VirtaMed LaparoS™
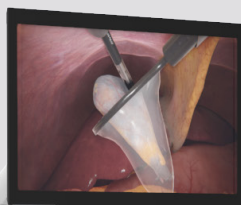
The most realistic laparoscopy simulator.

Photorealistic patients

Pathologies and complications

Anatomical model

Original instruments

LaparoS™ enables the integration of modules from other specialties (UroS™, GynoS™ and ArthroS™) on the same platform.

Educationally relevant training

VirtaMed LaparoS™ Essential Skills

The LaparoS™ Essential Skills module offers training cases inspired by FLS (Fundamentals of Laparoscopic Surgery) to prepare for the assessment of the 5 key skills: bimanual coordination, pattern cutting, loop ligation, needle manipulation and intracorporeal knot tying.

Using a simulated 0° or 30° optic, trainees can also become proficient in camera navigation, eye-hand coordination, clip placement, development of ambidextrous psychomotor skills, as well as laparoscopic suturing and needle handling.
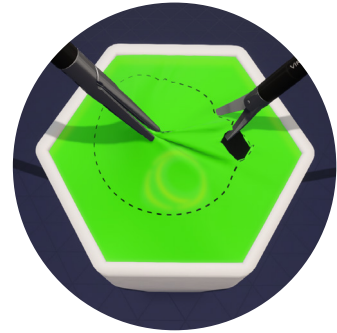
VirtaMed LaparoS™ General Surgery

Condensed training cases focus on specific skills and adverse events derived from **Cholecystectomy**, **Appendectomy** and **Incisional Hernia**, allowing residents to focus on repeating and mastering each skill individually. Rare situs-inversus totalis patient cases train ambidextrous and non-dominant hand skills.
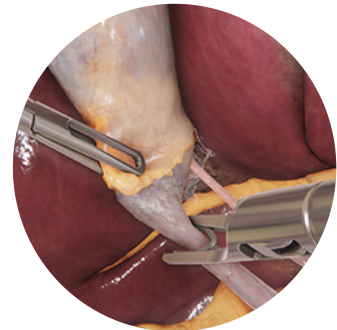
VirtaMed LaparoS™ Gynecological Laparoscopy

Condensed training cases include diagnostic laparoscopy, anatomy identification, clipping and cutting, and more training cases derived from highly realistic scenarios including **Hysterectomy**, **Tubal Ligation**, **Ovarian Cystectomy**, **Salpingectomy**, **Adnexectomy**, **Endometriosis** and **Salpingotomy for management of ectopic pregnancies**.

The platform is also compatible with the VirtaMed GynoS™ Hysteroscopy training modules to provide comprehensive training in line with ACGME, ABOG and ACOG milestones.
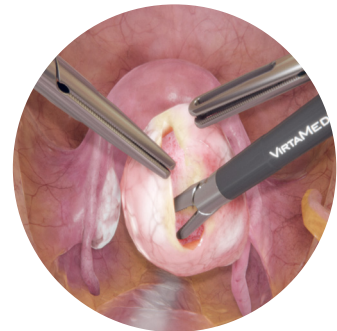
Training with original instruments

On VirtaMed simulators, trainees work with original instruments integrated into simulation. This has the advantage, that core instrument functionalities like camera handling, key principles of electrosurgery, fluid management, safe resection and many more can be trained with the actual laparoscopic instruments. This shortens the learning curve for the trainee and enables skills transfer and more efficient use of surgical instruments in the operating room.

Positioning for better outcomes

With the VirtaMed LaparoS™ the preparation prior to surgery is taken into account: correct patient positioning is crucial for surgical efficacy and patient safety[1], a well-considered choice of trocar positions ensures safe surgical access and efficient instrument triangulation and team training is crucial to improve team collaboration and shorten operative times.
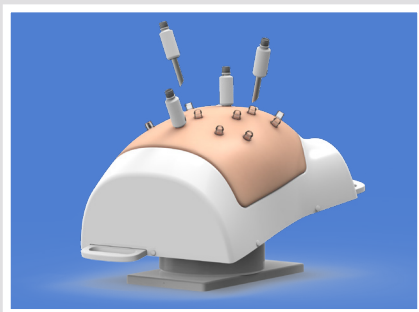
Trocar placement
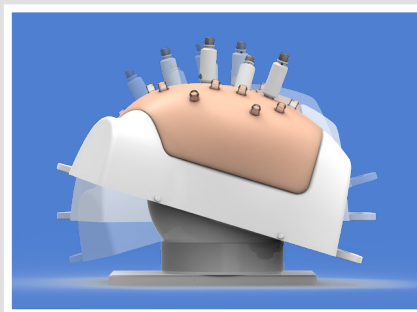
Patient positioning

