

Pathology Class 3:

Healing & Recovery – Why Some Wounds Don't Heal

Pre-Assessment Quiz: Pathology Week 3 (Ages 14-18yo)

1. Which sequence correctly lists the four major phases of wound healing?
 - a) **Hemostasis → Inflammation → Proliferation → Remodeling**
 - b) Inflammation → Hemostasis → Remodeling → Proliferation
 - c) Proliferation → Inflammation → Hemostasis → Fibrosis
 - d) Clotting → Regeneration → Fibrosis → Maturation
2. What is the main purpose of hemostasis immediately after an injury?
 - a) To build new collagen
 - b) To activate stem cells
 - c) To form scar tissue
 - d) **To stop bleeding and create an early scaffold**
3. Redness, warmth, and swelling around a fresh wound are usually signs of which healing phase?
 - a) Hemostasis
 - b) **Inflammation**
 - c) Remodeling
 - d) Regeneration
4. What is the key difference between regeneration and fibrosis?
 - a) Regeneration is slower than fibrosis
 - b) Fibrosis restores normal tissue perfectly
 - c) **Regeneration restores original tissue, fibrosis replaces it with scar**
 - d) Fibrosis only occurs in the skin
5. Which tissue has the strongest ability for true regeneration after injury?
 - a) Cartilage
 - b) Tendon
 - c) Heart muscle
 - d) **Bone**
6. Which tissues are known for very slow healing due to poor blood supply?
 - a) Skin and liver
 - b) **Tendons and cartilage**
 - c) Bone and muscle
 - d) Spleen and blood vessels

7. A keloid is best described as:
 - a) A cancerous skin growth
 - b) A type of infection
 - c) **An overgrowth of scar tissue from dysregulated healing**
 - d) A normal stage of regeneration

8. Which factor most strongly controls healing speed and quality across tissues?
 - a) **Blood supply**
 - b) Eye color
 - c) Body temperature alone
 - d) Dominant hand use

9. Peripheral nerves differ from brain and spinal cord tissue because peripheral nerves:
 - a) Cannot regrow at all
 - b) **Can slowly regenerate over time**
 - c) Only heal with scar tissue
 - d) Regrow instantly

10. Which statement best reflects a core concept from Pathology Week 3?
 - a) All tissues heal at the same speed
 - b) Scar tissue is always identical to original tissue
 - c) Inflammation should always be completely blocked during healing
 - d) **Healing quality depends on tissue type, blood supply, and systemic health**

Home Activity – Answer Key**Activity 1 — Healing Phase Mapping (Case Mini-Analysis)**

Think of a real injury you've had (cut, strain, fracture, bad scrape, overuse injury).

- Injury type: (Example - Shin Splints)
- Tissue involved: (Example – Anterior tibialis muscle)
- Which healing phase was most noticeable? (Example – inflammation)
- Which phase lasted the longest? (Example – remodeling; strengthening the tendon)
- Did healing look more like regeneration or fibrosis? Why? (Example – remodeling dominant repair, tissue reorganized and became stronger, even though it didn't rebuild exactly like the original.)

Activity 2 — Regeneration vs Fibrosis Decision Grid

Classify each as primarily:

R = regeneration dominant

F = fibrosis dominant

M = mixed

- R - Superficial skin abrasion
- F - Deep acne scar
- R - Liver injury (full recovery)
- F - Tendon tear
- M - Bone fracture
- F - Heart attack tissue
- F - Meniscus tear

Activity 3 — Blood Supply vs Healing Speed Ranking

Rank these tissues from **fastest to slowest typical healing**:

- Skin
- Bone
- Tendon
- Cartilage
- Muscle

Rank (fastest to slowest healing):

Skin – Bone – Muscle – Tendon - Cartilage

Bone is highly vascular and usually heals faster than muscle strains of comparable severity. Muscle healing is good, but often slower than uncomplicated bone fracture union timelines.

Activity 4 — Apoptosis vs Necrosis Sort

Label each:

A = apoptosis

N = necrosis

- N - Frostbite tissue death
- A - Normal gut lining turnover
- N - Severe ischemic ulcer
- A - Embryonic finger separation
- N - Diabetic foot necrosis
- A - Routine skin cell turnover