
BRINGING 3D TECHNOLOGIES TO THE MEDICAL SECTOR

**SIMULATION AND
TRAINING MODELS**



**3DLIFE
Prints**

INDEX

1. Nephrectomy
2. Ovarian Cyst
3. Craniotomy
4. Cardiac
5. Hemithorax
6. Lobectomy
7. Complete urinary
8. Cystoscopy
9. Cricothyroidotomy
10. Fetus and Uterus
11. Percutaneous Endoscopic Gastrostomy
12. Suture trainers
13. IV trainers
14. Airways trainer

SURGICAL SIMULATION

3D printing enables the rapid creation of a range of anatomical models that are ideal for Surgical Simulations.

Anatomical models are made to order, either from stock data or from patient specific scans. They are created in a variety of materials to suit the purpose and can include bespoke elements so a range of surgical skills can be assessed.

The use of anatomical models for high fidelity surgical simulations is on the rise due to strict animal protection laws and barriers in using cadaveric anatomical models avoid any such issues.

TRAINING MODELS

3D printed products can provide ultra-realistic and durable medical trainers. The models can be modified to suit customers' needs and have the advantage of being able to be provided in small numbers as required.

RESEARCH AND DEVELOPMENT

The models shown in this catalogue are examples of the simulation and training devices that can be provided. 3D LifePrints is able to work with clients to design and produce new models to fit each simulation requirement.

3D LifePrints are also developing new and improved materials for the models which mimic the properties of tissue and bone.

NEPHRECTOMY SIMULATOR



The models for this simulation are created in a range of silicone densities and colours to match those in the body. The models can be placed within a laparoscopic simulator for dissection.

The tumour, parenchyma and capsule are created in contrasting density of silicone to allow clear differentiation. The arteries, veins and ureter can be included. Kidney stones can be supplied if required.

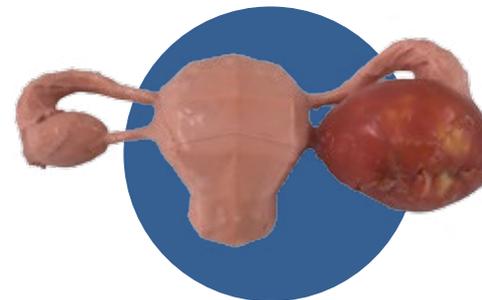


OVARIAN CYST REMOVAL SIMULATOR



This model is made in silicone to replicate the look and feel of human tissue. It is intended for use in a laparoscopic simulator.

The model has a large cyst contained within one of the ovaries.



“At the end of the day, the more you practise the better a surgeon you become. Being able to use 3D printed models that mimic tissues from bone to vessels provides us with an incredible opportunity to create high fidelity simulation models”

Iain Hennessey
Consultant Paediatric Surgeon

CRANIOTOMY SIMULATOR



The models for this simulation are made in a variety of materials that closely mimic the appearance and physical properties of the anatomy. The brain is 3D printed in life-like silicone together with a skull in woodfill or plaster. The skin is created by adding a thin layer of silicone onto the skull. The materials have been selected to provide as high fidelity as is possible without using organic sources.



CARDIAC SIMULATOR



The heart model is made in silicone to replicate the consistency of cardiac tissue. It can be sutured using standard materials. The model can be nested in a thorax or a set of 3D printed ribs and lungs to further increase the realism to the surgeon.



