



# Diabetes Self-Management Education and Support

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Module 7



Reducing Risk

Revised July 2024

**VA**



U.S. Department of Veterans Affairs  
Veterans Health Administration



U.S. Department of Defense

## In This Module You Will:

- List common long-term problems (complications) associated with diabetes.
- State ways to reduce risk or delay the development of complications.
- Recognize the importance of regular routine health care appointments, blood tests, and other exams.
- Create a sick day plan to manage illnesses.
- Recognize symptoms and solutions for low blood glucose.



## Long-term Problems

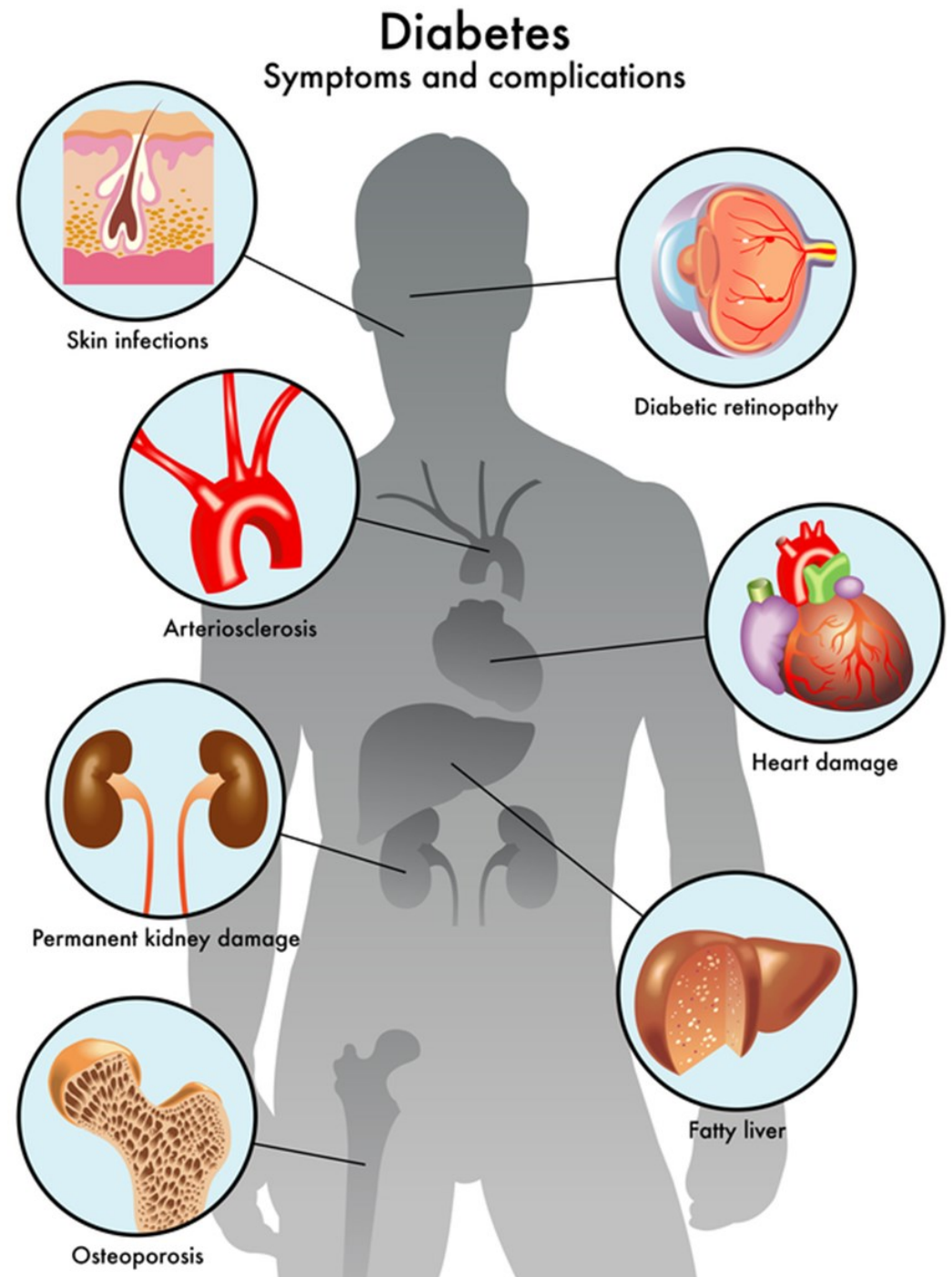
Research shows that by taking care of your diabetes, you can reduce risk or delay serious health problems.

