

#### WHERE CLASSICAL WISDOM MEETS INTELLIGENT LEARNING

# Chapter 4. Management of Common Injuries Part 1. Soft Tissue Injuries

# **Chapter 4 • Management of Common Injuries**

# Part 1 • Soft-Tissue Injuries

(Sprains · Strains · Contusions · Immediate Care & Rehabilitation)

# 1 What Counts as a "Soft-Tissue" Injury?

Soft tissues are **everything that is not bone**: ligaments, tendons, muscles, fascia, blood vessels, nerves and skin. The three most frequent injuries you will meet are:

| Term   | Tissue Involved  | One-Line Description   |  |  |  |
|--|------------------|--|--|--|--|
| Sprain   | Ligament         | Over-stretch or tear of the strong "rope" that joins one bone to another (e.g., ankle lateral ligament). |  |  |  |
| Strain   | Muscle or tendon | Over-stretch or tear of fibres that create movement (e.g., hamstring pull).                              |  |  |  |
| Contusion Muscle or sub-cutis A direct blow that crushes tissue and capillaries, causing a bruise. |                  |  |  |  |  |

# 2 How Do They Happen?—Quick Mechanisms

- **Sprain:** Sudden force across a joint **beyond its normal range**. *Example:* Landing on the outer border of your foot → ankle rolls inward.
- **Strain: Excessive tension** while the muscle is lengthening or contracting fast. *Example:* Sprinting—the hamstring fires eccentrically to slow the leg swing.
- Contusion: Direct impact—ball, elbow, fall, or blunt object. Capillaries burst, bleeding into the tissue.

**Mnemonic:** "S-P-R" — Sudden overstretch = Sprain, Pulling muscle = strain, Rough blow = contusion.

# 3 Grading Severity—Why It Matters

| Grade         | Tissue Damage            | Key Signs   | Typical Healing Time*         |
|---------------|--------------------------|---|-------------------------------|
| I (Mild)      | Micro-tear, <10 % fibres | Pain but little swelling; full strength                 | 2-3 weeks                     |
| II (Moderate) |                          | Visible swelling/bruising, weakness, painful movement   | 4-8 weeks                     |
| III (Severe)  | Complete rupture         | "Pop" felt/heard, gross instability or loss of function | 3–6 months (may need surgery) |

<sup>\*</sup>Assumes good compliance and no complications.

# 4 Immediate Care—The P.O.L.I.C.E. Plan

Protect • Optimal Loading • Ice • Compress • Elevate

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| Step |  | VV | wnat to Do (0-72 n) |  |  |  | wny |   |
|------|--|----|---------------------|--|--|--|-----|---|
| _    |  | _  |                     |  |  |  |     | _ |

**Protect** Stop activity, support joint (brace, sling). Prevents further tearing.

Optimal Loading Gentle pain-free motion (wiggle toes, isometrics). Maintains circulation, limits stiffness—better than

total rest

Ice (Cold)15 min every 2 h; cloth barrier.Constricts vessels ⇒ ↓ swelling, ↓ pain.CompressElastic bandage—snug, not numb.Limits oedema; provides proprioception.ElevateInjured part above heart level.Promotes drainage of fluid by gravity.

**Avoid** H.A.R.M. for 72 h → **H**eat, **A**lcohol, **R**unning, **M**assage (deep). These increase bleeding.

# 5 Rehabilitation Road-Map—3 Phases You Must Pass

| Phase                                | Goal  | Key Actions   | Progress Marker  |
|--------------------------------------|---|---|--|
| 1. Acute (Day 1-7)                   | Pain & swelling control;<br>gentle mobility | POLICE; pain-free isometrics; ankle circles or quad sets; diaphragmatic breathing                 | Swelling ↓ 30 %; pain ≤ 3/10 at rest   |
| 2. Sub-acute<br>(Week 2-4)           |   | Active ROM to full; resisted bands; balance drills (for sprains); gentle stretching (for strains) | Symmetrical ROM; ≥ 70 % strength vs uninjured side                               |
| 3. Functional /<br>Return (Week 4 +) | Sport or work-specific loading              | Plyometrics, agility, heavy strength, eccentric loading (hamstring Nordic curls)                  | Hop test, Y-balance, or job-task simulation pain-free $\& \ge 90 \%$ performance |

Golden rule: No phase is skipped. If pain, swelling or instability returns, drop back a level.

# 6 Red-Flag Signs—Refer Urgently

- Numbness / tingling beyond bruised area → possible nerve injury.
- Blue-cold extremity → vascular compromise.
- Extremely tight compartment → suspect compartment syndrome.
- Joint "gives way" repeatedly → likely Grade III sprain; surgical opinion needed.

When in doubt, immobilise and refer.

# 7 Practical Example—Lateral Ankle Sprain

| Day 0-2                              | Day 3-7  | Week 2                            | Week 3-4                                       |
|--------------------------------------|--|-----------------------------------|--|
| POLICE; crutches partial weight-bear | Ankle alphabet, static balance 30 s $\times$ 5 | Theraband inversion/eversion 3×15 | Single-leg hop, figure-8 run<br>when pain-free |

Return to sport when: painless triple hop, 90 % calf-raise endurance, agility T-test within 10 % of pre-injury time.

# 8 Common Student Questions—Simple Answers

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"Ice or heat first?"

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Ice in first 72 h; heat only after swelling subsides.

Brace gives consistent compression; tape is lighter but loses tension after 30 min-choose per "Brace or tape?"

sport and budget.

Mild static stretch starts in sub-acute phase when pain < 3/10. Aggressive stretching too early re-"When can I stretch?"

# 9 Quick-Look Checklist for Every Soft-Tissue Injury

1. History - mechanism, sound, immediate swelling?

- 2. **Inspect** bruise, deformity, compare sides.
- 3. Palpate pinpoint tenderness, gap?
- 4. Active & Passive ROM stop at pain.
- 5. **Strength** isometric test ± pain.
- 6. **Special test** ligament stress (if trained).
- 7. **Grade** injury → plan POLICE & rehab phase.
- 8. **Document** time, care given, advice.
- 9. **Educate** HARM to avoid, phase goals.
- 10. Follow-up review in 48 h; adjust load.

# 10 Key Take-Home Points

- Sprain = ligament, strain = muscle/tendon, contusion = bruise.
- POLICE is the modern standard—Optimal Loading beats strict rest.
- Progress through acute → sub-acute → functional phases; test before you load.
- Pain, swelling, instability are your dashboard gauges—monitor them daily.
- Know your **red flags** and never hesitate to **refer** when signs look serious.

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