First aid

Sprain: First aid

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Overview

A sprain is an injury to a ligament caused by stretching the ligament too far or tearing it. A ligament can tear partway or all the way. Ligaments are tough, elastic-like bands that connect bone to bone. They help hold joints in place.

When to seek emergency help

Seek medical care right away if:

- You can't put weight on the injured leg, the joint feels unstable or numb, or you can't use the joint. This may mean the ligament was completely torn. On the way to see your healthcare professional, apply a cold pack.
- You have a change of color or streaks of color that spread out from the injured area. This may mean you have an infection.
- You have pain directly over the bones of an injured joint.
- You have re-injured an area that has been injured a few times in the past.
- You have a severe sprain. Delayed treatment might lead to ongoing pain and the joint not being stable.

Symptoms

Areas of the body most likely to sprain are ankles, knees and wrists. Sprained ligaments often swell quickly, are painful and might cause bruising. Often, the greater the pain and swelling, the worse the injury is. For most minor sprains, you can start treatment yourself.

Treatment

To treat a sprain, try the R.I.C.E. approach — rest, ice, compression, elevation:

1. **Rest** the injured area. Your healthcare professional may say not to put weight on the injured area for 48 to 72 hours. You may need to use crutches or not use the sprained area. A splint or brace also may be helpful at first.

   Even with an injury such as an ankle sprain, you can often exercise other muscles to keep from losing strength. For instance, you can use an exercise bicycle that has movable arm handles. This works your arms and the leg that isn't injured.

   You can rest the injured ankle on the footrest. That way, you still can get a good workout while letting the ankle injury heal.

2. **Ice** the area. Use a cold pack, a bath of ice and water, or a compression sleeve filled with cold water to keep swelling down after an injury. Ice the area as soon as you can after the injury.

   Ice the area for 15 to 20 minutes, 4 to 8 times a day, for the first 48 hours or until swelling goes down. Don't use ice for more than 20 minutes at a time. Use a dishcloth or thin towel between the ice and your skin. Putting ice right on the skin or icing for too long can damage tissue.

3. **Compress** the area with an elastic wrap or bandage. Keeping pressure on the area might keep swelling down.
4. **Elevate** the injured area. Keep it raised on a pillow or cushion above your heart whenever possible. This helps keep swelling down.

Sprains can take days to months to heal. As the pain and swelling improve, gently begin using the injured area. It should get better over time. Pain relievers available without a prescription, such as ibuprofen (Advil, Motrin IB, others) and acetaminophen (Tylenol, others), might help ease pain.

Prevention

You must restore strength and stability to the injured area before you go back to sports or fitness activities. A physical therapist or other sports medicine professional can show you exercises to help you heal and help keep you from injuring the area again.

When to call your doctor

The causes of sprains also can result in broken bones and other serious injuries. See your healthcare professional if your sprain doesn't get better after two or three days.

April 03, 2024

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Overview

A sprain is a stretching or tearing of ligaments — the tough bands of fibrous tissue that connect two bones together in your joints. The most common location for a sprain is in your ankle.

Initial treatment includes rest, ice, compression and elevation. Mild sprains can be successfully treated at home. Severe sprains sometimes require surgery to repair torn ligaments.

The difference between a sprain and a strain is that a sprain injures the bands of tissue that connect two bones together, while a strain involves an injury to a muscle or to the band of tissue that attaches a muscle to a bone.

Video: Ankle sprain

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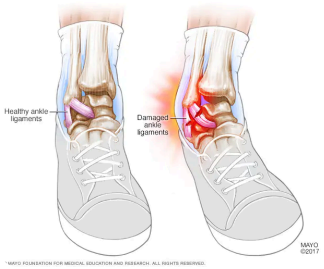
Symptoms



Sprained ankle

Enlarge image

Signs and symptoms will vary, depending on the severity of the injury, and may include:

- Pain
- Swelling
- Bruising
- Limited ability to move the affected joint

- Hearing or feeling a "pop" in your joint at the time of injury

When to see the doctor

Mild sprains can be treated at home. But the injuries that cause sprains can also cause serious injuries, such as fractures. You should see a doctor if you:

- Can't move or bear weight on the affected joint
- Have pain directly over the bones of an injured joint
- Have numbness in any part of the injured area

Causes

A sprain occurs when you overextend or tear a ligament while severely stressing a joint. Sprains often occur in the following circumstances:

- Ankle — Walking or exercising on an uneven surface, landing awkwardly from a jump
- Knee — Pivoting during an athletic activity
- Wrist — Landing on an outstretched hand during a fall
- Thumb — Skiing injury or overextension when playing racquet sports, such as tennis

Children have areas of softer tissue, called growth plates, near the ends of their bones. The ligaments around a joint are often stronger than these growth plates, so children are more likely to experience a fracture than a sprain.

