



# 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)	<ul style="list-style-type: none"> <li>• Gall bladder, biliary tree, common bile duct</li> <li>• Liver</li> <li>• Pancreas</li> <li>• Spleen</li> <li>• Bowel including appendix, small bowel loops</li> <li>• Abdominal aorta</li> <li>• Kidneys</li> <li>• Inferior vena cava (IVC)</li> <li>• Iliac</li> </ul>	<ul style="list-style-type: none"> <li>• Gall stones</li> <li>• Gall bladder inflammation (wall thickening, surrounding fluid)</li> <li>• Biliary obstruction (duct dilatation)</li> <li>• Hepatomegaly</li> <li>• Fatty liver</li> <li>• Splenomegaly</li> <li>• Intestinal obstruction</li> <li>• Appendicitis</li> <li>• Peritoneal fluid</li> <li>• Cyst/mass/abscess</li> <li>• Abdominal aortic aneurysm</li> <li>• Kidney stones</li> </ul>
Urology (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• Kidneys</li> <li>• Ureter</li> <li>• Urinary bladder</li> <li>• Uretero-vesicular junction</li> <li>• Prostate</li> </ul>	<ul style="list-style-type: none"> <li>• Kidney, ureteral, bladder stones</li> <li>• Kidney length</li> <li>• Hydronephrosis</li> <li>• Bladder dysfunction</li> <li>• Pre-post bladder volume</li> <li>• Bladder inflammation (wall and mucosal changes, calcifications)</li> <li>• Prostate size and volume</li> <li>• Cyst/mass</li> <li>• Ureteral jets with color</li> </ul>

## Curved array (deep scanning) transducer

Clinical application	Anatomy	Evaluation
OB-GYN	<ul style="list-style-type: none"> <li>• Uterus and endometrium</li> <li>• Ovaries</li> <li>• Cervix</li> <li>• Pouch of Douglas (POD)</li> <li>• Gestational Sac (GS)</li> <li>• Placenta</li> <li>• Amniotic fluid</li> <li>• Fetus(es)</li> </ul>	<ul style="list-style-type: none"> <li>• GS location (intra-uterine/extra-uterine)</li> <li>• Fetal viability/heart motion</li> <li>• Placenta position (including low-lying and previa)</li> <li>• Fetal position and presentation</li> <li>• Amniotic fluid assessment</li> <li>• Cervical length measurement/cervical insufficiency</li> <li>• Fetal well-being assessment: biophysical profile (breathing, movements, tone, amniotic fluid)</li> <li>• Confirmation of fetal death</li> <li>• Intrauterine device position</li> <li>• Endometrial thickness measurement</li> <li>• Uterine/adnexal mass/cyst (fibroids, cysts)</li> <li>• Free fluid in Pouch of Douglas (POD)</li> </ul>
Lung/Thoracic (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• A-lines, B-lines, E-lines</li> <li>• Pleura</li> <li>• Lung tissue</li> <li>• Lung sliding</li> <li>• Lung point</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumothorax and hemothorax</li> <li>• Pleural effusion</li> <li>• Lung consolidation <ul style="list-style-type: none"> <li>• Pneumonia/pneumonitis</li> <li>• Pulmonary fibrosis</li> </ul> </li> <li>• Pulmonary interstitial and inflammatory disorders (Ex. ILD, COPD)</li> <li>• Acute respiratory distress syndrome</li> </ul>
Cardiac and hemodynamic assessment (Adult/Pediatrics*)  <small>* Pediatric population for Cardiac application defined as minimum body weight 40 Kg and above.</small>	<ul style="list-style-type: none"> <li>• Heart (atria, ventricles, valves) including pericardium <ul style="list-style-type: none"> <li>• Subcostal view</li> </ul> </li> <li>• Inter-atrial and interventricular septum</li> <li>• Pulmonary arteries/veins</li> <li>• Inferior vena cava (IVC)</li> </ul>	<ul style="list-style-type: none"> <li>• Pericardial fluid</li> <li>• LV and RV size and function</li> <li>• Valvular regurgitations/stenosis</li> <li>• Volume status and responsiveness <ul style="list-style-type: none"> <li>• IVC size</li> <li>• Respiratory variation</li> </ul> </li> </ul>
Musculoskeletal (Conventional) (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• Hip/knee/shoulder joints</li> <li>• Femur</li> <li>• Humerus/elbow</li> <li>• Tibia/fibula</li> <li>• Radius/ulna</li> <li>• Muscles</li> <li>• Ligaments</li> <li>• Tendons</li> <li>• Nerves</li> </ul>	<ul style="list-style-type: none"> <li>• Fluid</li> <li>• Cyst/mass</li> <li>• Long bone fractures</li> <li>• Ligament and joint integrity</li> <li>• Tendon injuries (tendonitis, rupture/tear)</li> <li>• Muscle tears</li> <li>• Peripheral nerve blocks</li> </ul>

