

# Professor Paul Lee

Orthopaedic surgeon & Sports Medicine Doctor

(+44) 7764614688  
[leep@mskdoctors.com](mailto:leep@mskdoctors.com)  
[plee@lincoln.ac.uk](mailto:plee@lincoln.ac.uk)

Professor of Sports Medicine

MBBch, MFSEM(UK), MSc, PhD, FEBOT, FRCS (T&O)

## Qualification

### Professional

<i>GMC</i>	<b>CCT</b> –Trauma and Orthopaedic surgery (6115197)	2016
<i>Fellowship</i>	<b>FRCS (T&amp;O)</b> Royal College of Surgeons of Edinburgh	2015
	<b>FEBOT</b> European Board of Orthopaedic Trauma	2014
<i>Membership</i>	<b>MFSEM</b> Faculty of Sports and Exercise Medicine UK	2009
	<b>MRCS</b> Royal College of Surgeons of Edinburgh	2008
<i>Associate</i>	Regional Surgical Advisor Royal College of Surgeons of Edinburgh	

### Academic

<i>Postgraduate</i>	<b>PhD</b> (Medical Engineering) Cardiff University	2014 (Appendix 1)
	<b>MSc</b> (Sports and Exercise Medicine) UWIC	2011 (Appendix 2)
<i>Undergraduate</i>	<b>MBBch</b> Cardiff University	2005

### Management

<b>Q</b> Community Member, Quality Improvement	2017- current
<b>NHS</b> Clinical Entrepreneur Fellow	2016-17
<b>BOA</b> Clinical Leadership Fellow	2015-16
<b>PRINCE 2</b> Practitioner	2013

### NHS Post

<b>Consultant Sports &amp; Arthroplasty Surgeon</b>	
<b>ULHT Tutor for Staff Grades &amp; Associate Specialists (2018-19)</b>	
<b>ULHT Director of Research (2018-2021)</b>	

July 2017 – current

**Visiting Professor of Sports medicine  
Consultant Arthroplasty and Sports Surgeon  
MSK and Regenerative Medicine Consultant**Untied Lincolnshire Hospitals NHS trust  
University of Lincoln

I joined the Trust in July 2017. I completed my higher surgical training in the Welsh rotation. During this time, I was awarded two international travelling fellowships to visit Endoklink in Germany and Melbourne Orthopaedic Group in Australia. To further develop my expertise and research in arthritis, complex orthopaedics surgery and regeneration medicine, I undertook three highly competitive fellowships:

- Knee and Hip complex reconstructive arthroplasty surgery.
- Revision knee and stem cells surgery and research in the internationally renowned Robert Jones and Agnes Hunt Orthopaedics Hospital in Oswestry.
- Advanced sports knee surgery in the innovative Arthrex centre.

I am a certified Member of the Facility of Sports and Exercise Medicine (UK) and also achieved the certified fellowship exams in Europe (FEBOT) and UK (FRCS) in Orthopaedics. I have a passion for applying clinical and biomechanical principles to hip and knee surgery. I embrace the 50-year British tradition and craftsmanship of a well planned and thought-out cemented Exeter hip replacement, and yet I am at the forefront of sports surgery with the 'all-inside' technique for ACL reconstructions.

Being a double board certified Orthopaedic and Sports medicine surgeon with a PhD in medical Engineering, and MSc in injection therapy, I have successfully applied my research to clinical use, with over 50 clinical publications. I have successfully applied my research to treat UK premiership footballers for muscle injuries, which significantly reduced their time for recovery and return to play. My clinical interests are lower limb arthroplasty, stem cells, regenerative and sports surgery and non-surgical treatment of arthritis. I have been appointed as Visiting Professor of Sports Medicine at University of Lincoln.

Links:

<https://www.ulh.nhs.uk/consultants/mr-paul-y-f-lee-2/>

<https://www.linkedin.com/in/paulleeph/>

**Research Director – ULHT (2018 – 2021)**

During my 3 year term, we developed the new trust research strategy and governance process. Besides continuing to support the portfolio research, we continued to build our relationship with University of Lincoln and started a co-research showcase event which led to many new projects and grant funding.

## **ULHT Tutor for all Staff Grades & Associate Specialists (2018-2020)**

Providing guidance for all the Staff Grade & Associate Specialist (SAS) doctors in the trust, designed an induction programme to welcome new trust doctors. Working with Health Education England and neighbouring trusts, we secured a training programme and grant support for SAS doctors in ULHT. With our support, 5 SAS doctors successfully applied and completed the CESA process. I have developed protocols alongside with the GMC guidance to safeguard and support these doctors.

### **Private Medical Services:**

MSK Doctors [www.mskdoctors.com](http://www.mskdoctors.com)  
London Sports Injury Clinic  
London Cartilage Clinic  
108 Harley Street

Consultant Arthroplasty and Sports Surgeon  
MSK and Regenerative Medicine Consultant

International Cartilage Regeneration Society - ICRS teaching centre of excellence

Centre for International Society Cell and Gene Therapy – ISCT

I am a consultant Orthopaedic surgeon and visiting professor of sports medicine with the School of Sport and Exercise Science, College of Social Science, University of Lincoln. I have a PhD in medical cell engineering and surgical fellowships in regenerative medicine. As an expert in the field of regenerative medicine, I am internationally recognised as the ICRS teaching centre of excellence for cartilage and joint preservation surgery. Combining surgery, technology, engineering and medical principles, I have taken cell therapy to the next level with Single Treatment Autologous Chondrocyte implantation and meniscus repair with automation. As the medical director of the London Cartilage Clinic, I regularly perform treatment to cartilage and meniscus with extensive knowledge of the latest bio medical materials and surgical techniques.

With my involvement in elite sports, I have published my results in peer reviewed medical journals on the treatment of muscle injuries in UK Premiership footballers, which has significantly reduced their time for recovery and return to play. Working with the London Sports Injury Clinic in Harley Street, London, I am a recognised expert in meniscus, mFat, PRP, KneeKG and BFR.

As a regional surgical advisor for the Royal College of Surgeons of Edinburgh, I fully engage with surgical teaching and offer support to students to develop surgical skills. I embrace the use of digital technology, currently working with the school of computer science to build artificial intelligence and deep learning models in musculoskeletal regenerative medicine. As the medical director of MSK Doctors, I have established a network of doctors, surgeons, physios and scientists to form the ENRICH-MSK partnership to promote education and research in MSK regeneration and sports medicine.

### Professional associations:

Fellowship of Royal College of Surgeons (Tr & Orth)  
Membership of Faculty of Sports and Exercise Medicine  
Fellowship European Board of Orthopaedics and Traumatology  
Membership of British Hip Society  
Membership of British Orthopaedic Sports Trauma and Arthroscopy Association  
British Orthopaedic Association  
Biological Knee Society  
International Society Cell and Gene Therapy  
International Cartilage Regeneration Society

### **Teaching and education:**

Over the years, I have been involved, managed and led many medical educational projects with Cardiff and Swansea Medical Schools. Since my arrival in Lincolnshire, I have been involved in delivering clinical teaching for Nottingham BMBS students for their MDD module. I have also been an examiner for medical students with their OSCE exam.