Risk factors

Factors contributing to sprains include:

- **Environmental conditions.** Slippery or uneven surfaces can make you more prone to injury.
- **Fatigue.** Tired muscles are less likely to provide good support for your joints. When you're tired, you're also more likely to succumb to forces that could stress a joint.
- **Poor equipment.** Ill-fitting or poorly maintained footwear or other sporting equipment can contribute to your risk of a sprain.

Prevention

Regular stretching and strengthening exercises for your sport, fitness or work activity, as part of an overall physical conditioning program, can help to minimize your risk of sprains. Try to be in shape to play your sport; don't play your sport to get in shape. If you have a physically demanding occupation, regular conditioning can help prevent injuries.

You can protect your joints in the long term by working to strengthen and condition the muscles around the joint that has been injured. The best brace you can give yourself is your own "muscle brace." Ask your doctor about appropriate conditioning and stability exercises. Also, use footwear that offers support and protection.

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Sprains

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During the physical exam, your doctor will check for swelling and points of tenderness in your affected limb. The location and intensity of your pain can help determine the extent and nature of the damage.

X-rays can help rule out a fracture or other bone injury as the source of the problem. Magnetic resonance imaging (MRI) also may be used to help diagnose the extent of the injury.

More Information

MRI

X-ray

Treatment

For immediate self-care of a sprain, try the R.I.C.E. approach — rest, ice, compression, elevation:

- **Rest.** Avoid activities that cause pain, swelling or discomfort. But don't avoid all physical activity.
- **Ice.** Even if you're seeking medical help, ice the area immediately. Use an ice pack or slush bath of ice and water for 15 to 20 minutes each time and repeat every two to three hours while you're awake for the first few days after the injury.
- **Compression.** To help stop swelling, compress the area with an elastic bandage until the swelling stops. Don't wrap it too tightly or you may hinder circulation. Begin wrapping at the end farthest from your heart. Loosen the wrap if the pain increases, the area becomes numb or swelling is occurring below the wrapped area.
- **Elevation.** Elevate the injured area above the level of your heart, especially at night, which allows gravity to help reduce swelling.

Over-the-counter pain medications such as ibuprofen (Advil, Motrin IB, others) and acetaminophen (Tylenol, others) also can be helpful.

After the first two days, gently begin to use the injured area. You should see a gradual, progressive improvement in the joint's ability to support your weight or your ability to move without pain. Recovery from sprains can take days to months.

A physical therapist can help you to maximize stability and strength of the injured joint or limb. Your doctor may suggest that you immobilize the area with a brace or splint. For some injuries, such as a torn ligament, surgery may be considered.

Preparing for your appointment

While you may initially consult your family physician, he or she may refer you to a doctor who specializes in sports medicine or orthopedic surgery.

What you can do

You may want to write a list that includes:

- Detailed descriptions of your symptoms
- Information about medical problems you've had
- Information about the medical problems of your parents or siblings
- All the medications and dietary supplements you take
- Questions you want to ask the doctor

What to expect from your doctor

Your doctor may ask some of the following questions:

- How exactly were you moving when the injury occurred?
- Did you hear or feel a pop or snap?
- When did it happen?
- What types of home treatments have you tried?
- Have you ever injured this part of your body before?
- If so, how did that injury occur?

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Sprains

Sprained ankle

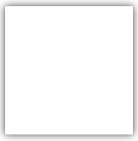
Overview

A sprained ankle is an injury that occurs when you roll, twist or turn your ankle in an awkward way. This can stretch or tear the tough bands of tissue (ligaments) that help hold your ankle bones together.

Ligaments help stabilize joints, preventing excessive movement. A sprained ankle occurs when the ligaments are forced beyond their normal range of motion. Most sprained ankles involve injuries to the ligaments on the outer side of the ankle.

Treatment for a sprained ankle depends on the severity of the injury. Although self-care measures and over-the-counter pain medications may be all you need, a medical evaluation might be necessary to reveal how badly you've sprained your ankle and to determine the appropriate treatment.

