**Assessment & Evaluation of Sports Injuries: Chapter 11**

**Assessment and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of Athletic Injuries**

* Orderly collection of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ data on health status
  + Based on professional knowledge and knowledge of events that occurred
* Knowledge of ATC helps in getting proper aid to the athlete quickly
  + \_\_\_\_\_\_\_\_\_\_\_ can evaluate injury, but they **cannot**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - Licensed health care providers (i.e. \_\_\_\_\_\_) diagnose

**Assessment and Evaluation of Athletic Injuries**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + What \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_provider states to be the problem, based on skills, expertise, and training
    - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ uses all information obtained to arrive at a diagnosis
    - ATC uses information to set short- and long-term \_\_\_\_\_\_\_\_\_\_\_\_ for recovery

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ vs. Diagnosis**

* Orderly collection of objective and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ data on the athlete’s health status
* Proper assessment and evaluation of injuries after they occur, help in getting the proper aid to the athlete as quickly as possible
* Using information from assessment and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ findings to establish the cause and nature of the athlete’s injury/disease
* Made \_\_\_\_\_\_\_\_\_\_\_\_ by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or other licensed health care provider

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Influencing Athletic Injuries**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Data
* Size
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Body Structure
* Gender
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Maturity Level
* Anthropomorphic Status
* Mechanism of Force
* \_\_\_\_\_\_\_\_\_\_\_\_\_
* Protective Equipment
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Mechanism of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* Comprises all forces at time of an impact
  + Direction
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Duration
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ being undertaken
  + Position of body/body part
* Enable \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_staff to get a preliminary picture of what might have been injured and to what extent

**Speed**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ type and severity of athletic injuries
* Greater the speed of collision, greater the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of injury

**Protective Equipment&\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ risk of injury
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and distributes force
* Skill Level
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are at greater risk

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and Evaluation**

* ATC determines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cause and mechanism of injury (MOI)
  + - May be based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or second-hand accounts

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Injury Survey**

* + Assessment of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ emergencies and management of ABCs
  + \_\_\_\_\_\_\_\_\_ should be activated in life-threatening situation
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Injury Survey
  + A thorough , methodical evaluation of an athlete’s \_\_\_\_\_\_\_\_\_\_\_\_health to reveal additional injuries beyond the initial injury

**Primary Injury Survey**

* Determining if injury is serious or life-threatening
  + \_\_\_\_\_\_\_\_\_\_\_\_\_
    - Airway
    - \_\_\_\_\_\_\_\_\_\_\_\_\_
    - Circulation
  + High-quality bystander \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_resuscitation (CPR) can double or triple survival rates from cardiac arrest

**Primary Injury Survey**

1. Involves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of serious, life-threatening injuries and the proper disposition of the injured athlete
2. Determines the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, site, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of injury
3. Determines the type of first aid and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ necessary
4. Determines how the athlete should be transported from the surface of play
5. Determines if injury warrants immediate referral to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Secondary Injury Survey**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ evaluation of an athlete’s overall health
* H.O.P.S. method (History, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Palpation, Special tests)
  + Be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Gather a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the injury
  + Perform a physical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Secondary Injury Survey**

* Rule out most ­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_ injuries first
* Be alert, \_\_\_\_\_\_\_\_, conservative, and safe
* Well-being of athlete always comes first
* Be Thorough
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Look beyond the obvious

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Injury Survey**

* Be Thorough
* Gather a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Do not touch individual until *\_\_\_\_\_\_*related questions have been asked

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Injury Survey**

* Be Thorough
* Gather a \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Expose the Injury
  + Injury must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to observe extent of damage
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ tape, jersey, pants if necessary
  + Maintain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Secondary Injury Survey**

* Be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Gather a History
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the Injury
* Perform a Physical Examination (HOPS)
  + O\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**History**

* Give some \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of some questions you would ask an athlete about their current injury.
* Your goal is use the answers to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the diagnosis in order to organize your steps for the evaluation.

**History**

1. What \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? Body part injured; description of injury
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ did it occur?
3. What \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ influenced the injury?
   * Position of body & injured area
   * WB or \_\_\_\_\_\_\_\_\_\_\_\_\_
   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_at time of injury?
   * Speed/direction of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?
   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_& duration of force
   * Results of force—\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, hyperextension/flexion
4. Was a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_heard? By individual or anyone else? Pop, snap, rip?
5. Where is pain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ now? Where was it located at time of injury? Have athlete point to pain with one finger.
6. Pain characteristics:
   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_or dull/achy?
   * Constant, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, intermittent?
   * Painful at rest or only with use?
   * How intense is pain? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ scale
7. Is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ function intact?
   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, pins-&-needles, prickling, muscle weakness, paralysis, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_sensation
8. Is there any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? A sense that something isn’t working right?
9. \_\_\_\_\_\_\_\_\_\_\_\_history of injury to this body part?

Observation

* Look &\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to uninjured side
* Specifically look for:
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (vascular problems or bruising)
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (dislocation and/or fracture)

Palpation

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of injured athlete
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ uninjured side first
* Observe athlete’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for signs of wincing
* \_\_\_\_\_\_\_\_\_\_ for bones, ligaments, muscles, and tendons

**Range of Motion (ROM) &Strength**

* \_\_\_\_\_\_\_\_\_\_\_\_\_ (AROM)
  + Movement done by athlete
* \_\_\_\_\_\_\_\_\_\_\_\_\_ (PROM)
  + Movement done by examiner
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (RROM)
  + Movement done by athlete while examiner applies resistance
* Manual Muscle Test (MMT)/Break Test

**Special Tests**

* Special tests/exams establish \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of injury
* Stability tests investigate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ laxity
  + Grade \_\_\_\_\_
  + Grade \_\_\_\_\_
  + Grade \_\_\_\_\_

