans for increasing UCL's sports presence on the Olympic Park in East London.

We are grateful to the entire team for their versatility, their resilience and their strong support and we are grateful to all our partners for their vision and collaboration. Our vision remains to be the world-leading institute of sport, exercise and health by 2030.

We hope that the brief snapshots that follow give you an insight into the outstanding clinical work, research, teaching, training and education that take place at ISEH.



Professor Fares Haddad
Director, ISEH



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ABOUT THE ISEH

The Institute of Sport, Exercise & Health (ISEH) was established in 2013 with a £10m grant from the Department of Health as a major legacy project from the 2012 London Olympic Games.

The ISEH's vision is to be the world-leading institute for sport and exercise medicine, providing excellence in the diagnosis, prognosis and treatment of sports injuries and illnesses, whilst bridging the gap between elite sport and recreational physical activity to support the improvement in the health of the nation.

The ISEH achieves this through:

- Providing world-class clinical delivery for elite athletes and sports enthusiasts of all abilities, both privately and through the NHS.
- Conducting world-leading research in supporting elite athlete health and performance, as well as focusing on how exercise and physical activity can play an important role in broader population health.
- Delivering exceptional education and training in sports exercise medicine, both academically and through continuing professional development (CPD).

The ISEH is a partnership between UCLH (University College London Hospitals, NHS Foundation Trust), HCA Healthcare UK, UCL, the English Institute of Sport and the British Olympic Association. It is also a founding member of the National Centre for Sport and Exercise Medicine (NCSEM).



KEY ACHIEVEMENTS IN 2022

This Annual Report details the good work ISEH has undertaken over the course of 2022. Below are some of the highlights of the Institute's key achievements this year.

CLINICAL ACTIVITY

With the pandemic easing over the past twelve months, improving, enhancing and maximising our clinical activity has very much been the priority at ISEH for both private and NHS clinical services. This has resulted in more patients being seen at the ISEH across both private and NHS pathways than in any previous year.

- Nearly 6,500 NHS patient appointments have been held at the ISEH in 2022.
- The ISEH Mobile Cardiac & Respiratory Screening service continues to grow, providing a unique specialised service to elite sports clubs across Europe.
- A range of new sports exercise medicine services have been launched to meet the needs of elite athletes, including the Advanced BRAIN Health Clinic in partnership with the RFU, Premiership Rugby, The Football Association and Imperial College.



**OUR MOBILE CARDIAC
LABORATORY HAS HAD A RAPID
UPTAKE WITH PREMIERSHIP,
CHAMPIONSHIP AND LEAGUE
ONE FOOTBALL CLUBS**



OVER 100 PEER-REVIEWED PAPERS PRODUCED

RESEARCH

Academic research forms a large part of the work that the ISEH undertakes, and with the country emerging from the pandemic over the past year the ISEH has been able to progress and move forward with some of our long-term research projects and also kick-start some new exciting studies.

This year ISEH colleagues have:

- Produced over 100 peer-reviewed papers.
- Submitted a number of new research applications across a range of topics that align to the ISEH research themes in sport and exercise medicine and population health.
- Successfully secured a number of research grant approvals to undertake some novel research studies over the coming years.
- Led a large number of research projects investigating outcomes in both elite sport and population health.

EDUCATION

Student numbers in the five UCL degree courses that are held at the ISEH have continued to increase over the past year, demonstrating their increasing popularity and reputation.

Encouragingly, student satisfaction scores have also significantly increased, reflecting positively on the hard-work that the ISEH and UCL teaching staff have invested in ensuring the quality of both teaching and student experience remains the core priority.

A large number of graduates from the ISEH courses have successfully been appointed to roles in elite sport or in other sport and exercise medicine fields, demonstrating the vocational relevance of our courses and the esteem and credibility employers attach to them.



CLINICAL ACTIVITY

THE ISEH PRIDES ITSELF ON PROVIDING
WORLD-CLASS CLINICAL CARE TO OUR PATIENTS

We provide excellence in the diagnosis, prognosis and treatment of sports injuries and illnesses to both elite athletes and exercise enthusiasts.

The ISEH offers private clinical care through our partner HCA Healthcare UK, but also provides public healthcare through NHS patient appointments from UCLH. We are proud that we provide and offer the same quality of medical care and clinical support for amateur and recreational athletes as we do for Olympians and world-leading sports stars.

As life has returned to normal this year following the pandemic, ISEH has continued to review our clinical services to ensure that we continue to provide the highest quality care to our patients, but also offer new clinical services to meet the needs of both elite and recreational athletes. We have maximised our clinical delivery to enable us to see more patients across both the private and NHS sectors at ISEH than any previous year.

**THE ISEH IS PROUD
TO PROVIDE THE SAME
QUALITY OF MEDICAL
CARE & CLINICAL
SUPPORT FOR AMATEUR
AND RECREATIONAL
ATHLETES AS WE DO
FOR OLYMPIANS**





NHS CLINICAL ACTIVITY

The ISEH is proud that we are able to offer the same level of clinical care, attention and service from diagnosis through to treatment and recovery to NHS patients, as elite professional athletes receive from the private care pathway at ISEH.

UCLH clinics take place at the ISEH on two mornings a week to treat NHS patients. But over the course of the past year, the ISEH has played an important role in hosting regular additional NHS clinics outside of these agreed hours to help reduce the UCLH backlog of patient appointments caused by the pandemic. This support has been particularly evident within the diagnostic pathway, with over 200 additional patients receiving MRI scans and a further 200 x-rays outside of the normal NHS / UCLH clinic times.

6,493

UCLH (NHS) patient appointments held at the ISEH in 2022, a 45% increase in patients compared to 2021.*

1,968

imaging (MRI / Ultrasound / X-ray) UCLH appointments at the ISEH in 2022, four times as many imaging patients compared to 2021.*

*This data is accurate as of 20 October 2022

// Fantastic support from the team at ISEH. //
NHS patient at ISEH, via Instagram.

PRIVATE CLINICAL ACTIVITY

The ISEH's private clinics are managed by HCA UK. Over the past year, we have continued to expand the sports and exercise medicine services, with our expert clinicians offering a world-leading service within their respective fields. This year is on course to be our most financially productive since opening, which is testament to the hard work of all the consultants and staff involved who continue to deliver high quality care to our diverse range of patient groups.

In 2022, we consolidated and refined our existing service provision, but have also recruited a number of new and established consultants, offering greater depth with new clinical pathways to provide a unique, 'one-stop shop' for both elite and recreational athletes. Our portfolio of services includes the following:

- Advanced BRAIN Health Clinic
- Concussion clinic
- Sports cardiology clinic
- Sports nutrition & recovery clinic
- Sports respiratory clinic
- Sports podiatry
- Sports psychology
- Tendon clinic
- Sports physiotherapy
- Upper and lower limb performance reconditioning assessment pathways
- Sports performance conditioning
- Corporate health & health fitness
- Hand, wrist and shoulder specialist clinics
- Endurance clinic

The ISEH Mobile Cardiac & Respiratory Screening service also continues to grow. This unique service provides a bespoke laboratory within a large, dedicated vehicle enabling the ISEH to provide expert care for elite athletes anywhere in Europe. In 2022, screenings at nine different clubs (inclusive of first team and academy) were performed at elite sport training venues around the UK. In addition, respiratory screening was provided for the England National Football Team.

This year also saw the launch of the Advanced BRAIN Health Clinic at ISEH in partnership with Imperial College London, The Rugby Football Union, Premiership Rugby and The Football Association. This specialist pathway includes advanced imaging, biomarker analysis and neurocognitive assessment for retired elite rugby and football players and has received much positive media attention since its launch.