Maintaining good health when living with diabetes means paying attention to your entire body.

Reducing risk or delaying long-term problems will help you protect your health for years to come.

Diabetes affects both small and large blood vessels found in:

- Feet
- Heart
- Nerves
- Stomach
- Eyes
- Brain
- Kidneys
- Bones
- Sexual organ
- Ears
- Urinary tract
- Mouth



## Cardiovascular Health

**Cardio = Heart. Vascular = Veins and arteries.**

Diabetes and heart disease go hand in hand. Over time, high blood glucose can damage blood vessels and nerves that control the heart. Plaque deposits (cholesterol) can build up in the arteries and decrease blood flow to the heart causing heart disease. A lot can be done to reduce the risk of heart disease by managing your blood glucose, blood pressure, and cholesterol levels.

**If experiencing chest pain or pressure, call 911! Be sure to tell them you have diabetes.**

To care for your heart:

- Know your Diabetes ABCs.
- Exercise most days of the week and be as physically active as you can. Refer to **Module 6–Being Active**.
- Avoid nicotine products, this is the time to quit.
- Maintain a healthy weight.
- If you need to lose weight, ask your provider or dietitian for a plan. Refer to **Module 5–Healthy Eating**.
- Consider joining a weight management program.
- Practice stress management. Staying calm helps keep your blood pressure and glucose under control.

**A** is for A1C

**B** is for Blood Pressure

**C** is for Cholesterol

**A1C Your 3-Month Blood Glucose**  
My A1C Target: \_\_\_\_\_

**Blood Pressure**  
Ways to lower blood pressure:  
 • Decrease salt in your diet  
 • Stop smoking  
 • Maintain a reasonable weight  
 • Manage stress  
 • Take pills as prescribed  
 • Stay physically active  
 • Limit or avoid alcohol  
 My Blood Pressure Target \_\_\_\_\_

