Ultrasound Phantoms
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Female Pelvic Ultrasound Phantom
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Breast Ultrasound Examination Phantom "BREASTFAN"
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Ultrasound Neonatal Head Phantom “GEORGE” (Normal type)

World’s First Ultrasound Neonatal Head Phantom

Head ultrasound is one of most difficult scanning skills, and trainees have few opportunities for training. This head model features an accurate depiction of a newborn’s cerebral anatomy, and facilitates a realistic user experience with its life-like soft touch.

Training Skills

- Scanning of brain anatomy in Sagittal (Angled Parasagittal), Coronal and Transverse planes via any fontanel.

Anatomy

- Skull
- Anterior fontanel, Posterior fontanel
- Cerebrum
- Cerebellum
- Brain-stem
- Lateral ventricle
- Ventricle
- Third cerebroventricle
- Fourth ventricle
- Septum lucidum

Ultrasound Neonatal Head Phantom “JEAN” (Abnormal type)

World’s First Ultrasound Neonatal Head Phantom with Hydrocephalus

This head phantom is designed to demonstrate abnormal anatomy, such as Hydrocephalus, in which the shape of the skull is altered due to intracranial pressure.

Anatomy

- Skull
- Anterior fontanel, Posterior fontanel
- Cerebrum
- Hypertrophied lateral ventricle

* Specifications are subject to change
Abdominal ultrasound phantom without pathologies

Features
1. Detailed hepatobiliary, pancreatic and other abdominal anatomy
2. Eight Couinaud’s hepatic segments can be localized.
3. ABDFAN has various simulated lesions to provide wider range in training.

Training Skills
● Basics of abdominal sonography:
  - Cross sections and sonographic anatomy
  - Sonographic demonstration of each individual organ
  - Localization of hepatic Couinaud’s segments

Anatomy
● Liver
  (segmental anatomy, portal and hepatic venous systems, ligamentum teres and ligamentum venosum)
● Biliary tract
  (gallbladder, cystic duct, intrahepatic and extrahepatic bile ducts)
● Pancreas (pancreatic duct)
● Spleen / kidneys
● Detailed vascular structures
  (aorta, vena cava, celiac artery and its branches, portal vein and its branches, superior mesenteric vessels, renal vessels, and more.)

Abdominal ultrasound phantom with pathologies

Pathologies (ABDFAN only)
● Hepatic lesions (cystic and solid)
● Gallbladder and bile duct stones
● Pancreatic tumors
  (one invading the portal vein)
● Splenic lesions
● Both kidney lesions
● Left adrenal tumor

Specifications :

<table>
<thead>
<tr>
<th>Set variations:</th>
<th>US-1 (41900-010) &quot;ECHOZY&quot;</th>
<th>US-1 (41900-000) &quot;ECHOZY&quot; full set</th>
<th>US-1B (41900-030) &quot;ABDFAN&quot;</th>
<th>US-1B (41900-100) &quot;ABDFAN&quot; full set</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ultrasound phantom &quot;ECHOZY&quot;</td>
<td>1 ultrasound phantom &quot;ECHOZY&quot;</td>
<td>1 ultrasound phantom &quot;ABDFAN&quot;</td>
<td>1 ultrasound phantom &quot;ABDFAN&quot;</td>
<td></td>
</tr>
<tr>
<td>1 set positioning pillows</td>
<td>1 set positioning pillows</td>
<td>1 tutorial manual (DVD)</td>
<td>1 tutorial manual (DVD)</td>
<td></td>
</tr>
<tr>
<td>1 storage case</td>
<td>1 storage case</td>
<td>1 storage case</td>
<td>1 storage case</td>
<td></td>
</tr>
</tbody>
</table>
Fetus ultrasound phantom with a full skeletal structure

Features
1. SPACE FAN-ST provides high quality training for routine second trimester screening.
2. The oval shape phantom abdomen can be set in four different positions

