

SNS COLLEGE OF PHYSIOTHERAPY

COIMBATORE - 641035

COURSE NAME: CLINICAL ORTHO

TOPIC: SOFT TISSUE INJURY

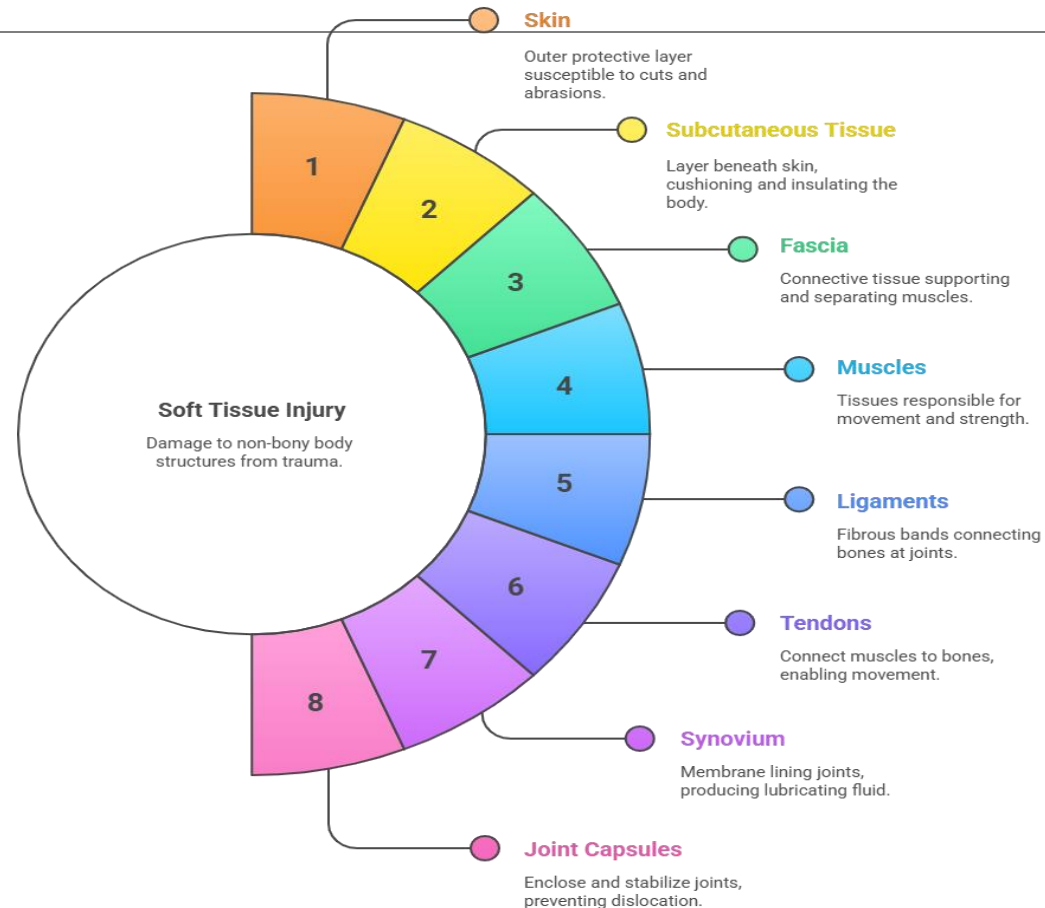
SUBJECT CODE: 746283

Soft Tissue Injury

Definition

A soft tissue injury refers to damage or trauma to the non-bony structures of the body, including the skin, subcutaneous tissue, fascia, muscles, ligaments, tendons, synovium, joint capsules, nerves, and blood vessels. These injuries are commonly caused by overuse, trauma, or sudden force, and can result in pain, swelling, bruising, and loss of function.

