HEALTH ASSESSMENT · STUDY GUIDE

Exam 7 Study Guide

This guide covers chapters 13 and 14. First you will examine muscles, joints and nerves with numbers: strength 0 to 5, range in degrees, reflexes 0 to 4+, a GCS charted in parts, and a neurovascular check that catches compartment syndrome early. Then you will learn the core skills where assessment and care become one act: the bath as a skin survey, safe mobility, falls and restraints, Braden and staging, medication checks and elimination care. Work one chapter at a time. Read the "what to know" paragraphs, study the tables, then try each worked case with the steps covered. Finish each chapter with its ten self-test items. The cram sheet at the end puts the numbers and rules in one place.

WHAT THIS GUIDE COVERS

- Chapter 13 · screening versus focused exams, side to side comparison, the joint above and below, active then passive ROM, strength grading, ROM in degrees, spine and scoliosis screening, straight leg raise, shoulder and hand tests, Phalen and Tinel, hip and knee tests, named gaits, TUG and the 4-stage balance test, orthostatics, the neurovascular check, AVPU and GCS, orientation, Mini-Cog and CAM, cranial nerves I to XII, infant reflexes and lifespan findings, tone, pronator drift, UMN versus LMN, cerebellar tests and Romberg, sensation and dermatomes, reflex grading and clonus, compartment syndrome, cauda equina, BE-FAST, rising ICP, autonomic dysreflexia, charting, SBAR and delegation.
- Chapter 14 · the bath as a skin survey, water temperature and sequence, oral and denture care, perineal and foot care, immobility by system, orthostatics, positions and angles, ROM and the dangle, the 35 pound limit, gait belts and lifts, canes, walkers, crutches and stairs, Morse and TUG, the fall bundle and post-fall response, restraint definitions and rules, Braden subscales, staging and DTPI in darker skin, prevention, medication rights and three checks, high-alert drugs and abbreviations, urine numbers, catheter indications and CAUTI care, the abdominal order, Bristol, impaction, enemas, ostomies, delegation and SBAR.

CHAPTER 13

Assessing the Musculoskeletal and Neurologic Systems

Read it in full: **Chapter 13 in the textbook**. Practice it in the lab: **The Exam Sequence and the Strength Grader** and **Upper versus Lower Motor Neuron: Reflexes, Sensation and Drift**.

What to know

These systems are assessed together because they fail together. Always compare side to side and examine the joint above and below the painful one. Expose the joint, examine the non-painful side first, and never force passive motion past resistance or pain. The order is inspect, palpate, then **active ROM**, then **passive ROM** if active is limited, then strength. Active limited with passive full means muscle, nerve, pain or effort; both limited means the joint itself. The abdomen is still the only region examined inspect, auscultate, percuss, palpate.

Strength: 5 full resistance; 4 some resistance; 3 against gravity only; 2 with gravity eliminated; 1 a flicker with no movement; 0 none. Chart each side ("left grip 3/5, right 5/5"). Expected ROM includes cervical flexion 45 and extension 55, rotation 70; shoulder flexion and abduction 180; elbow flexion 150 to 160; hip flexion 120 with the knee bent; knee flexion 130 to 150; ankle dorsiflexion 20 and plantar flexion 45; lumbar flexion 75 to 90. A painful arc between 60 and 120 degrees of abduction suggests impingement.

Spine: the Adams forward bend test reveals scoliosis rotation (screen girls about 10 and 12, boys about 13 or 14). A **straight leg raise** is positive when shooting pain below the knee appears between 30 and 70 degrees; hamstring pulling is not positive. Upper limb: drop arm test for rotator cuff tear; Heberden (DIP) and Bouchard (PIP) nodes in osteoarthritis; ulnar deviation and swan-neck in rheumatoid arthritis; Phalen (60 seconds of wrist flexion) and Tinel for carpal tunnel. Lower limb: Trendelenburg sign for gluteus medius weakness; bulge sign for a small knee effusion.

Gait integrates everything: antalgic, steppage (foot drop), shuffling (parkinsonian), wide-based (cerebellar), scissoring and hemiparetic. **Timed Up and Go**: rise, walk 10 feet (3 m), turn, return and sit; 12 seconds or more means increased fall risk. The 4-stage balance test holds each stance 10 seconds; failing full tandem is a fall-risk finding. Orthostatics are positive with a systolic drop of 20, a diastolic drop of 10, or a heart rate rise of 20 within 3 minutes. The best predictor of a fall is a fall in the past year.

The **neurovascular check** distal to any cast, fracture or surgical limb covers color, temperature, capillary refill (under 2 seconds), pulses, sensation, movement, pain and edema, compared with

the other limb, commonly hourly for 24 hours then every 4 hours. Judge color against the patient's own other limb and at mucosa, conjunctivae, palms and nail beds, never against "pink." Paresthesia and pain out of proportion are early; pallor, pulselessness and paralysis are late.