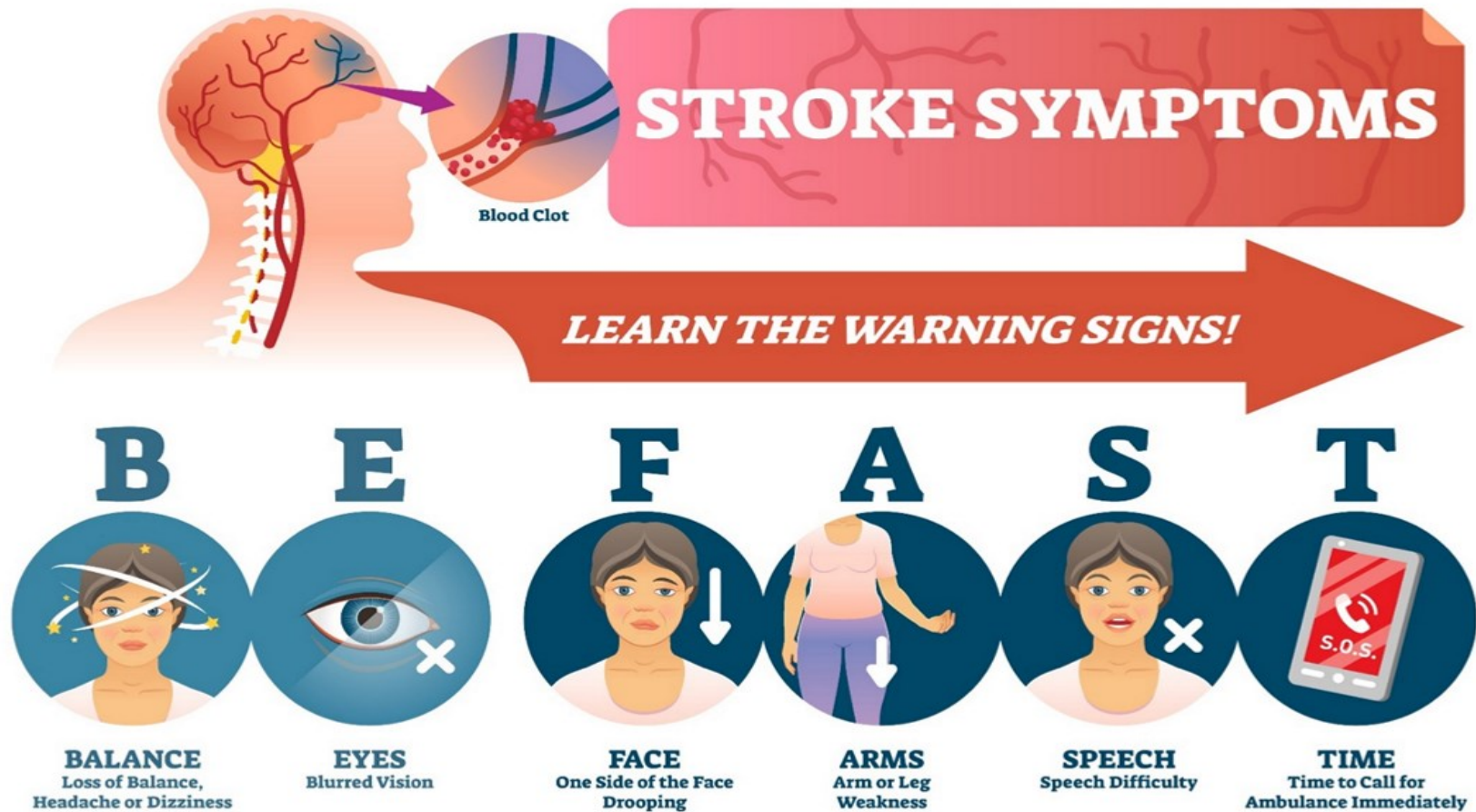
**Aspirin**  
Check with your provider.  
A daily aspirin may be advised

**Cholesterol**  
Talk with your healthcare provider about your goals  
 • "Lousy" LDL Cholesterol Target: \_\_\_\_\_  
 • "Healthy" HDL Cholesterol Target: \_\_\_\_\_  
 Triglyceride Target: \_\_\_\_\_

## Stroke

Heart and blood vessel disease can lead to having a stroke. A stroke is caused by either a bleed (hemorrhage) or a blockage in the brain. It is important to know stroke symptoms and warning signs.

An easy way to remember warning signs is the acronym **BE FAST**



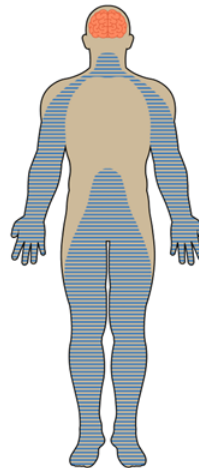
## Peripheral Vascular Conditions

Peripheral Vascular Disease (PVD) and Peripheral Artery Disease (PAD) cause changes in the way blood flows through blood vessels in the hands, feet, legs, and arms. A blood vessel might narrow, become weakened or damaged.

Complications include slow or non-healing wounds, cellulitis, and in severe cases, amputation.

Some symptoms to watch for are:

- Reduced blood flow in arms or legs
- Feet and legs that are cool or hot to touch
- Dark red/purple discoloration
- Swelling
- Hair loss on legs or feet
- Shiny skin on legs
- Pain or cramping triggered by activity, gets better with rest
- Slow or non-healing foot or leg wounds
- Cellulitis
- Amputation (severe case)



Nerves and arteries in these blue areas are referred to as peripheral.

