

Sonographic Descriptors Vocabulary Reference

How Sonographers Describe What They See on the Screen

A Companion to the *Sonography Program Glossary*

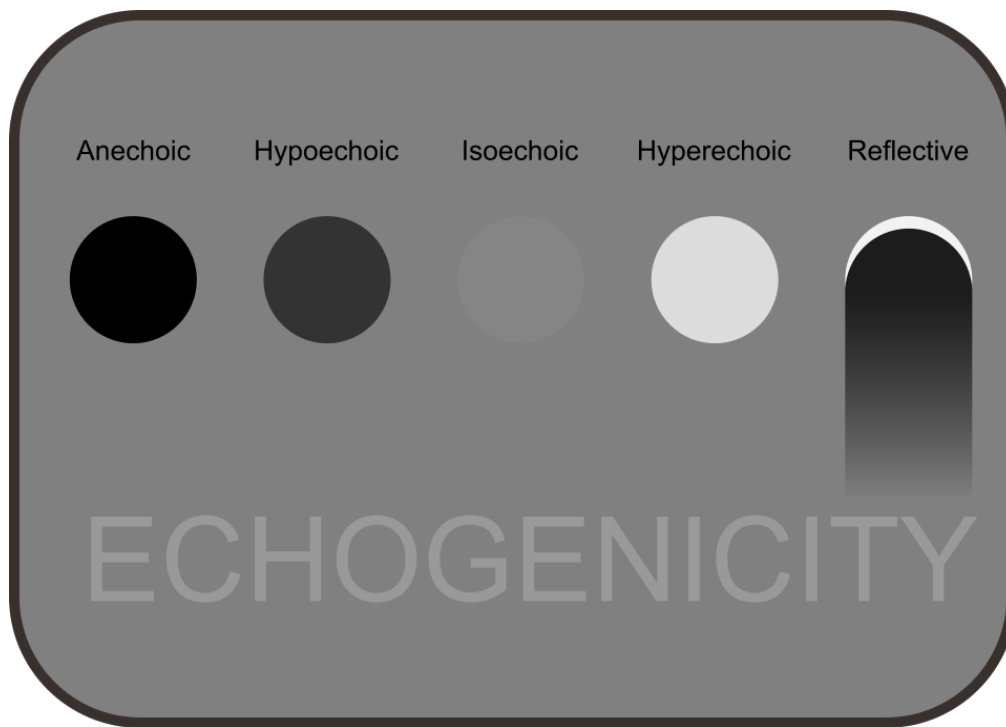
An In-Depth Review by [Dr. Alice Matthews](#)

amatthews@concorde.edu

How to use this guide. The main *Sonography Program Glossary* defines pathology, abbreviations, and clinical thresholds. This companion reference covers something different: the descriptive vocabulary sonographers use in real time, at the machine and in written reports, to characterize what a structure looks like, where it sits in the image, what plane it was scanned in, how its borders read, what shows up behind it, and how it behaves under the probe. These are the words that turn a gray scale image into a spoken or written finding. Terms are grouped by category rather than by textbook chapter, and each entry pairs a plain English definition with an everyday analogy.

How to read each row. The purple word is the vocabulary term. The plain black text is the clinical definition, the kind of wording you might see in a textbook or a chart. The teal italic text is a plain English analogy, an everyday comparison to help the idea stick. If a definition feels dense on the first read, start with the analogy, then circle back. There is no wrong order to read a row in.

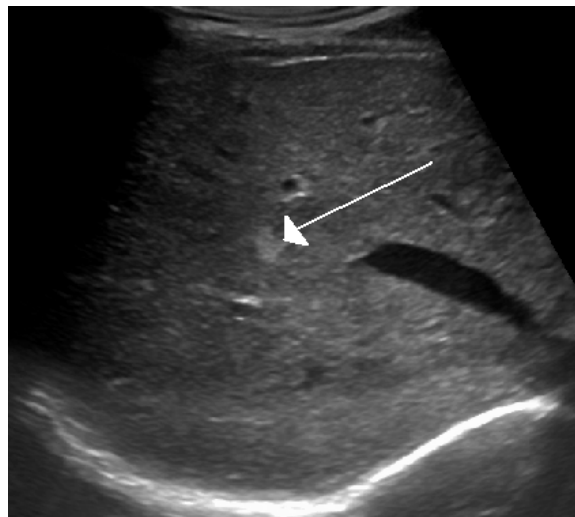
Part 1: Echogenicity (Relative Brightness)



Echogenicity runs from anechoic (black) to hyperechoic and reflective (white). Image: Nevit Dilmen, CC BY-SA 3.0, via Wikimedia Commons.