Level of consciousness comes first. Escalate stimuli from voice to a central stimulus (trapezius squeeze or supraorbital pressure); a peripheral nail bed stimulus can cause a spinal withdrawal and cannot score the motor response. Chart the GCS in components: E 1 to 4, V 1 to 5, M 1 to 6, total 3 to 15. 8 or less suggests an unprotected airway; a drop of 2 points or any drop in motor is urgent. Mark verbal as T when intubated. The pediatric GCS uses age-appropriate responses. Mini-Cog of 2 or less is positive; MMSE under 24; MoCA 26 or more normal. CAM: acute or fluctuating AND inattention, plus disorganized thinking OR altered consciousness. Check glucose, SpO_2 and a bladder scan before calling it sundowning.

Cranial nerves in order: I smell; II acuity and fields; III, IV, VI gaze and pupils (2 to 5 mm, PERRLA; a unilateral fixed dilated pupil is an emergency); V facial sensation and masseters; VII facial movement (forehead spared means central); VIII hearing, Weber and Rinne; IX and X palate and uvula (the uvula deviates **away** from the weak side); XI shrug; XII tongue (deviates **toward** the weak side). Infant reflexes must fade: Moro by 3 to 6 months, palmar grasp and rooting by 3 to 4, tonic neck by 4 to 6, plantar grasp by 8 to 12; Babinski is normal until about 12 to 24 months. Fontanels: posterior closes by 2 to 3 months, anterior by 12 to 18.

Motor: check bulk, tone, strength and involuntary movement. Spasticity (clasp knife) is **UMN**; flaccidity is **LMN**; rigidity (lead pipe or cogwheel) suggests parkinsonism. **Pronator drift** (arms out, palms up, eyes closed 20 to 30 seconds) catches a contralateral corticospinal lesion while strength still reads 5/5. UMN: hyperreflexia, clonus, upgoing toe, no fasciculations. LMN: hypo- or areflexia, atrophy, fasciculations, nerve pattern weakness. Cerebellar tests check accuracy and rhythm: rapid alternating movements, finger to nose, heel to shin, tandem walk. **Romberg** is positive when steady with eyes open but swaying with eyes closed: proprioceptive or vestibular, not cerebellar.

Sensation is tested eyes closed, side to side, distal to proximal: light touch, sharp and dull, vibration (128 Hz), proprioception, then cortical tests (stereognosis, graphesthesia, extinction). Dermatomes: C6 thumb, C7 middle finger, C8 little finger, T4 nipple, T10 umbilicus, L4 medial

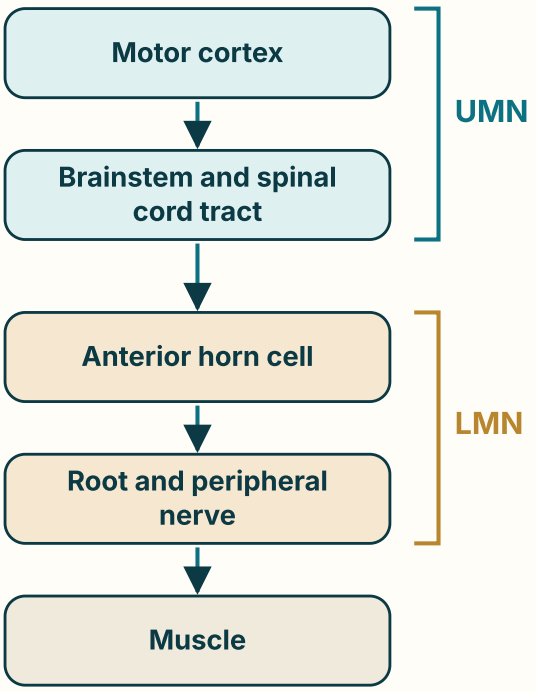
malleolus, L5 dorsum of foot and great toe, S1 lateral foot, S2 to S4 saddle. Reflexes: 0 absent, 1+ diminished, 2+ normal, 3+ brisk, 4+ with sustained clonus (always abnormal). Biceps C5 to C6, brachioradialis C5 to C6, triceps C7, patellar L4, Achilles S1. Use the Jendrassik maneuver before charting a 0.

Red flags: **compartment syndrome** (pain out of proportion, pain on passive stretch, paresthesia; damage in 4 to 8 hours; keep at heart level, no ice, no elevation, bivalve per order, escalate). Fat embolism 24 to 72 hours after a long bone fracture. **Cauda equina**: saddle anesthesia, retention, bilateral leg weakness. **BE-FAST** with the last known well time; thrombolysis generally within 4.5 hours, thrombectomy in selected patients up to 24. Rising ICP shows first as a falling level of consciousness; Cushing triad is late. **Autonomic dysreflexia** at T6 or above: sit up, lower legs, loosen clothing, find the trigger (bladder first), BP every 2 to 5 minutes.

