NCLEX 2026 · VISUAL STUDY GUIDE

SYSTEM · MUSCULOSKELETAL / PERIPHERAL VASCULAR

Amputation.

Complications · Management · Patient Teaching — the clinical judgment essentials.

PRIORITY FRAMEWORK
ABCs + Safety

TEST PLAN
NCJMM Clinical Judgment

FOCUS
Hemorrhage · Phantom Pain · Contractures

TOP TRAP
Stump elevation after 24 hr

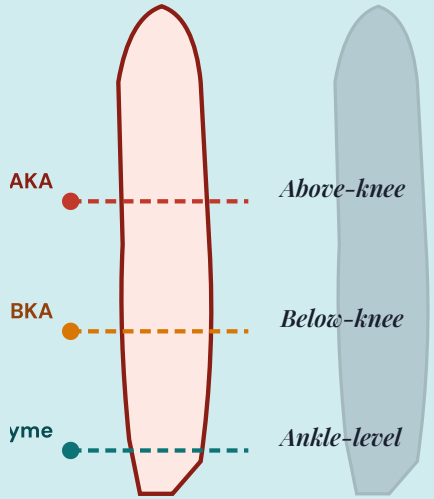
01 Definition & Overview

What is an amputation?

The surgical or traumatic removal of a limb, portion of a limb, or digit. It is most often performed as a **life-saving or limb-sparing measure** when tissue is no longer viable — when leaving it in place would threaten the client's life (sepsis) or overall function.

On the NCLEX, amputation is tested as a **high-risk surgical client**: the nurse must prevent hemorrhage, control pain (including phantom pain), preserve joint function, and support grieving over a changed body.

Why it matters: the #1 cause of non-traumatic lower-extremity amputation is poorly controlled *diabetes mellitus* with peripheral arterial disease — making amputation both a chronic-disease exam topic and a post-op surgical topic in one.



Common Levels

Higher amputation = greater energy cost to walk & more complex rehab.

TYPE 1

Traumatic

Crush, MVC, blast, industrial injury — limb is severed or devitalized at the scene. Preserve severed part in saline-moistened gauze on ice (not direct ice).

TYPE 2

Planned Surgical

Elective for PVD, diabetes, gangrene, osteomyelitis, or malignant tumor. Allows pre-op teaching, grief work, prosthesis planning.

TYPE 3

Open vs. Closed

Guillotine (open): left open in severe infection, revised later. **Closed (flap):** skin flap sutured over stump for cleaner healing.

02 Pathophysiology — Simplified

1 **Insult**
Trauma, ischemia, infection, or tumor compromises tissue.

→

2 **Ischemia**
Blood flow drops → cellular hypoxia → tissue death.

→

3 **Necrosis / Threat**
Gangrene, uncontrolled infection, or sepsis threatens life.

→

4 **Amputation**
Surgical removal at viable tissue level; vessels ligated; flap closed.

→

5 **Healing & Adaptation**
Stump heals; severed nerve endings generate phantom signals; rehab & prosthesis.

PVD / PAD	Diabetes	Trauma	Infection	Tumor	Frostbite
Impaired arterial flow	Neuropathic ulcers	Crush / avulsion	Osteomyelitis, gangrene	Bone & soft-tissue cancer	Full-thickness tissue loss

03 Signs & Symptoms — Pre-op Warnings & Post-op Complications

⏱ EARLY / Pre-op Limb Warnings

- Pallor, cyanosis, or mottling distal to block
- Coolness of the extremity to touch
- Diminished or absent distal pulses (6 Ps)
- Paresthesia — numbness, tingling, burning
- Pain that is out of proportion to appearance
- Non-healing ulcer > 2 weeks (esp. diabetic)
- Hair loss, shiny skin, thickened toenails

🚨 LATE / Post-op Complications

- Bright red bleeding saturating dressing — **HEMORRHAGE**
- Increased drainage + decreasing B/P + ↑ HR
- Fever, purulent drainage, foul odor — infection
- Phantom limb pain (burning, crushing, cramping)
- Flexion contracture of hip or knee
- Stump edema, delayed wound healing
- Depression, grief, body-image disturbance

🚩 *Red Flags* — Call the Provider / Act Now

Hemorrhage: large amount of bright red blood on dressing → apply direct pressure & **place tourniquet above stump** (kept at bedside post-op).

