

## DEFINITION

- Injuries to a bone, muscle, joint, or ligament of the ankle and foot
- Associated skin and soft tissue injuries are also included

## INITIAL ASSESSMENT QUESTIONS

1. MECHANISM: "How did the injury happen?" (e.g., twisting injury, direct blow)
2. ONSET: "When did the injury happen?" (Minutes or hours ago)
3. LOCATION: "Where is the injury located?"
4. APPEARANCE of INJURY: "What does the injury look like?"
5. WEIGHT-BEARING: "Can you put weight on that foot?" "Can you walk (four steps or more)?"
6. SIZE: For cuts, bruises, or swelling, ask: "How large is it?" (e.g., inches or centimeters; entire joint)
7. PAIN: "Is there pain?" If so, ask: "How bad is the pain?" (e.g., Scale 1-10; or mild, moderate, severe)
8. TETANUS: For any breaks in the skin, ask: "When was the last tetanus booster?"
9. OTHER SYMPTOMS: "Do you have any other symptoms?"
10. PREGNANCY: "Is there any chance you are pregnant?" "When was your last menstrual period?"

## TRIAGE ASSESSMENT QUESTIONS

### Call EMS 911 Now

Serious injury with multiple fractures

CA: 40, 1

[1] Major bleeding (e.g., actively dripping or spurting) AND [2] can't be stopped

*FIRST AID: Apply direct pressure to the entire wound with a clean cloth.*

CA: 40, 13, 1

Amputation

*FIRST AID: Apply direct pressure to the entire wound with a clean cloth.*

CA: 40, 13, 20, 1

Looks like a dislocated joint (very crooked or deformed)

*Reason: If dislocated, adult will be unable to walk at all. Possible vascular compromise. Needs reduction.*

CA: 40, 16, 1

Sounds like a life-threatening emergency to the triager

CA: 40, 1

### See More Appropriate Guideline

Wound looks infected

*Go to Guideline: Wound Infection (Adult)*

Caused by an animal bite

*Go to Guideline: Animal Bite (Adult)*

Caused by a human bite

*Go to Guideline: Human Bite (Adult)*

Puncture wound of foot

*Go to Guideline: Puncture Wound (Adult)*

Toe injury is main concern

*Go to Guideline: Toe Injury (Adult)*

Cast problems or questions

*Go to Guideline: Cast Symptoms and Questions (Adult)*

### **Go to ED Now**

Bullet wound, stabbed by knife, or other serious penetrating wound

*FIRST AID: If penetrating object still in place, don't remove it (Reason: removal could increase bleeding).*

*CA: 41, 14, 93, 15, 1*

Skin is split open or gaping (or length > 1/2 inch or 12 mm)

*Reason: may need laceration repair (e.g., sutures)*

*CA: 41, 160, 109, 118, 1*

[1] Bleeding AND [2] won't stop after 10 minutes of direct pressure (using correct technique)

*Reason: may need laceration repair (e.g., sutures)*

*CA: 41, 160, 116, 1*

[1] Dirt in the wound AND [2] not removed with 15 minutes of scrubbing

*Reason: needs irrigation and/or additional wound care*

*CA: 41, 160, 118, 1*

Can't stand (bear weight) or walk

*R/O: fracture*

*CA: 41, 160, 93, 1*

[1] Numbness (new loss of sensation) of toe(s) AND [2] present now

*CA: 41, 160, 93, 1*

Sounds like a serious injury to the triager

*R/O: fracture, dislocation*

*CA: 41, 93, 23, 15, 1*

**See HCP within 4 Hours (or PCP triage)**

[1] SEVERE pain AND [2] not improved 2 hours after pain medicine/ice packs

*R/O: fracture*

*CA: 43, 23, 11, 74, 73, 89, 1*

Suspicious history for the injury

*R/O: domestic violence or elder abuse*

*CA: 43, 89, 1*

### **See PCP within 24 Hours**

[1] Limp when walking AND [2] due to a twisted ankle or foot

*R/O: sprain, minor fracture*

*CA: 44, 8, 74, 73, 12, 1*

[1] Limp when walking AND [2] due to a direct blow or crushing injury

*R/O: contusion, minor fracture*

*CA: 44, 7, 74, 73, 12, 1*

Large swelling or bruise (> 2 inches or 5 cm)

