

INJURY TREATMENT

Blisters

Common causes of blisters include friction and burns. If the blister isn't too painful, do everything possible to keep it intact. Unbroken skin over a blister provides a natural barrier to bacteria and decreases the risk of infection.

Cover a small blister with an adhesive bandage, and cover a large one with a porous, plastic-coated gauze pad that absorbs moisture and allows the wound to breathe.

Don't puncture a blister unless it's painful or prevents you from walking or using one of your hands. If you have diabetes or poor circulation, call your doctor before considering the self-care measures below.

To relieve blister-related pain, drain the fluid while leaving the overlying skin intact. Here's how:

- Wash your hands and the blister with soap and warm water.
- Swab the blister with iodine or rubbing alcohol.
- Sterilize a clean, sharp needle by wiping it with rubbing alcohol.
- Use the needle to puncture the blister. Aim for several spots near the blister's edge. Let the fluid drain, but leave the overlying skin in place.
- Apply an antibiotic ointment to the blister and cover with a bandage or gauze pad.
- After several days, use tweezers and scissors sterilized with rubbing alcohol to cut away all the dead skin. Apply more ointment and a bandage.

Call your doctor if you see signs of infection around a blister — pus, redness, increasing pain or warm skin.

To prevent a blister, use gloves, socks, a bandage or similar protective covering over the area being rubbed. Special athletic socks are available that have extra padding in critical areas. You might also try attaching moleskin to the inside of your shoe where it might rub, such as at the heel.

Bruise

A bruise forms when a blow breaks small blood vessels near your skin's surface, allowing a small amount of blood to leak out into the tissues under your skin. The trapped blood appears as a black-and-blue mark. Sometimes, there also are tiny red dots or red splotches.

If your skin isn't broken, you don't need a bandage. You can, however, enhance healing with these simple techniques:

- Elevate the injured area.
- Apply ice or a cold pack for 30 to 60 minutes at a time for a day or two after the injury.
- Consider acetaminophen (Tylenol, others) for pain relief.

See your doctor if:

- You have unusually large or painful bruises — particularly if your bruises seem to develop for no known reasons.
- You bruise easily and you're experiencing abnormal bleeding elsewhere, such as from your nose or gums, or you notice blood in your eyes, your stool or your urine.
- You have no history of bruising, but suddenly experience bruises.

These signs and symptoms may indicate a more serious problem, such as a blood-clotting problem or blood-related disease. Bruises accompanied by persistent pain or headache also may indicate a more serious underlying illness and require medical attention.

Concussion

Your brain floats within your skull surrounded by cerebrospinal fluid (CSF). One of the functions of CSF is to cushion the brain from light bounces of everyday movement. However, the fluid may not be able to absorb the force of a sudden hard blow or a quick stop.

A concussion is a temporary loss of awareness or consciousness caused by a blow to the head. Severe blows may result in bleeding in the head or permanent damage to nerves. Some concussions can have serious, lasting effects.

Most concussions are mild and most people with mild brain injuries recovery fully, but the healing process takes time. Rest is the best recovery technique.

The signs and symptoms of a concussion can be subtle and may not appear immediately. Symptoms can last for days, weeks or longer.

Your behavior, mental ability and physical skills all are linked to specific areas of your brain. The severity and side effects of a head injury depend greatly on which area of your brain was most affected.

Immediate signs and symptoms of a concussion may include:

- Confusion
- Amnesia
- Headache
- Loss of consciousness
- Ringing in the ears (tinnitus)
- Drowsiness
- Nausea
- Vomiting
- Unequal pupil size
- Convulsions
- Unusual eye movements
- Slurred speech

Delayed signs and symptoms may include:

- Irritability
- Headaches
- Depression
- Sleep disturbances, including insomnia or difficulty waking
- Fatigue
- Poor concentration
- Trouble with memory
- Getting lost or becoming easily confused
- Increased sensitivity to sounds, lights and distractions
- Loss of sense of taste or smell
- Difficulty with gait or in coordinating use of limbs

If you experience any of these signs and symptoms after suffering head trauma, see your doctor.

Rest is the best recovery technique. Healing takes time. Some over-the-counter and prescription drugs may relieve headache pain, but talk to your doctor before taking any medications, especially aspirin. Aspirin may contribute to bleeding. Don't give aspirin to children because it may lead to serious problems, such as Reye's syndrome.