Video: Ankle sprain



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Symptoms

Signs and symptoms of a sprained ankle vary depending on the severity of the injury. They may include:

- Pain, especially when you bear weight on the affected foot
- Tenderness when you touch the ankle
- Swelling
- Bruising
- Restricted range of motion
- Instability in the ankle
- Popping sensation or sound at the time of injury

When to see a doctor

Call your doctor if you have pain and swelling in your ankle and you suspect a sprain. Self-care measures may be all you need, but talk to your doctor to discuss whether you should have your ankle evaluated. If signs and symptoms are severe, you may have significant damage to a ligament or a broken bone in your ankle or lower leg.

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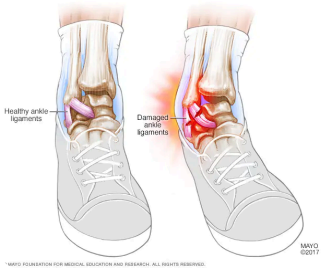
Causes



Sprained ankle

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A sprain occurs when your ankle is forced to move out of its normal position, which can cause one or more of the ankle's ligaments to stretch, partially tear or tear completely.

Causes of a sprained ankle might include:

- A fall that causes your ankle to twist
- Landing awkwardly on your foot after jumping or pivoting
- Walking or exercising on an uneven surface
- Another person stepping or landing on your foot during a sports activity

More Information

Ankle sprain

Risk factors

Factors that increase your risk of a sprained ankle include:

- **Sports participation.** Ankle sprains are a common sports injury, particularly in sports that require jumping, cutting action, or rolling or twisting of the foot such as basketball, tennis, football, soccer and trail running.
- **Uneven surfaces.** Walking or running on uneven surfaces or poor field conditions may increase the risk of an ankle sprain.
- **Prior ankle injury.** Once you've sprained your ankle or had another type of ankle injury, you're more likely to sprain it again.
- **Poor physical condition.** Poor strength or flexibility in the ankles may increase the risk of a sprain when participating in sports.
- **Improper shoes.** Shoes that don't fit properly or aren't appropriate for an activity, as well as high-heeled shoes in general, make ankles more

vulnerable to injury.

Complications

Failing to treat a sprained ankle properly, engaging in activities too soon after spraining your ankle or spraining your ankle repeatedly might lead to the following complications:

- Chronic ankle pain
- Chronic ankle joint instability
- Arthritis in the ankle joint

Prevention

The following tips can help you prevent a sprained ankle or a recurring sprain:

- Warm up before you exercise or play sports.
- Be careful when walking, running or working on an uneven surface.
- Use an ankle support brace or tape on a weak or previously injured ankle.
- Wear shoes that fit well and are made for your activity.
- Minimize wearing high-heeled shoes.
- Don't play sports or participate in activities for which you are not conditioned.
- Maintain good muscle strength and flexibility.
- Practice stability training, including balance exercises.

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Sprained ankle

Diagnosis

During a physical, your doctor will examine your ankle, foot and lower leg. The doctor will touch the skin around the injury to check for points of tenderness and move your foot to check the range of motion and to understand what positions cause discomfort or pain.

If the injury is severe, your doctor may recommend one or more of the following imaging scans to rule out a broken bone or to evaluate in more detail the extent of ligament damage:

- **X-ray.** During an X-ray, a small amount of radiation passes through your body to produce images of the bones of the ankle. This test is good for ruling out bone fractures.
- **Magnetic resonance imaging (MRI).** MRIs use radio waves and a strong magnetic field to produce detailed cross-sectional or 3-D images of soft internal structures of the ankle, including ligaments.

- **CT scan.** CT scans can reveal more detail about the bones of the joint. CT scans take X-rays from many different angles and combine them to make cross-sectional or 3-D images.
- **Ultrasound.** An ultrasound uses sound waves to produce real-time images. These images may help your doctor judge the condition of a ligament or tendon when the foot is in different positions.

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Treatment

Treatment for a sprained ankle depends on the severity of your injury. The treatment goals are to reduce pain and swelling, promote healing of the ligament, and restore function of the ankle. For severe injuries, you may be referred to a specialist in musculoskeletal injuries, such as an orthopedic surgeon or a physician specializing in physical medicine and rehabilitation.

Self-care

For self-care of an ankle sprain, use the R.I.C.E. approach for the first two or three days:

- **Rest.** Avoid activities that cause pain, swelling or discomfort.
- **Ice.** Use an ice pack or ice slush bath immediately for 15 to 20 minutes and repeat every two to three hours while you're awake. If you have vascular

disease, diabetes or decreased sensation, talk with your doctor before applying ice.