I reached out to Leicester medical school and have established a good clinical education relationship with the phase 2 and phase 3 medical school programme. I regularly receive year 3 and 5 special study module students to my clinic and have good understanding of the MBChB programme. As Lincoln Medical School has become more mature over the past few years, I have been involved in delivering sports medicine lectures and plenary lectures on sports injuries to the BMBS medical school students. Recently, I also started supporting some of these students and provided them with some clinical experience in my outpatient clinics and theatre sessions.

### **Lectures / Seminars/ Workshops:**

- Sports Medicine Lectures - Lincoln Medical school (2021)  
Plenary live lecture to Lincoln medical school year 3 students for Sports Medicine
- Pre-recorded lectures to Lincoln Medical school (2021)
  - Effects of Immobilisation on Skeletal Muscle
  - Physical Fitness: Effect of Exercise on Skeletal Muscle.
  - Sports and Exercise Nutrition
  - The Physiological Effects of Ageing on Muscles
  - Role of Exercise in Treatment and Prevention of Chronic Disease
  - Assessment and Treatment of Sports Injuries
- Physiotherapy lectures and Workshops - School of health and social care
  - Regenerative medicine, cartilage regeneration and hip and knee joint replacement
  - 2018,2019, 2020 (virtual)

#### School of Sport - Sports medicine:

- Sports Therapy MSc – School of Sport and Exercise Science  
Supervised Clinical Placements for Sports Therapy MSc students  
2018, 2019, (paused on 2020 due to COVID), to resume 2021

Working with the School of Sport and Exercise Science, I have supervised Sports Therapy MSc students which enabled clinical practice based learning and sports surgery experience. I work with all the students on an individual basis to help them apply theory into practice in a controlled and supervised environment.

#### School of engineering - Computer Science:

Collaborator Prof Xujiong Ye, Professor of Medical Imaging & Computer Vision

- Full time PhD student started Oct 2020, co-supervisor
- Computer vision – deep learning movement project, led to the development of BioAIM Project

#### School of life sciences - School of Biomedical Science:

Collaborator Jon Whitehead - Professor of Biomedical Biochemistry

- Ethics approval for collection of fat cells, for initial experiments
- The magic of fat cells – Lipogems, teaching webinar for biomedical students,
- Planning for the SLiM HoKOA study, wait grant decision.

#### **Student Supervision:**

- Lincoln and Leicester medical school Medical Student SSC projects and elective Projects  
Supervised Clinical Placements for Medical Students  
Planning for Lincoln medical student research projects with Sports Medicine, at discussion stage

#### **Reputational Input:**

- Being involved with the Global Rehabilitation & Assistive Technology Network (GReAT), helps develop links globally, which will help develop further robotic and sports rehabilitation reputation for the university globally.
- Being officially recognised as the international teaching centre of excellence by the international cartilage regeneration society (ICRS), would help develop regeneration medicine reputation of the university globally.
- Leicester Surgical Society Lectures – medical student conference May 2021, entice and encourage medical students to choose a career in surgery, showcase example of the work that we do to change people's life.

## **Official International Lectures**

Royal College of Surgeons of Edinburgh:

Virtual lectures. Regional Surgical Advisors Webinar Series for medical undergraduates.

Examiner for the Royal college of surgeon of Edinburgh for surgical skills

'Principles of Managing Fractures', 14<sup>th</sup> May 2020

'What do I do for my patient with an acute onset painful hip?', 4<sup>th</sup> June 2020

Cambridge Healthcare Training – UkeMed:

'The Magic of Fat cells' 2018

'Single stage Autologous Cartilage Implantation' 2018

'Osteotomy in lower limb' 2019

'Update on Hip replacement' 2019

'Knee Surgery update' 2020

OT-World conference

'Clinical and economic assessment of the unloader knee brace' – Keynote – Leipzig, Germany, 2018

Bio Bridge foundation conference 2021

'Pubic Symphysis injection with PRP' – keynote, 14<sup>th</sup> June 2021

I have delivered these lectures to a global audience, which helped improve the reputation of the university in MSK Medicine and orthopaedics globally.

## Surgical Training

**Fellowships****Arthrex Advanced Sports Knee Fellowship**

2017

Amit Chandratreya

Working with a senior Arthrex sports knee surgeon, I had great exposure to arthroscopies, was able to learn and perform the latest all in-side technique for single tendon ACL reconstruction. I have a good understanding of the non-surgical management of young painful knees, presented the long term results of the unloader knee brace in international conferences.

**Ling Exeter Arthroplasty Fellowship**

Princess Elizabeth Orthopaedic Hospital, RD&E  
*Hip Arthroplasty with Revision and Trauma*

2016

Matthew Wilson, Matthew Hubble, John Howells, Prof. John Timperley

The Exeter Hip Team is led by a world renowned team of specialist hip consultants and provides a comprehensive hip care service for adults of all ages, including routine and complex surgeries. I was responsible for the daily assessment of all in-patients, pre and post-operative care with elective/fracture outpatient clinics, elective/ trauma theatre lists, ward rounds and weekly grand round clinical conferences. As a fellow, I had a personal all day elective list on Fridays, also part of the team to treat fractured neck of femurs and provide a high quality cemented total hip replacement for this group of patients.

**BOA Clinical Leadership Fellow**

Robert Jones and Agnes Hunt Orthopaedic Hospital, RJA

2015

*Revision Knee/ Hip Arthroplasty, Regeneration medicine, complex trauma*

Richard Spencer Jones, Prof. James Richardson

RJA Oswestry is a specialist tertiary referral orthopaedics hospital in the UK. Working with Richard Spencer-Jones, who is one of the designer surgeons for the Attune revision knee system, I was able to perform a good number of complex primary knee replacements as well as revision knee surgery, arthrodesis and endoprosthesis. I have managed patients with complex arthroplasty problems as well as treating recurrent prosthetic infections. I have also been able to work with the late Prof. James Richardson and learnt the 18 years established ACI technique from the Oscell lab as well as performing distal femoral osteotomy, high tibial osteotomy and complex non-union trauma surgery.