Training Skills
- Fetal size assessment: BPD, AD, AC and FL
- Measurement of amniotic fluid volume
- Determination of fetus position
- Assessment of each body part
  - Head: skull and brain
  - Spine and limbs
  - Cardiac chambers, blood vessels, and lungs
- Assessment of umbilical cord and placenta
- Determination of sex (fetus is a male)

Anatomies and Pathologies
- Uterus: amniotic fluid, placenta, umbilical cord, and a 23-week fetus (10.2 in)
- Fetus:
  - skeletal structure, brain with septum lucidum, lateral ventricles and cerebellum, heart with four chambers, lungs, spleen, kidneys, aorta, UV, UA, and the external genital

Female pelvic phantom with 2 screening methods

Features
1. Realistic pathology for transvaginal ultrasound training as well as transabdominal procedure
2. Excellent ultrasound image quality
3. Anatomically correct and life-like images
4. Compatible with any ultrasound machine
5. 2 kinds of exchangeable phantoms for differing pathologies

Training Skills
- Transvaginal and transabdominal screenings
- Localization of pathologies
- 3D ultrasound imaging restructuring

Anatomies and Pathologies
- Pathological unit:
  - endometrial cancer, uterine fibroid, dermoid cyst of ovary, bleeding at Douglas pouch
- Ectopic pregnancy unit:
  - ectopic pregnancy in a fallopian tube, bleeding at Douglas pouch

Specifications:
- Set includes:
  - 1 mother body torso
  - 1 ultrasound pregnant uterus phantom
  - 1 fetus demonstration model
  - 1 storage case
  - 1 tutorial manual (DVD)

- Size:
  - 16 x 11.6 x 8.8 in.

Product Supervision
Charlotte Henningse, MS, RT(R), RDMS, RVT, FSDMS, FAIUM
Chair & Professor - Sonography Department
Adventist University of Health Sciences
Breast Ultrasound Examination Phantom
"BREASTFAN"

Training in ultrasound breast cancer screening with detailed anatomy

Features
1. State-of-the-art breast phantom with ultrasound anatomy
2. Skills required for ultrasound breast screening can be greatly advanced with practice.

Training Skills
- Skills to scan full area of breast systematically
- Visualization of key anatomical landmarks
- Tracking galactophore
- Visualization and differentiation of typical pathologies
- Localization and measurement of cyst and tumors

Anatomies
Subcutaneous adipose, mammary gland, galactophore, Cooper’s ligament, retromammary adipose, costae, clavicle, pectoralis major, lung, and lymph nodes at axilla.

Pathologies
Cyst, mammary ductal ectasia, malignant tumor, benign tumor

Ultrasound Guided Breast Biopsy Phantom

Provides step by training in ultrasound guided breast biopsy

Features
1. Compatible for FNAB, CNB and mammoctome biopsy with ultrasound guidance
2. Colored targets embedded in three levels
3. Realistic representation of the mammary gland
4. An inexpensive and disposable phantom that provides many numbers of trials.
5. The opaque phantom includes 2 types of targets; Hyperechoic and Hypoechoic.

Training Skills
- Hand-eye coordination in ultrasound biopsy
- Localization of targets under ultrasound guidance
- Sampling of target

Specifications:
- Set includes: 1 breast phantom, 1 storage case, 1 tutorial manual (DVD)
- Size: 7.6 x 8.8 x 2.8 in.
- Duo set: (11387-000) transparent + opaque type 6.3 dia x 3.2 in.
- Transparent set: (11387-100) 1 pair of transparent type
- Opaque set: (11387-200) 1 pair of opaque type
- Number of targets: 12 pieces
Scrotal Ultrasound Phantom

Excellent visualization of scrotal pathologies

The two phantoms, normal and pathological, facilitate a thorough anatomical understanding as well as a clear visualization of scrotal pathologies.

Features
1. Excellent ultrasound image quality
2. Normal and pathological unit provides differing case types
3. Exchangeable scrotal phantoms with easy cleaning

Training Skills
- Scrotal ultrasound screening
- Visualization of testicular cancer

Anatomies and Pathologies

Normal unit
- scrotum, testicle, epididymis and penis

Pathological unit
- scrotum, testicle, epididymis and penis
Testicular cancer (each one in left and right testis, 10mm dia.)