Exploring the Dimensions of Soft Tissue Injuries



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Sprains

Sprain Injury Mechanism



Twisting Injuries

Common cause of ankle sprains

Joint Overextension

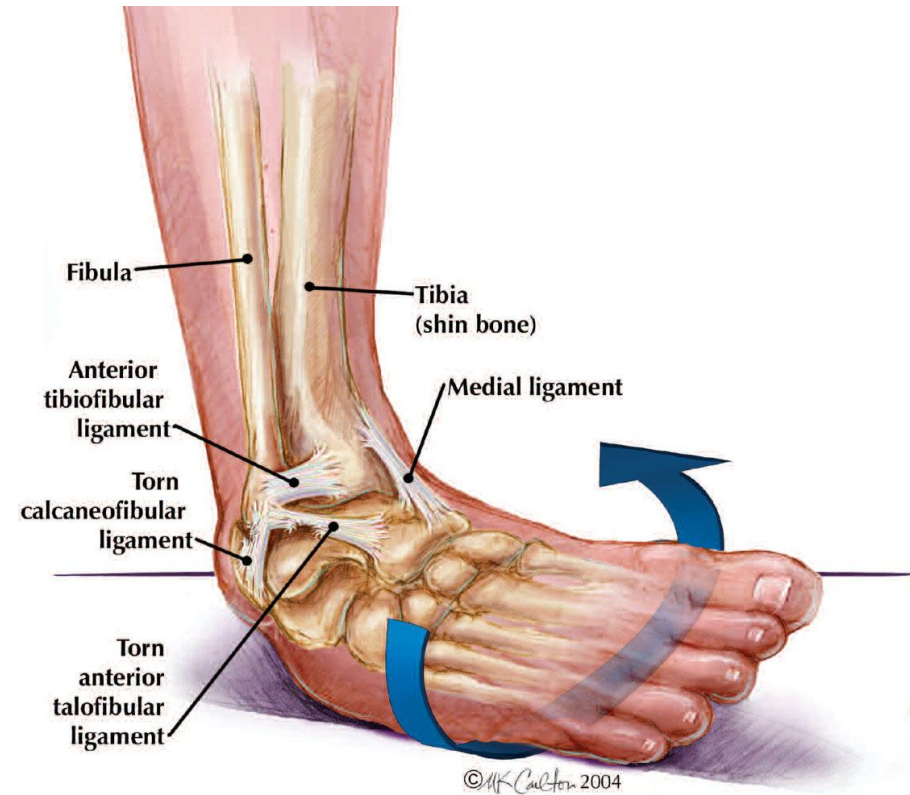
Movement beyond normal ROM