Cuts and Scrapes

Minor cuts and scrapes usually don't require a trip to the emergency room. Yet proper care is essential to avoid infection or other complications. These guidelines can help you care for simple wounds:

1. **Stop the bleeding.** Minor cuts and scrapes usually stop bleeding on their own. If they don't, apply gentle pressure with a clean cloth or bandage. Hold the pressure continuously for 20 to 30 minutes. Don't keep checking to see if the bleeding has stopped because this may damage or dislodge the fresh clot that's forming and cause bleeding to resume. If the blood spurts or continues to flow after continuous pressure, seek medical assistance.
2. **Clean the wound.** Rinse out the wound with clear water. Soap can irritate the wound, so try to keep it out of the actual wound. If dirt or debris remains in the wound after washing, use tweezers cleaned with alcohol to remove the particles. If debris remains embedded in the wound after cleaning, see your doctor. Thorough wound cleaning reduces the risk of tetanus. To clean the area around the wound, use soap and a washcloth. There's no need to use hydrogen peroxide, iodine or an iodine-containing cleanser. These substances irritate living cells. If you choose to use them, don't apply them directly on the wound.
3. **Apply an antibiotic.** After you clean the wound, apply a thin layer of an antibiotic cream or ointment such as Neosporin or Polysporin to help keep the surface moist. The products don't make the wound heal faster, but they can discourage infection and allow your body's healing process to close the wound more efficiently. Certain ingredients in some ointments can cause a mild rash in some people. If a rash appears, stop using the ointment.
4. **Cover the wound.** Bandages can help keep the wound clean and keep harmful bacteria out. After the wound has healed enough to make infection unlikely, exposure to the air will speed wound healing.
5. **Change the dressing.** Change the dressing at least daily or whenever it becomes wet or dirty. If you're allergic to the adhesive used in most bandages, switch to adhesive-free dressings or sterile gauze held in place with paper tape, gauze roll or a loosely applied elastic bandage. These supplies generally are available at pharmacies.
6. **Get stitches for deep wounds.** A wound that cuts deeply through the skin or is gaping or jagged-edged and has fat or muscle protruding usually requires stitches. A strip or two of surgical tape may hold a minor cut together, but if you can't easily close the mouth of the wound, see your doctor as soon as possible. Proper closure within a few hours minimizes the risk of infection.
7. **Watch for signs of infection.** See your doctor if the wound isn't healing or you notice any redness, drainage, warmth or swelling.
8. **Get a tetanus shot.** Doctors recommend you get a tetanus shot every 10 years. If your wound is deep or dirty and your last shot was more than five years ago, your doctor may recommend a tetanus shot booster. Get the booster within 48 hours of the injury.

Dislocation

A dislocation is an injury in which the ends of your bones are forced from their normal positions. The cause is usually trauma, such as a blow or fall, but dislocation can be caused by an underlying disease such as rheumatoid arthritis.

Dislocations are common injuries in contact sports, such as football and hockey, and in sports that may involve falls, such as downhill skiing and volleyball. Dislocations may occur in major joints such as your shoulder, hip, knee, elbow or ankle or in smaller joints such as your finger, thumb or toe. The injury will temporarily deform and immobilize your joint and may result in sudden and severe pain. A dislocation requires prompt medical attention to return your bones to their proper positions.

If you believe you have dislocated a joint:

1. **Don't delay medical care.** Get medical help immediately.
2. **Don't move the joint.** Until you receive help, splint the affected joint into its fixed position. Don't try to move a dislocated joint or force it back into place. This can damage the joint and its surrounding muscles, ligaments, nerves or blood vessels.
3. **Put ice on the injured joint.** This can help reduce swelling by controlling internal bleeding and the buildup of fluids in and around the injured joint.

Fractures

A fracture is a broken bone. It requires medical attention. If the broken bone is the result of a major trauma or injury, call 911 or your local emergency number. Also call for emergency help if:

- The person is unresponsive, isn't breathing or isn't moving. Begin cardiopulmonary resuscitation (CPR) if there's no respiration or heartbeat.
- There is heavy bleeding.
- Even gentle pressure or movement causes pain.
- The limb or joint appears deformed.
- The bone has pierced the skin.
- The extremity of the injured arm or leg, such as a toe or finger, is numb or bluish at the tip.
- You suspect a bone is broken in the neck, head or back.
- You suspect a bone is broken in the hip, pelvis or upper leg (for example, the leg and foot turn outward abnormally, compared with the uninjured leg).