Infant Hip Sonography Training Phantom

Best tool to teach Graf’s method

Features
1. The market’s only training model for hip sonography on a full body manikin of 6-week-old infant
2. Bilateral hips for examination
3. Key landmarks that can be recognized under ultrasound include:
   - chondro-osseous junction (bony part of femoral neck),
   - femoral head, synovial fold, joint capsule, labrum,
   - hyaline cartilage preformed acetabular roof,
   - bony part of acetabular roof, bony rim (check list I),
   - lower limb of os ilium, correct plane, labrum (check list II).
4. Facilitate anatomical understanding
5. The full body manikin with movable arms allows training in supporting and changing the position of the infant.

Training Skills
- Setting and preparation for hip sonography
- Changing the position of the infant
- Communication and interaction with the infant’s guardian
- Correct positioning and use of the transducer
- Recognition of ultrasonic landmarks for hip sonography
- Visualization of standard, anterior and posterior planes
- Interpretation and morphological classification of the sonogram

Anatomies

Specifications:

Set includes:
1 lower torso manikin
1 normal scrotal unit
1 pathological scrotal unit
1 storage case

Size:
13.4 x 13 x 9.5 in.

Specifications:

Set includes:
1 ultrasound infant phantom
1 instruction manual

Size:
21.6 x 9.8 x 5.1 in.

Product Supervision
Charlotte Henningsen, MS, RT(R), RDMS, RVT, FSDMS, FAIUM
Chair & Professor - Sonography Department
Adventist University of Health Sciences
**Best tool for workshops in emergency ultrasound**

FAST/ER FAN provides training to detect the presence of free intraperitoneal or pericardial fluid in patients experiencing trauma.

**Features**

1. An innovative phantom for repetitive training of FAST as an adjunct to the ATLS primary survey
2. Pathologies including cholecystitis, an aortic aneurysm, lesion on the colon

**Anatomies and Pathologies**

![Image of anatomies and pathologies]

- Cardiac Tamponade
- Right Upper Abdominal Bleeding
- Pelvic Bleeding

**Specifications:**

- **Set includes:**
  - 1 ultrasound phantom with storage case
  - 1 tutorial manual (DVD)
- **Size:**
  - 21 x 12 x 9 in.

---

**The world’s first pediatric ultrasound torso phantom**

This abdominal ultrasound phantom includes life-size anatomies of a 2 years old with internal hemorrhage and other conditions commonly found in acute pediatric patients.

**Features**

1. The phantom includes life-size 2-year-old thoracoabdominal organs, a bone structure, free fluid to learn FAST procedures and pathologies that are commonly seen in pediatrics.
2. With this phantom, trainees can acquire skills in basics of pediatric abdominal ultrasound.

**Anatomies and Pathologies**

![Image of anatomies and pathologies]

- Pleural Hemorrhage
- Hydronephrosis
- Appendicitis

**Specifications:**

- **Set includes:**
  - 1 ultrasound phantom
  - 1 storage case
  - 1 tutorial manual (DVD)
- **Size:**
  - 16 x 6 x 6 in.
Ensure highly detailed images to ensure reliable breast cancer examinations

Ultrasound QA phantom for high precision imaging in the high frequency sonography around 10 MHz that is required in breast examination.
For monthly basic quality check of ultrasound images, as well as longer term quality assurance to maintain consistency of the performance of scanners and transducers.

**Mass targets block (contrast resolution)**

Durable and stable

Useful both for daily assessment and further research. Gray scale for evaluation, cyst targets with non-resonance cylinders, line targets for geometrical evaluation including close range (dead zone) resolution, axial and lateral resolution are prepared for scanning. The phantom is designed to allow scanning from all four side walls.