The ISEH's work in the area of osteoarthritis has further expanded over the past 12 months. We now offer Arthrosamid®, a new, safe and innovative treatment injected into the knee to relieve and treat osteoarthritis pain. It is a single-dose that is purported to provide long-acting osteoarthritis pain relief without the need for surgery; the outcome is improved functionality of the knee, providing patients with sustained relief by reducing pain, stiffness and improving patient's quality of life. Contura has partnered with The ISEH's physical assessment unit to scientifically collect outcome data on the effectiveness of Arthrosamid® on osteoarthritis. As part of the treatment package, patients are eligible for a free physical performance assessment including movement and strength diagnostics pre-injection, and then again at three, six, and 12 months post-injection.

// 5-star service from the NHS team at ISEH. //
NHS patient at ISEH, via Google.



// An excellent experience, with friendly and exceptionally knowledgeable staff and consultants. //

— Patient feedback, via Doctify.



// Very professional staff and setting. Very happy with the care and treatment I received. Would highly recommend! //

— Patient feedback, via Doctify.

CASE STUDY: THE ADVANCED BRAIN HEALTH CLINIC AT ISEH

This year saw the launch of the Advanced BRAIN Health Clinic at ISEH to much media attention. This important area of elite sport research and clinical care is being delivered at the ISEH in partnership with Imperial College London, The Rugby Football Union and Premiership Rugby, with The Football Association also recently joining this programme.

This specialist pathway includes advanced imaging, biomarker analysis and neurocognitive assessment for retired elite rugby and football players. The clinic is operated by independent experts Professor David Sharp and Dr Richard Sylvester. All players undergo a comprehensive set of baseline assessments followed by a neurological consultation. Treatment needs or brain health actions are shared with the player and their GP. The process is then repeated again two and four years later to assess any time-related changes in brain health and the outcomes will be disseminated through the publication of academic research. At the time of writing, the clinic has seen 104 rugby players and two footballers, far exceeding the recruitment target.



ENGLISH INSTITUTE OF SPORT (EIS)

As a key partner of the ISEH, the EIS uses the ISEH and its facilities in supporting the health and performance of Olympic, Paralympic and other elite athletes.

Over the past year, EIS and ISEH have continued to work closely together in providing world-leading clinical and performance support services, to aid elite athletes in their training and preparations for major competitions. Athletes from ten different Olympic, Paralympic and Commonwealth Games accessed EIS sports medicine, physiotherapy and soft tissue therapy support at the ISEH during 2022.

To highlight some of the excellent work that EIS delivers at ISEH, Emma Levy (EIS Senior Physiotherapist) featured in an EIS video shot at ISEH earlier this year. Emma oversees the care and rehabilitation of a range of athletes at ISEH, including London-based divers which includes the 2022 European and Commonwealth 10m champion; 10m synchro Silver and Bronze Commonwealth medallists, plus the Bronze 1m Commonwealth medallist.

The video showcases the important work that Emma and other EIS practitioners do behind the scenes at ISEH to support athletes, ensuring they are ready for competition. This was a particularly busy competition year for elite athletes across many sports, it can be challenging to keep athletes fit from competition to competition. [View Emma's video here](#)

In 2022, the EIS forged even closer relationships with ISEH and its partners, particularly HCA UK, to remodel and improve the clinical and sports medicine services provided to EIS athletes. Working closely with the EIS Chief Medical Officers (CMOs) and national governing body CMOs, ISEH provides the best possible elite athlete care.

EIS also works in partnership with UCL to support the educational workstreams at ISEH. Ros Cooke, in her capacity as an EIS Senior Physiotherapist, also acts as a UCL Honorary Associate Clinical Lecturer. Ros provides teaching support, acts as a research supervisor, and provides pastoral care for the Sports Medicine and Exercise Health undergraduate and postgraduate programmes at ISEH, ensuring a high standard of education for multidisciplinary students within the UCL Connected Curriculum framework.



THE ISEH HOSTED FIVE UCL DEGREE COURSES IN 2022:

1. **MSc in Sports Medicine, Exercise & Health**
Now in its 14th year with student enrolments for the course at capacity. This programme attracts candidates from all around the world and is one of the few Master's programmes in this field to train doctors and physiotherapists alongside other physical therapists and sports scientists, thereby replicating the highly multidisciplinary nature of the specialty.
2. **Intercalated BSc (iBSc) in Sport & Exercise Medical Science**
This highly sought-after degree for medical students which attracts applications from candidates throughout the UK. The student intake has grown by over 25% this year.
3. **BSc in Sport & Exercise Medical Science**
Now in its fourth year, this degree grounds students with the knowledge and skills to help athletes achieve their performance potential and patients to optimise their health. The student intake for this course has once again significantly grown this year, demonstrating its popularity and growing reputation.
4. **MSc in Performing Arts Medicine**
This unique and highly specialised course, in its seventh year at the ISEH, provides targeted education to meet the health and well-being needs of performing artists (e.g. musicians, actors, dancers etc.). This year there are 22 students enrolled on this course.
5. **MSc Orthopaedics**
This novel teaching programme in its third year, enrolls professional students who aspire to excel in orthopaedics and its allied sub-specialities such as surgeons, physiotherapists, sports practitioners, clinical researchers etc. Students receive both high-quality learning, but also through this course have the potential for gaining high-end publications, international presentations and links to the top clinicians in the field.



EDUCATION

THE ISEH COURSES GO FROM STRENGTH-TO-STRENGTH WITH AN OUTSTANDING REPUTATION THAT ATTRACTS AND APPEALS TO STUDENTS FROM ALL OVER THE WORLD



“ Last month I was finally able to celebrate my iBSc graduation with my loved ones! The day was full of joy and reminiscing on the tough but beautiful year I had at the ISEH. I am so proud of myself for achieving a first-class degree, and creating a unique piece of research that I look forward to expanding on as my interest in the field grows. I’m so excited to see what more is to come in my final two years of Medicine at UCL, and feel so blessed to have my supportive village alongside me every step of the way! ”

iBSc student, via LinkedIn.



KEY SUCCESSES IN 2022

Student enrolments on the undergraduate and postgraduate courses at ISEH have now reached capacity this year, demonstrating the excellent credibility and reputation of the ISEH for delivering vocationally relevant high-quality courses.

With students returning this year to primarily face-to-face teaching, student satisfaction levels at ISEH are at an all-time high, with much student feedback highlighting how much they enjoy their learning experience and how clinically and vocationally relevant their courses are.

This has been illustrated by a number of ISEH graduates being offered roles working for elite sports teams and sports organisations both within the UK and abroad. Other graduates have demonstrated their initiative by setting up their own sports medicine clinics, whilst several have been accepted onto the NHS Higher Specialist Training programmes in Sport and Exercise Medicine.

We’ve also been proud to see our students presenting their research this year at a range of national and internationally important Sport and Exercise Medicine conferences, including at the IOC, BASEM and ACSM conferences.



“ The iBSc course was a huge influence on my decision to pursue a career in sports medicine! Great work from everyone @TheISEH @SportsMedUCL ”

UCL and ISEH alumni, via Twitter.



Academic research forms a large part of the work that the ISEH undertakes, and with the country emerging from the pandemic over the past year, the ability to conduct meaningful research and collect data relating to sport, exercise and population health has returned to being more straightforward. The ISEH has been able to progress and move forward with some of our long-term research projects and also kick-start some new exciting projects.

The full extent of the ISEH's research outputs over the course of 2022 can be seen at the end of this document in the appendix; but in this section we provide a brief snapshot of some of the research activities that the ISEH colleagues have been leading on this year.