## Curved array (deep scanning) transducer

Clinical application	Anatomy	Evaluation
Procedure guidance (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>Heart</li> <li>Lung</li> <li>Uterus</li> <li>Abdomen</li> <li>Thorax</li> <li>Bladder</li> <li>Nerve plexus</li> <li>Hip/knee/shoulder joints</li> </ul>	<ul style="list-style-type: none"> <li>Fluid detection: pericardial, pleural, peritoneal, amniotic, joints</li> <li>Procedures: thoracentesis, paracentesis, pericardiocentesis, amniocentesis, arthrocentesis</li> <li>Foreign body visualization/localization</li> <li>Bladder catheterization</li> <li>Nerve blocks</li> <li>Biopsy</li> <li>Placement and monitor position of tubes and catheters</li> </ul>
Protocols	<ul style="list-style-type: none"> <li>Heart</li> <li>Inferior vena cava (IVC)</li> <li>Lungs</li> <li>Abdomen</li> </ul>	<ul style="list-style-type: none"> <li>FAST</li> <li>eFAST</li> <li>BLUE</li> <li>FASH</li> <li>FASE</li> </ul>

## 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)	<ul style="list-style-type: none"> <li>Arteries (including carotid, vertebral, subclavian, axillary, brachial, iliac, saphenous, popliteal, femoral)</li> <li>Veins (including jugular, subclavian, cephalic, basilic, saphenous, femoral, popliteal, tibial)</li> </ul>	<ul style="list-style-type: none"> <li>Deep vein thrombosis</li> <li>Atherosclerosis (intima media thickness, plaques, vessel occlusion/stenosis)</li> <li>Subclavian Steal syndrome</li> </ul>
Lung/Thoracic (Adult /Pediatric)	<ul style="list-style-type: none"> <li>A-lines, B-lines, E-lines</li> <li>Pleura</li> <li>Lung tissue</li> <li>Lung sliding</li> <li>Lung point</li> </ul>	<ul style="list-style-type: none"> <li>Pneumothorax and hemothorax</li> <li>Pleural effusion</li> <li>Lung consolidation <ul style="list-style-type: none"> <li>Pneumonia/pneumonitis</li> <li>Pulmonary fibrosis</li> </ul> </li> <li>Pulmonary interstitial and inflammatory disorders (Ex. ILD, COPD)</li> <li>Acute respiratory distress syndrome</li> </ul>

## Linear array (shallow scanning) transducer

Clinical application	Anatomy	Evaluation
Small organs (Adult/Pediatric)	<ul style="list-style-type: none"> <li>• Testes</li> <li>• Scrotum</li> <li>• Thyroid</li> <li>• Breast</li> <li>• Bowel</li> <li>• Abdominal wall</li> <li>• Skin</li> <li>• Subcutaneous tissue</li> <li>• Fascia</li> <li>• Lymph nodes</li> </ul>	<ul style="list-style-type: none"> <li>• Testicular torsion (size, echo-texture and vascularity)</li> <li>• Epididymo-orchitis</li> <li>• Fluid collection in scrotal sac</li> <li>• Hematomas, hernias</li> <li>• Breast nodules, cyst/mass</li> <li>• Abdominal wall masses, hernias</li> <li>• Thyroid nodules/cyst/mass/diffuse enlargement</li> <li>• Bowel pathology (ex. appendicitis, diverticulitis, intestinal obstruction)</li> <li>• Pyloric stenosis/Intussusception for pediatric patients</li> <li>• Soft tissue infection (cellulitis, abscess, bed sore)</li> <li>• Foreign body visualization/localization</li> <li>• Cutaneous mass</li> </ul>
Musculoskeletal — (Superficial and conventional) (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• Tendons</li> <li>• Muscles</li> <li>• Ligaments</li> <li>• Nerves</li> <li>• Long bones (ex. humerus, radius, ulna, femur, tibia, fibula)</li> <li>• Joints (ankle, shoulder, knee, elbow, wrist)</li> <li>• Joint space/bursa</li> </ul>	<ul style="list-style-type: none"> <li>• Tendon injuries (tendonitis, rupture/tear)</li> <li>• Muscle tears</li> <li>• Long bone fractures</li> <li>• Carpal Tunnel syndrome</li> <li>• Fluid collection in joint space, muscles, bursae</li> <li>• Joint and ligaments integrity</li> <li>• Cyst/mass</li> <li>• Hip joint evaluation for neonates and infants</li> </ul>
Nerves (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• Peripheral nerves (including interscalene, supraclavicular, infraclavicular, axillary plexus, median N, radial N, ulnar, femoral, popliteal, tibial, peroneal, saphenous N)</li> </ul>	<ul style="list-style-type: none"> <li>• Peripheral nerve blocks</li> </ul>
Neck and airway (Adult /Pediatric)	<ul style="list-style-type: none"> <li>• Cervical lymph nodes</li> <li>• Trachea</li> <li>• Epiglottis, cricoid cartilage, cricothyroid membrane</li> <li>• Esophagus</li> <li>• Vocal folds</li> </ul>	<ul style="list-style-type: none"> <li>• Neck masses</li> <li>• Airway assessment</li> <li>• Vocal cord dysfunction</li> </ul>

