



# Common ultrasound use cases by specialty

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980-23577-00 Rev B



# Emergency Medicine | Clinical decisions and procedural guidance.

Peripheral and central venous catheterization	Soft tissue (cellulitis, abscess, adenopathy, FB, hematoma)	Pericardial effusion and tamponade	Deep vein thrombosis (DVT)
Thoracic aortic dissection (TAD)	Cardiomyopathy (dilated, hypertrophic, and restrictive)	Valvular assessment (regurgitation, AS, chordae rupture)	US-guided regional anesthesia
Abdominal fluid assessment (ascites, hemorrhage)	Pulmonary embolism	Identify ectopic pregnancy	Acute abdomen (biliary, renal, appy, SBO, hernia)
Assess acute respiratory disease (pneumonia, CHF, COPD, effusions, COVID)	MSK evaluation	Pneumothorax	Ventricular function assessment (LV and RV)
EFAST to evaluate traumatic injury	Assess undifferentiated shock	Volume assessment (RV, IVC, VExUS)	Procedural guidance

Common ultrasound use cases

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# Anesthesiology | Clinical decisions and procedural guidance.

Perioperative patient assessment and management	US-Guided Regional Anesthesia	Epidural or spinal injection guidance	Gastric content assessment
Arterial line placement	Assess basic heart function (LV and RV)	Procedural guidance	Airway assessment
Peripheral and central venous catheterization	Valvular assessment (regurgitation, AS, chordae rupture)		

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# ICU | Clinical decisions and procedural guidance.

Venous catheter placement (peripheral, mid, and central)	Pulmonary embolism	Arterial line placement	Basic heart function assessment (LV and RV)
Airway assessment (tracheal deviation)	CHF assessment and management	Pericardial effusion and tamponade	Deep vein thrombosis (DVT)
Cardiomyopathy (dilated, hypertrophic, and restrictive)	Valvular assessment (regurgitation, AS, chordae rupture)	Volume assessment (RV, IVC, VExUS)	US-guided regional anesthesia
Fatty liver and cirrhosis	Measure muscle wasting in chronic non-ambulatory pts	Hemodynamic status, determining type of shock	COVID assessment (via B-line in the lungs)
Pneumothorax	Assess acute respiratory disease (pneumonia, CHF, COPD, effusions)	Procedural guidance (LP, thora-, para-, pericardiocentesis)	Abdominal scan for fluid (ascites/hemorrhage)

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# Primary care | Clinical decisions, procedural guidance and informed referrals

Skin and soft tissue (e.g., abscesses, cellulitis)	Assess acute appendicitis	MSK evaluation	Evaluation for joint effusions (aspirations, hemophilia)
Ventricular function assessment (LV and RV)	Right upper quadrant pain assessment (biliary, fatty liver)	Splenomegaly (mononucleosis)	Soft tissue (cellulitis, abscess, adenopathy, foreign body)
Assess acute respiratory disease (pneumonia, CHF, COPD, effusions)	Renal evaluation (stone versus pyelonephritis)	Procedural guidance (joint aspiration, fb removal)	Basic OB/gyn (IUP, cysts, IUD placement)
Fatty liver and cirrhosis	Screening for AAA (abdominal aortic aneurysm)	US-Guided regional anesthesia	Pericardial effusion

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# Pre-hospital / EMS | Clinical decisions and procedural guidance.

Peripheral line placement	Pericardial effusion and tamponade	Out-of-hospital cardiac arrest (cardiac activity, guide CPR)	Deep vein thrombosis (DVT)
Thoracic aortic dissections	Cardiomyopathy (dilated, hypertrophic, and restrictive)	Valvular assessment (regurgitation, AS, chordae rupture)	IVC collapsibility for volume assessment
EFAST to evaluate traumatic injury	Pneumothorax	Distinguish COPD from CHF / pulmonary edema	Abdominal fluid assessment (ascites, hemorrhage)
Hemodynamic status, assessing type of shock	Pulmonary embolism	Basic heart function assessment (LV and RV)	MSK (identify long bone injury)

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# Urgent care | Clinical decisions, procedural guidance and informed referrals

Peripheral venous access	CHF assessment and monitoring	Assess pericardial effusions and tamponade	Deep vein thrombosis (DVT)
EFAST to evaluate traumatic injury	Skin and soft tissue (abscesses, cellulitis)	Procedural guidance	Pneumothorax
Abdominal imaging for fluid (ascites, hemorrhage)	Pulmonary embolism	Assess MSK injuries	Acute abdomen (appendicitis, SBO, AAA)
Lung scans for acute respiratory disease (pneumonia vs. CHF vs. COPD)	Foreign body identification and removal	Right upper quadrant abdominal pain (biliary, fatty liver)	Renal evaluation (stone +/- kidney infection)

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# Orthopedics | Clinical decisions and procedural guidance.

Track patient progress on rehab treatment	Baker's (popliteal) cyst	Ultrasound-guided injections (joints, bursae, tendons)	Ultrasound-guided regional anesthesia
Assess tendon injury	Joint assessment	Soft tissue	MSK assessment

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# Cardiology & Cardiothoracic/vascular surgery | Clinical decisions and procedural guidance.

Venous and arterial catheterization	Identify wall motion abnormalities in ischemic heart disease	Assess pericardial effusions and tamponade	Deep vein thrombosis (DVT) assessment	AAA assessment (abdominal aortic aneurysm)
Thoracic aortic dissections	Cardiomyopathy (dilated, hypertrophic, and restrictive)	Valvular assessment (regurgitation, AS, Chordae rupture)	Post-procedural electrical ablation heart size/function	Post-op monitoring of endograft after AAA repair
Monitor CHF and volume status	Volume assessment (IVC, RV, VExUS)	Monitor thoracic aortic aneurysms	Carotid intima tracking	Post-procedural pericardial / pleural effusion checks
Assess LV and RV function	Assess carotid artery stenosis	Post-intervention aneurysm vs. pseudoaneurysm		

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