*R/O: minor fracture, muscle hematoma*

*CA: 44, 2, 74, 73, 12, 1*

Diabetes (Exception: small cut or scrape)

*Reason: diabetic neuropathy reduces pain of fracture*

*CA: 44, 11, 74, 73, 12, 1*

[1] High-risk adult (e.g., age > 60, osteoporosis, chronic steroid use) AND [2] limping

*Reason: there is greater risk of fracture in patients with osteoporosis (bone thinning)*

*CA: 44, 23, 11, 89, 1*

[1] No prior tetanus shots (or is not fully vaccinated) AND [2] any wound (e.g., cut, scrape)

*Note: A full tetanus vaccination series consists of 3 shots. Nearly all adults born in North America have received a full 3-tetanus shot series in childhood.*

*CA: 44, 113, 109, 118, 74, 73, 107, 1*

### **See PCP within 3 Days**

[1] Last tetanus shot > 5 years ago AND [2] DIRTY cut or scrape

*Reason: may need a tetanus booster shot (vaccine).*

*CA: 45, 108, 109, 118, 74, 73, 107, 1*

[1] Last tetanus shot > 10 years ago AND [2] CLEAN cut or scrape (e.g., object AND skin were clean)

*Reason: may need a tetanus booster shot (vaccine).*

*CA: 45, 108, 109, 118, 74, 73, 107, 1*

[1] After 3 days AND [2] pain not improved

*R/O: sprain, fracture*

*CA: 45, 74, 73, 120, 12, 1*

[1] After 2 weeks AND [2] still painful or swollen

*CA: 45, 74, 73, 120, 12, 1*

[1] Has diabetes (diabetes mellitus) AND [2] minor cut or scrape

*Reason: increased risk of infection or ulcer*

CA: 45, 105, 18, 19, 74, 73, 21, 1

### Home Care

[1] Minor injury or pain from twisting or over-stretching AND [2] walks normally

*Reason: probably a minor sprain*

CA: 48, 6, 10, 120, 74, 73, 4, 5, 1

Minor injury or pain from direct blow or crushing injury

*Reason: probably a minor contusion (bruise)*

CA: 48, 3, 9, 120, 74, 73, 4, 5, 1

ALSO, superficial cut (scratch) or abrasion (scrape) is present

*Reason: probably a minor scratch or abrasion*

CA: 48, 104, 105, 74, 73, 107, 1

### CARE ADVICE (CA) -

1. **Care Advice** given per Foot and Ankle Injury (Adult) guideline.
2. **Local Cold:** For bruises or swelling, apply a cold pack or an ice bag (wrapped in a moist towel) to the area for 20 minutes per hour. Repeat for 4 consecutive hours. (Reason: reduce the bleeding and pain)
3. **Reassurance and Education:** It sounds like a bruised muscle or bone. We can treat that at home.
4. **Expected Course:** Pain and swelling usually peak on day 2 or 3. Swelling is usually gone by 7 days. Pain may take 2 weeks to completely resolve.
5. **Call Back If:**
  - Severe pain persists over 2 hours after pain medicine and ice
  - Swelling or bruise becomes over 2 inches (5 cm).
  - Pain not improved after 3 days
  - Pain or swelling lasts over 2 weeks
  - You become worse.
6. **Reassurance and Education:** It sounds like the muscles or ligaments were slightly stretched (sprained).
7. **Treatment of Mild Contusions** (e.g., direct blow to ankle or foot): Use R.I.C.E. (rest, ice, compression, and elevation) for the first 24 to 48 hours.
  - Continue to apply crushed **Ice** in a plastic bag for 10-20 minutes every hour for the first 4 hours. Then apply ice for 10-20 minutes 4 times a day for the first two days.
  - Apply **Compression** with a snug, elastic bandage for 48 hours. Numbness, tingling, or increased pain means the bandage is too tight.
  - Keep injured ankle or foot **Elevated** and at rest for 24 hours.
  - After 24 hours of **Rest**, allow any activity that doesn't cause pain.