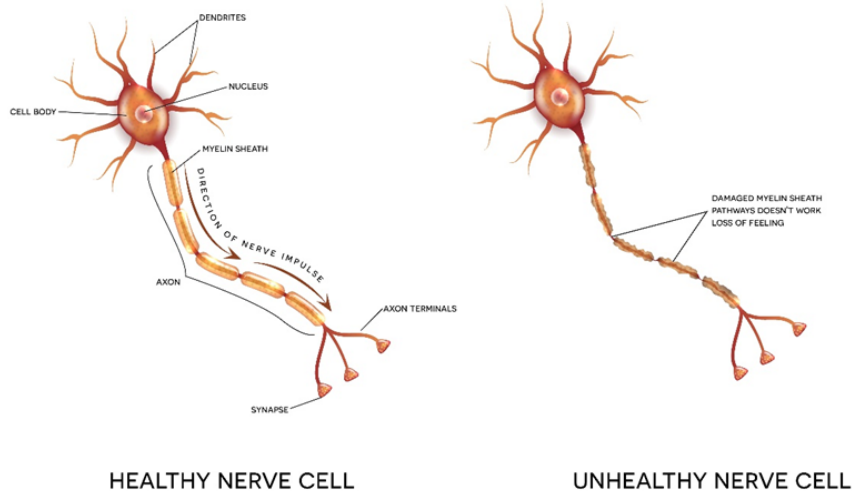
## Peripheral Neuropathy

Peripheral neuropathy is the result of nerve fiber damage in the hands, feet, legs, and arms. High glucose levels are the most common cause. This may lead to infection or amputation of an affected area.

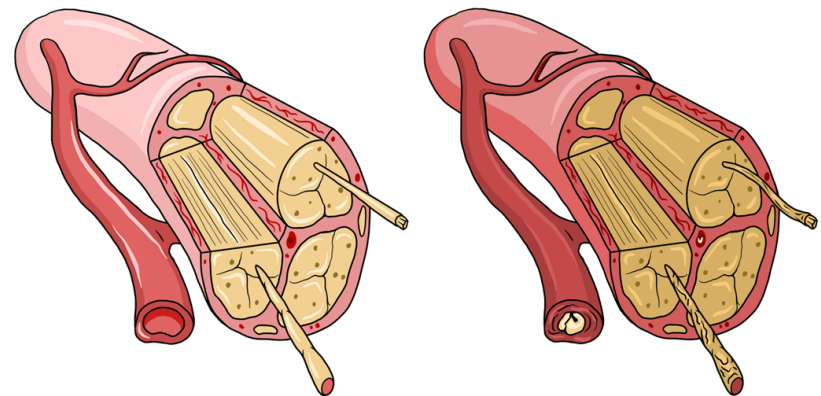
Common signs and symptoms may include:

- Numbness and/or tingling
- Pain or increased sensitivity
- Loss of sensation or feeling
- Non-healing ulcers

**Note:** Up to 50% of people do not have symptoms.



## Diabetes Peripheral Neuropathy (DPN)



Healthy Nerves & Blood Vessels

Nerves & Blood Vessels Damaged by DPN



As blood flow is decreased, the nerves that run along side the blood vessels can also be damaged.

## Foot Care

A comprehensive foot exam should be performed yearly, or more often, by a member of the health care team. This exam is one of the best ways to prevent, identify, and treat complications before they progress.

This medical foot exam will consist of 3 parts—a health history, a visual inspection, and a physical exam.

**Health History:** You may be asked about your diabetes management including blood glucose readings, physical activity, and eating habits as it relates to your health.

**Visual Inspection:** Your gait may be observed. You will be asked to remove your socks and shoes. A member of the health care team will conduct a visual inspection looking at: skin, toenails, joint ranges of motion, sores, reddened areas, hair loss, corns, calluses, bunions, fungus, bone structure and more.

**Physical Assessment:** A member of the health care team will check your pulses in your legs and feet. Then, a monofilament is used to check for protective sensation in your feet and legs. This tool is a short, thin plastic filament that is pressed against several sites on each foot. A tuning fork may be used to verify the feeling of vibrations and a small hammer maybe be used to check reflexes.

If you have not had a medical foot exam, ask your health care team to inspect your feet!





## Foot Care On Your Own

- Check feet daily for cuts, redness, swelling, blisters, and ingrown toenails.
- Wash and dry feet daily. Dry between toes.
- Apply white lotion, but not between the toes.
- Do not cut or use over the counter medications to treat corns or calluses; discuss treatment with your provider.
- Trim toenails straight across, rounding out sharp edges with an emery board.
- Wear shoes and socks both indoors and outdoors.
- Avoid going barefoot or wearing open toe shoes/sandals.
- Protect your feet from hot and cold.
- Keep blood flowing to your feet by being active and moving your feet even when seated.
- Wear shoes that fit well.

