

## Diabetic Foot

### Overview:

- For people with diabetes, common foot problems can develop and lead to serious complications.
- These problems can lead to numbness or loss of feeling in the foot, and, in severe cases, amputation.
- Foot problems for people with diabetes most often happen when there is nerve damage, also called diabetic neuropathy, which usually affects the feet and legs first, then the hands and arms.
- Depending on the case, treatment options include both surgical and non-surgical procedures.
- To avoid serious foot problems, it is advisable to manage your blood sugar levels and follow diabetes foot care guidelines.

### The Effect of Diabetes on Blood Vessels and Nerves in the Feet:

Over time, high blood sugar levels in people with diabetes can cause damage to blood vessels and nerves in the feet. Nerve damage can lead to numbness and loss of sensation in the feet. This loss of sensation often means that the patient may not be able to feel a foot injury or a foot ulcer until the skin breaks down and becomes infected. Damage to the blood vessels, on the other hand, can result in poor circulation, which means that less oxygenated blood reaches the feet, making it more difficult for wounds to heal.

### Diabetic Foot:

People with diabetes can develop many different foot problems. Even ordinary problems can get worse and lead to serious complications. In most cases, foot problems occur when there is nerve damage in the feet, also called (diabetic neuropathy).

### The Effect of Diabetes on the Feet:

- **Loss of sensation:**

- It can lessen the diabetic's ability to feel pain, heat, and coldness: if a diabetic has lost sensation in the feet, it means they may not feel a foot injury. For example, they could have a stone in their shoe and walk on it all day without knowing.
- Abnormal foot shape: diabetics may develop changes in the shape of their feet due to wearing tight shoes for an extended period of time.

**Cause:** Diabetic neuropathy.

- **Skin changes:**

Over time, diabetes can cause changes in the skin of the foot; it may become very dry and the skin may peel and crack.

**Cause:** This is caused by damage to the nerves that control the oil and moisture in the foot.

- **Calluses:**

Calluses occur more often and build up faster on the feet of people with diabetes. Calluses may even develop into ulcers.

**Cause:** High pressure on the foot.

- **Foot Ulcers:**

Ulcers most often occur on the ball of the foot or on the bottom of the big toe. Ulcers on the sides of the foot are usually a result of poorly fitted shoes.

**Cause:** Wounds that have not healed or due to infected wounds.

- **Poor circulation:**

Poor circulation can make the foot less able to fight infections and heal from them.

**Cause:** Diabetes causes blood vessels of the foot and leg to narrow and harden.

- **Gangrene:**

Gangrene is a serious condition that refers to the death of body tissue.

**Cause:** It is caused by lack of blood flow to the tissues or from a serious bacterial infection.

- **Amputation:**

Advanced stages of infected ulcers could result in amputation.

**Cause:** Loss of sensation and poor circulation.

### Signs and Symptoms of Diabetic Peripheral Neuropathy:

It often affects the feet and legs first, followed by the hands and arms. Signs and symptoms of peripheral neuropathy are often worse at night, and may **include:**

- Numbness or reduced ability to feel pain or temperature changes.
- Tingling sensation.
- Increased sensitivity to touch (in some cases, even the weight of a bedsheet can be painful).
- Muscle weakness.
- Loss of reflexes, (especially in the ankle).
- Loss of balance and coordination.
- Serious foot problems, (such as: ulcers, infections, deformation, and bone and joint pain).
- Skin discoloration.

### When to See a Doctor:

- If you notice a cut or sore on your foot even if it is small.
- If you notice a wound on your foot that is infected or won't heal.
- If you experience tingling, weakness or pain in your feet that interferes with your daily activities.

### Treatment:

#### Non-surgical treatment:

- Wounds must be cleaned and covered with sterile gauze.
- In case of an infection, antibiotics should be taken.
- Foot deformities can be treated by using a plaster or an orthopedic cast.
- Wear orthopedic shoes.
- Gangrene should be managed by taking appropriate medications.

#### Surgical treatment:

- Severe infections may be treated by surgically removing the infected tissue or by amputation.
- Foot deformities can be treated with corrective surgery.
- Partial amputation of the area affected by gangrene or full limb amputation.

#### Foot Care:

- Manage your blood sugar levels.
- Examine your feet every day:  
Check your bare feet for red spots, cuts, swellings, and blisters. If you cannot see the bottom of your feet, use a mirror.
  - Feel every foot and check how swollen it is.
  - Examine the area between the toes.
  - Test sensation in each foot.

- Focus on the following six areas in each foot: the tip of the big toe, the bottom of the little toe, the bottom of the middle toe, the heel, and the front part of the foot.
- Avoid undergoing any treatments without consulting your doctor first.
- **Take care of your feet by:**
  - Washing them daily with warm water and soap. Make sure to check the water temperature beforehand.
  - Avoid soaking your feet in water.
  - It is advisable to dry your feet by dabbing them gently with a clean towel, and make sure to dry the area between the toes.
  - Keep your feet moisturized by applying lotions to the entire foot, including the area between the toes.
  - Trim your toenails carefully. Cut your toenails straight across, and avoid cutting the edges to prevent wounds.
  - Inform your doctor of any problems with your nails as soon as possible.
  - Avoid using harsh disinfectants, ointments, hot compresses and sharp tools on your feet.
  - Keep your feet warm by wearing socks and avoid exposing them to any heat sources (like heaters).
  - Wear loose socks when you sleep.
  - Don't expose your feet to rain and snow.
  - Avoid crossing your legs or putting one foot on top of the other for an extended period of time because it may restrict blood flow to the feet.
  - Avoid smoking.

- **Wear shoes and socks at all times:**
  - Avoid walking barefoot.
  - Avoid wearing opened shoes.
  - Pick your shoes carefully and recheck the size by the end of the day because your foot size may increase.
  - Before buying new shoes, make sure that they are comfortable and well-fitted.
  - Avoid wearing pointed shoes, or high heels.
  - Avoid wearing the same shoes every day.
  - Feel the inside of the shoe with your hand before putting it on.
  - Don't tie your shoes too tightly.
  - Wear clean and dry socks and make sure to change them every day. Avoid wearing socks with holes in them.

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