**Princess of Wales Hospital**

August 2014 –15

*Sports Knees / Hip and Knee Arthroplasty with revision, Trauma*

**Morriston Hospital**

August 2013 – 14

*Knee and hip Arthroplasty with revision / Soft tissue knee, Trauma***Royal Gwent Hospital**

August 2012 – 13

*Hip and Knee Arthroplasty with revision, Hands and elbow***Royal Glamorgan Hospital**

August 2011 – 12

*Sports Shoulder, elbow and hands / Arthroplasty with revision***University Hospital of Wales – Major Trauma Centre**

August 2010 – 11

*Sports medicine / Sports Hip, Paediatric, Foot and ankle***Basic Surgical /Core surgical training**

Wales Surgical rotation (CT1, 2, 3)

August 2007 – 10

**Foundation doctor training**

Wales foundation doctor training programme (F1,2)

August 2005 – 07

**Travelling fellowship****Fanni Medical Australia Sport Medicine Travelling Fellowship 2014**Melbourne Orthopaedic Group, **Australia**

I would like to express my sincere gratitude to the Fanni Medical and Australia Orthopaedic Association, in supporting my travelling to Melbourne, Australia in October 2014. I attended the AOA-ASM, in which I have presented 6 of my research projects to a large dynamic group of orthopaedic surgeons. I was also able to scrub-in as a surgical assistant for a 3D laser guided direct anterior approach hip arthroplasty and complex knee surgery.

**BOA EU Travelling Fellowship 2013**Endoklinik, Hamburg, **Germany**

I would like to express my sincere gratitude to the British Orthopaedic Association and Dr. Akos Zahar, Endoklinik Hamburg, in supporting my travelling fellowship to the Endoklinik, Hamburg, Germany in April 2013. I attended Endoklinik as a septic revision arthroplasty fellow, during which I was able to acquire comprehensive knowledge of diagnostic procedures and therapies carried out in this specialist centre. I was able to scrub-in as a surgical assistant, in complex septic and aseptic revision arthroplasty cases. I have learnt complex impaction bone grafting techniques for distal femur, tibia and single stage septic revision technique. This experience enabled me to consolidate and extend my knowledge and understanding in hip and knee arthroplasty.



## National and International Grants:

**Lead applicant:** Paul Y F Lee  
**Organisation:** MSK Doctors  
**Funding body:** Lincolnshire County Council  
**Title:** Future Grant for MSK Clinic  
**Cost:** **£ 65,000 *awarded***  
**Status:** Starting August 2021

---

**Lead applicant:** Khaled Goher, Paul Lee  
**Organisation:** University of Lincoln, Research and Enterprise  
**Funding body:** European Regional Development Fund)  
**Title:** 3D printed custom jigs for MSK surgery  
**Cost:** **£ 6,000 *awarded***  
**Status:** Starting October 2021

---

**Lead applicant:** Paul Y F Lee  
**Organisation:** Grantham and District Hospital  
LEO institute Grantham  
**Funding body:** The Health Foundation  
**Title:** Spreading Consent Plus to Rural Lincolnshire  
**Cost:** **£ 30,000 *awarded***  
**Status:** Starting March 2021

---

**Lead applicant:** Xujiong Ye, Paul Lee  
**Organisation:** University of Lincoln  
**Funding body:** University of Lincoln  
**Title:** Fully funded PhD student for Deep Learning in MSK motion  
**Cost:** **£ 90,000 *awarded***  
**Status:** Starting October 2020

**Lead applicant:** Paul Y F Lee  
**Organisation:** Grantham and District Hospital  
LEO institute Grantham  
**Funding body:** Incrediwear  
**Title:** The effect of Carbonized Charcoal and Germanium embedded Knee Sleeve on osteoarthritis of the Knee  
**Cost:** **£ 20,000 *awarded***  
**Status:** Starting Jan 2018

---

**Lead applicant:** Paul Y F Lee  
**Co- applicant:** Amit Chandratreya, Barry Appleton  
**Organisation:** Princess of Wales Hospital, Bridgend, Wales  
Royal College of Surgeons of Edinburgh  
**Funding body:** Health Foundation: 4th round of Innovating for Improvement  
**Title:** Consent Plus Project  
**Cost:** **£ 74,620 *Granted***  
**Status:** Completed, <http://goo.gl/IABU3s>

---

**Lead applicant:** Paul Y F Lee  
**Co- applicant:** Michael Ryan  
**Organisation:** Cardiff University  
**Funding body:** Advanced Sustainable Manufacturing Technologies  
**Title:** Cyclops Project  
**Cost:** **£ 13,000 (*Awarded*) (*Completed*)**  
**Status:** Completed prototype [www.cyclopsled.com](http://www.cyclopsled.com)

**Lead applicant:** Paul Y F Lee  
**Co- applicant:** Emmanuel Brousseau  
**Organisation:** Cardiff University - School of Engineering  
**Funding company:** Fannin Healthcare  
**Title:** Creep effect in conventional vs crossed-linked polyethylene in a flexible acetabular cup  
**Cost:** £ 7,500 (2015 – 2016) (Awarded)  
**Status:** 2 x presentations in EFFORT 2017

---

**Lead applicant:** Paul Y F Lee  
**Co- applicant:** Sam Evans  
**Organisation:** Cardiff University - School of Engineering  
**Funding company:** Arthex  
**Title:** Mechanical testing of the fibre tape construct in MPFL  
**Cost:** £ 5,000 (2015-2016) (Awarded)  
**Status:** Published, 3 x presentations

---

**Lead applicant:** Paul Y F Lee  
**Co- applicant:** Len Nokes  
**Organisation:** Cardiff University - School of Engineering  
**Funding company:** Cardiff University  
**Title:** Biological role of Actovegin in muscle cells  
**Cost:** £ 4,000 (2015-2017) (Awarded)  
**Status:** Published 4 papers

---

**Lead applicant:** Paul Y F Lee  
**Co- applicant:** Sam Evans  
**Organisation:** Cardiff University - School of Engineering  
**Funding company:** Biomet  
**Title:** Mechanical test on Zip-tight vs Tight rope  
**Cost:** £ 3,000 (2011) (Awarded) (Completed)  
**Status:** Report submitted, presented in BOFAS

I am an inquisitive and enthusiastic person who enjoys working in an environment with a culture of curiosity and ambition; my clinical interests are lower limb arthroplasty, regenerative surgery and trauma. During my higher surgical training in the Welsh Rotation, UK, I became a Member of the Faculty of Sports and Exercise Medicine and have passed the certified Fellowship exams in Europe and UK in Orthopaedics. To further develop my expertise in arthritis, sports orthopaedics surgery and regenerative medicine, I have undertaken further national fellowship training in stem cells and regeneration surgery in the internationally renowned Robert Jones and Agnes Hunt Orthopaedics Hospital in Oswestry.

After completing my MSc in Sports and Exercise medicine in 2011, I was able to continue my research on Actovegin to a PhD level. Being a double board certified Orthopaedic surgeon with specialist interests in orthopaedics and regenerative medicine, I have successfully applied my research to clinical use, treating UK premier ship footballers for muscle injuries which significantly reduced their time for recovery and return to play. I have treated sports injuries in high-level athletes and have been offering performance medicine consultations, treatments and lectures to elite sports teams since 2010.