Linear array (shallow scanning) transducer

Clinical application	Anatomy	Evaluation
Procedural guidance (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• Thorax</li> <li>• Veins (including jugular/subclavian/axillary/femoral /brachial/basilic/cephalic)</li> <li>• Arteries (including femoral, radial, brachial, axillary, dorsalis pedis)</li> <li>• Peripheral nerves</li> <li>• Joints</li> <li>• Vertebral spaces</li> <li>• Skin and subcutaneous tissue</li> <li>• Trachea and surrounding structures</li> </ul>	<ul style="list-style-type: none"> <li>• Fluid detection and removal support: thoracentesis</li> <li>• Peripheral venous access</li> <li>• Central venous catheterization</li> <li>• Arterial access</li> <li>• Assessment and support of dialysis access</li> <li>• Nerve blocks</li> <li>• Joint aspiration and injections</li> <li>• Cyst aspiration</li> <li>• Biopsy</li> <li>• Abscess drainage</li> <li>• Foreign body visualization/localization</li> <li>• Lumbar puncture</li> <li>• Endotracheal tubes placement and confirmation</li> <li>• Support placement and monitor position of tubes and catheters</li> </ul>
Ophthalmic*	<ul style="list-style-type: none"> <li>• Optic nerve sheath</li> <li>• Retina</li> <li>• Globe</li> <li>• Lens</li> </ul>	<ul style="list-style-type: none"> <li>• Retinal detachment</li> <li>• Vitreous hemorrhage</li> <li>• Intra-ocular foreign body visualization</li> <li>• Globe rupture</li> <li>• Optic nerve sheath diameter</li> <li>• Lens dislocation</li> </ul>
Cephalic (Neonatal)	<ul style="list-style-type: none"> <li>• Fontanelle</li> <li>• Superficial and mid-superficial cranial structures</li> </ul>	<ul style="list-style-type: none"> <li>• Gyral-sulcal anatomy</li> <li>• Superior sagittal sinus thrombosis</li> <li>• Cerebral edema</li> <li>• Extra-axial fluid collections</li> </ul>
Protocols	<ul style="list-style-type: none"> <li>• Lungs</li> </ul>	<ul style="list-style-type: none"> <li>• eFAST</li> <li>• BLUE</li> </ul>

\*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)	<ul style="list-style-type: none"> <li>• Gall bladder, biliary tree, common bile duct</li> <li>• Liver</li> <li>• Pancreas</li> <li>• Spleen</li> <li>• Bowel including appendix, small bowel loops</li> <li>• Abdominal aorta</li> <li>• Kidneys</li> <li>• Inferior vena cava (IVC)</li> </ul>	<ul style="list-style-type: none"> <li>• Gall stones</li> <li>• Gall bladder inflammation (wall thickening, surrounding fluid)</li> <li>• Biliary obstruction (duct dilatation)</li> <li>• Hepatomegaly</li> <li>• Fatty liver</li> <li>• Splenomegaly</li> <li>• Intestinal obstruction</li> <li>• Appendicitis</li> <li>• Peritoneal fluid</li> <li>• Cyst/mass/abscess</li> <li>• Abdominal aortic aneurysm</li> <li>• Kidney stones</li> </ul>
Urology (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• Kidneys</li> <li>• Ureter</li> <li>• Urinary bladder</li> <li>• Uretero-vesicular junction</li> <li>• Prostate</li> </ul>	<ul style="list-style-type: none"> <li>• Kidney, ureteral, bladder stones</li> <li>• Kidney length</li> <li>• Hydronephrosis</li> <li>• Bladder dysfunction</li> <li>• Pre-post bladder volume</li> <li>• Bladder inflammation (wall and mucosal changes, calcifications)</li> <li>• Prostate size and volume</li> <li>• Cyst/mass</li> <li>• Ureteral jets with color</li> </ul>
OB-GYN	<ul style="list-style-type: none"> <li>• Uterus and endometrium</li> <li>• Ovaries</li> <li>• Cervix</li> <li>• Pouch of Douglas (POD)</li> <li>• Gestational Sac (GS)</li> <li>• Placenta</li> <li>• Amniotic fluid</li> <li>• Fetus(es)</li> </ul>	<ul style="list-style-type: none"> <li>• GS location (Intra-uterine/extra-uterine)</li> <li>• Fetal viability/heart motion</li> <li>• Placenta position (including low-lying and previa)</li> <li>• Fetal position and presentation</li> <li>• Amniotic fluid assessment</li> <li>• Cervical length measurement/cervical insufficiency</li> <li>• Fetal well-being assessment: biophysical profile (breathing, movements, tone, amniotic fluid)</li> <li>• Confirmation of fetal death</li> <li>• Intrauterine device position</li> <li>• Endometrial thickness measurement</li> <li>• Uterine/adnexal mass/cyst (fibroids, cysts)</li> <li>• Free fluid in Pouch of Douglas (POD)</li> </ul>

