

# Diabetes and Foot Care

*Anna Cason, Dietetics and Human Nutrition*



Taking good care of your feet is important for maintaining good health, especially for those who have diabetes. When blood-glucose levels stay high for a long time, it can cause problems for your feet in particular, by reducing sensitivity and limiting the blood flow that your body uses to heal itself.

The main goal for people with diabetes is to keep blood-glucose levels within the target range set by their health-care team. Being aware of common areas of concern and regularly monitoring your feet's condition can help you prevent and treat potential problems before they develop into more serious complications.

## How does high blood glucose damage the feet?

High blood sugar levels over time can lead to nerve damage, poor blood flow, and dry skin. The combination of these factors may result in sores or ulcers on your feet.

- **Dry, itchy skin.** High blood glucose causes the body to lose fluids. This fluid loss can result in dry, itchy skin. If undetected, this dry skin can crack, and if not treated, it can get infected.
- **Nerve damage.** High blood sugar can damage the nerves in the legs and feet, which can make it difficult to feel pain, heat, or cold. This loss of feeling is called neuropathy (pronounced "noo-ROP-uh-thee"). As a result, a small sore, blister, or cut on the foot may go undetected.

- **Poor blood flow.** High blood-glucose levels can lead to poor blood flow in the legs and feet. Poor blood flow makes it more difficult for sores and infections to heal.

If not treated, infections can worsen and potentially become life-threatening. Extensive infection can cause the tissues and skin to die, which is known as gangrene. To keep gangrene from spreading, the doctor may have to remove the infected limb. This is called amputation. Infections and worse can be avoided by proactively checking your feet.

## Take care of your feet regularly.

Checking your feet every day can prevent serious foot problems. If you experience any of these symptoms, check in with your health-care provider:

- Burning, tingling, or pain in your feet
- Changes in the shape, color, or temperature of your feet
- Dryness and cracking of the skin on your feet
- Ingrown or thick and yellow toenails
- Blisters, sores, or ulcers

Consider these ideas to ensure proper daily, weekly, and yearly foot care.

### Daily foot care

- Check for cuts, sores, red spots, swelling, infected toenails, and other problems.
  - Set a specific time that works best for you to check your feet. Try to keep to that same time every day, which will help you to remember to do it.
  - Check for dry, cracked skin; blisters; cuts; scratches; sores; redness; or increased warmth in any area of the feet.
  - Use a mirror if you cannot bend over or pull your feet up to check them.
  - If you have eye problems, have someone else check your feet.
  - See a doctor right away if a cut, sore, blister, or bruise on the foot does not heal.
- Wash feet in warm water every day.
  - Always make sure the temperature of the water is not too hot. It is best to use a thermometer or your elbow to test the water. If you use a thermometer, the water should be 90 to 95 degrees.
  - Avoid soaking your feet. This makes your skin dry and more likely to get infected.
  - Dry your feet well after washing. Pat skin dry instead of rubbing.
  - Pay attention to skin between your toes; use talcum powder to keep the area dry.
- Use lotion to keep the skin at the top and bottom of the feet soft. Do not put cream or lotion between your toes. This could cause an infection.

### Weekly foot care

- Trim your toenails after washing your feet, when the nails are softer.
  - Trim your toenails straight across. Avoid cutting into the corners of your toenails.
  - Use a nail file or emeryboard to smooth nails after trimming.
- Never use commercial or home-remedy corn or callus removers, because they can damage the skin.
- Have a podiatrist (foot care doctor) or health-care provider trim your toenails if they are thick and yellow or begin to grow into the skin.

### Yearly foot care

- Have a health-care provider check your feet.
  - Consider removing socks and shoes before the provider enters the room for an appointment, to serve as a reminder.
  - Tell the provider if you experience pain in your feet or any issues with dry skin, injury, calluses, or difficulty healing.
- Ask your provider the following questions:
  - Are the nerves in my feet healthy?
  - How is the blood flow to my legs and feet?
  - What exercises should I do?
  - How should I trim my toenails?
  - What lotions or creams should I use?