Excessive Force

Forces exceeding ligament capacity

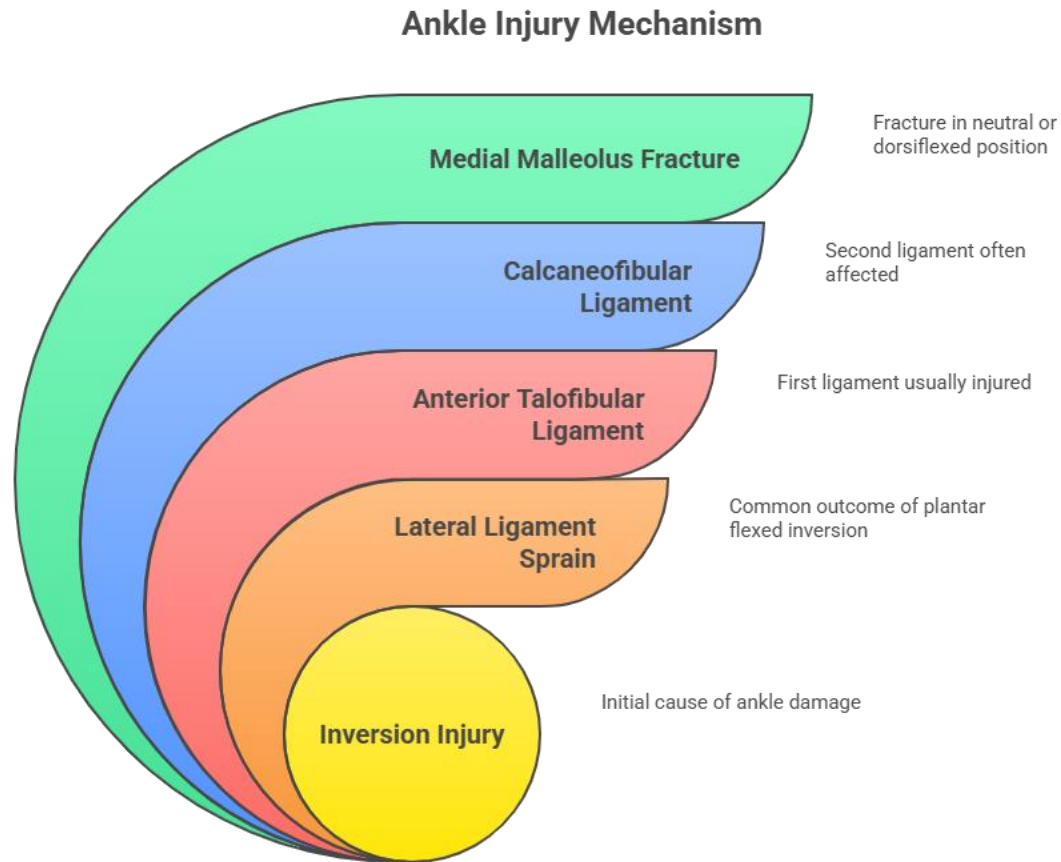
Ligament Tear

Disruption of ligament fibers

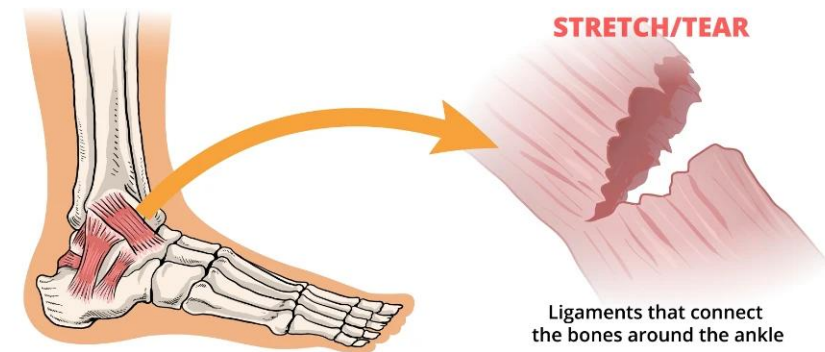
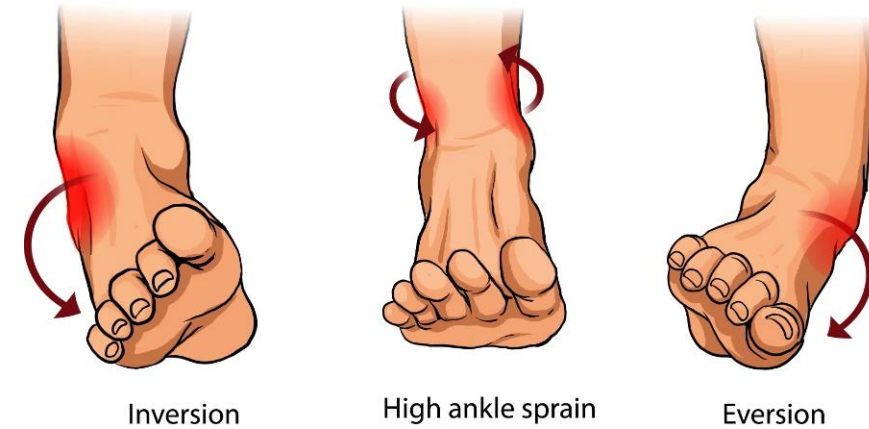


Ankle Injuries

Inversion Injury (foot turns inward):



