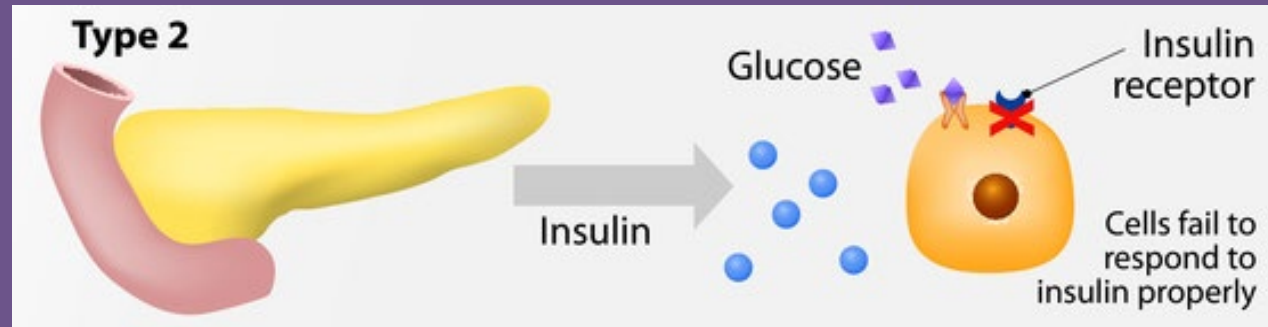
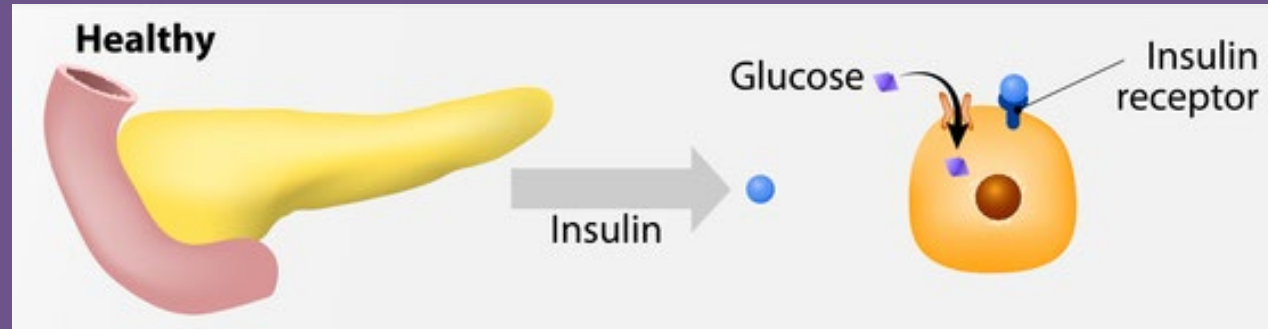