Term	Definition	Analogy / Example
Anechoic	Produces no internal echoes and appears completely black on the image, because sound passes through with almost no reflection. Simple fluid, such as urine in the bladder or bile in the gallbladder, is anechoic.	<i>Like shining a flashlight through clear water: nothing bounces back, so you see straight through to the bottom.</i>

Term	Definition	Analogy / Example
Echogenic	A general adjective meaning that a structure produces echoes, often used at the bedside as shorthand for brighter than expected.	<i>Like calling a shiny coin reflective: a general description of a property, not a precise measurement.</i>
Echogenicity	The general term for how strongly a structure reflects sound waves back to the transducer. The more it reflects, the brighter it looks on the screen.	<i>Like the reflectiveness of different materials in a flashlight beam: a mirror bounces light straight back and looks bright, while dark fabric absorbs it and looks dim.</i>
Echo-poor / Echo-rich	Informal shorthand sonographers use on the scan lab floor for hypoechoic (echo-poor) and hyperechoic (echo-rich) structures.	<i>Like calling a weak cell signal spotty and a strong one full bars: quick verbal shortcuts for the same underlying idea.</i>
Echolucent	Transmits sound well and returns very few echoes; used almost interchangeably with anechoic to describe fluid.	<i>Like a clean pane of glass that light passes straight through without much bouncing back.</i>
Hyperechoic	Produces more or stronger echoes than the surrounding or comparison tissue, so it looks brighter white by comparison.	<i>Like a patch of fresh snow on a dirt road: it reflects far more light than everything around it, so it jumps out as bright.</i>
Hypoechoic	Produces fewer or weaker echoes than the surrounding or comparison tissue, so it looks darker gray by comparison.	<i>Like a dim gray patch on a freshly painted wall: it stands out because it reflects less light than everything around it.</i>
Isoechoic	Produces about the same echo strength as the surrounding or comparison tissue, so it blends in rather than standing out.	<i>Like a camouflage pattern that matches its background so closely you have to look twice to find the edges.</i>

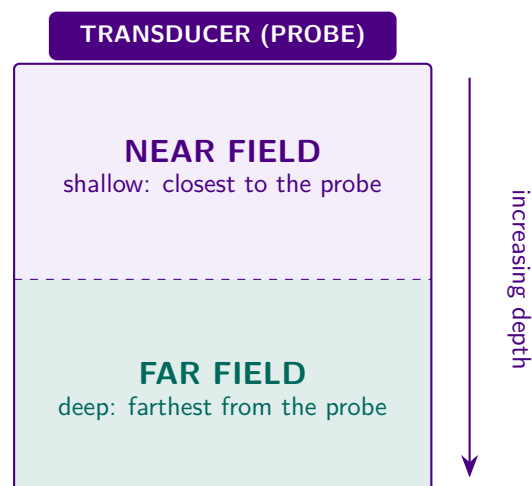


Real example: a hepatic hemangioma (arrow) as a discrete hyperechoic mass against the surrounding liver tissue. Image: James Heilman, MD, CC BY-SA 3.0, via Wikimedia Commons.