Signs of shock: tachycardia, hypotension, pallor, restlessness → likely bleeding into dressing/under flap.

Infection: fever > 101 °F, foul odor, purulent drainage, streaking, ↑ WBC.

DVT in remaining limb: unilateral calf pain, warmth, swelling, redness.

Necrosis of stump: black tissue, coolness, absence of capillary refill at flap.

Severe phantom pain unresponsive to ordered regimen — may need adjuvant therapy.

04 Priority Nursing Interventions

A	B	C	D
AIRWAY	BLEEDING	CIRCULATION & COMFORT	DISABILITY PREVENTION
Post-anesthesia airway patency; assess O_2 sat, LOC.	Tourniquet at bedside. Trace & mark drainage q hour × first 24 hr.	Perfusion to remaining limb; treat phantom pain as real pain.	Prevent contractures: no prolonged stump elevation; prone positioning.

Pre-operative

Assess baseline: peripheral pulses, skin color/temp, capillary refill on both limbs.

Psychosocial: allow expression of grief; anticipate denial, anger, depression.

Teach what to expect: phantom sensation, rehab, prosthesis timeline.

Consent & site marking verified with client; surgical site marked in indelible ink.

Optimize glucose in diabetic clients (delayed healing with ↑ glucose).

Strengthen upper body pre-op — trapeze bar, push-ups on mattress for crutch use later.

Post-operative

Monitor for hemorrhage — keep tourniquet at bedside; mark drainage on dressing.

Vital signs q 15 min × 1 hr, then per protocol; watch for shock.

Elevate stump on pillow for first 24 hr ONLY (to reduce edema). Then keep FLAT.

Prone position 20–30 min, 3–4×/day after 24 hr to prevent hip flexion contracture.

Rewrap residual limb with elastic bandage in figure-8, distal → proximal; reapply every 4–6 hr.

ROM exercises & early ambulation (with PT) to prevent contractures and DVT.

Treat phantom pain as real pain — gabapentin, mirror therapy, TENS, relaxation.

Wound & skin care: inspect flap, no lotions/powders on stump; report breakdown.

🛏️ Positioning Rules — the #1 Exam Fail Point

First 24 hours

Elevate the stump on a pillow to reduce edema. This is the *only* period elevation is acceptable.

After 24 hours

Do NOT elevate the stump on a pillow — causes permanent **hip/knee flexion contracture**.

Prone 20–30 min, 3–4×/day

Promotes full hip extension, stretches flexors, prevents contracture that would make prosthesis fitting impossible.

Avoid chronic sitting / dangling

Prolonged hip flexion & dependent stump → contracture + stump edema + delayed healing.

05 Pharmacology — Phantom Pain & Post-op Support

DRUG / CLASS	MECHANISM	USE IN AMPUTATION	KEY NURSING CONSIDERATIONS
Gabapentin / Pregabalin ANTICONVULSANT	Calms overactive peripheral & central nerve signaling.	**First-line for phantom limb pain.** Dampens burning, shooting, crushing phantom sensations.	Monitor for dizziness, drowsiness, ataxia. Taper slowly — do not stop abruptly. Fall precautions.
Amitriptyline / Nortriptyline TRICYCLIC	Modulates serotonin / norepinephrine in pain pathways.	Adjunct for neuropathic phantom pain, especially when pain disturbs sleep.	Anticholinergic effects — dry mouth, urinary retention, constipation, orthostasis. Caution in elderly and cardiac clients.
Opioids (morphine, oxycodone) ANALGESIC	Binds μ-receptors → reduces pain perception.	For acute surgical pain. **Less effective alone** for phantom pain — combine with an adjuvant.	Monitor respirations (hold if RR < 12), LOC, bowel function. Give stool softener.
Beta-blockers (propranolol) ADJUVANT	Reduces sympathetic hyperactivity in phantom pain.	Adjuvant for constant, burning phantom pain.	Monitor HR (hold if < 60) and BP. Do not stop abruptly.
Calcitonin ADJUVANT	Modulates bone / nerve pain signaling.	Used for severe, treatment-resistant phantom pain.	Monitor for hypocalcemia, flushing, nausea.
Enoxaparin / Heparin ANTICOAGULANT	Prevents thrombus formation.	DVT prophylaxis — immobility post-op ↑ clot risk.	Monitor for bleeding, bruising, platelet count (HIT). Do not rub injection site.
Cephalosporins (cefazolin) ANTIBIOTIC	Bactericidal; disrupts bacterial cell wall.	Surgical prophylaxis; treats stump infection.	Assess penicillin allergy (cross-sensitivity). Monitor wound and temp.

