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DEPARTMENT OF PHYSICAL
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SCIENCE

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Foreign Language & Sport
Terminology
ME0153



- ❑ The term sports injury refers to the kinds of injuries that most commonly occur during sports or exercise.
- ❑ Some sports injuries result from accidents, others are due to poor training practices, improper equipment, lack of conditioning, or insufficient warm-up and stretching.

SPORTS INJURIES

Although any part of your body can be injured during sports or exercise, the term is usually reserved for injuries that involve the musculoskeletal system, which includes the muscles, bones, and associated tissues (ιστούς) like cartilage (χόνδρος).



STRAINS

- ◉ A **strain** (θλάση/τράβηγμα) is an injury which occurs to a muscle in which the muscle fibers (ίνες) tear (σχίζω) as a result of overstretching.
- ◉ Strains are also known as *pulled muscles*.
- ◉ The equivalent injury to a ligament (σύνδεσμος) is a sprain.
- ◉ Typical symptoms of a strain include localized pain, stiffness (πιάσιμο, δυσκαμψία), swelling, inflammation (φλεγμονή), and bruising (μώλωπας) around the strained muscle.



SPRAINS

- ◉ A **sprain** (διάστρεμμα) is an injury which occurs to ligaments caused by a sudden overstretching.
- ◉ The ligament (σύνδεσμος) is usually only stretched, but sometimes it can be snapped (σπάω με κρότο), slightly torn (σχίζω/τραβώ), or ruptured (ρήξη), all of which are more serious and require longer to heal.
- ◉ Sprains are graded in three degrees.
- ◉ The most definitive method to assess the severity of a sprain is with the use of *Magnetic Resonance Imaging* (MRI) (μαγνητική τομογραφία).
- ◉ A **first degree** sprain has only minor tearing of the ligament whereas a **third degree** sprain is characterized by complete rupture (σπάσιμο).



SPRAINS

- The typical signs and symptoms associated with a sprain are the cardinal (βασικός) signs of inflammation (φλεγμονή): localized pain, swelling, and loss of function.
- Although any joint (άρθρωση) can experience a sprain, some of the more common include the ankle (αστράγαλος), knee, and fingers.



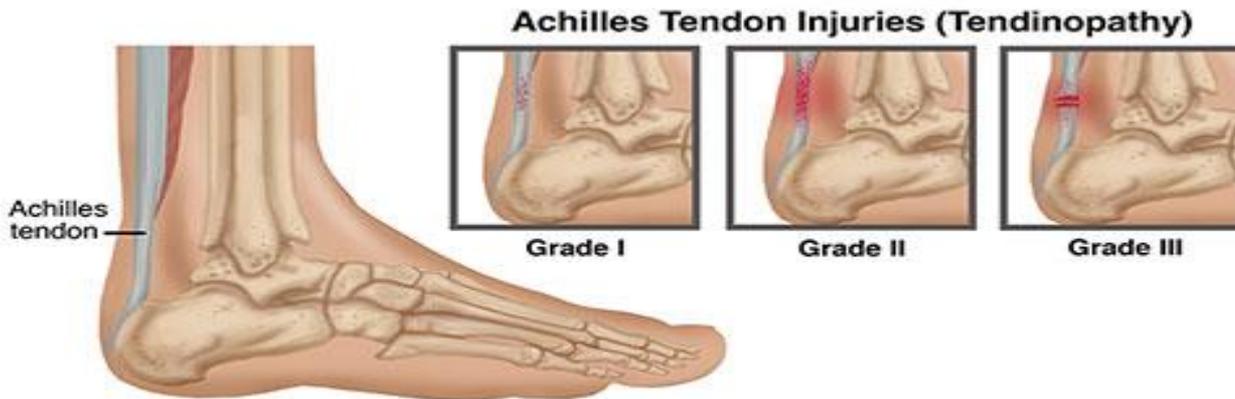
ANTERIOR CRUCIATE LIGAMENT

- ◉ One of the more spoken about sprains is that to the **Anterior Cruciate Ligament** (πρόσθιος χιαστός σύνδεσμος) of the knee.
- ◉ This is a disabling sprain common to athletes, especially basketball, soccer, and judo players.
- ◉ Sprains can best be prevented by proper use of safety equipment (wrist, ankle guards), warm-ups and cool-downs (including stretching), being aware of your surroundings and maintaining strength and flexibility.