In order to further develop education and research, I founded WelshBone in 2013 to inspire and promote education and good clinical practice; it was endorsed by the Royal College of Surgeons of Edinburgh and British Orthopaedics Association. This led to the development of clinical examination courses, practical workshops and the South Wales Orthopaedics Research Network (SWORN) to promote and support orthopaedics and sports medicine research, which has supported many undergraduate and postgraduate projects. Recently I have founded LEO institute to promote Musculoskeletal education and research in Lincolnshire.

Over the past few years, I have achieved research grants of over £250,000. My research interests range from cartilage research, muscle injuries, Actovegin therapy to digital patient engagement and consent. I am a recognised expert in 'surgical consent', 'non-surgical management of Osteoarthritis' and injection therapy for Musculoskeletal and Sports conditions.

I am a Key Opinion Leader in Regeneration, Actovegin, Cartilage Cell Therapy, Sports injuries, Joint replacements, General Trauma. My passion of teaching and medical education has led to my involvement with many medical schools, universities, royal colleges and post graduate teaching organisations.

## **Knee**

Ram Rammohan, S Gupta, **Paul Y F Lee**, Amit Chandratreya. The midterm results of a cohort study of patellofemoral arthroplasty from a non-designer centre using an asymmetric trochlear prosthesis. *Knee*, Vol:26 (2019) issue: 6 page:1348-1353. doi:10.1016/j.knee.2019.10.026, PMID: 32147094

Katherine Marino, Rachel Lee and **Paul Y F Lee**. Effect of Germanium-Embedded Knee Sleeve on Osteoarthritis of the Knee. *The Orthopaedic Journal of Sports Medicine*, Vol:7 (2019), issue:10, DOI: 10.1177/2325967119879124. PMID: 31696136

Abida Hasan, Alun D Yewlett, Ashok Marudanayagam, **Paul Y F Lee**. Key to Success in Anterior Cruciate Ligament Surgery: Pre-Tensioning in the Tape Locking Screw Method, *Journal of Orthopaedics and Trauma*, vol. 9 (2019), doi:10.4303/jot/ 236058

Alistair Taylor, **Paul Y F Lee**. Single Treatment Autologous Chondrocyte Implantation: The Next Generation of ACI. *Canadian Journal Biomedical Research & Technology. Journal of Orthopaedics and Trauma*, Vol:2 (2019), Issue:2

**Paul Y F Lee**, David Golding, Sam Rozewicz, Amit P Chandratreya. Modern synthetic material is a safe and effective alternative for medial patellofemoral ligament reconstruction. *Knee Surgery, Sports Traumatology, Arthroscopy*. Volume 26 (2018), Page 2716-2712, PMID: 28929187; doi:10.1007/s00167-017-4711-7

**Lee PYF**, Chandratreya AP (2017) Modern synthetic material is a safe and effective alternative for medial patellofemoral ligament reconstruction. *Knee Surgery, Sports Traumatology, Arthroscopy*. doi:10.1007/s00167-017-4711-7.

**Lee PYF**, Murray J, Nixon A, Chandratreya A (2017) Synovial Plica Syndrome of the knee - A commonly overlooked cause of anterior knee pain. *The Surgery Journal* doi: 10.1055/s-0037-1598047

Golding D, **Lee PYF** (2016) Non-surgical and Non-pharmacological Treatment of Knee Pain. *J Arthritis* 5:225. doi: 10.4172/2167-7921.1000225

**Lee PYF**, Holt M (2016) The Effects of Neuromuscular Blocking Agents in Soft Tissue Balancing During Primary Total Knee Arthroplasty. *Journal of Arthritis* 5:202. doi:10.4172/2167-7921.1000202

**Lee PYF**, Gul S, Davies A (2016) Clinical Outcomes of Tibial Tubercle Transfer for Anterior Knee Pain and Patello-femoral Instability. *Journal of Arthritis* 5:204. doi:10.4172/2167-7921.1000204

## **Sports**

James Brock, David Golding, Paul M Smith, Len Nokes, Alvin Kwan, **Paul Y F Lee**. Update on the Role of Actovegin in Musculoskeletal Medicine: A Review of the Past 10 Years. *Clinical Journal of Sport Medicine*, vol:30 (2020) issue:1 Page83-90. PMID: 31855916; doi:10.1097/JSM.0000000000000566

**Paul Y F Lee**, James Brock, Sarah Mansoor and Bethan Whiting. Knee Braces and Anti-Inflammatory Sleeves in Osteoarthritis, Innovation for the 21st Century? *Journal of Arthritis* Vol:7(2018) Issue:2. DOI: 10.4172/2167-7921.1000e117

**Lee PYF**, Winfield TG, Harris SRS, et al (2017). Unloading knee brace is a cost-effective method to bridge and delay surgery in unicompartmental knee arthritis. *BMJ*  
doi:10.1136/bmjsem- 016- 000195

Perkins C, Whiting B, **Lee PYF** (2017) Steroids and Osteoarthritis. *Journal of Arthritis* 6:e115. doi: 10.4172/2167-7921.1000e115

**Lee PYF**, Brock J (2016) Intra-articular Injections for Osteoarthritis: From Bench to Bedside, can we Teach Old Drugs New Tricks? *Journal of Arthritis* 5:e111. doi:10.4172/2167-7921.1000e111

Brock J, **Lee PYF**, Woodford C, Robertson A (2016) A Radiological and Clinical Evaluation of Acromioclavicular Joint Reconstruction Using Dog Bone Double Endobutton Technique. *Journal of Arthritis* 5:207. doi:10.4172/2167-7921.1000207

Man W, **Lee PYF**, Rogers A (2016) Treatment of Recalcitrant Lateral Epicondylitis with Autologous Conditioning Plasma. *Musculoskeletal Disorders and Treatment*. 1:1

**Lee PYF**, Nokes L, Smith PM (2012) No effect of intravenous Actovegin on peak aerobic capacity. *International Journal of Sports Medicine* Vol. 33: 4, 305 – 309 PMID: 22318562

**Lee PYF**, Kwan A, Nokes L (2011) Actovegin – Cutting Edge Sports Medicine or “Voodoo” remedy? *Current Sports Medicine Reports*, Vol. 10:4, 186 – 190 PMID: 2353189

**Lee PYF**, Nokes L (2011) Our Experience on Actovegin, is it cutting edge? *International Journal of Sports Medicine*, Vol. 32 : 4, 237 – 241 PMID: 21271496

## **Hip**

**Lee PYF**, Rozewicz S, Chandrappa M, Othman A, Jury C Whiting B, (2018) Modern Non-Pharmacological and Non-Surgical Treatments for Hip Pain. *Journal of Arthritis*. DOI: 10.4172/2167-7921.1000262