HEMITHORAX SIMULATOR

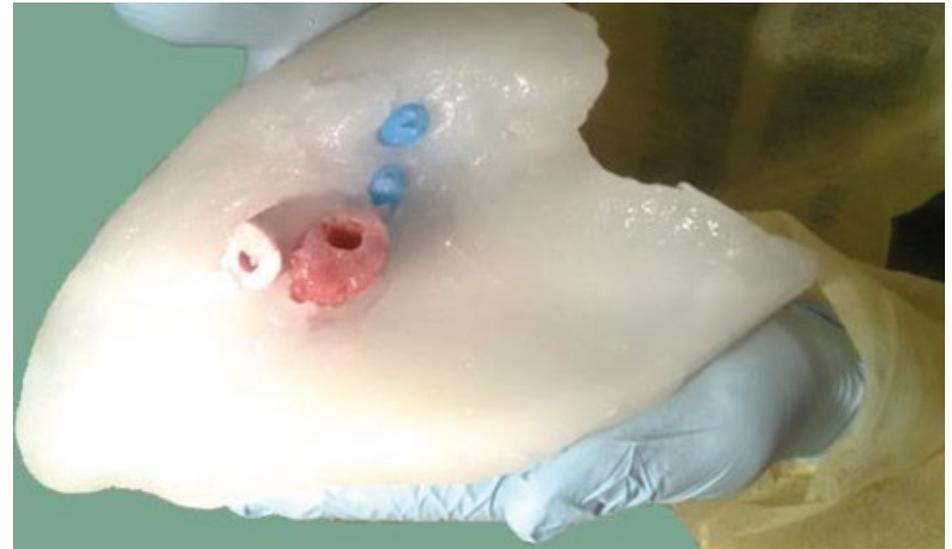


This simulator is a realistic thorax made in silicone and plastics. It includes accurate bone, muscle and skin layers. It can be used either with other 3D printed anatomical models of hearts or lungs etc or with porcine tissues.

The chest model is compatible with most standard ports and can be used to practice port placement.

It is an ideal training aid for Video Assisted Thoracic Surgery (VATS).

LOBECTOMY SIMULATOR

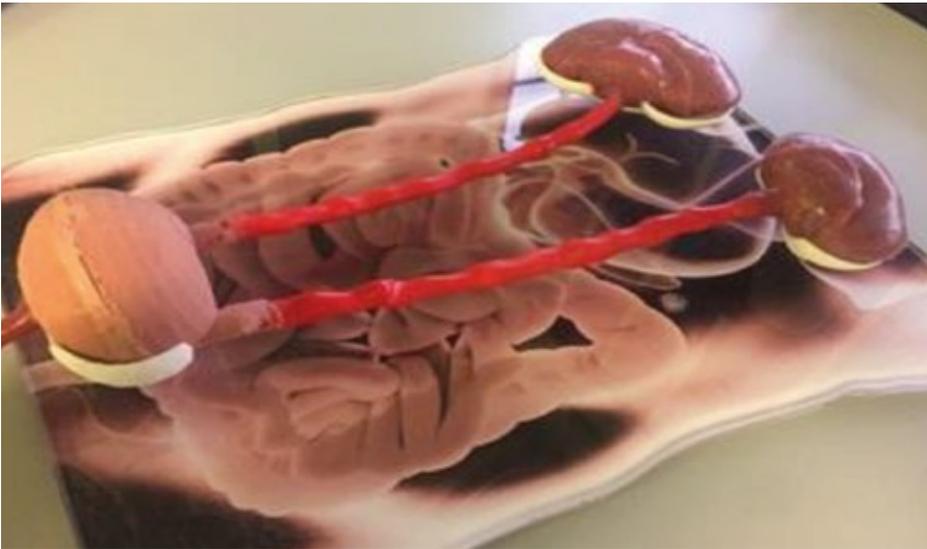


This silicone model of a lung enables accurate and lifelike lobectomy training. It contains arteries, veins and airways in differentiated and realistic materials.

It is superior to porcine lungs in that both left and right lungs are included allowing simulation on all 5 lobes.

This model can be combined with other models including the Hemithorax and Cardiac.

COMPLETE URINARY SIMULATOR



This set of models includes two kidneys, a bladder, a ureter and a urethra. Some of the uses include simulations of nephroscopy, ureter stenting, stone removal and cystoscopy. It has as accurate calyx and collecting system structure.

The system is watertight and can therefore be used for irrigation and insufflation. It is compatible with all standard instruments. Ports can be added to the kidney for the placement of kidney stones.

CYSTOSCOPY SIMULATOR

This model includes all of the necessary internal features including the trigonal ridge. It is perfect for demonstrating the use of cystoscopes and for urology training.

Different densities of materials are used in the creation of the bladder, urethra and ureters to make them as lifelike as possible. The model is watertight and comes with a stand that keeps the bladder in position.



CRICOTHYROIDOTOMY SIMULATOR

This model allows a surgeon to simulate a cricothyroidotomy. It includes a detailed replica of the bone and cartilage layer including hyoid bone, cricoid and thyroid cartilage

The model is encased in silicone skin and is supplied with a pack of fat and blood which adds realism to this simulation.



FETUS AND UTERUS SIMULATOR



This simulation model is created in a variety of densities of silicone to mimic real life. It includes a realistic model of a foetus and cord inside a fluid filled uterus. It is used to practice foetal surgery, C-section delivery, and placenta accreta treatment.

The model can be customised to include lifelike features, including lower urinary tract obstruction, and spina bifida.

