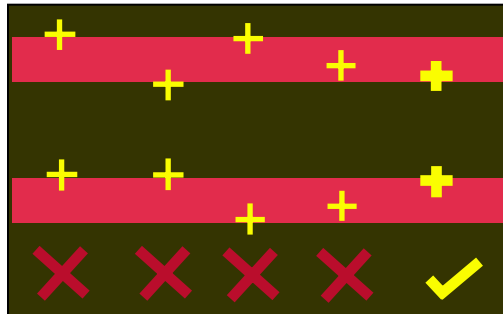


Nuchal Translucency and Nasal Bone Imaging: Helpful Hints

For NT Measurements:

The goal is to produce an image in which:

- √ The fetal head, neck, and upper thorax fill the image area
- √ The fetal profile including the nose can be clearly seen
- √ The whole NT area can be seen as two continuous lines from the back of the head down through the upper chest
- √ The lines that make up the NT are sharp and clear
- √ Ideally the fetus should be seen clear of the amnion
- √ After identifying the maximum lucency, the calipers should be placed on the tissue (“On to On”) so that they border the nuchal fluid space on either side of the NT



- √ The calipers should be lined up so that they are perpendicular to the fetal plane

Suggestions for optimizing the ultrasound system to achieve these goals:

- √ Don't just rely on the post-processing Zoom function as this will lose a lot of resolution. Change the depth and sector width before placing the magnification box
- √ Use the highest frequency transducer possible
- √ Don't rely on Routine OB settings. Use a high contrast setting, such as a fetal heart setting
- √ Turn off harmonics for NT measurements – harmonics may be called many different things on different ultrasound systems and may also be located under different menus depending on the manufacturer
- √ Try turning off other imaging enhancements. The overall image may not be as nice but the NT lines will be sharp and clear.

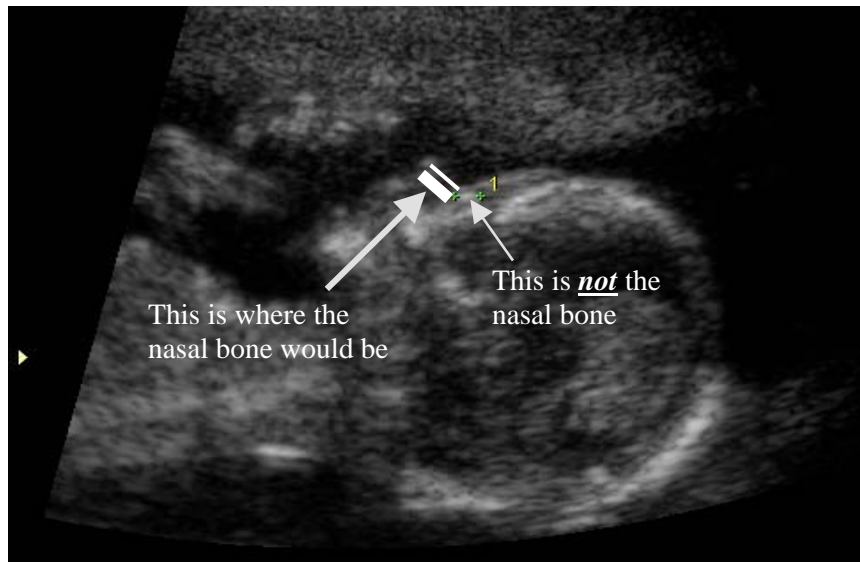
For Nasal Bone Assessment:

- ✓ The goal is to produce an image in which the skin overlying the nasal bone is thinner and less echogenic than the underlying nasal bone



Suggestions for optimizing technique to achieve this goal:

- ✓ The sound beam must be perpendicular to the plane of the nasal bone – NOT to the point where the nose meets the forehead (nasal bridge) – this will cause an echogenic line that is parallel to the forehead to appear and this line will be falsely called the nasal bone



- ✓ Use the highest frequency transducer available that is appropriate to the patient habitus.
- ✓ Choose a high-contrast setting, such as fetal heart setting.
- ✓ Magnify the fetal head and upper thorax, similar to when you are measuring the nuchal translucency.
- ✓ Play with harmonics, if your ultrasound system has this feature, as it is sometimes helpful in assessing the nasal bone- it usually hinders measurement of the NT but is often beneficial when looking at the nasal bone.

- √ Always make sure to insonate the plane of the nasal bone at a 90 degree angle.
- √ Try rocking the transducer gently back and forth slightly across the plane of the nasal bone to make sure you can see one or both of the two nasal bones- 20% of fetuses with present nasal bones may have a small gap between the two bones so rocking back and forth insures you are not missing the nasal bones by detecting only the small gap between them.
- √ Make sure to avoid assessing the nasal bone when there are fetal hands or other fetal parts or cord near the face.
- √ Adjust the overall gain down to avoid seeing the nasal bone and overlying skin merge into one.
- √ Don't turn the gain so far down that the skin disappears on the screen.
- √ Nasal Bone assessment should only be attempted when the fetal spine is down, and the fetal profile is facing up on the screen.
- √ Currently, the risk calculation takes into account ONLY the presence or absences of the nasal bone, NOT the measurement of the nasal bone.
- √ Only include nasal bone in the risk calculation when you are absolutely sure you have properly identified it as being present or absent. Absence of the nasal bone is a very powerful marker for Down syndrome. If you are not absolutely certain of your result, you are better off, as is the patient, to NOT include the result in the risk calculation.

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