GE HealthCare

Vscan Air™ CL and SL

Indications reference guide

Disclaimer: The information in this section is meant to be reference for examples of anatomies and examinations that can be evaluated by this product. The list may not be all inclusive.

Curved array (deep scanning) transducer

The curved array transducer on Vscan Air CL supports black/white (B-mode), color (Color Doppler), harmonic, M-mode and PW doppler modes. Vscan Air is indicated for ultrasound imaging, measurement, and analysis of the human body in clinical applications that include:

Clinical application	Anatomy	Evaluation
Abdominal (Adult/pediatrics)	• Gall bladder, biliary tree, common bile duct • Liver • Pancreas • Spleen • Bowel including appendix, small bowel loops • Abdominal aorta • Kidneys • Inferior vena cava (IVC) • Iliac	• Gall stones • Gall bladder inflammation (wall thickening, surrounding fluid) • Biliary obstruction (duct dilatation) • Hepatomegaly • Fatty liver • Splenomegaly • Intestinal obstruction • Appendicitis • Peritoneal fluid • Cyst/mass/abscess • Abdominal aortic aneurysm • Kidney stones
Urology (Adult/pediatrics)	• Kidneys • Ureter • Urinary bladder • Uretero-vesicular junction • Prostate	• Kidney, ureteral, bladder stones • Kidney length • Hydronephrosis • Bladder dysfunction • Pre-post bladder volume • Bladder inflammation (wall and mucosal changes, calcifications) • Prostate size and volume • Cyst/mass • Ureteral jets with color

Curved array (deep scanning) transducer

Clinical application	Anatomy	Evaluation
OB-GYN	• Uterus and endometrium • Ovaries • Cervix • Pouch of Douglas (POD) • Gestational sac (GS) • Placenta • Amniotic fluid • Fetus(es)	• GS location (intra-uterine/extra-uterine) • Fetal viability/heart motion • Placenta position (including low-lying and previa) • Fetal position and presentation • Amniotic fluid assessment • Cervical length measurement/cervical insufficiency • Fetal well-being assessment: biophysical profile (breathing, movements, tone, amniotic fluid) • Confirmation of fetal death • Intrauterine device position • Endometrial thickness measurement • Uterine/adnexal mass/cyst (fibroids, cysts) • Free fluid in Pouch of Douglas (POD)
Lung/thoracic (Adult/pediatrics)	• A-lines, B-lines, E-lines • Pleura • Lung tissue • Lung sliding • Lung point	• Pneumothorax and hemothorax • Pleural effusion • Lung consolidation • Pneumonia/pneumonitis • Pulmonary fibrosis • Pulmonary interstitial and inflammatory disorders (ex. ILD, COPD) • Acute respiratory distress syndrome
Cardiac and hemodynamic assessment (Adult/pediatrics*) * Pediatric population for cardiac application defined as minimum body weight 40 Kg and above.	• Heart (atria, ventricles, valves) including pericardium • Subcostal view • Inter-atrial and interventricular septum • Pulmonary arteries/veins • Inferior vena cava (IVC)	• Pericardial fluid • LV and RV size and function • Valvular regurgitations/stenosis • Volume status and responsiveness • IVC size • Respiratory variation
Musculoskeletal (Conventional) (Adult/pediatrics)	• Hip/knee/shoulder joints • Femur • Humerus/elbow • Tibia/fibula • Radius/ulna • Muscles • Ligaments • Tendons • Nerves	• Fluid • Cyst/mass • Long bone fractures • Ligament and joint integrity • Tendon injuries (tendonitis, rupture/tear) • Muscle tears • Peripheral nerve blocks
Procedure guidance (Adult/pediatrics)	• Heart • Lung • Uterus • Abdomen • Thorax • Bladder • Nerve plexus • Hip/knee/shoulder joints	• Fluid detection: pericardial, pleural, peritoneal, amniotic, joints • Procedures: thoracentesis, paracentesis, pericardiocentesis, amniocentesis, arthrocentesis • Foreign body visualization/localization • Bladder catheterization • Nerve blocks • Biopsy • Placement and monitor position of tubes and catheters
Protocols	• Heart • Inferior vena cava (IVC) • Lungs • Abdomen	• FAST • eFAST • BLUE • FASH • FASE

Linear array (shallow scanning) transducer

The linear array transducer on Vscan Air CL and the Vscan Air SL supports black/white (B-mode), color (Color Doppler), harmonic, M-mode and PW doppler modes. Vscan Air is indicated for ultrasound imaging, measurement, and analysis of the human body in clinical applications that include:

