CLINICALJUDGE™ · MASTER STUDY GUIDE

MATERNAL & NEWBORN DIAGNOSTICS & PROCEDURES

Every fetal-surveillance test, imaging study, diagnostic procedure, intrapartum monitoring method, obstetric intervention, and newborn procedure the 2026 NGN NCLEX-RN can test — each with its purpose, what the result means, and the priority nursing care. Built to take you to 100%.

2026 NGN BLUEPRINT | FETAL SURVEILLANCE · IMAGING · PROCEDURES | INTRAPARTUM MONITORING | NEWBORN PROCEDURES & PROPHYLAXIS | 7 REFERENCE TABLES

RED	BLUE	GREEN	ORANGE	YELLOW	PURPLE	TEAL
RESULT INTERPRETATION	PURPOSE	PRIORITY NURSING CARE	TIMING / INDICATION	MUST-KNOW FACT	CATEGORY	TEACHING

HOW TO READ THIS GUIDE

Each card moves the way a nurse works a procedure: **purpose → result interpretation → priority nursing care.** For any invasive uterine/fetal procedure, two priorities recur: **assess fetal heart rate before & after, and give RhoGAM to an Rh-negative mother.**

01 ANTEPARTUM FETAL SURVEILLANCE

FETAL WELL-BEING TESTING

NONSTRESS TEST (NST)

noninvasive · ≥28-32 weeks

PURPOSE

Assess fetal well-being by FHR response to fetal movement (intact autonomic/oxygenation).

RESULT

REACTIVE (GOOD)
≥2 accelerations ≥15 bpm lasting ≥15 sec in 20 min

NONREACTIVE
Criteria not met → further testing (BPP/CST)

CARE

Semi-Fowler's with left tilt (avoid supine hypotension); if fetus sleeping, use vibroacoustic stimulation.

KEY

Reactive = reassuring. "Acceleration" with movement is the good sign.

CONTRACTION STRESS TEST (CST / OCT)

oxytocin or nipple stimulation

PURPOSE

Evaluate how the fetus tolerates the stress of contractions (placental reserve).

RESULT

NEGATIVE (GOOD)
No late decelerations with contractions

POSITIVE (CONCERNING)
Late decels with ≥50% of contractions → uteroplacental insufficiency

CONTRAINDICATED

Placenta previa, prior classical C-section, high preterm-labor risk.

KEY

"Negative is good" (no late decels). Positive CST = poor fetal reserve.

BIOPHYSICAL PROFILE (BPP)

ultrasound + NST · 5 components

PURPOSE

Comprehensive fetal assessment combining NST with ultrasound parameters.

SCORING

5 components × 2 pts (max 10): NST, fetal breathing, gross movement, tone, amniotic fluid volume. **8–10 reassuring · 6 equivocal · ≤4 concerning** (consider delivery).

KEY

Low amniotic fluid volume is an early warning sign of chronic placental insufficiency.

DAILY FETAL MOVEMENT COUNT (KICK COUNTS)

maternal self-monitoring

PURPOSE

Low-cost ongoing surveillance of fetal well-being at home.

TEACH

Count daily at a consistent time (often after a meal, lying on side); expect about **10 movements within 2 hours**.

KEY

Report decreased fetal movement promptly — it can signal compromise and warrants evaluation.

FETAL FIBRONECTIN (FFN)

preterm-labor prediction · 22-34 weeks

PURPOSE

Predict likelihood of preterm birth (strong negative predictive value).

RESULT

Negative = unlikely to deliver within ~2 weeks. Positive is less specific.

CARE

Collect **before** vaginal exam, intercourse, or lubricants (these cause false positives).

DOPPLER FLOW / MCA DOPPLER

fetal circulation & anemia

PURPOSE

Assess umbilical/placental blood flow; **middle cerebral artery (MCA) Doppler detects fetal anemia** (e.g., Rh sensitization).

KEY

Abnormal flow → IUGR/insufficiency; MCA Doppler guides timing of fetal transfusion.

02 IMAGING & DIAGNOSTIC PROCEDURES

ULTRASOUND · AMNIO · CVS · ROM TESTS

ULTRASOUND
transvaginal vs transabdominal

PURPOSE
Dating, fetal anatomy/growth, placental location, amniotic fluid (AFI), BPP, presentation.