**N-365 Multipurpose Phantom**

<table>
<thead>
<tr>
<th>Specifications :</th>
<th>Phantom size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set includes:</td>
<td>Phantom size:</td>
</tr>
<tr>
<td>1 mass targets blocks</td>
<td>mass targets block phantom size: W7.2 x D3 x H4.4 in.</td>
</tr>
<tr>
<td>1 dot targets blocks</td>
<td>dot targets block phantom size: W5.4 x D3 x H4.4 in.</td>
</tr>
<tr>
<td>1 thermometer</td>
<td></td>
</tr>
<tr>
<td>1 storage case</td>
<td></td>
</tr>
</tbody>
</table>

**Specifications :**

<table>
<thead>
<tr>
<th>Set includes:</th>
<th>Phantom size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 phantom</td>
<td>W7.6 x D8.8 x H2.8 in.</td>
</tr>
<tr>
<td>1 storage case</td>
<td></td>
</tr>
</tbody>
</table>
**Effective training tool for abdominal intraoperative ultrasound examination**

Innovative phantom simulating abdominal open intraoperative and laparoscopic ultrasound examination

**Features**

1. Soft phantom materials allow realistic probe manipulation.
2. Various simulated lesions including biliary stones and cysts, solid tumors (hypoechoic, hyperechoic and target-appearance) in the liver, pancreas, spleen and kidneys
3. Detachable stomach and duodenum allows various scanning methods of the bile duct and pancreas.

**Training Skills**

- Abdominal intraoperative ultrasound examination
- Laparoscopic ultrasound examination

**Anatomy**

- Liver
  (segmental anatomy, portal and hepatic venous systems, ligamentum teres and ligament venosum)
- Biliary tract
  (gallbladder, cystic duct, intrahepatic and extrahepatic bile ducts)
- Pancreas (pancreatic duct)
- Spleen / kidneys
- Detailed vascular structures
  (aorta, vena cava, celiac artery and its branches, portal vein and its branches, superior mesenteric vessels, renal vessels, etc.)

**Specifications**

<table>
<thead>
<tr>
<th>Set includes:</th>
<th>Manikin Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 upper abdomen ultrasound phantom</td>
<td>W12 x D15 x H7 in.</td>
</tr>
<tr>
<td>1 stomach ultrasound phantom</td>
<td></td>
</tr>
<tr>
<td>1 phantom container</td>
<td></td>
</tr>
<tr>
<td>1 tutorial manual (DVD)</td>
<td></td>
</tr>
</tbody>
</table>

**Ultrasonic anatomy and needle access training**

Ultrasound compatible puncture block is anatomically correct and offers realistic image of ultrasound. Both epidural space and subarachnoid space are accessible for training.

**Features**

1. Ultrasonic landmarks of lumbar spine can be visualized.
2. Skin cover allows marking with a pen.
3. Both upright and lateral positions are possible for training.
4. Translucent blocks allow users to see the needle pathway under direct vision.

**Training Skills**

- Ultrasound-guided lumbar puncture
- Ultrasound-guided epidural anesthesia
- CSF collection and CSF pressure measurement

**Anatomy**

- Lumbar spine (L2-L5) including spinous process and transverse process
- Spinal canal, epidural space

**Specifications**

<table>
<thead>
<tr>
<th>Set includes:</th>
<th>Replacement parts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 lumbar region model</td>
<td>(11348-190) 1 ultrasound lumbar puncture/epidural block</td>
</tr>
<tr>
<td>1 ultrasound lumbar puncture/epidural block</td>
<td>(11348-230) 1 ultrasound lumbar region skin cover for M43E</td>
</tr>
<tr>
<td>1 ultrasound lumbar region skin cover</td>
<td></td>
</tr>
<tr>
<td>2 lumbar region support bases</td>
<td></td>
</tr>
<tr>
<td>1 irrigator bag/ tube/ support base</td>
<td>Manikin Size: W13 x D8.3 x H11.8 in.</td>
</tr>
<tr>
<td>and syringe</td>
<td></td>
</tr>
</tbody>
</table>
CVC Insertion Simulator II

Great practice simulator for CVC catheter insertion with a variety of methods

Features
1. CVC Insertion Simulator II offers training in both landmark and ultrasound-guided central venous catheterization.
2. Landmark puncture pad with anatomically correct vein bifurcations simulates mechanical complications including pneumothorax, mislodging and artery puncture.
3. Introductory ultrasound training block to acquire basics of ultrasound guided venous access.
4. Transparent anatomical block for anatomical understanding and guide wire manipulation.
5. Both internal jugular and subclavian (axillary) veins are accessible.