Part 2: Echotexture and Internal Pattern

Term	Definition	Analogy / Example
Coarse (echotexture)	Made up of larger, more widely spaced echoes that give a chunky appearance.	<i>Like coarse sand at the beach, made of visibly larger individual grains.</i>
Complex (mass)	Contains both cystic (fluid, anechoic) and solid (echogenic) components within the same structure.	<i>Like a jelly donut: part soft filling, part solid dough, both in one object.</i>
Cystic	Filled with fluid, typically anechoic, with a well defined wall and increased through transmission of sound.	<i>Like a water balloon: a thin wall around fluid that transmits light or sound easily.</i>
Echogenic foci	Small, discrete bright spots scattered within a structure, sometimes with shadowing and sometimes without, depending on their size.	<i>Like flecks of glitter caught in a beam of light: small bright points against a duller background.</i>
Fine (echotexture)	Made up of small, closely spaced, low level echoes that give a smooth, tightly packed appearance.	<i>Like powdered sugar compared to coarse sand, so fine the individual grains are hard to pick out.</i>
Heterogeneous	Mixed or uneven echotexture, with patches of different brightness and pattern inside the same structure.	<i>Like a bowl of vegetable soup: chunks, liquid, and textures of different sizes and brightness all mixed together.</i>
Homogeneous	Uniform echotexture throughout a structure, with echoes of similar size, brightness, and spacing everywhere you look.	<i>Like a glass of milk: smooth and the same consistency from top to bottom.</i>
Solid	Made of tissue that produces internal echoes rather than being filled with fluid.	<i>Like a rubber ball, filled with the same material all the way through, as opposed to a water balloon.</i>

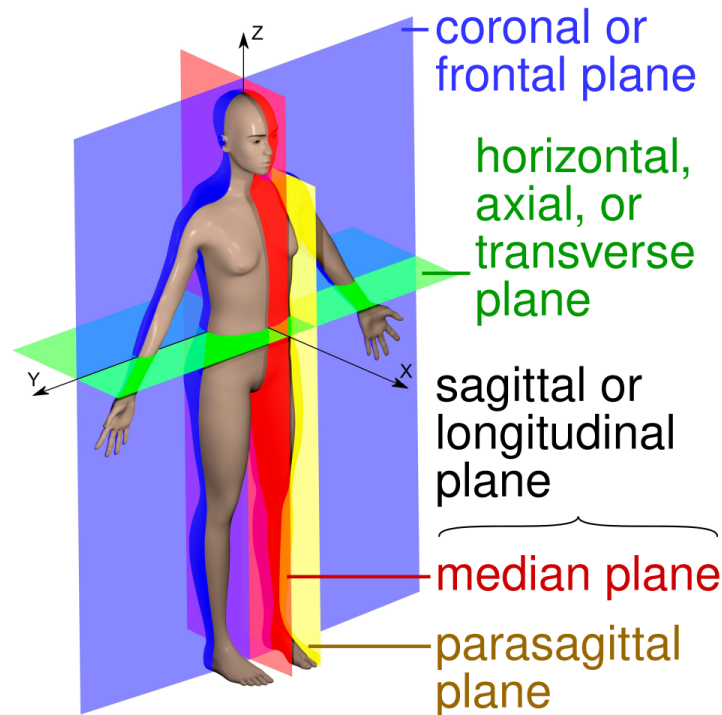
Part 3: Location, Depth, and Directional Terms



Every ultrasound image runs from the probe at the top to the deepest tissue at the bottom. Where a structure sits along that depth is described as near field (shallow) or far field (deep).

Term	Definition	Analogy / Example
Anterior	Toward the front of the body.	<i>Like the windshield side of a car, the side that faces forward.</i>
Caudad	Toward the feet.	<i>Like an elevator button labeled down, pointing toward the bottom of the building.</i>
Cephalad	Toward the head.	<i>Like an elevator button labeled up, pointing toward the top of the building.</i>
Deep	Farther from the skin surface, closer to the far field.	<i>Like the cake underneath the frosting, farther from the outside surface.</i>
Distal	Farther from the point of origin or farther from the trunk of the body.	<i>Like the end of a garden hose nearest the nozzle, farther from the source.</i>
Far Field	The part of the image farthest from the transducer; the deepest structures shown on the screen.	<i>Like the background of a photograph, the part farthest from the camera lens.</i>
Inferior	Below another structure, or closer to the feet when comparing two structures.	<i>Like the bottom shelf of a bookcase, positioned below the other shelves.</i>
Lateral	Away from the midline of the body, toward the side.	<i>Like a car drifting toward the shoulder of the highway, away from the center stripe.</i>
Medial	Toward the midline of the body.	<i>Like lanes merging toward the center stripe of a highway.</i>
Near Field	The part of the image closest to the transducer; the shallowest depth shown on the screen.	<i>Like the foreground of a photograph, the part nearest the camera lens.</i>
Posterior	Toward the back of the body.	<i>Like the trunk side of a car, the side that faces backward.</i>
Proximal	Closer to the point of origin or closer to the trunk of the body.	<i>Like the end of a garden hose nearest the spigot, closer to the source.</i>
Superficial	Closer to the skin surface.	<i>Like the top layer of frosting on a cake, the part nearest the outside.</i>
Superior	Above another structure, or closer to the head when comparing two structures.	<i>Like the top shelf of a bookcase, positioned above the other shelves.</i>

