



Professor Andrew D. Toms, Consultant Orthopaedic Surgeon

## **RESEARCH: CURRENT PROJECTS**

**Investigator Initiated MSA study agreement. CI.**

- **Biomechanical fixation cadaveric testing and clinical study. PI.**
- **Revision cones fixation study RCT. PI.**
- **Instrumented Kinematic Alignment study RCT. PI.**

**STAR cap. NIHR funded programme grant. PI. Recruiting.**

**Kfort. NIHR funded pilot study. PI. Recruiting.**

**INFORM. NIHR funded programme grant. Knee lead.**

**Prospective 3-stage project into postoperative delirium in TKR. CI.**

**Multiphoton microscopy in the investigation of the micromechanics of normal and osteoarthritic human cartilage.**

In conjunction with Professor Winlove, Dept of Physics, Exeter University.

**A Randomised Trial of Spinal + LIA versus Femoral Nerve Block for Post Operative Analgesia following Total Knee Arthroplasty. Recruiting.**

**A Randomised Trial of Ligament Balancing versus Measured Resection. Recruiting.**

## **Scientific Reviewer for Research Grants**

UK Research Council.  
National Institute of Health Research (NIHR).  
Arthritis UK.  
European Knee Society.  
British Association of Surgery of the Knee.  
European Knee Research Centre.

## **FUTURE OBJECTIVES**

I am a Consultant Arthroplasty and Trauma surgeon, specialising in the management of complex knee problems. I have a particular interest in bioengineering, joint reconstruction and periprosthetic infection and have had a broad education with excellent subspecialty operative experience. I have a firm grounding in the management of trauma and general orthopaedics and have further training in research techniques and the engineering aspects of orthopaedics. I have conducted cell culture research in the laboratory, biomechanical testing and analysis of implant behaviour as well as in vivo animal studies and clinical analysis of patient outcomes. I have experience of ethics committee submissions and have been able to attract considerable commercial funding for research projects. I have written original articles, review papers, book chapters, operative manuals and a scientific thesis.



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In my final period of training I completed six months on the Oswestry Arthroplasty Unit and six months of complex trauma at the University Hospital Trauma Centre, Stoke-on-Trent. This period allowed me to consolidate my training and gain considerable further operative experience. I was able to concentrate specifically on primary and revision knee arthroplasty while in Oswestry. I gained a very wide exposure to different techniques and implant systems; particularly the use of rotating hinges, patellofemoral replacement, complex periprosthetic osteotomies and the lateral and subvastus approaches, as well as the techniques of tibial tubercle osteotomy, rectus snip, V-Y turndown and extensor mechanism reconstruction. My time in Stoke was spent with Mr P.B.M. Thomas, who has a special interest in periarticular fractures and limb reconstruction; this was an extremely valuable time and I became familiar with external fixation, tibial plateau reconstruction, knee arthrodesis and opening wedge osteotomy. As one of the senior registrars I was able to spend a considerable amount of time in the trauma theatres and enjoyed both the clinical and surgical management of the trauma patient.

I subsequently completed an Arthroplasty Fellowship at the University of British Columbia, Canada under the supervision of Professor C.P. Duncan. This unit offers an enormous throughput of both complex primary and revision surgery where the fellow has full operating privileges. The unit has pioneered many reconstructive techniques and has a large experience in the use of both limited incision surgery and in techniques of extended surgical exposure. I have gained further experience in unicompartmental knee replacement and mini incision total knee arthroplasty. This fellowship allowed me the opportunity to be heavily involved in operative and clinical work, while being in an intellectually stimulating and challenging research environment.

I aim to apply my research endeavours to provide solutions for clinical problems. I believe that a multidisciplinary team approach both clinically and in research offers a more stimulating and productive environment and Exeter already has a worldwide reputation for this.