## Do you care for your feet every day?

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### Call your provider right away if you have

- A cut, blister or bruise on your foot that does not heal after a few days
- Skin on your foot that becomes red, warm, or painful
- Tingling, burning or pain in your feet
- If you have signs of a fungal infection or athlete's foot with redness, itching, pain, and burning

## Gastroparesis

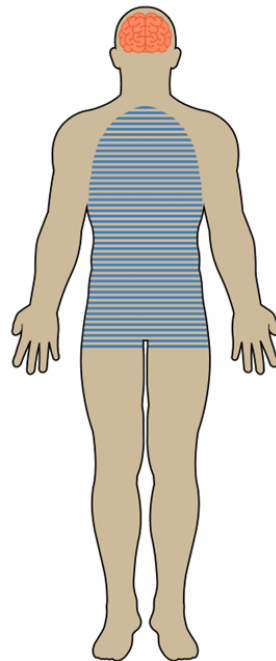
Gastroparesis is a condition that affects the nerves in the stomach and is diagnosed through gastric studies. Usually, the stomach's strong muscles move food through the digestive tract. But, with gastroparesis, the stomach's motility is slowed down or doesn't work at all. This prevents the stomach from emptying food properly.

Gastroparesis is very common in people with Type 1 diabetes and is getting more common in people with Type 2.

Common symptoms include:

- Vomiting
- Nausea
- Abdominal bloating
- Erratic blood glucose
- Feeling of fullness
- Not hungry

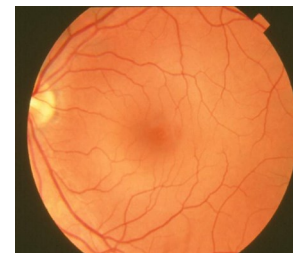
Autonomic Nerves



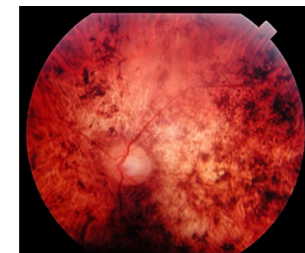
## Diabetic Eye Disease (Retinopathy)

Diabetic retinopathy develops in people with Type 1 or Type 2 diabetes. Often there are no symptoms. It is damage to the blood vessels in the retina (back of eye). Damage develops due to high blood glucose and high blood pressure. It can lead to legal or total blindness.

- Early treatment can save or restore your vision.
- Have a dilated retinal exam at diagnosis and then every 2 years, more often if at high risk or eye problems develop.
- Report symptoms of blurry vision, flashes of light, blind spots, floaters, or vision changes.
- Keep your glucose and blood pressure within the ranges agreed upon with your provider.
- Avoid nicotine products.



Healthy Eye



Retinopathy

## Diabetic Kidney Disease (Nephropathy)

Diabetic nephropathy affects the kidney's ability to remove waste products, electrolytes, and extra fluid from the body. Over time, the condition damages the kidney's filtering system. This may progress to end-stage kidney disease. At this stage, the treatment options are dialysis and kidney transplant.

Early treatment can save your kidneys!

Signs or symptoms may not develop until damage has occurred. These may include:

- Worsening blood pressure control
- Protein in the urine
- Swelling in feet, ankles, hands, or eyes
- Confusion or difficulty concentrating
- Shortness of breath (fluid buildup)
- Loss of appetite
- Nausea and vomiting
- Persistent itching
- Fatigue



To reduce your risk of developing nephropathy:

- Keep your glucose and blood pressure within the target ranges agreed upon with your provider.
- Maintain a healthy weight.
- Avoid tobacco products.
- Keep regular appointments with your provider.
- Monitor routine blood and urine tests.

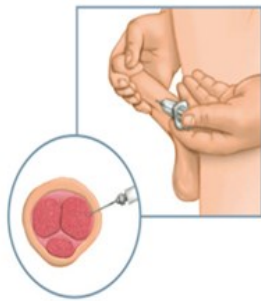
## Sexual Health

Having diabetes can increase your chance of having changes and problems in sexual function.