TYPE 2 DIABETES MELLITUS

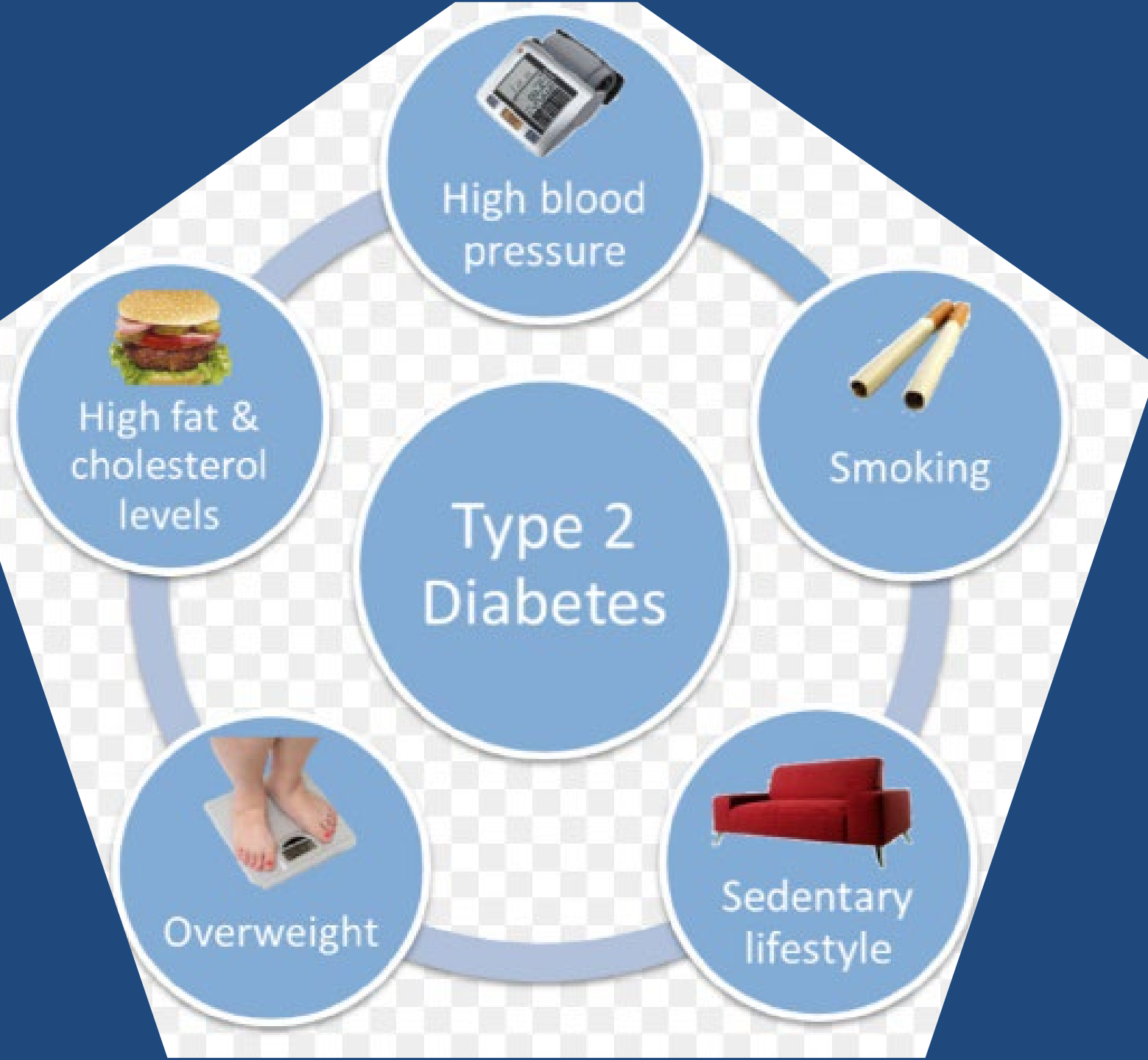
THE PANCREAS AND TYPE 2 DM

The pancreas is responsible for making sure glucose levels remain stable.

In Type 2 diabetes, the pancreas no longer produces enough insulin, or the cells no longer respond to insulin properly.



