



**ANTEPARTUM FETAL  
SURVEILLANCE  
HS-111**



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**Antepartum Fetal  
Surveillance**

**Policy Number: HS-111**

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**DISCLAIMER**

The Clinical Coverage Guideline is intended to supplement certain standard WellCare benefit plans. The terms of a member's particular Benefit Plan, Evidence of Coverage, Certificate of Coverage, etc., may differ significantly from this Coverage Position. For example, a member's benefit plan may contain specific exclusions related to the topic addressed in this Clinical Coverage Guideline. When a conflict exists between the two documents, the Member's Benefit Plan always supersedes the information contained in the Clinical Coverage Guideline. Additionally, Clinical Coverage Guidelines relate exclusively to the administration of health benefit plans and are NOT recommendations for treatment, nor should they be used as treatment guidelines. The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

**APPLICATION STATEMENT**

The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

## BACKGROUND

Several techniques for antepartum fetal surveillance currently in use are discussed in the ACOG bulletin. These include fetal movement assessment, non-stress test, contraction stress test, fetal biophysical profile, modified biophysical profile and umbilical artery Doppler velocimetry.

### *Fetal Movement Assessment*

Fetal movement assessment occurs when the mother perceives a diminution in fetal movement. The mother counts fetal "kicks" as a means of antepartum fetal surveillance. The optimal number of movements and the ideal duration for counting movements have not been determined; however, numerous protocols have been reported and appear to be acceptable.

### *Contraction Stress Test*

The contraction stress test is based on the response of the fetal heart rate to uterine contractions. It is believed that fetal oxygenation will be transiently worsened by uterine contractions. In the fetus with suboptimal oxygenation, the resulting intermittent worsening in oxygenation will, in turn, lead to the fetal heart rate pattern of late decelerations. Uterine contractions also may provoke or accentuate a pattern of variable decelerations caused by fetal umbilical cord compression, which in some cases is associated with oligohydramnios.

The contraction stress test is interpreted by the presence or absence of late fetal heart rate decelerations, which are defined as decelerations that reach their nadir after the peak of the contraction and that usually persist beyond the end of the contraction. The results of the contraction stress test are categorized in the ACOG bulletin as follows:

- Negative. No late or significant variable decelerations.
- Positive. Late decelerations following 50 percent or more of contractions (even if the contraction frequency is fewer than three in 10 minutes).
- Equivocal-suspicious. Intermittent late decelerations or significant variable decelerations.
- Equivocal-hyperstimulatory. Fetal heart rate decelerations that occur in the presence of contractions that are more frequent than every two minutes or last longer than 90 seconds.
- Unsatisfactory. Fewer than three contractions in 10 minutes or a tracing that is not interpretable.

Relative contraindications to the contraction stress test usually include conditions that are associated with an increased risk of preterm labor and delivery, uterine rupture or uterine bleeding. According to ACOG, these conditions include the following:

- Preterm labor or certain patients at high risk of preterm labor.
- Preterm membrane rupture.
- History of extensive uterine surgery or classic cesarean delivery.
- Known placenta previa.

### *Non-stress Test*

In the nonstress test, the heart rate of the fetus that is not acidotic or neurologically depressed will temporarily accelerate with fetal movement. Heart rate reactivity is believed to be a good indicator of normal fetal autonomic function. Loss of reactivity is commonly associated with a fetal sleep cycle but may result from any cause of central nervous system depression, including fetal acidosis.

Results of nonstress tests are classified as reactive or nonreactive. Various definitions of reactivity have been used. Most commonly, the nonstress test is considered reactive, or normal, if there are two or more fetal heart rate accelerations within a 20-minute period, with or without fetal movement discernible by the woman, according to ACOG. The nonreactive stress test lacks sufficient fetal heart rate accelerations over a 40-minute period. The nonstress test of the neurologically healthy preterm fetus is frequently nonreactive--from 24 to 28 weeks of gestation, up to 50 percent of nonstress tests may not be reactive, and from 28 to 32 weeks of gestation, 15 percent of nonstress tests are not reactive.

### *Biophysical Profile*

The biophysical profile discussed in the ACOG bulletin is a nonstress test plus four observations made by real-time ultrasonography. The five components of the biophysical profile are as follows: (1) nonstress test; (2) fetal breathing movements (one or more episodes of rhythmic fetal breathing movements of 30 seconds or more within 30 minutes); (3) fetal movement (three or more discrete body or limb movements within 30 minutes); (4) fetal tone (one or more episodes of extension of a fetal extremity with return to flexion, or opening or closing of a hand; and (5) determination of the amniotic fluid volume (a single vertical pocket of amniotic fluid exceeding 2 cm is considered evidence of adequate amniotic fluid).