ELITE SPORT

A number of research projects undertaken at the ISEH focus on understanding and improving sporting performance in elite athletes. Below are just some of the elite sports research conducted through the ISEH during 2022:

- Respiratory Infection in Athletes**
 Professor James Hull and Professor Mike Loosemore have focused on understanding the factors underpinning respiratory tract infection susceptibility in elite athletes. They have led work co-funded between the English Institute of Sport, Royal Brompton Hospital, Imperial College and the ISEH, enabling detailed characterisation of clinical, immunological and microbiological factors relevant in athletes struggling with recurrent respiratory tract infections. This will provide data to inform management strategies to help athletes over the next Olympic cycle. They have also led an evaluation of how the COVID-19 infection impacts elite athletes and their recovery time to sport.
- Sleep & Health in Elite Sport**
 Dr Charlie Pedlar has several funded PhD projects currently running including sleep and recovery in football (Southampton FC funded); sleep and cognition in female athletes (Letterkenny Institute of Technology/Orreco funded); health and performance of female football players (FIFA/Orreco/Western Sydney University funded); workload and health of professional ballet dancers (Royal Ballet Company funded); Cultural aspects of female athlete health in Pacific Islanders (Waikato University/High Performance Sport New Zealand/Orreco). Dr Pedlar is also working on deriving research outputs on blood biomarkers in professional sports including in the English Premier League and the NBA via the Orreco database.
- Rehabilitation Strategies for Injured Athletes**
 Dr Paul Read is running several projects on assessment strategies of lower limb neuromuscular control in both injured and non-injured athletes and enhancing the efficacy of return to sport assessment strategies following ACL reconstruction. Specific projects he is currently working on include: 1) enhancing decision making in the return to run process following ACL reconstruction; 2) The application of blood flow restriction training and preoperative rehabilitation to augment clinical outcomes following ACL reconstruction; 3) effects of ACL reconstruction on physical performance and kinetic movement strategies; 4) effects of early sport specialisation on injury risk and movement competency; 5) quantification and trainability of deceleration to enhance performance and reduce injury risk.

RESEARCH

OUR RESEARCH OVER THE LAST YEAR CONTINUES TO DEMONSTRATE IMPACT ACROSS A RANGE OF KEY THEMES IN SPORT AND EXERCISE MEDICINE AND POPULATION HEALTH AS WE INFLUENCE AND DRIVE THESE FIELDS FORWARD



- **Musculoskeletal Injury & Concussion Research**

Dr Madi Davies has been conducting musculoskeletal injury work in elite horseracing and in adult sport-related trauma. She is also running an ongoing concussion project in Premiership Rugby players with the Rugby Football Union.

- **Global Delphi Hamstring Injury Consensus Project**

Professor Fares Haddad and Dr Bruce Paton convened the ISEH hamstring injury consensus group in London in 2020, inviting 40 world-leading multidisciplinary experts on hamstring injuries to conduct a global Delphi consensus project. The group agreed consensus statements on four themes relating to hamstring injuries: 1) Classification; 2) Surgery; 3) Rehabilitation after injury and surgery; 4) Return to running and sport.

Over the past year, these consensus statements have been disseminated through our Olympic and global network of hamstring injury experts for additional input and agreement, which has resulted in a series of published research papers.



POPULATION HEALTH

The ISEH's research programme does not just focus on elite sport, it also importantly covers research themes that look to understand and implement learning to improve the broader population health. Below are some of the research projects that ISEH colleagues have been leading on over the past year:

- **Physical Activity's Impact on Heart Disease**

Professor Mark Hamer is leading several British Heart Foundation funded projects. The first (ProPASS) analyses data from across the world to investigate associations between device measured sleep, sedentary and physical activity with cardiovascular diseases. The second is designed to undertake gold standard cardiorespiratory fitness testing in an established cohort study (ALSPAC) and understand early life determinants and trajectories.

- **Obesity & Physical Activity**

Dr Snehal Pinto Pereira leads a Medical Research Council (MRC) funded project on obesity, physical activity, strength and ageing. Recent outputs from this project include examining how early-life socio-economic position is linked to the accumulation of health-related deficits by midlife. Dr Pereira is also involved in an on-going National Institute for Health Research and UK Research & Innovation funded study with the primary aim of describing the clinical phenotype and prevalence of post-COVID physical and mental health symptoms among children and young people (The CLoCk Study).

- **Exercise & the Brain**

Dr Flaminia Ronca has been collaborating with the UCL Faculty of Brain Sciences and has identified significant links between exercise, mood, brain haemodynamics and cognitive function. Dr Ronca is currently building on this work to identify the mechanisms that underpin these processes in adults and in children.

Professor Hamer is collaborating with colleagues from UCL Institute of Cognitive Neuroscience on a project funded by the Rosetrees Trust to assess effort-based decision-making for reward following an exercise intervention in relation to the treatment of depression.

- **Police Health & Fitness**

Dr Flaminia Ronca has also been continuing her collaborative work with the Metropolitan Police Force, informing their decision making to safeguard and promote officer health and fitness through empirical research.





RESEARCH GRANT FUNDING

Much of the ISEH's research programmes are dependent on successful grant applications and financial support through key partners and stakeholders. We continue to be immensely thankful for the ongoing support and the trust that our partners invest in ISEH.

In 2022, the ISEH has received financial support for research projects from the following organisations:

- International Olympic Committee (IOC) to investigate the prevention of sports injuries and protection of athlete health.
- UCL have provided significant funding for research equipment to study brain imaging and health, along with biomechanical analysis equipment including 3D motion capture systems and force plates to better analyse body movement.
- Biotechnology & Biological Sciences Research Council (BBSRC) and MRC have invested in the Healthy Ageing Network and the Ageing Research Translation (ART). Dr Snehal Pereira Pinto is a key member of this network.
- National Institute for Health & Care Research (NIHR) have funded research investigating frailty in younger group. Dr Jo Blodgett is supporting this work.
- Single Homeless Project (SHP) have funded an evaluation studying the impact and benefits of physical activity in homeless people. Professor Mike Loosemore is leading this project.
- Greenhouse Sports have fully funded a PhD studentship on 'Sport for Social Mobility,' led by Dr Flaminia Ronca.
- VALD Applied Research Initiative have awarded the ISEH grant funding that will allow us to integrate objective assessment into the orthopaedic pathway of an NHS Hospital (UCLH) with the purpose of providing benchmark data and measurement of patient outcomes in patients with Osteoarthritis and ACL injury. This research is being led by Dr Paul Read.
- The Advanced BRAIN Health Clinic at ISEH (as mentioned earlier in this report), has been launched in 2022 with the support of the RFU, Premiership Rugby, The Football Association and Imperial College to undertake neurocognitive assessment for retired elite rugby and football players.

CASE STUDY: KNEE & HIP BIOMECHANICAL ANALYSIS PRE-& POST- OPERATIONS

The ISEH prides itself in bringing together clinicians, researchers and the health and sports sector to collaborate in producing cutting-edge research that has positive real-life implications. A good example of this is the work being undertaken by Professor Fares Haddad and Dr Dia Giebaly in undertaking the first study of its kind to examine the gait biomechanical analysis of patients that have undergone robotic assisted knee and hip surgery.

There is growing evidence that robotic assisted knee and hip surgery has improved the accuracy of implant positioning, resulting in better functional outcomes post-operation in comparison to more conventional surgical procedures on these joints. This study is looking to increase the understanding of the actual functional outcomes on the joints, patient satisfaction and gait analysis following this type of surgery and comparing it with more conventional methods.

Using the state-of-the-art equipment in the ISEH laboratory, this study will use 3D motion capture systems and force plates in instrumented treadmills to provide an accurate, objective, non-invasive measurement of the gait biomechanics of patients pre- and post-operation.



CASE STUDY: EXERCISE NEUROSCIENCE RESEARCH

ISEH colleagues who specialise in exercise physiology have been collaborating with UCL colleagues in neuroscience to undertake cutting-edge research investigating the impact of exercise and physical activity on brain activity and cognitive development.

