

FETAL ULTRASOUND **BIOPHYSICAL PROFILE (BPP)**

Patient Prep (recommended):

- Patients are recommended to drink 32 ounces of water 2 hours prior to exam time. The water should be finished 1 hour prior to exam time. The patient should have a full bladder for exam.

Survey:

1. Evaluate fetal cardiac activity and heart rate.
2. Evaluate amniotic fluid level.
3. Perform the criteria for the Biophysical Profile (BPP)

Use Doppler or color flow to distinguish vessels and on any abnormalities.

- Multiple pregnancies require that a survey is performed for each fetus and they will have the required documentation.

Image Documentation:

- Each image must be labeled with the patient's full name, medical record number, accession number, initials of the imaging technologist, organ/area identification and scanning plane.
- If an image of a structure is not well seen, take an image of the structure and annotate the purpose of the image (i.e. right ovary not well seen).

For Dating Purposes:

- If an EDD (Estimated Date of Delivery) has been determined from a prior ultrasound this is to be used for dating. If the patient has not had a prior ultrasound but the LMP (Last Menstrual Period) is known for sure use this date.
- All follow up ultrasounds will use the established EDD from the first ultrasound for dating. This will show growth of fetus between ultrasounds.
- NOTE: After obtaining the required images, the patient can void for comfort if there is adequate amniotic fluid for good visualization for the remainder of the exam. If the patient gets lightheaded allow them to lie on their side or sit up.

General Procedure Description:

AMNIOTIC FLUID INDEX (AFI)

1. When the fetus is at 18 weeks gestation provide an AFI.
2. In the longitudinal axis measure the amniotic fluid in all four quadrants of the uterus with the anterior-posterior (AP) approach. There should not be any fetal body parts or umbilical cord in these measurements. These measurements will be added together to calculate the AFI.
3. When the fetus is at 14 weeks gestation in the longitudinal axis measure the Maximum Vertical Pocket of amniotic fluid. This may be one of the measurements from the four quadrant measurements. This measurement will be used to diagnose the range that the amniotic fluid level falls in.
4. The normal range for the Maximum Vertical Pocket is 20mm – 80mm. Below 20mm would be Oligohydramnios and above 80mm would be Polyhydramnios.
5. Provide the information on the worksheet from the charts provided based on fetal age.

Gender

1. When requested by ordering physician, medically indicated and with multiple gestations document the gender on the image when seen. When providing images to the patient do not document the gender on the image if you are not absolutely positive what the gender is.

CARDIAC ACTIVITY

1. Evaluate and image in the transverse axis for a four-chamber heart. Label image right or left side so situs can be determined.
2. Evaluate and image heart rate and rhythm utilizing M Mode. Record this tracing and calculate the heart rate. Note any Brady, tachycardia or erratic heart beats.
3. Cine loop (clip store) needs to be utilized to confirm or exclude cardiac activity.
4. Doppler or color flow should only be utilized on a fetal heart when an abnormality is suspected or to confirm no cardiac activity.

BIOPHYSICAL PROFILE (BPP)

1. Fetal Breathing Movements: At least 1 episode of breathing for ≥ 30 seconds in 30 minutes. Cine loop (clip store) needs to be utilized to confirm breathing movement.
2. Gross Body Movement: At least 3 discrete body or limb movements in 30 minutes (episodes of continuous movement are considered a single movement). Cine loop (clip store) needs to be utilized to confirm gross body movement.
3. Fetal Tone: At least 1 episode of active extension with return to flexion of fetal limb(s) or trunk in 30 minutes. Opening and closing of hand is considered normal tone.
4. Qualitative AFV: One pocket of amniotic fluid that measures ≥ 2 cm in the vertical plane.

During a biophysical profile exam, the fetus will either score a 2 or 0 for the requirements listed. If the fetus meets the requirements listed a score of 2 will be given. If the fetus does not meet the requirements listed a score of 0 will be given.

The fetus needs to be observed for 30 minutes before a score of 0 can be assigned.

Provide images of the calculation package.