LOCK THESE IN

- Active ROM first; active limited with passive full is not a joint problem.
- Strength 0 to 5: 3 is against gravity only; 2 is gravity eliminated.
- TUG 12 seconds or more means fall risk.
- Neurovascular: pain out of proportion and paresthesia are early; pulselessness is late.
- Chart GCS components; use a central stimulus for motor scoring.
- Uvula deviates away from the weak side; the tongue deviates toward it.
- UMN: spastic, 3+ to 4+, upgoing toe. LMN: flaccid, 0 to 1+, atrophy, fasciculations.
- Romberg positive: steady eyes open, sways eyes closed: proprioception or vestibular.

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.

Reflexes and dermatomes

Item	Where	Root
Biceps	Thumb over the tendon in the antecubital fossa	C5 to C6
Brachioradialis	Radius 1 to 2 inches above the wrist	C5 to C6
Triceps	Tendon above the olecranon	C6 to C7 (mainly C7)
Patellar	Tendon below the patella, knee dangling	L2 to L4 (mainly L4)
Achilles	Tendon, foot slightly dorsiflexed	S1 to S2 (mainly S1)
Plantar	Lateral sole heel to ball, across the toes	L5 to S1; upgoing abnormal after about 2 years
Dermatomes, arm	Thumb C6; middle finger C7; little finger C8	T4 nipple line; T10 umbilicus
Dermatomes, leg	Medial malleolus L4; dorsum and great toe L5; lateral foot S1	Saddle S2 to S4

Neurologic emergencies

Emergency	Key signs	First nursing actions
Compartment syndrome	Pain out of proportion, worse on passive stretch, paresthesia	Limb at heart level, no ice, bivalve per order, escalate; pressure over 30 mm Hg is surgical
Cauda equina	Saddle anesthesia, retention or incontinence, bilateral leg weakness	Escalate: surgical emergency
Stroke	BE-FAST: balance, eyes, face, arm, speech, time	Stroke alert, last known well, glucose, NPO until swallow screen, CT
Rising ICP	Falling LOC first, then headache, vomiting, pupil change; Cushing triad late	Rapid response, head of bed up, neuro checks
Autonomic dysreflexia	T6 or above: severe hypertension, pounding headache, flushing above, bradycardia	Sit up, legs down, loosen clothing, check bladder and catheter, BP every 2 to 5 min
Fat embolism	24 to 72 h after long bone fracture: hypoxemia, confusion, petechiae	Oxygen, escalate

Worked cases

WORKED CASE 1 · ACTIVE VERSUS PASSIVE RANGE

Mr. Lee cannot actively abduct his right shoulder past 70 degrees, but you can move it passively to 180 degrees without resistance.

STEP 1 · COMPARE

Active is limited; passive is full.

STEP 2 · REASON

Full passive range proves the joint surfaces and capsule allow the motion.

STEP 3 · LOCATE

The problem is muscle, nerve, pain or effort: rotator cuff tear, axillary nerve or C5 root, a central lesion, or pain limiting effort.

STEP 4 · CHART

Record active and passive values separately, with pain scores.

WORKED CASE 2 · GRADING STRENGTH AND COMPARING OVER TIME

At 0800 Mrs. Chen's grips were 5/5. At 1400 her left elbow moves fully only when the forearm rests sideways on the bed; she cannot lift it against gravity.

STEP 1 · GRADE IT

Full range with gravity eliminated is 2/5.

STEP 2 · COMPARE

A drop from 5/5 to 2/5 on one side in six hours is a new focal deficit.

STEP 3 · CHECK FOR STROKE

Pronator drift, facial symmetry, speech, and the last known well time (0800 here).

STEP 4 · ACT

BE-FAST positive findings mean a stroke alert now.

WORKED CASE 3 · SCORING THE GCS IN COMPONENTS

Mr. Ross opens his eyes to speech, gives confused answers, and reaches up to push your hand away from a trapezius squeeze.

STEP 1 · EYES

To sound: E3.

STEP 2 · VERBAL

Confused conversation: V4.

STEP 3 · MOTOR

Localizes to a central stimulus: M5.

STEP 4 · TOTAL AND CHART

E3 V4 M5 = 12. If he was 15 two hours ago, a drop of 3 is urgent: escalate.

WORKED CASE 4 · AUTONOMIC DYSREFLEXIA

Ms. Diaz has a T4 spinal cord injury. She now has a pounding headache, BP 210/110 (baseline 105/65), flushing above the injury and a heart rate of 54.

STEP 1 · RECOGNIZE IT

An injury at or above T6 plus sudden severe hypertension, headache and bradycardia.

STEP 2 · POSITION

Sit her fully upright and lower her legs.

STEP 3 · LOOSEN

Remove binders and tight clothing.

STEP 4 · FIND THE TRIGGER

Check the bladder and catheter first, then for impaction, then skin pressure. Recheck BP every 2 to 5 minutes and call for help.

