

## Ultrasound: Imaging Requirements and Pathology Protocol

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The following Imaging Requirements and Pathology Protocol guidelines are the required methods of imaging and documentation that are to be applied for all ultrasound exams, including normal anatomy and general pathology. Additional pathology-specific images and documentation requirements can be found in the individual protocols.

### Imaging Requirements

#### Measurements

- Anytime a structure is measured, save images both with and without calipers.
- Length in sagittal view.
- Width in transverse view.
- AP taken in either view best imaged but always at perpendicular/right angles to form a (+).
  - ❖ NOTE for thyroid, AP must be in transverse view.
- If more than one lesion measured in same organ, number in annotations. (Interns check with preceptor re thyroid study expectations; will not number early rotations, only as scan level progresses.)

#### Doppler

- All areas of pathology must be evaluated for blood flow.
- If documenting possible flow in a structure/mass, all color Doppler should be accompanied by Pulse Wave Doppler for waveform tracing.

#### Cine Clips

CINE clips to be labeled:

- MIDLINE structures: “right to left” when sagittal.
- RIGHT or LEFT lateral structures: “lateral to medial” when sagittal.
- “Superior to inferior” when transverse.
- Each cine should be 1 sweep, NOT back and forth. (Note exception; nose/lips ok to sweep completely in/out.)
- Make sure cines are taken at careful even speed and all the way through area of interest for radiologist to view without adjustment.

#### Notes on Imaging Techniques

- Bring in field of view, adjust depth, *then* zoom.
- Color Doppler: use a box that is taller than wide and decrease frequency (wide box = decreased frame rate).
- Images of area of interest should be obtained w/AOI in the middle of the screen so that interfaces are clearly defined: i.e. liver surface images should be centered and horizontal, ovary images should be centered on screen.
- When using split screen, ensure that the perspective on both screens is the same – do not zoom or change depth on only one; both screens should have identical scales.
- Measurements of vessels should be taken at 90 degree angle to vessel wall.

[Pathology Protocol \(next page\)](#)

## Pathology Protocol

Required documentation of all Pathology.

1. Optimize image first; zoom, gains etc.
2. Measure volume, ok to use split screen. Always save images with and without calipers.
3. Evaluate with color Doppler.
  - a. If documenting possible flow in a structure/mass, all color Doppler should be accompanied by Pulse Wave Doppler for waveform tracing.
4. Document relationship to surrounding structures if possible. Includes documenting vessels adjacent for lesions that would potentially require biopsy i.e., cervical lymph nodes.
5. Concerning pathology i.e., any solid mass, or complex cyst (see specific protocol requirements for thyroid nodules):
  - a. Cine clip in two planes.
  - b. Spectral Doppler to demonstrate arterial and/or venous flow.
6. When appropriate, change patient position to evaluate mass versus mobile debris, i.e. bladder.