HEALTH ASSESSMENT · STUDY GUIDE

Final Exam Study Guide

This guide covers the whole course, chapters 1 to 14, in a shorter form than the exam guides. Each chapter has the core ideas, the diagram from its exam guide, one table of numbers or rules, two quick worked cases, the traps and six new self-test items. Use it after you have worked the exam guides. The cram sheet at the end pulls every number, scale and red flag from the course into one place.

WHAT THIS GUIDE COVERS

- Chapters 1 to 4 · scope, delegation and the law; the nursing process and clinical judgment; communication, documentation and handoff; safety, asepsis and infection prevention.
- Chapters 5 to 8 · vital signs; the health history and interview; general survey, pain and mental status; skin, hair and nails.
- Chapters 9 to 12 · head, neck, eyes, ears, nose and throat; thorax and lungs; heart and peripheral vessels; abdomen, nutrition and elimination.
- Chapters 13 and 14 · musculoskeletal and neurologic systems; hygiene, mobility, skin integrity and core skills.

CHAPTER 1

The Nurse, Professional Practice and Scope

Read it in full: **Chapter 1 in the textbook**. Practice it in the lab: **Your License on the Line** and **Delegation Decider: UAP, LPN or RN Only**.

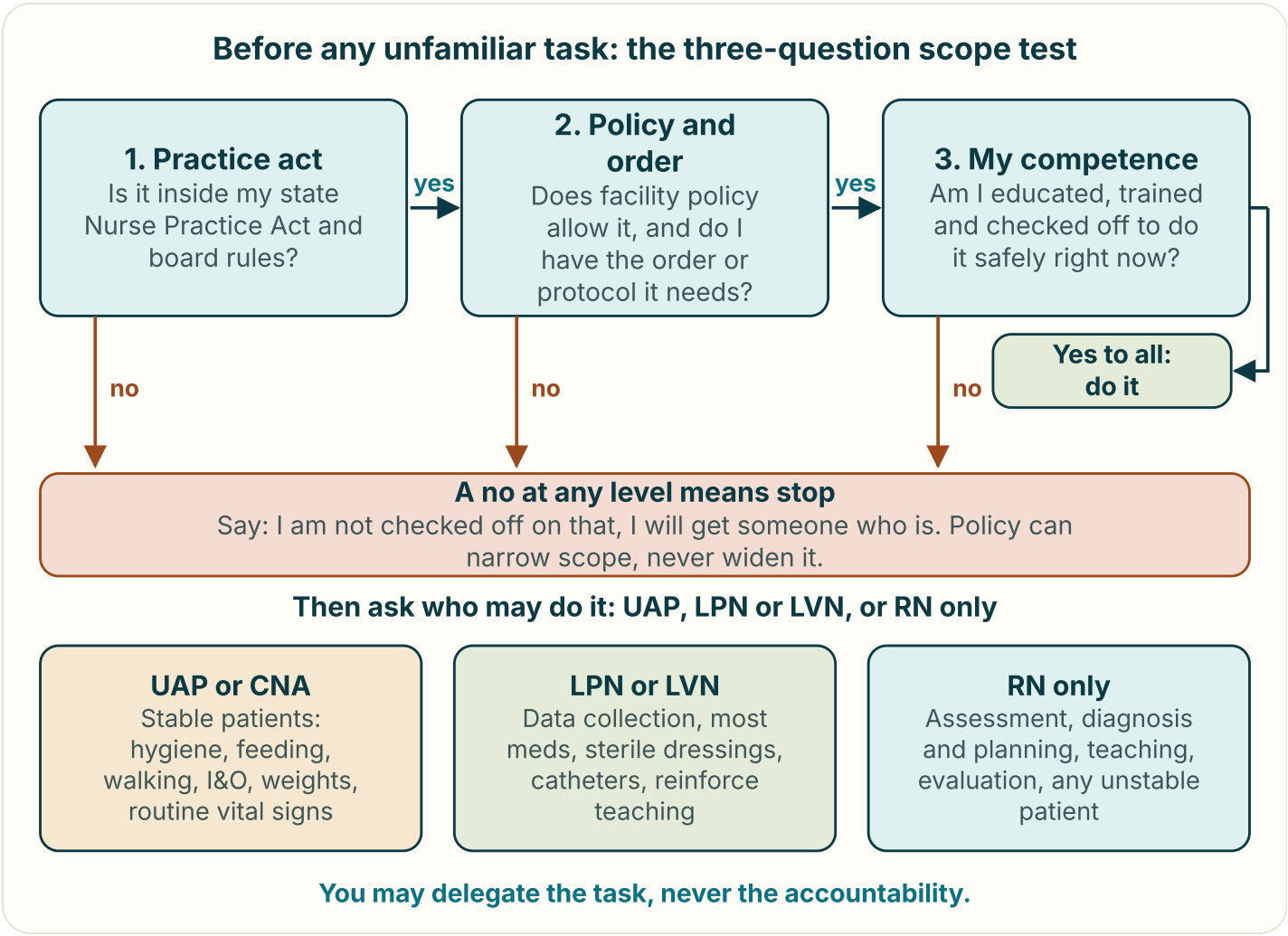
What to know

Your license comes from a state statute, the Nurse Practice Act, enforced by the board of nursing. Policy can narrow scope but never widen it. Under the compact you follow the law of the state where the patient is. Before any new task, check the practice act, then policy and orders, then your own competence; a no anywhere means stop.

Delegation moves the task, never the accountability. The five rights: task, circumstance, person, direction and communication, supervision and evaluation. Assessment, diagnosis and planning, teaching, evaluation and any unstable patient stay with the RN.

You are judged against the standard of care. Negligence needs duty, breach, causation and damages. The nurse checks that consent is informed and voluntary and witnesses it; the provider explains. Restraint orders are never PRN: 4 hours adult, 2 hours ages 9 to 17, 1 hour under 9, with a face to face within 1 hour.

> **LOCK THESE IN**
>
> - Policy narrows scope, never widens it.
> - Delegate the task, keep the accountability.
> - Duty, breach, causation, damages.
> - Inspect, palpate, percuss, auscultate; abdomen: inspect, auscultate, percuss, palpate.
> - Children 1 to 10: hypotension below 70 + 2 × age.



The scope test, then the delegation split. Run the three questions in order before any new task. A no at any step ends it. Then match the task to the lowest role that may legally do it, keeping assessment, teaching, evaluation and unstable patients with the RN.

Chapter 1 numbers

Item	Value	Note
Adult vital signs	T 36.5 to 37.5 °C; P 60 to 100; R 12 to 20; BP under 120/80; SpO_2 95 to 100%	Fever 38.0 °C
Red flags	RR < 8 or > 28; HR < 40 or > 130; SBP < 90 or 40 below baseline	New confusion; SpO_2 < 90%
Older adult fever	37.8 °C or 1.1 °C over baseline	New confusion may be the only sign
Urine	At least 30 mL/h or 0.5 mL/kg/h	Report under 30 for 2 h
Restraint order	4 h adult; 2 h ages 9 to 17; 1 h under 9	Face to face within 1 h

Worked cases

CASE 1.1 · SCOPE TEST

A provider asks a new nurse to titrate a drip; there is no protocol and the nurse has never been checked off.

STEP 1 · POLICY AND ORDER

No protocol: the second question fails.

STEP 2 · COMPETENCE

Never validated: the third fails too.

STEP 3 · WORDS

"I am not checked off on that; I will get someone who is."

CASE 1.2 · PEDIATRIC FLOOR

A 3 year old has a systolic of 74.

STEP 1 · COMPUTE

70 + 2 × 3 = 76.

STEP 2 · READ

74 is below 76: hypotensive, a late sign.

STEP 3 · ACT

Escalate now.

TRAPS PEOPLE FALL INTO

- **Trusting policy over the statute.** The practice act is the ceiling.
- **Delegating vitals on an unstable patient.** Instability keeps the task with the RN.
- **Calling the threat battery.** The threat is assault; contact is battery.
- **Charting "afebrile" at 37.8 °C in an older adult with confusion.** That is a significant fever.

Chapter 1 self-test · six items

1. A nurse holds a compact license and cares for a patient by telehealth across state lines. Which law governs the visit?

A. The patient's state law
B. The nurse's home state law
C. The issuing state's law
D. The employer's written policy

A. The patient's state law You practice under the law of the state where the patient is located.

2. Which of these is the RN's alone to perform?

A. Feeding a patient with no swallow risk
B. Evaluating a patient's response to a drug
C. Recording intake and output on a stable patient
D. Taking routine vital signs on a stable patient

B. Evaluating a patient's response to a drug Evaluation never leaves the RN. The others can be delegated for stable patients.

3. A patient refused a procedure, and it was done anyway. Which tort is this?

A. Assault
B. Defamation
C. Battery
D. Slander

C. Battery Performing a procedure a competent patient refused is unconsented contact: battery.

4. Which element must be present for negligence besides duty, breach and causation?

A. Intent to cause harm
B. A written complaint
C. A witness to the act
D. Damages, a real injury

D. Damages, a real injury All four elements are needed: duty, breach, causation and damages.

5. An older adult is newly confused, with an oral temperature of 37.8 °C. How is the temperature read?

A. A significant fever for an older adult
B. Afebrile, since it is under 38.0 °C
C. Normal variation that needs no action
D. A low reading caused by the route used

A. A significant fever for an older adult Older adults have a blunted fever; 37.8 °C with new confusion warrants a sepsis screen.

6. Which finding is the earliest and most often ignored sign of deterioration?

A. A falling blood pressure
B. A rising temperature
C. A rising respiratory rate
D. A drop in urine output

C. A rising respiratory rate Reviews of failure to rescue find a rising respiratory rate documented hours before arrest.

CHAPTER 2

The Nursing Process and Clinical Judgment

Read it in full: **Chapter 2 in the textbook**. Practice it in the lab: **The Assessment Bench** and **From Cue to Nursing Diagnosis**.

What to know

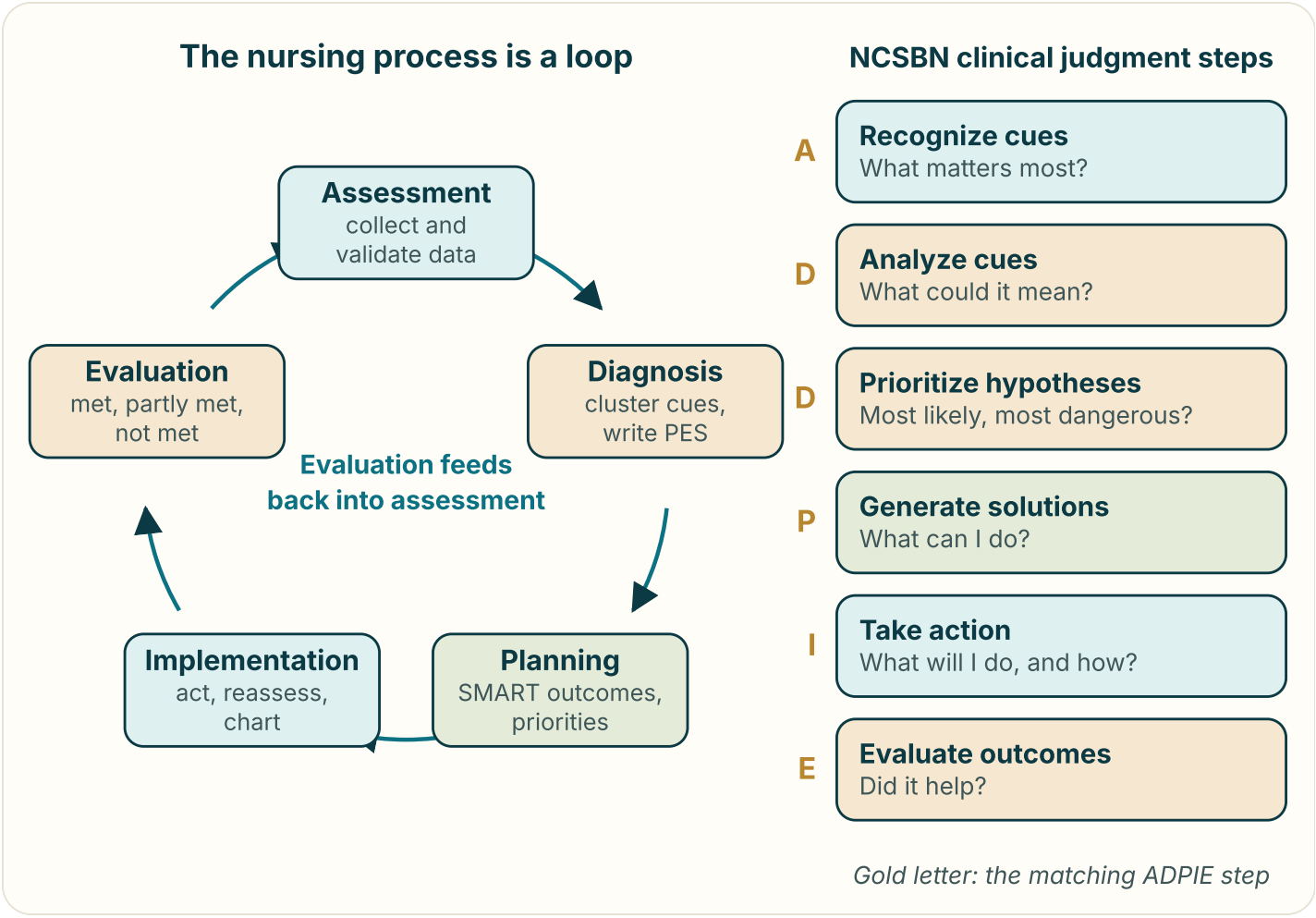
ADPIE is a loop: evaluation is the next assessment. Subjective data are reported; objective data are measured. The patient is the primary source. When data conflict, validate before acting: a full minute apical pulse, a manual pressure, the question asked again.