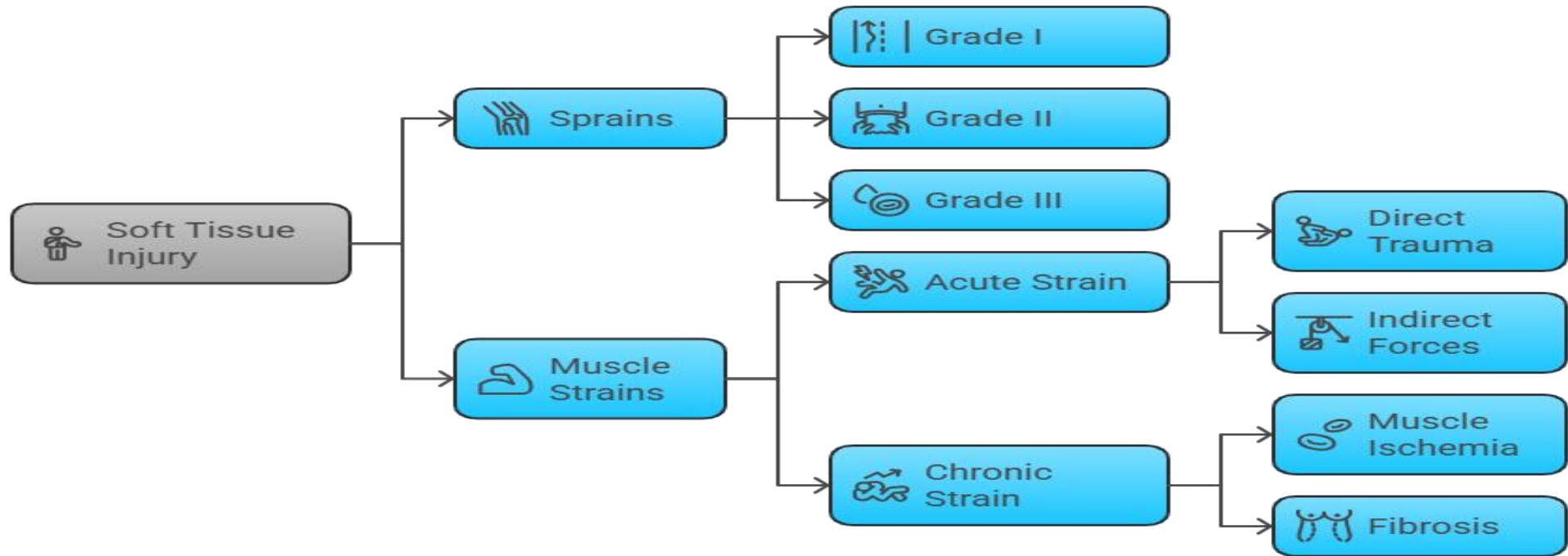
Ankle Sprains



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"Sprains are graded based on the severity of ligament damage from mild stretching to complete tears."

Soft Tissue Injury Classification and Causes



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MUSCLE STRAIN

It's important to remember that a normal X-ray does not exclude a sprain, as it primarily assesses bony structures

Muscle strain

A muscle strain is defined as an injury to a muscle and its tendons . It is also described as a tear in the muscles and can occur due to overstretching of a muscle at rest

Pathophysiology of Muscle Strains: Injury to the muscles leads to pain. As a result, the muscle goes into **spasm** to limit movements and reduce pain



INJURY TYPES

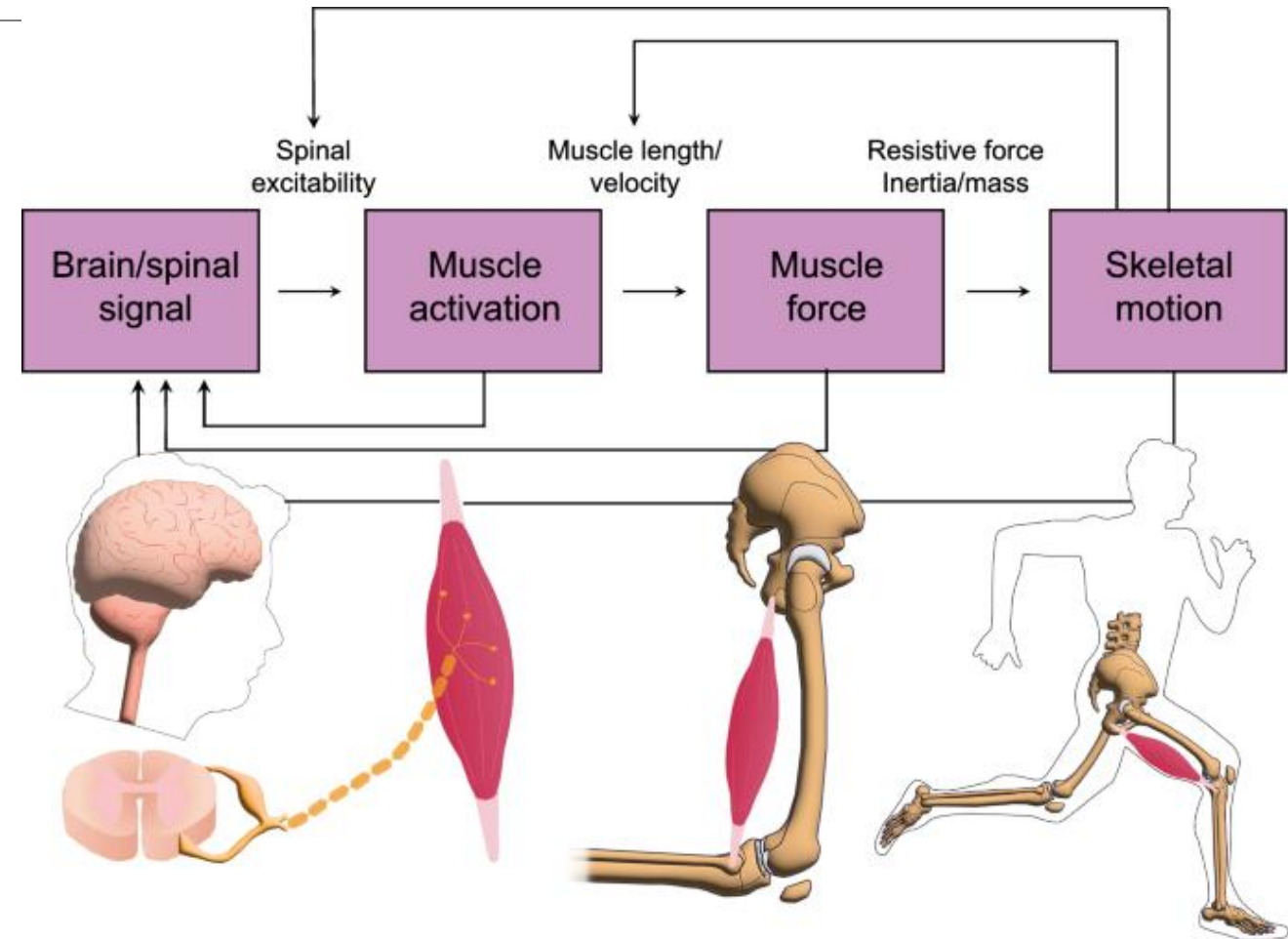
Direct trauma can also injure the muscles and tendons

