

# NUCHAL TRANSLUCENCY OBSTETRICAL ULTRASOUND PROTOCOL

For 11wks - 13wk6d GA

UW Medicine

## BILLING CODES:

UOBNTM1 – Singleton pregnancy  
UOBNTTWIN – Twin pregnancy

[BILLING CODES FOR  
MULTIPLES -CLICK HERE](#)

UOBNTM1FU or UOBNTTWNFU to be used on follow up exams if a UOB1 has already been charged in this pregnancy.

UOBTV to be added when transvaginal exam performed. *Transvaginal imaging to be done if abnormality suspected or otherwise indicated.*

**\*\*See separate [FETAL DEMISE PROTOCOL](#) for contact information and imaging requirements.**

**DATING:** As a routine, use the date provided by the clinician or patient's known LMP. Working EDD in EPIC should be used if more than one date is provided. Use AIUM and ACOG dating criteria if dating is unknown.

**PATIENT PREP:** Please have patient come with full bladder.

**IMAGING TECHNIQUE:** Scanning should be performed with a transabdominal approach. If unable to obtain NT measurement a transvaginal approach can be attempted to visualize better.

## IMAGES TO OBTAIN

### MATERNAL STRUCTURES –

#### **CERVIX:**

- Sagittal image of cervix.
- Transverse/Coronal image of cervix.
- Orientation and evaluation of cervical masses.

#### **UTERUS/MYOMETRIUM:**

- Sagittal image showing size, shape, and orientation of uterus.
- Sagittal cine sweep of uterus evaluating for contour changes, echogenicity, fibroids, and masses. *Depth and field of view should be set to visualize area superior to fundus and posterior cul de sac for pedunculated or other extra uterine anomalies.*
- Transverse/Coronal image size, shape, and orientation of uterus.
- Additional cine sweeps if abnormality seen.
- Document any abnormality and measure in three dimensions.

#### **Measuring fibroids: See FIGO classification chart below.**

- Measure 2 largest fibroids and report location.
- Measure additional fibroids if they are submucosal or pedunculated.
- If the indication for exam is bleeding, also measure any submucosal fibroids regardless of size.

## **PLACENTA:**

- Sagittal and transverse image of placenta

## **ADNEXA:**

- Transverse image of right and left adnexa.
- Cine clip in sagittal and transverse of right and left adnexa.

## **OVARIES:**

- Sagittal image of right and left ovary without measurements.
- Sagittal measurement of the right and left ovary in long and AP.
- Transverse image of right and left ovary without measurements.
- Transverse width measurement of the right and left ovary.
- Additional cine sweeps if abnormality seen.
- Document any abnormality and measure in three dimensions.

## **FETAL STRUCTURES**

- **NUCHAL TRANSLUCENCY** – measured 3 times according to established technique described below.
- **CRL** – Measured three times.
- **HEART RATE** -Establish presence or absence of fetal cardiac motion with M-mode. *If no FHM is present*, include images of a slow cine clip sweep through CRL and color image over CRL. Two observers are preferred to verify lack of FHM if available.
- **CHOROID PLEXUS** - Document the head in cross section showing both the choroid plexuses and ossified calvarium.
- **TRANSVERSE CINE SWEEP OF CRANIAL STRUCTURES** to evaluate thalami, cerebral peduncles, 3<sup>rd</sup> vent, aqueduct of Sylvius and posterior fossa
- **SAGITTAL MIDBRAIN**- 3 lines/spaces view showing the thalami, brainstem, posterior fossa and intracranial translucency.
- **NASAL BONE** – show presence or absence of nasal bone in profile view.
- **STOMACH** - Document abdomen in cross section showing left sided stomach.
- **BLADDER** – Document area of fetal bladder. Report as not well seen if not distended.
- **3VC** – Color image at bladder showing presence of 3 umbilical cord vessels.
- **CORD INSERTION** -Note: *Physiologic Bowel in the 1<sup>st</sup> Trimester: >7mm in diameter. In normal embryos you will see an echogenic mass almost always 8.5-10.5 weeks, sometimes 10.5 –12.0 weeks. And virtually never in a >12.0 weeks. If there is an echogenic mass protruding prominently, measure it. If its >7mm, rescan at 13 weeks.*
- **EXTREMITIES** –
  - Right and left lower extremities.
  - Right and left upper extremities.
- **MULTIPLES** -If there are multiples document number, location and chorionicity.
- **CINE CLIP** in sagittal and transverse if any abnormalities are seen.

## **IF AN INCREASED NUCHAL TRANSLUCENCY IS SUSPECTED**

### **Include the following images:**

- Cine clip of the fetus in motion showing the nuchal area to prove it is not the amnion being measured.
- Transverse image of the cranium showing the nuchal area, looking for septations and cystic hygroma.
- Cine clip in sagittal through the entire fetus.
- Cine clip in transverse through the entire fetus.
- Perform transvaginal imaging if needed for better visualization.

