Chapter 25
The Biophysical Profile

Meredith O. Cruz and Isabelle Wilkins

Objectives

• List the components of the biophysical profile.
• Describe the scoring method for the BPP.
• Identify factors affecting the BPP score.
• Interpret the biophysical profile

Biophysical Components

• Nonstress test (NST)
• Fetal
  – Breathing
  – Movements
  – Tone
  – Qualitative amniotic fluid volume
Amniotic Fluid Volume (AFV)

- Largest vertical pocket
- Amniotic Fluid Index (AFI)
  - Four quadrant measurement of fluid
  - Perpendicular measurement
  - Fluid pocket free of cord / fetal parts
  - Sum of all reported

Biophysical Profile Scoring

- NST
  - Reactive = 2
  - Nonreactive = 0
- Sonographic observation
  - Maximum score = 8
- NST / Sonographic maximum score = 10
- Score less than 4 indicates fetal compromise
Modified Biophysical Profile (mBPP)

- Components
  - NST
  - AFI

Case Study 1 - Scoring

A 25-year-old G3P2002 at 32 weeks gestational age, with a history of chronic hypertension, on medication, presents for antenatal testing. The nonstress test is nonreactive, and a biophysical profile is performed. The following is visualized: fetal breathing for 30 seconds, rolling of the fetal trunk, movement of 3 extremities, and opening and closing of the hand. The following image of fluid was obtained. What is the BPP score?

Case Study 2 - Scoring

- A 33-year-old G1P0 presents to antenatal testing at 41 weeks of gestation. Her prenatal care has been uncomplicated; she has no medical problems. A nonstress test demonstrates moderate variability with one fetal acceleration in 20 minutes. A biophysical profile visualized the following: one episode of rolling of the trunk, one episode of leg flexion, extension with return to flexion, and an AFI measuring 0.5 cm. An inward movement of the anterior chest wall and a simultaneous outward movement of the anterior abdominal wall are also visualized for 30 seconds in the following image. The fetus is noted to be in a breech presentation.

Case Study 2 - Scoring

- What is the biophysical profile score?
- How can determining the type of breech presentation help the clinician?
Case Study 3 - Scoring

A 29-year-old G4 P1112 at 32 weeks of gestation is scheduled for a BPP due to Class C diabetes and a nonreactive NST. During the BPP frequent trunk movements are demonstrated, there is an open fetal hand, and no movements of the lower extremities are seen as demonstrated in the following figures. Fetal breathing movements for 60 seconds are visualized. The AFI is 26.2 cm.

- What is the BPP score?
- What additional images would help the clinician with this patient?