Teoh K, Whitham R, Golding D, Wong JF, **Lee PYF**, Evans AR (2017) R3 Cup Does Not Have a High Failure Rate in Conventional Bearings: A Minimum of 5-Year Follow-Up. *Journal of Arthroplasty*. doi:10.1016/j.arth.2017.09.059

**Lee PYF**, Golding D, Woodnutt D (2017) Delayed Profunda Femoris Artery Bleeding After Intramedullary Nailing of an Unstable Intertrochanteric Fracture: A Case Report. *JBJS Case Connector* doi:[10.2106/JBJS.CC.16.00217](https://doi.org/10.2106/JBJS.CC.16.00217)

**Lee PYF**, Charity J, Timperley J (2017) Details of a Tendon–Spring Posterior Approach in Hemiarthroplasty in the Treatment of Displaced Intracapsular Neck of Femur Fracture. *Journal of Arthritis* 6: 243. doi:[10.4172/2167-7921.1000243](https://doi.org/10.4172/2167-7921.1000243)

**Lee PYF**, Golding D, Woodnutt D (2017) The Short Femoral Stem in Total Hip Replacement - A Case Report to Demonstrate an Alternative Solution in Complex Femoral Revision for Prosthetic Implant Fracture. *JBJS Case Connector* JBJS Case Connector doi:[10.2106/JBJS.CC.16.00174](https://doi.org/10.2106/JBJS.CC.16.00174)

Kuiper JH, **Lee PYF**, Heaton P, Qureshi A and Richardson J (2016) Personalized Medicine for Metal on Metal Hip Resurfacing: Predictors for the 10 Years Success of the Birmingham Hip Resurfacing. *Journal of Arthritis* 6:1 1-7. doi: [10.4172/2167-7921.1000228](https://doi.org/10.4172/2167-7921.1000228)

**Lee PYF**, Brock J (2016) Modern British Cemented Total Hip Replacement. *Journal of Arthritis* 5:e113. doi: [10.4172/2167-7921.1000e113](https://doi.org/10.4172/2167-7921.1000e113)

**Lee PYF**, Rachala M, Teoh K, Woodnutt D (2016) Long-term results with the Atlas IIIp elastic cementless acetabular component in total hip replacement. *International Orthopaedics* 40(9), 1835-1842 doi:[10.1007/s00264-015-3088-9](https://doi.org/10.1007/s00264-015-3088-9)

**Lee PYF**, Alderman P, Roberts P (2016) Polymerizing Bone Cement Can Roughen a Polyethylene Bearing Surface on Total Hip Replacement – A Surface Analysis. *Journal of Arthritis* 5:203. doi:[10.4172/2167-7921.1000203](https://doi.org/10.4172/2167-7921.1000203)

Teoh K, **Lee PYF**, Woodnutt D (2016) Our early experience of the Corin Minihip prosthesis. *Hip international* 16;26(3):265-9. PMID: [27034100](https://pubmed.ncbi.nlm.nih.gov/27034100/)

**Lee PYF**, Evans A (2014) Early Failure of the Polarstem Total Hip Arthroplasty: Can The Australian NJR Tell Us The Full Story? *The Journal of Arthroplasty* 29:3, 609-11 PMID: [23993433](https://pubmed.ncbi.nlm.nih.gov/23993433/)

**Lee PYF**, Phillips G, Owen T (2013) *Patient positioning for total hip arthroplasty: Can this affect leg length inequality?* *Welsh Orthopaedic Journal* Vol. 1:1, 4-7

## **Others**

Ibrahim Haq, Alun D Yewlett, Ashok Marudanayagam, **Paul Y F Lee**. Lipogems in Osteoarthritis: Fact or Fiction? *Journal of Orthopaedics and Trauma*, vol. 9 (2019), doi:[10.4303/jot/236057](https://doi.org/10.4303/jot/236057)

Sneh Shah, Alun D Yewlett, Ashok Marudanayagam, **Paul Y F Lee**. Achilles Tendon Ruptures –Is Operative or Non-Operative Treatment More Effective? *Journal of Orthopaedics and Trauma*, vol. 9 (2019), doi:[10.4303/jot/236055](https://doi.org/10.4303/jot/236055)

Alex Calder, Alun D Yewlett, Ashok Marudanayagam, **Paul Y F Lee**. Advanced In-Clinic Arthroscopy, the Mi-Eye2. Journal of Orthopaedics and Trauma, vol. 9 (2019), doi:10.4303/jot/236054

Mistry DA, Chandratreya AP, **Lee PYF**, (2017) A Systematic Review on the Use of Aspirin in the Prevention of Deep Vein Thrombosis in Major Elective Lower Limb Orthopaedic Surgery: An Update from the Past 3 Years. The Surgery Journal. doi: 10.1055/s-0037-1615817

**Lee PYF**, Davies A, Whiting B, Masud S (2017) Consent for Treatment in the UK-2017 Update. Journal of Arthritis 6:e116. doi: 10.4172/2167-7921.1000e116

Man W, Mukherjee A, **Lee PYF** (2014) The economic impact of individually packaged screws. *The Surgeon*,12:1, 35-9 PMID: 24012437

Shahid M, **Lee PYF**, Evans S, Thomas R (2012) A comparative study of bone shortening and bone loss with use of saw blades versus burr in Hallux Valgus surgery. *Foot and Ankle Surgery* Vol. 18: 3, 195–197 PMID: 22857962

#### Published abstracts

**Lee PYF**, Robertson A, Lyons K, Forster MC (2013) The MRI appearances for the trufit plug in the treatment of chondral and osteochondral lesions at a minimum of 2 years. *Bone and Joint Journal* vol. 95-B

Morgan A, **Lee PYF**, Batra S, and Alderman P (2012) A study assessing whether patients can correctly identify the surgical procedure undergone after hip fracture surgery and the effectiveness of their informed consent *Journal of Bone and Joint Surgery (Br)* 94-B: 252

#### *Book*

**Paul Y. F. Lee**

**Sports Muscle injuries and Actovegin**

Basics, Concepts and Future of Actovegin

ISBN: 978-3-659-83180-5

(2016)

#### *Non -Medical Publications (since 2010)*

<b>Lee P</b>	BOA	2017
Consent PLUS – new innovation in elective arthroplasty	Journal of T&O	
<b>Lee P</b>	Remedy	2014
South Wales Orthopaedics Trauma Showcase –WelshBone	Cardiff University	
<b>Lee P</b>	Joint magazine	2014
BOTA -Welsh representative report	BOTA	

#### *Media*

**Metro newspaper 2021**

Will doing squats damage your knees?