PERCUTANEOUS ENDOSCOPIC GASTROSTOMY

This soft stomach 3D model is made in flexible silicone to provide surgeons with a realistic simulator for PEG insertion training.

It is used by theatre staff to practice stomach tube insertions prior to undertaking the procedure on patients. The model can also be easily modified to include specific anatomical features for particular patients.



SUTURE TRAINING



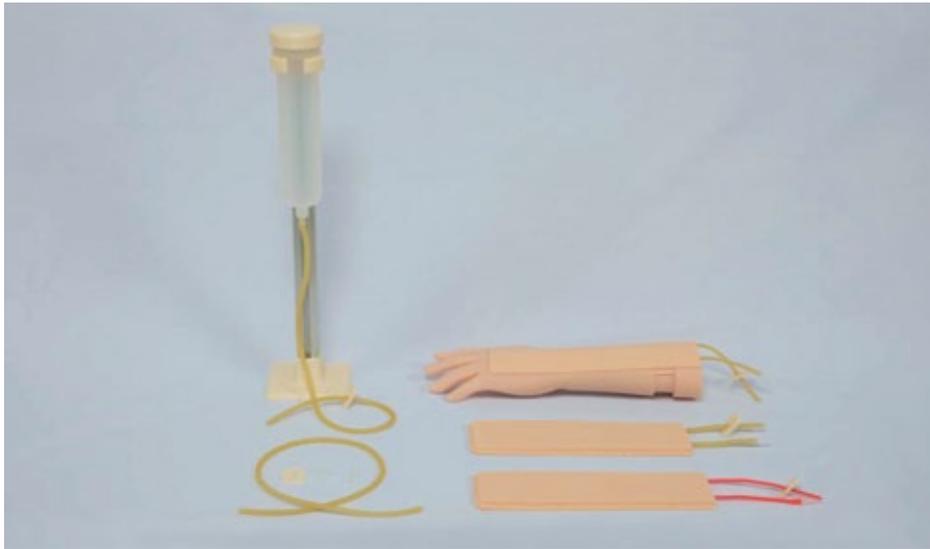
This model is suitable for training of suturing, ligation, and suture removal. It provides a realistic feel of suturing and ligation with appropriate tension feedback. The model has been created to provide a realistic hardness, thickness, and density of epidermis, dermis, and hypodermis and as such it is suitable for deep dermal suturing.

Models are available of:

- A adult or child's arm with snap-on and replaceable skin pad
- Abdomen
- Limited space (oral)



INTRAVENOUS (IV) TRAINING



These training models are suitable for injection training and blood sampling.

They have a realistic feel for needle insertion and can withstand over 100 repetitions. The arms have a snap-on and replaceable skin pad with three types of blood vessel for different skill levels.

Models available of:

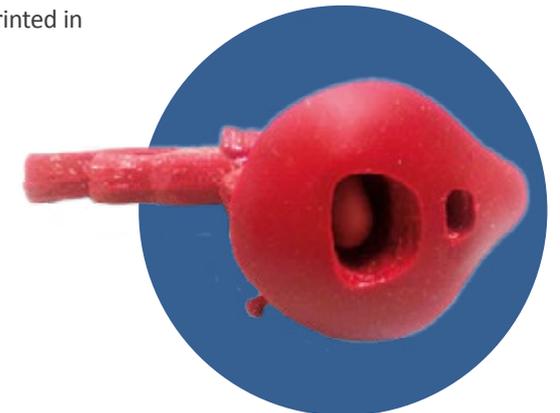
- Adult arm
- Child's arm
- skin pad

AIRWAY TRAINER (MOUTH PART ONLY)



This model is of the mouth piece only, as marked with a 1 on the picture.

This 3D printed part is more durable than a standard OEM part and has incorporated design changes from user feedback. It also has a more realistic feel as it is printed in 100% silicone



3D LIFEPRINTS

3D LifePrints is a 3D technology company that provides innovative solutions in emerging and expanding markets. In the UK, 3D LifePrints supplies 3D printing services into the medical sector.

From its embedded 3D printing hub at Alder Hey Hospital in Liverpool, 3D LifePrints supplies bespoke 3D printed anatomical models to the NHS, private hospitals, universities and medical training centres.

CONTACT

To arrange a meeting to discuss 3D LifePrints providing your medical institution with 3D printing and modelling services or to get a quote for a 3D printed anatomical model, please contact Rammy Arafa, 3D LifePrints Head of UK Sales:

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