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  - Apply **Compression** with a snug, elastic bandage for 48 hours. Numbness, tingling, or increased pain means the bandage is too tight.
  - **Elevating** and **Resting** the ankle and foot can sometimes help decrease pain and swelling. Try to do this several times a day for the first 48 hours after the injury.
10. **Treatment of Mild Sprains** (e.g., mild sprained ankle): Use R.I.C.E. (rest, ice, compression, and elevation) for the first 24 to 48 hours.
  - Continue to apply crushed **Ice** in a plastic bag for 10-20 minutes every hour for the first 4 hours. Then apply ice for 10-20 minutes 4 times a day for the first two days.
  - Apply **Compression** with a snug, elastic bandage for 48 hours. Numbness, tingling, or increased pain means the bandage is too tight.
  - **Elevating** and **Resting** the ankle and foot can sometimes help decrease pain and swelling. Try to do this several times a day for the first 48 hours after the injury.
11. **Local Cold:** Apply cold pack or an ice bag (wrapped in a moist towel) for 20 minutes out of every hour until seen.
12. **Call Back If:**
  - Severe pain persists longer than 2 hours after pain medicine and ice
  - You become worse.
13. **First Aid:** apply direct pressure to the entire wound with a clean cloth.
14. **First Aid:** If penetrating object still in place, don't remove it. (Reason: removal could increase bleeding)
15. **Nothing By Mouth:** Do not eat or drink anything for now. (Reason: condition may need surgery and general anesthesia)
16. **First Aid Advice For Suspected Fracture Or Dislocation Of Ankle Or Foot:**
  - Do not remove the shoe.
  - Immobilize the ankle and foot by wrapping them with a soft splint (e.g., a pillow or a rolled-up blanket).
  - Use tape to keep this splint in place.

18. **Diabetes:**
  - Some patients with diabetes have "neuropathy" (nerve damage of sensory nerves) which can often reduce your ability to sense pain in your feet.
  - Wounds in patients with diabetes heal slower. People who have diabetes are prone to developing infected foot ulcers at sites of minor injury. Be vigilant for signs of infection: redness, pus, fever, or a non-healing wound.
19. **Diabetes Foot Care:**
  - Keep your feet clean.
  - Wash your feet daily. Dry your feet thoroughly, especially between the toes
  - Wear clean socks that do not have any tears or bumps. Change them twice daily.
  - Wear comfortable shoes that fit well.
  - You should examine your feet, toes, and toenails daily for wounds, blisters, and infection.
  - You should not go barefoot.
20. **Transport of Amputated Part:**
  - Briefly rinse amputated part with water (to remove any dirt)
  - Place amputated part in plastic bag (to protect and keep clean)
  - Place plastic bag containing part in a container of ice (to keep cool and preserve tissue).
21. **Call Back If:**
  - Dirt in the wound persists after cleaning
  - Unusual or unpleasant foot odor
  - Looks infected (pus, redness)
  - Doesn't heal within 10 days
  - You become worse.
22. **Call Back If:**
  - Dirt in wound persists after scrubbing
  - You become worse.
23. **No Standing:** Try not to put any weight on the injured leg.
40. **Call EMS 911 Now:**
  - Immediate medical attention is needed. You need to hang up and call 911 (or an ambulance).
  - *Triager Discretion:* I'll call you back in a few minutes to be sure you were able to reach them.
41. **Go to ED Now:**
  - You need to be seen in the Emergency Department.
  - Go to the ED at \_\_\_\_\_ Hospital.
  - Leave now. Drive carefully.
42. **Go To ED Now (or PCP triage):**
  - **If No PCP (Primary Care Provider) Second-Level Triage:** You need to be seen within the next hour. Go to the ED/UCC at \_\_\_\_\_ Hospital. Leave as soon as you can.
  - **If PCP Second-Level Triage Required:** You may need to be seen. Your doctor (or NP/PA) will want to talk with you to decide what's best. I'll page the provider on-call now. If you haven't heard from the provider (or me) within 30 minutes, go directly to the ED/UCC at \_\_\_\_\_ Hospital.