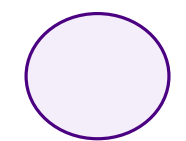
Part 4: Scan Planes and Orientation



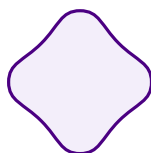
The three cardinal body planes a sonographer scans in. Sagittal (also called longitudinal) divides left from right, coronal divides front from back, and transverse (axial) divides top from bottom. Image: David Richfield, Mikael Häggström & cmglee, CC BY-SA 4.0, via Wikimedia Commons.

Term	Definition	Analogy / Example
Coronal Plane	A scan plane that divides the body into front and back portions.	<i>Like slicing an apple through its equator into a front half and a back half.</i>
Long Axis	The plane that shows the greatest length of a structure.	<i>Like looking at a hot dog from the side, showing its full length.</i>
Oblique Plane	Any scan plane angled between the standard sagittal, transverse, and coronal planes.	<i>Like slicing a loaf of bread at a diagonal instead of straight up and down or straight across.</i>
Sagittal Plane (Longitudinal)	A scan plane that divides the body into right and left portions, oriented head to toe along a structure's long axis.	<i>Like slicing a loaf of bread the long way, from end to end.</i>
Short Axis	The plane perpendicular to the long axis, showing a cross section of a structure.	<i>Like looking at a hot dog end on, showing a round cross section instead of its length.</i>
Transverse Plane (Axial)	A scan plane that divides the body into upper and lower portions, perpendicular to the long axis of a structure.	<i>Like slicing a loaf of bread into round slices, cutting straight across.</i>

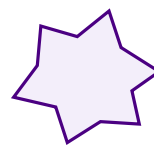
Part 5: Margins, Borders, and Shape



Smooth
(well-defined)



Lobulated
(rounded bumps)



Irregular
(ill-defined)

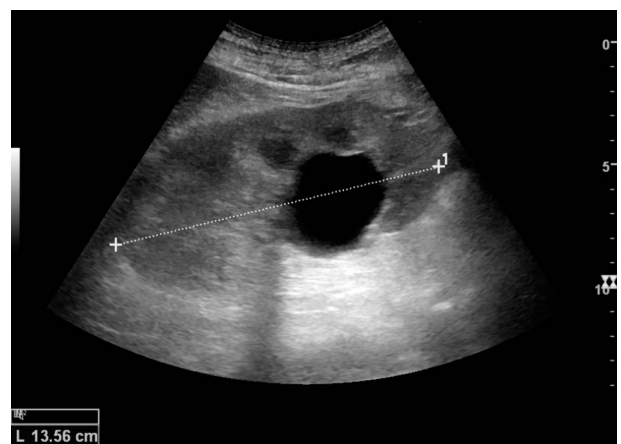
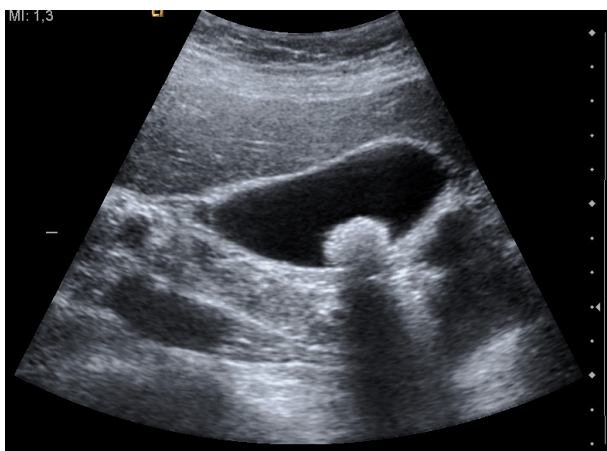
How the border of a structure reads. A smooth, well-defined margin is usually reassuring; a lobulated or, especially, an irregular margin is a feature to describe carefully because it can raise concern.