TRAPS PEOPLE FALL INTO

- **Charting "MSK WNL."** Chart grades, degrees and sides.
- **Scoring motor response to nail bed pressure.** A spinal reflex can withdraw a limb. Use a central stimulus.
- **Charting "GCS 9" alone.** E2 V2 M5 and E4 V1 M4 are very different patients.
- **Calling hamstring tightness a positive straight leg raise.** Positive means shooting pain below the knee at 30 to 70 degrees.
- **Reading a positive Romberg as cerebellar.** Unsteady with eyes open is cerebellar; worse only with eyes closed is proprioceptive or vestibular.
- **Charting a reflex as 0 without reinforcement.** Try the Jendrassik maneuver first.
- **Elevating a limb with suspected compartment syndrome.** Keep it at heart level; elevation reduces arterial inflow.
- **Calling new confusion "sundowning."** Check glucose, SpO_2 and the bladder; screen with CAM.

Chapter 13 self-test · ten items

1. A muscle group moves through full range against gravity but gives way to any resistance. What grade is this?

A. 2/5

B. 4/5

C. 3/5

D. 1/5

C. 3/5 3/5 is full range against gravity only. 4/5 tolerates some resistance; 2/5 needs gravity eliminated.

2. A 78 year old completes the Timed Up and Go in 15 seconds. How should the nurse read this?

A. Increased fall risk; act on it
B. Normal for age; no plan change
C. Low risk unless a fall occurred
D. A concern only past 30 seconds

A. Increased fall risk; act on it 12 seconds or more on the TUG indicates increased fall risk.

3. Two hours after a cast is applied, which finding is the earliest sign of compartment syndrome?

A. An absent pedal pulse in that foot
B. Paralysis of the toes on that side
C. A pale, cold foot below the cast
D. Pain on passive stretch of the toes

D. Pain on passive stretch of the toes Pain out of proportion and pain on passive stretch come early. Pulselessness, pallor and paralysis are late.

4. Which stimulus should be used to score the GCS motor response?

A. Nail bed pressure
B. A trapezius squeeze
C. A sternal rub repeated
D. A light touch on the arm

B. A trapezius squeeze A central stimulus avoids mistaking a spinal withdrawal for a brain response. Repeated sternal rub bruises and is no longer recommended.

5. When asked to say "ah," the uvula deviates to the right. Which side is weak?

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

B. The left side The uvula deviates away from the weak side. The tongue, by contrast, deviates toward the weak side.

6. A 9 month old still shows a strong Moro reflex. How should this be read?

A. Normal finding at 9 months
B. Expected until about age 2
C. Past its window; refer
D. Sign of normal maturing

C. Past its window; refer The Moro reflex should fade by 3 to 6 months. Persistence past its window warrants referral.

7. Which set of findings points to an upper motor neuron lesion?

A. Flaccidity, absent reflexes, atrophy
B. Fasciculations and marked wasting
C. Weakness in a single nerve pattern
D. Spasticity, 4+ reflexes, upgoing toe

D. Spasticity, 4+ reflexes, upgoing toe UMN lesions cause spastic tone, hyperreflexia and a Babinski sign.

8. During a Romberg test, Mr. Sato holds still with his eyes open, then loses his balance within seconds of closing them. Which system is most likely affected?

A. Position sense or inner ear
B. The cerebellum, by itself
C. No system; this is normal
D. The motor cortex, on one side

A. Position sense or inner ear A positive Romberg points to dorsal column or vestibular dysfunction. Cerebellar patients are unsteady even with eyes open.

9. A patient reports numbness of the great toe and the top of the foot. Which root is most likely involved?

A. L4
B. L5
C. S1
D. S2

B. L5 L5 covers the dorsum of the foot and great toe. L4 is the medial malleolus and S1 the lateral foot.

10. Mr. Grant, paraplegic after a high thoracic injury, suddenly reports a pounding headache. His face is flushed and his pressure is far above his usual. What should the nurse do first?

A. Sit the patient up and lower the legs
B. Lay the patient flat and raise the legs
C. Give a sedative and recheck in an hour
D. Apply a warm blanket and dim the lights

A. Sit the patient up and lower the legs Sitting up uses gravity to lower pressure. Then loosen clothing and find the trigger, starting with the bladder.

CHAPTER 14

Hygiene, Mobility, Skin Integrity and Core Skills

Read it in full: **Chapter 14 in the textbook**. Practice it in the lab: **The Bath as a Skin Survey** and **Braden Scoring and Pressure Injury Staging**.

What to know

The bath is the most complete skin survey of the shift: scalp, ears, axillae, back, sacrum, perineum, gluteal folds, heels and every toe web. If a UAP bathes the patient, you still look at the sacrum and heels yourself. Water is about 110 to 115 °F (43 to 46 °C), at the cooler end for diabetes, neuropathy, spinal cord injury or fragile skin. Go clean to dirty: eyes first with no soap, inner to outer canthus with a separate corner for each eye, then face, neck, far arm, chest, abdomen, far leg, back, perineum last. Dry skin folds fully, pat fragile skin, and never massage a reddened bony prominence.

