NPTE REVIEW · STUDY GUIDE

Study Guide 5

This guide goes with Practice Exam 5. Chapter 9 is about dosing exercise safely around heart, lung, vascular and lymphatic disease, and spotting decompensation before it becomes an emergency. Chapter 10 moves to the skin: naming a wound from where it is and how it looks, staging pressure injuries, matching dressings to drainage, and protecting a burned patient from contracture. Work the arithmetic in the cases by hand (Karvonen, ABI, Wells, rule of nines), then take the ten board-style items for each chapter.

WHAT THIS GUIDE COVERS

- Chapter 9 · stable and unstable angina, MI and troponin, heart failure signs, NYHA and ACC/AHA, sternal precautions, pacemakers, ICDs, LVADs and transplant, cardiac rehab phases and prescription, cardiac drugs, obstructive versus restrictive disease, COPD grades and oxygen, asthma, pulmonary rehab, breathing retraining, airway clearance, arterial versus venous disease, the ABI, claudication walking, Wells DVT and lymphedema with CDT.
- Chapter 10 · skin layers, healing phases and delays, wound documentation, pressure injury stages and the Braden scale, arterial, venous and neuropathic wounds, TIME, selective and nonselective debridement, dressings by drainage, infection, offloading and compression, adjunct modalities, burn depth, rule of nines, grafts, antideformity positions, scar management, skin cancer, skin infections and edema grading.

CHAPTER 9

Cardiovascular, Pulmonary and Lymphatic Conditions and Rehabilitation

Read it in full: **Chapter 9 in the textbook**. Practice it: **Practice Exam 5** and the **flashcards**.

What to know

Stable angina comes with predictable exertion and eases with rest or nitroglycerin. **Unstable angina** is new, at rest or crescendo: stop and get medical help, never "lower the intensity and

continue." Unstable angina, NSTEMI and STEMI are the acute coronary syndromes. Troponin rises within about 3 to 4 hours, peaks near 24 hours and stays up 7 to 14 days; mobilize once it has peaked and the patient is stable. A patient with known stable angina who gets pain: stop, sit, one sublingual nitroglycerin; call emergency services if not better or worse after 5 minutes.

Left heart failure floods the lungs: dyspnea, orthopnea, PND, crackles, S3. **Right heart failure** backs up into the body: JVD, dependent edema, liver congestion, weight gain. HFrEF is EF 40 percent or less, HFpEF 50 percent or more. NYHA classes I to IV describe symptoms and can improve; ACC/AHA stages A to D never move backward. Hold exercise for weight gain of about 2 to 3 pounds in a day or 5 in a week, new crackles or S3, rising JVD or resting HR above about 120.

A median sternotomy unites in about 6 to 8 weeks. Traditional **sternal precautions**: no lifting, pushing or pulling over about 5 to 10 pounds, no pushing up with the arms, no bilateral or resisted overhead reaching, splint the cough, no driving about 4 weeks. Clicking or drainage means stop and report. Pacemaker leads: limit that arm to about 90 degrees for 4 to 6 weeks. ICD: keep HR 10 to 20 below the detection rate. LVAD: often no pulse; read a Doppler MAP (about 70 to 90). A transplanted heart is denervated: high resting rate, slow rise, use RPE.

Cardiac rehab phase I limits the HR rise to about 20 above rest after MI and 30 after surgery, RPE 13 or less. Phase II trains at 40 to 80 percent of HRR or RPE 12 to 16, with the upper limit at least **10 beats below the ischemic threshold**. Resistance work at about 40 to 60 percent of 1RM, 10 to 15 reps. Beta blockers blunt HR (use RPE); nitrates cause hypotension and reflex tachycardia; diuretics cause dehydration and low potassium; digoxin toxicity brings nausea and yellow halos; statins can cause myalgia.

