



eoSurgical  
safer surgery

Evidence  
based  
training

for surgeons, by  
surgeons





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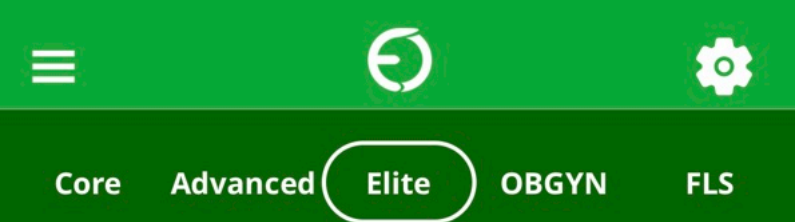
**Evidence-based:** eoSurgical provides evidence-based, accessible surgical skills simulation training to make surgery safer globally.

**For Surgeons, by Surgeons:** eoSurgical was conceived, developed, and continues to be managed by a team of three active surgeons who work as consultants in tertiary surgical centres in the UK.

**CPD and training:** You're never too good to get better. Simulation is well established in training, and is now developing a growing role in continuous professional development.

**MIS and beyond:** Our core product is the **eoSim** minimally invasive surgery (MIS) simulator with **SurgTrac** curriculum and instrument tracking AR software. We also have offerings in Microsurgery (eoMicro p.15) and Neurosurgery (3D printed skulls p.16)





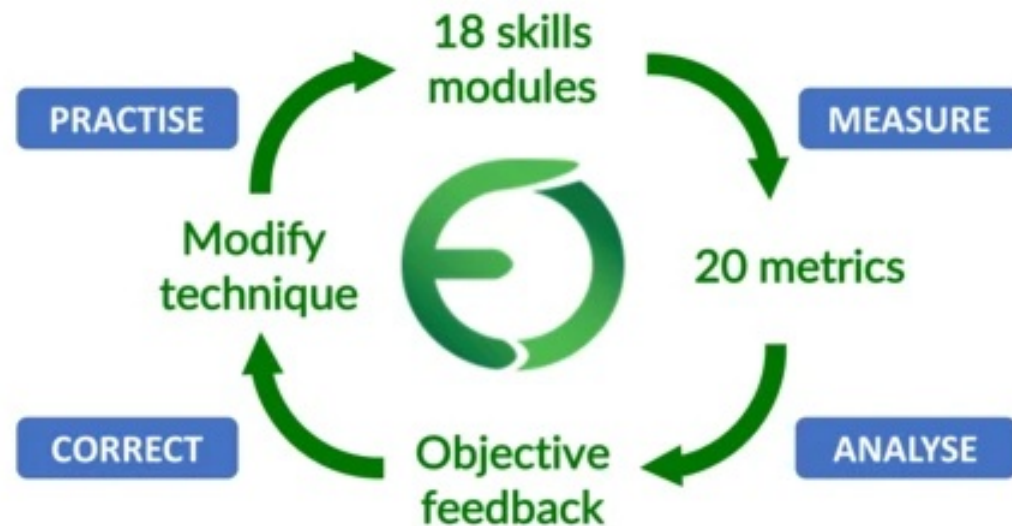
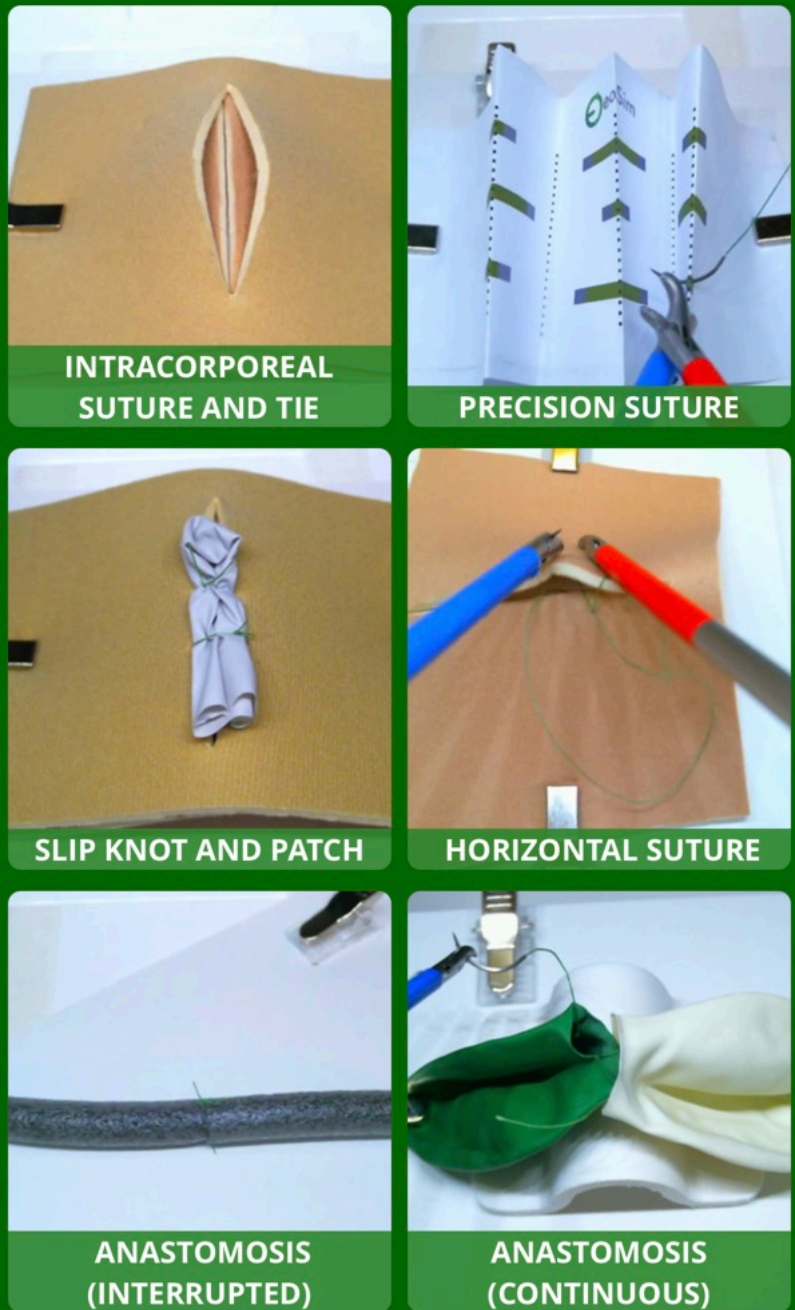
# eoSim & SurgTrac