Term	Definition	Analogy / Example
Angular	A shape with sharp corners or straight edged borders instead of curves.	<i>Like a piece cut from a sheet of paper with a ruler and scissors, all straight edges and corners.</i>
Ill-Defined (Poorly Marginated)	Has a blurred or indistinct border that fades into the surrounding tissue.	<i>Like a drop of dye spreading into water, with no clean edge where it stops.</i>
Irregular Margin	An uneven, jagged border; a feature that raises concern for malignancy.	<i>Like the edge of a torn piece of paper, rough and unpredictable rather than clean.</i>
Lobulated	A border with rounded bumps or projections, like a series of connected rounded lobes.	<i>Like a bunch of grapes, made of multiple rounded bulges joined together.</i>
Oval	An elongated shape, longer in one direction than the perpendicular direction.	<i>Like a football, longer along one axis than the other.</i>
Round	A shape with roughly equal dimensions in every direction.	<i>Like a basketball, the same width no matter which way you measure it.</i>
Smooth Margin	An even, regular border without bumps or notches.	<i>Like the edge of a coin, round and continuous all the way around.</i>
Tubular	Elongated and narrow like a tube, often used to describe a dilated duct or vessel.	<i>Like a drinking straw, long and hollow with a consistent width.</i>
Well-Defined (Well-Circumscribed)	Has a sharp, clearly seen border that separates it from the surrounding tissue.	<i>Like a cookie cutter shape pressed cleanly into dough, with a crisp edge all the way around.</i>

Term	Definition	Analogy / Example
------	------------	-------------------

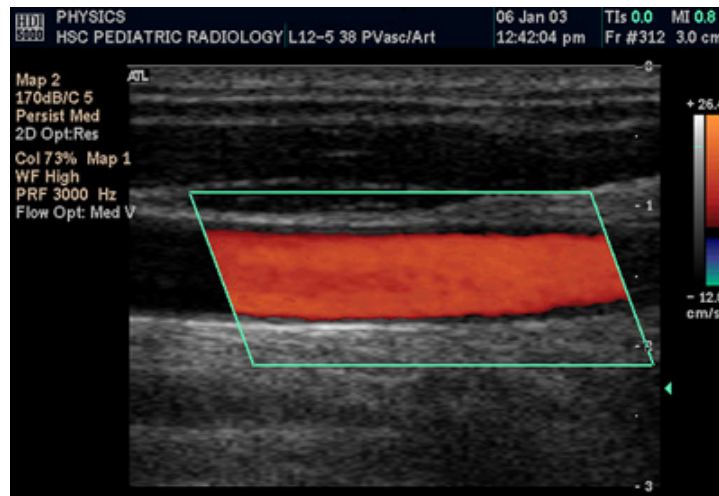
Part 6: Posterior Acoustic Features and Artifacts

Term	Definition	Analogy / Example
Acoustic Shadowing	A dark band deep to a structure that blocks or strongly absorbs sound, such as a stone, calcification, or bone.	<i>Like the dark shadow cast on the ground behind a solid fence post when the sun is low.</i>
Comet Tail Artifact	A short, tapering trail of closely spaced echoes deep to a small, strong reflector.	<i>Like the tapering trail of light behind a shooting star, bright at the source and fading with distance.</i>
Edge Shadow (Refractive Shadowing)	Thin, clean shadowing at the curved edge of a rounded structure, caused by the sound beam bending away instead of continuing straight.	<i>Like light bending as it passes through the curved edge of a glass, creating a thin dark line at the rim.</i>
Mirror Image Artifact	A duplicate image of a structure appearing on the opposite side of a strong reflector, such as the diaphragm.	<i>Like the reflection of a boat on still water, a copy of the real object appearing on the other side of a reflective surface.</i>
Posterior (Acoustic) Enhancement	A bright band deep to a fluid filled structure, because sound passes through fluid so easily that it arrives stronger at the tissue just beyond it.	<i>Like sunlight passing through a clean window and brightening the floor just past the glass, more than the floor beside a solid wall.</i>
Reverberation Artifact	Multiple, evenly spaced bright parallel lines deep to a strong reflector, caused by sound bouncing back and forth between the reflector and the transducer.	<i>Like standing between two facing mirrors and seeing your reflection repeat over and over into the distance.</i>
Ring-Down Artifact	A continuous, non tapering trail of echoes deep to a collection of tiny gas bubbles.	<i>Like a steady stream of bubbles rising from a fish tank aerator, evenly spaced and unbroken.</i>