<https://metro.co.uk/2021/06/19/will-doing-squats-damage-your-knees-14797885/>



## Stylist Magazine 2021

5 common running myths debunked by the experts

<https://www.stylist.co.uk/fitness-health/running-tips-expert-fitness-advice-lululemon/510875>

## The Express 2021

How to avoid shin splints - Why you should NEVER run on pavements

<https://www.express.co.uk/life-style/health/1430868/how-to-avoid-shin-splints-run-on-pavements-evg>

### BBC radio Lincolnshire

New treatment on Knees in Grantham

Nov  
2017

### Daily Mail:

Sore knee? You could be spared the pain of surgery by Ant's 'Robocop' leg brace which helps align the joint

Sep  
2017

### The Grantham Journal:

Latest techniques boost for hospital

Oct  
2017

### Independent Practitioner:

A new age of consent

Aug  
2017

### Biological Knee UK:

Non-surgical treatments

Feb  
2017

### Nursing times:

Hospital to pilot videos to inform patients about surgery

Aug  
2016

### *Invited Reviewer for peer-reviewed journal*

- International Journal of Sports Medicine
- Journal of Orthopaedics and Trauma
- Scandinavian Journal of Medicine & Science in Sport
- Journal of Tissue Science & Engineering
- International Orthopaedics
- Bone and Joint Journal

University of Lincoln – visiting Professor of Sports Medicine

Since 2018

University Hospital Coventry and Warwickshire NHS trust - Visiting Professor of Orthopaedic Surgery

(2021)

Cardiff University – Orthopaedic Engineering Senior Research Fellow

(2014-2017)

Abertawe Bro Morgannwg University Health Board – Quality improvement Fellow

(2015-2018)

Keele University - Research Fellow

(2016-2017)

*Podium presentations (2010-2018)*

Consent PLUS – a digital solution to the modern consent process.

- Warwick international Sports Knee Meeting, Warwick, UK, 2017
- BASK, 2018

Unloading Knee Brace is A Cost Effective Method to Bridge and Delay Surgery in Unicompartmental Knee Arthritis – Short and Long-term analysis

- EFORT congress, Vienna, Austria, 2017
- DOA congress, Copenhagen Denmark, 2016

Comparative clinical study of autograft vs synthetic graft in medial patellofemoral ligament (MPFL) reconstruction.

- BASK, Liverpool UK, 2016

11.5 Year Experience On A Cementless Monoblock Acetabular Component Used In Revision Total Hip Arthroplasty

- EFFORT, Prague, Czech Republic, 2015
- AOA-ASM Melbourne Australia, 2014

Clinical results on a cementless elastic rough under surface acetabular component - MINIMUM 10 YEARS

- 23rd Biennial Congress of the SA Arthroplasty Society, 2015

Clinical and serological outcomes on 36mm head metal on metal total hip Arthroplasty

- 23rd Biennial Congress of the SA Arthroplasty Society, 2015

Autologous Conditioning Serum Injection on Tennis Elbow: Our Experience So Far

- AOA-ASM Melbourne Australia, 2014

## Anterior Knee Pain & Patella Femoral Instability: Clinical Outcome of Rotational Tibial Tubercle Transfer

- BASK, Liverpool UK, 2016
- AOA-ASM Melbourne Australia, 2014

Impact of theatre efficacy on individually packaged screws

- AOA-ASM Melbourne Australia, 2014
- EFORT / BOA, London, 2014

The effect of bone cement on tribology on polyethylene bearing surface

- EFFORT, Prague, Czech Republic, 2015
- Welsh Orthopaedics Registrar meeting, 2013

The MRI appearances for the trufit plug in the treatment of chondral and osteochondral lesions at a minimum of 2 years

- BASK, Derby, 2012

A study assessing whether patients can correctly identify the surgical procedure undergone after hip fracture surgery and the effectiveness of their informed consent.

- BOA/IOA, Dublin, 2011

Actovegin injection therapy - Basic Science & Preliminary Report.

- UKSEM International Conference, 2010

**(Post 2018 information available on request)**

### *International / National Poster (2010-2018)*

Comparison Of Backside Creep Between Highly Crosslinked And Non-Crosslinked Ultra High Molecular Weight Polyethylene Liners In A Total Hip Arthroplasty Flexible Press Fit Titanium Alloy Cup

- EFORT congress, Vienna, Austria, 2017

Comparison Of Dissociation Forces Between Highly Crosslinked And Non-Crosslinked Ultra High Molecular Weight Polyethylene Liners From A Flexible Press Fit Titanium Alloy Cup

- EFORT congress, Vienna, Austria, 2017

Medial Patellofemoral Ligament (MPFL) reconstruction with synthetic tape and peek anchors: a biomechanical study.

- AAOS, Florida, USA, 2016
- ESSKA, Barcelona, Spain, 2016

6 Years Minimum Follow Up Of An Offloading Knee Brace for Unicompartmental Knee Arthritis.

- AAOS, Florida, USA, 2016
- BASK, Liverpool, UK, 2016
- ESSKA, Barcelona, Spain, 2016

Prospective clinical and radiological midterm results for asymmetric trochlea patella-femoral arthroplasty.

- BASK, Liverpool, UK, 2016
- ESSKA, Barcelona, Spain, 2016

Minimum 10 year follow up on a cementless elastic rough undersurface acetabular component

- AOA-ASM, Melbourne, Australia, 2014

36MM Head Metal on Metal THA: Clinical & Serological Outcome

- AOA-ASM, Melbourne, Australia, 2014

Can patient positioning in total hip arthroplasty affect leg length discrepancy?

- BOA, Birmingham, 2013

Patient positioning for total hip arthroplasty: Is Sir John Charnley right, can this affect leg length discrepancy?

- Charnley 50th anniversary - National Hip Research Meeting. 2012

A comparative study of bone shortening and bone loss with use of saw blades versus burr in hallux valgus surgery.

- BOFAS, Newport, Wales, 2012

Delayed two stage skin preparation technique reduces infection in shoulder surgery.

- BOA, Manchester, 2012

The MRI appearances for the trufit plug in the treatment of chondral and osteochondral lesions at a minimum of 2 years.