CARE
1. **Early transabdominal → full bladder** (lifts uterus into view)
2. Transvaginal (early pregnancy) → empty bladder
3. Position with lateral tilt to avoid supine hypotension

KEY
Noninvasive & safe; bladder prep depends on the approach.

AMNIOCENTESIS
≥15 wks (genetic) / 3rd tri (lung maturity)

PURPOSE
Genetic studies, **fetal lung maturity (L/S ratio ≥2:1, PG present)**, bilirubin, infection.

CARE
1. Ultrasound-guided; consent; bladder per gestation
2. **Monitor FHR & for contractions/leakage** after
3. **Rh-negative → RhoGAM**; teach signs to report (bleeding, leaking fluid, fever, ↓movement)

RISK
Infection, bleeding, rupture of membranes, fetal injury.

CHORIONIC VILLUS SAMPLING (CVS)
10–13 weeks

PURPOSE
Early genetic diagnosis from placental tissue — results sooner than amniocentesis.

RISK
Miscarriage, bleeding, infection; possible limb defects if performed very early.

CARE
Consent, monitor FHR/bleeding/cramping; **Rh-negative → RhoGAM**.

KEY
CVS = earlier genetic results but **does not detect neural tube defects** (no AFP from amniotic fluid).

RUPTURE-OF-MEMBRANES TESTS
nitrazine · fern · pooling

PURPOSE
Confirm rupture of membranes (amniotic fluid vs urine).

RESULT
Nitrazine turns blue (amniotic fluid is alkaline, pH ~7.0–7.5); fernning pattern under microscope; visible pooling.

KEY
Blood, semen, and bacterial vaginosis can cause **false-positive** nitrazine; after ROM, watch for cord prolapse & infection.

PUBS / CORDOCENTESIS
percutaneous umbilical blood sampling

PURPOSE
Direct fetal blood sampling & **intrauterine transfusion** for fetal anemia/hemolytic disease.

CARE
Ultrasound-guided; monitor FHR; Rh-negative → RhoGAM; watch for bleeding/cord hematoma.

AMNIOTIC FLUID INDEX (AFI)
measured on ultrasound

RESULT
Normal ~5–25 cm. **Oligohydramnios <5** (renal/placental issues, cord-compression risk). **Polyhydramnios >25** (GI atresia, diabetes, neural tube defect).

KEY
Low fluid → cord compression/IUGR; high fluid → fetal swallowing/GI or neural tube anomaly.

03 INTRAPARTUM MONITORING
EXTERNAL · INTERNAL · FETAL ASSESSMENT

EXTERNAL ELECTRONIC FETAL MONITORING (EFM)
ultrasound transducer + tocodynamometer

PURPOSE
Continuous FHR (ultrasound transducer) + contraction **frequency/duration** (toco) — noninvasive.

CARE
Can use with intact membranes; reposition for tracing; toco shows timing but **not contraction strength**.

KEY
External toco tells you **when** contractions occur, not **how strong** they are.

INTERNAL FETAL MONITORING
fetal scalp electrode (FSE) + IUPC

PURPOSE
Most accurate FHR (FSE) + actual **contraction intensity/resting tone** (intrauterine pressure catheter).

REQUIRES
Ruptured membranes, adequate cervical dilation, presenting part down, known presentation.

RISK
Infection, fetal scalp injury — used when external tracing is inadequate.

KEY
IUPC measures contraction strength; internal monitoring needs ruptured membranes & dilation.

FETAL SCALP STIMULATION
indirect fetal status check

PURPOSE
Assess fetal well-being when FHR is questionable.

RESULT
FHR acceleration in response = reassuring (well-oxygenated fetus).

READING THE FHR STRIP
baseline · variability · decelerations

INTERPRETATION
Baseline 110–160; **moderate variability is reassuring**. Early decels (head) benign; variable decels (cord) → reposition; **late decels (placental insufficiency) → intrauterine resuscitation**.

RESCUE BUNDLE
Reposition left side · stop oxytocin · O_2 8–10 L · IV fluid bolus · notify provider.