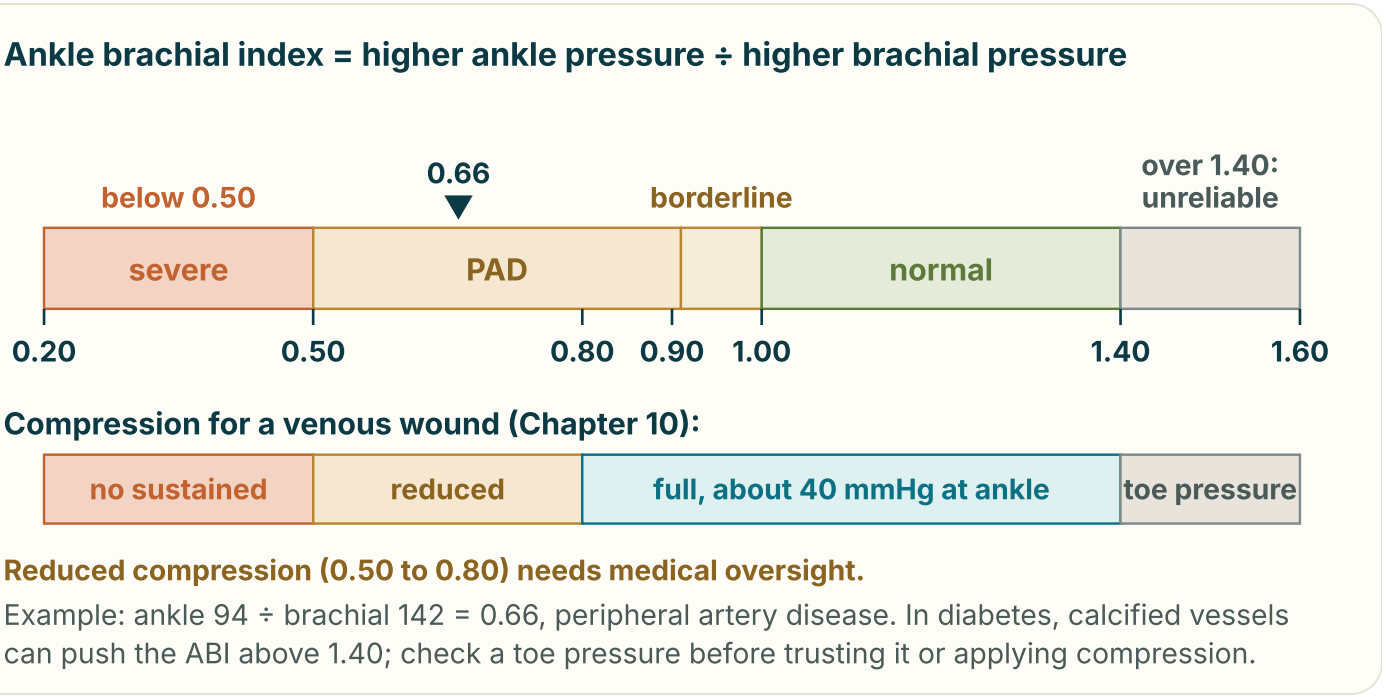
Obstruction lowers FEV_1/FVC below 0.70 and traps air; restriction lowers TLC and causes exertional desaturation with a low DLCO in fibrosis. COPD grades by FEV_1 percent predicted: 1 mild 80 or more, 2 moderate 50 to 79, 3 severe 30 to 49, 4 very severe below 30. Long term oxygen for resting SpO_2 88 percent or lower; the usual target is **88 to 92 percent**. Dynamic hyperinflation is why COPD patients stop. Asthma bronchoconstriction peaks 5 to 15 minutes after vigorous exercise; a quiet chest is an emergency.

Pulmonary rehab improves capacity and dyspnea but not FEV_1. **Pursed lip breathing** (exhale about twice as long) splints airways and slows the rate; forward lean positions restore some diaphragm dome. Diaphragmatic breathing can worsen work of breathing in severe hyperinflation. Airway clearance: postural drainage (head down avoided with raised ICP, GERD, hemoptysis, uncontrolled hypertension), percussion (avoid fractures, low platelets, fresh incisions), ACBT with huffing, PEP and assisted cough.

Arterial disease: claudication, rest pain eased by dangling, cool hairless skin, weak pulses, painful punched out wounds, worse with elevation. **Venous** disease: edema, hemosiderin staining, aching eased by elevation, shallow medial wounds. The **ABI** is the higher ankle pressure over the higher brachial pressure; 0.90 or less is PAD, below 0.50 means no sustained compression, above 1.40 is unreliable (calcified vessels, so check toe pressures). Claudication walking: to moderate pain (3 to 4 of 4), rest to full relief, 30 to 45 minutes, 3 or more times a week for 12 weeks.