The complete minimally invasive surgery training package:

**eoSim**: take-home laparoscopic simulator.

**SurgTrac** software: structured training curriculum using Kolb's experiential learning cycle, AR instrument tracking, **20 real-time performance metrics** with natural language generated feedback, and online portfolio.

Optimised for mobile devices: making surgical simulation truly accessible to all. Used in **over 95 countries**. Validated by **30 peer-reviewed publications**.



# eoSim: the future is mobile

The camera on your smartphone or tablet is now much better than any webcam.

And you always have it with you. So we've **optimised eoSim & SurgTrac to work with iOS and Android.**

Use your phone or tablet **directly on the lid** of eoSim, or **plug in to a larger screen** as shown here.

There are 4 ways to use eoSim with mobile devices: **phone alone**, **tablet alone**, phone or tablet attached via HDMI or VGA cable to **external monitor** (as pictured here), or **wirelessly screen-cast** to a monitor or projector. See our [website](#) for demos.

You can still specify your eoSim with a built-in webcam if required, but mobile is becoming by far and away the most popular and future-proof way of training.



# Evidence-base



There is a robust evidence-base for eoSim and SurgTrac. For both basic and advanced skills training. From multiple specialties and countries. **30 peer reviewed articles** and counting. Here are highlights from recent papers (full references on our [website](#)):

**SurgTrac metrics personalise training:** “We analysed the largest database of simulated laparoscopic task performances (13,027 tasks undertaken by 578 users). Performance improves with practice. Using learning curves derived from peer-group performances as benchmarks, users may be regularly and objectively assessed to support personalisation of training.” [Keni et al 2020](#).

**Take-home simulator use improves skills in trainees:** “A take-home box trainer simulation-training program was associated with improvement in laparoscopic skills. This type of program may improve trainee access to simulation training.” [Wilson et al 2018](#).

**SurgTrac AR metrics validity:** “The eoSim laparoscopic AR simulator is regarded as a realistic, accessible, and useful tool for the training of basic laparoscopic skills, with good face validity. Construct validity of the eoSim AR simulator was demonstrated on several core variables.” [Arts et al 2019](#).

Acquire foundation laparoscopic skills with eoSim and the SurgTrac **Core** skills curriculum.

Includes everything you need to get started:  
**eoSim:** simulator, instruments and practise models.

**SurgTrac:** user license to training curriculum, AR instrument tracking performance metrics feedback, and online portfolio software.