Each of the components is given a score of 2 (normal or present as defined previously) or 0 (abnormal, absent or insufficient). A composite score of 8 or 10 is normal, a score of 6 is equivocal and a score of 4 or less is abnormal. In the presence of oligohydramnios, further evaluation is warranted regardless of the composite score.

### *Modified Biophysical Profile*

During the late second or third trimester, amniotic fluid reflects fetal urine production. Placental dysfunction may cause diminished fetal renal perfusion, which can lead to oligohydramnios. Therefore, assessment of amniotic fluid volume can be used to evaluate long-term uteroplacental function. This led to the development of the modified biophysical profile.

The modified biophysical profile combines the nonstress test with the amniotic fluid index, which is the sum of measurements of the deepest cord-free amniotic fluid pocket in each of the abdominal quadrants, as an indicator of long-term function of the placenta. An amniotic fluid index of more than 5 cm is thought to be an adequate volume of amniotic fluid. The modified biophysical profile is considered normal if the nonstress test is reactive and the amniotic fluid index is greater than 5 cm and abnormal if the nonstress test is nonreactive or the amniotic fluid index is 5 cm or less.

### *Umbilical Artery Doppler Velocimetry*

Doppler ultrasonography is used to assess the hemodynamic components of vascular impedance. Umbilical artery Doppler flow velocimetry has been adapted as a fetal surveillance technique because it is believed that flow velocity waveforms in the umbilical artery of fetuses with normal growth differ from those of fetuses with growth restriction. The umbilical flow velocity waveform of a normally growing fetus has high-velocity diastolic flow, while in cases of intrauterine growth restriction, the umbilical artery diastolic flow is diminished. With extreme intrauterine growth restriction, the flow may be absent or even reversed. There is a high perinatal mortality rate among such pregnancies.

## POSITION STATEMENT

The following procedures are included in the antepartum fetal surveillance guideline:

|                  |  |
|------------------|--|
| <b>CPT 76818</b> | Biophysical Profile                              |
| <b>CPT 76819</b> | Modified Biophysical Profile                     |
| <b>CPT 59020</b> | Contraction Stress Test                          |
| <b>CPT 76820</b> | Fetal Umbilical Artery Doppler Velocimetry       |
| <b>CPT 76821</b> | Fetal Middle Cerebral Artery Doppler Velocimetry |
| <b>No Code</b>   | Maternal Uterine Artery Doppler Velocimetry      |

A biophysical profile (76818) and the modified biophysical profile (76819) starting at 27 weeks gestation **are considered medically necessary** for the following indications:

### 1) Maternal Conditions

- Antiphospholipid syndrome; **OR**,
- Poorly-controlled hyperthyroidism; **OR**,
- Hemoglobinopathies with significant anemia-hemoglobin SS, SC, or S-thalassemia; **OR**,
- Cyanotic heart disease; **OR**,
- Systemic lupus erythematosus; **OR**,
- Chronic renal disease; **OR**,
- Diabetes mellitus or gestational diabetes on anti-hyperglycemic agents; **OR**,
- Hypertensive disorders

### 2) Pregnancy-related Conditions

- Pre-eclampsia/eclampsia; **OR**,
- Decreased fetal movement; **OR**,
- Oligohydramnios (AFI < 7 cm); **OR**,
- Polyhydramnios (AFI > 24 cm); **OR**,
- Intrauterine growth restriction (EFW < 10th percentile growth); **OR**,
- Post-term pregnancy (greater than 41 weeks gestation); **OR**,
- Moderate to severe isoimmunization; **OR**,
- Previous fetal demise (unexplained or untreated recurrent risk); **OR**,
- Multiple gestation with significant growth discrepancy > 20%

NOTE: A biophysical or modified biophysical profile is generally authorized once a week unless non-reassuring, then it may be repeated twice a week.

NOTE: A contraction stress test is considered medically necessary following an abnormal non-stress test or modified biophysical profile.

Fetal umbilical artery Doppler velocimetry (76820) **is considered medically necessary** for the following indications:

- Fetal growth restriction (EFW < 10<sup>th</sup> percentile growth); **OR**,
- Monochorionic/diamniotic twins with significant growth discrepancy > 20%; **OR**,
- Twin-twin transfusion syndrome; **OR**,
- Oligohydramnios (AFI < 7 cm)

NOTE: Fetal umbilical artery doppler velocimetry is generally authorized every two weeks. The procedure may be performed more frequently if

there is documentation of absent end diastolic velocity/flow, reserved flow or a flow index > 2 SD above the mean for gestational age.

