Diagnostic Tests and Procedure Prep

Before, during and after cath, thoracentesis, paracentesis, LP, biopsies, bronchoscopy, contrast CT and MRI, scopes and bowel prep, EEG, stress tests and PFTs

EVERY PROCEDURE

- Consent: the provider explains the procedure and risks; the nurse checks the signed, witnessed form is on the chart
- Ask about allergies (medicines, numbing agents, any past contrast reaction) and possible pregnancy
- Anticoagulants and antiplatelets (warfarin, apixaban, clopidogrel, aspirin): report them; check clotting labs as ordered
- NPO as ordered; remove dentures before scopes; empty the bladder before paracentesis
- After sedation: airway, SpO2 and vital signs first. After throat numbing: nothing by mouth until the gag or cough reflex returns
- Sedated outpatient goes home with a driver; no driving, alcohol or big decisions for 24 h

EXAM TIP NCLEX asks for the first sign of the complication each test risks. Biopsy or arterial puncture: bleeding (falling BP, rising pulse). Chest needle: pneumothorax. Throat numbed: aspiration. Contrast: allergic reaction and kidney injury.

INVASIVE PROCEDURES: THE COMPLICATION TO WATCH FOR

PROCEDURE	BEFORE AND DURING	WATCH FOR AFTER, AND ACT
Cardiac cath (femoral or radial)	NPO 6–8 h; contrast and drug allergies; consent; client awake but sedated	Bleeding or hematoma at site; femoral: lie flat for the ordered hours. Check the limb below the site for colour, warmth, numbness. Falling BP with no visible bleeding: think retroperitoneal bleed, call now
Thoracentesis	Imaging before; sit up, arms and head on an over-bed table; no coughing or deep breaths during	Pneumothorax: dyspnea, chest pain, falling SpO2; chest x-ray or ultrasound after. Report breathlessness at once
Paracentesis	Void first; on the back, head flat or slightly raised	Hypotension after large-volume removal: vital signs, report dizziness. Small clear leak normal for 1–2 days
Lumbar puncture	Side-lying, knees to chest, chin tucked (or sitting bent forward); hold still. Not done with signs of a brain mass; riskier with low platelets, clotting problems or anticoagulants	Headache, worse upright: rest several hours, caffeine may help; flat only if ordered. Report a headache lasting days
Liver biopsy	Coagulation checked; supine, right hand behind head; hold breath out as the needle goes in	Bleeding: BP and pulse often for at least 3 h, right side or supine. Severe abdominal or shoulder pain, falling BP: call now
Kidney biopsy	Report blood thinners; prone (supine for a transplant kidney)	Bleeding: check every urine; some blood normal, bright red past 24 h is not. At least 12 h stay; nothing over 10 lb for 2 weeks
Bronchoscopy	NPO 6–12 h; throat numbed; IV sedation	Aspiration: nothing by mouth until the cough reflex returns (1–2 h). Also low SpO2, bleeding, pneumothorax

CONTRAST CT AND MRI

- Iodinated contrast: a past reaction to the same contrast class is the biggest risk; premedicate as ordered (e.g., prednisone 13, 7 and 1 h before)
- Shellfish or povidone-iodine allergy is no bigger risk than any other allergy (ACR); still ask about every allergy
- Warm flush and metallic taste are expected; hives, itching or trouble breathing is a reaction: report at once
- Kidneys: check creatinine/eGFR; IV saline as ordered for AKI or eGFR < 30; extra fluids afterward as ordered
- Metformin and iodinated contrast: follow the order and agency protocol, and check the eGFR first. FDA label: hold at or before the study for eGFR 30–60, liver disease, alcoholism, heart failure or intra-arterial contrast (contraindicated below 30), recheck eGFR at 48 h, restart if stable. ACR: hold only for AKI, eGFR < 30 or arterial studies, restart after 48 h once renal function is normal
- MRI: screen for pacemaker, defibrillator, aneurysm clips, cochlear implant, metal fragments; remove all metal; claustrophobia: anxiolytic or open MRI
- Gadolinium: NSF risk with dialysis, eGFR < 30 or AKI when a group I or III agent is used (group II agents are preferred); metformin need not be held

SCOPES AND BOWEL PREP

- EGD: NPO from midnight (about 8 h); dentures out; left side with a mouth guard; nothing by mouth until the gag reflex returns
- Colonoscopy prep: clear liquids or a low-residue diet the day before; avoid coloured drinks; stop iron a few days before
- Split-dose prep: second dose 4–6 h before, finished at least 2 h before the procedure (USMSTF 2025)
- Colonoscopy: left side, knees drawn up; gas and cramping afterward are expected; heavy bleeding is not
- Both scopes: rare perforation and bleeding after biopsy or polyp removal

NONINVASIVE TESTS

- EEG: wash hair the night before, no conditioner, oil, spray or gel; no caffeine for 8 h; stop no medicine unless told; sleep-deprive if ordered
- EEG: flashing light and hyperventilation can trigger a seizure: seizure precautions
- Exercise stress test: nothing to eat, smoke or drink with caffeine or alcohol for 3 h (caffeine often 24 h); comfortable shoes; ask about sildenafil-type drugs in 24–48 h
- Stop the test for chest pain, a worrying BP change or ischemic ECG changes; monitor 10–15 min after
- Regadenoson (drug stress): no caffeine, theophylline or aminophylline for 12 h; risks AV block, bronchospasm, seizure, hypotension; aminophylline reverses
- PFTs: hold bronchodilators only as ordered (SABA 4–6 h, LABA 24 h, LAMA 36–48 h); inhaled steroids need not be held; no smoking for at least 1 h (longer if the lab says so), loose clothing

SAFETY After a femoral cath, falling blood pressure with a dry dressing may mean bleeding into the retroperitoneum, where groin pressure works poorly and the blood stays hidden. Check vital signs and the site and call the provider at once; do not wait for a visible hematoma.

Sources (20) are listed with links at rnbasics.com/sheets/diagnostic-procedures.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. RN Basics is an independent study aid not affiliated with any certifying body.