### eoSim Core:

**3** laparoscopic instruments: ratcheted grasper, non-ratcheted grasper & scissors.

**2** practice models and all required disposables.

**6** SurgTrac training modules: Thread transfer, Precision cutting, Dice stack, Paper fold, Paper clip undo and Peg capping. **Awarded 20CPD points by RCSEd.**

Each task has demo video, real-time AR instrument tracking metrics, natural language performance feedback, and all data syncs with online portfolio.



# eoSim Advanced



Improve your precise instrument control and take your MIS skills to the next level with eoSim **Advanced**.

Includes everything in the Core package, and brings extra challenges:

### **eoSim Advanced:**

**4** laparoscopic instruments: ratcheted grasper, non-ratcheted grasper, scissors: **Advanced adds:** a reusable knot-pusher for self-tie ligature loops (video on how to tie a roeder knot included).

**3** practice models: **Advanced adds:** a four-clip board for the extra modules.

**12** SurgTrac training modules: in addition to the 6 Core modules, **Advanced adds 6: cyst dissection, tube ligation, paper peg thread, thread pull, peg ligate, tube thread.**



Take your skills to the **highest level**.

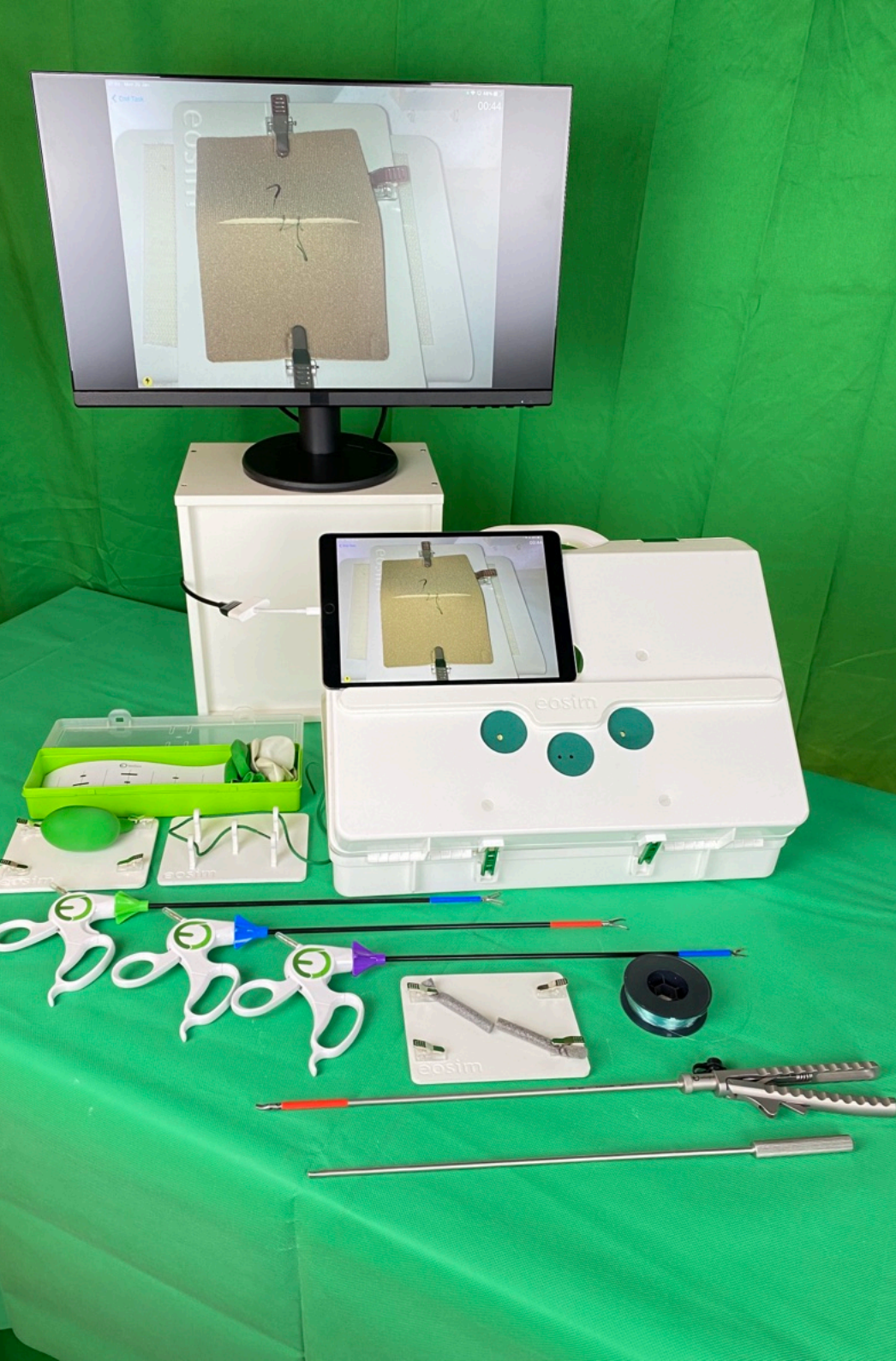
## eoSim Elite:

