EQUIPMENT SETTINGS

General guidelines:

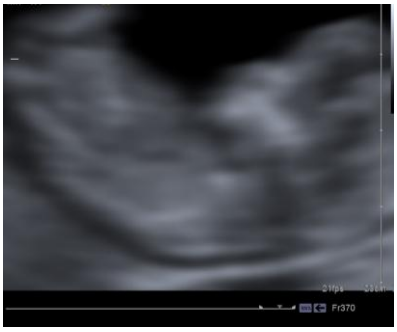
The first step to the best ultrasound assessment is image optimization

For all of the markers:

1. Reduce the depth to the area of interest
2. Narrow the sector width to the area of interest
3. Magnify the image to the area of interest (pre-processing zoom or depth function), possibly using post-processing zoom to magnify further
4. Reduce the overall gain appropriately

2-D settings for NT, NB, and FA

Goal is to go from this: to this:



The objective is for linear structures to be seen as thin, sharp lines (borders of the NT so the caliper placement is accurate and the NB and skin line over the nasal bridge can be differentiated)

- Transducer selection:
  - Use the highest frequency transducer that allows for adequate penetration
  - A 2-D curvilinear transducer is the most practical one to use
  - High frequency linear transducer gives you optimal image quality - however, the edges of the transducer may be uncomfortable for the patient if pressure is used and transducer face may lose contact with the patient skin if significant angulation of the transducer is required
  - 3-D transducer is cumbersome and somewhat heavy for extended use - the transducer face may lose contact with the patient skin if significant angulation of the transducer is required
- Equipment settings:
  - Use a high contrast setting (e.g. fetal cardiac preset)
    - > Decrease the persistence
    - > Decrease the dynamic range
    - > Increase the edge enhancement
  - Harmonics may result in membranous structures appearing too thick - turn this feature on and off to see how this affects your image
  - Place the focal zone at the region of interest

Doppler settings for DV, TF, and UaD

Objective is to optimize the spectral Doppler tracing

- Transducer selection:
  - Use the highest frequency transducer that allows for adequate penetration
  - High frequency linear transducer is optimal - however, the edges of the transducer may be uncomfortable to the patient if pressure is used
- Equipment settings:
  - Filter: Low setting (50-70Hz)
  - Sample volume:
    - 0.5-1.0 mm for the Ductus Venosus
    - 2.0-3.0 mm for the Tricuspid
    - 2.0 mm for the Uterine Artery
  - Sweep speed: High sweep speed so that the Doppler signal is spread out, 3 to 6 waveforms
  - Doppler angle of insonation: Set at less than 30 degrees with respect to the **longitudinal** axis of the interrogated structure in DV and UaD and with respect to **longitudinal** axis of the ventricular septum in TF