ANTEPARTUM NONSTRESS TESTING FREQUENCY AND ULTRASOUND SURVEILLANCE

GUIDELINE

Site Applicability

Antenatal fetal surveillance occurs in the Antepartum and Maternal Ambulatory Programs.

Guideline for Minimum Frequency of Antepartum Nonstress Testing and Ultrasound Surveillance

For all Outpatient Bookings, the following is required:

1. Greater than or equal to 26 weeks gestation
2. Plan to deliver at BC Women's
3. Antenatal Records Parts 1 and 2
4. Ultrasound report

Indication	Definition/details	Type of Surveillance	Minimum Frequency	When to start
Abnormal serum screen	One or more of the following: ▪ Low PAPP-A (less than 0.15 MoM) ▪ High AFP (greater than 2.50 MoM) ▪ High hCG (greater than 4.00 MoM) ▪ High Inhibin A (greater than 3.00 MoM) ▪ E3 (estriol) (less than 0.4 MoM)	Growth US	See EMMA guidelines (PSBC HUB)	Per EMMA guidelines (or equivalent)
		NST, AFI & UA Doppler only if SGA, GHTN or pre-eclampsia	See SGA or GHTN/ Guidelines See OB Risk recommendations as per PGSP	Per SGA or GHTN/ pre-eclampsia guidelines
Advanced maternal age	40 years age or more at EDD	NST & AFV	2x/week	38-38+3 weeks
Antepartum hemorrhage	Inpatient	NST	As clinically indicated	At diagnosis*
Abruption (Chronic)	Outpatient	NST	Weekly	At diagnosis*
Assisted reproductive technology pregnancy	As per other indications as they arise			
Cholestasis of pregnancy	Pruritis without rash with or without abnormal liver enzymes	NST	Weekly (or increase as clinically indicated)	At diagnosis* (if greater than or equal to 28 weeks)
		US	As clinically indicated	
Decreased fetal movement	Less than 6 distinct fetal movements in 2 hours	NST	Once (or more if indicated by findings)	At diagnosis*
		US within 24 hours (if high risk factors or suspicion of SGA or oligo-hydramnios)		

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Pre-existing Diabetes (type 1 or type 2) OR Gestational Diabetes diagnosed under 20 weeks GA	Refer to BCW OB US Booking Guidelines: Diabetes, and explanatory memo on BCW US webpage	US detailed + extended heart views	Once	19-21 weeks
		Growth US	Q4 weeks	Associated end organ disease and/or hypertension and/or poor control: Yes->starting at 22-24 weeks No->starting at 28 weeks
		NST	Well-controlled - Weekly	36 weeks
			Poorly-controlled – 2x/week	32 weeks
Gestational Diabetes diagnosed over 20 weeks	Insulin-treated	Growth US	Once	32-36 weeks
		NST	Well-controlled - Weekly	36 weeks
			Poorly-controlled – 2x/week	32 weeks
	Diet-controlled	Growth assessment	n/a	If clinically indicated
		NST	n/a	if clinically indicated
Gastroschisis		NST, AFI & Umb A Doppler	Weekly	34 weeks
Hypertension -gestational and pre-eclampsia	BP greater than or equal to 140 and/or dBP greater than or equal to 90	NST, AFI & Umb A Doppler	2x/week	At diagnosis*
		Growth US	Q2 weeks	
	Severity requiring admission	NST	Daily	
		AFI & UA Doppler	2x/week	
		Growth US	Q2 weeks	
Hypertension -pre-existing/chronic	BP ≥ 140 and/or dBP ≥ 90 before 20 weeks or anti-hypertensive therapy before 20 weeks	NST, AFI & Umb A Doppler	Weekly	35 weeks
		Growth US	Q2 weeks	
Isolated severe oligohydramnios (with intact membranes)	DVP less than 2 cm	NST	2x/week	At diagnosis*
		AFI & UA Doppler	2x/week	At diagnosis*
		Growth US	Q2 weeks	
Isolated Polyhydramnios	AFI > 250mm	NST and AFI Doppler	Weekly or as per MFM recommendation	At diagnosis*