**5** laparoscopic instruments: ratcheted grasper, non-ratcheted grasper, scissors, knot-pusher. **Elite adds:** a high quality 5mm laparoscopic needle holder for the laparoscopic suturing tasks.

**Neoprene suture pads and braided sutures.**

**18** SurgTrac training modules: in addition to the 12 Core & Advanced modules, **Elite adds 6:** intracorporeal suture and tie, precision suture, slip knot and patch, horizontal suture, anastomosis (interrupted) and anastomosis (continuous).





Develop and refine advanced minimally invasive techniques with our specially curated OBGYN curriculum of training modules. **All hardware and software as per Elite package.**

Undertaken in the order below they form a step-wise OBGYN lap skills training course, starting by refining core laparoscopic skills and finishing with **advanced OBGYN-specific tasks.**

**Peg Thread:** core skills: fine instrument control, depth perception, economy of movement.

**Precision Cutting:** core skills: careful tissue handling and precise cutting.

**Tube ligation:** OBGYN skills: **fallopian tube ligation.**

**Cyst Dissection:** OBGYN skills: **ovarian cyst dissection.**

**Suture & Tie:** advanced skills: learn sound **suturing technique.**

**Horizontal Suture:** advanced OBGYN skills: replicating **closure of the vaginal vault in TAH.**

Undertaken in the order below these modules form a **step-wise structured Urology lap skills training** course. They take the user along a training journey, starting by refining core laparoscopic skills and finishing with advanced Urology-specific tasks.

**All hardware and software as Elite package.**

**Peg Thread:** core skills: fine instrument control, depth perception, economy of movement.

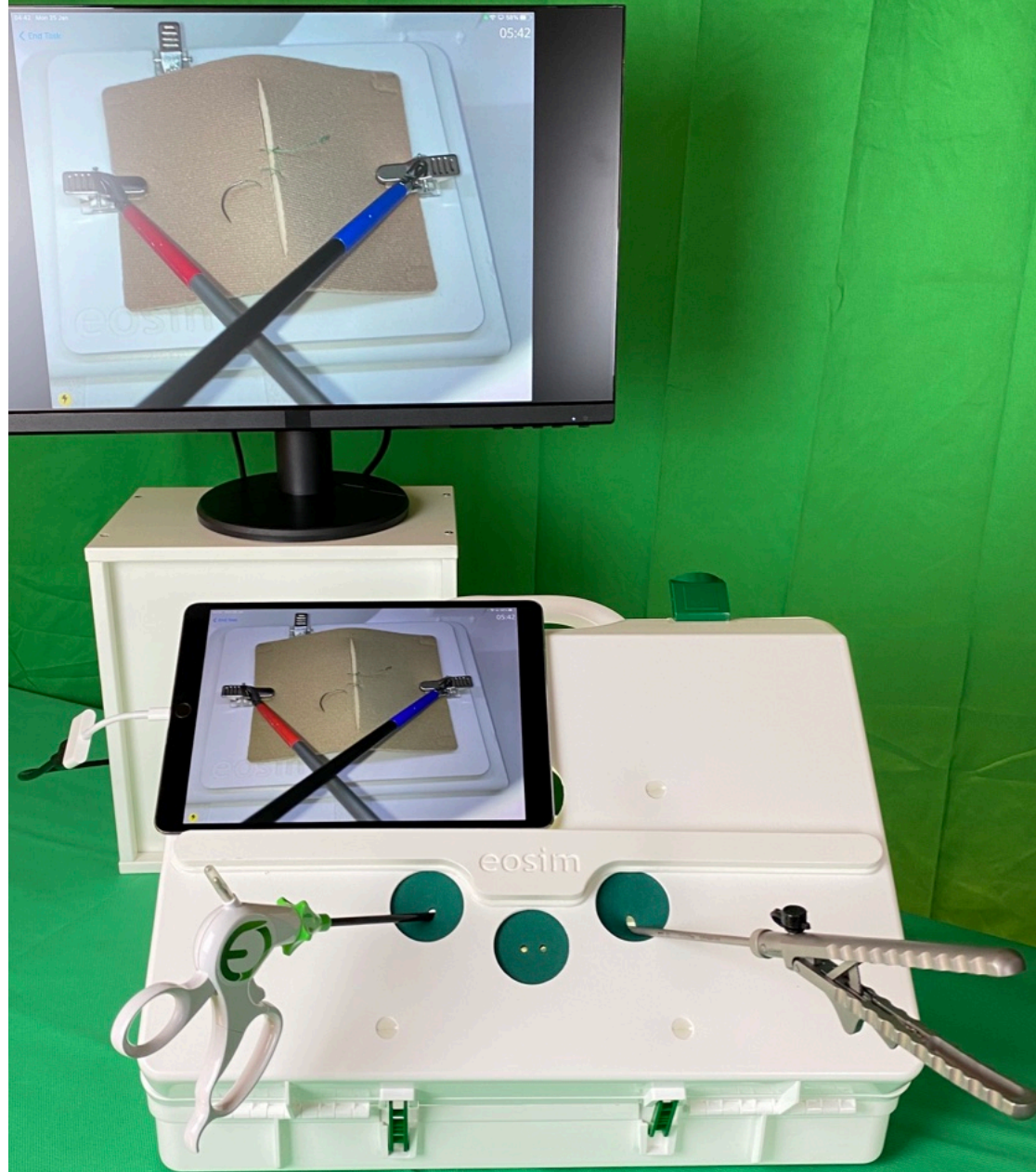
**Precision cutting:** core skills: careful tissue handling and precise cutting.