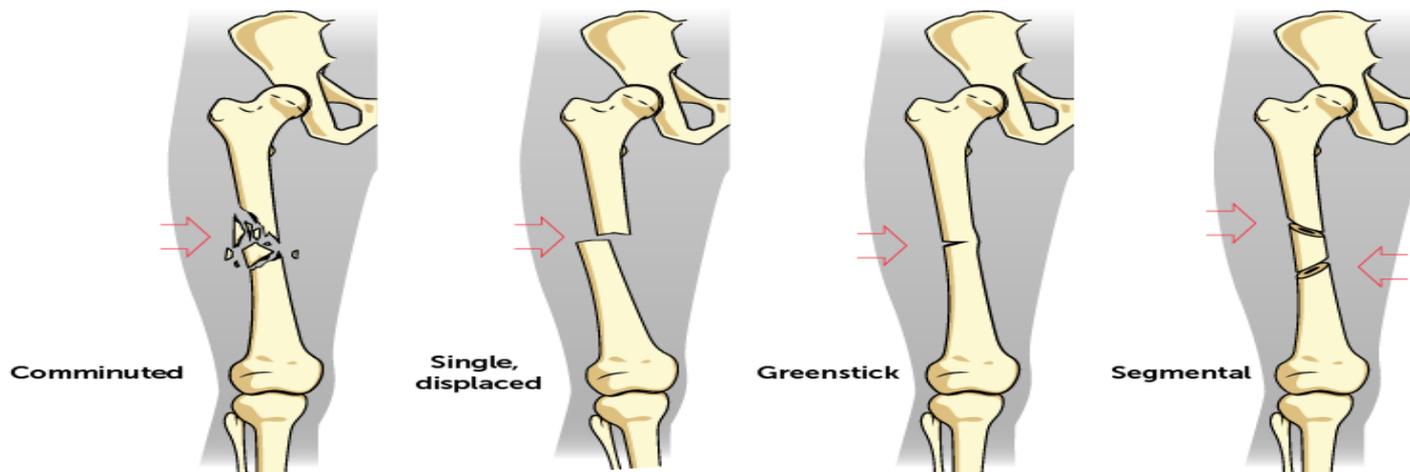
ACHILLES TENDON INJURIES

- **Achilles tendon injuries** refer to a stretch, tear, or irritation to the tendon connecting the calf (γάμπα) muscle to the back of the heel (φτέρνα).
- The most common cause of Achilles tendon tears is a problem called tendinitis, a degenerative (παραμορφωτική) condition caused by aging or overuse.
- When a tendon is weakened, trauma can cause it to rupture (ρήξη, σπάσιμο).