RISK FACTORS



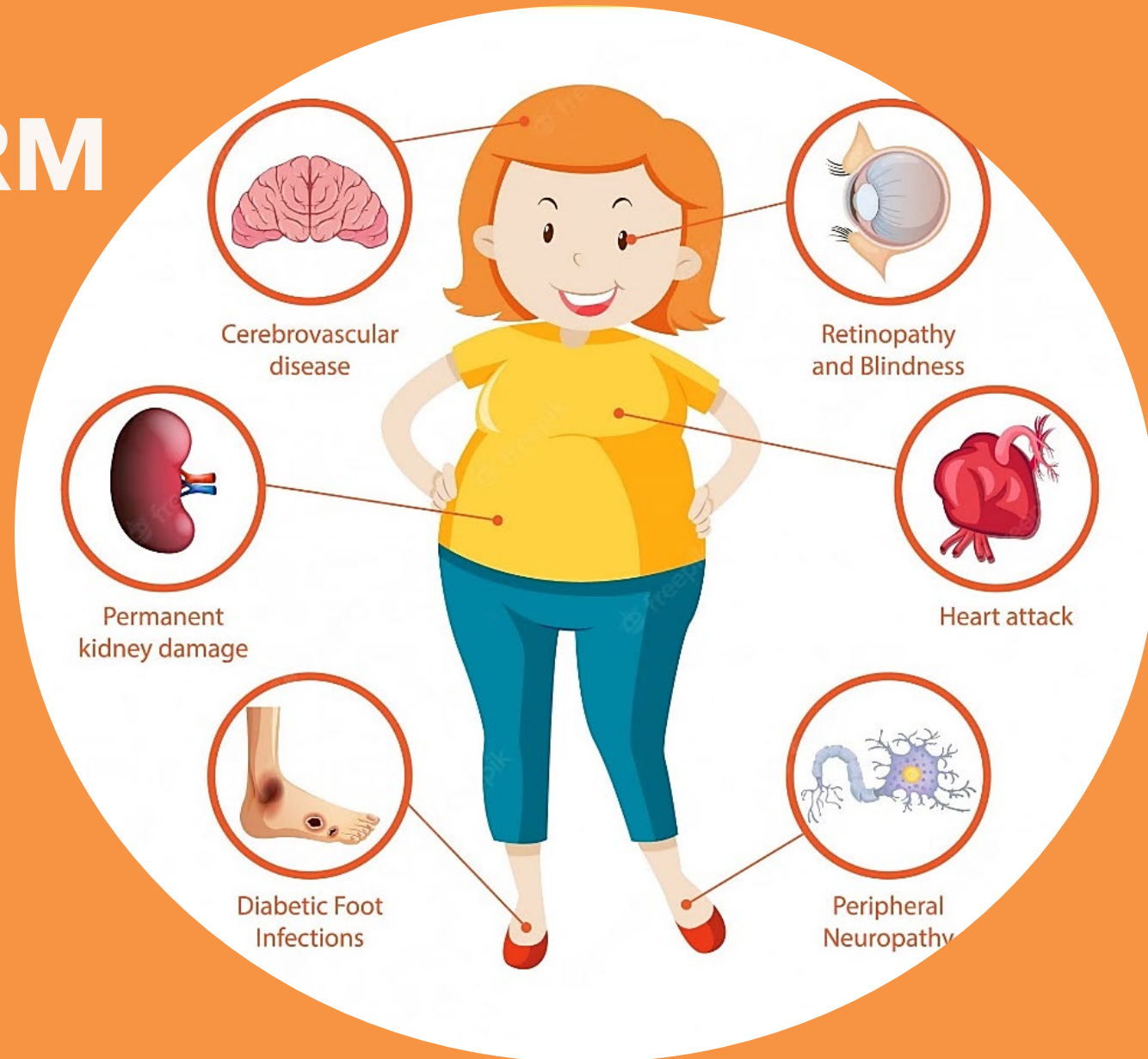
- **Family history**
- **Metabolic syndrome**
- **Lifestyle**