Brush teeth with a soft brush and fluoride paste at least twice a day, intubated and comatose patients included; foam swabs moisten but do not remove plaque. For an unconscious or dysphagic patient, turn the head to the side, have suction on, use little fluid and keep fingers out from between the teeth. Clean dentures over a lined sink in cool or tepid water and store them in a labeled, lidded cup. Perineal care: front to back for females in single strokes; for males clean from the meatus outward and replace the foreskin to prevent paraphimosis. In diabetes or arterial disease, no soaking, no hot water, no lotion between toes, no nail cutting. Use an electric razor with anticoagulants or low platelets.

Immobility harms every system: strength falls about 1 to 1.5% a day, bone about 1% a week, foot drop can become fixed in a week or two, atelectasis then pneumonia, venous stasis and VTE, orthostatic hypotension, constipation, urinary stasis and pressure injury. The fix is progressive mobility. Dangle at the bed edge for 1 to 5 minutes before the first stand. Positions: semi-Fowler 30 to 45 degrees, Fowler 45 to 60, high Fowler 60 to 90; turn to a 30 degree lateral tilt, not 90 degrees over the trochanter; Sims (left side) for enemas. Range of motion: 3 to 5 repetitions, 2 or 3 times a day, never forced.

The recommended maximum one caregiver should lift is **35 pounds** (about 16 kg). No weight bearing or uncooperative: full body lift with two staff. Partial weight bearing, cooperative, upper body strength: sit to stand lift. Full weight bearing: gait belt and standby. Belt snug with two fingers of room, never over an abdominal incision, ostomy, tubes or a pregnant abdomen. Stand on the weaker side, slightly behind. If the patient falls, ease them down along your leg. Cane on the strong side, advancing with the weak leg; walker advanced 6 to 12 inches, weak leg then strong; crutch weight on the hands, two to three finger widths below the axilla; stairs up with the good, down with the bad.

Morse Fall Scale items: history of falling 25, secondary diagnosis 15, ambulatory aid 0, 15 or 30, IV or saline lock 20, gait 0, 10 or 20, mental status 0 or 15; total 0 to 125; 45 or more is high risk. Treat the mechanism, not just the score, and review medications. Bundle: bed low and locked, items in reach, nonskid footwear, lighting, hourly rounding on pain, potty, position and possessions, toileting schedules; alarms supplement rounding. After a fall, do not move the patient first: assess in place, check vital signs, glucose if unclear, and neuro checks, especially with anticoagulants. Never mention the incident report in the chart.

A restraint is anything that limits free movement or any drug used for behavior that is not standard treatment; four side rails up, a tucked sheet or a locked tray all count. Try and document alternatives first. Orders are never PRN. Violent or self-destructive: adults 4 hours, ages 9 to 17 2 hours, under 9 1 hour, renewable to 24 hours, face to face within 1 hour, continuous monitoring with documentation at least every 15 minutes. Non-violent: renewed at least each calendar day, assessed and released at least every 2 hours. Two fingers of space, padding, a quick release knot, tied to the bed frame, never the side rail.

Skin: inspect then palpate, every pressure point and every device site. Patients with darker skin more often present at Stage 3 or 4 because Stage 1 was missed. In darker skin, Stage 1 may look darker, gray or ashen than surrounding skin, with changes in temperature, firmness or pain; **persistent purple, maroon or deep red over intact skin is a deep tissue pressure injury, not Stage 1**. Use natural light and compare with the mirror site. Children from about 21 days to 8 years use the Braden Q. Older skin tears easily; lift, never drag.

Braden: sensory perception, moisture, activity, mobility and nutrition each 1 to 4, friction and shear 1 to 3; total 6 to 23, lower is worse (19 to 23 none, 15 to 18 mild, 13 to 14 moderate, 10 to 12 high, 9 or less very high). Read the subscales: each low one names an intervention. Judgment can raise the risk, never lower it. Stage by the deepest visible tissue: is the skin intact? Can you see fat? If you cannot see the base, it is unstageable. Mucosal injuries are not staged, and wounds never reverse-stage. Prevention: reposition every 2 hours in bed and every hour in a chair (weight shifts every 15 minutes), head of bed 30 degrees or less, float heels, no donut cushions, pH balanced cleanser and barrier, early dietitian.

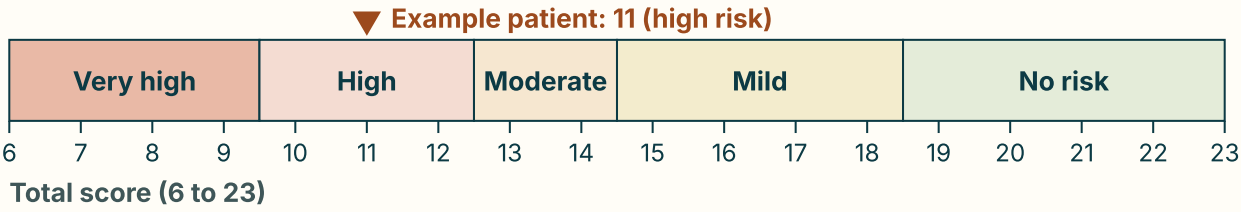
Medications: right patient, drug, dose, route and time, plus documentation, reason, response, refusal and education. Check three times (removing, preparing, at the bedside), with two identifiers; a room number never counts and a scan does not replace asking. High-alert drugs (insulin, anticoagulants, opioids, concentrated electrolytes, chemotherapy, neuromuscular blockers) get an independent double check. Time-critical drugs go within 30 minutes of schedule. Do not crush enteric coated or extended release forms. Through a tube: verify placement, head up 30 degrees, give each drug separately, flush 15 to 30 mL before, between and after. If a patient questions a pill, stop and verify. After an error, assess the patient first.

