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

Curved array (deep scanning) transducer

| Clinical application | Anatomy | Evaluation |
|---|---|---|
| OB-GYN | • Uterus and endometrium<br>• Ovaries<br>• Cervix<br>• Pouch of Douglas (POD)<br>• Gestational Sac (GS)<br>• Placenta<br>• Amniotic fluid<br>• Fetus(es) | • GS location (intra-uterine/extra-uterine)<br>• Fetal viability/heart motion<br>• Placenta position (including low-lying and previa)<br>• Fetal position and presentation<br>• Amniotic fluid assessment<br>• Cervical length measurement/cervical insufficiency<br>• Fetal well-being assessment: biophysical profile (breathing, movements, tone, amniotic fluid)<br>• Confirmation of fetal death<br>• Intrauterine device position<br>• Endometrial thickness measurement<br>• Uterine/adnexal mass/cyst (fibroids, cysts)<br>• Free fluid in Pouch of Douglas (POD) |
| Lung/Thoracic<br>(Adult/Pediatrics) | • A-lines, B-lines, E-lines<br>• Pleura<br>• Lung tissue<br>• Lung sliding<br>• Lung point | • Pneumothorax and hemothorax<br>• Pleural effusion<br>• Lung consolidation<br>  • Pneumonia/pneumonitis<br>  • Pulmonary fibrosis<br>• Pulmonary interstitial and inflammatory disorders (Ex. ILD, COPD)<br>• Acute respiratory distress syndrome |
| Cardiac and hemodynamic assessment<br>(Adult/Pediatrics*)<br><br>* Pediatric population for Cardiac application defined as minimum body weight 40 Kg and above. | • Heart (atria, ventricles, valves) including pericardium<br>  • Subcostal view<br>• Inter-atrial and interventricular septum<br>• Pulmonary arteries/veins<br>• Inferior vena cava (IVC) | • Pericardial fluid<br>• LV and RV size and function<br>• Valvular regurgitations/stenosis<br>• Volume status and responsiveness<br>  • IVC size<br>  • Respiratory variation |
| Musculoskeletal<br>(Conventional)<br>(Adult/Pediatrics) | • Hip/knee/shoulder joints<br>• Femur<br>• Humerus/elbow<br>• Tibia/fibula<br>• Radius/ulna<br>• Muscles<br>• Ligaments<br>• Tendons<br>• Nerves | • Fluid<br>• Cyst/mass<br>• Long bone fractures<br>• Ligament and joint integrity<br>• Tendon injuries (tendonitis, rupture/tear)<br>• Muscle tears<br>• Peripheral nerve blocks |

Curved array (deep scanning) transducer

| Clinical application | Anatomy | Evaluation |
|---|---|---|
| Procedure guidance (Adult/Pediatrics) | • Heart<br>• Lung<br>• Uterus<br>• Abdomen<br>• Thorax<br>• Bladder<br>• Nerve plexus<br>• Hip/knee/shoulder joints | • Fluid detection: pericardial, pleural, peritoneal, amniotic, joints<br>• Procedures: thoracentesis, paracentesis, pericardiocentesis, amniocentesis, arthrocentesis<br>• Foreign body visualization/localization<br>• Bladder catheterization<br>• Nerve blocks<br>• Biopsy<br>• Placement and monitor position of tubes and catheters |
| Protocols | • Heart<br>• Inferior vena cava (IVC)<br>• Lungs<br>• Abdomen | • FAST<br>• eFAST<br>• BLUE<br>• FASH<br>• 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 and Pediatrics) | • Arteries (including carotid, vertebral, subclavian, axillary, brachial, iliac, saphenous, popliteal, femoral)<br>• Veins (including jugular, subclavian, cephalic, basilic, saphenous, femoral, popliteal, tibial) | • Deep vein thrombosis<br>• Atherosclerosis (intima media thickness, plaques, vessel occlusion/ stenosis)<br>• Subclavian Steal syndrome |
| Lung/Thoracic (Adult /Pediatric) | • A-lines, B-lines, E-lines<br>• Pleura<br>• Lung tissue<br>• Lung sliding<br>• Lung point | • Pneumothorax and hemothorax<br>• Pleural effusion<br>• Lung consolidation<br>  • Pneumonia/pneumonitis<br>  • Pulmonary fibrosis<br>• Pulmonary interstitial and inflammatory disorders (Ex. ILD, COPD)<br>• Acute respiratory distress syndrome |