43. **See HCP Within 4 Hours (or PCP triage):**
- **If Office Will Be Open:** You need to be seen within the next 3 or 4 hours. Call your doctor (or NP/PA) now or as soon as the office opens.
  - **If Office Will Be Closed and No PCP (Primary Care Provider) Second-Level Triage:** You need to be seen within the next 3 or 4 hours. A nearby Urgent Care Center (UCC) is often a good source of care. Another choice is to go to the ED. Go sooner if you become worse.
  - **If Office Will Be Closed and PCP Second-Level Triage Required:** You may need to be seen. Your doctor (or NP/PA) will want to talk with you to decide what's best. I'll page the on-call provider now. If you haven't heard from the provider (or me) within 30 minutes, call again. **NOTE:** If on-call provider can't be reached, send to UCC or ED.
44. **See PCP Within 24 Hours:**
- **If Office Will Be Open:** You need to be seen within the next 24 hours. Call your doctor (or NP/PA) when the office opens and make an appointment.
  - **If Office Will Be Closed and No PCP (Primary Care Provider) Second-Level Triage:** You need to be seen within the next 24 hours. A clinic or an urgent care center is often a good source of care if your doctor's office is closed or you can't get an appointment.
  - **If Office Will Be Closed and PCP Second-Level Triage Required:** You may need to be seen within the next 24 hours. Your doctor (or NP/PA) will want to talk with you to decide what's best. I'll page the on-call provider now. **NOTE:** Since this isn't serious, hold the page between 10 pm and 7 am. Page the on-call provider in the morning.
  - **If Patient Has No PCP:** Refer patient to a clinic or urgent care center. Also try to help caller find a PCP for future care.
45. **See PCP Within 3 Days:**
- You need to be seen within 2 or 3 days. Call your doctor (or NP/PA) during regular office hours and make an appointment. A clinic or urgent care center are good places to go for care if your doctor's office is closed or you can't get an appointment. **NOTE:** If office will be open tomorrow, tell caller to call then, not in 3 days.
  - **If Patient Has No PCP (Primary Care Provider):** A clinic or urgent care center are good places to go for care if you do not have a primary care provider. **NOTE:** Try to help caller find a PCP for future care (e.g., use a physician referral line). Having a PCP or "medical home" means better long-term care.
46. **See PCP Within 2 Weeks:**
- You need to be seen for this ongoing problem within the next 2 weeks. Call your doctor (or NP/PA) during regular office hours and make an appointment.
  - **If Patient Has No PCP (Primary Care Provider):** A primary care clinic or an urgent care center are good places to go for care if you do not have a primary care provider. **NOTE:** Try to help caller find a PCP (e.g., use a physician referral line). Having a PCP or "medical home" means better long-term care.
47. **Home Care - Information or Advice Only Call.**
48. **Home Care:**
- You should be able to treat this at home.

49. **Call PCP Now:**
- You need to discuss this with your doctor (or NP/PA).
  - I'll page the on-call provider now. If you haven't heard from the provider (or me) within 30 minutes, call again.
50. **Call PCP Within 24 Hours:**
- You need to discuss this with your doctor (or NP/PA) within the next 24 hours.
  - **If Office Will Be Open:** Call the office when it opens tomorrow morning.
  - **If Office Will Be Closed:** I'll page the on-call provider now. **Exception:** from 9 pm to 9 am. Since this isn't urgent, we'll hold the page until morning.
51. **Call PCP When Office Is Open:**
- You need to discuss this with your doctor (or NP/PA) within the next few days.
  - Call the office when it is open.
52. **Go To L&D Now:**
- You need to be seen.
  - Go to the Labor and Delivery Unit or the Emergency Department at \_\_\_\_\_ Hospital.
  - Leave now. Drive carefully.
73. **Caution - NSAIDs (e.g., ibuprofen, naproxen):**
- Do not take nonsteroidal anti-inflammatory drugs (NSAIDs) if you have stomach problems, kidney disease, heart failure, or other contraindications to using this type of medicine.
  - Do not take NSAID medicines for over 7 days without consulting your PCP.
  - Do not take NSAID medicines if you are pregnant.
  - Do not take NSAID medicines if you are also taking blood thinners.
  - You may take this medicine with or without food. Taking it with food or milk may lessen the chance the drug will upset your stomach.
  - **Gastrointestinal Risk:** There is an increased risk of stomach ulcers, GI bleeding, perforation.
  - **Cardiovascular Risk:** There may be an increased risk of heart attack and stroke.