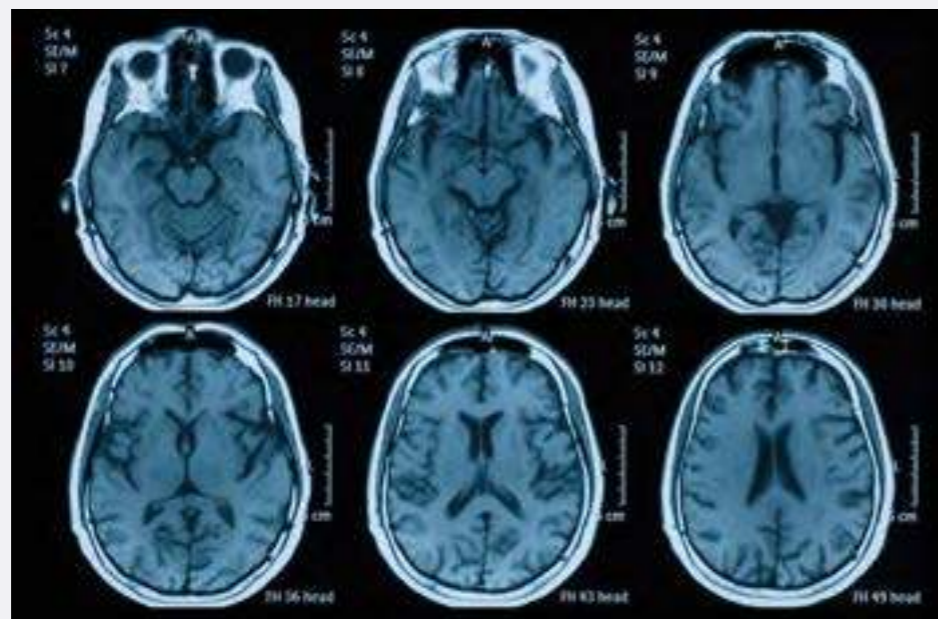
Over the past 12 months, UCL have invested heavily into this research area, particularly to enhance the equipment within the ISEH laboratory:

- A Dexa scanner for full body composition analysis
- A lab-based functional near-infrared spectroscopy (fNIRS) with full brain coverage, the only one of its kind in Europe
- Two portable wireless brain fNIRS systems
- 24-hour portable physiological monitoring with actigraphy, full ECG and continuous blood pressure
- 3D motion capture cameras
- Electromyography
- Force plates

This new integrated equipment enables real time synchronised data collection and will allow the ISEH to deliver cutting edge research in Exercise Neuroscience, Biomechanics and Physiology.

The lab based fNIRS equipment will enable the ISEH to study brain connectivity and changes in cortical activity following exercise. The portable fNIRS systems will enable us to go into schools to study child cognitive development after physical activity interventions, and to collect pitch-side brain imaging changes before and after sport sessions. By integrating the biomechanical system (3D cameras, EMG, force plates) with the wireless brain fNIRS, we will also be able to examine the relationship between brain activity and movement.

A team of two PhD students and three research interns led by Dr Flaminia Ronca, are initially focusing on the impact of cognitive fatigue on motor control and injury risk, and on the impact of exercise on relieving cognitive fatigue.



CASE STUDY: THE VALD APPLIED RESEARCH INITIATIVE

The ISEH have been successful in receiving a highly competitive grant this year, as one of only a handful of winners of the VALD Applied Research Initiative (VARI), including over 250 applicants and national governing bodies worldwide.

This grant will support the integration of an objective assessment in an NHS Orthopaedic pathway. VALD Health, leaders in Human Measurement Technology, and their devices and financial support will allow the ISEH to integrate cutting-edge objective assessment into the orthopaedic pathway of an NHS Hospital (UCLH) with the purpose of providing benchmark data and measurement of patient outcomes in patients with osteoarthritis and ACL injury.

This important project aims to help address the chronic burden of musculoskeletal injury and diseases through precision healthcare, and could provide a benchmark for others to follow.



“ Amazing care from these [ISEH] folks today! Thanks so much for looking after me. ”
 — Private patient, via Instagram.



TAKING A MULTIDISCIPLINARY APPROACH FROM INJURY AND PRE-OPERATION THROUGH TO RETURN TO SPORT

EVENTS

OUR EVENTS ATTRACT LARGE AUDIENCES FROM ACROSS THE MEDICAL AND SPORT AND EXERCISE COMMUNITY

“ It’s amazing, I am hoping to be able to do the 10k and I will speak to my physio and hopefully sign up. The ISEH has been a lifesaver. ”

ISEH Patient regarding ISEH Run, via Instagram.

The ISEH prides itself on delivering world-class, thought-leading educational events that provide sport and exercise medicine practitioners with high-quality support and learning. Over the past year, ISEH has continued to deliver an engaging and popular programme of online educational webinars and conferences.

These webinars offer free CPD on a range of topics given by the ISEH consultants and specialists, as well as other world-renowned experts have had thousands of people join these events live, with many more accessing them post-event by streaming them from the ISEH website and YouTube channel, providing a valuable ongoing educational resource for everyone across the sport and exercise medicine community.

In 2022, the ISEH has also begun holding a number of smaller, more informal face-to-face CPD evenings for physiotherapists, fitness trainers and other related disciplines to support their learning and development whilst also raising the profile and awareness of the ISEH.

As well as providing educational events, ISEH also puts on an annual fun-run in London’s beautiful Regents Park, encouraging hundreds of people to come and be active regardless of their age or fitness levels. Unfortunately, this year the ISEH Run coincided with the passing of Her Royal Majesty the Queen, and out of respect the ISEH cancelled the event. The ISEH Run will return in 2023!

WEBINARS HELD IN 2022

Below is a list of some of the online educational conferences and webinars that ISEH have held this year:

- Sports Injuries and Sports Orthopaedics Conference, January 2022:
 - The Multi-Disciplinary Management of Instability in Sport, 12 January 2022.
 - Female Health & Performance in Sport, 20 January 2022.
- Sports Cardiorespiratory Medicine Conference, 12 May 2022.

“ Great day so far on the @TheISEH Cardiorespiratory Medicine Conference. Learnt a lot so far, even if some of it went right over my head. Looking forward to the next half of the day! ”

“ Fantastic presentations @TheISEH this evening contributing to pushing forward research & support for menstruating, pregnant and postnatal women with high activity loads professional and recreational. ”

Dance professional and webinar attendee, via Twitter.

MARKETING & COMMUNICATIONS

ISEH WEBSITE

The ISEH website continues to be a key platform for people to discover, learn and find out more about our renowned sport and exercise medicine facility and the services that we offer. It attracts people not only from the UK, but from all over the world including the USA, Germany and China. On average there are over 6,000 monthly online visitors, we have seen a 21% growth in the numbers of people engaging in our website over the past 12 months.

During 2022, new strategies have been implemented to increase the digital reach and visibility of the ISEH, particularly through improving the website's prominence within search engines, such as Google. We have produced more regular and engaging digital content demonstrating the ISEH services and positively communicating the array of different activities and work that takes place at the ISEH. This has led to a significant increase in visitors and overall engagement with the website.



ISEH SOCIAL MEDIA CHANNELS

Throughout 2022, the ISEH has focused on creating relevant, informative, and high value content in a range of formats to connect authentically with current followers and reach new audiences across the ISEH's Instagram, Twitter, LinkedIn and Facebook platforms.

The ISEH social media channels have experienced significant growth and greater engagement from our followers this year, with LinkedIn in particular seeing a 20% growth in followers. With the assistance and input from ISEH colleagues sharing their knowledge and expertise, relevant and timely engaging content has been produced to help publicise the range of outstanding work that takes place at the Institute. The interactive video posts featuring ISEH colleagues and students on Instagram have performed particularly well with each video being watched by between 2,000 to 4,500+ people.