04 INTRAPARTUM PROCEDURES
RUPTURE · INFUSION · INDUCTION · DELIVERY

AMNIOTOMY (AROM)
artificial rupture of membranes

PURPOSE

Induce/augment labor; allow internal monitoring.

CARE

1. **Assess FHR immediately before & after** (cord-prolapse risk)
2. Note fluid **color, amount, odor**, and time of rupture
3. Monitor temperature (infection risk rises over time)

KEY

Sudden variable decels/bradycardia after AROM → **suspect cord prolapse**; meconium/foul fluid → report.

AMNIOINFUSION
warmed fluid via IUPC

PURPOSE

Instill fluid into the uterus to relieve **variable decelerations (cord compression)** or dilute thick meconium.

CARE

Requires ruptured membranes/IUPC; monitor FHR, fluid output, and uterine resting tone (overdistention).

CERVICAL RIPENING & INDUCTION
prostaglandins · mechanical · oxytocin

PURPOSE

Prepare an unfavorable cervix & initiate labor (assessed by **Bishop score**).

CARE

1. Prostaglandins (dinoprostone/misoprostol) or mechanical (Foley balloon)
2. Oxytocin titration — **stop for tachysystole or late decels**
3. Continuous FHR & contraction monitoring

KEY

A higher Bishop score = more favorable cervix & greater induction success.

EXTERNAL CEPHALIC VERSION (ECV)
turning a breech fetus · ~37 weeks

PURPOSE

Manually rotate breech/transverse fetus to vertex to allow vaginal birth.

CARE

1. Ultrasound, NST, consent; **tocolytic** to relax the uterus
2. Continuous FHR monitoring; **Rh-negative → RhoGAM**
3. Be ready for emergency C-section (NPO/IV access)

CONTRAINDICATED

Placenta previa, multiple gestation, oligohydramnios, prior classical incision.

EPIDURAL / SPINAL ANESTHESIA
regional analgesia

CARE

1. **IV fluid bolus (preload)** before placement
2. Monitor for **maternal hypotension → fetal bradycardia** (reposition, fluids, may need vasopressor)
3. Assist positioning; assess bladder (retention); watch for post-dural-puncture headache

KEY

Hypotension is the most common complication — preload fluids & treat with positioning/fluids.

OPERATIVE & SURGICAL DELIVERY
forceps/vacuum · cesarean · episiotomy

PURPOSE

Assist or perform delivery when vaginal birth stalls or fetal/maternal status requires.

CARE

Vacuum/forceps → assess newborn for cephalohematoma/injury & mother for lacerations. C-section → standard perioperative + neonatal resuscitation readiness; monitor for hemorrhage/VTE post-op.

KEY

After operative vaginal delivery, assess the newborn for trauma and the mother for perineal/vaginal lacerations.

05 NEWBORN DIAGNOSTICS
SCREENS · ASSESSMENTS

APGAR ASSESSMENT
1 & 5 minutes

PURPOSE

Rapid evaluation of newborn transition & need for resuscitation.

RESULT

5 signs scored 0–2 (Appearance, Pulse, Grimace, Activity, Respirations): **7–10 good · 4–6 moderate · 0–3 severe**.

KEY

Guides resuscitation; warmth + establishing respirations are the priorities for a low score.

GESTATIONAL AGE ASSESSMENT
Ballard / Dubowitz

PURPOSE

Estimate gestational age from neuromuscular + physical maturity signs.

KEY

Identifies preterm/SGA/LGA → who needs closer glucose, thermoregulation, and respiratory monitoring.

BILIRUBIN SCREENING
transcutaneous & serum

PURPOSE

Detect hyperbilirubinemia and guide phototherapy decisions.

RESULT

Jaundice <24 h = pathologic; physiologic jaundice appears after 24 h (peaks day 3–5). Plot against hour-specific nomogram.

KEY

Untreated severe hyperbilirubinemia → kernicterus (irreversible neuro damage).

HEEL-STICK SCREENS
glucose · metabolic panel

PURPOSE

Glucose (hypoglycemia) & state newborn metabolic screen (PKU, hypothyroidism, galactosemia, sickle cell, CF).