Cues are clustered into patterns. A nursing diagnosis names the response, not the disease. Actual diagnoses use PES; risk diagnoses have two parts and no "as evidenced by." Never use a medical diagnosis as the etiology. Prioritize ABC, then Maslow, then actual before risk and acute before chronic.

SMART outcomes describe the patient's behavior with a deadline. Interventions are independent, dependent or collaborative. Reassess IV analgesia in 15 to 30 minutes and oral in 45 to 60. The Clinical Judgment Measurement Model has six steps: recognize cues, analyze cues, prioritize hypotheses, generate solutions, take action, evaluate outcomes. qSOFA is positive with two of RR ≥ 22, altered mentation, SBP ≤ 100.

LOCK THESE IN

- Validate a surprising number before acting.
- PES for actual; two parts for risk.
- ABC, then Maslow.
- SMART: the patient does it, by a deadline.
- qSOFA: any two of three.



One loop, two vocabularies. ADPIE never stops: every evaluation is a new assessment. The six NCSBN steps make the reasoning between assessment and action explicit and line up with ADPIE almost step for step.

Chapter 2 rules

Item	Rule	Example
Actual diagnosis	P r/t E AEB S	Impaired gas exchange r/t alveolar changes AEB SpO_2 88%
Risk diagnosis	Label r/t risk factors	Risk for falls r/t postural hypotension
Priority	ABC, Maslow, actual before risk, acute before chronic	Stridor before pain
Reassessment	IV 15 to 30 min; oral 45 to 60 min; O_2 change 15 min	Chart the response
qSOFA	RR ≥ 22, altered mentation, SBP ≤ 100	Two or more: escalate

Worked cases

CASE 2.1 · FIXING A RISK DIAGNOSIS

"Risk for infection r/t surgery AEB incision."

STEP 1 · COUNT PARTS

Risk diagnoses have two parts; drop "AEB."

STEP 2 · FIX ETIOLOGY

Name treatable factors: incision, catheter, steroids.

CASE 2.2 · QSOFA

RR 24, new confusion, SBP 104.

STEP 1 · SCORE

RR yes, confusion yes, SBP no (over 100): 2 of 3.

STEP 2 · ACT

Positive: escalate for sepsis care.

TRAPS PEOPLE FALL INTO

- **Charting a number you did not obtain.** Recheck it yourself.
- **Writing the nurse's action as an outcome.** Outcomes describe the patient.
- **Using "related to pneumonia."** You cannot treat a medical diagnosis.
- **Skipping reassessment.** Undocumented reassessment looks like failed care.

Chapter 2 self-test · six items

1. A family member reports that the patient "has not been himself." What kind of data is this?

A. Objective data from a primary source
B. Subjective data from the primary source
C. Objective data from a secondary source
D. Subjective data from a secondary source

D. Subjective data from a secondary source It is reported, not measured, and comes from someone other than the patient.

2. Which diagnosis has the right structure for a risk problem?

A. Risk for falls AEB a fall last week
B. Risk for falls r/t sedative use and weakness
C. Risk for falls r/t Parkinson disease AEB gait
D. Falls r/t weakness AEB two falls at home

B. Risk for falls r/t sedative use and weakness Risk diagnoses have two parts and a nursing-treatable etiology.

3. Four patients need care. Who is seen first?

A. The patient wanting pain medicine
B. The patient due for an antibiotic
C. The patient asking about discharge
D. The patient who has new stridor

D. The patient who has new stridor Airway comes first.

4. Which outcome is measurable and time bound?

A. Keeps SpO_2 94% or more on 2 L until 1900
B. Patient will breathe more easily soon
C. Nurse will titrate the oxygen as needed
D. Patient will understand oxygen safety

A. Keeps SpO_2 94% or more on 2 L until 1900 It names a measure, a condition and a deadline.

5. In the CJMM, choosing to obtain cultures and a lactate is part of which steps?

A. Recognize cues and analyze cues
B. Generate solutions, take action
C. Prioritize the hypotheses only
D. Evaluate the outcomes only

B. Generate solutions, take action Selecting and carrying out interventions are generate solutions and take action.

6. A dull note is heard over the lower lung field. What does it most likely mean?

A. Normal, air filled lung tissue
B. Trapped air from emphysema
C. Fluid or solid replacing air
D. The gastric air bubble below

C. Fluid or solid replacing air Dullness over lung suggests consolidation, effusion or atelectasis.

CHAPTER 3

Communication, Documentation and Handoff

Read it in full: **Chapter 3 in the textbook**. Practice it in the lab: **The Record Bench** and **The Escalation Line**.

What to know

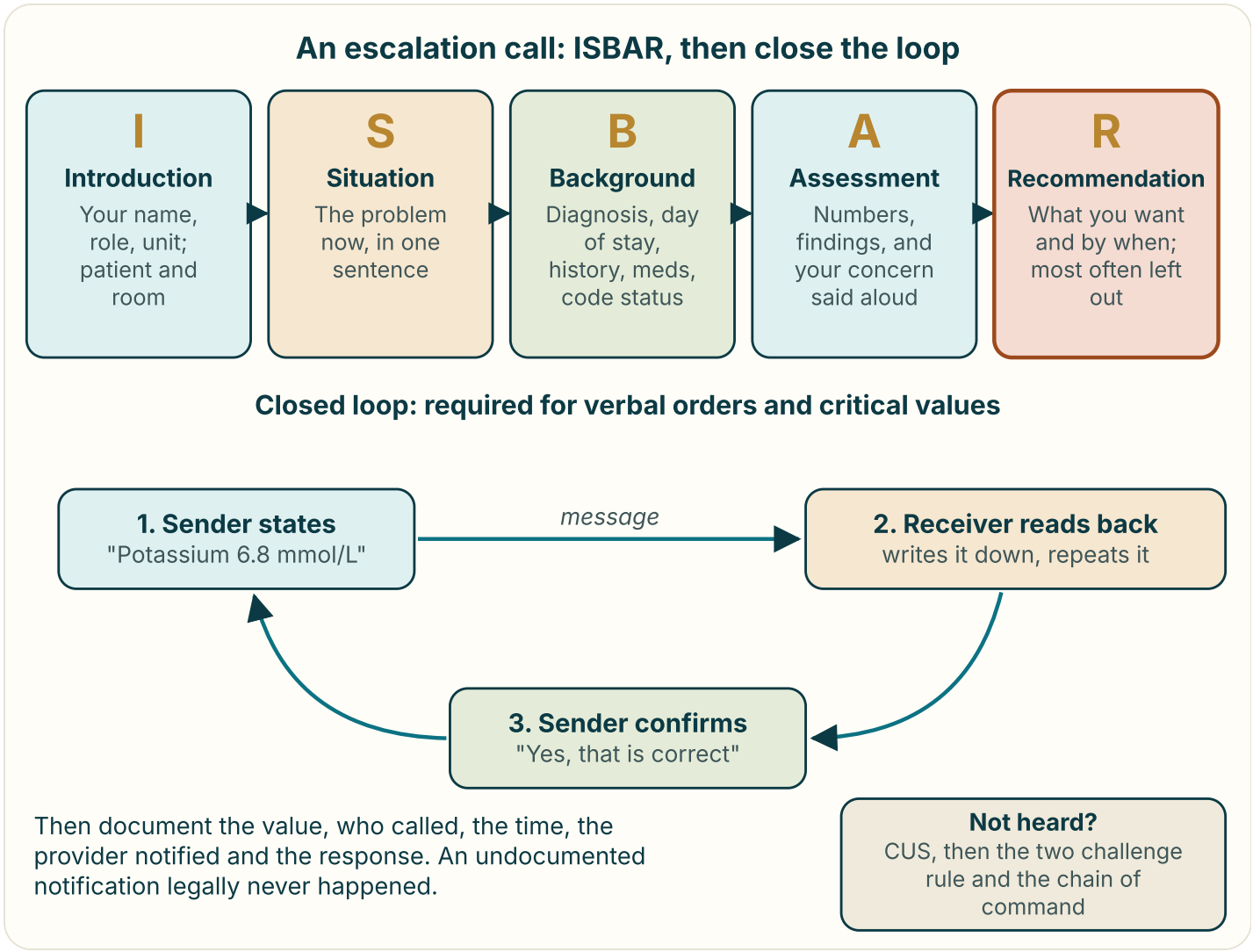
Peplau's phases are orientation, working and termination. Silence, reflection and open questions open the door; false reassurance, "why" questions and advice close it. Sit at eye level. Use a qualified interpreter, never a child, and teach-back to test your teaching.

SBAR or ISBAR ends with a specific Recommendation and timeframe. Read back verbal orders and critical values (for example potassium below 2.5 or above 6.5, platelets below 50,000). Not heard? Use CUS and the two challenge rule, and go up the chain. A rapid response needs no permission.

Chart measurements and quotes, correct with a single line, label late entries, avoid the Do Not Use list, and never mention the incident report. I-PASS ends with synthesis by the receiver; bedside report includes a joint safety check.

LOCK THESE IN

- Silence: wait three to five seconds.
- Qualified interpreter; never a child.
- SBAR ends with the ask.
- Read back, then document the notification.
- I-PASS ends with the receiver saying it back.



Say it in order, then close the loop. ISBAR puts the headline first and ends with a specific request. Every verbal order and critical value is read back and confirmed, then charted with names and times.

Chapter 3 numbers and lists

Item	Value	Note
Call now	RR < 8 or > 28; HR < 40 or > 130; SBP < 90	SpO_2 < 90%; new confusion; GCS drop 2
Glucose	Below 70 treat, recheck in 15 min; above 400 call	Treat before you call
Critical values	K < 2.5 or > 6.5; Na < 120 or > 160; Hgb < 7	Platelets < 50,000; INR > 5
Do Not Use	U, IU, QD, QOD, trailing zero, missing leading zero, MS, MSO_4, $MgSO_4$	Write it out
I-PASS	Illness severity, Patient summary, Action list, Situation awareness, Synthesis	Handoff

Worked cases

CASE 3.1 · A CRITICAL VALUE

The lab calls a potassium of 6.8 mmol/L.

STEP 1 · READ BACK

Write it, read it back, note the caller and time.

STEP 2 · ASSESS AND NOTIFY

Monitor rhythm, call with SBAR and a request, document the notification.

CASE 3.2 · AN UNSAFE ORDER

"Morphine 2.0 mg IV q4h."

STEP 1 · FIND THE ERROR

A trailing zero can be read as 20 mg.

STEP 2 · FIX

Clarify: "morphine sulfate 2 mg."

TRAPS PEOPLE FALL INTO

- **Ending SBAR without a request.** The provider has to guess.
- **Shouting at a hard of hearing older adult.** Lower your pitch instead.
- **Backdating a missed note.** Label a late entry.
- **Copying forward an assessment.** You copy the errors too.

Chapter 3 self-test · six items

1. A frightened patient says, "I do not think I will make it through surgery." Which reply is most therapeutic?

A. "Tell me more about what worries you."
B. "Don't worry, the surgeon is excellent."
C. "Why would you think something like that?"
D. "Let us talk about something more pleasant."

A. "Tell me more about what worries you." An open invitation keeps the conversation going. The others reassure falsely, accuse or change the subject.

2. What does teach-back measure?

A. How smart the patient is
B. How well the nurse taught
C. How long teaching took
D. How much the family knows

B. How well the nurse taught Teach-back tests the teaching, not the patient.

3. A sodium of 118 mmol/L is called by the lab. What is the first step?

A. Call the provider before writing it
B. Ask the lab to fax it later instead
C. Write it down and read it back
D. Recheck it with a fingerstick first

C. Write it down and read it back Closed loop: write, read back, confirm, then notify and document.

4. Which handoff step confirms the patient has been accepted?

A. The sender lists every medicine
B. The sender signs the handoff form
C. The receiver reads the full chart
D. The receiver restates the plan

D. The receiver restates the plan Synthesis by the receiver is the point of I-PASS.

5. Which charting entry is correct?

A. "Pt uncooperative, refused morning meds."
B. "Pt difficult; incident report filed."
C. "Declined metoprolol: 'It makes me dizzy.'"
D. "Pt seems fine; will keep an eye on it."

C. "Declined metoprolol: 'It makes me dizzy.'" Quote the patient and chart facts. Labels and references to incident reports do not belong.

6. A concern was raised twice and not addressed, and the patient is worse. What next?

A. Wait for the next scheduled vitals
B. Go up the chain and call a rapid response
C. Document it and tell the oncoming nurse
D. Ask the family to call the provider

B. Go up the chain and call a rapid response The two challenge rule obliges escalation.

CHAPTER 4

Safety, Asepsis and Infection Prevention

Read it in full: **Chapter 4 in the textbook**. Practice it in the lab: **The Fall Risk & Restraint Bench** and **The Asepsis Bench**.

What to know

Two identifiers, never the room number; anyone may stop a time-out. Morse 45 or more is high risk; round on pain, potty, position, possessions. Four rails up is a restraint. After a fall, assess in place before moving. RACE and PASS for fire.