DVT: use the **Wells criteria**, not Homans sign. Two level: 2 or more likely, 1 or less unlikely; hold LE exercise and notify the physician the same day. After a confirmed DVT, walk once therapeutically anticoagulated. Sudden dyspnea, pleuritic pain, tachycardia and falling SpO_2 suggest PE: emergency.

Lymphedema stages: 0 latent, I reversible with elevation, II fibrotic, III elephantiasis. A positive Stemmer sign supports it; lipedema spares the feet. **Complete decongestive therapy**: phase 1 (MLD, short stretch bandages about 23 hours a day, exercise in bandages, skin care) then phase 2 self management with garments. MLD clears proximal healthy nodes and territories first, then the limb proximal to distal. Cellulitis, acute DVT, decompensated heart failure and severe arterial disease stop MLD and compression.



Reading the ankle brachial index. Divide the higher ankle pressure by the higher brachial pressure. The number tells you whether the patient has arterial disease and how much compression is safe.

LOCK THESE IN

- New, rest or crescendo angina: stop and get help.
- Left HF floods lungs; right HF floods the body. Weight up 2 to 3 lb a day or 5 a week: hold.
- Sternal precautions about 6 to 8 weeks; no pushing up with the arms.
- Phase II: 40 to 80% HRR, at least 10 beats below the ischemic threshold.
- COPD SpO_2 target 88 to 92%; pursed lip breathing and forward lean.
- ABI ≤ 0.90 PAD; < 0.50 no sustained compression; > 1.40 unreliable.
- Wells DVT: 2 or more likely; never rely on Homans.
- MLD starts proximal and clears healthy nodes first.

Heart failure and cardiac rehab

Item	Rule
HFrEF; HFpEF	EF ≤ 40%; EF ≥ 50%
NYHA III	Marked limitation: less than ordinary activity causes symptoms
NYHA IV	Symptoms at rest
Phase I limits	HR rise about 20 after MI, 30 after surgery; RPE ≤ 13
Phase II intensity	40 to 80% HRR or RPE 12 to 16
Ischemic threshold	Stay at least 10 bpm below it
ICD	Train 10 to 20 bpm below detection rate
LVAD	Doppler MAP about 70 to 90; protect the driveline

Vascular and lymphatic

Item	Rule
ABI	Higher ankle ÷ higher brachial
ABI > 1.40	Noncompressible; use toe pressure
ABI ≤ 0.90	PAD
ABI < 0.50	No sustained compression
Claudication walking	To pain 3 to 4 of 4, rest, repeat; 30 to 45 min, 3+/week, 12 weeks
Wells DVT	≥ 2 likely (two level)
Lymphedema stage I	Reverses with elevation
CDT phase 1	MLD, short stretch bandaging, exercise, skin care

Worked cases

WORKED CASE 1 · DECOMPENSATION AT HOME

A 74 year old with HFrEF (EF 30%) needed three pillows to sleep, gained 4 pounds in two days and has new bibasilar crackles. HR 98, BP 108/70, SpO_2 92%.

STEP 1 · LIST THE SIGNS

Orthopnea, rapid weight gain and new crackles: left sided decompensation with fluid overload.

STEP 2 · COMPARE TO LIMITS

4 pounds in 2 days exceeds 2 to 3 pounds in a day.

STEP 3 · ACT

Hold exercise and contact the physician or nurse today.

WHY NOT LOWER INTENSITY

New crackles and weight gain mean the medical regimen needs adjusting.

WORKED CASE 2 · KARVONEN WITH AN ISCHEMIC THRESHOLD

Phase II after MI: resting HR 70; exercise test on his usual beta blocker reached 150 peak; 1.5 mm ST depression appeared at 130. Prescribe at 70% HRR.

STEP 1 · RESERVE

150 − 70 = 80.

STEP 2 · 70 PERCENT

80 × 0.70 = 56; 56 + 70 = 126.

STEP 3 · APPLY THE CEILING

Ischemia at 130, so the upper limit is 130 − 10 = **120**.

STEP 4 · DECIDE

Set the top at **120 bpm** and use RPE 11 to 13 as a cross check. The ischemic threshold overrides the formula.

WORKED CASE 3 · COMPUTING AN ABI

Brachial pressures: right 142, left 136. Right leg: DP 88, PT 94. What is the right ABI and what does it mean?

STEP 1 · PICK THE ARM

Higher brachial = 142.

STEP 2 · PICK THE ANKLE

Higher right ankle = 94.