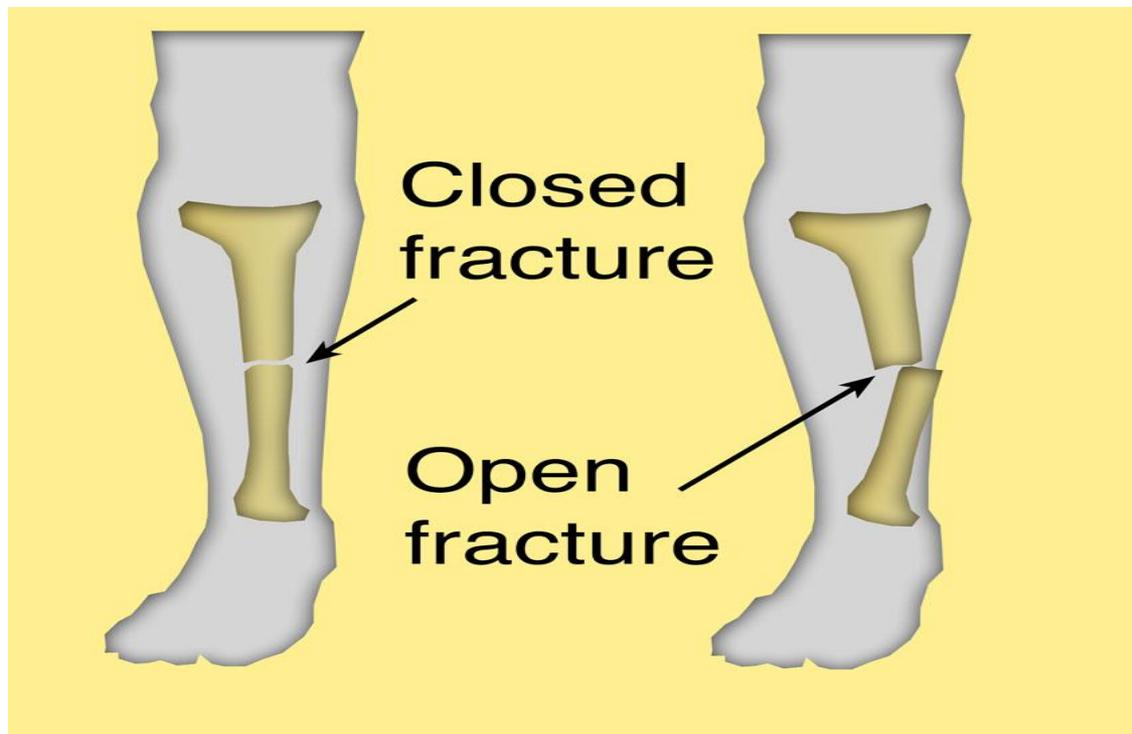
BONE FRACTURE

- ◉ A **bone fracture** (κάταγμα) is a medical condition in which a bone becomes cracked, splintered (θρυμματίζω), or bisected (δικοτομώ) as a result of physical trauma.
- ◉ In orthopaedic medicine, fractures are classified as *closed* or *open* (compound) and *simple* or *multi-fragmentary* (διασπασμένος) (formerly comminuted) (συντριπτικό κάταγμα στο παρελθόν).
- ◉ Comminuted=συντριπτικό κάταγμα
- ◉ Displaced= απλό, μετατοπισμένο
- ◉ Greenstick=κάταγμα όπου το κόκκαλο λυγίζει και σπάει
- ◉ Segmental=χωρισμένο σε τμήματα



CLOSED – OPEN FRACTURES

- **Closed fractures** are those in which the skin is intact, while **open (compound) fractures** involve wounds that communicate with the fracture and may expose bone to contamination (μόλυνση).
- **Open injuries** carry an elevated (υψηλό) risk of infection. They require antibiotics treatment and usually urgent surgical treatment. This involves removal of all dirt, contamination, and dead tissue.



SIMPLE FRACTURES

- ◉ **Simple fractures** are fractures that occur along one line, splitting the bone into two pieces, while multi-fragmentary fractures involve the bone splitting into multiple pieces.
- ◉ A simple, closed fracture is much easier to treat and has a much better prognosis than an open, contaminated fracture.
- ◉ Other considerations in fracture care are displacement and angulation (όταν το σπάσιμο είναι στις γωνίες του οστού). If angulation or displacement is large, reduction (manipulation) of the bone may be required and, in adults, frequently requires surgical care.

Simple fracture



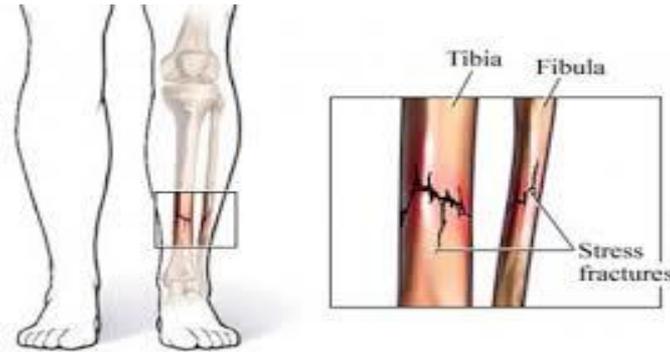
Comminuted fracture



Open fracture



STRESS FRACTURES



- **Stress fractures** (κατάγματα κόπωσης) occur largely in the weight-bearing bones, such as the tibia (κνήμη) or fibula (περόνη)(bones of the lower leg) and metatarsals (bones of the foot).
- They are common in sports that require repetitive impact, primarily running/jumping sports such as gymnastics or track and field.
- Running creates forces two to three times a person's body weight on the lower limbs (άκρα).

STRESS FRACTURES

- ◉ **Stress fractures** usually have a narrow list of symptoms.
- ◉ It could present as a generalized area of pain, tenderness (ευαισθησία), and pain with weight-bearing.
- ◉ Usually when running, a stress fracture has severe pain in the beginning of the run, moderate pain in the middle of the run, and severe pain at the end and after the run.
- ◉ X-rays usually do not show any evidence of stress fractures, so a CT scan (αξονική τομογραφία), or MRI may be more effective in unclear cases.

