Table 13. RECOMMENDED ANTENATAL FETAL EVALUATION FOR A WOMAN WITH GESTATIONAL DIABETES, revised 2004, Chapter 5

Test	Time Frame	Rationale
Expanded maternal serum alpha-fetoprotein	At 15-20 weeks, preferably between 16-18 weeks	AFP3, or triple marker, as it is sometimes called, screens for neural tube (spine and brain) defects and some chromosomal abnormalities in the fetus.[1]
Amniocentesis	Late first trimester for maternal age >35. PRN in late gestation to document fetal lung maturity.	With AMA, risk increases for fetal chromosomal abnormalities.[2] To assess fetal lung maturity. In term patients (> 38 weeks) with demonstrated blood glucose control, amniocentesis may not be needed.[3]
Ultrasound	PRN third trimester	May be use to detect fetal anomalies and also to assess fetal growth and development, Estimates of fetal weight may vary ≥ 10%.[4]
Fetal Movement Count (kick count)	30-32 weeks, earlier if complicated by other medical conditions, or previous stillbirth.	Provides a maternal assessment of fetal activity.[5]
Non-Stress Test (NST)	Twice weekly @ 40 weeks for GDM/diet if fetal kick counts are reassuring. Once or twice weekly starting at 32 weeks if woman is on insulin or oral medications, may consider once weekly for well controlled. Twice weekly if poor glycemic control. Start @ 28 weeks for woman with hypertension, renal disease, or suspected fetal growth restriction (IUGR)	A primary measure for ante-partum fetal surveillance, NST is routinely used to assess the risk of fetal death in pregnancies complicated by preexisting maternal conditions (eg. Type 1 and type 2 diabetes mellitus) as well as those in which complications have developed (eg IUGR).[6] …It would seem reasonable that women whose GDM is not well controlled, who require insulin, or have other risk factors such as hypertension or adverse obstetric history should be managed the same as individuals with preexisting diabetes.[7]
Fetal Biophysical Profile (BPP)or Contraction Stress Test (CST)	As indicated, as a further test to support well being in a non-reactive NST, or in place of an NST.	BPP includes both an NST and real-time ultrasound to evaluate fetal breathing, gross movement, fetal tone, and amniotic fluid volume. A score of 8 or 10 is normal, 6 is considered equivocal, and 4 or less is abnormal. Regardless of composite score, if oligohydramnios is present (largest vertical pocket of AF ≤ 2cm, further evaluation is warranted.[6] A CST requires 3 contractions in a 10 minute period, and is an evaluation of fetal heart rate in relationship to stress (contractions) and is interpreted according to the presence or absence of late fetal heart rate decelerations.[6]
Amniotic Fluid Index (AFI)	Weekly, or as indicated for a woman with oligohydramnios, hypertension, IUGR, or > 40 weeks gestation	Used to assess the volume of amniotic fluid as an indirect, semi-quantitative measure of fetal well being; used for evaluation in the diagnosis of oligo- or polyhydramnios, the AFI reflects fetal urine production. Placental dysfunction may result in diminished fetal renal perfusion, leading to oligo.[6]

REFERENCES

1. ACOG Educational Bulletin "Maternal Serum Screening" Number 228, September 1996.

2. ACOG Practice Bulletin "Prenatal Diagnosis of Fetal Chromosomal Abnormalities" Number 27, May 2001.

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5. ACOG Technical Bulletin "Antepartum Fetal Surveillance" Number 188, January 1994.

6. ACOG Practice Bulletin "Antepartum Fetal Surveillance" Number 9, October 1999.

7. ACOG Practice Bulletin "Gestational Diabetes" Number 30, September 2001.