STEP 3 · DIVIDE

94 ÷ 142 = 0.66.

STEP 4 · INTERPRET

0.66: PAD (0.90 or less). Above 0.50, so sustained compression is not ruled out by this alone, but any compression needs medical oversight; start claudication walking if symptoms fit.

WORKED CASE 4 · SCORING THE WELLS CRITERIA

Four days after TKA, a 63 year old with breast cancer on treatment has new right calf pain, a calf 3.5 cm larger than the left, pitting edema only in that leg and tenderness along the deep veins.

STEP 1 · COUNT

Active cancer +1, surgery within 12 weeks +1, calf > 3 cm +1, pitting edema +1, tenderness +1 = **5**.

STEP 2 · READ THE SCORE

5 is far above 2: DVT likely.

STEP 3 · ACT

Hold LE exercise and notify the physician immediately for ultrasound. No Homans sign, no massage or compression.

TRAPS PEOPLE FALL INTO

- **Lowering intensity for unstable angina.** Stop and activate medical care.
- **Using 220 minus age on a beta blocker.** Use the measured test or RPE.
- **Ignoring an ischemic threshold.** Stay at least 10 bpm below it, whatever the formula says.
- **Raising oxygen far above the order in COPD.** Titrate within the order to about 88 to 92%.
- **Trusting an ABI of 1.5 in diabetes.** Calcified vessels inflate it; check toe pressures.
- **Starting MLD at the hand.** Clear proximal healthy nodes and territories first.

Chapter 9 self-test · ten items

1. A patient with known stable angina says his chest pressure now comes on while watching TV. What is the best action?

A. Lower the intensity and continue
B. Recheck vitals and continue slowly
C. Stop activity and get medical help
D. Take two nitroglycerin and proceed

C. Stop activity and get medical help Angina at rest is unstable angina, an acute coronary syndrome.

2. Which finding points to right sided heart failure?

A. Orthopnea and paroxysmal nocturnal dyspnea
B. An S3 with exertional dyspnea only
C. Bibasilar crackles and a frothy cough
D. Jugular venous distension and ankle edema

D. Jugular venous distension and ankle edema Right failure backs fluid into the systemic veins. Orthopnea, PND and crackles are left sided signs.

3. A patient has symptoms with less than ordinary activity but is comfortable at rest. What NYHA class is this?

A. Class III
B. Class IV
C. Class I
D. Class II

A. Class III Class III is marked limitation: less than ordinary activity causes symptoms.

4. Four days after CABG, which task breaks traditional sternal precautions?

A. Splinting a cough with a pillow
B. Pushing up from the chair with both arms
C. Reaching to shoulder height for a cup
D. Walking in the hall with the nurse

B. Pushing up from the chair with both arms Pushing up with the arms loads the healing sternum and is avoided for about 6 to 8 weeks.

5. A patient has an ICD with a detection rate of 160 bpm. What is the safest upper training HR?

A. About 160 to 170 bpm
B. About 155 to 160 bpm
C. Any rate under 165 bpm
D. About 140 to 150 bpm

D. About 140 to 150 bpm Keep exercise HR at least 10 to 20 beats below the detection rate.

6. A patient has FEV_1/FVC 0.58 and FEV_1 42% of predicted. How is the airflow limitation graded?

A. Grade 3, severe
B. Grade 4, very severe
C. Grade 2, moderate
D. Grade 1, mild

A. Grade 3, severe With FEV_1/FVC below 0.70, an FEV_1 of 30 to 49% of predicted is grade 3, severe.

7. Which breathing technique best reduces air trapping in COPD?

A. Rapid shallow chest breathing
B. Segmental expansion breathing
C. Pursed lip breathing on exhalation
D. Breath holding at full inspiration

C. Pursed lip breathing on exhalation Back pressure from pursed lips splints small airways, slows the rate and lengthens exhalation.

8. Postural drainage for a lower lobe basal segment is planned. Which history most clearly rules out the head down position?

A. A history of seasonal allergies
B. Recent neurosurgery with raised ICP
C. Mild osteoarthritis of the knees
D. Controlled type 2 diabetes

B. Recent neurosurgery with raised ICP Head down positions are avoided with increased intracranial pressure, recent neurosurgery, hemoptysis, GERD and uncontrolled hypertension.