Left: a gallstone (bright echo) with clean acoustic shadowing behind it. Image: Nevit Dilmen, CC BY-SA 3.0, via Wikimedia Commons.
 Right: a simple renal cyst (anechoic) with posterior acoustic enhancement behind it. Image: Hansen, Nielsen & Ewertsen, CC BY 4.0, via Wikimedia Commons.

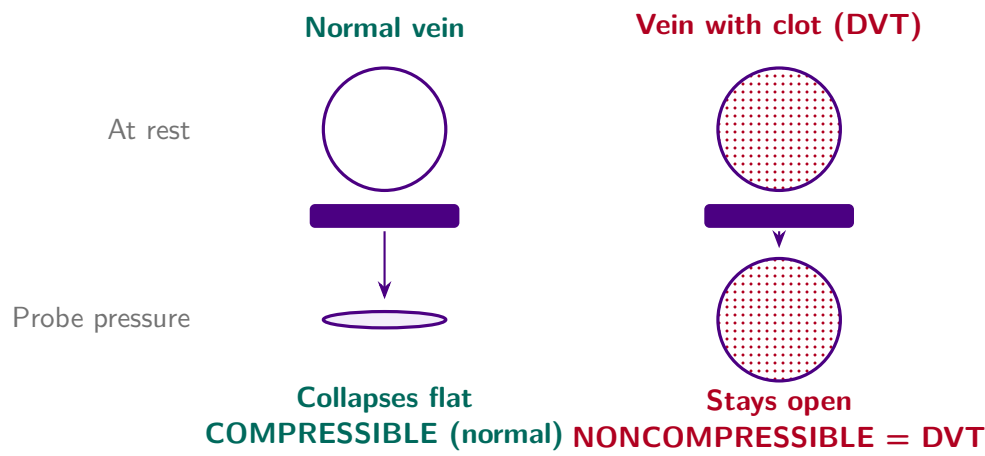
Part 7: Vascularity and Doppler Descriptors



Color Doppler of a common carotid artery: blood flow is painted in color over the gray scale image, and the scale bar on the right maps each color to a direction and speed. Image: Daniel W. Rickey, CC BY-SA 2.5, via Wikimedia Commons.

Term	Definition	Analogy / Example
Aliasing	A color Doppler artifact in which flow faster than the machine's Nyquist limit wraps around and displays as the opposite color.	<i>Like a spinning wheel on video that looks like it is spinning backward once it moves faster than the camera's frame rate can capture.</i>
Avascular	Shows no detectable blood flow on color or spectral Doppler.	<i>Like an abandoned lot with no roads leading in or out at all.</i>
Color Flow	Blood flow displayed as color over the gray scale image, with the color and shade showing direction and relative speed.	<i>Like a traffic map app that colors roads by how fast cars are moving and which direction they are heading.</i>
Hypervascular	Contains more blood vessels or shows more flow signal than expected for that tissue.	<i>Like a neighborhood with far more streets and traffic than a typical one its size.</i>
Hypovascular	Contains fewer blood vessels or shows less flow signal than expected for that tissue.	<i>Like a quiet neighborhood with only one or two access roads.</i>
Turbulence	Disorganized, multidirectional flow, often seen just past a narrowing, shown as a mixed, speckled mosaic of colors.	<i>Like water churning below a small dam, swirling in every direction instead of moving smoothly in one path.</i>

Part 8: Compressibility, Mobility, and Consistency



The compression test. Press straight down with the probe. A normal vein flattens completely (compressible). A vein packed with clot will not flatten (noncompressible), which is the key sign of a deep vein thrombosis.