Infection needs all six links: agent, reservoir, exit, transmission, entry, susceptible host. Colonization is not infection. Older adults may never pass 38.0 °C; neonates under 28 days with rectal 38.0 °C need a full workup. Neutropenic fever means antibiotics within 1 hour.

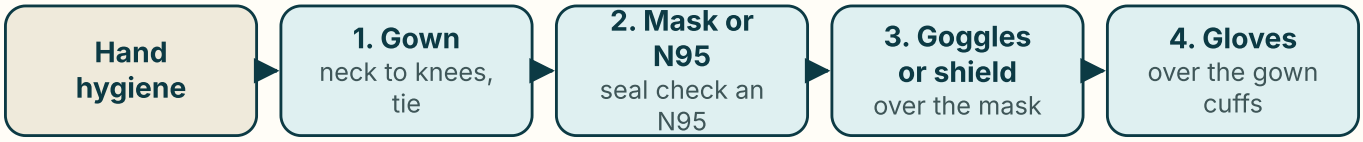
Hand hygiene at the five moments; soap and water for soiled hands, C. difficile, norovirus, anthrax, before eating and after the restroom. Don gown, mask, goggles, gloves; doff gloves, goggles, gown, mask, N95 removed outside. Contact: gown and gloves. Droplet: surgical mask. Airborne: N95, negative pressure, door closed. Doubt equals contamination in a sterile field.

LOCK THESE IN

- Two identifiers.
- Morse 45 or more: high risk.
- Soap and water for spores.
- Gloves off first; mask off last.
- Airborne: N95 and negative pressure.

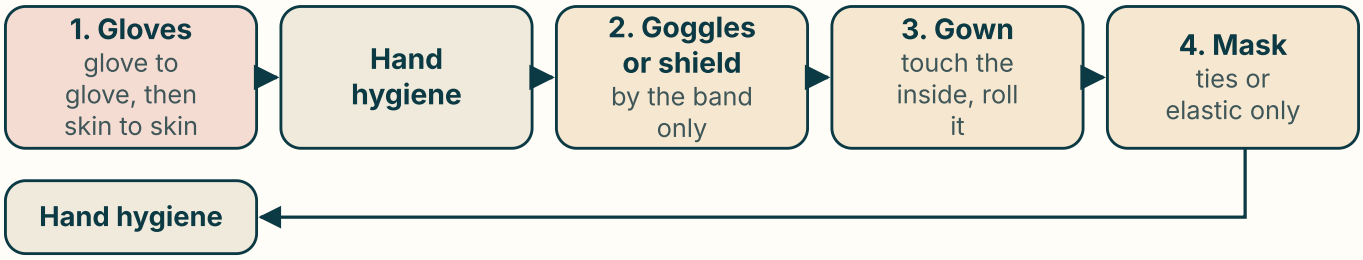
PPE: the order is the safety feature

DONNING, before entering



Memory hook: gown, mask, goggles, gloves (gloves last, covering the cuffs)

DOFFING, at the doorway inside the room



Memory hook: gloves, goggles, gown, mask (dirtiest off first, mask last)

Airborne precautions exception

Remove the N95 respirator only AFTER you leave the room and close the door. It is the only item ever removed outside.

On in size order, off dirtiest first. Donning ends with gloves so they overlap the gown. Doffing starts with gloves and ends with the mask, with hand hygiene between and at the end. In an airborne room the respirator comes off outside.

Chapter 4 numbers

Item	Value	Note
Morse	45 or more high; 25 to 44 moderate	Hendrich II 5 or more
Alcohol rub	60 to 95%, 20 to 30 s until dry	Handwash at least 20 s
Airborne clearance	12 ACH: 23 and 35 min; 6 ACH: 46 and 69 min	99% and 99.9%
Exposure risk	HIV about 0.3%; HCV 1.8%; HBV up to 30% unvaccinated	PEP within hours, by 72 h
Neutropenic fever	38.3 °C or sustained 38.0 °C, ANC < 500	Antibiotics within 1 h

Worked cases

CASE 4.1 · AIR CLEARANCE

A TB patient left a 12 ACH room at 1340.

STEP 1 · FIND THE TIME

35 minutes for 99.9%.

STEP 2 · ADD

1340 + 35 min = 1415.

CASE 4.2 · WHICH PRECAUTION

A child with varicella is admitted.

STEP 1 · TIER

Airborne plus contact.

STEP 2 · SETUP

Negative pressure, N95, gown and gloves; immune staff.

TRAPS PEOPLE FALL INTO

- **Alcohol rub after C. difficile.** Wash with soap and water.
- **N95 on the patient for transport.** The patient wears a surgical mask.

- **Restraint tied to the side rail.** Use the frame.
- **"No fever, so no infection" in an older adult.** Look for confusion, falls, poor intake.

Chapter 4 self-test · six items

1. Which identifiers are acceptable before giving a blood product?

A. Room number and bed letter
B. Diagnosis and room number
C. Provider name and diagnosis
D. Full name and date of birth

D. Full name and date of birth Name, date of birth and record number are identifiers; a room never is.

2. A patient with norovirus has just been helped to the toilet. Which hand hygiene fits?

A. Soap and water for 20 seconds
B. Alcohol rub for 20 seconds
C. A fresh pair of gloves only
D. A bleach wipe for the hands

A. Soap and water for 20 seconds Norovirus resists alcohol; wash with soap and water.

3. Which item is removed first when doffing PPE?

A. Gloves
B. Gown
C. Mask
D. Goggles

A. Gloves Gloves are the dirtiest item and come off first.

4. Which patient needs an airborne isolation room?

A. A patient with influenza A
B. A patient with MRSA in urine
C. A patient with active TB
D. A patient with pertussis

C. A patient with active TB TB is airborne. Influenza and pertussis are droplet; MRSA is contact.

5. A drape is wet where it lies on the table. What does this mean?

A. It stays sterile once it dries
B. The field is contaminated
C. Only the wet corner is replaced
D. Moisture makes it cleaner

B. The field is contaminated Moisture wicks organisms up from below: replace the field.

6. Which CLABSI bundle step is correct?

A. Change the dressing only when it falls off
B. Prefer the femoral site in adult patients
C. Leave the line in place until discharge
D. Scrub the hub 10 to 15 s and let it dry

D. Scrub the hub 10 to 15 s and let it dry Scrubbing the hub before every access is part of the bundle.

CHAPTER 5

Vital Signs

Read it in full: **Chapter 5 in the textbook**. Practice it in the lab: **The Temperature Bench** and **Breath and Saturation**.

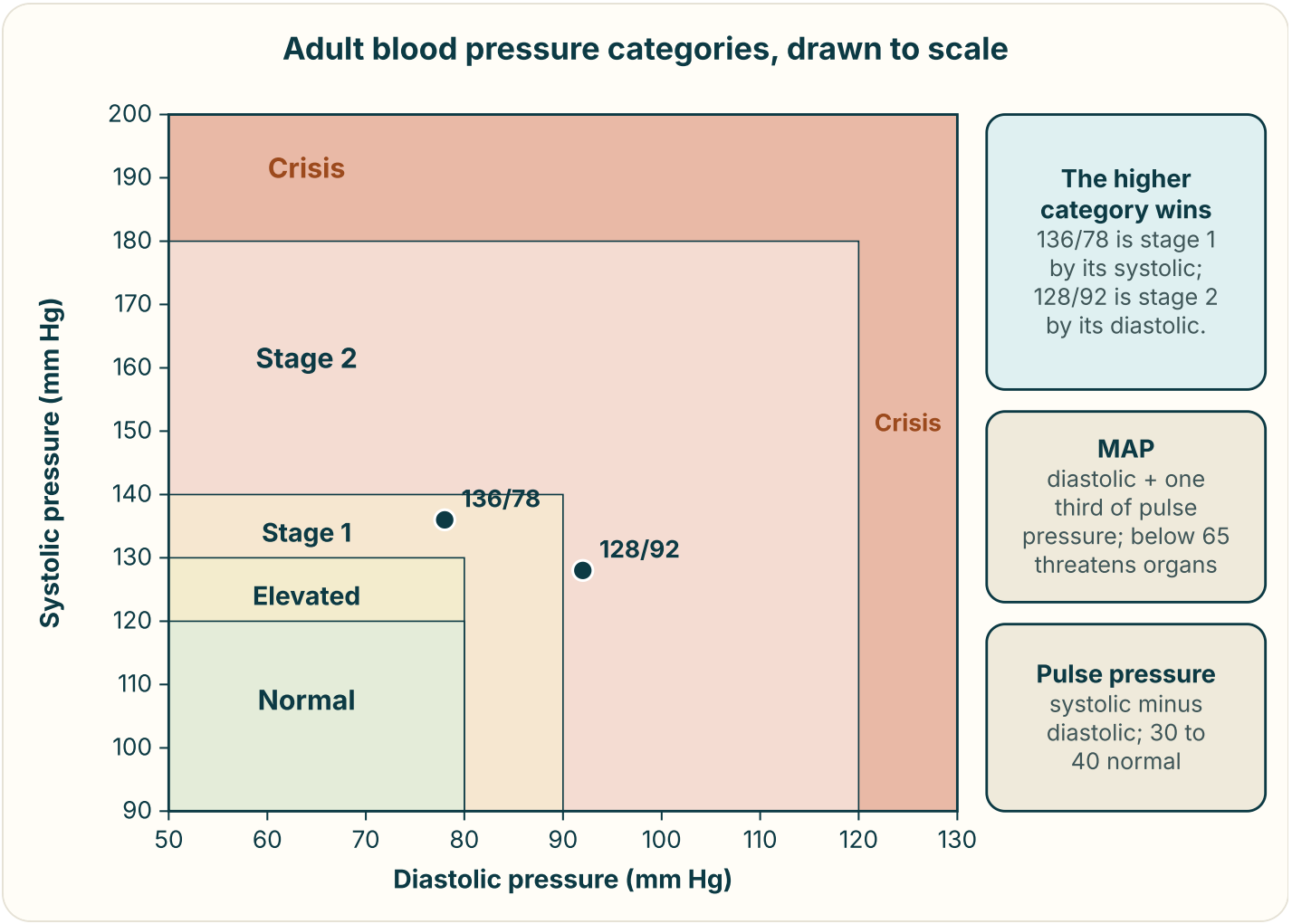
What to know

Trend beats snapshot. Count respirations unannounced. Chart the temperature route: rectal about 0.5 °C above oral, axillary about 0.5 °C below. Fever is a raised set point; hyperthermia needs cooling, not antipyretics.

Pulse: rate, rhythm and amplitude 0 to 4+. Irregular rhythms get a full minute apical count; a pulse deficit needs two nurses at once. SpO_2 90% is about PaO_2 60; oximetry fails in CO poisoning and poor perfusion and can overestimate in darker skin.

Cuff width 40% of the arm, length 80%. Too small reads high. Palpate the systolic first to beat the auscultatory gap and deflate 2 to 3 mm Hg per second. Categories: normal under 120 and under 80, elevated 120 to 129, stage 1 130 to 139 or 80 to 89, stage 2 140 or 90, crisis over 180 and/or 120. MAP = diastolic + one third of pulse pressure. Orthostatic positive: SBP down 20 or DBP down 10 within 3 minutes.

> **LOCK THESE IN**
>
> - Chart the route.
> - Irregular pulse: apical, full minute.
> - Cuff too small reads high.
> - MAP below 65 threatens organs.
> - Orthostatic: down 20 or down 10.



Read both numbers, then take the higher category. Each band is defined by systolic or diastolic, so one high number is enough to move a reading up. Points are plotted to scale.

Chapter 5 numbers

Item	Value	Note
Adult	T 36.5 to 37.5 °C; P 60 to 100; R 12 to 20	BP under 120/80; SpO_2 95 to 100%
Pulse pressure and MAP	30 to 40; MAP 70 to 100	MAP < 65 threatens organs
Pediatric floor	70 + 2 × age (1 to 10 y)	Neonate < 60; infant < 70
Infant fever	Rectal 38.0 °C under 3 months	Emergency
Red flags	RR < 10 or > 24; HR < 40 or > 130	SBP < 90; SpO_2 < 90%

Worked cases

CASE 5.1 · MAP

BP 110/62.

STEP 1 · PULSE PRESSURE

110 − 62 = 48.

STEP 2 · MAP

62 + 48 ÷ 3 = 62 + 16 = 78 mm Hg, inside 70 to 100.

CASE 5.2 · CONVERSION

A temperature of 38.5 °C.

STEP 1 · CONVERT

38.5 × 1.8 + 32 = 69.3 + 32 = 101.3 °F.

TRAPS PEOPLE FALL INTO

- **Doubling a 30 second irregular count.** Count the full minute.
- **Trusting SpO_2 after smoke exposure.** CO reads as oxygen.
- **Skipping the palpated systolic.** The gap hides the true systolic.
- **Antipyretics for heat stroke.** Cool actively.

