

CARDIOVASCULAR · HEALTH ASSESSMENT

Cardiovascular Assessment

A systematic head-to-toe evaluation of the heart, vessels, and perfusion — distinguishing normal from abnormal findings to drive priority nursing judgment.

NGN NCLEX 2026

Clinical Judgment

Inspection · Palpation · Auscultation

Priority Recognition

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SECTION ONE

Definition & Overview

- ▶ **Cardiovascular assessment** is the systematic evaluation of cardiac function, peripheral vascular status, and tissue perfusion.
- ▶ Performed in the order: **Inspection → Palpation → Auscultation** (percussion is rarely used for cardiac exam).
- ▶ The goal is **early recognition of cues** — subtle changes (restlessness, ↓ urine output, faint pulses) precede catastrophic events like cardiogenic shock or cardiac arrest.
- ▶ Findings drive every step of the NCJMM: cues recognized here are the foundation of clinical judgment.

WHY IT MATTERS

A focused cardiac assessment takes 5 minutes and can identify life-threatening dysrhythmias, heart failure exacerbations, or perfusion failure before the patient codes.

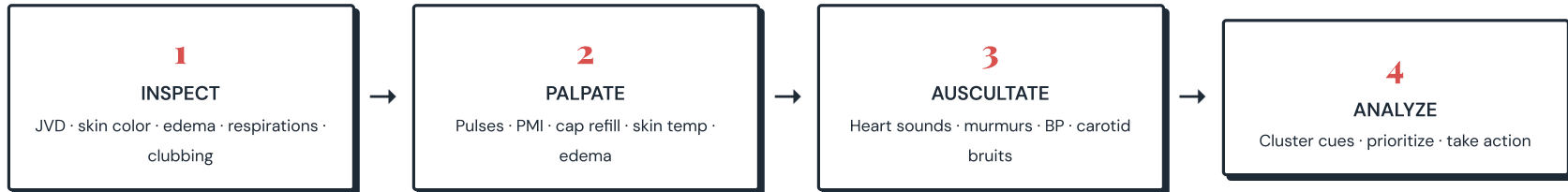
5 Domains You Will Assess

Heart	Rate, rhythm, sounds (S1, S2, S3, S4, murmurs)
Vessels	BP, peripheral pulses, JVD, capillary refill
Perfusion	Skin color, temperature, moisture, mentation
Fluid Status	Edema, lung sounds, weight, I&O
Symptoms	Chest pain, dyspnea, fatigue, syncope, palpitations

SECTION TWO

2 Pathophysiology & Assessment Flow

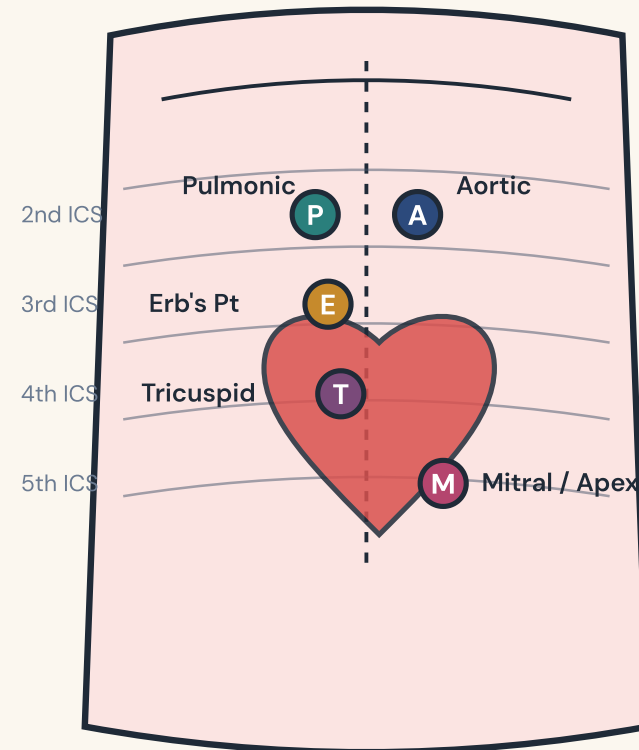
The heart pumps oxygenated blood to tissues. When pump function, rhythm, vessels, or volume fail — perfusion drops. Each assessment technique evaluates a different link in that chain.