74. **Pain Medicines:**

- For pain relief, take acetaminophen, ibuprofen, or naproxen.
- Use the lowest amount that makes your pain feel better.

**Acetaminophen (e.g., Tylenol):**

- Take 650 mg (*two 325 mg pills*) by mouth every 4-6 hours as needed. Each Regular Strength Tylenol pill has 325 mg of acetaminophen. The most you should take each day is 3,250 mg (10 Regular Strength pills a day).
- Another choice is to take 1,000 mg (*two 500 mg pills*) every 8 hours as needed. Each Extra Strength Tylenol pill has 500 mg of acetaminophen. The most you should take each day is 3,000 mg (6 Extra Strength pills a day).

**Ibuprofen (e.g., Motrin, Advil):**

- Take 400 mg (*two 200 mg pills*) by mouth every 6 hours as needed.
- Another choice is to take 600 mg (*three 200 mg pills*) by mouth every 8 hours as needed.
- The most you should take each day is 1,200 mg (six 200 mg pills a day), unless your doctor has told you to take more.

**Naproxen (e.g., Aleve):**

- Take 220 mg (*one 220 mg pill*) by mouth every 8 hours as needed. You may take 440 mg (*two 220 mg pills*) for your first dose.
- The most you should take each day is 660 mg (three 220 mg pills a day), unless your doctor has told you to take more.

**Extra Notes:**

- Acetaminophen is thought to be safer than ibuprofen or naproxen for people over 65 years old. Acetaminophen is in many OTC and prescription medicines. It might be in more than one medicine that you are taking. You need to be careful and not take an overdose. An acetaminophen overdose can hurt the liver.
- McNeil, the company that makes Tylenol, has different dosage instructions for Tylenol in Canada and the United States. In Canada, the maximum recommended dose per day is 4,000 mg or twelve (12) Regular-Strength (325 mg) pills. In the United States, McNeil recommends a maximum dose of ten (10) Regular-Strength (325 mg) pills.
- Before taking any medicine, read all the instructions on the package.

89. **Call Back If:**

- You become worse.

93. **Note to Triager - Driving:**

- Another adult should drive.
- If there are any problems with automobile transport (e.g., unable to get to the car), then ambulance transport may be necessary.
- The patient, caregiver, or family members can arrange ambulance transport via private ambulance company or via EMS 911.

104. **Reassurance and Education:**

- It sounds like a small cut or scrape that we can treat at home.

105. **Cut or Scrape:**

- Wash the wound with soap and water for 5 minutes.
- For any dirt, scrub gently with a wash cloth.
- For any bleeding, apply direct pressure with a sterile gauze or clean cloth for 10 minutes.
- Apply an antibiotic ointment (OTC) three times a day for 3-4 days.
- For large scrapes or cuts, cover with a Band-Aid or dressing. Change daily or if gets wet.

107. **Call Back If:**

- Dirt in the wound persists after scrubbing
- Looks infected (pus, redness)
- Doesn't heal within 10 days
- You become worse.

108. **Tetanus Shot:**

- You should get a tetanus booster shot in the next 3 days.
- Most doctor's offices give tetanus shots. You can also get a tetanus shot at retail clinics (drug store clinics) and at urgent care centers.

109. **Cleaning the Wound:**

- Wash the wound with soap and water.
- For any dirt, scrub gently with a wash cloth.
- *Bleeding:* Put direct pressure on the wound for 10 minutes to stop any bleeding. Use a clean cloth or gauze pad.

113. **Tetanus Shot Series:**

- If you have never gotten a tetanus shot, then you will need to get the full tetanus series.
- The full tetanus shot series is a shot now, a shot in 4-8 weeks, and a shot in 6-12 months. Three shots in total.
- *You should try to get the first tetanus shot in the next 24 hours.*

116. **Bleeding:** Continue direct pressure with a sterile gauze or clean cloth until seen.