Stress Fractures of the Leg and Foot



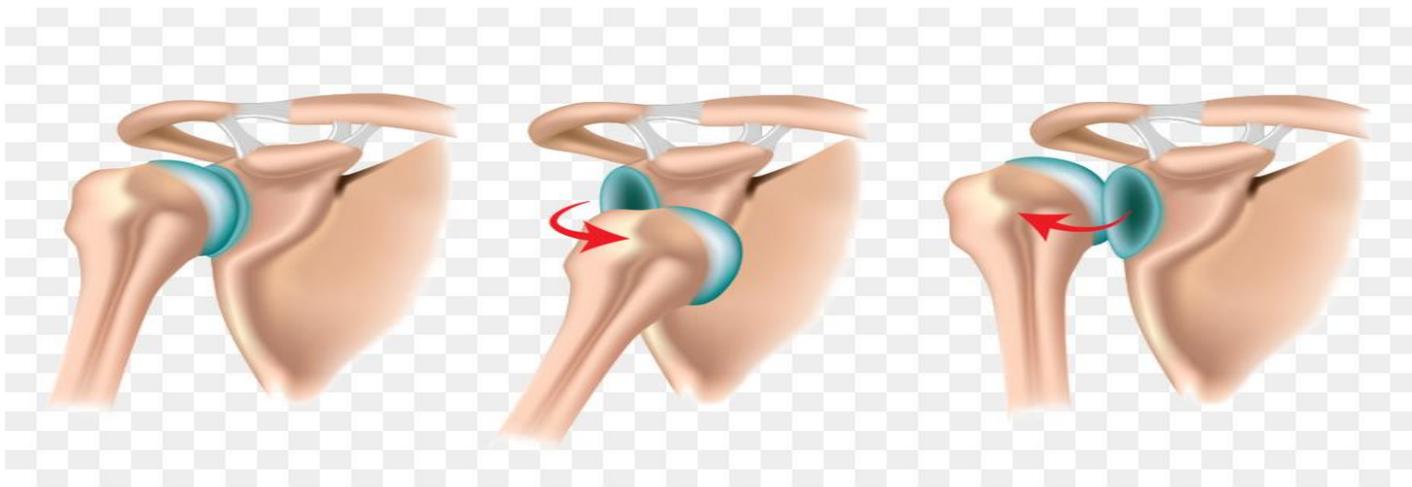
JOINT DISLOCATION

- ❑ **Joint dislocation** (εξάρθρωση συνδέσμου) takes place when bones in a joint become displaced or misaligned (μη ευθυγραμμισμένα).
- ❑ It is often caused by a sudden impact to the joint. Once a joint is dislocated, it may reduce (return to its proper position) on its own, or it may require physical manipulation.



JOINT DISLOCATION

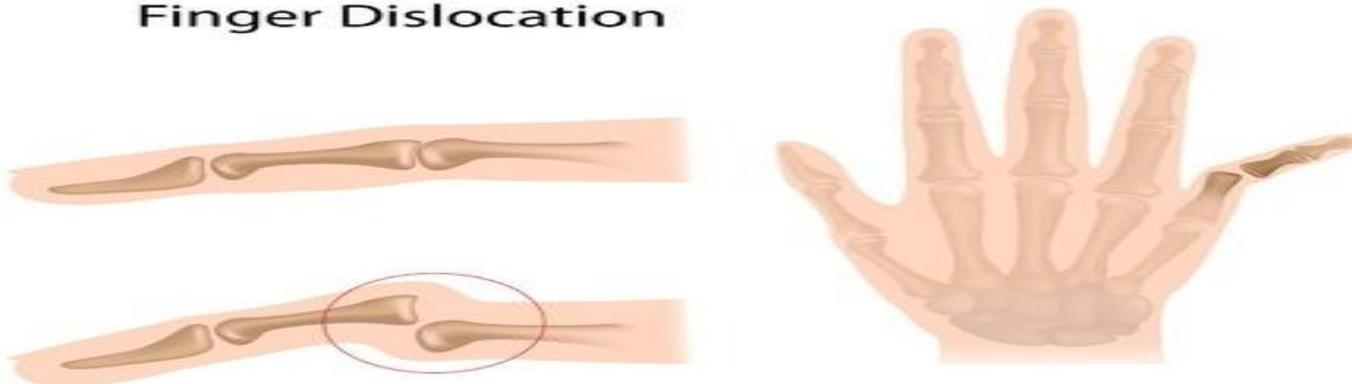
- ❑ Once reduction is achieved, the joint is held in place through a splint (νάρθηκας) (for straight joints like fingers and toes) or a bandage (επίδεσμος) (for complex joints like shoulders).
- ❑ Even if a dislocated joint reduces on its own, it should be immobilized and medical attention should be sought.