Take these actions immediately while waiting for medical help:

- **Stop any bleeding.** Apply pressure to the wound with a sterile bandage, a clean cloth or a clean piece of clothing.
- **Immobilize the injured area.** Don't try to realign the bone, but if you've been trained in how to splint and professional help isn't readily available, apply a splint to the area.
- **Apply ice packs to limit swelling and help relieve pain until emergency personnel arrive.** Don't apply ice directly to the skin — wrap the ice in a towel, piece of cloth or some other material.
- **Treat for shock.** If the person feels faint or is breathing in short, rapid breaths, lay the person down with the head slightly lower than the trunk and, if possible, elevate the legs.

Head Pain

Most headaches are minor, and you can treat them with a pain reliever. Some head pain, however, signals a dangerous or serious medical problem. Don't ignore unexplained head pain or head pain that steadily worsens.

Get medical attention right away if your head pain:

- Strikes suddenly and severely
- Accompanies a fever, stiff neck, rash, mental confusion, seizures, changes in vision, dizziness, weakness, loss of balance, numbness or difficulty speaking
- Is severe and follows a recent sore throat or respiratory infection
- Begins or worsens after a head injury, fall or bump
- Is a new pain, and you're older than age 50
- Is excruciating and affects just one, reddened eye
- Worsens over the course of a day, or persists for several days

Head Trauma

Most head trauma involves injuries that are minor and don't require hospitalization. However, dial 911 or call for emergency medical assistance if any of the following signs are apparent:

- Severe head or facial bleeding
- Change in level of consciousness for more than a few seconds
- Black-and-blue discoloration below the eyes or behind the ears
- Cessation of breathing
- Confusion
- Loss of balance
- Weakness or an inability to use an arm or leg
- Unequal pupil size
- Repeated vomiting
- Slurred speech

If severe head trauma occurs:

- **Keep the person still.** Until medical help arrives, keep the person who sustained the injury lying down and quiet in a darkened room, with the head and shoulders slightly elevated. Don't move the person unless necessary and avoid moving the person's neck.
- **Stop any bleeding.** Apply firm pressure to the wound with sterile gauze or a clean cloth. But don't apply direct pressure to the wound if you suspect a skull fracture.
- **Watch for changes in breathing and alertness.** If the person shows no signs of circulation (breathing, coughing or movement), begin CPR.

Heat Cramps

Heat cramps are painful, involuntary muscle spasms that usually occur during heavy exercise in hot environments. Inadequate fluid intake often contributes to heat cramps. The spasms may be more intense and more prolonged than typical nighttime leg cramps. Muscles most often affected include those in your calves, arms, abdomen and back, although heat cramps may involve any muscle group involved in the exercise.

If you suspect heat cramps:

- Rest briefly and cool down.
- Drink clear juice or an electrolyte-containing sports drink.
- Practice gentle, range-of-motion stretching and gentle massage of the affected muscle group.
- If your cramps don't go away in 1 hour, call your doctor.

Heat Exhaustion

Heat exhaustion is one of the heat-related syndromes, which range in severity from mild heat cramps to heat exhaustion to potentially life-threatening heatstroke.

Signs and symptoms of heat exhaustion often begin suddenly, sometimes after excessive exercise, heavy perspiration and inadequate fluid intake. Signs and symptoms resemble those of shock and may include:

- Feeling faint
- Nausea
- Heavy sweating
- Ashen appearance
- Rapid, weak heartbeat
- Low blood pressure
- Cool, moist skin
- Low-grade fever

If you suspect heat exhaustion:

- Get the person out of the sun and into a shady or air-conditioned location.
- Lay the person down and elevate the legs and feet slightly.
- Loosen or remove the person's clothing.
- Have the person drink cool water, not iced, or a sports drink containing electrolytes.
- Cool the person by spraying or sponging him or her with cool water and fanning.
- Monitor the person carefully. Heat exhaustion can quickly become heatstroke. If fever greater than 102 F, fainting, confusion or seizures occur, dial 911 or call for emergency medical assistance.

Heatstroke

Heatstroke is similar to heat cramps and heat exhaustion. It's one of the heat-related problems that often result from heavy work in hot environments, usually accompanied by inadequate fluid intake. Older adults, people who are obese and people born with an impaired ability to sweat are at high risk of heatstroke. Other risk factors include dehydration, alcohol use, cardiovascular disease and certain medications.