To help ISEH audiences better understand our services and the excellent work we do, a new look and feel has been adopted. Posts have become more curated while content is digestible and bite-sized. The social media channels continue to be a useful resource for people to discover the ISEH and to further their knowledge within sport and exercise medicine.



The ISEH twitter account now has over 8,800 followers

MEDIA

The ISEH continues to have a great deal of interest from a variety of media in 2022, and has become a key point of contact for current media stories around sport, exercise and health. Below are some highlights. For all media stories please see our [press coverage page](#) on the ISEH website.

- Health & Wellbeing - (readership: 40,000):**

Commentary from Dr Sarah Davies on how to sync your exercise regime to your menstrual cycle has been featured. The piece includes a full credit to Dr Davies and ISEH, along with a link to the website.
- Stylist.co.uk: Exercising in a Heatwave**

Professor Mathew Wilson shared expertise and advice on how to exercise safely during a heatwave.
- Multiple Media Outlets: How Exercise can give you a Better Night's Sleep**

Dr Sarah Davies shared her expertise and experience of the impact of exercise on sleep – this was featured and picked up by a range of local news platforms.
- Tom's Guide - (readership: 20m):**

Dr Bruce Paton shares insight on the causes of knee pain and the exercises that may be contributing to this, while discussing the types of strengthening exercises to help relieve symptoms



LOOKING AHEAD TO 2023

As business has returned to normal during 2022 following the pandemic, we are very much looking forward to being able to advance and progress the ISEH's workstreams across all areas of our organisation into 2023.

The ISEH's clinical activity is going from strength-to-strength both in supporting elite athletes and sports organisations, but also in caring for recreational sports people through both our private and NHS collaborations. In 2023, we will continue to review and adapt our clinics to ensure that we are able to provide the highest quality of care for the optimal number of patients. We will also continue to look at introducing new specialist clinical services, staffed by world-class clinicians, that best meet the needs and demands of our patients.

The ISEH's educational courses continue to grow in popularity, and in 2023 we will work closely with UCL and the ISEH teaching team to look at how we can continue to meet the student demand for our undergraduate and postgraduate courses, whilst also maintaining the quality of teaching and student experience. The ISEH will also continue to work collaboratively with UCL in developing and refining their potential plans for expanding their sporting facilities at the new UCL campus situated at the Olympic Park in Stratford through the UCL Sport East project. This exciting new development has the potential of providing great opportunities for the ISEH and UCL to expand our footprint and grow our teaching and research capabilities.

A strong commitment to research will continue to underpin all of the ISEH's excellent clinical and educational work in 2023. As the pandemic has eased over the past year, we have seen exciting momentum across our research activities. We want to continue to maintain and accelerate this momentum with more academic outputs and the delivery of a number of cutting-edge research studies, growing our understanding and knowledge in novel areas of sport injury and performance, exercise medicine and population health.

We are very excited about the opportunities to grow and develop the work of ISEH in 2023, and will continue to work in collaboration with a broad range of colleagues, partners and stakeholders on the journey to deliver the ISEH's vision of becoming a world leading institute for sport and exercise medicine.

APPENDIX

ISEH RESEARCH OUTPUTS IN 2022

The list below outlines the academic research outputs of the ISEH in 2022. The list primarily covers published peer reviewed papers.

NAME OF ISEH CONTRIBUTOR	TITLE OF PAPER	DATE	PUBLICATION	ADDITIONAL REFERENCING DETAILS	OUTPUT COLLABORATORS (names of other contributors)
James Hull	Prevalence of lower airway dysfunction in athletes: a systematic review and meta-analysis by a subgroup of the IOC consensus group on 'acute respiratory illness in the athlete'	Feb 2022	Br J Sports Med.	56(4):213-222	Price OJ, Sewry N, Schwellnus M, Backer V, Reier-Nilsen T, Bougault V, Pedersen L, Chenuel B, Larsson K, Hull JH
James Hull	Acute respiratory illness and return to sport: a systematic review and meta-analysis by a subgroup of the IOC consensus on 'acute respiratory illness in the athlete'	Feb 2022	Br J Sports Med	56(4):223-231	Snyders C, Pyne DB, Sewry N, Hull JH, Kaulback K, Schwellnus M
James Hull & Mike Loosemore	Clinical patterns, recovery time and prolonged impact of COVID-19 illness in international athletes: the UK experience	Jan 2022	Br J Sports Med	56(1):4-11	Hull JH, Wootten M, Moghal M, Heron N, Martin R, Walsted ES, Biswas A, Loosemore M, Elliott N, Ranson C.
Mathew Wilson	Association between thermal responses, medical events, performance, heat acclimation and health status in male and female elite athletes during the 2019 Doha World Athletics Championships	Feb 2022	Br J Sports Med.	14:bjssports-2021-104569. doi: 10.1136/bjssports-2021-104569.	Racinais S, Havenith G, Aylwin P, Ihsan M, Taylor L, Adami PE, Adamuz MC, Alhammoud M, Alonso JM, Bouscaren N, Buitrago S, Cardinale M, van Dyk N, Esh CJ, Gomez-Ezeiza J, Garrandes F, Holtzhausen L, Labidi M, Lange G, Lloyd A, Moussay S, Mtibaa K, Townsend N, Wilson MG, Bermon S.
Mark Hamer	Prospective Associations of Leisure-Time Physical Activity With Psychological Distress and Well-Being: A 12-Year Cohort Study.	Jan 2022	Psychosom Med.	1;84(1):116-122.	Werneck AO, Stubbs B, Kandola A, Oyeyemi AL, Schuch FB, Hamer M, Vancampfort D, Silva DR.
Snehal Pinto-Pereira	Physical and mental health 3 months after SARS-CoV-2 infection (long COVID) among adolescents in England (CLoCk): a national matched cohort study	Feb 2022	Lancet Child Adolesc Health.	7:S2352-4642(22)00022-0. doi: 10.1016/S2352-4642(22)00022-0.	Stephenson T, Pinto Pereira SM, Shafran R, de Stavola BL, Rojas N, McOwat K, Simmons R, Zavala M, O'Mahoney L, Chalder T, Crawley E, Ford TJ, Harnden A, Heyman I, Swann O, Whittaker E; CLoCk Consortium, Ladhani SN.
Charlie Pedlar	Recent COVID-19 vaccination has minimal effects on the physiological responses to graded exercise in physically active healthy people	Feb 2022	J Appl Physiol.	1;132(2):275-282.	Batatinha H, Baker FL, Smith KA, Zúñiga TM, Pedlar CR, Burgess SC, Katsanis E, Simpson RJ.
Mark Hamer & Flaminia Ronca	Decreased Exercise-Induced Changes in Prefrontal Cortex Hemodynamics are Associated with Depressive Symptoms.	2022	Frontiers in Neuroergonomics	p.16	Crum, J., Ronca, F., Herbert, G., Funk, S., Carmona, E., Hakim, U., Jones, I., Hamer, M., Hirsch, J., Hamilton, A. and Tachtsidis, I.,