Linear array (shallow scanning) transducer

| Clinical application | Anatomy | Evaluation |
|---|---|---|
| Small organs<br>(Adult/Pediatric) | • Testes<br>• Scrotum<br>• Thyroid<br>• Breast<br>• Bowel<br>• Abdominal wall<br>• Skin<br>• Subcutaneous tissue<br>• Fascia<br>• Lymph nodes | • Testicular torsion (size, echo-texture and vascularity)<br>• Epididymo-orchitis<br>• Fluid collection in scrotal sac<br>• Hematomas, hernias<br>• Breast nodules, cyst/mass<br>• Abdominal wall masses, hernias<br>• Thyroid nodules/cyst/mass/diffuse enlargement<br>• Bowel pathology (ex. appendicitis, diverticulitis, intestinal obstruction)<br>• Pyloric stenosis/Intussusception for pediatric patients<br>• Soft tissue infection (cellulitis, abscess, bed sore)<br>• Foreign body visualization/localization<br>• Cutaneous mass |
| Musculoskeletal — (Superficial and conventional)<br>(Adult/Pediatrics) | • Tendons<br>• Muscles<br>• Ligaments<br>• Nerves<br>• Long bones (ex. humerus, radius, ulna, femur, tibia, fibula)<br>• Joints (ankle, shoulder, knee, elbow, wrist)<br>• Joint space/bursa | • Tendon injuries (tendonitis, rupture/tear)<br>• Muscle tears<br>• Long bone fractures<br>• Carpal Tunnel syndrome<br>• Fluid collection in joint space, muscles, bursae<br>• Joint and ligaments integrity<br>• Cyst/mass<br>• Hip joint evaluation for neonates and infants |
| Nerves<br>(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<br>(Adult /Pediatric) | • Cervical lymph nodes<br>• Trachea<br>• Epiglottis, cricoid cartilage, cricothyroid membrane<br>• Esophagus<br>• Vocal folds | • Neck masses<br>• Airway assessment<br>• Vocal cord dysfunction |

Linear array (shallow scanning) transducer

| Clinical application | Anatomy | Evaluation |
|---|---|---|
| Procedural guidance (Adult/Pediatrics) | • Thorax<br>• Veins (including jugular/subclavian/ axillary/femoral /brachial/basilic/ cephalic)<br>• Arteries (including femoral, radial, brachial, axillary, dorsalis pedis)<br>• Peripheral nerves<br>• Joints<br>• Vertebral spaces<br>• Skin and subcutaneous tissue<br>• Trachea and surrounding structures | • Fluid detection and removal support: thoracentesis<br>• Peripheral venous access<br>• Central venous catheterization<br>• Arterial access<br>• Assessment and support of dialysis access<br>• Nerve blocks<br>• Joint aspiration and injections<br>• Cyst aspiration<br>• Biopsy<br>• Abscess drainage<br>• Foreign body visualization/localization<br>• Lumbar puncture<br>• Endotracheal tubes placement and confirmation<br>• Support placement and monitor position of tubes and catheters |
| Ophthalmic* | • Optic nerve sheath<br>• Retina<br>• Globe<br>• Lens | • Retinal detachment<br>• Vitreous hemorrhage<br>• Intra-ocular foreign body visualization<br>• Globe rupture<br>• Optic nerve sheath diameter<br>• Lens dislocation |
| Cephalic (Neonatal) | • Fontanelle<br>• Superficial and mid-superficial cranial structures | • Gyral-sulcal anatomy<br>• Superior sagittal sinus thrombosis<br>• Cerebral edema<br>• Extra-axial fluid collections |
| Protocols | • Lungs | • eFAST<br>• BLUE |

*Disclaimer: Ophthalmic is not available in Japan and China.