Clinical application	Anatomy	Evaluation
Peripheral vascular (Adult/pediatrics)	• Arteries (including carotid, vertebral, subclavian, axillary, brachial, iliac, saphenous, popliteal, femoral) • Veins (including jugular, subclavian, cephalic, basilic, saphenous, femoral, popliteal, tibial)	• Deep vein thrombosis • Atherosclerosis (intima media thickness, plaques, vessel occlusion/stenosis) • Subclavian Steal syndrome
Lung/thoracic (Adult/pediatrics)	• A-lines, B-lines, E-lines • Pleura • Lung tissue • Lung sliding • Lung point	• Pneumothorax and hemothorax • Pleural effusion • Lung consolidation • Pneumonia/pneumonitis • Pulmonary fibrosis • Pulmonary interstitial and inflammatory disorders (ex. ILD, COPD) • Acute respiratory distress syndrome
Small organs (Adult/pediatrics)	• Testes • Scrotum • Thyroid • Breast • Bowel • Abdominal wall • Skin • Subcutaneous tissue • Fascia • Lymph nodes	• Testicular torsion (size, echo-texture and vascularity) • Epididymo-orchitis • Fluid collection in scrotal sac • Hematomas, hernias • Breast nodules, cyst/mass • Abdominal wall masses, hernias • Thyroid nodules/cyst/mass/diffuse enlargement • Bowel pathology (ex. appendicitis, diverticulitis, intestinal obstruction) • Pyloric stenosis/Intussusception for pediatric patients • Soft tissue infection (cellulitis, abscess, bed sore) • Foreign body visualization/localization • Cutaneous mass
Musculoskeletal — (Superficial and conventional) (Adult/pediatrics)	• Tendons • Muscles • Ligaments • Nerves • Long bones (ex. humerus, radius, ulna, femur, tibia, fibula) • Joints (ankle, shoulder, knee, elbow, wrist) • Joint space/bursa	• Tendon injuries (tendonitis, rupture/tear) • Muscle tears • Long bone fractures • Carpal Tunnel syndrome • Fluid collection in joint space, muscles, bursae • Joint and ligaments integrity • Cyst/mass • Hip joint evaluation for neonates and infants
Nerves (Adult/pediatrics)	• Peripheral nerves (including interscalene, supraclavicular, infraclavicular, axillary plexus, median N, radial N, ulnar, femoral, popliteal, tibial, peroneal, saphenous N)	• Peripheral nerve blocks
Neck and airway (Adult/pediatrics)	• Cervical lymph nodes • Trachea • Epiglottis, cricoid cartilage, cricothyroid membrane • Esophagus • Vocal folds	• Neck masses • Airway assessment • Vocal cord dysfunction

Linear array (shallow scanning) transducer

Clinical application	Anatomy	Evaluation
Procedural guidance (Adult/pediatrics)	• Thorax • Veins (including jugular, subclavian, axillary, femoral, brachial, basilic, cephalic) • Arteries (including femoral, radial, brachial, axillary, dorsalis pedis) • Peripheral nerves • Joints • Vertebral spaces • Skin and subcutaneous tissue • Trachea and surrounding structures	• Fluid detection and removal support: thoracentesis • Peripheral venous access • Central venous catheterization • Arterial access • Assessment and support of dialysis access • Nerve blocks • Joint aspiration and injections • Cyst aspiration • Biopsy • Abscess drainage • Foreign body visualization/localization • Lumbar puncture • Endotracheal tubes placement and confirmation • Support placement and monitor position of tubes and catheters
Ophthalmic* *Not available in Japan and China.	• Optic nerve sheath • Retina • Globe • Lens	• Retinal detachment • Vitreous hemorrhage • Intra-ocular foreign body visualization • Globe rupture • Optic nerve sheath diameter • Lens dislocation
Cephalic (Neonatal)	• Fontanelle • Superficial and mid-superficial cranial structures	• Gyral-sulcal anatomy • Superior sagittal sinus thrombosis • Cerebral edema • Extra-axial fluid collections
Protocols	• Lungs	• eFAST • BLUE
Aesthetics* *Optional, not available in all markets.	• Epidermis • Dermis • Subcutaneous fat • Neck and facial arteries and veins • Superficial and deep facial muscles • Superficial fat pads • Superficial bone structures	• Presence of nodules • Granulomas or filler • Abscesses or seromas • Mapping vascular pathways • Identifying vessels in high-risk zones • Detecting vascular compromise • Locating precise injection planes • Assessing asymmetry • Assessing muscle thickness • Planning fat grafting procedures • Detecting irregular filler spread or migration • Determining injection depth • Monitoring filler longevity