- **Compression.** To help stop swelling, compress the ankle with an elastic bandage until the swelling stops. Don't hinder circulation by wrapping too tightly. Begin wrapping at the end farthest from your heart.
- **Elevation.** To reduce swelling, elevate your ankle above the level of your heart, especially at night. Gravity helps reduce swelling by draining excess fluid.

Medications

In most cases, over-the-counter pain relievers — such as ibuprofen (Advil, Motrin IB, others) or naproxen sodium (Aleve, others) or acetaminophen (Tylenol, others) — are enough to manage the pain of a sprained ankle.

Devices

Because walking with a sprained ankle might be painful, you may need to use crutches until the pain subsides. Depending on the severity of the sprain, your doctor may recommend an elastic bandage, sports tape or an ankle support brace to stabilize the ankle. In the case of a severe sprain, a cast or walking boot may be necessary to immobilize the ankle while it heals.

Therapy

Once the swelling and pain is lessened enough to resume movement, your doctor will ask you to begin a series of exercises to restore your ankle's range of motion, strength, flexibility and stability. Your doctor or a physical therapist will explain the appropriate method and progression of exercises.

Balance and stability training is especially important to retrain the ankle muscles to work together to support the joint and to help prevent recurrent sprains. These exercises may involve various degrees of balance challenge, such as standing on one leg.

If you sprained your ankle while exercising or participating in a sport, talk to your doctor about when you can resume your activity. Your doctor or physical therapist may want you to perform particular activity and movement tests to determine how well your ankle functions for the sports you play.

Surgery

In rare cases, surgery is performed when the injury doesn't heal or the ankle remains unstable after a long period of physical therapy and rehabilitative exercise. Surgery may be performed to:

- Repair a ligament that won't heal
- Reconstruct a ligament with tissue from a nearby ligament or tendon

Preparing for your appointment

Schedule an appointment or get emergency medical care for suspected sprains that don't respond to self-care strategies or that cause continued pain or instability. If your sprain is severe, you may be referred to a doctor who specializes in sports medicine or orthopedic surgery.

What you can do

You may want to write a list that includes the following:

- Detailed descriptions of your symptoms
- Information about medical problems you've had, especially past ankle injuries
- All the medications and dietary supplements you take
- Questions you want to ask the doctor

What to expect from your doctor

Your doctor may ask some of the following questions:

- How did the injury occur?
- Which direction did your foot turn when you injured it?
- Can you bear weight on that foot?
- What self-care treatment have you used?
- What effect did the treatment have?
- Have you injured your ankle before?
- How was that injury treated?

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Muscle strains

Diagnosis

During the physical exam, your doctor will check for swelling and points of tenderness. The location and intensity of your pain can help determine the extent and nature of the damage.

In more severe injuries, where the muscle or tendon has been completely ruptured, your doctor may be able to see or feel a defect in the area of injury. Ultrasound often can help distinguish among several different types of soft tissue injuries.

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Ultrasound

Treatment

For immediate self-care of a muscle strain, try the R.I.C.E. approach — rest, ice, compression, elevation:

- **Rest.** Avoid activities that cause pain, swelling or discomfort. But don't avoid all physical activity.
- **Ice.** Even if you're seeking medical help, ice the area immediately. Use an ice pack or slush bath of ice and water for 15 to 20 minutes each time and repeat every two to three hours while you're awake for the first few days after the injury.
- **Compression.** To help stop swelling, compress the area with an elastic bandage until the swelling stops. Don't wrap it too tightly or you may hinder circulation. Begin wrapping at the end farthest from your heart. Loosen the wrap if the pain increases, the area becomes numb or swelling is occurring below the wrapped area.
- **Elevation.** Elevate the injured area above the level of your heart, especially at night, which allows gravity to help reduce swelling.

Some doctors recommend avoiding over-the-counter pain medications that can increase your risk of bleeding — such as aspirin, ibuprofen (Advil, Motrin IB, others) and naproxen sodium (Aleve) — during the first 48 hours after a muscle strain. Acetaminophen (Tylenol, others) can be helpful for pain relief during this time period.

A physical therapist can help you to maximize stability and strength of the injured joint or limb. Your doctor may suggest that you immobilize the area with a brace or splint. For some injuries, such as a torn tendon, surgery may be considered.

Preparing for your appointment

While you may initially consult your family physician, he or she may refer you to a doctor who specializes in sports medicine or orthopedic surgery.

What you can do

You may want to write a list that includes:

- Detailed descriptions of your symptoms
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