CARE

Warm the heel; use the **lateral aspect**; collect metabolic screen **after feeding is established** (~24 h) for accurate PKU.

HEARING SCREEN
OAE / AABR before discharge

PURPOSE
Detect congenital hearing loss early for timely intervention.

CARE
Performed when newborn is calm/quiet; **failed screen → audiology referral** (re-test/diagnostic).

CRITICAL CONGENITAL HEART DISEASE (CCHD) SCREEN
pulse oximetry

PURPOSE
Detect critical CHD via SpO_2 (compares right hand = pre-ductal vs foot = post-ductal).

RESULT
Low SpO_2 or a significant pre/post-ductal difference → **failed screen → echocardiogram/cardiology** before discharge.

06 NEWBORN PROCEDURES & PROPHYLAXIS
ROUTINE CARE · MEDICATIONS

VITAMIN K (PHYTONADIONE)
IM · vastus lateralis

PURPOSE
Prevent **vitamin-K–deficiency bleeding (hemorrhagic disease of the newborn)** — the sterile gut can't yet synthesize vitamin K.

CARE
Single IM dose into the **vastus lateralis** shortly after birth.

KEY
Given to **prevent bleeding** — the newborn lacks gut flora to make clotting factors.

ERYTHROMYCIN EYE OINTMENT
prophylaxis · within ~1–2 h

PURPOSE
Prevent **ophthalmia neonatorum** (gonococcal/chlamydial eye infection from birth canal).

CARE
Apply into lower conjunctival sac inner→outer canthus; may delay briefly for parent-infant bonding/eye contact.

KEY
Mandated prophylaxis regardless of maternal infection status; protects against blindness.

HEPATITIS B VACCINE (± HBIG)
first dose before discharge

PURPOSE
Begin hepatitis B immunization.

CARE
If mother is **HBsAg-positive**, give **both Hep B vaccine AND HBIG within 12 hours** of birth.

CIRCUMCISION
elective surgical procedure

CARE
1. Verify consent & vitamin K given; assess for bleeding (#1 concern)
2. Apply petroleum gauze (Gomco/Mogen); **do not remove the yellow exudate** (normal granulation)
3. Monitor first void; comfort measures

CONTRAINDICATED
Hypospadias/epispadias (foreskin needed for surgical repair), bleeding disorders, prematurity/instability.

UMBILICAL CORD CARE
stump care

TEACH
Keep clean & **dry**; fold diaper below the stump; sponge baths until it falls off (~1–2 weeks).

REPORT
Redness, swelling, foul odor, or purulent drainage = infection (omphalitis).

PHOTOTHERAPY
treatment for hyperbilirubinemia

PURPOSE
Convert bilirubin to a water-soluble, excretable form.

CARE
1. **Eye shields** on; minimal clothing (maximize skin exposure)
2. Maintain hydration/feeding; monitor temperature & skin
3. Reposition frequently; monitor bilirubin levels

KEY
Protect the eyes & prevent dehydration/overheating; loose green stools are expected.

★ MASTER REFERENCE TABLES
THE CONSOLIDATED HIGH-YIELD DATA

07 · NST & CST INTERPRETATION

TEST	REASSURING	CONCERNING
Nonstress Test (NST)	Reactive: ≥2 accelerations ≥15 bpm × ≥15 sec in 20 min	Nonreactive: criteria not met
Contraction Stress Test (CST)	Negative: no late decels	Positive: late decels with ≥50% of contractions
Fetal scalp stimulation	FHR acceleration in response	No acceleration

08 · BIOPHYSICAL PROFILE (BPP)

COMPONENT (2 PTS EACH)	TOTAL SCORE	INTERPRETATION
1. NST (reactive)	8–10	Reassuring / normal
2. Fetal breathing movements	6	Equivocal — repeat / further eval

COMPONENT (2 PTS EACH)	TOTAL SCORE	INTERPRETATION
3. Gross body movement	≤4	Concerning — consider delivery
4. Fetal tone	Low amniotic fluid is an early indicator of chronic insufficiency	
5. Amniotic fluid volume	Each scored 0 (absent) or 2 (present); max 10	