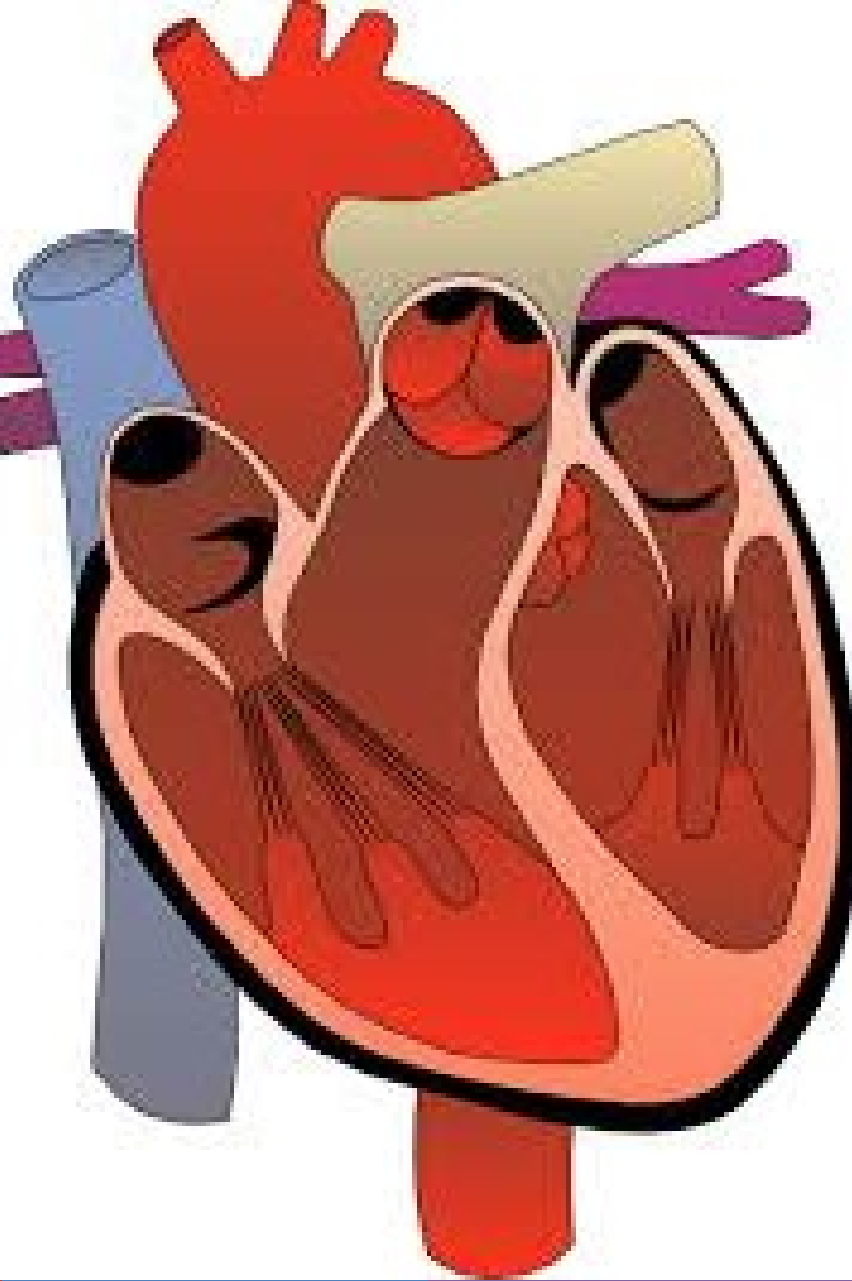


DIABETES SYMPTOMS

Symptoms are usually not seen when someone is first diagnosed with type 2 diabetes though symptoms of high blood sugar are sometimes present.

COMPLICATIONS OF LONG-TERM DIABETES





CARDIOVASCULAR

Heart disease is the most common long-term complication and includes heart attacks and stroke.

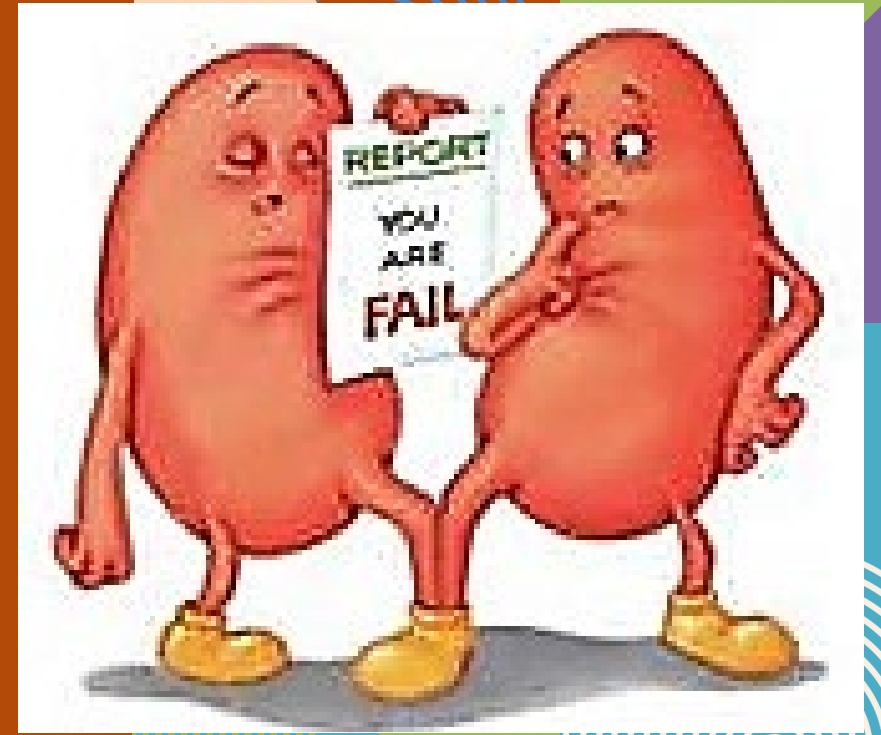
People with diabetes tend to develop hypertension and high cholesterol levels.

Problems with circulation may affect the heart, eyes, kidneys, legs, and feet.

KIDNEY COMPLICATIONS

Kidneys no longer work as well,
and dialysis is often needed.

Hypertension speeds this process





EYE COMPLICATIONS

Vision is affected because diabetes causes blood vessels to become fragile. Diabetes is the leading cause of new cases of blindness in adults.

Issues affecting the eye include:

- retinopathy
- cataracts
- glaucoma

NERVE DAMAGE: DIABETIC NEUROPATHY

- Nerve damage may occur because of poor circulation. This damage is called diabetic neuropathy.
- Symptoms of neuropathy include burning pain, numbness, tingling or loss of feeling in the feet or lower legs, especially at night.
- Neuropathy can also cause changes in stomach and bowel function.