Fetal middle cerebral artery Doppler velocimetry (76821) **is considered medically necessary** for the following indications:

- Risk of fetal anemia; red cell alloimmunization (Rh and non-Rh, parvovirus, fetal infection, fetomaternal hemorrhage; **OR**,
- Twin-twin transfusion syndrome

Maternal uterine artery Doppler velocimetry **is considered experimental and investigational**.

## **CODING**

### **Covered CPT® Codes**

|              |  |
|--------------|--|
| <b>59020</b> | Contraction Stress Test                          |
| <b>76818</b> | Biophysical Profile                              |
| <b>76819</b> | Modified Biophysical Profile                     |
| <b>76820</b> | Fetal Umbilical Artery Doppler Velocimetry       |
| <b>76821</b> | Fetal Middle Cerebral Artery Doppler Velocimetry |

**ICD-9-CM Procedure Codes** - No applicable codes

**HCPCS Codes** - No applicable codes

### **Covered ICD-9-CM Diagnosis Codes**

|                   |  |
|-------------------|--|
| 642.03            | Benign Essential Hypertension; antepartum condition or complication  |
| 642.13            | Hypertension secondary to renal disease; antepartum condition or complication                                      |
| 642.23            | Pre-Existing Hypertension; antepartum condition or complication  |
| 642.33            | Transient Hypertension of pregnancy, i.e. Gestational Hypertension; antepartum condition or complication           |
| 642.43            | Mild Pre-eclampsia or unspecified; antepartum condition or complication  |
| 642.53            | Severe Pre-eclampsia; antepartum condition or complication   |
| 642.63            | Eclampsia; antepartum condition or complication  |
| 642.73            | Pre-eclampsia or Eclampsia superimposed on Pre-existing Hypertension; antepartum condition or complication         |
| 645.13            | Post Term pregnancy; greater than 41 weeks gestation   |
| 646.23            | Unspecified renal disease in pregnancy without mention of hypertension; antepartum condition or complication       |
| 648.03            | Diabetes mellitus; antepartum condition or complication  |
| 648.13            | Thyroid dysfunction; antepartum condition or complication  |
| 648.23            | Anemia and other hemoglobinopathies with significant SS, SC or S-Thalassemia; antepartum condition or complication |
| 648.53            | Congenital cardiovascular disorders; antepartum condition or complication  |
| 648.83            | Abnormal glucose tolerance; antepartum condition or complication   |
| 649.33 and 289.81 | Antiphospholipid Syndrome; Coagulation Defects; antepartum condition or complication                               |
| 651.03            | Twin pregnancy   |
| 651.13            | Triplet pregnancy  |
| 651.23            | Quadruplet pregnancy   |
| 651.33            | Twin pregnancy with fetal loss and retention of one fetus  |
| 651.43            | Triplet pregnancy with fetal loss and retention of one or more fetus(es)   |

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|                  |   |
|------------------|---|
| 651.53           | Quadruplet pregnancy with fetal loss and retention of one or more fetus(es)   |
| 651.63           | Other Multiple pregnancy with fetal loss and retention of one or more fetus(es)   |
| 651.73           | Multiple gestation following (elective) fetal reduction   |
| 655.73           | Decreased fetal movements; antepartum condition or complication   |
| 656.13           | Rhesus isoimmunization affecting management of mother, antepartum condition or complication   |
| 656.23           | Isoimmunization from other and unspecified blood-group incompatibility affecting management of mother, antepartum condition or complication |
| 656.53           | Poor fetal growth affecting management of mother; antepartum condition or complication  |
| 657.03           | Polyhydramnios, antepartum condition or complication  |
| 658.03           | Oligohydramnios, antepartum condition or complication   |
| 678.03           | Fetal hematologic conditions, antepartum condition or complication  |
| 648.93 and 710.0 | Systemic lupus erythematosus; antepartum condition or complication  |

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## **HISTORY AND REVISIONS**

| <b>Date</b> | <b>Action</b>  |
|-------------|--|
| 12/1/2011   | <ul style="list-style-type: none"><li>• New template design approved by MPC.</li></ul> |
| 8/2/2011    | <ul style="list-style-type: none"><li>• Approved by MPC. No changes.</li></ul>         |