Training Skills
- Ultrasound-guided CVC
- Landmark guided CVC
- Ultrasound-guided venous access
- Prevention of mechanical complications

Specifications:

<table>
<thead>
<tr>
<th>Set includes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 male upper torso manikin</td>
</tr>
<tr>
<td>1 introductory ultrasound training block</td>
</tr>
<tr>
<td>1 landmark puncture pad</td>
</tr>
<tr>
<td>1 skin for cannulation training</td>
</tr>
<tr>
<td>1 ultrasound puncture pad</td>
</tr>
<tr>
<td>1 red coloring powder</td>
</tr>
<tr>
<td>1 transparent anatomical block</td>
</tr>
<tr>
<td>1 blue coloring powder</td>
</tr>
<tr>
<td>Size: 16 x 18 x 13 in.</td>
</tr>
</tbody>
</table>

CVC Insertion Simulator III

CVC Insertion Simulator III provides training in a sequence of procedural skills from the needle insertion to catheter placement, including Seldinger technique.

Features
1. Repeated insertion:
   - Improved frictionless tissue of the pad allows Seldinger technique and repeated insertion and removable of the catheter with less needle marks left on the surface of the pad.
2. Both Landmark and ultrasound-guided CVC:
   - Anatomically correct structure facilitates training in both landmark and ultrasound-guided CVC.
3. Mechanical complications, such as arterial puncture and pneumothorax can be simulated for training.
4. New Material
   - Close to human tissue material of the pad provides true-to-life sensation to the catheter.
5. Realistic venous collapse

Training Skills
- Ultrasound-guided CVC
- Landmark guided CVC
- Ultrasound-guided venous access
- Prevention of mechanical complications

Anatomy
- Internal jugular vein & carotid artery
- Subclavian vein & artery
- Superior vena cava
- Ribs
- Sternum
- Lung

Specifications:

<table>
<thead>
<tr>
<th>Set includes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 CVC placement pads</td>
</tr>
<tr>
<td>1 vein pipe</td>
</tr>
<tr>
<td>2 artery tubes</td>
</tr>
<tr>
<td>1 instruction manual</td>
</tr>
<tr>
<td>2 vein tubes</td>
</tr>
<tr>
<td>Size: 16 x 18 x 13 in.</td>
</tr>
</tbody>
</table>

Product Supervision

Masahiro Tanabe, M.D., Ph.D., Professor Director General Medical Education Center Chiba University School of Medicine
Kinya Sando, M.D., Ph.D., Professor Director Department of Human Dietetics Graduate School of Human Science Osaka Shion Women’s University
Masanori Hoki, M.D., Ph.D., Professor Department of Human Dietetics Graduate School of Human Science Osaka Shion Women’s University
Joho Tokumine, M.D. Ph.D., Department of Anesthesia, Kawatezu Chiba Hospital
Comprehensive, hands-on training for PICC insertion

This model provides training in full procedural skills from the needle insertion, manipulation of the PICC to the placement of the distal tip in the SVC. Both basilic and cephalic veins are accessible for different levels of challenges in cannulation. The replaceable puncture pad is ultrasound-compatible. Anatomically correct bifurcation of the vein provides realistic resistance on its outer walls and simulates complications such as catheter malpositioning.