06 NCLEX Test Traps ⚠️

Trap 01 · Positioning

Elevating the stump indefinitely

WRONG THINKING
"Elevation reduces swelling, so keep it up."

CORRECT
Elevate on pillow ONLY the first 24 hr. After that it causes a **hip/knee flexion contracture**.

Trap 02 · Phantom Pain

Calling phantom pain "not real"

WRONG THINKING
"The limb is gone — reassure the client the pain isn't real."

CORRECT
Phantom pain IS real. Validate it and treat it (gabapentin, mirror therapy, TENS).

Trap 03 · Hemorrhage

First action when dressing is saturated with bright red blood

WRONG THINKING
"Call the provider first."

CORRECT
Apply direct pressure and **place the bedside tourniquet** above the stump. Then notify.

Trap 04 · Bandaging

Wrapping direction

WRONG THINKING
"Wrap tighter at the top to hold the bandage."

CORRECT
Wrap **distal → proximal** (tighter at the bottom) in figure-8 pattern to shape the residual limb for prosthesis.

Trap 05 · Prone Position

Client refuses lying prone

WRONG THINKING

"It's uncomfortable, so allow supine with pillow."

CORRECT

Teach why prone 20–30 min, 3–4×/day is essential — it's the only position that **prevents hip flexion contracture**.

Trap 06 · Stump Skin Care

Softening the stump with lotion

WRONG THINKING

"Apply lotion to keep skin supple for the prosthesis."

CORRECT

Wash with mild soap & water, dry thoroughly. **No lotions, powders, or oils** — they macerate skin and breed bacteria under the prosthesis.

Trap 07 · Priority Early vs Late

What's the priority on POD 1 vs POD 3+?

WRONG THINKING

"Same priorities for all post-op days."

CORRECT

POD 1 = **hemorrhage & shock**. POD 3+ = **infection + contracture prevention**. Change your lens with the day.

Trap 08 · Traumatic Amputation

Storing a severed part

WRONG THINKING

"Put the limb directly on ice."

CORRECT

Wrap in **saline-moistened sterile gauze**, seal in a plastic bag, then place the bag on ice. *Never* let ice touch tissue.

07 NCJMM Clinical Judgment Scenario

NCJMM

Scenario: *A 68-year-old client with a history of type 2 diabetes and peripheral arterial disease is* **post-op day 1 following a right below-knee amputation (BKA).** *At 0800, vital signs are BP 108/62, HR 98, RR 20, SpO_2 96%. The dressing has a quarter-sized spot of bright red drainage, and the stump is elevated on two pillows. The client rates pain at 7/10 in "the foot that isn't there" and is tearful, stating, "I should have listened to my doctor about my sugar."*

1

Recognize Cues

Relevant: bright-red drainage (↑ baseline), BP trending low, HR elevated, 7/10 phantom pain, guilt/grief statements, stump elevated on POD 1.

2

Analyze Cues

Cluster: possible early hemorrhage (drainage + ↓ BP + ↑ HR); phantom limb pain is real pain needing treatment; psychosocial grief/guilt normal but must be supported.

