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Ligament Sprains

Anatomy

Ligaments are fibrous bands or sheets of connective tissue linking two or more bones, cartilages, or structures together to form a joint. One or more ligaments provide stability to a joint during rest and movement by preventing excessive joint movements in certain directions.

Definition

A sprain is an injury to a ligament; a stretching or a tearing. One or more ligaments can be injured during a sprain. The severity of the injury will depend on the extent of force submitted to a single ligament and the number of ligaments involved.

A sprain can result from a fall, a sudden twist, or a blow to the body that forces a joint structure out of its normal alignment. This will result in a stretch beyond the ligaments normal limits or a tear of one or more ligaments involved. Typically, sprains occur when people fall and land on an outstretched arm, slide into base, land on the side of their foot, or twist a knee with the foot planted firmly on the ground.

Most common sites of sprains:

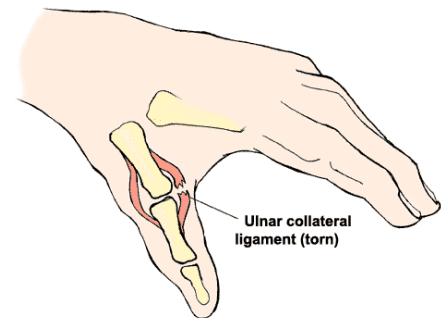
- Ankle; foot will often turn inwards due to a fall
- Knee; a blow to the knee or a sudden twisting
- Wrist; typically when people fall and land on an outstretched hand.

Ligament sprains are classified in several grades to determine severity:

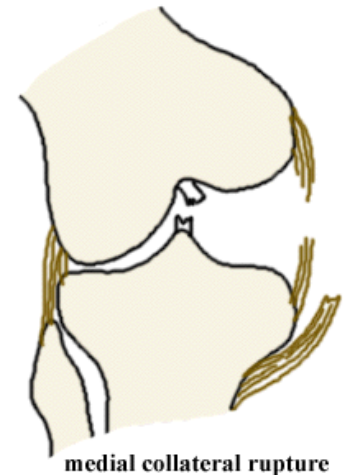
Grade 1

- Overstretching or slight tearing of the ligaments with no joint instability.
- Minimal pain, swelling, and little or no loss of functional ability.
- Bruising is absent or slight, and the person is usually able to put weight on the affected joint.

Ulnar Collateral Ligament Tear
(Skier's Thumb)



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Grade 2

- Partial tearing of the ligament and is characterized by bruising, moderate pain, and swelling.
- Difficulty putting weight on the affected joint and some loss of joint function experienced.
- An x ray may be needed to help determine if a fracture is causing the pain and swelling.
- Magnetic resonance imaging (MRI) is occasionally used to help differentiate between a significant partial injury and a complete tear in a ligament.

Grade 3

- Complete tear or rupture of one or more ligaments.
- Pain, swelling, and bruising are usually severe.
- Inability to put weight on the joint.
- An x ray is usually taken to rule out a broken bone.

Management

Initial management (within the first 48 hours) involves:

- Unloading the damaged tissue for several weeks to provide the body time to heal
- Icing the injury for 10-15 minutes every 1-2 hours
- Starting on a pain-free active ROM exercise program as soon as possible
- Simple analgesics (e.g. paracetamol) in the first 48 hours for pain relief.

Physiotherapy management:

- Soft tissue therapy is a primary goal of treatment to reduce tension in the adjacent muscles, to help develop a functional scar at the site of tearing and prevent scar tissue from adversely binding adjacent fibers.
- Manual Therapy to address reduced mobility in adjacent joints
- Stretching focusing on the affected area to regain normal muscle length
- Functional strengthening to regain muscle bulk, recruitment and assisting in the recovery and prevention of recurrence.
- Core stability program consisting of progressive agility and stabilization exercises to promote return to sport and preventing injury recurrence.
- Return to sport may be complemented with a joint stabilizing brace to protect the injured ligament and prevent recurrence.

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Prognosis

The amount of rehabilitation and the time needed for full recovery will depend on the severity of the injury and individual rates of healing.

On average, a grade 1 sprain will require 2-3 weeks of rehabilitation with bracing upon return to sport.

A grade 2 sprain may require 3 to 6 weeks of rehabilitation before a person can return to full activity.

With a severe sprain, it can take 8 to 12 months before the ligament is fully healed.

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