**Ligamentous Laxity**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_: few torn fibers that will make maneuver painful, but not show any ligamentous laxity compared to uninjured side
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_: produce both pain and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ligamentous laxity; will be endpoint
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_: may or may not be pain; will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ instability of joint; marked looseness that joint can be dislocated; complete tear of ligament; no end point

**Functional Activity**

* Passed various tests
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ normal inspection
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_l pain upon palpation
* \_\_\_\_\_\_\_\_\_\_ ROM
* Full muscle strength vs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Joint \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Athlete stand, walk, hop, jog, sprint, cut, twist
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ activities

**Return-to-Play Criteria**

* \_\_\_\_\_\_\_\_\_ strength
  + All muscles supporting the injury must be at \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of pre-injury strength prior to RTP
  + Damage to surrounding soft tissue must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Return-to-Play Criteria**

* Full Strength
* \_\_\_\_\_\_\_\_\_\_\_\_\_ from pain
  + Athlete in pain is athlete at risk for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ injury
  + True pain is indication that injury has \_\_\_\_\_\_\_\_\_\_\_\_\_ completely healed
  + No pain during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ test for RTP

**Return-to-Play Criteria**

* Full Strength
* Free from pain
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ performance tests
  + Tests \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to simulate actual skills required for sport
  + Begin at \_\_\_\_\_\_\_\_ level of intensity, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ increase until athlete performing at game speed
  + May include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, jumping, cutting, back-pedaling, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, etc

**Return-to-Play Criteria**

* Full Strength
* Free from pain
* Skills performance test
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will help athlete work through any hesitation about returning to play after sustaining injury
  + Athlete who do not perform at \_\_\_\_\_\_\_\_\_\_\_will be prone to new injuries
  + Always ask the athlete if they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - An athlete who is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or does not feel ready should not be allowed to return

**Documentation of Injuries**

* \_\_\_\_\_\_\_\_\_\_\_\_ vs HOPS
* Daily Injury Report
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Treatment Log
* Daily Red-Cross List
* Athlete Medical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Form

**SOAP**

* S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ made by injured athlete
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ taking (time, mechanism, injury site)
* O\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SOAP**

* Subjective
* O\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inspection
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of active, passive, resistive motion
  + Special tests performed
* Assessment
* Plan

**SOAP**

* Subjective
* Objective
* A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + ATCs personal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_& impression as to nature and extent of injury
* Plan

**SOAP**

* Subjective
* Objective
* Assessment
* Plan
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rendered to athlete
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (what is done next)
  + Include treatment and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exercises

**HOPS**

* H\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* O\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Body’s Response to Injury**

* Chapter 16
* Pages 333-335

**Inflammation**

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to invasion by an infectious agent or physical, chemical, or traumatic damage
* Response due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ injuries
* Body must respond to injury by healing and repairing the damaged tissue
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ infectious agents and their toxins

**Inflammatory Response**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ defense mechanism
* Concentration of immune-system cells and their products at the site of damage
* 3 major events occur:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ supply to damaged tissue increases
  + Capillary permeability \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ migrate out of capillaries into surrounding tissues

**Cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* Act of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ healing
* Once tissue is degraded by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, generation of new tissue can begin
* Damaged tissue may be replaced by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (fibrous connective tissue that binds to damaged tissue)
* Cellular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Regeneration
  + Cells revert to an earlier stage of development
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of cells with completely different functions than original
* Tissue \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Cells and molecules of tissue are modified and reassembled to yield a new composition of cell types and extracellular matrix

**Tissue Remodeling**

* \_\_\_\_\_\_\_ components to process of extracellular matrix
  + Formation of new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ vessels
  + Migration and proliferation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to fill and bridge wound
  + Deposition of \_\_\_\_\_\_\_\_
  + Tissue remodeling, maturation and reorganization of fibrous tissue into a \_\_\_\_\_\_\_

**Tissue Remodeling cont.**

* Remodeling phase can last \_\_\_\_\_ year +
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers thickened and strengthened
* Tensile strength of wound increases as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecules modified and cross-linked by enzymes

**Phases of Soft Tissue Injury**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inflammatory Phase
* Repair and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase

**Acute Inflammatory Phase**

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Swelling
  + Increased tissue temperature
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Signs:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Pain Due To:
  + Specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substances
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on nerve endings
  + Lack of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to area resulting in death of tissues

**Acute Inflammatory Phase**

* ­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ followed by vasodilation
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Initially & up to \_\_\_\_\_\_ minutes
  + Seals blood vessels
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ blood flow to area
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Slowing of blood’s flow
  + Increase in blood viscosity (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
  + Blockage of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Results of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Accumulation of plasma and \_\_\_\_\_\_\_\_\_\_\_
* Vessel lining becomes more permeable so there is more fluid accumulation
* Redistribution of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Bring \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substance
  + Ingest small \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (pavementing)
* Lineup and adhere to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wall (setting stage for scar)

**Repair & Regeneration Phase**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Synonymous with healing
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Refers to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of destroyed or lost tissue
  + Healing occurs when the area become clean through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of cellular debris, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and fibrin clot

**Repair & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of scar tissue is common
* The less \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the better the end result
* Mature scar tissue is firm, fibrous, inelastic, devoid of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ circulation
* Tissue repair \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Remodeling Phase**

* First \_\_\_\_\_\_\_ weeks
* Increase in production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in strength of fibers
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ take up to one year to complete the remodeling phase
* Tensile strength of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is specific to the mechanical force imposed during the remodeling phase

**Remodeling Phase**

* Force applied during rehab = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Too early or too \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of rehab results in delayed and extended healing
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ balance synthesis and lysis (building up and breaking down)

**Length of Phases Based On:**

* Forces on injury
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Immediate action taken