



NT MEASUREMENT CRITERIA

1. Fetus occupies majority of image:

The fetal head, neck, and upper thorax should fill the majority of the image. The fetus should occupy greater than 50% of the image space. The image should NOT show the entire fetus or crown-rump length. A second fetus of the same magnitude would not fit in the surrounding space.

2. Margins of NT edges clear:

The ultrasound image should be clear with **thin** NT membranes (lines). The angle of insonation should be perpendicular to the NT space. The following techniques will help achieve this:

- Decrease depth
- Narrow sector width
- Use fetal echo settings if needed
- Use magnification box
- Magnify then freeze
- Decrease gain at the level of the NT

Avoid membrane shadows (try turning harmonics off if shadows persist)

3. Fetus in midsagittal plane:

- Midsagittal view of fetal spine seen in cervical and thoracic region
- Tip of nose and rectangular shaped palate seen
- Third and fourth ventricle seen in fetal CNS
- Should NOT see zygoma, ribs, stomach, or heart

4. Fetal head in neutral position:

The fetal head must be neutral without hyperflexion or hyperextension

Hyperflexion:

Fetal head is flexed with no free space (amniotic fluid) seen between lower chin and anterior neck

Hyperextension:

Fetal neck is extended with an angle between lower chin and anterior neck of greater than 90 degrees

5. Fetus observed away from the amnion:

This is a frequent source of error and if not properly measured, may overestimate or underestimate the NT. Patience should be used to allow for spontaneous fetal movement away from the amnion. The amnion should be seen as a separate line from the nuchal membrane in the area of the NT measurement.

6 – 8. Correct caliper placement: The following guidelines should be followed:

Use the "+" calipers.

Measure the NT at the **widest translucent space**.

The horizontal crossbars of the calipers must be placed **on the echogenic inner borders of the nuchal membranes** with none of the horizontal crossbars protruding into the translucent NT space.

A vertical line connecting the two calipers should be perpendicular to the long axis of the fetus.

9. ALARA

The output display standard (ODS) which consists of MI and TI must be left on each image submitted. TIB should be displayed at this gestational age and its value should be less than or equal to 0.7.

NOTE: Measure the NT three times and report the **largest** of three acceptable measurements