118. **Dressing the Wound:**

- Cover the wound with a dressing.
- Use a sterile gauze, an adhesive bandage (such as a Band-Aid), or a clean cloth.

120. **Local Heat:**

- Beginning 48 hours after an injury, apply a warm washcloth or heating pad for 10 minutes three times a day.
- This will help increase circulation and improve healing.

160. **Alternate Disposition - Urgent Care Center:** An Urgent Care Center can usually manage this problem, **If** one is available in the caller's area.

## FIRST AID



**FIRST AID Advice for Bleeding:** Apply direct pressure to the entire wound with a clean cloth.

**FIRST AID Advice for Penetrating Object:** If penetrating object still in place, don't remove it.

**FIRST AID Advice for Shock:** Lie down with feet elevated.

**FIRST AID Advice for a Sprain or Twisting Injury of Ankle or Foot:**

- Apply a cold pack or an ice bag (wrapped in a moist towel) to the area for 20 minutes.
- Wrap area with an elastic bandage.

**FIRST AID Advice for Suspected Fracture or Dislocation of Ankle or Foot:**

- Do not remove the shoe.
- Immobilize the ankle and foot by wrapping them with a soft splint (e.g., a pillow, a rolled-up blanket, a towel).
- Use tape to keep this splint in place.

**Transport of an Amputated Body Part:**

- Briefly rinse amputated part with water (to remove any dirt).
- Place amputated part in plastic bag (to protect and keep clean).
- Place plastic bag containing part in a container of ice (to keep cool and preserve tissue).

## BACKGROUND INFORMATION

### Types of Foot and Ankle Injuries

- Achilles tendon rupture: There is pain in the Achilles tendon (area above heel and behind ankle). There is weakness or inability to extend the foot (e.g., can't stand on tiptoes).
- Contusion: A direct blow or crushing injury results in bruising of the skin, muscle, and underlying bone.
- Cuts, abrasions
- Dislocations (bone out of joint)
- Fractures (broken bones)
- Sprains: Stretches and tears of ligaments
- Strains: Stretches and tears of muscles (e.g., pulled muscle)

### What Cuts Need to be Sutured?

- Any cut that is split open or gaping probably needs sutures (or staples or skin glue).
- Cuts longer than 1/2 inch (1 cm) usually need sutures.
- Any open wound that may need sutures should be evaluated by a physician regardless of the time that has passed since the initial injury.

### When Does an Adult Need a Tetanus Booster (Tetanus Shot)?

- **Clean Cuts and Scrapes - Tetanus Booster Needed Every 10 Years:** Patients with **clean minor** wounds AND who have previously had 3 or more tetanus shots (full series) need a booster every 10 years. Examples of minor wounds include a superficial abrasion or a shallow cut from a clean knife blade. Obtain booster within 72 hours.
- **Dirty Wounds - Tetanus Booster Needed Every 5 Years:** Patients with **dirty** wounds need a booster if it has been more than 5 years since the last booster. Examples of dirty wounds include those contaminated with soil, feces, saliva and more serious wounds from deep punctures, crushing, and burns. Obtain booster within 72 hours.

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## SEARCH WORDS

ACHILLES TENDON  
ACHILLES TENDONS  
ANKLE  
ANKLE FRACTURE  
ANKLE INJURY  
ANKLES  
BONE  
BONE TRAUMA  
BONES  
BROKEN ANKLE  
BROKEN BONE  
BROKEN BONES  
BROKEN FOOT  
BULLET  
BULLETS  
CROOKED BONE  
CROOKED BONES  
CUT  
CUTS  
DISLOCATED JOINT  
DISLOCATION  
DISLOCATIONS  
FEET  
FOOT  
FOOT FRACTURE  
FOOT INJURY  
FRACTURE  
FRACTURES  
GSW  
INJURIES  
INJURY  
JOINT TRAUMA  
LACERATION

LIGAMENT  
LIGAMENT TRAUMA  
LIGAMENTS  
LIMPING  
OTTAWA  
SPRAIN  
SPRAINS  
STABBED  
STABBING  
STRAIN  
STRAINED MUSCLE  
STRAINED MUSCLES  
STRAINS  
TRAUMA

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