DIABETIC NEUROPATHY



Decreased sensation can be a serious threat to safety and security.

- With decreased sensation, someone may not realize that an injury has occurred. An infection may quickly develop.
- Because of problems with circulating blood, the ability to fight infection is compromised.
- In serious cases, infected body parts may need to be amputated.

[illegible]

- High blood sugar levels reduce the body's ability to fight off many kinds of infections.
- Even the slightest cut or sore may be slow to heal and become easily infected.

INFECTION PREVENTION



- ✓ Use sunscreen to avoid sunburns
- ✓ Avoid dental problems by brushing and flossing regularly.
- ✓ See the dentist at least yearly.



- ✓ Wear puncture resistant gloves when doing anything that might cause injury to the skin.



- ✓ Prevent blisters by wearing socks with shoes and gloves when working outdoors.

PREVENTING INFECTIONS



- ✓ Take care of the skin by keeping it clean.
- ✓ Shower or bathe daily or every other day with warm water and mild soap.



- ✓ Avoid frostbite in the winter by keeping hands and feet warm and wearing a hat that covers the ears.
- ✓ Change shoes or gloves immediately if they get wet from the snow.

MORE INFECTION PREVENTION

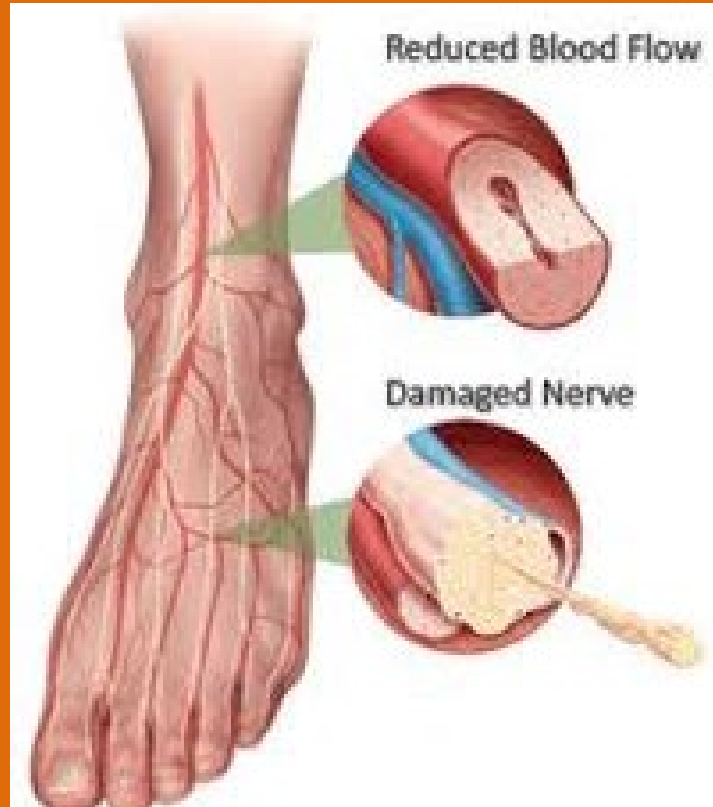
- ✓ Wash cuts and scrapes immediately with warm water and soap.
- ✓ Use an antibacterial ointment if recommended.



- ✓ Cover cuts and scrapes with a bandage.
- ✓ Change bandages at least daily and when they get wet or dirty.

- ✓ Report signs of infection:
 - Redness
 - Oozing of yellow or green discharge
 - Swelling
 - Warm/hot to touch
 - Tenderness
 - Temperature over 100°F

DIABETIC FOOT PROBLEMS



Poor circulation, nerve damage and trouble fighting infections can cause any foot problem to become serious. There are things that can be done to help avoid complications and keep feet healthy.

HOW TO AVOID DIABETIC FOOT PROBLEMS



- ✓ Always wear shoes or slippers with hard soles. Avoid going barefoot.
- ✓ Shoes should be comfortable and supportive.



- ✓ Shoes should be clean.
- ✓ Shoes should be discarded when worn out and no longer providing proper support.



- ✓ Socks should not be too tight around the toes or ankles.
- ✓ Socks should not be so big that they bunch up inside the shoe when walking.

Before putting on, look inside the shoe to make sure nothing got in such as a stone.