**Peg paper thread:** core skills: fine tissue and instrument control.

**Precision Suturing:** advanced skills: precise placement of the needle through tissue.

**Suture & Tie:** advanced skills: develop sound **suturing technique.**

**Anastomosis (Continuous):** advanced Urology skills: end to end anastomosis such as in a **pyeloplasty.**



# Orthopaedics



The SurgTrac modules undertaken in the order below act as a **training course in essential Orthopaedic minimally invasive skills**. The generic MIS skills you will develop will translate into **improved performance** when training and undertaking **arthroscopic procedures**.

**Peg Thread:** core skills: fine instrument control, depth perception, **economy of movement**.

**Precision cutting:** core skills: careful tissue handling and **precise cutting**.

**Peg Cap:** core skills: economy of movement, **tissue handling**, depth perception.

**Peg ligate:** core skills: handling ligatures, **precise instrument placement**.

**Dice stack:** core skills: developing **ambidexterity** to have matching instrument control in both hands.

**Cyst Dissect:** core skills: accurate tissue handling, careful use of **sharp dissection**.

**All hardware and software as Elite package.**

A specially curated course to facilitate the development and rehearsal of **neonatal & paediatric surgical minimally invasive procedures**. Includes **two novel models** unique to this package.

**Peg thread:** core skills: fine instrument control, depth perception, **economy of movement**.

**Fundoplication:** Horizontal suture - advanced suturing skills: replicating **fundoplication wrap sutures**.

**Inguinal hernia:** unique model for practising **laparoscopic inguinal hernia** repairs.

**CDH:** a novel model to facilitate **thoracoscopic congenital diaphragmatic hernia** repair rehearsal.

**Pyeloplasty:** continuous end-to-end anastomosis: this task develops the skills required for **retroperitonesoscopic / laparoscopic pyeloplasty**.