Urine: about 1,200 to 1,500 mL a day; at least 0.5 mL/kg/hour; under 30 mL/hour for 2 hours is reportable; PVR over 100 mL needs attention, over about 200 mL usually triggers straight catheterization. The best CAUTI prevention is not placing a catheter; incontinence and convenience are not indications. Insertion depth: female 5 to 7.5 cm until urine, then 2.5 to 5 cm more; male at 90 degrees, 17 to 22.5 cm until urine, then to the bifurcation; inflate with sterile water. Keep the system closed, the bag below the bladder and off the floor, no dependent loops, secured, soap and water meatal care, empty before two thirds full, review daily. Liquid seepage after days without a formed stool is impaction with overflow: no antidiarrheal. Enema: left Sims, 105 to 110 °F, 750 to 1,000 mL adult, tube 7.5 to 10 cm, bag 30 to 45 cm above the anus. Stoma barrier cut 1/8 inch (3 mm) larger; a dusky or black stoma is an emergency.

LOCK THESE IN

- The bath is a skin survey you own, even when a UAP washes.
- Water 110 to 115 °F; eyes first, inner to outer, perineum last.
- 35 pounds is the one-nurse lift limit; use equipment.
- Cane on the strong side; up with the good, down with the bad.
- Morse 45 or more is high risk; assess before you move a fallen patient.
- Restraints: never PRN; frame, not rail; quick release knot; two fingers.
- Braden 6 to 23, lower is worse; purple or maroon over intact skin is DTPI.
- Three checks, two identifiers; bag below the bladder; abdomen listened to before touched.

Braden Scale: lower total means higher risk



Read the subscales: each low one names an intervention

Sensory perception	**2/4**	Cannot feel discomfort: turn on a schedule
Moisture	**1/4**	Constantly damp: barrier cream, containment plan
Activity	**1/4**	Bedfast: pressure redistributing surface
Mobility	**2/4**	Cannot shift alone: reposition every 2 h
Nutrition	**3/4**	Adequate: keep monitoring intake
Friction and shear	**2/3**	Slides down: slide sheet, HOB 30 degrees or less

2 + 1 + 1 + 2 + 3 + 2 = 11. Clinical judgment can raise the risk, never lower it.

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.

Mobility devices and positions

Item	The rule	Why
Cane	Strong side; handle at hip; advance with the weak leg	Device carries what the weak leg cannot
Walker	Advance 6 to 12 in; weak leg, then strong; all four legs down	No standard walker on stairs
Crutches	Weight on hands; 2 to 3 finger widths below axilla	Axillary pressure injures the brachial plexus
Stairs	Up with the good leg; down with the bad leg and device	Strong leg lifts against gravity
Wheelchair transfer	Chair on strong side at 45 degrees, brakes locked, footrests away	Pivot on the strong leg
Semi-Fowler	Head of bed 30 to 45 degrees	Aspiration prevention; 30 is the pressure ceiling
30 degree lateral	Rolled a third of the way, pillows behind	Avoids loading the trochanter
Sims	Left side, upper knee flexed	Enemas, suppositories, follows the sigmoid
Trendelenburg	Head down	Not routine for hypotension; raises ICP

Restraint rules

Element	Non-violent (medical)	Violent or self-destructive
Order	Never PRN; renewed at least each calendar day	Never PRN; 4 h adult, 2 h ages 9 to 17, 1 h under 9
Maximum	Per policy	Renewable to 24 h, then in-person evaluation
Face to face	Per policy	Within 1 hour of starting
Monitoring	At least every 2 hours	Continuous; documented at least every 15 minutes
Release	Reposition, ROM, toileting at least every 2 hours	As soon as behavior criteria are met
Technique	Pad, two fingers of space, quick release knot to the frame	Same; never to a side rail

Worked cases

WORKED CASE 1 · SCORING THE BRADEN AND READING THE SUBSCALES

Mr. Delacroix scores: sensory 2, moisture 1, activity 1, mobility 2, nutrition 3, friction and shear 2.

STEP 1 · ADD

2 + 1 + 1 + 2 + 3 + 2 = 11.

STEP 2 · BAND IT

10 to 12 is high risk.

STEP 3 · READ EACH LOW SUBSCALE

Moisture 1: barrier cream and a containment plan. Activity 1: pressure redistributing surface. Mobility 2: reposition every 2 hours. Friction and shear 2: slide sheet and head of bed 30 degrees or less.