- BASK, Derby, 2012

**(Post 2018 information available on request )**

#### *Abstracted Audits (2010-2015)*

Trauma Snap-Shot: a pilot multicentre audit of trauma practice in the UK using the BONE network and Amplitude electronic data capturing system: a review of 300 trauma cases from 10 centres <b>Outcome: Poster presentation</b>	Liverpool, BOA	2015
The use of Autologous Conditioned Plasma (ACP) in the treatment for tennis elbow <b>Outcome: Podium presentation</b>	AOA-ASM Melbourne Australia	2014
Use of 'pre-prep' and infection rates in shoulder surgery (and re audit) <b>Outcome: Poster presentation</b>	BOTA AGM Cheshire	2013

Neck of Femur Consent Audit  
(and re-audit)  
**Outcome: Podium presentation**

BOA/IOA 2010  
Dublin

Cemented vs Un-cemented Thompson  
Hemiarthroplasty for neck of femur fracture  
(and re-audit)  
**Outcome: Change of practice**

Royal Glamorgan 2012  
Hospital

Standard of record keeping - Case notes Audit  
(and re-audit)  
**Outcome: Improved note keeping**

Royal Gwent Hospital 2012  
University Hospital of and  
Wales 2011

**(Pre 2010 and non abstracted Audits available on request :30)**

### *Prizes and Awards*

Most download paper for 2017 'The Surgery Journal'	1 <sup>st</sup> Prize
DPT Medical Innovation award – 2015	1 <sup>st</sup> Prize
Future Orthopaedic Surgeon Conference - 2014	1 <sup>st</sup> Prize
British Orthopaedic Trainee Association Quiz Prize - 2013	1 <sup>st</sup> Prize
National Orthopaedic Conference Poster Prize - 2012	2 <sup>nd</sup> Prize

### *Invited Faculty*

**Cardiff T&O FRCS viva course, WIMAT, Cardiff,**

- October 2016

**Oswestry FRCS clinical examination course, Oswestry,**

- January 2016
- October 2015

**6th RCSEd All Wales Medical Student Surgical Research Symposium**

- December 2015

**South Wales Orthopaedic Trauma Showcase WelshBone, Cardiff,**

- May 2017
- March 2016

**Basic surgical skills** WIMAT, Cardiff, September 2013

**Intermediate MB medical exams** Cardiff University, March 2012

**Upper limb trauma** Core surgical training –teaching curriculum, February 2012

**Basic surgical skills** WIMAT, Cardiff, January 2011

**Medical management of hamstring injuries** UWIC, Cardiff, January 2011

**Sports Medicine and orthopaedics** Cardiff Medical School, December 2010

**Basic surgical skills** Royal College of Surgeon of Edinburgh, November 2010

**(Post 2018 information available on request )**

### Supervised Academic Students

<b>PhD Computer Engineering</b> student <i>3 year program of computer deep learning</i>	School of Engineering University of Lincoln	2020
<b>MSc Sports Therapy</b> student <i>Clinical application of sports therapy</i>	School of Engineering University of Lincoln	2020
<b>MSc Orthopaedic Engineering</b> student dissertation <i>“Creep effect on insert in a flexible acetabular cups – A comparison between Highly Crosslinked Polyethylene insert and Conventional Polyethylene insert.”</i>	School of Engineering Cardiff University	2015
Undergraduate <b>3<sup>rd</sup> year Medical</b> student SSC project <i>“MPFL reconstruction using fibre tape and anchors“</i>	School of Medicine Cardiff University	2015
Undergraduate <b>3<sup>rd</sup> year Medical</b> student SSC project <i>“Long term outcome of the un-loader knee brace”</i>	School of Medicine Cardiff University	2015
Undergraduate <b>final year Engineering</b> student dissertation <i>“3D microfluidic surgical scalpel.”</i>	School of Engineering Cardiff University	2015
Undergraduate <b>final year Engineering</b> student dissertation <i>“Stiffness of Surgical Blades.”</i>	School of Engineering Cardiff University	2014
Undergraduate <b>final year Engineering</b> student dissertation <i>“Sliver Technology on Surgical Blades.”</i>	School of Engineering Cardiff University	2014

Undergraduate <b>final year Engineering</b> student dissertation “The thermal effect of cement on tribology of polyethylene bearing surface.”	School of Engineering Cardiff University	2013
Undergraduate <b>3<sup>rd</sup> year Medical</b> student SSC project “The biological effects of the haemodialysates Actovegin and Solcoseryl on cultured human macrophages.”	School of Medicine Cardiff University	2011
Undergraduate <b>3<sup>rd</sup> year Medical</b> student dissertation “Technology on Doping.”	School of Medicine Cardiff University	2011
Undergraduate <b>final year Engineering</b> student dissertation “Can Isokinetic data produce reliable information in predicting hamstring injury?”	School of Engineering Cardiff University	2010

### *Postgraduate lecture series*

Please visit [YouTube channel for MSK Doctors](#) for more information

Musculoskeletal lecture (Knee) series: 30 minutes each

- Base principles and anatomy of the Knee
- Mechanics, biology and pathophysiology of Arthritis
- Pathophysiology of Knee pain
- Advanced principles in muscle, ligaments and tendon
- Cartilage regeneration
- Treatment of muscle injuries
- Fractures – what, why, when and how?
- Injection therapy for MSK conditions
- Steroid injection therapy to the knee, really?
- Biological knee replacements
- Knee brace – logics and evidence

Sports lectures (Hips and Knees) series: 30 minutes each

- Sports medicine, sports surgery and performance
- Doping in sports
- Sports injuries around the knee
- FAI, Pincer and Osteitis Pubis
- The ACL – applied anatomy, prevention & non-surgical options
- ACL – surgical approach
- Ultrasound in sports medicine around the hip and knee
- Hip replacement in athletes

## Hip Replacement series: 40 minutes each

- Materials of Hip replacement
- Bearing surfaces and choice
- Cement or Cementless – evidence based medicine
- Consent
- Planning- offset, leg length & neck shift angle
- Approaches
- Custom implants with 50 years results?
- Complex hip cases

## Regeneration medicine series: 40 minutes each

- Base principles and anatomy for regeneration medicine
- Micro Fractures are not logical
- PRP, BMAC, MAC, Stem cells, facts or fiction?

## Clinical Teaching / Practical Workshop

### Practical workshops:

Hip replacement, knee replacement, fracture fixation, IM nailing and plaster application, Basic wound suturing, surgical techniques	Junior doctors Medical Students	2016- 2013
-------------------------------------------------------------------------------------------------------------------------------------	------------------------------------	---------------

### Joint examination:

Knee, Hip, elbow, shoulder, hands, brachial plexus, spine, foot and ankle	Junior doctors Medical Students Physiotherapists	2016- 2013
---------------------------------------------------------------------------	--------------------------------------------------------	---------------

### Clinical skills teaching for doctors to be

Practical sessions for final year medical students to prepare for their clinical OSCE exams. "phlebotomy, IV insertion, catheterisation"	Medical Students	2012- 2010
------------------------------------------------------------------------------------------------------------------------------------------	------------------	---------------

### Small group medical student teaching

"Distal radius fractures" "Ankle fractures"	Cardiff Medical School	2016- 2010
"Neck of femur fractures" "Sports knee injuries"		

**(Post 2016 information available on request)**

## Management and Leadership

### Consent Plus

I am the chief investigator for the Consent Plus project; the principal of the project is to educate patients on risks and implications so they understand and are willing to accept the risks before surgery. Patients and clinicians can track their progress of learning and a check-point test is in place for the patients to demonstrate their understanding for the consent process. This will free up time for the actual consent process and promote high quality discussions during the consent process. <http://www.consentplus.com>