9. Right brachial 150, left 140, right ankle DP 60 and PT 66. What is the right ABI?

A. 0.47
B. 0.40
C. 0.44
D. 0.60

C. 0.44 Higher ankle (66) ÷ higher brachial (150) = 0.44, severe disease: no sustained compression.

10. A woman in phase 1 CDT has a hot, red, spreading area on her lymphedematous arm and a fever. What should the therapist do?

A. Continue with lighter MLD strokes
B. Stop MLD and bandaging; refer urgently
C. Switch to pneumatic compression
D. Apply moist heat and recheck tomorrow

B. Stop MLD and bandaging; refer urgently Cellulitis is a contraindication to MLD and compression until treated with antibiotics.

CHAPTER 10

Integumentary: Wounds, Burns and Skin

Read it in full: **Chapter 10 in the textbook**. Practice it: **Practice Exam 5** and the **flashcards**.

What to know

The **epidermis** is avascular; the **dermis** is vascular and holds hair follicles and sweat glands lined with epithelium. When those appendages survive, new epithelium grows up from them, so **partial thickness wounds regenerate and full thickness wounds heal by scar**. Aging flattens the rete ridges, so skin tears easily.

Healing: hemostasis and inflammation (to about day 4 to 6, the macrophage is key), proliferation (about day 3 to week 3: granulation, contraction, epithelialization, type III collagen), maturation (day 21 to 2 years: type I collagen; scar reaches only about 80 percent of original strength). Delays: poor perfusion, infection, necrotic tissue, wrong moisture, pressure, diabetes, steroids, smoking and poor nutrition (albumin below 3.5, prealbumin below about 15).

Document length head to toe and width perpendicular, depth with a sterile applicator, all in cm. **Undermining** spans clock hours along the edge; a **tunnel** is a narrow channel in one direction; 12 o'clock points to the head. Note tissue percentages (granulation, epithelial, slough, eschar),

exudate (serous, serosanguineous, sanguineous, purulent), edges (epibole stops epithelial migration) and periwound (maceration, erythema).

Pressure injury stages follow the deepest tissue: 1 intact nonblanchable erythema; 2 partial thickness with exposed dermis or a serum blister; 3 full thickness with fat visible; 4 exposed or palpable fascia, muscle, tendon, ligament, cartilage or bone. Unstageable: base hidden by slough or eschar. Deep tissue pressure injury: persistent maroon or purple discoloration or a blood blister. Never reverse stage. Braden 6 to 23; 18 or less is at risk. Float heels, 30 degree tilt, head of bed 30 degrees or less, seated relief every 15 to 30 minutes.

Name the wound by location. **Arterial**: toes, lateral malleolus, punched out, pale, painful, worse with elevation; restore flow and keep dry eschar dry. **Venous**: medial gaiter area, shallow, wet, red base, edema; compress after an ABI check. **Neuropathic**: plantar metatarsal heads, callus, painless, loss of protective sensation; offload with a **total contact cast**. A wound that probes to bone suggests osteomyelitis. Skin tears and moisture damage are not staged as pressure injuries.