Due to damage in blood vessels and nerves, people with diabetes may have:

- Performance anxiety
- Erectile Dysfunction (ED)
- Orgasmic/Ejaculatory Function abnormalities
- Low testosterone
- Decreased self esteem
- Painful intercourse
- Vaginal dryness
- Decreased arousal and desire
- Inability to orgasm
- Vaginal infections

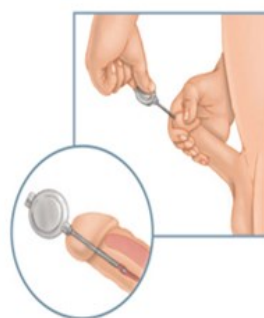
Contact your provider if you are experiencing sexual difficulties. There are many treatment options including lubricants, penile injections, vacuum erection devices, urethral suppositories, penile implants, and tension rings.



Injections



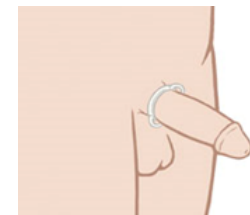
Vacuum  
Erection  
Devices



Urethral  
Suppositories



Penile  
Implants



Tension  
Ring

## Brain Health

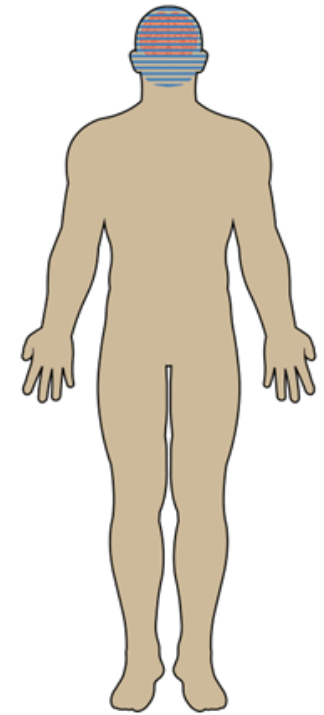
Your brain is sensitive to the amount of glucose it receives. Both high and low blood glucose can damage nerves and blood vessels in the brain. Over time, this can lead to memory loss, learning differences, mood shifts, hormonal changes, and dementia like Alzheimer’s.

People with diabetes are at higher risk for dementia and Alzheimer’s disease which may be related to insulin resistance, frequent hypoglycemia, prolonged high blood pressure, or prolonged hyperglycemia.

To keep your brain healthy:

- Follow a healthy eating plan. Refer to **Module 5–Eating Healthy.**
- Maintain a healthy weight.
- Monitor your blood pressure and blood glucose. Refer to **Module 2—Monitoring.**
- Keep your blood pressure and blood glucose within target levels as agreed upon by you and your provider.
- Get regular physical activity. Refer to **Module 6–Being Active.**
- Take medications as prescribed. Refer to **Module 4–Taking Medications.**
- Drink alcohol in moderation. 1 drink per day for women and 2 drinks per day for men.
- Avoid tobacco products.
- Manage stress.
- Talk to your provider or healthcare team about any concerns you may have. Refer to **Module 3—Healthy Coping.**

Cranial Nerves



## Sleep Hygiene

Getting a good night sleep is important for your mind and body. Getting restful sleep:

- Reduces insulin resistance
- Reduces hunger and desire to eat
- Lowers blood pressure and decreases risk of heart attack
- Improves the immune system’s ability to fight infections
- May reduce risk of depression or anxiety
- Improves reflex response time

Here are some tips to help you get more sleep:

- Develop consistent sleep patterns
- Keep the bedroom dark, quiet, and cool
- Remove electronic devices from the bedroom
- Mentally unwind and relax before bedtime
- Have a bedtime routine (taking a shower, reading, writing, or meditating)
- Get into bed only when sleepy
- Speak with provider if you are having difficulty falling or staying asleep, snoring, or having excessive daytime fatigue.

## Oral Hygiene

Taking care of your gums and teeth is important when you have diabetes. If your glucose is high in your blood, it is also high in your saliva. Bacteria in your mouth thrives on sugar. Some bacteria cause tooth decay, cavities, and gum disease. Having gum disease will make it harder for you to manage your diabetes. Dental screenings are typically required before cardiac procedures. Poor oral health may worsen heart disease. Gum disease may cause inflammation or bleeding. Infections in your mouth may take longer to heal.