### Protect your feet from injury.

Additional considerations can help prevent damage to your feet:


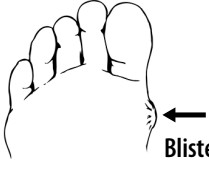
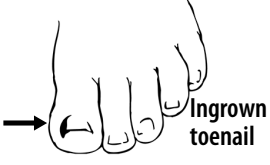
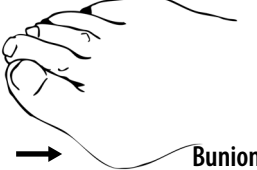
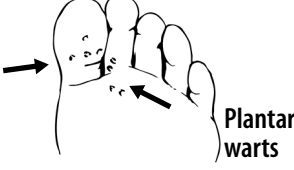


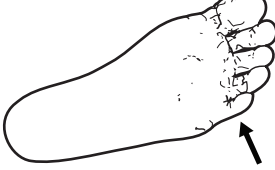
- Avoid walking barefoot, even when indoors, to prevent blisters, injuries, and sores.
- Choose socks that are made of cotton, wool, or a cotton-polyester blend. These types of socks keep the feet dry.
- Avoid wearing stockings that are too tight below the knees, because they may reduce blood flow to your legs and feet.
- Wear socks without seams to prevent blisters.
- Protect your feet from heat (such as radiators, open fires, the sun, and hot pavements), cold, and excess moisture.
- Avoid using hot water bottles or heating pads on your feet.
- Wear shoes that fit well. Always check inside shoes to make sure there are no objects in them before putting them on.
- Wear comfortable and supportive shoes when engaging in physical activity.

### Keep the blood flowing to your legs and feet.

- Prop your feet up when you are sitting for long periods.
- Wiggle your toes and move your ankles up and down for five minutes, two or three times a day.
- Avoid crossing your legs for long periods.
- Avoid wearing tight socks, elastic or rubber bands, or garters around your legs.
- Avoid smoking, which reduces blood flow to the feet.



**Common foot problems associated with diabetes.**

 <p><b>Corn and callus</b></p>	<p>Corns and calluses are tough layers of skin that have become thick and hard due to too much friction and pressure on the same spot.</p> <p>Never cut corns or use a liquid corn or callus remover.</p>
 <p><b>Blister</b></p>	<p>Blisters form if shoes always rub on the same spot.</p> <p>Wear shoes that fit well, and use socks to prevent blisters.</p>
 <p><b>Ingrown toenail</b></p>	<p>Ingrown toenails happen when an edge of a nail grows into the skin.</p> <p>To prevent an ingrown nail, cut toenails straight across and avoid shoes that are too tight.</p>
 <p><b>Bunion</b></p>	<p>Bunions form when the big toe slants toward the small toes and the place between the bones near the base of the big toe grows larger.</p> <p>Avoid wearing pointed shoes or shoes that do not fit well.</p>
 <p><b>Plantar warts</b></p>	<p>Plantar warts form at the bottom of the foot and are caused by a virus.</p> <p>Do not use over-the-counter medication to remove warts.</p>
 <p><b>Hammertoe</b></p>	<p>Hammertoes form when the foot muscle gets weak, such as when diabetic nerve damage occurs. The weakened muscle makes the tendon in the foot shorter and makes the toes curl under the feet.</p> <p>To prevent hammertoes, wear shoes that fit properly.</p>
 <p><b>Dry and cracked skin</b></p>	<p>Dry and cracked skin occurs because the nerves that control the oil and moisture in the foot no longer work, making skin dry, itchy, and prone to cracks and infections.</p> <p>It is important to keep skin moist.</p>
 <p><b>Athlete's foot</b></p>	<p>Athlete's foot is a fungus that causes itchiness, redness, and cracking of the skin. Germs can enter through the cracks in the skin and cause an infection.</p> <p>Ask a health-care provider for medicine to treat athlete's foot.</p>

Source: Adapted from the National Diabetes Information Clearinghouse.



## Choose proper shoes.

- Have your feet measured each time you buy shoes. The size and shape of the feet change over time.
- Buy shoes that are comfortable and that fit the length and width of your feet with plenty of room for the toes. Shoes should not be too big, as this can also cause your feet to rub, which may lead to foot ulcers.
- New shoes should be comfortable when you buy them and should not need a “break-in” period. Avoid wearing new shoes for more than an hour at a time.
- Try on shoes with the type of socks you will typically wear with them.
- Avoid shoes with high heels and pointed toes, because they put too much pressure on your foot and can cause foot ulcers.
- Avoid shoes such as sandals that expose your toes and heels, because they increase your risk for injury and infection.
- Consider therapeutic shoes or shoe inserts to support foot health while following along with other protective measures.

## Resources

American Diabetes Association. <http://www.diabetes.org/>.

Medline Plus. Diabetic Diet. <http://www.nlm.nih.gov/medline-plus/diabeticdiet.html>.

National Institute for Diabetes and Digestive and Kidney Diseases. <https://www.niddk.nih.gov/health-information/diabetes>.

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