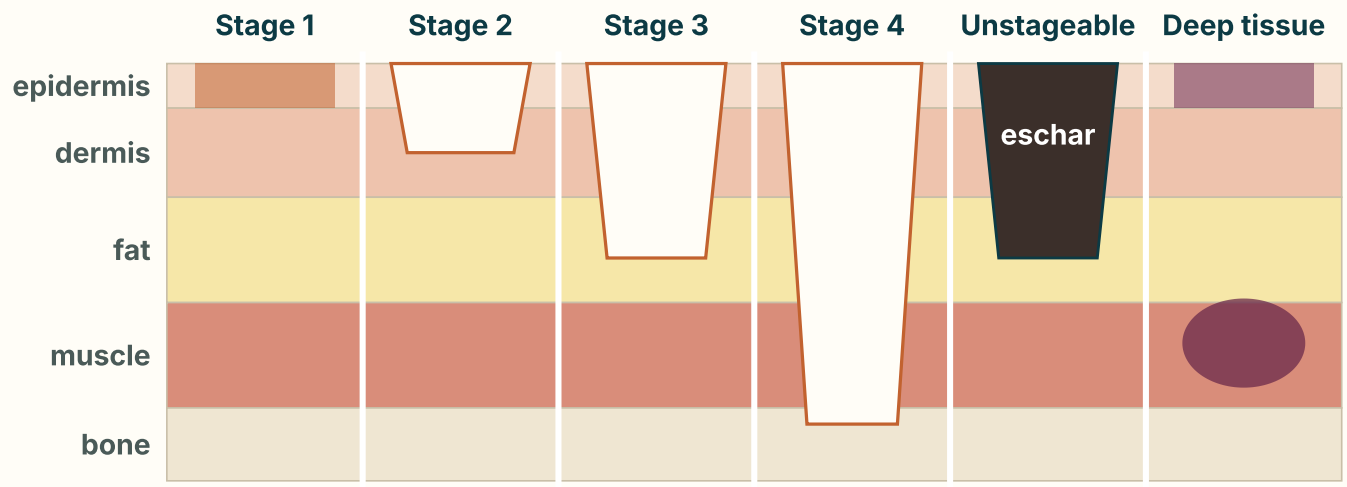
Debridement: **selective** methods are sharp, enzymatic, autolytic and larval; **nonselective** are wet to dry, whirlpool and pulsed lavage. Leave stable, dry, adherent eschar on heels and ischemic limbs. Cleanse at about 4 to 15 psi with saline. Dressings by drainage: dry, hydrogel; minimal, film or hydrocolloid; moderate to heavy, foam; heavy or cavity, alginate or hydrofiber; infected, an antimicrobial and never occlusive. Full compression (about 40 mmHg) is common at ABI 0.8 or higher.

Burn depth: superficial (epidermis, red, no blisters); **superficial partial thickness** (blisters, moist, very painful, heals in about 1 to 3 weeks); **deep partial thickness** (mottled red and white, slow blanching, 3 to 5 weeks, scar likely); **full thickness** (leathery, insensate, needs grafting). Size by the **rule of nines**: head 9, each arm 9, front trunk 18, back trunk 18, each leg 18, perineum 1; count only partial and full thickness. Parkland: 4 mL × kg × %TBSA over 24 hours, half in the first 8.

Grafts are usually immobilized about 3 to 5 days. The position of comfort is the position of contracture, so position against it: neck in slight extension with no pillow, shoulder abducted about 90 degrees, elbow extended, hand in the intrinsic plus position, hip extended and slightly

abducted, knee extended, ankle at neutral. Pressure garments about 25 mmHg, worn about 23 hours a day until the scar matures. A keloid grows beyond the wound; a hypertrophic scar stays within it.

Screen the skin every visit. **ABCDE**: asymmetry, border, color, diameter over about 6 mm, evolving (the most important sign). Basal cell is most common; melanoma is most deadly. Cellulitis: refer and hold compression. Pain out of proportion with fast spread suggests necrotizing fasciitis: emergency. A blistering rash with mucosal sores after a new drug suggests Stevens Johnson syndrome. Bilateral pitting edema suggests a systemic cause; unilateral suggests a local one.



Stage 1 intact, nonblanchable red · Stage 2 dermis exposed or serum blister · Stage 3 fat visible
Stage 4 muscle, tendon or bone · Unstageable: base hidden · Deep tissue: maroon or purple

Stage by the deepest tissue you can see. A healing stage 4 stays a stage 4; never reverse stage.

Pressure injury stages by depth. Each stage is named for the deepest tissue exposed. Slough or eschar that hides the base makes it unstageable until the base is seen.

LOCK THESE IN

- Partial thickness regenerates from appendages; full thickness heals by scar.
- Undermining spans clock hours; a tunnel goes one direction; 12 is the head.
- Stage by the deepest tissue; never reverse stage.
- Braden ≤ 18 at risk.
- Medial and wet = venous; lateral and toes, painful = arterial; plantar, callus, painless = neuropathic.
- Leave stable dry eschar on heels and ischemic limbs.
- Dry: hydrogel. Heavy: alginate or hydrofiber. Infected: never occlusive.
- Rule of nines: arm 9, leg 18, front trunk 18; count partial and full thickness only.