Features
1. Excellent image quality and visualization of the needle tip for ultrasound guided venous access
2. Movable shoulder to demonstrate positioning
3. Realistic flashback in needle provides confirmation for successful venous access
4. Ribs and right clavicle provide anatomical understanding of correct PICC placement
5. Anatomically correct bifurcation of the vein
6. Simulation of cannula malposition

Training Skills
- Correct needle insertion, PICC, manipulation and catheter tip placement
- Finding a puncture site under ultrasound guidance
- The Seldinger technique
- Technique for the peel-away sheath
- Advancing of the cannula into the SVC
- Visualization and localization of the vessels
- Transducer manipulation
- Basics for ultrasound-guided vascular access
- Excellent image quality and visualization of the needle tip for ultrasound guided venous access
- Movable shoulder to demonstrate positioning
- Realistic flashback in needle provides confirmation for successful venous access
- Ribs and right clavicle provide anatomical understanding of correct PICC placement
- Anatomically correct bifurcation of the vein
- Simulation of cannula malposition

Specifications :
Set includes:
- 1 male upper torso with the right arm
- 2 PICC puncture pads
- 10 simulated blood (swab type)
- 1 syringe
- 1 instruction manual
- 1 storage case
- 1 jar
Size: 15.7 x 5.9 x 23.7 in.
Replacement part:
(11348-010) 2 PICC puncture pads

Provides training in hands-eye coordination and basic skills in ultrasound-guided venous access.

Features
1. 2 simulated vessel lines: straight and curve.
2. Lines have slope to represent vessels with different depth.
3. Vessel wall yields under pressure of a needle tip.

Training Skills
- Visualization and localization of the vessels
- Transducer manipulation
- Basics for ultrasound-guided vascular access

Set includes:
REAL VESSEL Introductory ultrasound training block (a set of 2)

Ultrasound Guided Breast Biopsy Phantom

Provides step by training in ultrasound guided breast biopsy

Training Skills
- Hand-eye coordination in ultrasound biopsy
- Localization of targets under ultrasound guidance
- Sampling of target
Let us know your thoughts

We believe in the importance of providing phantoms that meet your needs and listening to your voice to find a solution.

If you would like to suggest any additional features for our phantoms, please do not hesitate to contact Kyoto Kagaku America Inc!

Innovation is our tradition.

Cases

Bladder Ultrasound Phantom

Fundamental Ultrasound Phantom

Finger Joint Ultrasound Phantom

Research Model for Transcranial Doppler (TCD)

CT-Ultrasound Fusion QA Phantom

Have you found what you are looking for?

We take pride in offering a wide variety of high quality models, simulators and phantoms. Please do not hesitate to contact Kyoto Kagaku America Inc!
Kyoto Kagaku Phantoms for ultrasonography

Materials for Ultrasound Phantoms
Japanese patent No. 3650096

Durable, stable with homogeneous granular background reflection with excellent and controllable echogenicities

Sonic velocity: 1434m/sec at 25 degrees C
Density: 0.954g/cm³
Attenuation rate: 0.57dB/cmMHz at 25 degrees C
Acoustic impedance: 1.37 rayl at 25 degrees C

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Speed of sound</th>
<th>Attenuation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 degrees C</td>
<td>1449.5 m/sec</td>
<td>0.58 dB/cmMHz</td>
</tr>
<tr>
<td>25 degrees C</td>
<td>1434.1 m/sec</td>
<td>0.57 dB/cmMHz</td>
</tr>
<tr>
<td>35 degrees C</td>
<td>1403.9 m/sec</td>
<td>0.55 dB/cmMHz</td>
</tr>
</tbody>
</table>

Higher sonic velocity for detailed QA in high-frequency ultrasound.

US-4 Breast Ultrasound QA Phantom
Higher sonic velocity for detailed QA in high-frequency ultrasound.

Mass targets block (contrast resolution)  Dot targets block (spatial resolution)

Gray scale targets  Cyst targets

Natori H, Igarashi T, Arakawa M.
Durable fine resolution test phantom for diagnostic ultrasound system
ECR 2013 Poster C-1765

"Durable fine resolution test phantom for diagnostic ultrasound system", H.Natori 2013

7.5 MHz linear probe was applied on the old phantom made in 2004 on the front row, and new phantom made in 2012 was displayed on the back row.