To keep your mouth healthy:

- Brush your teeth at least twice a day with a fluoride toothpaste.
- Floss your teeth at least once a day.
- Tell your dentist if you have diabetes.
- Tell your dentist if your dentures don’t fit right or if your gums are sore.
- If your gums are red and swollen, or bleed easily, see your dentist.
- If you use tobacco, quit. Using tobacco increases your risk of gum disease.

## Routine Care for People with Diabetes

Exam/Test	Description	How Often
A1C	Measures the glucose attached to your blood cells. It is a snapshot of your average glucose over 2-3 months. Managing your blood glucose improves this number.	2-4 times a year
Blood Pressure	A measure of the force with which your heart pumps to move blood through your arteries. High blood pressure can be treated to reduce risk of complications.	Check at every health care visit
Lipid Panel	Cholesterol levels help determine risk for heart disease. High cholesterol can be treated to prevent complications.	At least yearly
Dental Exam	Dental problems can raise glucose levels. Treatment can improve glucose management.	Dental care is not always provided at VA or DOD facilities; recommendation is to see a dentist for preventive care at least twice a year
Eye Exam	Small blood vessel damage can cause loss of vision. Early treatment can prevent extensive damage.	At diagnosis and then every 2 years unless at risk or problems arise
Immunizations	People with diabetes have a harder time fighting infection.	<a href="#"><u>Immunization Schedule</u></a>
Foot Exam	Nerve and blood vessel damage can lead to foot problems. Many foot problems can be treated if caught early.	Check your feet every day; recommend a comprehensive annual exam by your provider, more often if problems arise
Kidney Function	Blood and urine tests are used to monitor kidney health. A urine protein test can also find early kidney damage. Early treatment can help prevent kidney failure.	At least once per year

## Why vaccines are important for you:

- Diabetes, even if well managed, can make it harder for the immune system to fight infections.
- People with diabetes are at increased risk for complications from an illness compared to people without diabetes.
- Immunization provides the best protection against vaccine preventable diseases.
- People with diabetes are at an increased risk for influenza (flu), pneumonia, shingles, and bronchitis. These can result in hospitalization.
- Hepatitis B is a liver infection caused by a virus and transmitted through blood or other body fluid. HBV can be spread through sharing finger stick devices or insulin pens.

## How to get vaccinated: Ask your provider

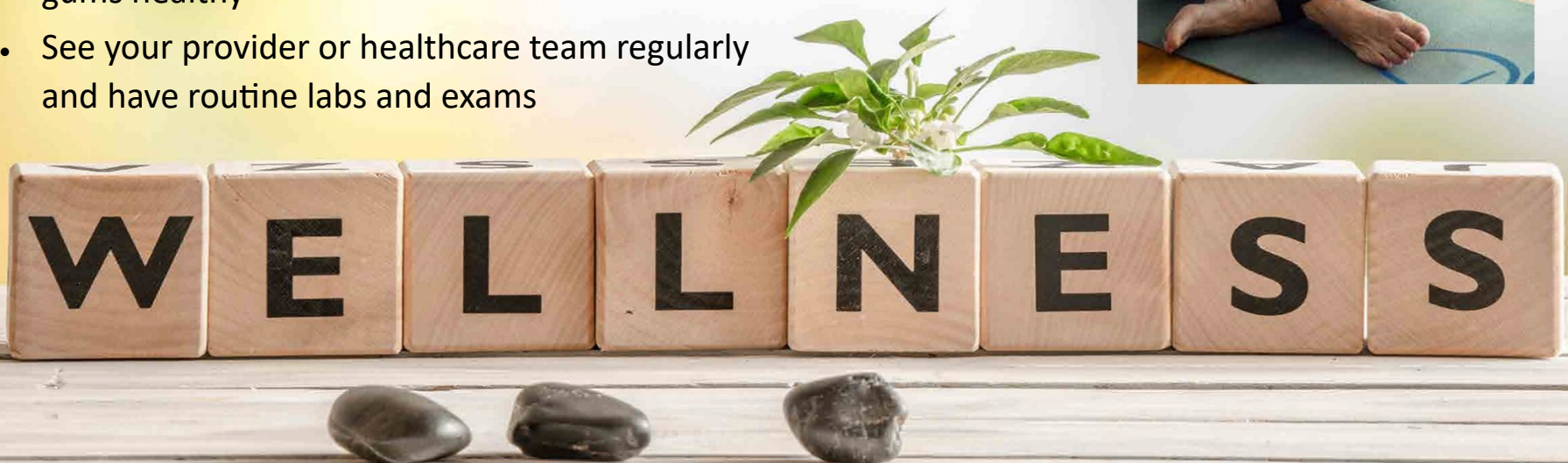
Vaccine	When to Get it
Influenza Vaccine	Every year
Tdap vaccine (Tetanus, Diphtheria, Pertussis)	Get Tdap once and Td booster every 10 years
Zoster (Shingles) vaccine	Once when you are 50 years or older. 2 dose series 6 months apart.
Pneumococcal vaccine	1 or 2 doses in your lifetime.
Hepatitis B vaccine	3 doses 1 and 6 months apart.