Heart Sounds — What They Mean

Sound	Cause	Significance
S1 "lub"	AV valves close (mitral, tricuspid)	Normal · loudest at apex
S2 "dub"	Semilunar valves close (aortic, pulmonic)	Normal · loudest at base
S3	Rapid ventricular filling	🚑 HF / fluid overload in adults · normal in kids/pregnancy
S4	Atrial contraction into stiff ventricle	🚑 HTN, MI, LVH · always abnormal
Murmur	Turbulent flow through valve	Stenosis or regurgitation · grade I–VI

Five Auscultation Sites — "All Physicians Take Money"



● Aortic ● Pulmonic ● Erb's ● Tricuspid ● Mitral

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SECTION THREE

Findings — Normal vs Abnormal

System	✅ Normal	⚠️ Abnormal
Heart Rate	60–100 bpm · regular rhythm	<60 bradycardia · >100 tachycardia · irregular (AFib)
Blood Pressure	<120/80 mmHg	HTN ≥130/80 · Hypotension <90/60 · orthostatic drop ↓20 syst / ↓10 dias
Heart Sounds	S1 & S2 clear, crisp, no extras	S3 (HF) · S4 (HTN/MI) · murmurs · pericardial rub · clicks
PMI / Apical	5th ICS, midclavicular line · ≤1 cm wide	Displaced laterally/downward → cardiomegaly · heaves · thrills
Peripheral Pulses	2+ bilateral, equal, regular	0 absent · 1+ weak/thready · 3+ bounding · 4+ aneurysmal · unequal
Capillary Refill	<3 seconds	>3 seconds → poor perfusion / shock
Skin	Pink, warm, dry, intact	Cyanosis · pallor · mottling · diaphoresis · cool/clammy · clubbing (chronic hypoxia)
Jugular Veins	Flat at 45° HOB · no JVD	JVD >3 cm above sternal angle → RHF, fluid overload, tamponade
Edema	None · no pitting	Pitting 1+ to 4+ · dependent · sacral · pulmonary (crackles)
Mentation	Alert & oriented ×4 · calm	🚑 Restlessness · confusion · ↓ LOC = early shock / poor cerebral perfusion

✅ Reassuring Cluster

- ▶ Alert & oriented, calm
- ▶ HR 72, regular · BP 118/74
- ▶ S1, S2 clear · no extras
- ▶ Pulses 2+ bilaterally
- ▶ Cap refill < 2 sec · skin warm/pink
- ▶ No JVD · no edema · clear lung sounds

🚑 Worry Cluster — Act Now

- ▶ **Chest pain** — radiating, crushing, >15 min
- ▶ **Dyspnea** at rest or sudden onset
- ▶ **S3 + crackles + JVD + edema** = HF exacerbation
- ▶ **Cool, mottled, clammy** + ↓ BP + ↑ HR = shock
- ▶ **Restlessness or confusion** = ↓ cerebral perfusion (EARLY)
- ▶ **New irregular rhythm** + palpitations + dizziness

▶ **Syncope, severe bradycardia, or pulseless extremity**

 RED FLAG — THE 6 P'S OF ACUTE ARTERIAL OCCLUSION

Pain · Pallor · Pulselessness · Paresthesia · Paralysis · Poikilothermia (cold). A pulseless, cold, painful extremity is a limb-threatening emergency — notify HCP immediately.

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SECTION FOUR

Priority Nursing Interventions

A Airway · Breathing

- ▶ Assess respiratory rate, effort, SpO₂
- ▶ Auscultate lungs — crackles signal pulmonary edema (LHF)
- ▶ Position upright (Fowler's) if dyspneic
- ▶ Apply O₂ to maintain SpO₂ ≥ 94%

C Circulation

- ▶ **Apical pulse for full 60 sec** if irregular or before digoxin
- ▶ BP — both arms initially; orthostatics if dizzy
- ▶ Compare bilateral pulses simultaneously (except **carotids** — never both at once)
- ▶ Continuous ECG if dysrhythmia suspected

S Safety · Perfusion

- ▶ Fall precautions if orthostatic or bradycardic
- ▶ Monitor LOC every shift & PRN
- ▶ Strict I&O · daily weights (same time, same scale)
- ▶ Skin breakdown checks for edematous areas

Focused Cardiac Assessment Sequence

- ▶ **Inspect:** chest symmetry, JVD at 30–45°, skin color, clubbing, edema
- ▶ **Palpate:** PMI at 5th ICS MCL · radial, brachial, femoral, pedal pulses · cap refill
- ▶ **Auscultate** with diaphragm (high-pitch S1, S2) → bell (low-pitch S3, S4, murmurs)
- ▶ Auscultate at all 5 sites: **APE To Man**
- ▶ Listen to carotids for bruits (use bell, hold breath)
- ▶ Document baseline; recheck after every intervention

