

Fetal Surveillance with Modified BPP: Diagnostic Conditions and Frequency

INDICATIONS	GA OF INITIATION	FREQUENCY	ESTIMATED RISK OF STILLBIRTH PER 1,000 BIRTHS (low risk: 3.6)
Abnormal serum analytes, defined as Inhibin \geq 2.0 MoM PAPP-A \leq 0.4 MoM AFP \geq 2.5 MoM with abnormal EFW Second trimester HCG \geq 3.0 MoM Estriol \leq 0.15 MoM	36 weeks (earlier if multiple analytes abnormal)	Weekly	8-18*
Advanced maternal age, 35-39 years	36 weeks	Weekly	11-14*
Advanced maternal age, \geq 40 years	32 weeks	Weekly	11-21*
Decreased fetal movement	At diagnosis	May be one time only	13
Elevated pre-pregnancy BMI, 35-39 kg/m ²	37 weeks	Weekly	12-15*
Elevated pre-pregnancy BMI, \geq 40 kg/m ²	34 weeks	Weekly	13-18*
Experiences with structural racism or other vulnerabilities, if patient would benefit from closer surveillance	32-36 weeks	Weekly	12-18*
IVF pregnancy	36 weeks	Weekly	12
Prolonged gestation	40-40 ½ weeks	Twice weekly	1.6 -3.5
HYPERTENSIVE DISEASE			
Hypertensive disease of pregnancy, without severe features	At diagnosis	Twice weekly	9-51
Hypertensive disease of pregnancy, with severe features	At diagnosis	Daily	9-51
Chronic hypertension, without complications	32 weeks	Once weekly	6-25
Chronic hypertension, with complications (SIPE, poorly controlled BP, FGR, other co-morbidities)	At diagnosis	Twice weekly	10-47
DIABETES			
GDM A1, controlled	None	None	6-10
GDM A1, uncontrolled	32 weeks	Once or twice weekly	6-35
GDM A2, controlled	32 weeks	Once or twice weekly	6-35
GDM A2, uncontrolled	32 weeks	Twice weekly	6-35
T1 or T2 DM, controlled, without complications	32 weeks	Twice weekly	6-35
T1 or T2 DM, with complications (poor control, FGR, vascular disease)	28 weeks	Twice weekly	6-47
CARDIAC DISEASE			
Cardiac disease, mWHO class I	None	None	*
Cardiac disease, mWHO class II	36 weeks	Once weekly	*
Cardiac disease, mWHO class II-III	32 weeks	Once or twice weekly	*
Cardiac disease, mWHO class III	32 weeks	Twice weekly	*
Cardiac disease, mWHO class IV	28 weeks 32 weeks	Once weekly Twice weekly	*
OTHER MEDICAL CONDITIONS			
Antiphospholipid syndrome (individualize for other hypercoagulable disease)	32 weeks	Twice weekly	40-150
Infectious disease History of severe COVID19, influenza, or pyelonephritis HIV on HAART	36 weeks	Weekly	11*
Intrahepatic cholestasis of pregnancy	At diagnosis (before bile acid results)	Once or twice weekly	12-30
Pemphigoid gestationalis	At diagnosis	Once or twice weekly	12-30
Pulmonary disease, including severe, uncontrolled asthma	32 weeks	Once or twice weekly	*
Renal disease with Cr > 1.4 mg/dL	32 weeks	Once or twice weekly	15-200
Seizure disorder, uncontrolled	32 weeks	Once or twice weekly	*
Sickle cell disease	32 weeks	Once or twice weekly	*
Systemic lupus erythematosus, without complications	32 weeks	Once or twice weekly	40-150
Substance use, including Alcohol > 5 drinks per week Tobacco > 10 cigarettes per day Methadone with unstable dosing	36 weeks	Weekly	8-15*
Thyroid/Graves disease, uncontrolled or with TSI > 130%	32 weeks	Twice weekly	12-20*

MULTIPLE GESTATIONS			
Di/di twins, without complications	36 weeks	Weekly	12
Mo/di twins, without complications	32 weeks	Weekly	12
Mo/mo twins, without complications	At designated GA for intervention	Individualize	140
Di/di twins, with complications, including Fetal growth restriction Discordant growth > 20% Abnormal amniotic fluid volume	At diagnosis	Twice weekly	12-47
Mo/di twins, with complications, including Fetal growth restriction Discordant growth > 20% Abnormal amniotic fluid volume	At diagnosis	Twice weekly	12-47
Triplets	28-32 weeks	Once or twice weekly	34
FETAL COMPLICATIONS			
Fetal growth restriction, without complications	At diagnosis	Once or twice weekly	10-47
Fetal growth restriction, with complications, including EFW \leq 3% Diagnosed < 32 weeks Abnormal UA Dopplers Oligohydramnios Inadequate interval growth	At diagnosis	Twice weekly	10-47*
Oligohydramnios, defined as DVP < 2 cm (or AFI < 5 cm)	At diagnosis	Once to 3x weekly	14
Polyhydramnios, <u>moderate to severe</u> , defined as AFI > 30 cm DVP > 12 cm	32 weeks	Once or twice weekly	12*
Fetal anomalies, including but not limited to, Gastroschisis Cardiac anomaly or CDH Cleft lip/palate Echogenic bowel (persistent) Nuchal translucency \geq 3.0 mm	Individualize, consider 32 weeks	Once or twice weekly	31-76

Fetal aneuploidy	Individualize	Once or twice weekly	31-76
Fetal arrhythmia, including PAC, PVC, SVT	At diagnosis	Weekly (may require BPP if unable to obtain FHR strip)	**
Fetal heart block	At diagnosis or at 28 weeks	Weekly BPP	**
Fetal blood disorders, including Anemia, due to alloimmunization or parvovirus Thrombocytopenia, due to NAIT	At diagnosis or at 28 weeks	Once or twice weekly	*
PLACENTAL AND CORD ABNORMALITIES			
Placental abruption	At diagnosis	Once or twice weekly	61.4*
Placenta previa	32 weeks	Weekly	**
Vasa previa	Individualize	Individualize	**
Circumvallate placenta	36 weeks	Weekly	18*
Umbilical cord anomalies, including Single umbilical artery (two vessel cord) Velamentous cord insertion	36 weeks	Weekly	18*
PRIOR OBSTETRIC HISTORY			
Prior IUFD	At 32 weeks, or 1-2 weeks prior to GA of previous demise (whichever is earlier)	Once or twice weekly	9-20
Prior placental complication, including Prior FGR Prior placental abruption Prior preterm preeclampsia	32 weeks	Weekly	*

* Risk of IUFD may be increased, but insufficient data on this indication to prove that fetal surveillance will modify risk.

** May need fetal surveillance testing for fetal heart rhythm, sono for FH rate (Ht block), toco for detection of contractions, or whenever reassurance of fetal well-being is advised.