## KNGF-Guideline

# Ankle sprain: Acute ankle sprain

#### Introduction

- Patient has suffered an inversion injury to the ankle involving a lesion of the lateral capsular ligamentous complex.
- No distinction is made between single or multiple ligament injuries.
- Treatment is determined by the tissue recovery phase, i.e. the acute or inflammatory phase (0-3 days), the proliferation phase (4-10 days), early remodeling phase (11-21 days), late remodeling phase / transfer phase 1 (3-6 weeks), and transfer phase 2 (6-12 weeks).
- Ideally, patients should see a physical therapist between 0 and 5 days after sustaining the injury.
- Examination and treatment take place between 0 and 6 weeks after the injury.
- Sports-specific treatment and rehabilitation of severe sprains in top-level athletes may extend to 12 weeks after the injury.

## 1. Screening

Identifying problems

Screening for problems requiring medical attention (sense of alarm):

- Do symptoms fit in with familiar pattern?
- Red flags: fracture? (Ottawa ankle rules)

Contact family physician if pattern is unfamiliar or if fracture is suspected.

## 2. Diagnostic process

History: origin, development, complaints, re-injury, load-bearing, and risks during ADL or sports

Inspection: location of pain, swelling, discoloration due to hematoma, abnormal stance

Functional testing: active movement tests, load-bearing capacity, function score

Differential diagnostics: muscle, tendon or cartilage injury

Function score: distinction between mild sprains (≥ 40 points) and severe sprains (< 40 points) at first examination 0-5 days after injury

Analysis: tissue recovery phase; normal or abnormal recovery; prognosis; impeding factors; can recovery be influenced by physical therapy?; treatment according to guideline; re-evaluation required?

## 3. Therapy

Mild sprain

Acute phase (0-3 days): reducing pain and swelling, partial load-bearing Information/advice: rest, elevate foot, perhaps ice, load-bearing (perhaps with crutches) determined by pain, actively moving foot and toes Instruction: compression bandage

If necessary re-evaluation / check-up after 1 week.

## Severe sprain

Acute phase: as in mild sprain

Proliferation phase: regaining functions and activities; increasing loads

tape or brace: depending on load-bearing capacity required and patient's preference

exercises for functions and activities: range of motion, active stability, coordination, and walking

Early remodeling phase: increasing muscular strength, active (functional) stability, walking

exercises for functions and activities: dynamic stability, balance, coordination

Late remodeling phase: regaining ADL activities

exercises for activities: progression to normal load-bearing, exercises at home

If recovery normal, treatment once a week, maximum duration of treatment 6 weeks.

## High loads / risks in ADL (achievement-oriented and top-level athletes)

Acute phase: adhesive bandage and tape if tape can be changed daily, start load-bearing

Proliferation phase: alternative exercises to maintain physical condition / muscle strength, building up load-bearing

Early/ late remodeling phase: progressive build-up of load-bearing; exercises for functions and activities, from static to dynamic, from simple to complex, from cyclical to non-cyclical

Transfer phase 2: sports-specific rehabilitation to required level; progression as in remodeling phase

Treatment frequency depends on level of sports, maximum duration of treatment 12 weeks



## KNGF-Guideline

# Ankle sprain: Functional instability

#### Introduction

- · Patient has residual complaints after inversion injury or re-injury, involving a sense of 'giving-way' or recurrent spraining.
- Patient is afraid to put full weight on foot.
- Goal of physical therapy is optimal functional recovery and return to highest achievable level of participation.
- Treatment must be regularly evaluated (every 3 weeks). Positive developments should be apparent after 6 weeks.

## 1. Screening

Identifying problems

Screening for problems requiring medical attention (sense of alarm):

- Do symptoms fit in with familiar pattern?
- Red flags: persistent synovitis; pressure pain on sinus tarsi

Contact family physician if pattern is unfamiliar and/ or red flags are present

## 2. Diagnostic process

History: inversion trauma in past, recurrent spraining, signs of inflammation, use of tape/brace, identify complaints (PSC), load-bearing, and risks during ADL or sports

Yellow flags: excessive insecurity and fear of load-bearing

Inspection: signs of inflammation, abnormal static posture or stance

Palpation: signs of inflammation (synovitis), provoked pain

Functional tests: gait (GALN), active stability, strength, range of motion

Differential diagnostics: subtalar (mechanical) instability, syndesmosis rupture, arthrosis

Analysis: interrelations between functional abnormalities, activities, and participation problems; impeding factors (yellow flags, cartilage injury); physical therapy indicated?; functional instability?; new tissue damage?; treatment according to guideline?

# New tissue damage Acute phase (0-3 days): reducing pain and swelling, partial load-bearing information / advice: rest, elevate foot, perhaps ice, load-bearing (perhaps with crutches) determined by pain, actively moving foot and toes instruction: compression bandage

## **Functional instability**

Goal: regaining functions and activities, removing fear of movement / increasing confidence

Procedures: exercises for functions and activities, balanced use of tape/brace

Information/advice: balanced use of tape/brace, footwear, progressively increasing load-bearing, exercise at home, prevention Progression of therapy: restoring gait and normal ankle function, progressively increased load-bearing up to ADL level; progressively increased load-bearing determined by response of joint (inflammation) and pain; time-contingent if possible

If therapist coaches and patient shows good compliance, once every 1 to 2 weeks Evaluation every 3 weeks; results should be apparent after 6 weeks

## High loads / risks in ADL (achievement-oriented and top-level athletes)

Goal: return to competition level

*Procedures:* intensive training program based on load-bearing capacity; increase load-bearing capacity by training coordination and balance, strength, and endurance, speed: from static to dynamic, from simple to complex, from cyclical to non-cyclical

Frequency and duration of treatment depend on required level of work and sports activities