⚡ Priority Actions for Abnormal Findings

- ▶ **Chest pain** → MONA: Morphine, Oxygen, Nitro, Aspirin · 12-lead ECG · troponin
- ▶ **HR < 60 & symptomatic** → hold beta-blocker / digoxin · notify HCP
- ▶ **BP < 90/60** → trendelenburg modified · IV access · notify HCP
- ▶ **New murmur or S3** → assess for HF; report & document
- ▶ **Pulseless extremity** → emergency · do not elevate or apply heat
- ▶ **Restlessness** → assess perfusion BEFORE giving sedatives

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SECTION FIVE

Pharmacology — Drugs That Change Your Assessment

Cardiac medications directly alter the findings you collect. Knowing the expected effect tells you when to **hold**, **give**, or **escalate**.

Drug / Class	Effect on Assessment	Hold / Notify If...
Beta-blockers (metoprolol, atenolol, "—olol")	↓ HR · ↓ BP · ↓ contractility	HR < 60 · SBP < 100 · wheezing
Calcium-channel blockers (diltiazem, verapamil, amlodipine)	↓ HR (non-DHP) · ↓ BP · vasodilation	HR < 60 · SBP < 90 · constipation, edema
Digoxin (cardiac glycoside)	↑ contractility · ↓ HR · regular rhythm	🚫 Hold if apical HR < 60 · level > 2.0 ng/dL · N/V, yellow halos
ACE inhibitors / ARBs (lisinopril, "—pril" / losartan, "—sartan")	↓ BP · ↓ afterload · ↑ K ⁺	SBP < 90 · K ⁺ > 5.0 · dry cough, angioedema (ACE)
Diuretics — Loop (furosemide / Lasix)	↓ preload · ↓ edema · ↓ BP	K ⁺ < 3.5 · ototoxicity · orthostatic ↓ BP
Nitroglycerin (vasodilator)	↓ preload · relieves chest pain · ↓ BP	SBP < 90 · severe headache · >3 doses no relief → 911
Anticoagulants (warfarin, heparin, DOACs)	↑ bleed risk · no direct VS change	INR > 3 (warfarin) · aPTT > 2× control (heparin) · bleeding
Vasopressors (dopamine, norepinephrine)	↑ BP · ↑ HR · vasoconstriction	Extravasation = tissue necrosis · titrate to MAP ≥ 65

APICAL PULSE RULE

Always count **apical pulse for a FULL 60 seconds** before digoxin, beta-blockers, or calcium channel blockers — and any time the rhythm is irregular. Hold and notify if HR < 60 in adults (< 90 infants, < 70 children).

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SECTION SIX

NCLEX Test Traps !

✗ Wrong Answer Pattern	✓ Correct NCLEX Logic
Counting pulse for 15 seconds × 4 when rhythm is irregular	Full 60 seconds apical pulse for any irregular rhythm or before cardiac meds (digoxin, β-blockers, CCBs)
Giving digoxin when apical HR is 58	Hold digoxin if apical pulse < 60 (adult) — recount, then notify HCP
Treating restlessness with sedatives first	Restlessness is the EARLIEST sign of hypoxia / poor perfusion — assess oxygenation and circulation FIRST
Palpating both carotids at the same time	NEVER palpate carotids simultaneously — risk of decreased cerebral perfusion / vagal response
Using diaphragm for S3/S4 or murmurs	Bell = low-pitched (S3, S4, murmurs of mitral stenosis); Diaphragm = high-pitched (S1, S2, friction rub)
Calling JVD a "normal aging" finding	JVD > 3 cm above sternal angle at 45° = right-sided HF, fluid overload, or tamponade — never normal
Confusing left-sided vs right-sided HF	Left = Lungs (crackles, dyspnea, orthopnea) · Right = Rest of body (JVD, peripheral edema, hepatomegaly)
Reporting orthostatic drop only after BP changes	Orthostatic = drop of ≥ 20 systolic OR ≥ 10 diastolic within 3 min of position change · check pulse change too
Choosing "give pain medication" for pulseless cold leg	Acute arterial occlusion = EMERGENCY — do NOT elevate, do NOT apply heat, notify HCP STAT
Selecting "increase fluids" for new S3 + crackles	S3 + crackles = fluid overload / HF — restrict fluids, give diuretics, elevate HOB

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SECTION SEVEN

NCJMM Clinical Judgment Framework

Scenario: 72 y/o post-op day 2 reports new dyspnea. HR 112, BP 96/60, SpO₂ 89%, crackles in bases, S3 present, JVD, 2+ pedal edema, restless.