What makes heatstroke much more severe and potentially life-threatening is that the body's normal mechanisms for dealing with heat stress, such as sweating and temperature control, are lost. The main sign of heatstroke is a markedly elevated body temperature — generally greater than 104 F — with changes in mental status ranging from personality changes to confusion and coma. Skin may be hot and dry, although in heatstroke caused by exertion, the skin is usually moist.

Other signs and symptoms may include:

- Rapid heartbeat
- Rapid and shallow breathing
- Elevated or lowered blood pressure
- Cessation of sweating
- Irritability, confusion or unconsciousness
- Fainting, which may be the first sign in older adults

If you suspect heatstroke:

- Move the person out of the sun and into a shady or air-conditioned space.
- Dial 911 or call for emergency medical assistance.
- Cool the person by covering him or her with damp sheets or by spraying with cool water. Direct air onto the person with a fan or newspaper.

Nosebleeds

Nosebleeds are common. Most often they are a nuisance and not a true medical problem. But they can be both. Why do they start, and how can they be stopped?

Among children and young adults, nosebleeds usually originate from the septum, just inside the nose. The septum separates your nasal chambers.

In middle aged and older adults, nosebleeds can begin from the septum, but they may also begin deeper in the nose's interior. This latter form of nosebleed is much less common. It may be caused by hardened arteries or high blood pressure. These nosebleeds begin spontaneously and are often difficult to stop. They require a specialist's help.

To take care of a nosebleed:

- **Sit upright.** By remaining upright, you reduce blood pressure in the veins of your nose. This discourages further bleeding.
- **Pinch your nose.** Use your thumb and index finger and breathe through your mouth. Continue the pinch for five to 10 minutes. This maneuver sends pressure to the bleeding point on the nasal septum and often stops the flow of blood.
- **To prevent rebleeding after bleeding has stopped,** don't pick or blow your nose and don't bend down until several hours after the bleeding episode. Keep your head higher than the level of your heart.
- **If rebleeding occurs,** sniff in forcefully to clear your nose of blood clots, spray both sides of your nose with a decongestant nasal spray containing oxymetazoline (Afrin, Dristan, others). Pinch your nose again in the technique described above and call your doctor.
- Seek medical care immediately if:
 - The bleeding lasts for more than 20 minutes
 - The nosebleed follows an accident, a fall or an injury to your head, including a punch in the face that may have broken your nose

If you experience frequent nosebleeds, make an appointment with your doctor. You may need to have the blood vessel that's causing your problem cauterized. Cautery is a technique in which the blood vessel is burned with electric current, silver nitrate or a laser. Sometimes your doctor may pack your nose with special gauze or an inflatable latex balloon to put pressure on the blood vessel and stop the bleeding.

Also call your doctor if you are experiencing nasal bleeding and are taking blood thinners, such as aspirin or warfarin (Coumadin). Your doctor may advise adjusting your medication.

Using supplemental oxygen administered with a nasal tube (cannula) may increase your risk of nosebleeds. Apply a water-based lubricant to your nostrils and increase the humidity in your home to help relieve nasal bleeding.

Shin Splints

Whether you're running after a soccer ball, jogging around the neighborhood park or training for a marathon, you're at risk of running-related injuries. One of the most common injuries is shin splints (medial tibial stress syndrome).

The term "shin splints" refers to pain along the shinbone (tibia) — the large bone in the front of your lower leg. The pain is the result of an overload on the shinbone and the connective tissues that attach your muscles to the bone.

Shin splints are common among runners and other athletes. But the risk of shin splints is no reason to give up your morning jog or afternoon aerobics class. Most cases of shin splints can be treated with rest, ice and other self-care measures — and wearing proper footwear and modifying your exercise routine can help prevent shin splints from recurring.