Dressings and debridement

Choice	When
Hydrogel	Dry or painful wounds; adds moisture
Film	Superficial, stage 1 to shallow 2; allows inspection
Hydrocolloid	Clean, light drainage; avoid with infection
Foam	Moderate to heavy drainage; cushioning
Alginate, hydrofiber	Heavy drainage, cavities and tunnels
Antimicrobial	Local infection, limited trial (about 2 weeks)
Selective debridement	Sharp, enzymatic, autolytic, larval
Nonselective debridement	Wet to dry, whirlpool, pulsed lavage

Burns

Item	Rule
Superficial partial	Blisters, moist, very painful; 1 to 3 weeks
Deep partial	Mottled, slow blanch, less sensation; 3 to 5+ weeks
Full thickness	Leathery, insensate; graft
Rule of nines	Head 9, arm 9, front 18, back 18, leg 18, perineum 1
Palm with fingers	About 1% TBSA
Parkland	4 mL × kg × %TBSA; half in first 8 h
Axilla	Abduction about 90 degrees
Hand	Wrist extended, MCPs flexed 60 to 90, IPs extended

Worked cases

WORKED CASE 1 · SIZING A BURN

A 34 year old has burns of the whole right arm (front and back), the anterior trunk and the anterior right leg. The arm and trunk are mottled red and white with slow refill; the leg is red with intact blisters. What is the TBSA and the depth?

STEP 1 · ARM

Whole right arm = 9%.

STEP 2 · TRUNK

Anterior trunk = 18%.

STEP 3 · LEG

Anterior right leg = half of 18 = 9%.

STEP 4 · ADD

9 + 18 + 9 = **36% TBSA**.

STEP 5 · DEPTH

Arm and trunk: deep partial thickness. Leg: superficial partial thickness (blisters).

POSITION

Shoulder abducted about 90 degrees; watch the circumferential arm for lost pulses or refill.

WORKED CASE 2 · PARKLAND FLUIDS

The same patient weighs 80 kg with 36% TBSA. Estimate 24 hour fluids and the first 8 hour amount.

STEP 1 · MULTIPLY

4 × 80 × 36 = **11,520 mL** in 24 hours.

STEP 2 · FIRST HALF

11,520 ÷ 2 = **5,760 mL** in the first 8 hours from injury.

NOTE

Urine output guides adjustment; this is the medical team's estimate, not a PT order.

WORKED CASE 3 · NAMING THE WOUND

A 58 year old with type 2 diabetes has a painless wound under the right second metatarsal head with thick callus. She cannot feel the 10 g monofilament. Pulses are palpable; ABI 1.05.

STEP 1 · LOCATION AND LOOK

Plantar, callused, painless.

STEP 2 · SENSATION AND FLOW

Loss of protective sensation with adequate perfusion.

STEP 3 · NAME IT

Neuropathic ulcer.

STEP 4 · TREAT THE CAUSE

Offload with a total contact cast if no infection, plus callus debridement and glucose control.

FIRST CHECK

Probe to bone, spreading cellulitis or a hot red foot (Charcot).

WORKED CASE 4 · WET WOUND, WRONG DRESSING

A venous wound above the left medial malleolus, 6 by 4 cm, has heavy exudate and macerated periwound skin. A hydrogel sheet is in use. ABI is 0.95.

STEP 1 · FIND THE MISMATCH

Hydrogel adds moisture to an already wet wound.

STEP 2 · SWITCH DRESSING

Alginate or hydrofiber with a foam cover, plus a skin barrier for the periwound.

STEP 3 · TREAT THE CAUSE

ABI 0.95 is above 0.8, so **multilayer compression** is safe; add elevation and calf pumping.

TRAPS PEOPLE FALL INTO

- **Calling a channel undermining.** Undermining spans clock hours; a tunnel is one narrow track.
- **Reverse staging a healing stage 4.** It stays a healing stage 4.
- **Calling a purple heel a stage 1.** Persistent maroon or purple is a deep tissue pressure injury.
- **Debriding a dry heel eschar on an ischemic limb.** Leave it, keep it dry and refer for vascular care.
- **Counting superficial burns in TBSA.** Count partial and full thickness only.
- **Positioning a burned axilla in adduction.** Comfort is contracture; abduct about 90 degrees.

Chapter 10 self-test · ten items

1. Why can a superficial partial thickness burn heal without a graft?

A. Fat in the hypodermis lays down new skin
B. The epidermis is vascular and can regrow fast
C. Muscle cells below differentiate into skin
D. Epithelium regrows from hair follicles and glands

D. Epithelium regrows from hair follicles and glands Surviving dermal appendages are lined with epithelium that regrows the surface.