Team training

Develop ambidexterity in the optimal way

LaparoS™ is designed to train ambidexterity in a highly realistic and risk-free surgical environment, with particular focus on motivation and engagement throughout the training cases. Residents are able to repeatedly train their non dominant hand to improve performance of both hands and reach proficiency benchmarks, supported by formative guidance and summative feedback. Situs-inversus totalis patient cases challenge residents to reorient their visual motor skills and encourages bilateral transfer. As a result, residents gain better understanding of situations that require working with the non-dominant hand in an inverted environment. The LaparoS™ Essential Skills module provides an excellent way to improve ambidexterity in an abstract environment. Residents learn transferable key skills through exercises designed to engage both the dominant and non-dominant hand.

Enter the OR with confidence

VirtaMed's Training & Education team are experts in the pedagogy of using simulation for medical education and will support you in the entire learning journey, from the integration of simulation into your existing training curriculum to implementing standardized levels of proficiency prior to entering the operating room.

> **"** What fascinates me the most about the new simulator is really in taking not just the operation in consideration but the **entire preparation: positioning trocars** and being able to **simulate as close as possible to the reality.**
>
> — *Prof. Dieter Hahnloser, CHUV Lausanne, Switzerland*

A modular learning approach

With LaparoS™ the trainee starts with essential psychomotor skills training in an abstract environment and then transfers these skills into short anatomical learning sequences, once this is mastered, anatomical variations and complication handling can be trained, all the way to understanding the full procedure and transferring the skills to the OR. Modular training approaches like the one implemented in LaparoS™ have been validated to be successful in shortening the learning curve and mitigating surgical risk.[2]
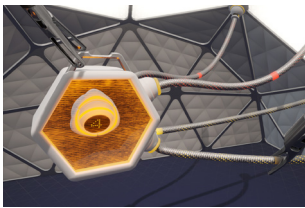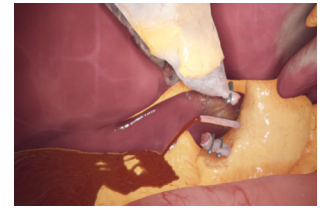

Essential skills
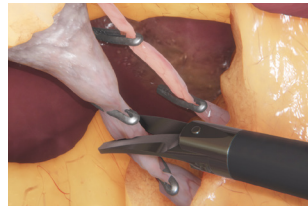
Deconstructed skills
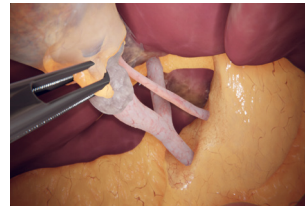
Clinical variations

Adverse events

> **"** You are able to **mimic exactly what we do on a real patient** […] I like the idea that we can actually intercede and add **complications**, we can add bleeding, we can add a leakage from the gallbladder for example […] so all those things give you the **feel that you are in the OR.**
>
> — *Dr. Ivan Puente, Broward Health, Fort Lauderdale, USA*

VirtaMed Connect

Connect is VirtaMed's cloud-based solution that lets you access your simulator data anytime from anywhere. Use Connect to remotely create courses, track student progress, and manage your simulator usage - all from the convenience of your desk or tablet. With Connect, trainees are motivated through online leader boards and can compare their own results over time.

[1]Agostini J, Goasguen N, Mosnier H. "Patient positioning in laparoscopic surgery: Tricks and tips.", Journal of Visceral Surgery (2010) vol. 147, no. 4, p. 287-291.
[2]Stolzenburg et al.: Modular surgical training for endoscopic extraperitoneal radical prostatectomy. BJU Int. 2005 Nov;96(7): p. 1022-7.

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