Chapter 5 self-test · six items

1. Which temperature route is the least reliable?

A. Axillary

B. Oral

C. Rectal

D. Tympanic

A. Axillary Axillary is the least reliable and runs about 0.5 °C below oral.

2. Two nurses count an apical rate of 112 and a radial rate of 90 at the same time. What is the pulse deficit?

A. 202
B. 90
C. 22
D. 112

C. 22 Apical minus radial: 112 − 90 = 22.

3. A pulse is full and bounding and cannot be obliterated. How is it graded?

A. 2+
B. 3+
C. 1+
D. 4+

D. 4+ 4+ is bounding and cannot be obliterated.

4. A reading of 142/76 falls in which ACC/AHA category?

A. Elevated pressure
B. Stage 2 hypertension
C. Stage 1 hypertension
D. Normal pressure

B. Stage 2 hypertension A systolic of 140 or more is stage 2 regardless of the diastolic.

5. A blood pressure of 100/58 gives what MAP, to the nearest whole number?

A. 79 mm Hg
B. 58 mm Hg
C. 72 mm Hg
D. 86 mm Hg

C. 72 mm Hg Pulse pressure 42; 58 + 14 = 72.

6. What breathing pattern waxes and wanes with periods of apnea?

A. Kussmaul type
B. Cheyne-Stokes
C. Biot (ataxic)
D. Tachypnea

B. Cheyne-Stokes Cheyne-Stokes cycles crescendo to decrescendo with apnea.

CHAPTER 6

The Health History and the Therapeutic Interview

Read it in full: **Chapter 6 in the textbook**. Practice it in the lab: **Setting the Stage** and **The Response Bench**.

What to know

Prepare first: review the chart, close the curtain, restore glasses and hearing aids, sit at eye level about four to five feet away. The interview runs orientation, working (open, then closed) and termination ("Is there anything else?").

Record the reason for seeking care in the patient's words with a duration. Reconcile every medication category and the last dose actually taken. Allergies need the reaction. Family history covers three generations with age at diagnosis. Analyze each symptom with OLDCARTS or PQRSTU and record pertinent negatives. The ROS is questions only.

Screen: PHQ-2 3 or more; AUDIT-C 4 or more men, 3 or more women; CAGE 2 or more. Adolescents get HEEADSSS alone. A red flag mid-history ends the history: chest pressure with jaw pain, worst headache, new droop, airway swelling, GI bleeding, suicidal plan, impending doom.

LOCK THESE IN

- Start open; stay quiet 60 to 90 seconds.
- Patient's words, with a duration.
- Allergy plus reaction.
- OLDCARTS plus pertinent negatives.
- Red flag: stop, assess, stay, escalate.

OLDCARTS: one symptom, dissected the same way every time

"It feels like a belt tightening across my chest."

O — Onset
0850, sudden, while walking

L — Location
Substernal; points with a flat hand

D — Duration
Constant for 25 minutes

C — Characteristics
"Like a belt tightening"

A — Aggravating, associated
Worse walking; sweating, nausea

R — Relieving, radiation
Rest did not help; goes to left jaw

T — Timing, treatment
First episode; nothing taken

S — Severity
7 out of 10; had to sit down

Pertinent negatives prove your reasoning
Denies fever, cough, leg swelling, recent travel and prior similar episodes.

Red flag pattern: stop the history and escalate now

OLDCARTS turns a sentence into a pattern. Each letter is a question you ask every time. Here the pattern, exertional pressure with jaw radiation, sweating and nausea, is a red flag, so the history stops and escalation starts.

Chapter 6 frameworks

Tool	Content	Use
OLDCARTS	Onset, Location, Duration, Characteristics, Aggravating, Relieving, Timing, Severity	Any symptom
GTPAL	Gravida, Term, Preterm, Abortions, Living	Obstetric history
HEEADSSS	Home, Education, Eating, Activities, Drugs, Sexuality, Suicide, Safety	Teens, alone
Screens	PHQ-2 ≥ 3; AUDIT-C ≥ 4 men, ≥ 3 women; CAGE ≥ 2	Follow up positives
Weight loss flag	4.5 kg or 5% in 6 months	Unintentional

Worked cases

CASE 6.1 · CLARIFYING "DIZZY"

"I get dizzy when I stand."

STEP 1 · ASK

"Does the room spin, or do you feel faint?"

STEP 2 · ROUTE

Faint points to orthostatics next.

CASE 6.2 · GTPAL

Pregnant now; one term birth; one loss at 12 weeks; one living child.

STEP 1 · COUNT

G 3, T 1, P 0, A 1, L 1: 3-1-0-1-1.

TRAPS PEOPLE FALL INTO

- **Closed questions first.** You lose the story.
- **Recording a diagnosis as the reason for care.** Quote the patient.

- **"Allergic to sulfa" alone.** Add the reaction.
- **Delegating the admission questions.** The history is assessment.

Chapter 6 self-test · six items

1. What is the main purpose of the termination phase?

A. Collect the past medical history in detail
B. Introduce yourself and confirm identity
C. Perform the head to toe physical exam
D. Summarize, correct and say what comes next

D. Summarize, correct and say what comes next Termination summarizes, invites corrections and explains next steps.

2. A patient says "penicillin gives me an upset stomach." How is this recorded?

A. As an intolerance with the reaction
B. As a severe allergy with an alert
C. As no reaction worth recording
D. As an allergy to all antibiotics

A. As an intolerance with the reaction Nausea is not immune mediated; record it as an intolerance with the reaction.

3. Which question is leading?

A. "Tell me about any tobacco use."
B. "You don't smoke, do you, sir?"
C. "What brought you in today?"
D. "How often do you drink alcohol?"

B. "You don't smoke, do you, sir?" A leading question supplies the expected answer.

4. A pregnant patient has had two term births and no losses and has two children. She is pregnant now. What is her gravida?

A. 2
B. 4
C. 3
D. 1

C. 3 Two prior pregnancies plus the current one: G 3.

5. Which finding stops the history so the nurse can escalate?

A. Seasonal allergies each spring
B. A sibling with high cholesterol
C. Mild knee pain going up stairs
D. New facial droop, slurred speech

D. New facial droop, slurred speech New droop and speech change suggest stroke: establish last known well and escalate.

6. A teen is seen with a parent. When are the HEEADSSS questions asked?

A. Alone, after explaining confidentiality
B. With the parent present to confirm answers
C. Only if the parent gives written consent
D. On a form the parent fills out later

A. Alone, after explaining confidentiality Adolescents need time alone and an explanation of confidentiality and its limits.

General Survey, Pain and Mental Status

Read it in full: **Chapter 7 in the textbook**. Practice it in the lab: **Survey & Sequence Bench** and **The Three Ds Bench**.

What to know

The general survey scans appearance, body structure, mobility and behavior before you touch. BMI = kg ÷ m^2; loss over 5% in a month or 10% in six months is significant.

Pain is what the patient says it is; normal vitals do not refute it. Use FLACC, CPOT or PAINAD when the patient cannot self-report. Sedation precedes respiratory depression: POSS 3 means hold or reduce and notify.

GCS: E 1 to 4, V 1 to 5, M 1 to 6; 8 or less, protect the airway; chart components. Orientation is lost time, place, situation, then person. Delirium is acute, fluctuating inattention; CAM is 1 AND 2 plus 3 OR 4. The quiet hypoactive patient is most often missed.

> **LOCK THESE IN**
>
> - Look before you speak.
> - Never "but" between score and behavior.
> - POSS 3 means act.
> - Chart E, V, M.
> - CAM: 1 and 2, plus 3 or 4.

Glasgow Coma Scale: score each part, then add

Eye opening (E)	Verbal (V)	Motor (M)
4 Spontaneous	5 Oriented	6 Obeys commands
3 To sound	4 Confused	5 Localizes
2 To pressure	3 Words	**4 Normal flexion**
1 None	**2 Sounds**	3 Abnormal flexion
	1 None	2 Extension
		1 None

Example: opens eyes to nail pressure, moans, withdraws
E2 + V2 + M4 = GCS 8

8 or less	9 to 12	13 to 15
Severe; airway may not be protected	Moderate	Mild

Lowest possible total is 3. A drop of 2 or more points is an emergency. Chart E, V and M separately.

Three responses, scored and charted separately. Score the best response in each column. The worked example sums to 8, the classic threshold for an unprotected airway. Extension (M2) is worse than abnormal flexion (M3).

Chapter 7 numbers

Item	Value	Note
BMI	18.5 to 24.9 healthy; 30 and over obesity	Waist over 102 cm men, 88 cm women
Reassess analgesia	IV 15 to 30; IM or subcut 30 to 60; oral about 60 min	With sedation check
Pain tools	CPOT > 2; BPS > 5; FLACC 0 to 10	PAINAD for dementia
GCS	3 to 15; ≤ 8 severe	Drop of 2 urgent
Screens	Mini-Cog under 3 positive; MoCA 26 normal	PHQ-2 ≥ 3; GDS-15 ≥ 5

Worked cases

CASE 7.1 · BMI

1.70 m, 92 kg.

STEP 1 · SQUARE

1.70 × 1.70 = 2.89.

STEP 2 · DIVIDE

92 ÷ 2.89 = 31.8: obesity class I.

CASE 7.2 · GCS

Opens eyes spontaneously, oriented, localizes but does not follow commands.

STEP 1 · SCORE

E4 V5 M5 = 14.

STEP 2 · CHART

Chart each part and compare with the last check.

TRAPS PEOPLE FALL INTO

- **Charting "denies pain" for a nonverbal patient.** Use an observational tool.
- **Waiting for the respiratory rate to fall.** Act on sedation.
- **Calling new confusion sundowning.** Screen with CAM; check glucose and SpO_2.
- **Testing cognition without hearing aids.** Fix the barriers first.

Chapter 7 self-test · six items

1. Which pain tool suits a nursing home resident with advanced dementia?

A. PAINAD
B. NRS 0 to 10
C. FPS-R
D. Wong-Baker FACES

A. PAINAD PAINAD is built for advanced dementia when self-report is not possible.

2. Burning pain with numbness and tingling in the feet is best classified as what?

A. Somatic
B. Visceral
C. Neuropathic
D. Referred

C. Neuropathic Burning, tingling and electric pain point to nerve damage.

3. A patient on opioids is awake, alert and talking. What is the POSS level?

A. 3, hold the dose
B. 1, acceptable
C. 4, an emergency
D. 2, reduce the dose

B. 1, acceptable POSS 1 is awake and alert, which is acceptable.

4. A patient opens eyes only to pressure, makes no sounds, and shows extension posturing. What is the GCS?

A. 6
B. 4
C. 7
D. 5

D. 5 E2 + V1 + M2 = 5.

5. Which delirium subtype is most common and most often missed?

A. Hyperactive
B. Hypoactive
C. Mixed type
D. Agitated type

B. Hypoactive The quiet, drowsy, withdrawn patient is easily overlooked.

6. An older adult is suddenly inattentive, with fluctuating alertness and rambling speech. Which tool fits best?

A. The Braden Scale
B. The Morse Fall Scale
C. The PHQ-2 screen
D. The CAM screen

D. The CAM screen The CAM screens for delirium.

Assessing Skin, Hair and Nails

Read it in full: **Chapter 8 in the textbook**. Practice it in the lab: **Skin Layers & Lifespan Bench** and **Hair & Nail Reader**.

What to know

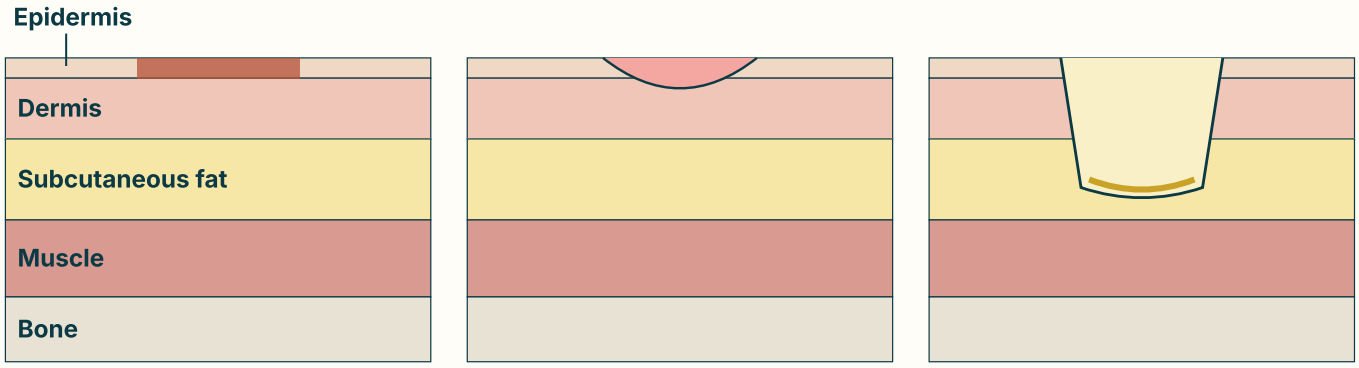
The physiology of color change is the same in every skin tone; change where you look: tongue and buccal mucosa for cyanosis, conjunctivae and palms for pallor, sclera near the limbus and hard palate for jaundice, palpation for erythema.

Turgor over the sternum; refill under 2 seconds; edema 1+ to 4+ at about 2 mm steps. Name lesions by morphology and size in cm. Press the red: non-blanching rash with fever is an emergency. ABCDE for moles, with acral sites checked.

Clubbing (angle over 180 degrees, no Schamroth window) means chronic hypoxia. Braden 18 or less starts prevention. Visible fat is Stage 3; bone, tendon or muscle is Stage 4; slough or eschar hiding the base is unstageable; persistent maroon or purple is deep tissue injury. Never reverse-stage.

> **LOCK THESE IN**
>
> - Change where you look, not the standard.
> - Petechiae under 3 mm; purpura to 1 cm.
> - Non-blanching plus fever: escalate.
> - Clubbing: chronic hypoxia.
> - Never reverse-stage.