REMEMBER

The total triggers the protocol; the subscales write the plan.

WORKED CASE 2 · SCORING THE MORSE FALL SCALE

Mrs. Price fell at home two months ago, has diabetes as a second diagnosis, uses a walker, has a saline lock, has a weak gait and knows her limits.

STEP 1 · SCORE EACH ITEM

History of falling 25; secondary diagnosis 15; walker 15; IV or saline lock 20; weak gait 10; mental status 0.

STEP 2 · ADD

25 + 15 + 15 + 20 + 10 + 0 = 85.

STEP 3 · BAND IT

45 or more is high risk.

STEP 4 · MATCH THE MECHANISM

Walker within reach, toileting schedule, hourly rounding, orthostatic check, medication review.

WORKED CASE 3 · STAGING IN DARKER SKIN

Two patients with deeply pigmented skin have intact skin over the sacrum. In Mr. Ade the area is darker and ashen than the surrounding skin, warmer and firmer, and tender. In Ms. Obi it is a persistent deep maroon patch.

STEP 1 · ASK THE FIRST QUESTION

Is the skin intact? Yes in both, so the choice is Stage 1 or DTPI.

STEP 2 · LET COLOR SORT IT

Darker, gray or ashen with temperature, firmness or pain change: Mr. Ade has a Stage 1.

STEP 3 · THE OTHER ONE

Persistent purple, maroon or deep red over intact skin: Ms. Obi has a deep tissue pressure injury.

STEP 4 · ACT

Both: offload now. Ms. Obi also needs immediate provider notification and a wound consult; DTPI can worsen within days.

WORKED CASE 4 · A FALL ON AN ANTICOAGULANT

At 0215 Mrs. Hall, 82, on warfarin, is found on the floor after an unwitnessed fall. She may have struck her head.

STEP 1 · DO NOT MOVE HER FIRST

Stay, call for help, assess in place: consciousness, movement of all limbs, pain, deformity, head strike.

STEP 2 · MEASURE

Vital signs, glucose if unclear, start neuro checks per policy.

STEP 3 · MOVE SAFELY

Lift with adequate staff after injury is evaluated.

STEP 4 · SBAR, ENDING WITH THE R

"Please evaluate her now. I am requesting a stat head CT and coagulation panel. Neuro checks are running every 15 minutes and she is on bed rest with the alarm on. Do you want tonight's warfarin held?"

TRAPS PEOPLE FALL INTO

- **Letting a UAP bath replace your skin check.** Delegating the washing never delegates your eyes.
- **Lifting a patient alone with "good body mechanics."** Over 35 pounds needs equipment and help.
- **Putting the cane on the weak side.** It goes on the strong side and moves with the weak leg.
- **Tying a restraint to the side rail.** When the rail drops, the limb goes with it.
- **Calling a maroon patch on intact dark skin a Stage 1.** Persistent purple or maroon over intact skin is DTPI.
- **Using a donut cushion.** It creates a ring of ischemia.
- **Giving an antidiarrheal for liquid seepage after days without stool.** That is impaction with overflow.
- **Hanging the catheter bag on the bed rail during transport.** Above bladder level, urine refluxes and seeds infection.

Chapter 14 self-test · ten items

1. In what order does the nurse wash during a bed bath?

A. Perineum, back, legs, chest, arms, face, eyes

B. Face, perineum, chest, arms, legs, back, eyes

C. Chest, arms, face, eyes, legs, perineum, back

D. Eyes, face, arms, chest, legs, back, perineum

D. Eyes, face, arms, chest, legs, back, perineum Bathing goes clean to dirty, eyes first with no soap and the perineum last.

2. A patient has diabetes and peripheral neuropathy. Which foot care action is correct?

A. Soak the feet in warm water each night
B. Apply lotion between all of the toes
C. Inspect soles and toe webs; refer nails
D. Trim the toenails short and curved

C. Inspect soles and toe webs; refer nails No soaking, no lotion between toes and no nail cutting in diabetes; inspect and refer nail care per policy.

3. A nurse plans to move a patient alone using good body mechanics. Above what weight should one caregiver not lift by hand?

A. About 50 pounds
B. About 75 pounds
C. About 35 pounds
D. About 100 pounds

C. About 35 pounds The limit is 35 pounds (about 16 kg), so most adult transfers need equipment.

4. A patient with left sided weakness uses a cane. Where should the cane be held?

A. In the left hand, on the weak side
B. In whichever hand feels more natural
C. In both hands, held in front
D. In the right hand, on the strong side

D. In the right hand, on the strong side The cane goes on the strong side and advances with the weak leg.

5. A patient scores 50 on the Morse Fall Scale. What does this mean?

A. High risk; match actions to the cause
B. Low risk; universal precautions only
C. Moderate risk; reassess next week
D. No risk, since 125 is the cutoff

A. High risk; match actions to the cause On the Morse scale, 45 or more is high risk. The score signals risk; the plan must address the mechanism.

