Introduction
People with diabetes are more likely than others to have problems with their feet. These problems can lead to dangerous infections of the foot. Recognizing and treating foot problems early can help avoid serious complications.

This reference summary explains how diabetes affects the feet. It also explains what you can do, if you have diabetes, to help prevent serious complications.

A Healthy Foot
Healthy feet are strong and flexible. They allow us to walk and run as they support the weight of the whole body. The bones and joints of the foot help absorb pressure from the body's weight. The skin and fat of the foot is the first barrier to prevent infections from entering the inner parts of the foot.

Normally, if we injure our foot or if an infection sets in, the affected area starts hurting. The pain alerts us to a possibly dangerous condition. Once we feel the pain, we know to care for the affected area and prevent it from getting injured again. The body also starts fighting any infection with special cells that can kill harmful germs. Infection-fighting cells and tissue-repairing cells reach the infection through the bloodstream. Blood vessels also carry nutrients and oxygen to the tissues of the foot.

How Diabetes Can Affect the Feet
Diabetes affects the feet mainly in two ways. It can cause nerve damage and it can cause narrowing of the blood vessels. Because of the abnormal increase of glucose in the blood, nerves of the body can be damaged. This is known as “diabetic neuropathy.” A feeling of numbness and tingling in the foot may mean the nerves are damaged.
Diabetic neuropathy mainly affects the nerves that supply sensation to the feet. Diabetic neuropathy decreases the feeling of pain in the feet. Because of this, a person with diabetes may not feel a small cut or a blister. Numbness in the feet may change the normal balance of walking and standing. The poor weight distribution may lead to painless fractures and flattened arches. Unusual pressure points may lead to blisters. They may also cause injuries that do not heal well.

Diabetes can also affect the blood vessels of the feet, causing them to narrow. Narrow blood vessels carry less blood to the feet. Oxygen is carried to the blood cells. When the blood vessels are narrowed, less blood and oxygen reaches the feet. This can delay healing of wounds on the feet.

A cold, blue or pale foot may mean the foot has poor circulation. With less blood, the foot will not have enough oxygen and nutrients to heal and fight infections. Smoking also can reduce the blood flow to the feet. This makes it difficult for the feet to receive nutrients and the oxygen needed for health and healing. Ask your health care provider about smoking cessation classes.

A wound or cut with poor blood supply may become infected or lead to gangrene. Gangrene is a serious infection. Treatment may require an amputation. During an amputation, the infected part of the foot or leg is surgically removed.

When both the nerves and arteries are damaged, the patient with diabetes may not feel simple wounds. These can soon become serious infections that threaten the entire foot and even the leg. Early detection, care and treatment can prevent the need for an amputation. Redness, swelling, and increased temperature in the foot are signs of infection. Talk to your healthcare provider right away if you notice these symptoms.

**Preventing Foot Problems**

Controlling diabetes by keeping your blood glucose within or close to a normal range will help delay or prevent the foot problems associated with diabetes. This is the most important way people with diabetes can prevent foot complications.
In addition to controlling blood glucose levels, people with diabetes should:

1. Take care of their feet. Wash your feet daily, carefully trim toenails, and inspect the feet for signs of injury or infection every day.
2. Wear proper footwear and check for any wrinkles in your socks prior to putting on your shoes.
3. Prevent injury to their feet. Do not walk barefoot.
4. Visit their health care provider regularly.

People with diabetes who stop smoking can help prevent or delay foot complications.

**Daily Foot Care**

If you are a person with diabetes, checking your feet daily helps you notice small problems before they become serious complications.

To keep your feet healthy:

1. Inspect your feet every day.
2. Look between your toes.
3. Check for any cracks, blisters, scratches, cuts, redness or swelling.
4. If you cannot see the bottom of your feet, use a hand mirror.

Wash your feet every day using mild soap and warm water. Dry your feet carefully, especially between the toes. Apply lotion to dry or cracked skin and to soles of feet, but do not put lotion between the toes. Call your health care provider immediately if you have any signs of infection, such as swelling, redness, drainage, fever or pain.

**Regular Foot Care**

Keep toenails neatly trimmed. After a bath or shower, cut the toenails with the shape of your toes so they are even with the skin on the end of your toes. Avoid cutting down into the corners. Never cut skin on the end of your toes. If you have trouble seeing, have someone help you trim your toenails. If your toenails are thick, you may need them trimmed by a health care provider, such as a doctor, a podiatrist or a specialized nurse. Avoid nail salons.
Tell your health care provider about signs of ingrown toenails, such as redness, drainage or swelling. Corns are thick or hard skin on toes. Calluses are thick skin on the bottom of feet. Blisters could form under this thick hard skin. If you have corns or calluses, tell your health care provider. Do not try to cut them off yourself.

**Footwear**

The right shoes and socks can protect the feet and keep them healthy by preventing corns, calluses, and injuries.

- Wear comfortable shoes that fit your feet. The toe end should allow all toes to wiggle. Get your feet measured.
- Avoid tight, pointed, or high heel shoes. Avoid open-toe or open-back shoes to prevent possible injury to the feet.
- Wear clean socks. Change them every day. Avoid bumpy socks or socks with tight elastic.

**Preventing Injury to the Feet**

People with diabetes should take extra precautions to avoid injuries to their feet because they may not feel pain in their feet. Here are some tips:

- Never walk barefoot.
- Check the inside of shoes before putting them on. Small objects, wrinkles in your socks, and torn linings create pressure points that can lead to irritation or infection.
- Avoid contact with hot water or surfaces. Burns may occur without you feeling them. Before washing your feet with warm water, check the water temperature with your hand or elbow. Wear shoes on hot surfaces.
- Avoid exposure to the sun without the protection of sunscreen lotion.

**Regular Checkups**

You should also check with your health care provider or podiatrist regularly. A podiatrist is a doctor specializing in foot care. Ask your health care provider to check your feet. Do not remove corns yourself. Let your health care provider care for them. Similarly, let your health care provider remove your calluses.
When found early, foot problems can be treated. Minor infections can be treated with regular cleaning and antibiotics. When not treated early, minor infections can become severe. Severe infections may spread to the bones. To treat such infections, surgery may be recommended.

Summary
People with diabetes are more likely than others to have problems with their feet. These problems can lead to dangerous infections of the foot. Recognizing and treating foot problems early can help avoid serious complications.

Because diabetes causes an abnormal increase of glucose in the blood, nerves of the body can be damaged. This is known as “diabetic neuropathy.” A feeling of numbness and tingling in the foot may mean the nerves are damaged.

Diabetes can also affect the blood vessels of the feet, causing them to narrow. A cold, blue, or pale foot may mean the foot has poor circulation. With less blood, the foot will not have enough oxygen and nutrients to heal and fight infections. Controlling diabetes by keeping your blood glucose within or close to a normal blood glucose range will help to delay or prevent the foot problems associated with diabetes. This is the most important way a person with diabetes can prevent foot complications.

If you are a person with diabetes, checking your feet daily helps you notice small problems before they become serious complications. The right shoes and socks can protect the feet and keep them healthy by preventing corns, calluses, and injuries. People with diabetes should take extra precautions to avoid injuries to their feet because they may not feel pain in their feet. You should also check with your health care provider or podiatrist regularly.