Pressure injury stages by depth of tissue loss



Stage 1

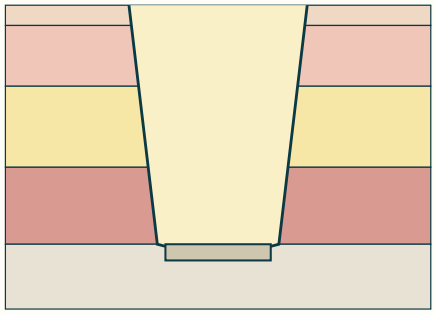
Intact skin, non-blanchable; in darker skin palpate warmth and firmness

Stage 2

Partial thickness: exposed dermis, pink and moist, or a serum blister

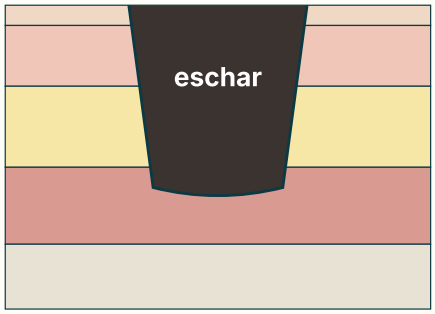
Stage 3

Full thickness: fat visible; no muscle, tendon or bone



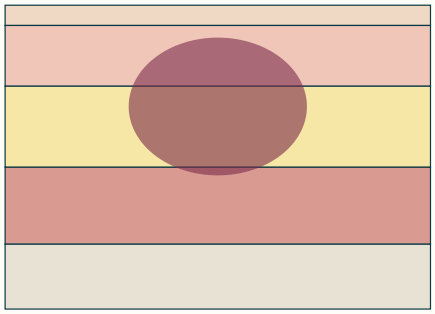
Stage 4

Exposed or palpable fascia, muscle, tendon or bone



Unstageable

Base hidden by slough or eschar



Deep tissue injury

Persistent maroon or purple area or blood blister

Layers top to bottom in each panel: epidermis, dermis, subcutaneous fat, muscle, bone.

Depth decides the stage. Visible fat marks the line between Stage 2 and Stage 3; exposed or palpable muscle, tendon or bone means Stage 4. A healing wound keeps its deepest stage: never reverse-stage.

Chapter 8 numbers

Item	Value	Note
Turgor	Recoil under 2 s; tenting 3 s or more	Sternum in adults
Edema	1+ 2 mm; 2+ 4 mm; 3+ 6 mm; 4+ 8 mm	Record extent
Lesions	Macule, papule, vesicle under 1 cm	Patch, plaque, bulla over 1 cm
Nails	Grow about 3 mm per month	Angle 160 normal; over 180 clubbing
Braden	6 to 23; 18 or less prevention	10 to 12 high

Worked cases

CASE 8.1 · LESION NAMING

A fluid filled lesion 1.5 cm across on a burn.

STEP 1 · NAME IT

Fluid filled and over 1 cm: a bulla.

CASE 8.2 · BEAU LINE

Groove 9 mm from the cuticle.

STEP 1 · DIVIDE

9 ÷ 3 = 3 months since the illness.

TRAPS PEOPLE FALL INTO

- **Looking only for redness on dark skin.** Palpate.
- **Turgor on the back of an older hand.** Use the sternum.
- **Staging a skin tear.** Only pressure injuries are staged.
- **Removing stable heel eschar.** Leave it and offload.

Chapter 8 self-test · six items

1. A flat, brown, 2 cm area of color change is best called what?

A. A macule
B. A plaque
C. A patch
D. A papule

C. A patch Flat and over 1 cm is a patch.

2. Where is jaundice best confirmed in a patient with dark skin?

A. Sclera by the iris; hard palate
B. The skin of the inner forearm
C. The skin over the abdomen
D. The outer edge of the sclera

A. Sclera by the iris; hard palate Peripheral scleral fat can look yellow; use the sclera near the limbus and the hard palate.

3. Spoon shaped, concave nails suggest which condition?

A. Chronic lung disease
B. Infective endocarditis
C. Liver cirrhosis
D. Iron deficiency anemia

D. Iron deficiency anemia Koilonychia is associated with iron deficiency.

4. A pressure injury shows a shallow, pink, moist bed with no fat visible. What stage is it?

A. Stage 2
B. Stage 1
C. Stage 3
D. Stage 4

A. Stage 2 Partial thickness with exposed dermis is Stage 2.

5. A healing Stage 4 wound is now shallow and granulating. How is it charted?

A. Stage 2, since it is now shallow
B. Healing Stage 4 pressure injury
C. Stage 3, since fat is covered
D. Resolved, since it is granulating

B. Healing Stage 4 pressure injury Pressure injuries are never reverse-staged.

6. Which finding is expected in an older adult rather than a sign of abuse?

A. Bruises shaped like a hand print
B. Burns with sharp, even margins
C. Flat purple patches on forearms
D. Bruises of many ages on the trunk

C. Flat purple patches on forearms Senile purpura on the extensor forearms is common with fragile vessels.

CHAPTER 9

Assessing Head, Neck, Eyes, Ears, Nose and Throat

Read it in full: **Chapter 9 in the textbook**. Practice it in the lab: **Sequence, Nodes and the Neck** and **Tonsils, Oral Lesions and the Airway Stop Rule**.

What to know

Compare both sides at once. Forehead spared means a central lesion; forehead involved means a peripheral CN VII palsy. Hard, fixed, matted, painless nodes are reported at any size; any supraclavicular node is abnormal. The thyroid rises with a swallow; the trachea is pushed away by tension pneumothorax.

Acuity by Snellen at 20 feet per eye; pupils in mm, normally 3 to 5. A new unilateral fixed dilated pupil with falling consciousness is herniation. Irrigate a chemical splash first. Pull the pinna up and back at 3 and older, down and back under 3. Weber to the bad ear with a negative Rinne means conductive loss; Weber to the good ear means sensorineural.

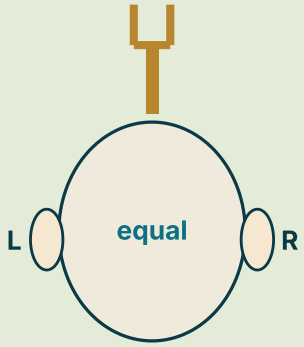
Inspect the lateral tongue and floor of the mouth. Candidiasis scrapes off; leukoplakia does not. Tonsils 1+ to 4+. Drooling, muffled voice, tripod posture or stridor: no tongue blade, keep upright, airway team now.

> **LOCK THESE IN**
>
> - Forehead spared: central.
> - Supraclavicular node: always abnormal.
> - Pupils in mm.
> - Up and back at 3 and older.
> - No tongue blade with stridor.

Weber and Rinne: sorting a hearing loss in the right ear

Normal hearing

Weber: fork on the midline



Heard equally in both ears

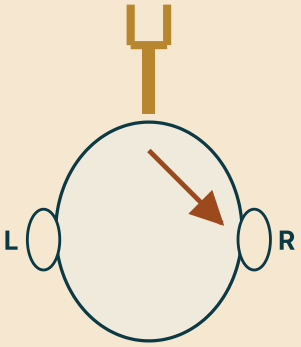
Rinne: mastoid, then ear

Rinne both ears: AC > BC (positive)

Normal Rinne ratio about 2 to 1

Conductive loss, right

Weber: fork on the midline



Lateralizes to the BAD (right) ear

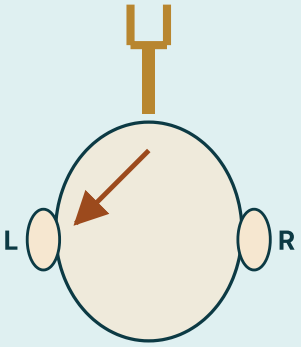
Rinne: mastoid, then ear

Rinne right: BC ≥ AC (negative)

Causes: cerumen, effusion, perforation, otosclerosis

Sensorineural loss, right

Weber: fork on the midline



Lateralizes to the GOOD (left) ear

Rinne: mastoid, then ear

Rinne right: AC > BC (positive, both reduced)

Causes: aging, noise, ototoxic drugs

Use a 512 Hz fork. AC is air conduction; BC is bone conduction.

Where the Weber goes, and what the Rinne says. Conductive loss sends the Weber to the bad ear and flips the Rinne. Sensorineural loss sends the Weber to the good ear and leaves the Rinne positive.

Chapter 9 numbers

Item	Value	Note
Mouth opening	3 to 6 cm	Trismus with sore throat: urgent
Acuity	20/20; legal blindness 20/200 best eye corrected	Jaeger at 14 in
Eye irrigation	15 to 20 min or pH 7.0 to 7.4	Before acuity
Epistaxis	Pinch 10 to 15 min, leaning forward	Over 20 to 30 min: call
Fontanels	Anterior closes 12 to 18 mo; posterior by 1 to 2 mo	Bulging at rest: ICP

Worked cases

CASE 9.1 · TONSIL GRADE

Tonsils touch each other at midline.

STEP 1 · GRADE

4+ (kissing tonsils).

CASE 9.2 · HEARING

Weber to the left; left Rinne BC ≥ AC.

STEP 1 · READ

Conductive loss in the left ear.

TRAPS PEOPLE FALL INTO

- **Pressing hard on nodes.** Light pressure finds them.
- **Acuity before irrigation.** Irrigate first.
- **Missing the lateral tongue.** It is a common cancer site.

- **Tongue blade in a drooling child.** It can close the airway.

Chapter 9 self-test · six items

1. Which node is abnormal at any size?

A. A small, soft occipital node
B. A supraclavicular lymph node
C. A tender submandibular node
D. A preauricular node with an ear infection

B. A supraclavicular lymph node Any palpable supraclavicular node is abnormal.

2. A patient reads the 20/40 line with the right eye. What does this mean?

A. At 20 feet, sees what normal eyes see at 40
B. At 40 feet, sees what normal eyes see at 20
C. Vision is half of normal in both eyes
D. The patient is legally blind in that eye

A. At 20 feet, sees what normal eyes see at 40 The numerator is test distance; the denominator is where normal eyes read that line.

3. Where is the cone of light on a normal right tympanic membrane?

A. At about 7 o'clock
B. At about 12 o'clock
C. At about 5 o'clock
D. At about 3 o'clock

C. At about 5 o'clock The cone points anteroinferiorly: 5 o'clock on the right, 7 on the left.

4. A white patch on the tongue does not scrape off. What is it most likely?

A. Candidiasis
B. Milk residue
C. Leukoedema
D. Leukoplakia

D. Leukoplakia A white patch that will not scrape off is leukoplakia and needs a biopsy.

5. A patient has a nosebleed. How should the nurse position the patient?

A. Lying flat on the back
B. Sitting with the head tilted back
C. Lying on the left side
D. Sitting up, leaning forward

D. Sitting up, leaning forward Leaning forward keeps blood out of the airway and stomach.

6. Clear fluid drips from one nostril after head trauma. What must the nurse avoid?

A. Nasal packing or a nasogastric tube
B. Keeping the head of the bed raised
C. Reporting it to the provider now
D. Checking for raccoon eyes, bruising

A. Nasal packing or a nasogastric tube This may be CSF. No packing and no NG tube.

CHAPTER 10

Assessing the Thorax and Lungs

Read it in full: **Chapter 10 in the textbook**. Practice it in the lab: **Inspection and Palpation of the Thorax** and **Percussion Tones and Diaphragmatic Excursion**.

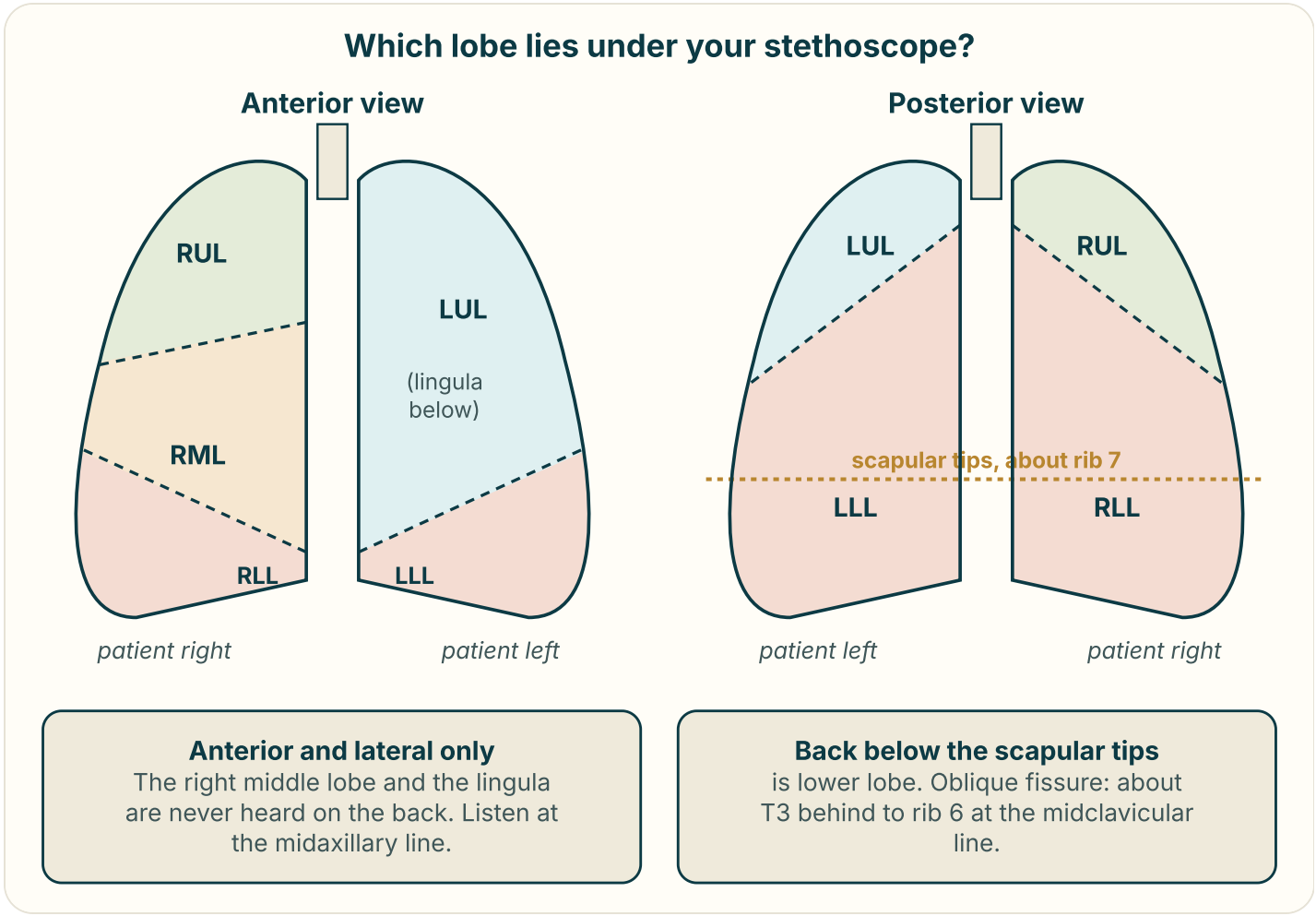
What to know

The sternal angle marks the second rib; the scapular tips sit at about rib 7. The back below the scapulae is lower lobe; the right middle lobe and lingula are heard only in front and at the side. Adult respirations 12 to 20; newborn 30 to 60.