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Flaminia Ronca	Bilateral improvements following unilateral home-based training in plantar flexors: A potential for Cross-education in Rehabilitation	2022	Journal of Sports Rehabilitation		Mandal, S., Simmons, N., Wong, L. Z., Mirallais, A., Ronca, F., & Kumar, B.
Fares Haddad & Flaminia Ronca	Return to Sport After Unicompartmental Knee Arthroplasty: A Systematic Review and Meta-analysis	2022	Orthopaedic Journal of Sports Medicine	10(3), p.23259671221079285	Radhakrishnan, G.T., Magan, A., Kayani, B., Asokan, A., Ronca, F. Haddad, F.S.
Mark Hamer & Snehal Pinto-Pereira	Lifetime body mass index and grip strength at age 46 years: the 1970 British Cohort Study.	2022	Journal of Cachexia, Sarcopenia and Muscle	DOI: https://doi.org/10.1002/jcsm.12992	Cooper R, Tomlinson D, Hamer M, Pinto Pereira SM
Snehal Pinto-Pereira	Long COVID (post-COVID-19 condition) in children: a modified Delphi process	2022	Archives of Disease Childhood	doi:10.1136/archdischild-2021-323624	Stephenson, T., Allin, B., Nugawela, M. D., Rojas, N., Dalrymple, E., Pinto Pereira, S., Shafran, R
Snehal Pinto-Pereira, Mark Hamer, Jo Blodgett & Tom Norris	Obesity in early adulthood and physical functioning in mid-life: Investigating the mediating role of c-reactive protein	2022	Brain, Behavior, and Immunity	102, 325-332. doi:10.1016/j.bbi.2022.03.008	Norris, T., Blodgett, J. M., Rogers, N. T., Hamer, M., & Pinto Pereira, S. M.
Mark Hamer & Jo Blodgett	Dose-response association between step count and cardiovascular disease risk markers in middle-aged adults	Apr 2022	Scand J Med Sci Sports.	23. doi: 10.1111/sms.14173	Hamer M, Blodgett JM, Stamatakis E.
Mark Hamer	Cross-sectional associations between domain-specific sitting time and other lifestyle health behaviours: the Stormont study	Mar 2022	J Public Health (Oxf)	7;44(1):51-59. doi: 10.1093/pubmed/fdab298	Kettle VE, Hamer M, Munir F, Houdmont J, Wilson K, Kerr R, Addley K, Sherar LB, Clemes SA.
Mark Hamer	Sedentary behaviour is associated with heightened cardiovascular, inflammatory and cortisol reactivity to acute psychological stress	Mar 2022	Psychoneuroendocrinology	31;141:105756. doi: 10.1016/j.psyneuen.2022.105756.	Chantry AJ, Bishop NC, Hamer M, Kingsnorth AP, Chen YL, Paine NJ.
Mark Hamer	Feasibility Trial of Yoga Programme for Type 2 Diabetes Prevention (YOGA-DP) among High-Risk People in India: A Qualitative Study to Explore Participants' Trial- and Intervention-Related Barriers and Facilitators	May 2022	Int J Environ Res Public Health	1;19(9):5514. doi: 10.3390/ijerph19095514.	Mishra P, Harris T, Greenfield SM, Hamer M, Lewis SA, Singh K, Nair R, Mukherjee S, Manjunath NK, Tandon N, Kinra S, Prabhakaran D, Chattopadhyay K.
Snehal Pinto-Pereira	Physical and mental health 3 months after SARS-CoV-2 infection (long COVID) among adolescents in England (CLoCk): a national matched cohort study.	2022	The Lancet Child & Adolescent Health.	doi:10.1016/S2352-4642(22)00022-0	Stephenson, T., Pinto Pereira, S. M., Shafran, R., de Stavola, B. L., Rojas, N., McOwat, K., . . . Ladhani, S. N.
Ian Needleman	Orofacial conditions and oral health behavior of young athletes: A comparison of amateur and competitive sports	May 2022	Scandinavian Journal of Medicine in Sports Sciences	32(5):903-912. doi: 10.1111/sms.14143. Epub 2022 Mar 7. PMID: 35174553	Merle C, Richter L, Challakh N, Haak R, Schmalz G, Needleman I, Wolfarth B, Ziebolz D & Wustenfeld J.

NAME OF ISEH CONTRIBUTOR	TITLE OF PAPER	DATE	PUBLICATION	ADDITIONAL REFERENCING DETAILS	OUTPUT COLLABORATORS (names of other contributors)
James Hull & Mike Loosemore	Evidence of immunometabolic dysregulation and airway dysbiosis in athletes susceptible to respiratory illness	May 2022	EBioMedicine	79:104024. doi: 10.1016/j.ebiom.2022.104024.	Cuthbertson L, Turner SEG, Jackson A, Ranson C, Loosemore M, Kelleher P, Moffatt MF, Cookson WOC, Hull JH, Shah A.
James Hull	BTS clinical statement for the assessment and management of respiratory problems in athletic individuals.	June 2022	Thorax	77(6):540-551. doi: 10.1136/thoraxjnl-2021-217904	Hull JH, Burns P, Carre J, Haines J, Hepworth C, Holmes S, Jones N, MacKenzie A, Paton JY, Ricketts WM, Howard LS.
James Hull	Physiotherapy for large airway collapse: an ABC approach	Feb 2022	ERJ Open Res	7;8(1):00510-2021. doi: 10.1183/23120541.00510-2021	Grillo LJF, Housley GM, Gangadharan S, Majid A, Hull JH.
James Hull	Exercise-induced laryngeal obstruction (EILO) in athletes: a narrative review by a subgroup of the IOC Consensus on 'acute respiratory illness in the athlete'	June 2022	Br J Sports Med	56(11):622-629. doi: 10.1136/bjsports-2021-104704.	Clemm HH, Olin JT, McIntosh C, Schwellnus M, Sewry N, Hull JH, Halvorsen T.
James Hull	Burden and impact of chronic cough in UK primary care: a dataset analysis	Dec 2021	BMJ Open	17;11(12):e054832. doi: 10.1136/bmjopen-2021-054832.	Hull JH, Langerman H, Ul-Haq Z, Kamalati T, Lucas A, Levy ML.
James Hull	Tolerability and impact of SARS-CoV-2 vaccination in elite athletes	Jan 2022	Lancet Respir Med.	10(1):e5-e6. doi: 10.1016/S2213-2600(21)00548-8	Hull JH, Wootten M, Ranson C.
Mike Loosemore	The Role of Physical Activity in Healthy Ageing: An Overview for the Family Physician	2022	In: Demurtas J., Veronese N. (eds) The Role of Family Physicians in Older People Care. Practical Issues in Geriatrics.	Springer, Cham. https://doi.org/10.1007/978-3-030-78923-7_5	Smith L., Bruyere O., Hoedebecke K., Loosemore M.
Mathew Wilson & Theo Farley	Poor isometric neck extension strength as a risk factor for concussion in male professional Rugby Union players.	June 2022	Br J Sports Med	56(11):616-621. doi: 10.1136/bjsports-2021-104414	Farley T, Barry E, Sylvester R, Medici A, Wilson MG
Mathew Wilson & Theo Farley	Poor cervical proprioception as a risk factor for concussion in professional male rugby union players	Apr 2022	Phys Ther Sport.	4;55:211-217. doi: 10.1016/j.ptsp.2022.03.010	Farley T, Barry E, Bester K, Barbero A, Thoroughgood J, De Medici A, Sylvester R, Wilson MG
James Hull	International Olympic Committee (IOC) consensus statement on acute respiratory illness in athletes part 1: acute respiratory infections	Jul 2022	Br J Sports Med	21:bjsports-2022-105759. doi: 10.1136/bjsports-2022-105759. Online ahead of print. PMID: 35863871	Schwellnus M, Adami PE, Bougault V, Budgett R, Clemm HH, Derman W, Erdener U, Fitch K, Hull JH, McIntosh C, Meyer T, Pedersen L, Pyne DB, Reier-Nilsen T, Schobersberger W, Schumacher YO, Sewry N, Soligard T, Valtonen M, Webborn N, Engebretsen L.
James Hull	Diagnosis and management of allergy and respiratory disorders in sport: An EAACI task force position paper	Jul 2022	Allergy	9. doi: 10.1111/all.15431. Online ahead of print. PMID: 35809082	Price OJ, Walsted ES, Bonini M, Brannan JD, Bougault V, Carlsen KH, Couto M, Kippelen P, Moreira A, Pite H, Rukhadze M, Hull JH.