6. Which restraint practice is correct?

A. Tie it to the side rail so it is easy to reach
B. Tie it to the bed frame with a quick release knot
C. Use a square knot so that it cannot slip loose
D. Pull it snug so no fingers fit under the strap

B. Tie it to the bed frame with a quick release knot Tie to the frame with a quick release knot and leave two fingers of space. A side rail can drag the limb when lowered.

7. A patient's Braden total is 16. How is this read?

A. High risk, since higher totals mean more risk
B. No risk, since 16 is above the midpoint
C. Mild risk, since lower totals mean higher risk
D. Very high risk, since 16 is near the top

C. Mild risk, since lower totals mean higher risk Braden 15 to 18 is mild risk. Lower totals mean higher risk.

8. Intact skin over the heel shows a persistent deep maroon patch. How should it be classified?

A. Stage 1 pressure injury
B. Deep tissue pressure injury
C. Stage 2 pressure injury
D. A simple bruise from a bump

B. Deep tissue pressure injury Persistent purple, maroon or deep red over intact skin is a DTPI, not a Stage 1.

9. At the bedside, before giving a scanned medication, what else must the nurse do?

A. Have the patient state name and birth date
B. Check the room number against the MAR
C. Rely on the scan alone to confirm identity
D. Ask a family member to confirm the name

A. Have the patient state name and birth date Scanning supplements but never replaces two identifiers. A room number is never an identifier.

10. A patient has had no formed stool for five days and now has frequent small liquid stools. What is the priority concern?

A. Viral gastroenteritis
B. A new food intolerance
C. Normal return of bowel function
D. Fecal impaction with overflow

D. Fecal impaction with overflow Liquid seepage around a hard mass is overflow. An antidiarrheal would worsen the obstruction.

Cram sheet

Everything from chapters 13 and 14 in one place. Cover the right column and see if you can rebuild each row.

Numbers to know

Item	Value	Note
Strength	0 none; 1 flicker; 2 gravity eliminated; 3 against gravity; 4 some resistance; 5 full	Chart each side
Key ROM	Shoulder 180; knee 130 to 150; hip 120 knee bent; ankle DF 20, PF 45	Painful arc 60 to 120
Straight leg raise	Positive with radicular pain at 30 to 70 degrees	Below the knee
TUG	12 s or more is fall risk	10 feet, turn, return
Neurovascular	Refill under 2 s; hourly for 24 h, then every 4 h	Compare limbs
GCS	3 to 15; 8 or less airway risk	Drop of 2 or any motor drop: urgent
Pupils	2 to 5 mm, PERRLA	Fixed dilated: emergency
Infant reflexes	Moro by 3 to 6 mo; grasp and rooting by 3 to 4; tonic neck by 4 to 6	Babinski normal to 12 to 24 mo
Compartment	Damage in 4 to 8 h; pressure over 30 mm Hg	Keep at heart level
Stroke windows	Thrombolysis within 4.5 h; thrombectomy up to 24 h selected	Door to CT 20 min; door to needle 60
Bath and enema water	Bath 110 to 115 °F; enema 105 to 110 °F	Enema 750 to 1,000 mL adult; tube 7.5 to 10 cm
Lift limit	35 lb (about 16 kg)	Equipment plus a second person
Morse	45 or more high risk	Total 0 to 125
Braden	6 to 23; 10 to 12 high; 9 or less very high	Q version for children
Urine	0.5 mL/kg/h; under 30 mL/h x 2 h reportable	PVR over 100 attention; over about 200 catheterize per protocol

Item	Value	Note
Catheter depth	Female 5 to 7.5 cm then 2.5 to 5 more; male 17 to 22.5 cm	Sterile water in the balloon
Ostomy	Barrier 1/8 in (3 mm) larger; empty at one third to one half	Ileostomy over about 1,200 mL/day: report

Patterns

Pattern	Findings	Meaning
UMN	Spastic, 3+ to 4+, clonus, upgoing toe	Brain or cord lesion
LMN	Flaccid, 0 to 1+, atrophy, fasciculations	Anterior horn, root or nerve
Romberg	Steady eyes open, sways eyes closed	Proprioceptive or vestibular
Facial droop	Forehead spared vs involved	Central vs peripheral
Stage 1 vs DTPI	Darker or ashen vs persistent purple or maroon on intact skin	DTPI needs faster escalation
Impaction	Days without stool, then liquid seepage	No antidiarrheal

Rules that are not numbers

Topic	The rule
Exam order	Inspect, palpate, then active ROM, passive ROM, strength; abdomen still inspect, auscultate, percuss, palpate.
Falls	Assess before moving; neuro checks with anticoagulants; never mention the incident report in the chart.
Restraints	Alternatives first; never PRN; frame not rail; quick release knot.
Medications	Three checks, two identifiers, double check high-alert drugs, stop when the patient questions a pill.
CAUTI	Do not place one without an indication; closed system; bag low; review daily.
Delegation	UAP bathe, reposition, record I&O, apply footwear; the RN assesses skin and falls, stages, gives meds, teaches, ambulates first.

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