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# 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

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# 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?

## 3. Therapy

### 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

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