Sector array (deep scanning) transducer

The sector array transducer on Vscan Air SL supports black/white (B-mode), color (Color Doppler), harmonic, M-mode and PW doppler modes. Vscan Air is indicated for ultrasound imaging, measurement, and analysis of the human body in clinical applications that include::

Clinical application	Anatomy	Evaluation
Abdominal (Adult/pediatrics)	• Gall bladder, biliary tree, common bile duct • Liver • Pancreas • Spleen • Bowel including appendix, small bowel loops • Abdominal aorta • Kidneys • Inferior vena cava (IVC)	• Gall stones • Gall bladder inflammation (wall thickening, surrounding fluid) • Biliary obstruction (duct dilatation) • Hepatomegaly • Fatty liver • Splenomegaly • Intestinal obstruction • Appendicitis • Peritoneal fluid • Cyst/mass/abscess • Abdominal aortic aneurysm • Kidney stones
Urology (Adult/pediatrics)	• Kidneys • Ureter • Urinary bladder • Uretero-vesicular junction • Prostate	• Kidney, ureteral, bladder stones • Kidney length • Hydronephrosis • Bladder dysfunction • Pre-post bladder volume • Bladder inflammation (wall and mucosal changes, calcifications) • Prostate size and volume • Cyst/mass • Ureteral jets with color
OB-GYN	• Uterus and endometrium • Ovaries • Cervix • Pouch of Douglas (POD) • Gestational sac (GS) • Placenta • Amniotic fluid • Fetus(es)	• GS location (Intra-uterine/extra-uterine) • Fetal viability/heart motion • Placenta position (including low-lying and previa) • Fetal position and presentation • Amniotic fluid assessment • Cervical length measurement/cervical insufficiency • Fetal well-being assessment: biophysical profile (breathing, movements, tone, amniotic fluid) • Confirmation of fetal death • Intrauterine device position • Endometrial thickness measurement • Uterine/adnexal mass/cyst (fibroids, cysts) • Free fluid in Pouch of Douglas (POD)
Lung/thoracic (Adult/pediatrics)	• A-lines, B-lines, E-lines • Pleura • Lung tissue • Lung sliding • Lung point	• Pneumothorax and hemothorax • Pleural effusion • Lung consolidation • Pneumonia/pneumonitis • Pulmonary fibrosis • Pulmonary interstitial and inflammatory disorders (ex. ILD, COPD) • Acute respiratory distress syndrome

Sector array (deep scanning) transducer

Clinical application	Anatomy	Evaluation
Cardiac and hemodynamic assessment (Adult/pediatrics*) * Pediatric population for Cardiac application defined as minimum body weight 40 Kg and above.	• Heart (atria, ventricles, valves) including pericardium – Subcostal view – Apical 2-chamber, apical 3-chamber, apical 4-chamber, apical 5-chamber, parasternal view (long axis and short axis) – LVOT • Inter-atrial and interventricular septum • Pulmonary arteries/veins • Inferior vena cava (IVC)	• Pericardial fluid • LV and RV size and function • Systolic and diastolic function • Valvular regurgitations/stenosis • Volume status and responsiveness – IVC size – Respiratory variation
Adult cephalic/ transcranial doppler	• Circle of Willis • Vertebrobasilar system/artery • Middle cerebral artery (MCA)	• Stenosis • Cerebral vasculopathy • Vasospasms • Collateral pathways • Right to left shunts • Aneurysms • Positional vertigo • Cerebral microemboli • Ischemic stroke
Procedure guidance (Adult/pediatrics)	• Heart • Lung • Uterus • Abdomen • Thorax • Bladder • Nerve plexus • Hip/knee/shoulder joints	• Fluid detection: pericardial, pleural, peritoneal, amniotic, joints • Procedures: thoracentesis, paracentesis, pericardiocentesis, amniocentesis, arthrocentesis • Bladder catheterization • Nerve blocks • Biopsy • Placement and monitor position of tubes and catheters
Protocols	• Heart • Inferior vena cava (IVC) • Lungs • Abdomen	• FAST • eFAST • BLUE • FASH • FASE

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