09 · EXTERNAL VS INTERNAL FETAL MONITORING

FEATURE	EXTERNAL	INTERNAL
FHR device	Ultrasound transducer	Fetal scalp electrode (FSE)
Contraction device	Tocodynamometer (timing only)	Intrauterine pressure catheter (IUPC) — strength
Membranes	Intact OK	Must be ruptured
Cervix	Any	Must be dilated, presenting part down
Accuracy / risk	Less precise, noninvasive	Most accurate; infection/scalp-injury risk

10 · BISHOP SCORE (CERVICAL READINESS FOR INDUCTION)

COMPONENT	WHAT IT ASSESSES
Dilation	Cervical opening (cm)
Effacement	Cervical thinning (%)
Station	Fetal descent relative to ischial spines
Consistency	Firm → soft cervix
Position	Posterior → anterior cervix

Higher total score = more favorable cervix & higher likelihood of successful induction.

11 · ROUTINE NEWBORN PROPHYLACTIC MEDICATIONS

MEDICATION	PURPOSE	ROUTE / TIMING
Vitamin K (phytonadione)	Prevent hemorrhagic disease of newborn	IM, vastus lateralis, after birth
Erythromycin eye ointment	Prevent ophthalmia neonatorum	Both eyes, within ~1–2 h
Hepatitis B vaccine	Begin Hep B immunization	IM, before discharge
HBIG (if mother HBsAg+)	Passive immunity	Within 12 h (with vaccine)

12 · AMNIOTIC FLUID INDEX

FINDING	AFI	ASSOCIATIONS
Normal	~5–25 cm	Adequate fluid
Oligohydramnios	<5 cm	Renal anomalies, placental insufficiency, cord compression, IUGR
Polyhydramnios	>25 cm	GI atresia, maternal diabetes, neural tube defects, multiple gestation

13 · PROCEDURE PREP QUICK REFERENCE

PROCEDURE	KEY NURSING PREP / PRIORITY
Early transabdominal ultrasound	Full bladder (lifts uterus into view)
Transvaginal ultrasound	Empty bladder
Amniocentesis / CVS / PUBS	Consent, monitor FHR after, RhoGAM if Rh-negative
Fetal fibronectin	Collect before exam/intercourse (avoid false positive)
Amniotomy (AROM)	FHR before & after; note fluid color/odor; watch cord prolapse
External cephalic version	Tocolytic, ultrasound, RhoGAM, ready for C-section
Epidural	IV fluid preload; watch maternal hypotension
Internal monitoring (FSE/IUPC)	Requires ruptured membranes & dilation
Phototherapy	Eye shields, hydration, monitor temp, reposition
Circumcision	Bleeding check; don't remove yellow exudate; contraindicated in hypospadias

DIAGNOSTICS & PROCEDURES MASTERY CHECKLIST

SELF-CHECK BEFORE TEST DAY

I CAN CONFIDENTLY... ✓

- ☑ Interpret NST (reactive = good) and CST (negative = good)
- ☑ Teach kick counts and report decreased fetal movement
- ☑ State ultrasound bladder prep (full transabdominal early / empty transvaginal)
- ☑ Recognize that CVS gives early genetic results but misses neural tube defects
- ☑ Distinguish external vs internal monitoring and what each measures
- ☑ Provide AROM care: FHR before/after, fluid assessment, cord-prolapse vigilance
- ☑ Manage epidural hypotension with preload fluids and positioning
- ☑ Administer the routine newborn meds (vitamin K, erythromycin, Hep B/HBIG)
- ☑ Score and interpret the biophysical profile (8–10 reassuring)
- ☑ Explain fetal fibronectin (negative = unlikely preterm birth) and proper collection
- ☑ Provide post-amniocentesis/CVS care and give RhoGAM if Rh-negative
- ☑ Confirm ROM with nitrazine (blue) / fern and know false-positive causes
- ☑ List requirements for internal monitoring (ruptured membranes, dilation)
- ☑ Explain amnioinfusion for variable decels and ECV prep (tocolytic, RhoGAM)
- ☑ Apply Bishop score to gauge induction readiness
- ☑ Give safe circumcision and phototherapy care and proper cord care

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