NAME OF ISEH CONTRIBUTOR	TITLE OF PAPER	DATE	PUBLICATION	ADDITIONAL REFERENCING DETAILS	OUTPUT COLLABORATORS (names of other contributors)
James Hull	Safety of the SARS-CoV-2 vaccination and addressing vaccine hesitancy in athletes	Jun 2022	Br J Sports Med	29:bjsports-2022-105487. doi: 10.1136/bjsports-2022-105487. Online ahead of print. PMID: 35768182	Rankin A, Hull JH, Wootten M, Ranson C, Heron N.
James Hull	The effects of acute respiratory illness on exercise and sports performance outcomes in athletes - A systematic review by a subgroup of the IOC consensus group on "Acute respiratory illness in the athlete"	Jul 2022	Eur J Sport Sci.	8:1-19. doi: 10.1080/17461391.2022.2089914. Online ahead of print. PMID: 35695464	Kaulback K, Pyne DB, Hull JH, Snyders C, Sewry N, Schwellnus M.
James Hull	Persistent symptoms in athletes following COVID-19: time to take a breath in the search for answers?	May 2022	Br J Sports Med	31:bjsports-2022-105889. doi: 10.1136/bjsports-2022-105889	
Mark Hamer, Snehal Pinto-Pereira & Jo Blodgett	Stability of Balance Performance From Childhood to Midlife	Jul 2022	Pediatrics.	1;150(1):e2021055861	Blodgett JM, Cooper R, Pinto Pereira SM, Hamer M.
Mark Hamer	Cohort Profile Update: The 1970 British Cohort Study (BCS70)	Jul 2022	Int J Epidemiol	18:dyac148. doi: 10.1093/ije/dyac148.	Sullivan A, Brown M, Hamer M, Ploubidis GB
Mark Hamer	Sedentary behaviour, physical activity and psychobiological stress reactivity: A systematic review.	Jul 2022	Biol Psychol	172:108374. doi: 10.1016/j.biopsycho.2022.108374.	Chaunry AJ, Bishop NC, Hamer M, Paine NJ.
Mark Hamer	Changes in physical activity and adiposity with all-cause, cardiovascular disease, and cancer mortality	Aug 2022	Int J Obes (Lond).	1. doi: 10.1038/s41366-022-01195-z.	Ahmadi MN, Lee IM, Hamer M, Del Pozo Cruz B, Chen LJ, Eroglu E, Lai YJ, Ku PW, Stamatakis E.
Mark Hamer	Associations between childhood and adulthood socioeconomic position and grip strength at age 46 years: findings from the 1970 British Cohort Study	Jul 2022	BMC Public Health	27;22(1):1427. doi: 10.1186/s12889-022-13804-7.	Yusuf M, Montgomery G, Hamer M, McPhee J, Cooper R.
Snehal Pinto-Pereira & Tom Norris	Adiposity and grip strength: a Mendelian randomisation study in UK Biobank	Jun 2022	BMC Med.	2;20(1):201. doi: 10.1186/s12916-022-02393-2.	Pinto Pereira SM, Garfield V, Farmaki AE, Tomlinson DJ, Norris T, Fatemifar G, Denaxas S, Finan C, Cooper R.
Charlie Pedlar	Rise of intravenous nutrition products among professional team sport athletes: reasons to be concerned?	Aug 2022	Br J Sports Med	16:bjsports-2022-105883. doi: 10.1136/bjsports-2022-105883	Lewis N, Hodgson A, Khanbhai T, Sygo J, Mazur J, Smith C, Catterson P, Pedlar C.
Charlie Pedlar	Menstrual Cycle: The Importance of Both the Phases and the Transitions Between Phases on Training and Performance	Jul 2022	Sports Med	52(7):1457-1460. doi: 10.1007/s40279-022-01691-2	Bruinvels G, Hackney AC, Pedlar CR.

NAME OF ISEH CONTRIBUTOR	TITLE OF PAPER	DATE	PUBLICATION	ADDITIONAL REFERENCING DETAILS	OUTPUT COLLABORATORS (names of other contributors)
Bruce Paton	Outcomes following surgical management of proximal hamstring tendon avulsions	2022	Bone & Joint Open	3(5):415-22	Hillier-Smith R, Paton B.
Bruce Paton	Tolerance to Intermittent vs. Continuous Blood Flow Restriction Training: A meta-Analysis.	2022	INT J SPORTS MED	43(1):3-10.	Sinclair P, Kadhum M, Paton B.
Bruce Paton	Is There a Minimum Effective Dose for Vascular Occlusion During Blood Flow Restriction Training?	2022	Frontiers in Physiology	13	Das A, Paton B.
Mark Hamer	Bidirectional associations of sleep and discretionary screen time in adults: longitudinal analysis of the UK Biobank	Sep 2022	Journal of Sleep Research	16:e13727. doi: 10.1111/jsr.13727.	Sampasa-Kanyinga H, Chaput J-P, Huang B-H, Duncan MJ, Hamer M, Stamatakis E.
Mark Hamer, Snehal Pinto-Pereira, Jo Blodgett, & Tom Norris	Pre- and post-natal correlates of moderate-vigorous physical activity in midlife: evidence from the 1970 British Cohort	Sep 2022	J Epid Community Health	http://dx.doi.org/10.1136/jech-2022-219213	Blodgett JM, Norris T, Stamatakis E, O'Donovan G, Pinto Pereira SM, Hamer M.
Mark Hamer	Device-measured vigorous intermittent lifestyle physical activity and mortality: the UK Biobank	2022	Nature Med	(in press)	Stamatakis E, Ahmadi MN, Gill JMR, Thøgersen-Ntoumanis C, Gibalad M, Doherty A, Hamer M
Fares Haddad	Digital and robotic MSK surgery: is this the moment?	Jan 2022	Ann R Coll Surg Engl.	104(1):2-4. doi: 10.1308/rcsann.2021.0131	Plastow R, Beard DJ, Haddad FS
Fares Haddad	Modern total hip arthroplasty: peak of perfection or room for improvement?	Feb 2022	Bone Joint J	104-B(2):189-192. doi: 10.1302/0301-620X.104B2.BJJ-2022-0007	Scott CEH, Clement ND, Davis ET, Haddad FS.
Fares Haddad	Is the die cast? Anterior cruciate ligament injury and osteoarthritis	May 2022	Bone Joint J.	104-B(5):529-531. doi: 10.1302/0301-620X.104B5.BJJ-2022-0239	Rajput V, Haddad FS.
Fares Haddad	Deep learning in orthopaedic research: weighing idealism against realism.	Aug 2022	Bone Joint J	104-B(8):909-910. doi: 10.1302/0301-620X.104B8.BJJ-2022-0416.	Vigdorchik JM, Jang SJ, Taunton MJ, Haddad FS
Fares Haddad & Flaminia Ronca	A meta-analysis assessing time for return to sport following hip resurfacing.	Aug 2022	Arch Orthop Trauma Surg	30. doi: 10.1007/s00402-022-04592-1	Magan A, Wignadasan W, Kayani B, Radhakrishnan G, Ronca F, Haddad FS