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Indication	Definition/details	Type of Surveillance	Minimum Frequency	When to start
Maternal conditions (SLE, renal disease, APAS, etc.)	As indicated by co-morbid conditions (hypertension, SGA, etc.)			
Motor Vehicle Accident	Contractions less than 1 in 10 min, no vaginal bleeding, no abdominal pain and normal FHR	Continuous EFM x 4 hours from admission		At diagnosis*
	Regular contractions, vaginal bleeding, ABN FHR, pain, low platelets or fibrinogen	Continuous EFM x 24 hours from the event		
Multiple gestations (assuming no other complications or SGA) Surveillance of all complex multiple gestations as per MFM recommendations	Dichorionic twins and trichorionic triplets	US	Every 3-4 weeks	19-22 weeks
		NST	2x/week	37 weeks for twins
				35 weeks for triplets
	Monochorionic diamniotic twins	US	Every 2 weeks	16 weeks
		NST	2x/week	36 weeks for twins
				34 weeks for triplets
Obesity	Pre-pregnancy BMI greater than or equal to 35 kg/m2	NST	Weekly	37-38 weeks or as per other underlying risk factors
		Detailed US	Once	21-22 weeks
		Growth & Fluid	32-34 weeks Follow-up at 36-37 weeks	32-34 weeks
Post dates	Maternal age less than 40 years	NST & AFV assessment	2x/week	41 weeks
PPROM		NST	3x/week	At diagnosis*
Preterm labour	While on maintenance tocolysis for 48 hours	NST	Daily	At diagnosis*
	Once contractions have stopped completely	NST	Only if preterm labour returns	
Previous stillbirth	Previous IUFD of unknown etiology in second or third trimester	Serum screening for placental evaluation		
		NST, AFI & UA Doppler	Weekly	32 weeks or 1-2 weeks before previous IUFD
		Growth US	Every 4 weeks	28 weeks

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Indication	Definition/details	Type of Surveillance	Minimum Frequency	When to start
Red blood cell Alloimmunization	All alloimmunization at risk for severe fetal anemia	Growth US and MCA Doppler as per Mari chart and trend	As per MFM recommendations	As per MFM recommendations
		NST	Weekly	32 weeks
SGA fetus ≥32 weeks gestation -See appended flow chart. -if fetus SGA at <32 weeks gestation, refer to MFM	UA Doppler PI <95th %ile AND AC and EFW ≥ 3rd %ile	NST, AFI & UA Doppler	Weekly	At diagnosis*
	UA Doppler PI ≥95th %ile, OR AC or EFW < 3rd %ile		2x/week	
	UA Doppler waveform with any absent (AEDF) or reversed end-diastolic flow (REDF)		Urgent referral to MFM	
Substance use	Perform NST prior to OAT dose or minimum 8 hours post dose (only when one is scheduled) NST's on FIR Unit are routinely ordered 3x/ week independent of a specific OB indication.	NST	On admission and readmission after patient-initiated discharge, or as per OB indication	On admission After 28 weeks
		US	Within 24 hours (if high risk factors or suspicion of SGA or oligo-hydramnios)	On admission
Trisomy 21	Fetus diagnosed with trisomy 21 this pregnancy	NST	Weekly	34 weeks
Umbilical vein varix Fetal intra-abdominal (FIUVV)	Routine NST not recommended	NST	As per other obstetrical indications	
	Isolated and non-isolated FIUVV	US	Every 2 weeks,	32 weeks

* Provided fetus(es) at a gestational age and estimated weight compatible with option for intervention.

Key:

AC = Abdominal Circumference
AFI = amniotic fluid index;
AFV = amniotic fluid volume
APAS = antiphospholipid antibody syndroome
BMI = basal metabolic index
dBP = diastolic blood pressure
DVP = Deepest vertical pocket
EDD = expected date of delivery
EFM = electronic fetal monitoring
EMMA = evaluating maternal markers of acquired risk for pre-eclampsia
etc = et cetera
FHR = fetal heart rate
GA = gestational age
GHTN = gestational hypertension
hCG = human chorionic gonadotropin
IUFD = intrauterine fetal demise
kg/m^2 = kilograms per metre squared
MCA doppler = middle cerebral artery
MoM = multiples of the median
NST = nonstress test
OAT – opioid agonist therapy
PAPP-A = pregnancy associated plasma protein A
PRN = as needed
sBP = systolic blood pressure
SGA = small for gestational age
SLE = systemic lupus erythematosus
TTTS = twin to twin transfusion syndrome
Umb A = umbilical artery
US = ultrasound
x = times

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Version History

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22-Jan-2019	C-06-07-60013 Antepartum Nonstress Testing Frequency Ultrasound Surveillance	Approved at: Perinatal Best Practice Committee
23-Jul-2024	"	Maternal Newborn Committee

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