Expansion and excursion are both 3 to 5 cm. Fremitus rises with consolidation and falls with air, fluid or a thick chest wall. Resonance is normal lung; dull means solid or fluid; hyperresonant means too much air.

Bronchial sounds in the periphery with egophony and whispered pectoriloquy mean consolidation. Rhonchi often clear with cough. Stridor and a silent chest are emergencies. Restlessness and confusion come before cyanosis.

> **LOCK THESE IN**
>
> - Front, side and back.
> - Lagging side is the abnormal side.
> - Fremitus up with consolidation.
> - E to A change: consolidation.
> - Silent chest: impending arrest.



Front, side and back hear different lobes. Most of the back is lower lobe, most of the front is upper lobe, and the right middle lobe lives only in front and at the side. A posterior-only exam misses it.

Chapter 10 numbers

Item	Value	Note
Rates	Newborn 30 to 60; preschool 20 to 28; adult 12 to 20	Sustained over 24 in an older adult: screen
SpO_2	95 to 100%; CO_2 retainers 88 to 92%	90% is about PaO_2 60
AP ratio	About 1:2 adult	Near 1:1 in infants and barrel chest
Expansion and excursion	3 to 5 cm	Excursion to 7 to 8 cm if tall and fit
Percussion depth	About 5 to 7 cm	Interspaces only

Worked cases

CASE 10.1 · EXCURSION

Dull at 2 cm above a mark on expiration and 2.5 cm below it on inspiration.

STEP 1 · ADD

2 + 2.5 = 4.5 cm: normal.

CASE 10.2 · PATTERN

Dull, decreased fremitus, absent breath sounds at the left base, trachea shifted right.

STEP 1 · MATCH

Large left pleural effusion pushing the trachea away.

TRAPS PEOPLE FALL INTO

- **Back only.** The RML is in front.
- **Liver dullness called pneumonia.** Right base near rib 6 is liver.
- **Auscultating through the gown.** Rustle mimics crackles.
- **Waiting for cyanosis.** Restlessness comes first.

Chapter 10 self-test · six items

1. Which landmark marks the second intercostal space just below it?

A. The xiphoid process

B. The suprasternal notch

C. The sternal angle

D. The costal angle

C. The sternal angle The second rib joins the sternum at the sternal angle.

2. Fine, high pitched popping at the end of inspiration best describes what?

A. Rhonchi
B. Fine crackles
C. Wheezes
D. A friction rub

B. Fine crackles Fine crackles are brief and end inspiratory.

3. A loud, harsh, inspiratory sound heard without a stethoscope is what?

A. A wheeze
B. Rhonchi
C. Stridor
D. Coarse crackles

C. Stridor Stridor signals upper airway obstruction.

4. Hyperresonance is normal in which patient?

A. A healthy adult man
B. An adult with pneumonia
C. An adult with an effusion
D. A young, thin child

D. A young, thin child A child's thin chest can sound hyperresonant normally.

5. Over a suspected consolidation, a whisper is heard clearly. What is this sign?

A. Whispered pectoriloquy
B. Bronchophony testing
C. Egophony, E to A
D. Tactile fremitus check

A. Whispered pectoriloquy A clearly heard whisper is whispered pectoriloquy.

6. What is the earliest sign of hypoxia?

A. Central cyanosis of the lips
B. Restlessness or confusion
C. Clubbing of the fingertips
D. A barrel shaped chest wall

B. Restlessness or confusion The brain complains first; cyanosis is late.

CHAPTER 11

Assessing the Heart and Peripheral Vascular System

Read it in full: **Chapter 11 in the textbook**. Practice it in the lab: **Listening Posts and the Cardiac Baseline** and **Exam Order, the PMI and the Neck Vessels**.

What to know

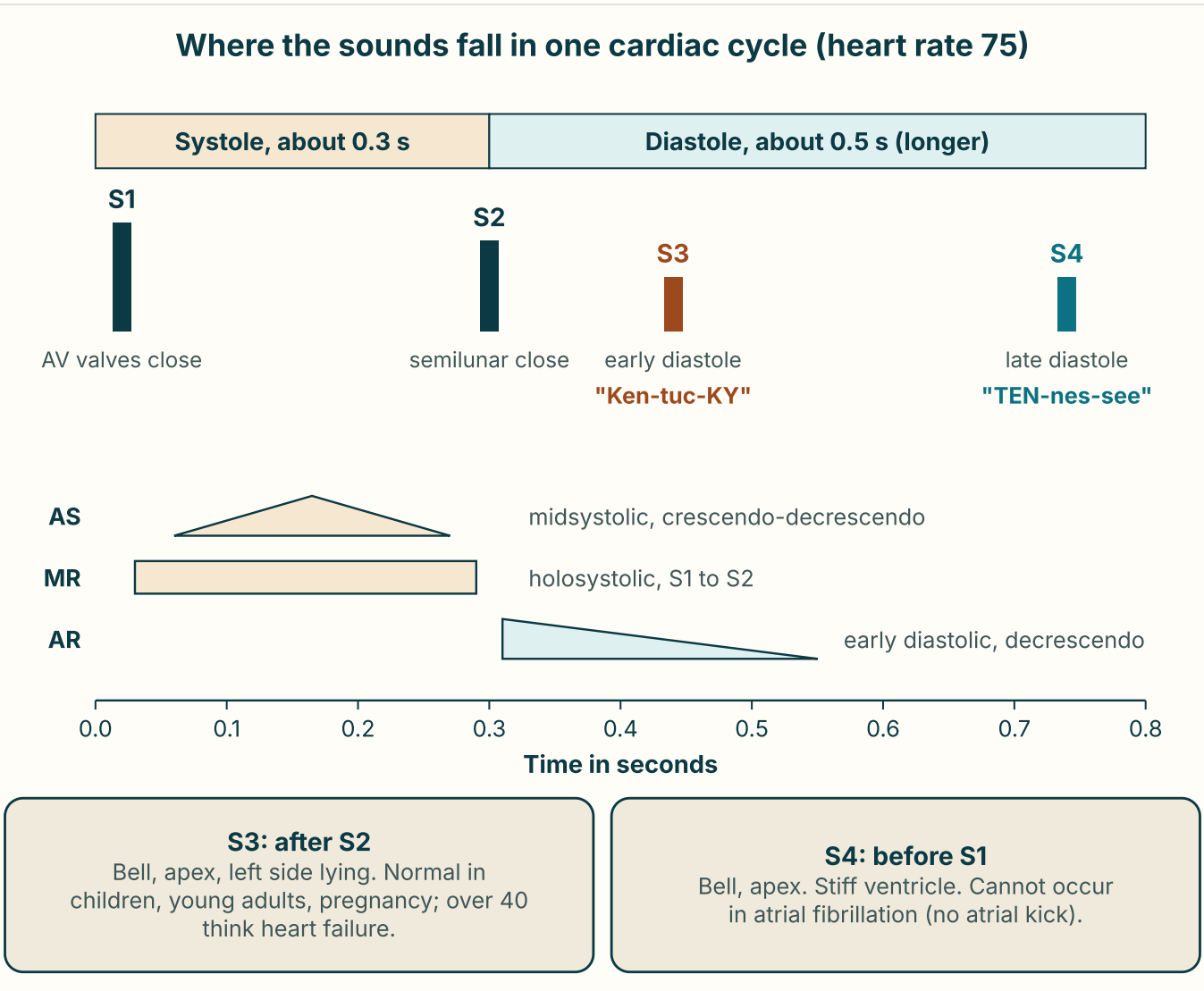
S1 starts systole and is loudest at the apex; S2 ends it and is loudest at the base. Areas: aortic 2R, pulmonic 2L, Erb 3L, tricuspid 4 to 5L, mitral 5th ICS MCL. The PMI is 1 to 2 cm; displaced and diffuse means dilation. JVP over 3 cm above the sternal angle at 30 to 45 degrees is elevated.

Bell lightly for S3, S4 and mitral stenosis; diaphragm firmly for the rest. S3 after S2 over age 40 means heart failure; S4 before S1 cannot occur in AF. A thrill means at least IV/VI; a diastolic murmur is never innocent.

Pulses 0 to 4+; ABI = ankle ÷ higher brachial: 0.90 or less is PAD; over 1.40 is calcified. Arterial: cool, pale, hairless, weak pulses, never elevate. Venous: warm, swollen, brown, elevate and compress. Six Ps: about six hours to save the limb.

LOCK THESE IN

- S1 apex; S2 base.
- JVP over 3 cm: elevated.
- S4 never in AF.
- Thrill: at least IV/VI.
- Six Ps: do not elevate; call now.



Timing places every extra sound. Diastole is the longer phase. S3 follows S2 and S4 comes just before S1; murmurs are named by where they sit between S1 and S2 or after S2. Times are drawn to scale for a rate of 75.

Chapter 11 numbers

Item	Value	Note
PMI	5th ICS MCL, 1 to 2 cm	Over 3 cm: dilation
JVP	3 cm or less above sternal angle	At 30 to 45 degrees
ABI	1.00 to 1.40 normal; 0.90 or less PAD	Under 0.40 severe; over 1.40 calcified
Refill	Under 2 s	Allen: over 15 s abnormal
HF weight	1 kg in 24 h or 2.3 kg in a week	Report

Worked cases

CASE 11.1 · ABI

Ankle 110; brachials 118 and 124.

STEP 1 · DIVIDE

110 ÷ 124 = 0.89.

STEP 2 · READ

0.90 or less: PAD.

CASE 11.2 · MURMUR GRADE

A loud murmur with no palpable thrill.

STEP 1 · GRADE

Loud without a thrill: III/VI.

TRAPS PEOPLE FALL INTO

- **Bell pressed firmly.** It becomes a diaphragm.
- **Both carotids at once.** One at a time.
- **Elevating an ischemic leg.** Keep it level or slightly low.
- **Homans sign.** Unreliable; do not use.

Chapter 11 self-test · six items

1. Where is the aortic area?

A. 2nd ICS, left sternal border
B. 3rd ICS, left sternal border
C. 2nd ICS, right sternal border
D. 5th ICS, left midclavicular line

C. 2nd ICS, right sternal border The aortic area is the second intercostal space at the right sternal border.

2. Which extra heart sound comes just before S1?

A. An S3
B. An S4
C. A loud S2
D. A split S1

B. An S4 S4 is late diastolic, just before S1.

3. A holosystolic, blowing murmur at the apex radiating to the axilla suggests which lesion?

A. Mitral regurgitation
B. Aortic stenosis
C. Aortic regurgitation
D. Mitral stenosis

A. Mitral regurgitation Mitral regurgitation is holosystolic at the apex, radiating to the axilla.

4. A dorsalis pedis pulse is absent but the posterior tibial is strong and the foot is warm. How is this best read?

A. Acute arterial occlusion
B. Severe venous disease
C. A sign of heart failure
D. Often a normal variant

D. Often a normal variant The dorsalis pedis is absent in about 2 to 10% of healthy people.

5. Which finding fits arterial rather than venous insufficiency?

A. Brown staining around the ankles
B. A warm, swollen lower leg and foot
C. An ulcer at the medial malleolus
D. Cool, hairless skin, weak pulses

D. Cool, hairless skin, weak pulses Arterial disease gives cool, shiny, hairless skin and weak pulses.

6. What is the expected capillary refill in an adult?

A. Under 5 seconds
B. Under 2 seconds
C. About 4 seconds
D. Over 3 seconds

B. Under 2 seconds Normal refill is under 2 seconds.

CHAPTER 12

Assessing the Abdomen, Nutrition and Elimination

Read it in full: **Chapter 12 in the textbook**. Practice it in the lab: **Quadrant Map and the Sequence That Protects Your Findings** and **Elimination, Red Flags, SBAR and Delegation**.