Overstretching of muscles due to indirect trauma, especially in sportspersons

A single high-force contraction of the muscle while the muscle is lengthened by external forces (such as body weight).

Eccentric exercise, where the muscle lengthens while under tension

Hamstring Curl



Muscle Strain Grades Comparison

Characteristic	Grade I	Grade II	Grade III
Description	Small fiber tear	More fibers torn	Complete muscle rupture
Symptoms	Mild pain, minimal loss	Moderate pain, weakness	Severe pain, loss of function
Example	Slight discomfort after activity	Limping, reduced strength	Sudden pop, unable to contract

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Muscle strains are classified into grades based

Grade I – Mild Strain:

Description:

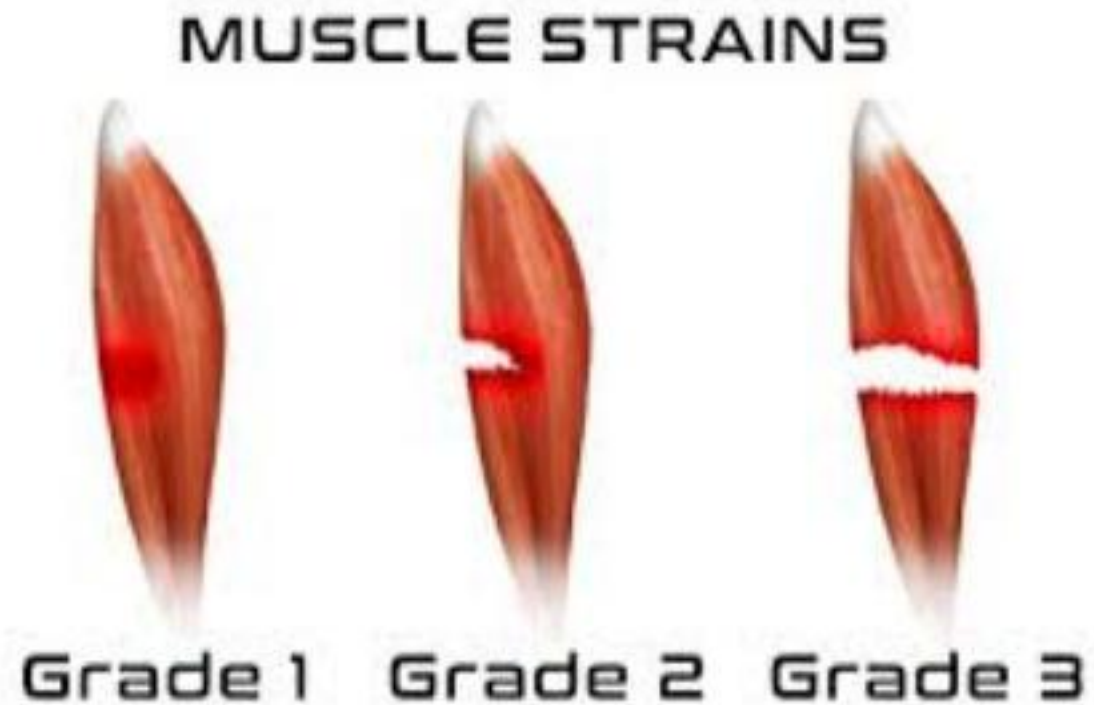
Small number of muscle fibers are overstretched or torn.