3

Prioritize Hypothesis

#1 Bleeding (ABC) > #2 Pain control > #3 Psychosocial support. Positioning (elevation OK today, not tomorrow) is also a consideration.

4

Generate Solutions / Act

Mark & circle drainage, recheck VS in 15 min, verify tourniquet at bedside, reinforce (not remove) dressing, medicate per order, validate phantom pain, sit with client to address grief.

5

Evaluate Outcomes

Drainage stable/not expanding, VS return to baseline, pain ≤ 3/10, client verbalizes feelings & agrees to psych/social-work consult, plan to lower stump to flat tomorrow.

08 Patient & Family Education

Key Teaching Points for Home

- **Inspect the stump daily** using a hand mirror — look for redness, blisters, abrasions, drainage, or color change.
- **Wash stump daily** with mild soap and water; rinse well and **dry thoroughly** (moisture → breakdown).
- **No lotions, powders, or oils** on the residual limb — they soften skin and harbor bacteria under the prosthesis.
- **Wear the elastic wrap or shrinker sock** at all times (except bathing) to shape the stump for a prosthesis.
- **Rewrap every 4–6 hours;** figure-8 pattern, firmer at distal end, looser proximally.
- **Lie prone 20–30 minutes 3–4× daily** for the first few weeks to prevent hip flexion contractures.
- **Do prescribed ROM and strengthening exercises** — prosthetic success depends on upper-body and hip strength.
- **Protect the remaining limb:** well-fitting shoes, check feet daily, no barefoot walking, manage diabetes and smoking.
- **Phantom pain is real and treatable** — use ordered medication, mirror therapy, TENS, distraction, and relaxation. Tell your provider if pain worsens.
- **Grief is expected.** Join an amputee support group; involve family; seek counseling if sadness persists > 2 weeks or interferes with

🚨 Call the Provider If...

Teach the client & family to report any of the following immediately:

- Sudden increase in drainage or any bright red bleeding
- Fever > 101 °F (38.3 °C), chills, or flu-like symptoms
- Foul odor, pus, or spreading redness from the stump
- Black or cold tissue at the surgical site
- New or worsening pain unrelieved by medication
- Sudden swelling, redness, warmth, or pain in the remaining leg (DVT)
- Skin breakdown, open sores, or blisters from the prosthesis
- Thoughts of harming self or hopelessness that won't lift

function.

- **Care of the prosthesis:** clean socket daily, inspect for wear, don't adjust yourself — return to prosthetist.

09 Memory Boosters & Mnemonics

STUMP

POST-OP CARE CHECKLIST

- **S** hape it — figure-8 wrap distal → proximal
- **T** ourniquet at bedside for hemorrhage
- **U** pright only after 24 hr (no pillow elevation)
- **M** ove it — ROM, prone 3–4×/day
- **P** ain — treat phantom pain as real

6 Ps

PRE-OP VASCULAR ASSESSMENT

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

PHANTOM

PHANTOM PAIN MANAGEMENT

- **P** regabalin / gabapentin
- **H** eat & relaxation
- **A** ntidepressants (TCAs)
- **N** erve stimulation (TENS)
- **T** reat as real pain — validate
- **O** pioids (adjunct, not alone)
- **M** irror therapy & massage

Quick Associations & Pattern Recognition

Bright red drainage	→	Pressure + tourniquet + notify (not just "call MD")	**Pillow under stump**	→	OK day 1 · BAD day 2+ (contracture)
Prone 20–30 min	→	Prevents hip flexion contracture	**Figure-8 wrap**	→	Distal → proximal · shapes for prosthesis
"My foot is burning"	→	Phantom pain · validate + medicate + mirror	**Diabetic + PAD**	→	#1 cause of non-traumatic LE amputation
Severed limb in field	→	Saline gauze → plastic bag → ON ice (never direct)	**Lotion on stump**	→	NO — macerates skin under prosthesis

Clinical Judgment Bottom Line: *On POD 1, think bleeding & shock. On POD 2+, think contractures, infection, phantom pain, grief. Treat the stump — and the whole person — every shift.*