## Sector array (deep scanning) transducer

Clinical application	Anatomy	Evaluation
Lung/Thoracic (Adult/Pediatrics)	<ul style="list-style-type: none"> <li>• A-lines, B-lines, E-lines</li> <li>• Pleura</li> <li>• Lung tissue</li> <li>• Lung sliding</li> <li>• Lung point</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumothorax and hemothorax</li> <li>• Pleural Effusion</li> <li>• Lung consolidation               <ul style="list-style-type: none"> <li>• Pneumonia/pneumonitis</li> <li>• Pulmonary fibrosis</li> </ul> </li> <li>• Pulmonary interstitial and inflammatory disorders (Ex. ILD, COPD)</li> <li>• Acute respiratory distress syndrome</li> </ul>
Cardiac and hemodynamic assessment (Adult/Pediatrics*)  <small>* Pediatric population for Cardiac application defined as minimum body weight 40 Kg and above.</small>	<ul style="list-style-type: none"> <li>• Heart (atria, ventricles, valves) including pericardium               <ul style="list-style-type: none"> <li>• Subcostal view</li> <li>• Apical 2-chamber, apical 3-chamber, apical 4-chamber, apical 5-chamber, parasternal view (long axis and short axis)</li> <li>• LVOT</li> </ul> </li> <li>• Inter-atrial and interventricular septum</li> <li>• Pulmonary arteries/veins</li> <li>• Inferior vena cava (IVC)</li> </ul>	<ul style="list-style-type: none"> <li>• Pericardial fluid</li> <li>• LV and RV size and function</li> <li>• Systolic and diastolic function</li> <li>• Valvular regurgitations/stenosis</li> <li>• Volume status and responsiveness               <ul style="list-style-type: none"> <li>• IVC size</li> <li>• Respiratory variation</li> </ul> </li> </ul>
Adult cephalic/Transcranial doppler	<ul style="list-style-type: none"> <li>• Circle of Willis</li> <li>• Vertebrobasilar system/artery</li> <li>• Middle cerebral artery (MCA)</li> </ul>	<ul style="list-style-type: none"> <li>• Stenosis</li> <li>• Cerebral vasculopathy</li> <li>• Vasospasms</li> <li>• Collateral pathways</li> <li>• Right to left shunts</li> <li>• Aneurysms</li> <li>• Positional vertigo</li> <li>• Cerebral microemboli</li> <li>• Ischemic stroke</li> </ul>

Sector array (deep scanning) transducer

Clinical application	Anatomy	Evaluation
<p>Procedure guidance (Adult/Pediatrics)</p>	<ul style="list-style-type: none"> <li>• Heart</li> <li>• Lung</li> <li>• Uterus</li> <li>• Abdomen</li> <li>• Thorax</li> <li>• Bladder</li> <li>• Nerve plexus</li> <li>• Hip/knee/shoulder joints</li> </ul>	<ul style="list-style-type: none"> <li>• Fluid detection: pericardial, pleural, peritoneal, amniotic, joints</li> <li>• Procedures: thoracentesis, paracentesis, pericardiocentesis, amniocentesis, arthrocentesis</li> <li>• Bladder catheterization</li> <li>• Nerve blocks</li> <li>• Biopsy</li> <li>• Placement and monitor position of tubes and catheters</li> </ul>
<p>Protocols</p>	<ul style="list-style-type: none"> <li>• Heart</li> <li>• Inferior vena cava (IVC)</li> <li>• Lungs</li> <li>• Abdomen</li> </ul>	<ul style="list-style-type: none"> <li>• FAST</li> <li>• eFAST</li> <li>• BLUE</li> <li>• FASH</li> <li>• FASE</li> </ul>