# 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<br>• Liver<br>• Pancreas<br>• Spleen<br>• Bowel including appendix, small bowel loops<br>• Abdominal aorta<br>• Kidneys<br>• Inferior vena cava (IVC) | • Gall stones<br>• Gall bladder inflammation (wall thickening, surrounding fluid)<br>• Biliary obstruction (duct dilatation)<br>• Hepatomegaly<br>• Fatty liver<br>• Splenomegaly<br>• Intestinal obstruction<br>• Appendicitis<br>• Peritoneal fluid<br>• Cyst/mass/abscess<br>• Abdominal aortic aneurysm<br>• Kidney stones |
| Urology (Adult/Pediatrics) | • Kidneys<br>• Ureter<br>• Urinary bladder<br>• Uretero-vesicular junction<br>• Prostate | • Kidney, ureteral, bladder stones<br>• Kidney length<br>• Hydronephrosis<br>• Bladder dysfunction<br>• Pre-post bladder volume<br>• Bladder inflammation (wall and mucosal changes, calcifications)<br>• Prostate size and volume<br>• Cyst/mass<br>• Ureteral jets with color |
| OB-GYN | • Uterus and endometrium<br>• Ovaries<br>• Cervix<br>• Pouch of Douglas (POD)<br>• Gestational Sac (GS)<br>• Placenta<br>• Amniotic fluid<br>• Fetus(es) | • GS location (Intra-uterine/extra-uterine)<br>• Fetal viability/heart motion<br>• Placenta position (including low-lying and previa)<br>• Fetal position and presentation<br>• Amniotic fluid assessment<br>• Cervical length measurement/cervical insufficiency<br>• Fetal well-being assessment: biophysical profile (breathing, movements, tone, amniotic fluid)<br>• Confirmation of fetal death<br>• Intrauterine device position<br>• Endometrial thickness measurement<br>• Uterine/adnexal mass/cyst (fibroids, cysts)<br>• Free fluid in Pouch of Douglas (POD) |

Sector array (deep scanning) transducer

| Clinical application | Anatomy | Evaluation |
|---|---|---|
| Lung/Thoracic<br>(Adult/Pediatrics) | • A-lines, B-lines, E-lines<br>• Pleura<br>• Lung tissue<br>• Lung sliding<br>• Lung point | • Pneumothorax and hemothorax<br>• Pleural Effusion<br>• Lung consolidation<br>  • Pneumonia/pneumonitis<br>  • Pulmonary fibrosis<br>• Pulmonary interstitial and inflammatory disorders (Ex. ILD, COPD)<br>• Acute respiratory distress syndrome |
| Cardiac and hemodynamic assessment<br>(Adult/Pediatrics*)<br><br>* Pediatric population for Cardiac application defined as minimum body weight 40 Kg and above. | • Heart (atria, ventricles, valves) including pericardium<br>  • Subcostal view<br>  • Apical 2-chamber, apical 3-chamber, apical 4-chamber, apical 5-chamber, parasternal view (long axis and short axis)<br>  • LVOT<br>• Inter-atrial and interventricular septum<br>• Pulmonary arteries/veins<br>• Inferior vena cava (IVC) | • Pericardial fluid<br>• LV and RV size and function<br>• Systolic and diastolic function<br>• Valvular regurgitations/stenosis<br>• Volume status and responsiveness<br>  • IVC size<br>  • Respiratory variation |
| Adult cephalic/Transcranial doppler | • Circle of Willis<br>• Vertebrobasilar system/artery<br>• Middle cerebral artery (MCA) | • Stenosis<br>• Cerebral vasculopathy<br>• Vasospasms<br>• Collateral pathways<br>• Right to left shunts<br>• Aneurysms<br>• Positional vertigo<br>• Cerebral microemboli<br>• Ischemic stroke |

Sector array (deep scanning) transducer

| Clinical application | Anatomy | Evaluation |
|---|---|---|
| Procedure guidance (Adult/Pediatrics) | • Heart<br>• Lung<br>• Uterus<br>• Abdomen<br>• Thorax<br>• Bladder<br>• Nerve plexus<br>• Hip/knee/shoulder joints | • Fluid detection: pericardial, pleural, peritoneal, amniotic, joints<br>• Procedures: thoracentesis, paracentesis, pericardiocentesis, amniocentesis, arthrocentesis<br>• Bladder catheterization<br>• Nerve blocks<br>• Biopsy<br>• Placement and monitor position of tubes and catheters |
| Protocols | • Heart<br>• Inferior vena cava (IVC)<br>• Lungs<br>• Abdomen | • FAST<br>• eFAST<br>• BLUE<br>• FASH<br>• FASE |



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