What to know

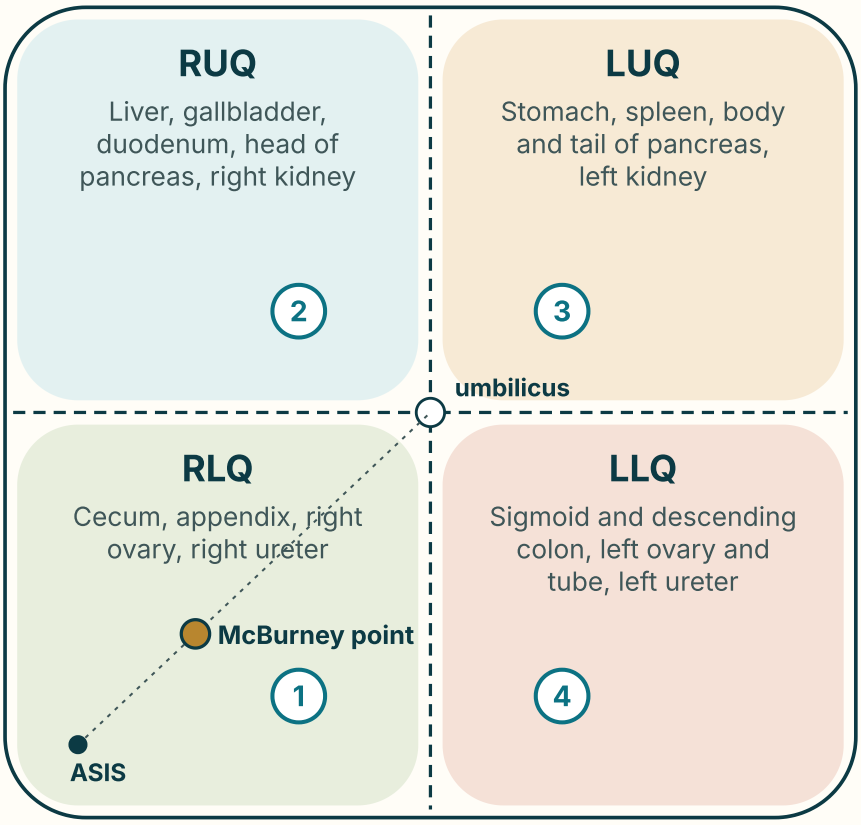
Inspect, auscultate, percuss, palpate; painful quadrant last; rebound last if at all. Listen from the RLQ clockwise; 5 to 30 sounds a minute; 5 full minutes before "absent." Liver span 6 to 12 cm. No deep palpation over a pulsatile mass, a child's tumor or a rigid abdomen.

Weight loss over 5% in 1 month, 7.5% in 3, or 10% in 6 is significant. Albumin and prealbumin are inflammation markers. Watch refeeding labs. NPO until the swallow screen; x-ray before first use of a blind feeding tube; never the air bolus; pH 5.0 or less supports gastric.

Urine at least 0.5 mL/kg/hour; PVR under 50 mL normal; scan before catheterizing. Bristol 3 to 4 ideal. Melena, a rigid abdomen, coffee ground emesis, a dusky stoma or a pulsatile mass means call now.

> **LOCK THESE IN**
>
> - Listen before you touch.
> - 5 minutes before "absent."
> - Liver span 6 to 12 cm.
> - Albumin is not a nutrition marker.
> - Scan before you catheterize.

The abdomen: four quadrants, and the order you examine them



Patient's right is on the image left. Numbered circles: auscultation route.

Abdomen only

1. **Inspect** — contour, skin, movement
2. **Auscultate** — start RLQ, then clockwise; 5 min before "absent"
3. **Percuss** — tympany; liver span 6 to 12 cm
4. **Palpate** — light 1 to 2 cm, then deep; tender area last

Pressing first changes the bowel sounds, so listening moves up to second.

Listen before you touch. The abdomen is the one region examined inspect, auscultate, percuss, palpate. Start listening in the right lower quadrant and move clockwise, and map every finding to a quadrant.

Chapter 12 numbers

Item	Value	Note
Bowel sounds	5 to 30 per minute	Start RLQ
Palpation	Light 1 to 2 cm; deep 4 to 6 cm	Tender area last
Weight loss	5% / 1 mo; 7.5% / 3 mo; 10% / 6 mo	Dietitian
Albumin / prealbumin	3.5 to 5.0 g/dL / 15 to 36 mg/dL	Inflammation markers
Urine and PVR	0.5 mL/kg/h; PVR < 50 mL	> 100 repeated: incomplete

Worked cases

CASE 12.1 · URINE OUTPUT

A 60 kg patient made 75 mL in 3 hours.

STEP 1 · MINIMUM

0.5 × 60 = 30 mL/h.

STEP 2 · ACTUAL

75 ÷ 3 = 25 mL/h: too low.

CASE 12.2 · WEIGHT LOSS

Usual 80 kg; now 74 kg over 1 month.

STEP 1 · COMPUTE

6 ÷ 80 × 100 = 7.5% in 1 month: significant.

TRAPS PEOPLE FALL INTO

- **Palpating first.** You chart your own artifact.
- **Arms behind the head.** It mimics guarding.
- **Air bolus checks.** Unreliable.
- **Silence after loud sounds read as better.** Obstruction is worsening.

Chapter 12 self-test · six items

1. Where does the nurse begin auscultating the abdomen?

A. The right lower quadrant

B. The left upper quadrant

C. The epigastric area

D. The left lower quadrant

A. The right lower quadrant Start in the RLQ near the ileocecal valve.

2. Pain in the right lower quadrant when the left lower quadrant is pressed is which sign?

A. Murphy sign
B. Psoas sign
C. Rovsing sign
D. Castell sign

C. Rovsing sign Rovsing sign suggests appendicitis.

3. A liver span of 14 cm at the right midclavicular line suggests what?

A. A normal liver
B. A small liver
C. Hepatomegaly
D. Normal for women

C. Hepatomegaly Over 12 cm suggests hepatomegaly.

4. Which feeding tube check is acceptable after placement is confirmed?

A. Listening while injecting air
B. External length and aspirate pH
C. Asking the patient to hum
D. Watching for bubbles in water

B. External length and aspirate pH Measure the external length and check pH; never the air bolus.

5. A stool is a smooth, soft sausage. What Bristol type is it?

A. Type 1
B. Type 6
C. Type 7
D. Type 4

D. Type 4 Type 4 is smooth and soft, the ideal.

6. During a shift on a surgical unit, which elimination finding must be reported right away?

A. Black, tarry, foul stool
B. Brown, formed stool
C. A soft, pink, moist stoma
D. Bristol type 3 stool

A. Black, tarry, foul stool Melena suggests an upper GI bleed.

CHAPTER 13

Assessing the Musculoskeletal and Neurologic Systems

Read it in full: **Chapter 13 in the textbook**. Practice it in the lab: **The Neurovascular Check and the Fall-Risk Bench** and **Consciousness, Cognition and the Cranial Nerves**.

What to know

Compare side to side. Active ROM first, then passive; active limited with passive full is muscle, nerve or pain. Strength 0 to 5. TUG 12 seconds or more is fall risk. Neurovascular checks: pain out of proportion and paresthesia are early; pulselessness is late.

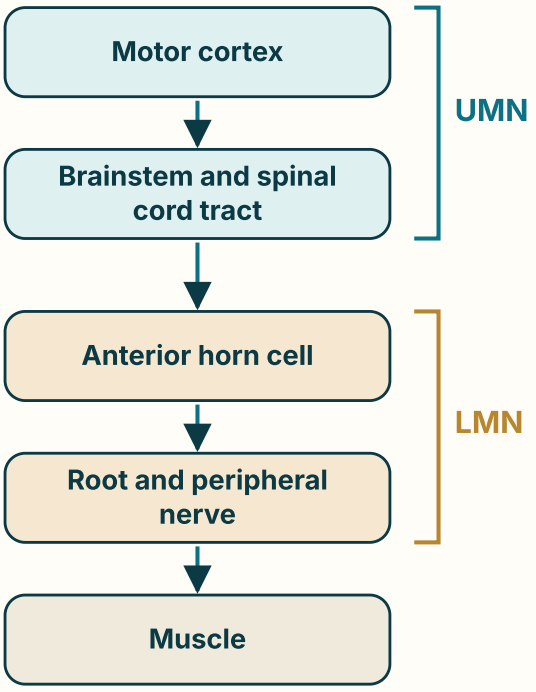
GCS in components with a central stimulus. Cranial nerves in order; the uvula deviates away from and the tongue toward the weak side. Infant reflexes must fade on time.

UMN: spastic, 3+ to 4+, clonus, upgoing toe. LMN: flaccid, 0 to 1+, atrophy, fasciculations. Romberg positive means proprioceptive or vestibular. Red flags: compartment syndrome, cauda equina, BE-FAST stroke, rising ICP, autonomic dysreflexia.

LOCK THESE IN

- 3/5 is against gravity only.
- TUG 12 s.
- Central stimulus for motor.
- UMN vs LMN.
- Autonomic dysreflexia: sit up, find the trigger.

Upper versus lower motor neuron: where the lesion lives



Finding	UMN	LMN
Tone	Spastic (clasp knife)	Flaccid
Reflexes	3+ to 4+, clonus	0 to 1+
Plantar	Upgoing (Babinski)	Downgoing or absent
Bulk	Normal early	Marked atrophy
Fasciculations	Absent	Present
Weakness	Limb or one side	Nerve or root pattern

Pronator drift: arms out, palms up, eyes closed, 20 to 30 seconds
Downward drift with pronation means a corticospinal (UMN) lesion on the opposite side, even when strength still measures 5/5.

The pattern points to the level. Spastic tone, brisk reflexes and an upgoing toe place the lesion in the brain or cord. Flaccid weakness, absent reflexes, atrophy and fasciculations place it in the anterior horn, root or nerve.

Chapter 13 numbers

Item	Value	Note
Reflexes	0 to 4+; 2+ normal	4+ with clonus always abnormal
Roots	Biceps C5 to C6; triceps C7; patellar L4; Achilles S1	Plantar L5 to S1
Dermatomes	C6 thumb; T4 nipple; T10 umbilicus; L5 great toe; S1 lateral foot	S2 to S4 saddle
Stroke	Thrombolysis within 4.5 h	Thrombectomy up to 24 h selected
Compartment	Damage in 4 to 8 h; pressure over 30 mm Hg	Keep at heart level

Worked cases

CASE 13.1 · STRAIGHT LEG RAISE

Pain shoots below the knee at 50 degrees.

STEP 1 · READ

Within 30 to 70 degrees, below the knee: positive for root irritation.

CASE 13.2 · REFLEX

Brisk patellar reflexes with sustained clonus.

STEP 1 · GRADE

4+.

STEP 2 · MEANING

Always abnormal: upper motor neuron.

TRAPS PEOPLE FALL INTO

- **Nail bed pressure for motor scoring.** Use a central stimulus.
- **"GCS 9" alone.** Chart parts.

- **Elevating a limb in compartment syndrome.** Heart level.
- **Romberg as cerebellar.** It tests proprioception.

Chapter 13 self-test · six items

1. Shoulder abduction is painful only between 60 and 120 degrees. What does this suggest?

A. A full rotator cuff tear
B. Frozen shoulder
C. Subacromial impingement
D. A C5 root lesion

C. Subacromial impingement A painful arc suggests impingement.

2. What score on the 4-stage balance test signals fall risk?

A. Holding single leg stance 10 s
B. Cannot hold full tandem 10 s
C. Standing feet together 10 s
D. Finishing the test under 30 s

B. Cannot hold full tandem 10 s Failing full tandem for 10 seconds is a fall-risk finding.

3. Which reflex tests mainly the L4 root?

A. Patellar
B. Achilles
C. Biceps
D. Triceps

A. Patellar The patellar reflex is L2 to L4, mainly L4.

4. A protruded tongue deviates to the left. Which side is weak?

A. The right side
B. Neither side
C. Both sides
D. The left side

D. The left side The tongue deviates toward the weak side.

5. Saddle anesthesia with new urinary retention and leg weakness suggests what?

A. Autonomic dysreflexia
B. Fat embolism syndrome
C. Carpal tunnel syndrome
D. Cauda equina syndrome

D. Cauda equina syndrome This is a surgical emergency.

6. In a stroke workup, what time must be established?

A. The time symptoms were found
B. The last known well time
C. The time of the last meal
D. The time of the last dose

B. The last known well time Treatment windows depend on last known well.

CHAPTER 14

Hygiene, Mobility, Skin Integrity and Core Skills

Read it in full: **Chapter 14 in the textbook**. Practice it in the lab: **Positioning, the Dangle and Safe Patient Handling** and **Fall Risk, the Post-Fall Response and Restraints**.