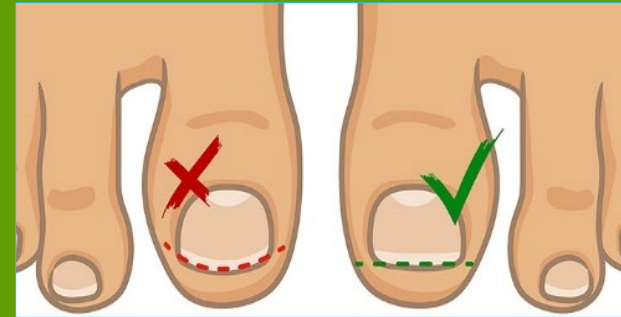
Make sure the lining is not worn, torn, or bunched up inside the shoe.

AVOIDING DIABETIC FOOT PROBLEMS

- ✓ Socks should be changed daily.
- ✓ Wear only clean and dry socks and those in good repair.



- ✓ Use care when trimming toenails. This may need to be done by a podiatrist.



- ✓ Make sure the feet are washed daily with warm water and mild soap.
- ✓ Do not soak feet. Soaking can dry the skin and cause cracking and peeling.



- ✓ Check feet daily for any redness, swelling, corns, calluses, ingrown toenails, or breaks in the skin.

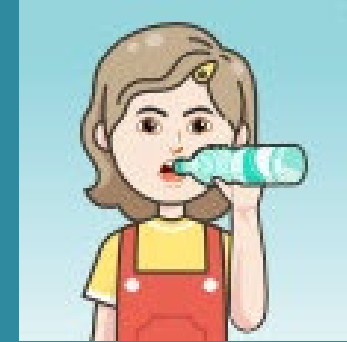
HYPERGLYCEMIA

Causes:

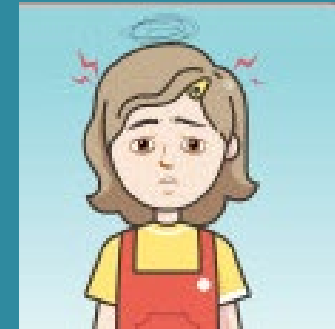
- Stress
- Illness
- Not getting the correct or enough medication to control levels
- Low exercise
- Certain medications
- Consuming too many carbohydrates
- Poor sleep



SYMPTOMS OF HIGH BLOOD SUGAR



- Hunger and excessive thirst
- Fatigue
- Blurred vision
- Frequent urination
- Unexplained weight loss
- Headache
 - Irritability
 - Slowly healing wounds
 - Frequent yeast or urinary tract infections



HYPOGLYCEMIA

Causes:

- Stress
- Illness
- Drinking excessive alcohol
- Taking too much insulin
- Taking too much diabetic medication
- Not eating enough food
- Waiting too long between meals
- Exercising vigorously without adjusting insulin or eating before exercise.



LOW BLOOD SUGAR SYMPTOMS

EARLY STAGES

(sugar levels below 60 to 70 mg/dl)

- Sweating, palpitations
- Trembling, anxiety
- Hunger
- Loss of inhibitions
- Irritability



LOW BLOOD SUGAR SYMPTOMS

MODERATELY LOW LEVELS

(sugar below 50 to 55 mg/dl)

- Difficulty walking with weakness
- Lack of coordination
- Blurred vision



SEVERE HYPOGLYCEMIA

Later symptoms - call 911

- Lethargy, confusion when levels below 50 mg/dl
- Loss of consciousness at levels around 30 mg/dl
- Seizures at levels of ~20 mg/dl with death shortly thereafter



TREATMENT FOR GLUCOSE BELOW 70

If the person is alert enough to safely swallow, give any of the following or something similar:

- A half cup of fruit juice or soda pop
- 6-8 hard candies
- 2 teaspoons jelly, jam, or pancake syrup
- 3 to 4 glucose tablets

Avoid foods that contain fat or protein such as candy bars or cheese. These slow the body's ability to absorb glucose.



TREATING HYPOGLYCEMIA

Recheck glucose level 15 minutes after giving a source of sugar.



- ✓ Give an additional source of sugar if level is still below 70 but not decreasing.
- ✓ Call 911 if the level is dropping or the person shows a decreased level of alertness.
- ✓ If a second source of sugar was given, recheck the level in 15 minutes again. Call 911 if the level is still below 70.
- ✓ When the glucose level is above 70 and symptoms are resolving, give food with protein and fat.



DIABETES

Jean Justad, MD
Medical Director DDP
2024