Collaboration Case Study
Innovate Orthopaedics Ltd

Orthopaedic Screw

**Innovate Orthopaedics Ltd** (IO) is a start-up company, based in Yorkshire, with ambitions to introduce innovation to the global orthopaedics market. Founder Alex Gutteridge, says the business intends to “challenge the status quo of the orthopaedic sports medicine market” and believes that introducing high quality products does not mean a high cost for the customer.

The development process from 3D printed parts to machined brass prototypes.

Precision engineered titanium screw prototype with variable thread.

X-ray of implanted screw.
The Medical AMRC didn’t only help us refine our designs and take them into production. It also helped us to create patentable technology which can be further protected by design registration and enabled us to quickly gain ISO 13485 medical devices quality approval and European CE marking.

Alex Gutteridge, Innovate Orthopaedics founder

IO asked the Medical AMRC (MAMRC) to evaluate two new orthopaedic screw concepts it had created for use in surgical procedures such as anterior cruciate ligament surgery. The concepts had been developed in collaboration with eminent orthopaedic surgeons to ensure they incorporated the insights and experience of potential users.

The MAMRC reviewed IO’s designs and worked with the company to combine different aspects to create one universal design, whose beneficial features include:

- Reducing the potential for graft damage during insertion.
- Assisting surgeons by ensuring the screw engages more rapidly with the ligament and bone, when it is inserted.
- Improving on current ligament fixation forces.

The final form and functional aspects created by the MAMRC has provided IO with patentable technology and the opportunity for design registration.

The MAMRC used Creo CAD software to show how the design could be applied across a wide range of screw sizes, taking into consideration manufacturing processes and possible compromises to features that would have to be made so that all sizes met functional requirements.
Clinical tests have produced extremely positive results and we are already seeing demand rising among British and international surgeons, who see the benefit of using these innovative, new designs.

Alex Gutteridge, Innovate Orthopaedics founder