Step 1

Recognize Cues

Tachycardia, hypotension, ↓ SpO₂, crackles, S3, JVD, edema, restlessness — multiple system cues consistent with cardiopulmonary compromise.

Step 2

Analyze Cues

S3 + crackles + JVD + edema cluster strongly suggests **acute heart failure exacerbation**; restlessness signals early hypoxia.

Step 3

Prioritize Hypotheses

HF exacerbation > PE > MI > sepsis. Address oxygenation and pump failure first; rule out PE/MI in parallel.

Step 4

Generate Solutions

High-Fowler's, O₂ to keep SpO₂ ≥ 94%, IV access, 12-lead ECG, BNP/troponin, anticipate IV diuretic, restrict fluids, daily weights.

Step 5

Take Action

Position upright, apply O₂, place on monitor, notify HCP with SBAR, draw labs, initiate strict I&O, prepare furosemide IV per order.

Step 6

Evaluate Outcomes

Recheck VS & SpO₂ q15 min, urine output ≥ 30 mL/hr, lung sounds clearing, ↓ JVD, calmer mentation = improving perfusion.

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SECTION EIGHT

Patient & Family Education

Call 911 / Provider Immediately For...

- ▶ Chest pain unrelieved by rest or 3 doses of nitroglycerin (5 min apart)
- ▶ Sudden severe shortness of breath
- ▶ Fainting, near-fainting, or new confusion
- ▶ Cool, blue, painful, or pulseless arm/leg
- ▶ Pulse < 50 or > 120 with symptoms
- ▶ Sudden weight gain > 2–3 lb overnight or 5 lb in a week

Daily Self-Monitoring

- ▶ Take BP & pulse at the **same time daily** — log readings
- ▶ Weigh first thing in the morning, after voiding, same scale, same clothing
- ▶ Inspect feet/legs daily for swelling, color changes, wounds
- ▶ Report swelling that leaves a pit or new ankle edema

Lifestyle & Heart-Healthy Habits

- ▶ **DASH diet:** ↑ fruits, vegetables, whole grains, lean protein, low-fat dairy
- ▶ Limit sodium < 2,300 mg/day (1,500 mg if HTN/HF)
- ▶ 30 min moderate aerobic activity, 5 days/week (with HCP clearance)
- ▶ Smoking cessation · limit alcohol · stress reduction
- ▶ Maintain healthy weight (BMI 18.5–24.9)

Medication Safety

- ▶ Take cardiac meds at the same time each day — do not skip
- ▶ Never stop beta-blockers abruptly (rebound HTN, MI risk)
- ▶ Warfarin: consistent vitamin K intake; report unusual bleeding
- ▶ Carry a list of meds and allergies at all times
- ▶ Check pulse before digoxin — hold < 60 and call provider



SECTION NINE

Memory Boosters & Mnemonics

APE To Man

Auscultation sites — top to bottom, right to left

- A**ortic — 2nd ICS, R sternal border
- P**ulmonic — 2nd ICS, L sternal border
- E**rb's Point — 3rd ICS, L sternal border
- T**ricuspid — 4th ICS, L sternal border
- M**itral / Apex — 5th ICS, midclavicular line

6 P's

Acute arterial occlusion — limb-threatening!

- P**ain
- P**allor
- P**ulselessness
- P**aresthesia
- P**aralysis
- P**oikilothermia (cold)

L = Lungs • R = Rest

Heart failure pattern recognition

- L**eft HF → **L**ungs (crackles, orthopnea, frothy sputum)
- R**ight HF → **R**est of body (JVD, edema, hepatomegaly, ascites)

MONA

Acute chest pain / suspected MI initial care

- M**orphine — for unrelieved pain
- O**xygen — keep SpO₂ ≥ 94%
- N**itroglycerin — sublingual q5 min × 3
- A**spirin — 325 mg chewed (non-enteric)

Bell vs Diaphragm

Stethoscope tip selection

- B**ell → **L**ow-pitched (S3, S4, mitral stenosis murmur)
- D**iaphragm → **H**igh-pitched (S1, S2, friction rub, lung sounds)

Pulse 0-4

Peripheral pulse grading scale

- 0** Absent — emergency if acute
- 1+** Weak / thready
- 2+** Normal · expected finding
- 3+** Bounding (HTN, fluid overload)
- 4+** Aneurysmal · very strong

Recognize cues early · Cluster findings · Prioritize ABCs · Apical pulse for irregular rhythm · S3 = HF until proven otherwise · Restlessness = early hypoxia