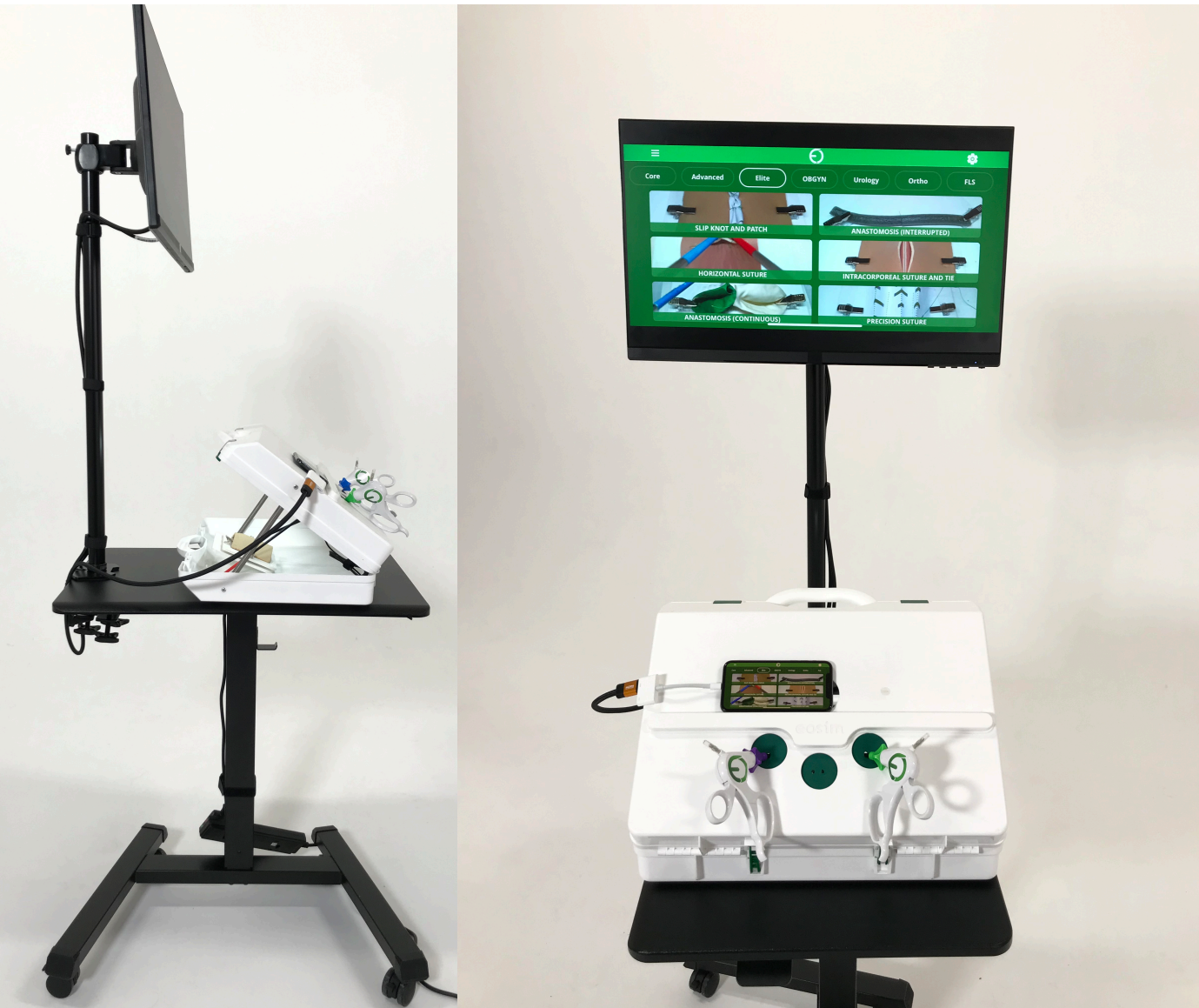
**OA/TOF:** interrupted anastomosis with foam tubes representing the oesophagus in **thoracoscopic OA/TOF repair**.

**Hardware and software as Elite package, plus the unique CDH and inguinal hernia models.**



# Institutional Packages

Provide remote simulation training with eoSim & SurgTrac



Unique Instrument tracking software generating **20 performance metrics**.

Skills curriculum Core, Advanced and Elite training packages.

Metrics synced to **individual user SurgTrac cloud portfolios**.

**Institutional-specific groups** to maximise flexibility in user numbers.

**Assessor dashboard** to remotely monitor and assess trainees.

Flexible subscription services.

eoSim simulators **can be shipped with tablets** pre-loaded with SurgTrac.



## **eoMicro: take home microsurgical simulator.**

Use eoMicro with your smartphone to create a micro-operating arena.

The portable flat-pack Perspex design allows you to perform surgical tasks anywhere.

Use the magnification of your phone to hone your macro and microsurgical skills.

Training curriculum of 6 modules:  
**Precision cutting, Precision suturing, Balloon anastomosis, Interrupted suturing, Continuous suturing and Tendon anastomosis.**

Videos sync with cloud portfolio.

# Instruments and Disposables



One of the core aims of eoSurgical is to make the replacement parts for the rehearsal models as cheap and easy to replace as possible. To this end, many of the parts are readily available (eg surgical gloves).

We do however offer replacement disposable items if required. [See our website for details.](#)

We can also provide individual or sets of laparoscopic instruments, in both 5mm and 3mm if required.