2. A sacral wound has a 2 cm deep shelf of tissue loss under the skin from 1 to 4 o'clock. How is this documented?

A. Undermining from 1 to 4 o'clock
B. Epibole along 1 to 4 o'clock
C. A tunnel at 1 o'clock, 2 cm deep
D. A tunnel at 4 o'clock, 2 cm deep

A. Undermining from 1 to 4 o'clock Tissue loss along the edge across a span of clock hours is undermining.

3. A pressure injury shows full thickness loss with visible fat, some slough and no exposed bone or tendon. What stage is it?

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

C. Stage 3 Fat visible without exposed fascia, muscle, tendon or bone is stage 3. Slough that hides the base would make it unstageable.

4. A patient's Braden score is 12. How is the risk classified?

A. Moderate risk
B. High risk
C. No risk
D. Mild risk

B. High risk Braden 10 to 12 is high risk; 18 or less is at risk.

5. A painful, round, punched out wound with a pale base sits on the lateral malleolus. Pain worsens with leg elevation. What type is it?

A. Arterial
B. Neuropathic
C. Pressure
D. Venous

A. Arterial Lateral malleolus, punched out, pale and painful with elevation is an arterial wound.

6. Which method is selective debridement?

A. Whirlpool to loosen necrotic tissue
B. Pulsed lavage at high pressure
C. Enzymatic debridement with collagenase
D. Wet to dry gauze dressing changes

C. Enzymatic debridement with collagenase Sharp, enzymatic, autolytic and larval methods remove only nonviable tissue.

7. A clean, shallow wound bed is dry and painful. Which dressing fits best?

A. Foam
B. Hydrogel
C. Hydrofiber
D. Calcium alginate

B. Hydrogel Hydrogel donates moisture to a dry wound. Alginate, foam and hydrofiber absorb.

8. A burn is white and leathery, does not blanch and is painless to pinprick. What depth is it?

A. Superficial
B. Deep partial thickness
C. Superficial partial thickness
D. Full thickness

D. Full thickness Leathery, nonblanching and insensate means the dermis and its nerve endings are gone.

9. An adult has partial thickness burns of the entire left leg and the entire back of the trunk. What is the TBSA?

A. 45%
B. 36%
C. 27%
D. 18%

B. 36% Leg 18% + posterior trunk 18% = 36%.

10. A mole is 7 mm, has two shades of brown and a notched edge, and his partner says it has grown. What is the best action?

A. Reassure him because it is under 10 mm
B. Tell him it is melanoma and to call now
C. Document and urge prompt dermatology review
D. Ignore it since it is outside the plan

C. Document and urge prompt dermatology review Several ABCDE features, especially evolution, call for prompt referral without diagnosing.

Cram sheet

One page for Study Guide 5. Cover the right column and say the answer before you look.

Heart, lung, vessels, lymph

Topic	Rule
ACS	New, rest or crescendo angina: stop, get help
HF	Left: lungs. Right: body. Weight 2 to 3 lb/day or 5/week: hold
Sternal	6 to 8 weeks; no pushing up; splint cough
Rehab	Phase I +20 MI, +30 surgery; Phase II 40 to 80% HRR
Devices	ICD 10 to 20 below detection; LVAD Doppler MAP; transplant RPE
COPD	$FEV_1/FVC < 0.70$; SpO_2 88 to 92%; pursed lips
Airway clearance	No head down with raised ICP, GERD, hemoptysis
ABI	≤ 0.90 PAD; < 0.50 no compression; > 1.40 unreliable
DVT	Wells ≥ 2 likely; walk once anticoagulated
Lymphedema	Stages 0 to III; CDT; MLD proximal first

Skin and wounds

Topic	Rule
Healing	Inflammation, proliferation, maturation; scar about 80%
Staging	1 red, 2 dermis, 3 fat, 4 muscle, tendon or bone; DTPI; unstageable
Braden	6 to 23; ≤ 18 at risk; ≤ 9 very high
Wound types	Arterial lateral, venous medial, neuropathic plantar
Debridement	Selective: sharp, enzymatic, autolytic, larval
Dressings	Dry hydrogel; wet alginate or hydrofiber; foam moderate
Compression	Full at ABI ≥ 0.8; reduced 0.5 to 0.8
Burns	Blisters = superficial partial; leathery = full
Rule of nines	9, 9, 9, 18, 18, 18, 18, 1
ABCDE	Evolution is the most important sign

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