Through my research and clinical contacts during my training in Wales, I founded WelshBone, an organisation helping to inspire and promote orthopaedic education and research. With the support of the RCSd and Cardiff University, we founded South Wales Orthopaedics Training Showcase. Since then, we have continued to build on our strengths and helped other subspecialties in orthopaedics to build, organise and co-ordinate events. [www.welshbone.com](http://www.welshbone.com)

## *BOA Clinical leadership fellow - South Wales Orthopaedic Research network*

I set up the South Wales Orthopaedic Research Network (SWORN) to enable greater collaboration between students, academics and clinicians during the BOA clinical leader fellowship. Over the year since I established this network, we were able to produce some meaningful research projects, which were presented nationally, internationally and have won prizes. Currently we can co-ordinate national research projects through this network. <http://www.welshbone.com/sworn/>

## *BOTA committee Welsh rep 2013/2014*

I was elected by my trainee colleagues to become the Welsh representative of the British Orthopaedic Trainee Association. As a committee member of BOTA I was actively involved with training issues, attended local and national stakeholder's meetings. With the help of my WelshBone contacts, I set up the South Wales Orthopaedic Research Network and Social media networking for trainees.

## *Medtaste*

My vision with this project was to expose real life medicine to school students and help them to make an informed decision to choose to study medicine and become a doctor. I developed Medtaste in 2006, and have been updating its contents regularly. Over recent years, I have taken a supervisory role to guide five medical students to deliver the Medtaste course. [www.medtaste.com](http://www.medtaste.com)

## *NHS based Management and Leadership*

Research Director for ULHT (2018-2021)

ULHT Tutor for Staff Grades & Associate Specialists (2018-19)

South Wales orthopaedic research network 2014-2018, develop, organise, execute and maintain the network

Arthroplasty rota management 2015, 2016: 12 consultants and 6 registrars

T&O Departmental weekly education programme organiser, 2014,15

Interviewer for CT2 for ABMU NHS 2014

### *Non-Clinical Skills*

#### *Innovation*

##### *Dual Scalpel Project*

- Initial concept
- Design CAD
- Initial testing

##### *Virtual Clinic Project*

- Initial concept
- Co-ordination with management
- Assign team, data collection
- Run and analyse data

##### *Knee brace Project*

- Initial concept
- Design CAD
- On going

##### *Silver Scalpel Project*

- Initial concept
- Design CAD
- 3D printing
- Initial product testing

#### *Information technology:*

- European Computer Driving Licence (ECDL)
- Microsoft Office Specialist certificate: Word, Excel, Access
- Basic Web design HTML, Wordpress
- SPSS
- Endnote

#### *Time management*

During my higher surgical training, as well as keeping up with training, operative logbook and on-call commitments; I have completed a part time MSc and a part time PhD. This effectively demonstrates good time management skills.

#### *Evidence of Good Medical practice*

- Keeping up to date with current practice via teaching and courses
- Maintaining and improving performance by regular review with supervisors
- Appraising and assessing junior members of the team, providing regular feedback
- 360-multi-source feedback yearly to ensure insight and good practice

#### *Hobbies*

After a long day of work, I enjoy relaxing at home with my wife and children, Morgan, Ffion and Owen. Besides teaching the children how to ride their bikes, swim and digital photography, I enjoy rock climbing, skiing and travelling.

University: Cardiff University  
 Supervisor: Professor Len Nokes  
 Department: Institute of Medical Engineering and Medical Physics  
 Title: "The role of Actovegin in muscle injuries"

**Summary:**

The aim of this PhD was to provide information on the role of Actovegin in muscle injuries and its efficacy as an injection therapy in the treatment of hamstring muscular injuries in professional footballers. The *in vitro* study in this PhD was the first study to investigate the role of Actovegin in the inflammatory process and demonstrated significant results to support the hypothesis. It confirmed that Actovegin could modulate the inflammatory process by influencing the CD68+ and CD163+ macrophages and CD163+ THP-1 cells, which could influence the muscle healing process. Based on the findings from the *in vitro* studies and data from previous literature, a standalone single drug intramuscular Actovegin injection therapy regimen was developed to treat acute muscle injuries. The first clinical study using this stand-alone Actovegin treatment regimen was conducted in this PhD in professional footballer players and translated the *in vitro* findings to clinical practice, which confirmed the second hypothesis, that Actovegin can influence clinical outcome in treating acute muscle injuries. Compared with conventional conservative RICE and NSAID therapy, Actovegin proposes an exciting and legal alternative for high performance athletes. From the studies, Actovegin injection therapy seems safe and well tolerated. Overall, this PhD has suggested that Actovegin has an active role in the treatment of muscle strain injuries biochemically and clinically.

**Techniques used:**

Basic sciences and cell proliferation assay DNR, RNA isolation techniques  
 Quantitative polymerase chain reaction (qPCR) method for gene analysis  
 High-performance liquid chromatography (HPLC) for drug separation  
 Isokinetic testing on hamstrings  
 Clinical trial, ethics, MHRA regulations

**Publications generated:**

**Lee PYF, Nokes L (2011)** Our Experience on Actovegin, is it cutting edge? *International Journal of Sports Medicine*, Vol. 32 : 4, 237 – 241 [PMID: 21271496](#)

**Lee PYF, Kwan A, Nokes L (2011)** Actovegin – Cutting Edge Sports Medicine or "Voodoo" remedy? *Current Sports Medicine Reports*, Vol. 10:4, 186 – 190 [PMID: 2353189](#)

PhD awarded 2014  
 (more publications followed please see research sections)

University: Cardiff Metropolitan University  
Supervisor: Dr Paul Smith  
Department: School of Sports  
Title: "The role of Actovegin in peak exercise capacity"

**Summary:**

Intravenous injection study with Actovegin (Phase- 1 trial)

There is much subjective and inconclusive conjecture that Actovegin® is ergogenic and can improve performance capacity. However, no scientific studies have been conducted to explore how the intravenous injection of Actovegin® influences functional capacity and physiological responses during exercise. The principal objective in this single blinded, crossover study is to explore intravenous Actovegin® injection to influence peak aerobic capacity (W<sub>peak</sub>) and other selected parameters. While we acknowledge there are limitations to this preliminary study, our data provided new evidence that questions the ergogenic properties of Actovegin®.

**Techniques used:**

Exercise physiology, VO<sub>2</sub>max testing  
Upper body physiology testing  
Blood lactate and glucose testing  
High-performance liquid chromatography (HPLC) for drug separation  
Double blinded clinical trial, ethics, MHRA regulations

**Publications generated:**

**Lee PYF, Nokes L, Smith PM (2012)** No effect of intravenous Actovegin on peak aerobic capacity. *International Journal of Sports Medicine* Vol. 33: 4, 305 – 309 [PMID: 22318562](#)

MSc awarded 2011