JOINT DISLOCATION

- Contact sports such as football and basketball, as well as high-impact sports and sports that can result in excessive stretching or falling, cause the majority of dislocations.
- The shoulders, fingers, and wrists (καρποί) are all common places for a dislocation to occur.

Finger Dislocation



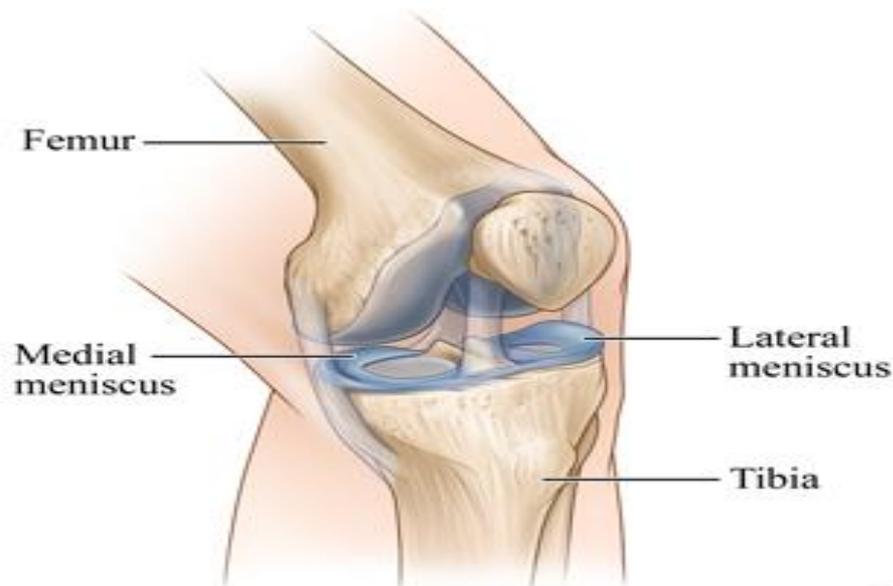
MENISCI

Menisci are cartilaginous (χόνδρινος) elements within the knee joint which serve to protect the ends of the bones from rubbing (τριβή) on each other and to effectively deepen the tibial (κνημιαίες) sockets (αρθρώσεις) into which the femur (μηριαίο οστό) attaches.



MENISCI

- ◉ There are two menisci in each knee: the **medial** and the **lateral meniscus** (μεσαίος και πλευρικός μηνίσκος).
- ◉ Either or both may be cracked, or torn, when the knee is forcefully rotated (περιστρέφω) and/or bent (λυγίζω).





- ⦿ **Overtraining** occurs when the volume (όγκος) and intensity (ένταση) of an exercise exceeds (υπερβαίνει) the organism's recovery capacity.
- ⦿ **Improvements** in strength and fitness occur only during the rest period following the training.



- **Overtraining** may be accompanied by one or more of the following symptoms:
- **persistent muscle soreness (πόνος, πιάσιμο), persistent fatigue (συνεχής κούραση), elevated resting heart rate, increased susceptibility (ευαισθησία) to infections (μολύνσεις), increased incidence of injuries, irritability (ευερεθιστότητα), depression and loss of motivation.**

OVERTRAINING

- ◉ **Fortunately**, most sports injuries can be treated effectively, and most people who suffer injuries can return to a satisfying level of physical activity after an injury.
- ◉ Even better, many sports injuries can be prevented if people take the proper precautions.



Fig 1: The major problems resulting from overtraining

THANKS FOR YOUR ATTENTION

*Reference : Sports Injuries. National Institute of
Arthritis and Musculoskeletal and Skin Diseases,
NIAMS/National Institutes of Health, U.S.
Department of Health and Human Services. NIH
Publication No. 04-5278. Bethesda, MD 20892-
3675. April 2004*