Term	Definition	Analogy / Example
Compressible	Able to be flattened with gentle transducer pressure. Normal veins compress easily.	Like pressing on an empty balloon: it flattens easily because nothing solid is blocking it from the inside.
Fixed (Tethered)	Attached to a structure and unable to move independently.	Like a barnacle stuck to the hull of a boat, staying in one place no matter how the boat moves.
Mobile	Able to move or shift position, such as a mobile thrombus or a gallstone that repositions with the patient.	Like a marble rolling around inside a jar when you tilt it.
Noncompressible	Does not flatten with transducer pressure; a key sign of thrombus filling a vein.	Like pressing on a balloon that has been packed with sand: it will not flatten no matter how hard you press.
Pliable	Soft and flexible in texture.	Like a piece of modeling clay that gives way easily under gentle pressure.
Rigid	Firm and resistant to compression or deformation.	Like a wooden block that holds its shape no matter how you press on it.

Part 9: Size, Comparison, and General Descriptors

Term	Definition	Analogy / Example
Asymmetric	Paired structures, right versus left, that differ in size or appearance from one side to the other.	Like mismatched bookends, one larger or a different shape than the other.
Attenuation	The loss of sound energy as it travels through tissue. Highly attenuating structures cause shadowing behind them.	Like sunlight fading as it passes through layers of fog, weaker and weaker the farther it travels.

Term	Definition	Analogy / Example
Diffuse	Involving the entire structure rather than one localized area.	<i>Like a road that is bumpy and cracked along its entire length, not just in one spot.</i>
Dilated	Larger than normal in diameter; usually describes a duct, vessel, or chamber.	<i>Like a garden hose that has ballooned outward under too much water pressure.</i>
Distended	Stretched or enlarged; usually describes a fluid filled structure like the bladder or gallbladder.	<i>Like a water balloon filled past its usual size, stretched tight by the fluid inside.</i>
Focal	Involving a limited, localized area of a structure rather than the whole thing.	<i>Like a single pothole in an otherwise smooth road.</i>
Lesion	A general term for any area of abnormal tissue, not necessarily a discrete, measurable mass.	<i>Like the broad word damage compared to the more specific word dent: it covers a wide range of possible findings.</i>
Mass	A discrete area of abnormal tissue that displaces or distorts the normal architecture around it, usually measurable in three dimensions.	<i>Like a boulder sitting in the middle of a field, clearly taking up its own space and pushing everything else aside.</i>
Nodule	A small, usually well defined round or oval area of tissue, smaller than a mass.	<i>Like a pebble compared to that same boulder: the same basic idea, just on a much smaller scale.</i>
Symmetric	Paired structures, right versus left, that match in size and appearance.	<i>Like a pair of matching bookends on either side of a shelf.</i>
Thickened	Greater than normal wall or tissue thickness.	<i>Like a sweater with an extra layer of padding sewn into it, noticeably heavier than the original fabric.</i>

This vocabulary reference covers the descriptive terminology sonographers use to characterize structures during real time scanning and in written reports, as a companion to the Sonography Program Glossary.

Image credits. The near field and far field, margins, and vein compression diagrams were created for this guide by Dr. Alice Matthews. All photographs and other diagrams are from Wikimedia Commons under Creative Commons licenses, unmodified: echogenicity diagram and gallstone shadowing image by Nevit Dilmen (CC BY-SA 3.0); liver hemangioma image by James Heilman, MD (CC BY-SA 3.0); simple renal cyst image by Kristoffer Lindskov Hansen, Michael Bachmann Nielsen, and Caroline Ewertsen (CC BY 4.0); anatomical planes diagram by David Richfield, Mikael Häggström, and cmglee (CC BY-SA 4.0); carotid color Doppler image by Daniel W. Rickey (CC BY-SA 2.5).

Dr. Alice Matthews · amatthews@concorde.edu · alice@deepneuro.ai · Concorde Career College Portland