Symptoms:

Mild pain, minimal swelling, no or very little loss of strength or movement.

Example:

Slight discomfort after sprinting or lifting.



Grade II – Moderate Strain:

Description:

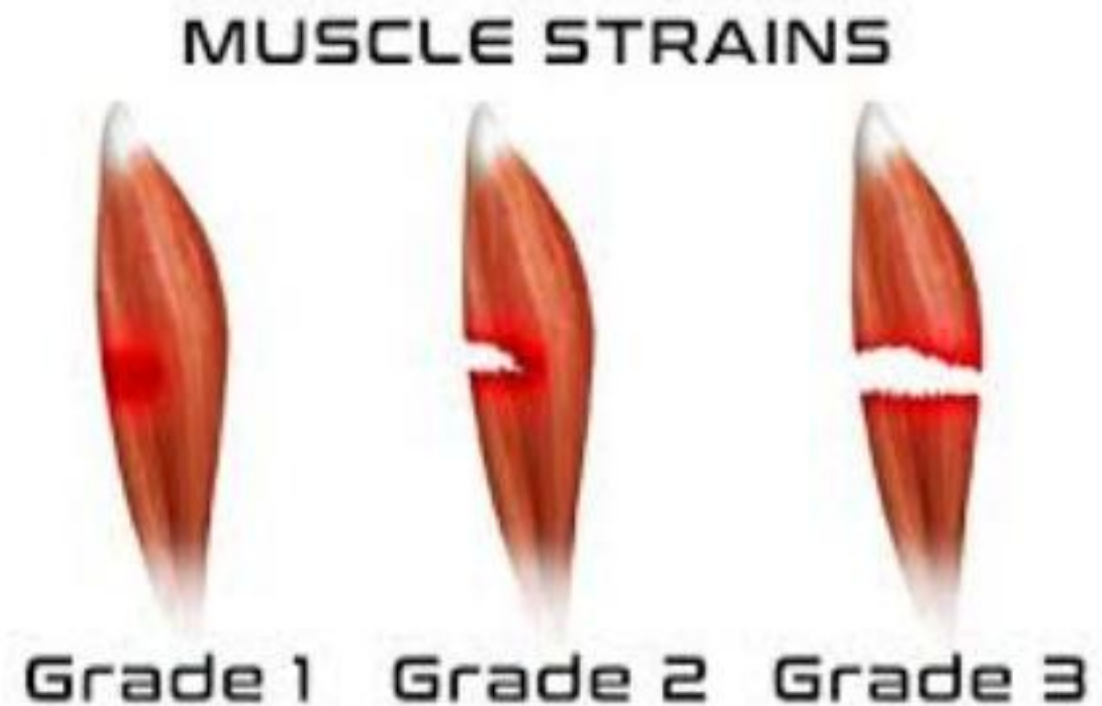
More muscle fibers are torn but the muscle is not completely ruptured.

Symptoms:

Moderate pain, swelling, bruising, weakness, and difficulty using the muscle.

Example:

Limping after a hamstring strain, reduced strength in affected muscle.



Grade III – Severe Strain:

Description:

Complete rupture of the muscle or tendon

Symptoms:

Severe pain, swelling, significant loss of function, visible deformity or gap in muscle, bruising.

Example:

Sudden popping sensation during activity, unable to contract the muscle.