In most cases, you can treat shin splints with simple self-care steps:

- **Rest.** Avoid activities that cause pain, swelling or discomfort — but don't give up all physical activity. While you're healing, try low-impact exercises, such as swimming, bicycling or water running. If your shin pain causes you to limp, consider using crutches until you can walk normally without pain.
- **Ice the affected area.** Apply ice packs to the affected shin for 15 to 20 minutes at a time, four times a day for several days. To protect your skin, wrap the ice packs in a thin towel.
- **Reduce swelling.** Elevate the affected shin above the level of your heart, especially at night. It may also help to compress the area with an elastic bandage or compression sleeve. Loosen the wrap if the pain increases, the area becomes numb or swelling occurs below the wrapped area.
- **Take an over-the-counter pain reliever.** Try ibuprofen (Advil, Motrin, others), naproxen (Aleve) or aspirin to reduce pain and inflammation.
- **Wear proper shoes.** Your doctor may recommend a shoe that's especially suited for your foot type, your stride and your particular sport.
- **Consider arch supports.** Arch supports can help cushion and disperse stress on your shinbones. Off-the-shelf arch supports come in various sizes and can be fitted immediately. More durable arch supports can be custom-made from a plaster cast of your foot.

It's also important to resume your usual activities gradually. If your shin isn't completely healed, returning to your usual activities too quickly may only cause continued pain.

Sprain

Your ligaments are tough, elastic-like bands that attach to your bones and hold your joints in place. A sprain is an injury to a ligament caused by excessive stretching. The ligament can have tears in it, or it can be completely torn apart.

Sprains occur most often in your ankles, knees or the arches of your feet. Sprained ligaments swell rapidly and are painful. Generally the greater the pain, the more severe the injury. For most minor sprains, you can probably treat the injury yourself.

Follow the instructions for P.R.I.C.E.

1. **Protect** the injured limb from further injury by not using the joint. You can do this using anything from splints to crutches.
2. **Rest** the injured limb. But don't avoid all activity. Even with an ankle sprain, you can usually still exercise other muscles to prevent deconditioning. For example, you can use an exercise bicycle, working both your arms and the uninjured leg while resting the injured ankle on another part of the bike. That way you still get three-limb exercise to keep up your cardiovascular conditioning.
3. **Ice** the area. Using a cold pack, a slush bath or a compression sleeve filled with cold water will limit swelling after an injury. Try to apply ice as soon as possible after the injury. If you use ice, be careful not to use it for too long, as this could cause tissue damage.
4. **Compress** the area with an elastic wrap or bandage. Compressive wraps or sleeves made from elastic or neoprene are best.
5. **Elevate** the injured limb whenever possible to help prevent or limit swelling.

Call for emergency medical assistance if:

- You heard a popping sound when your joint was injured, or you can't use the joint. This may mean the ligament was completely torn apart. On the way to the doctor, apply a cold pack.
- You have a fever, and the area is red and hot. You may have an infection.
- You have a severe sprain. Inadequate or delayed treatment may cause long-term joint instability or chronic pain.
- You aren't improving after the first two or three days.

Tendinitis

Tendinitis is inflammation or irritation of a tendon — any one of the thick fibrous cords that attach muscles to bone. The condition, which causes pain and tenderness just outside a joint, is most common around your shoulders, elbows and knees. But tendinitis can also occur in your hips, heels and wrists.

Some common names for tendinitis are tennis elbow, golfer's elbow, pitcher's shoulder, swimmer's shoulder and jumper's knee.

If tendinitis is severe and leads to the rupture of a tendon, you may need surgical repair. But many times, rest and medications to reduce the pain and inflammation of tendinitis may be the only treatments you need. You can also take preventive measures to reduce your chance of developing tendinitis or to keep tendinitis from affecting your normal range of motion in joints such as your shoulder.

The goals of tendinitis treatment are to relieve your pain and reduce inflammation. Often, home treatment — which includes rest, ice and over-the-counter pain relievers — is all that you need.

Other treatments for tendinitis include:

- **Corticosteroid injections.** Sometimes your doctor may inject a corticosteroid medication around a tendon to relieve tendinitis. Injections of cortisone reduce inflammation and can help ease pain. However, there are potential side effects. For example, repeated injections may weaken a tendon, increasing your risk of rupturing the tendon. Also, corticosteroid medications should never be directly injected into the tendon itself because this can contribute to tendon rupture.
- **Strengthening exercises and physical therapy.** People with tendinitis and tendonosis may also benefit from a program of specific exercise designed to strengthen the force-absorbing capability of the muscle-tendon unit.
- **Surgery.** Depending on the degree and type of tendon tear, you may benefit from a surgical procedure that can improve tendon health. Damaged tendons can be removed to promote the formation of more healthy tissue. In select individuals, surgeons can repair full-thickness tendon tears to reduce pain and restore function.

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