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Fares Haddad	The introduction of day-case total knee arthroplasty in a national healthcare system: A review of the literature and development of a hospital pathway.	Apr 2022	Surgeon	20(2):103-114. doi: 10.1016/j.surge.2021.01.017. Epub 2021 Mar 23	Thompson JW, Wignadasan W, Ibrahim M, Plastow R, Beasley L, Haddad FS.
Fares Haddad	Surgical Repair of Stener-like Injuries of the Medial Collateral Ligament of the Knee in Professional Athletes	June 2022	Am J Sports Med	50(7):1815-1822. doi: 1177/03635465221093807	Thompson JW, Rajput V, Kayani B, Plastow R, Magan A, Haddad FS.
Fares Haddad	Tourniquet use in total knee arthroplasty and the risk of infection: a meta-analysis of randomised controlled trials	Jul 2022	J Exp Orthop	1;9(1):62. doi: 10.1186/s40634-022-00485-9.	Magan AA, Dunseath O, Armonis P, Fontalis A, Kayani B, Haddad FS
Fares Haddad	Robotic arm-assisted versus manual unicompartmental knee arthroplasty: a systematic review and meta-analysis of the MAKO robotic system.	May 2022	Bone Joint J	104-B(5):541-548. doi: 10.1302/0301-620X.104B5.BJJ-2021-1506.R1	Zhang J, Ng N, Scott CEH, Blyth MJG, Haddad FS, Macpherson GJ, Patton JT, Clement ND
Fares Haddad	Implant Malalignment may be a Risk Factor for Poor Patient-Reported Outcomes Measures (PROMs) Following Total Knee Arthroplasty (TKA).	Jun 2022	J Arthroplasty	37(6S):S129-S133. doi: 10.1016/j.arth.2022.02.087	Kazarian GS, Haddad FS, Donaldson MJ, Wignadasan W, Nunley RM, Barrack RL
Fares Haddad & Jenni Tahmassebi	Oxidized zirconium versus cobalt-chrome femoral heads in total hip arthroplasty: a multicentre prospective randomized controlled trial with ten years' follow-up	Jul 2022	Bone Joint J	104-B(7):833-843. doi: 10.1302/0301-620X.104B7.BJJ-2021-1673.R1	Kayani B, Baawa-Ameyaw J, Fontalis A, Tahmassebi J, Wardle N, Middleton R, Stephen A, Hutchinson J, Haddad FS
Fares Haddad, Sam Oussedik & Jenni Tahmassebi	Inflammatory Response in Robotic-Arm-Assisted Versus Conventional Jig-Based TKA and the Correlation with Early Functional Outcomes: Results of a Prospective Randomized Controlled Trial	Sep 2022	J Bone Joint Surg Am.	8. doi: 10.2106/JBJS.22.00167.	Fontalis A, Kayani B, Asokan A, Haddad IC, Tahmassebi J, Konan S, Oussedik S, Haddad FS.
Fares Haddad	Access to hip arthroplasty and rates of complications in different socioeconomic groups: a review of 111,000 patients in a universal healthcare system	May 2022	Bone Joint J.	104-B(5):589-597. doi: 10.1302/0301-620X.104B5.BJJ-2021-1520.R2	Atrey A, Pincus D, Khoshbin A, Haddad FS, Ward S, Aktar S, Ladha K, Ravi B.
James Hull	Hosting international sporting events during the COVID-19 pandemic: lessons learnt and looking forward	Aug 2022	Br J Sports Med	. doi: 10.1136/bjsports-2022-106096.	Mountjoy M, McCloskey B, Bahr R, Hull JH, Kemp J, Thornton JS, Patricios J.
James Hull	Heightened ventilatory response during stair climbing in individuals with dysfunctional breathing.	Oct 2022	ERJ Open Res	doi: 10.1183/23120541.00285-2022.	Siewers K, Walsted E, Manivannan B, Warren C, McCabe C, Hull JH.
Mark Hamer	Perceived Social Support and Sustained Physical Activity During the COVID-19 Pandemic	Sep 2022	Int J Behav Med	doi: 10.1007/s12529-022-10125-2.	Hailey V, Fisher A, Hamer M, Fancourt D.

NAME OF ISEH CONTRIBUTOR	TITLE OF PAPER	DATE	PUBLICATION	ADDITIONAL REFERENCING DETAILS	OUTPUT COLLABORATORS (names of other contributors)
Mark Hamer	The burden of mild cognitive impairment attributable to physical inactivity in Colombia.	Nov 2022	Eur Rev Aging Phys Act.	doi: 10.1186/s11556-022-00307-y	O'Donovan G, Lee IM, Hamer M, García-Garro P, Duran-Aniotz C, Ibáñez A, Sarmiento OL, Hessel P.
Mark Hamer	Bidirectional associations of sleep and discretionary screen time in adults: Longitudinal analysis of the UK biobank.	Sep 2022	J Sleep Res.	doi: 10.1111/jsr.13727.	Sampasa-Kanyinga H, Chaput JP, Huang BH, Duncan MJ, Hamer M, Stamatakis E.
Jo Blodgett, John Mitchell & Mark Hamer	Associations between the composition of daily time spent in physical activity, sedentary behaviour and sleep and risk of depression: Compositional data analyses of the 1970 British cohort Study.	Sep 2022	J Affect Disord.	doi: 10.1016/j.jad.2022.09.110.	Blodgett JM, Mitchell JJ, Stamatakis E, Chastin S, Hamer M.
Jo Blodgett	One-Legged Balance Performance and Fall Risk in Mid and Later Life: Longitudinal Evidence From a British Birth Cohort	Aug 2022	Am J Prev Med.	doi: 10.1016/j.amepre.2022.07.002.	Blodgett JM, Hardy R, Davis D, Peeters G, Kuh D, Cooper R.
Tom Norris & Snehal Pinto Pereira	The associations of maternal and paternal obesity with latent patterns of offspring BMI development between 7 and 17 years of age: pooled analyses of cohorts born in 1958 and 2001 in the United Kingdom	Nov 2022	Int J Obes (Lond).	doi: 10.1038/s41366-022-01237-6	Johnson W, Pereira SMP, Costa S, Baker JL, Norris T.
Snehal Pinto Pereira	The relationship between Post COVID symptoms in young people and their parents.	Oct 2022	J Infect.	doi: 10.1016/j.jinf.2022.10.005	Bertran M, Pinto Pereira SM, Nugawela MD, Stephenson T, Shafran R, Ford T, Buszewicz M, Whittaker E, Heyman I, Segal TY, Dalrymple E, Ladhani SN.
Fares Haddad	One- or Two-Stage Reimplantation for Infected Total Knee Prosthesis?	Oct 2022	Orthop Traumatol Surg Res.	doi: 10.1016/j.otsr.2022.103453	Wignadasan W, Ibrahim M, Haddad FS.
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Hugh Montgomery	Travelling back to normal.	May 2022	Exp Physiol.	doi: 10.1113/EP090408	Tipton M, Montgomery H
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Hugh Montgomery	Non-invasive respiratory support in the management of acute COVID-19 pneumonia: considerations for clinical practice and priorities for research.	Feb 2022	Lancet Respir Med.	doi: 10.1016/S2213-2600(21)00414-8	Weerakkody S, Arina P, Glenister J, Cottrell S, Boscaini-Gilroy G, Singer M, Montgomery HE.
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Hugh Montgomery	Global environmental climate change, covid-19, and conflict threaten food security and nutrition.	Sep 2022	BMJ.	doi: 10.1136/bmj-2022-071534	Hendriks SL, Montgomery H, Benton T, Badiane O, Castro de la Mata G, Fanzo J, Guinto RR, Soussana JF
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Hugh Montgomery	Safety and Feasibility Assessment of Repetitive Vascular Occlusion Stimulus (RVOS) Application to Multi-Organ Failure Critically Ill Patients: A Pilot Randomised Controlled Trial	Jul 2022	J Clin Med.	doi: 10.3390/jcm11143938	Chhetri I, Hunt JEA, Mendis JR, Forni LG, Kirk-Bayley J, White I, Cooper J, Somasundaram K, Shah N, Patterson SD, Puthuchery ZA, Montgomery HE, Creagh-Brown BC.
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