

# Abdominal Ultrasound



# Imaging Control Buttons

## Depth

- The organ imaged should take up 3/4 of the screen

## Frequency = Penetration

- Use high frequencies (harmonics) for fluid filled and superficial structures
- If the far field (lower part) of the image loses detail (blurry, darkened, fuzzy, etc.) decrease the frequency for more penetration. You may also need to change to a lower frequency transducer

## Gain = Brightness

- Adjust the gain to see the borders of all structures clearly. This usually would be around 50-60%, but will differ with anatomy, depth, and frequency

## Map = Shades of gray

- The overall image will slightly change. Shades of gray will get brighter as you go up, or will get darker as you go down
- Use this function when the frequency and gain is at it's best, but still want to fine tune the image

# Transducers

## Linear (L14-5)

- Typically used for smaller animals and superficial structures. Can also be used to image the GI system in larger animals.

## Microconvex (MC9-4)

- Typically used for medium - large animals and all echocardiograms. Can also be used on smaller animals to image deeper organs (liver, right kidney, etc.) and when a large amount of gas is present.

## Curvilinear (C7-3)

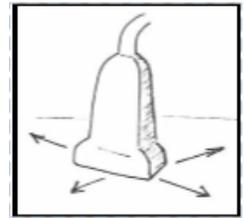
- Typically used for large animals and deep structures

**NOTE:** The choice of transducer is dependent on many factors such as body habitus, depth of organs imaged, and presence of gas. It is important to use multiple transducers and find what is right for that animal and organ being imaged.

# Scanning Movements

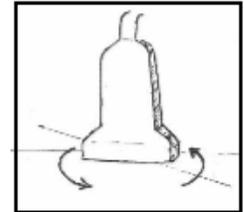
## Slide

- Move the transducer
- Example: Slide Cranial - move the transducer toward the patients head



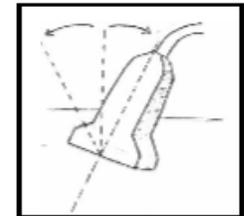
## Rotate/Twist

- To move from one plane to another
- Example: moving from a long axis image to a short axis image



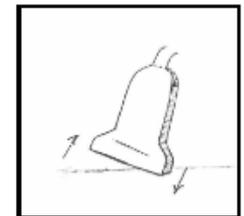
## Tilt

- Hold the transducer in the same spot and point the transducer towards area of interest
- Example: Tilt the beam to the left to image the left (to image the left side of the body) or tilt the beam to the right (to image the right side of the body).



## Rock or Heel/Toe

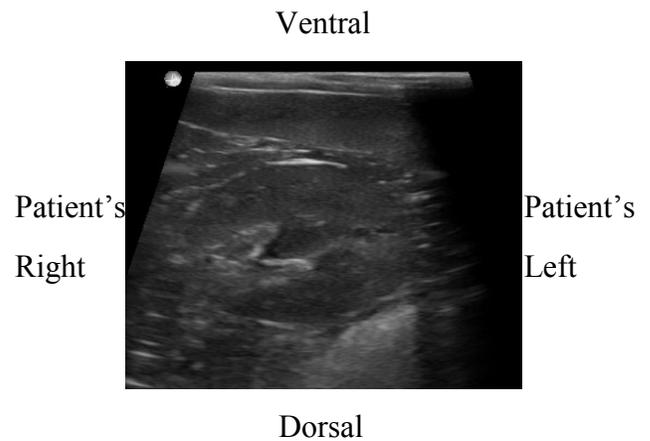
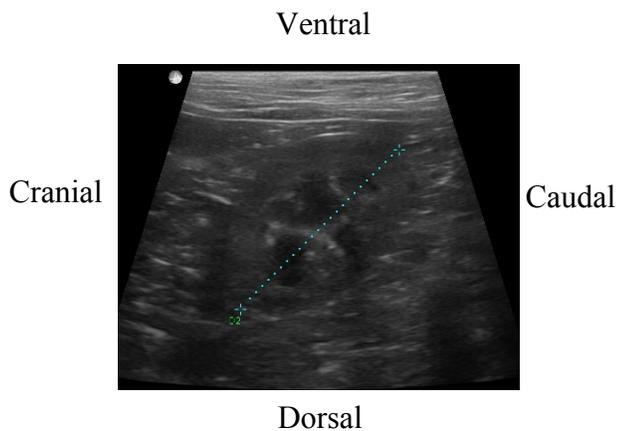
- Apply more pressure to one end of the long axis of the transducer
- Example: rock the transducer to image underneath the rib cage - more pressure is placed on the end of transducer without the notch (heel of the transducer)



# Image Orientation

**Long Axis:** Notch pointed to the patients head

**Short Axis:** Notch pointed to the patients right side



# Imaging Abnormalities

When abnormalities are noted on an exam additional images should be taken in addition to the protocol

## Additional Images for Lesions

- Long AND Short Axis Images
  - If lesion is small use split screen
- Image with measurements
  - Smaller lesions can be measured on split screen
- Image with color Doppler
- Multiple lesions on the same organ that have similar appearance
  - Measure the largest 2 lesions and include images of the others
- Make sure that on your video that the lesions are included
  - May need to take 1-2 additional videos
- Large masses
  - Try to locate the organ it is originating from (this may be difficult at times depending on location and size)

## Abdominal Fluid

- Capture an image of any ascites that you note
- Use organs as landmarks if only a small amount is seen so the specialist can document where the fluid is seen on reports

## Fluid-filled Intestine

- Can be a normal finding or a sign of an abnormality
- Follow intestine until you no longer see the fluid or until you scan come across an abnormal/suspicious area