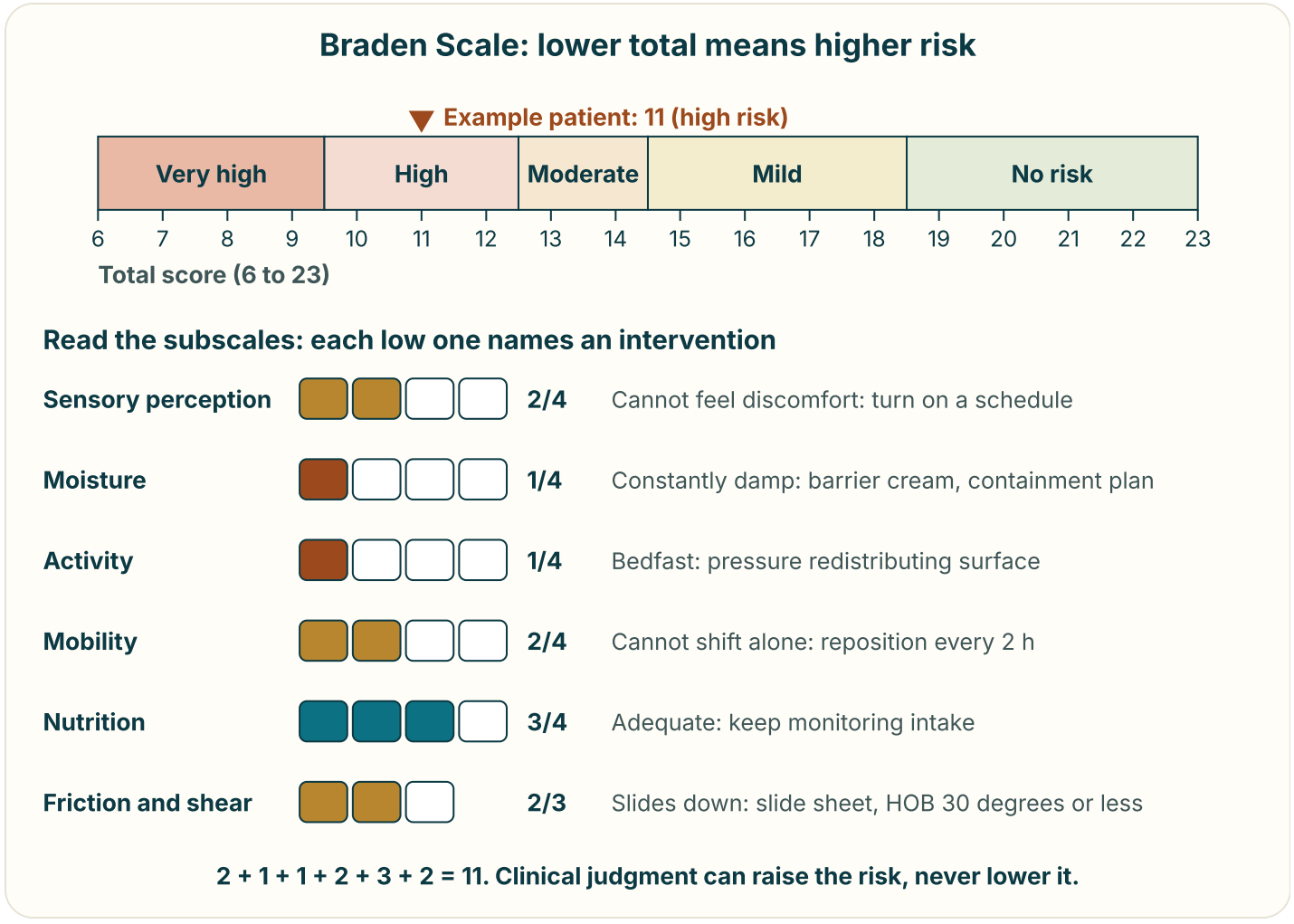
What to know

The bath is a skin survey you own. Water 110 to 115 °F; clean to dirty; eyes inner to outer. Brush teeth twice a day. No soaking or nail cutting in diabetes. Immobility harms every system; dangle before standing; 35 pounds is the one-nurse lift limit.

Cane on the strong side; up with the good, down with the bad. Morse 45 or more is high risk; assess before moving a fallen patient. Restraints: never PRN, frame not rail, quick release knot, two fingers.

Braden 6 to 23, lower is worse; read the subscales. Purple or maroon over intact skin is DTPI. Three checks and two identifiers for medications. Do not place a catheter without an indication; keep the bag low. Liquid seepage after days without stool is impaction.

> **LOCK THESE IN**
>
> - Bath: you own the skin check.
> - 35 pounds.
> - Cane strong side.
> - Restraint to the frame.
> - Braden lower is worse.



The total triggers the protocol; the subscales write the plan. Five subscales score 1 to 4 and friction and shear scores 1 to 3, so totals run 6 to 23. This patient's 11 is high risk, and each low subscale points to its own intervention.

Chapter 14 numbers

Item	Value	Note
Bath water	110 to 115 °F (43 to 46 °C)	Cooler for neuropathy
Enema	105 to 110 °F; 750 to 1,000 mL; tube 7.5 to 10 cm	Left Sims; bag 30 to 45 cm high
Reposition	Every 2 h in bed; every 1 h in chair	Weight shift every 15 min
Time-critical meds	Within 30 min of schedule	Others 1 to 2 h per policy
Catheter depth	Female 5 to 7.5 cm, then 2.5 to 5 cm; male 17 to 22.5 cm	Sterile water balloon

Worked cases

CASE 14.1 · BRADEN

Sensory 3, moisture 2, activity 2, mobility 2, nutrition 2, friction and shear 2.

STEP 1 · ADD

3 + 2 + 2 + 2 + 2 + 2 = 13.

STEP 2 · BAND

13 to 14: moderate risk.

CASE 14.2 · RESTRAINT TIMING

A 15 year old needs a violent behavior restraint at 1300.

STEP 1 · LIMIT

Ages 9 to 17: 2 hours.

STEP 2 · DEADLINE

The order runs to 1500; face to face by 1400.

TRAPS PEOPLE FALL INTO

- **Massaging a red bony prominence.** It worsens injury.
- **Donut cushions.** They cause ischemia.
- **Room number as identifier.** Never.
- **Bag on the bed during transport.** Keep it below the bladder.

Chapter 14 self-test · six items

1. Which side does the nurse stand on when walking a patient with right sided weakness?

A. The right side, slightly behind
B. The left side, slightly ahead
C. Directly in front of the patient
D. The left side, slightly behind

A. The right side, slightly behind Stand on the weaker side, slightly behind.

2. Which statement about restraint orders is correct?

A. They may be PRN for confused patients
B. They last 24 hours for any adult
C. They are never written as PRN
D. They need no face to face visit

C. They are never written as PRN PRN restraint orders are prohibited.

3. A Braden total of 9 is read as which risk?

A. Very high risk
B. High risk
C. Moderate risk
D. Mild risk

A. Very high risk 9 or less is very high risk.

4. Which position is used to give a cleansing enema?

A. Right side lying
B. High Fowler position
C. Left Sims position
D. Trendelenburg position

C. Left Sims position Left Sims follows the curve of the sigmoid colon.

5. How large should the ostomy barrier opening be cut?

A. Exactly the size of the stoma
B. About 1/8 inch larger than the stoma
C. About 1 inch larger than the stoma
D. Smaller, to hold the stoma firm

B. About 1/8 inch larger than the stoma About 1/8 inch (3 mm) larger protects the skin without constricting the stoma.

6. Which is a valid indication for an indwelling urinary catheter?

A. Incontinence alone
B. Staff convenience
C. Routine I&O on a stable patient
D. Acute urinary retention

D. Acute urinary retention Retention is an accepted indication; incontinence and convenience are not.

ONE PAGE

Cram sheet

The whole course in one place. Cover the right column and see if you can rebuild each row.

Vital signs and ranges

Item	Value	Note
Adult	T 36.5 to 37.5 °C; P 60 to 100; R 12 to 20; BP under 120/80; SpO_2 95 to 100%	Fever 38.0 °C; hypothermia below 35.0 °C
Route offsets	Rectal about +0.5 °C; axillary about −0.5 °C	Chart the route
Pediatric (PALS)	Neonate HR 100 to 205, R 30 to 60; infant 100 to 180, 30 to 53; toddler 98 to 140, 22 to 37	Preschool 80 to 120, 20 to 28; school 75 to 118, 18 to 25
Pediatric hypotension	Systolic below 70 + 2 × age (1 to 10 y)	Neonate below 60; infant below 70
Older adult fever	37.8 °C single, 37.2 °C repeated, or +1.1 °C	Confusion may be the only sign
Infant fever	Rectal 38.0 °C under 3 months	Emergency workup
Pregnancy	HR up 10 to 20; volume up 30 to 50%	140/90 after 20 weeks is abnormal; left tilt
BP categories	Elevated 120 to 129/<80; stage 1 130 to 139 or 80 to 89; stage 2 ≥ 140 or ≥ 90	Crisis > 180 and/or > 120
MAP and pulse pressure	MAP 70 to 100 (65 floor); PP 30 to 40	MAP = DBP + PP ÷ 3
Orthostatics	SBP down 20, DBP down 10, or HR up 20 within 3 min	Supine 5 min first
SpO_2	90% is about PaO_2 60	CO_2 retainers 88 to 92%
Urine	At least 0.5 mL/kg/h (about 30 mL/h)	Children 1, infants 2 mL/kg/h

Scales and scores

Scale	Range and cutoffs	Use
GCS	E 1 to 4, V 1 to 5, M 1 to 6; 3 to 15; 8 or less severe	Drop of 2 is urgent
POSS	S, 1, 2 acceptable; 3 reduce and notify; 4 emergency	Opioid sedation
RASS	+4 combative to −5 unarousable	Sedation and agitation
Pain tools	NRS 0 to 10; FLACC; CPOT > 2; BPS > 5; PAINAD	Match ability to self-report
Mini-Cog / MMSE / MoCA	Under 3 positive / under 24 / 26 normal	Screens, not diagnoses
PHQ-2 / PHQ-9 / GDS-15	≥ 3 / ≥ 10 / ≥ 5	Item 9: ask about suicide directly
AUDIT-C / CAGE	≥ 4 men, ≥ 3 women / ≥ 2	Alcohol
Morse / Hendrich II	45 or more / 5 or more high risk	Falls
TUG	12 s or more	Fall risk
Braden	6 to 23; 18 or less prevent; 10 to 12 high; 9 or less very high	Lower is worse
Strength / reflexes	0 to 5 / 0 to 4+, 2+ normal	4+ with clonus abnormal
Murmurs / pulses / edema	I to VI (thrill at IV) / 0 to 4+ / 1+ to 4+	State the scale

Sequences and formats

Name	Sequence	Note
Exam order	Inspect, palpate, percuss, auscultate	Abdomen: inspect, auscultate, percuss, palpate
ADPIE	Assessment, Diagnosis, Planning, Implementation, Evaluation	A loop
CJMM	Recognize, analyze, prioritize, generate, take action, evaluate	NCSBN
SBAR / I-PASS	Situation, Background, Assessment, Recommendation / Illness severity, Patient summary, Action list, Situation awareness, Synthesis	End with the ask / receiver repeats
Five rights of delegation	Task, circumstance, person, direction, supervision	Never assessment, teaching, evaluation, unstable patients
PPE	On: gown, mask, goggles, gloves. Off: gloves, goggles, gown, mask	N95 off outside
OLDCARTS	Onset, Location, Duration, Characteristics, Aggravating, Relieving, Timing, Severity	Plus pertinent negatives
CAM	Acute or fluctuating AND inattention, plus disorganized OR altered LOC	Delirium
BE-FAST	Balance, Eyes, Face, Arm, Speech, Time	Last known well

Exam findings to know

Region	Key numbers or signs	Meaning
Skin	Turgor recoil under 2 s; refill under 2 s; petechiae under 3 mm	Non-blanching with fever: escalate
Pressure injury	Fat visible = Stage 3; bone or tendon = Stage 4; maroon on intact skin = DTPI	Never reverse-stage
Eyes and ears	Pupils 3 to 5 mm; Snellen 20/20; pinna up and back at 3 and older	Weber to bad ear + negative Rinne: conductive
Neck	Supraclavicular node always abnormal; JVP 3 cm or less	Trachea away: tension pneumothorax
Lungs	Expansion and excursion 3 to 5 cm; resonance normal	Dull + bronchial + egophony: consolidation
Heart	PMI 5th ICS MCL 1 to 2 cm; S3 after S2; S4 before S1	Diastolic murmur never innocent
Vessels	ABI 0.90 or less PAD; calves differ over 3 cm	Six Ps: do not elevate
Abdomen	Bowel sounds 5 to 30/min; 5 min for absent; liver 6 to 12 cm	Rigid and silent: peritonitis
Neuro	UMN: spastic, brisk, upgoing toe; LMN: flaccid, absent, atrophy	Romberg: proprioception

Red flags: escalate now

Finding	Think	Act
RR < 8 or > 28; SpO_2 < 90%; SBP < 90; HR < 40 or > 130	Deterioration	Rapid response, SBAR
qSOFA 2 or more with infection	Sepsis	Cultures, lactate, antibiotics
Stridor, drooling, tripod; silent chest	Airway failure	Upright, no tongue blade, airway team
New unilateral fixed dilated pupil; GCS drop 2; Cushing triad	Rising ICP, herniation	Rapid response
BE-FAST positive	Stroke	Stroke alert, last known well, glucose, NPO
Pain out of proportion, worse on passive stretch	Compartment syndrome	Heart level, escalate
Cold, pale, pulseless limb	Arterial occlusion	Do not elevate; vascular now
Rigid abdomen, melena, coffee ground emesis, dusky stoma	Surgical abdomen, GI bleed, ischemia	NPO, escalate
T6 or above injury with severe hypertension	Autonomic dysreflexia	Sit up, find trigger
Non-blanching rash with fever	Meningococcemia, DIC	Rapid response, droplet precautions

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