***\*\*Transvaginal images to be included if abnormality suspected or otherwise indicated.***

## **NUCHAL TRANSLUCENCY MEASUREMENT TECHNIQUE**

### **CRITERIA**

- Sonographer must have active certification through FMF or NTQR to perform and document official NT measurement.
- The gestational period must be 11 to 13 weeks and 6 days.
- CRL must be between 45-84mm. No exceptions.

### **FETAL POSITION**

- Neutral position, with head in line with the spine. When the fetal neck is hyperextended, the measurement can be falsely increased and when the neck is flexed, the measurement can be falsely decreased
- A mid-sagittal view of the face should be obtained. This is defined by the presence of the echogenic tip of the nose and rectangular shape of the palate anteriorly, the translucent diencephalon in the center and the nuchal membrane posteriorly.
- Midline diencephalon and brain structures should be visible.
- Nasal bone and maxilla should be visible.
- Amnion should be distinguishable from fetal skin.
- Fetus must be horizontal on the screen.

### **IMAGE OPTIMIZATION**

- **C9-2 probe** should be used when reasonable.
- Image should be zoomed to only include the fetal head and upper thorax.
- Image should be zoomed to maximum magnification and always such that any movement of the caliper produces only a 0.1 mm change in the measurement.
- In magnifying the image (pre or post freeze zoom) it is important to turn the gain down. This avoids the mistake of placing the calliper on the fuzzy edge of the line which causes an underestimate of the nuchal measurement.

### **MEASUREMENT OF NUCHAL TRANSLUCENCY**

- Must be measured at least 3 times meeting all criteria.
- Measure at the widest part of the translucency.
- Measurements should be taken with the calipers placed on the white line and should not include any of the fuzz between the lines.
- The umbilical cord may be round the fetal neck in about 5% of cases and this finding may produce a falsely increased NT. In such cases:
  - Document cord with color doppler
  - Obtain a measurement above and below the cord using the same image criteria.
  - Report the average of the above and below measurements.



## NUCHAL TRANSLUCENCY IMAGE LIST

IMAGE	MODE
<b>TRANSABDOMINAL</b>	<b>TRANSABD</b>
Cervix Sag	2D
Cervix Trans	2D
UT Sag Mid	2D
UT Sag R-L Cine	Cine
UT Trans Mid	2D
<i>Fibroids (measure largest 2 and any submucosal or pedunculated)</i>	2D +
Placenta Sag	2D
Placenta Trans	2D
Rt Adnexa Trans	2D
Rt Adnexa Trans S-I Cine	Cine
Rt Adnexa Sag M-L Cine	Cine
Rt Ov Sag	2D
Rt Ov Sag w/ length and height measurements	2D ++
Rt Ov Trans	2D
Rt Ov Trans w/ width measurement	2D +
Lt Adnexa Trans	2D
Lt Adnexa Trans S-I Cine	Cine
Lt Adnexa Trans M-L Cine	Cine
Lt Ov Sag	2D
Lt Ov Sag w/ length and height measurements	2D ++
Lt Ov Trans	2D
Lt Ov Trans w/ width measurement	2D +
Nuchal Translucency x3	2D+
CRL x3 (must be 45-84mm)	2D +
Heart Rate	Mmode
Choroid Plexus	2D
Trans cine sweep of brain	Cine
Sagittal midbrain	2D
Nasal Bone	2D
Stomach	2D
Bladder	2D
3VC	Color
Cord Insertion	2D
Extremities	2D
<i>Multiples – number, chronicity, and location</i>	<i>Cine / 2D</i>
<i>Cine clip of any abnormalities</i>	
<b>REPEAT W TRANSVAGINAL IF NEEDED</b>	<b>TRANSVAG</b>

## NUCHAL TRANSLUCENCY OB ULTRASOUND PROTOCOL HISTORY

Created	Date	Changes made	By whom
	4/1/2023	Separated from First trimester protocol  - Added Use smallest of best 3 CRL. Use whole numbers, no decimals. - Added If increased Nuchal seen image requirements - Added Nuchal cord wrap criteria -Added NT meas. technique section - Page 3 -Added use C9-2 probe when reasonable -NTQR also will be used for certification	Manjiri Dighe  Renee Betit Fitzgerald
		Changed maternal section and cine requirements to match 1 <sup>st</sup> Tri protocol.	
Reviewed	1/25/2024	Separated >11wks and <10w6d protocols Changed: Measure 2 largest fibroids (from 3) Added: Placenta Added: 3VC color image Added: Sagittal midbrain Added: Trv cine sweep of head Added Image List	Protocol Meeting Attendees: Manjiri Dighe Edith Cheng Kim Ma, Jane Hitti, Michael Richley, Shaun Bornemeier, Dalene Edden, Becky Marion, Renee Betit Fitz