## Self-Care Strategies

To lower your risk of diabetes complications and prevent long term problems:

- Take your medications as directed
- Monitor blood glucose, blood pressure, and other routine tests
- Be physically active
- Eat wisely
- Maintain a healthy weight
- Get adequate sleep
- Check feet daily
- Stop smoking or using other commercial tobacco products
- Work with your provider to manage your blood pressure and keep cholesterol within agreed upon range
- Brush your teeth and floss every day to keep your mouth, teeth, and gums healthy
- See your provider or healthcare team regularly and have routine labs and exams



## Sick Day Management

During sick days, glucose values almost always go up. You may need more medication when you are sick.

If you have nausea and vomiting or unable to keep fluids down, go to the Emergency Room.

**Repeated vomiting and diarrhea requires medical attention.**

This topic was covered in **Module 1: Diabetes in a Nutshell. Review pages 15–17.**



## Low Blood Glucose–Hypoglycemia”

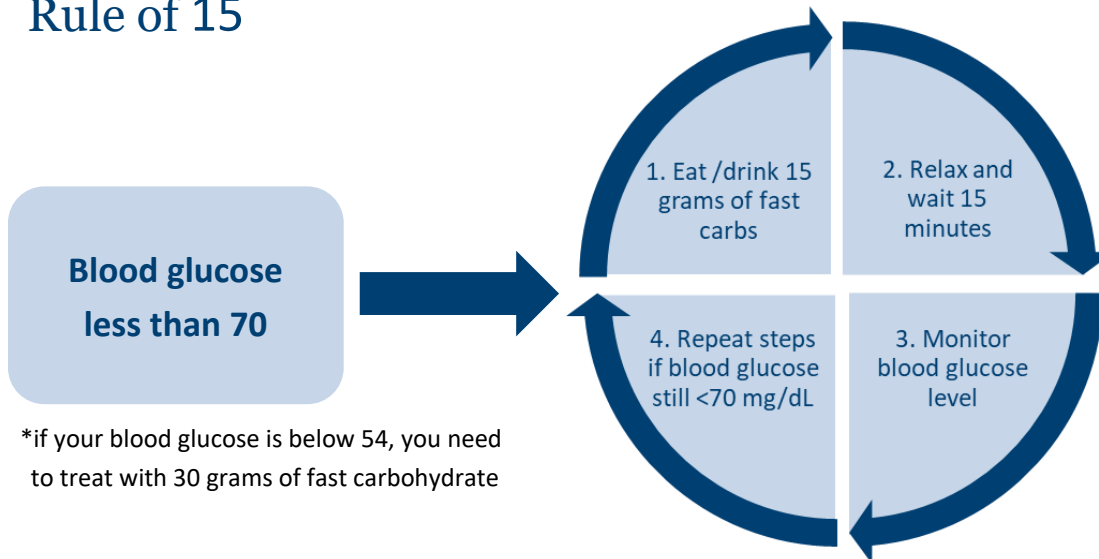
Blood glucose changes throughout the day. When your glucose drops below 70, this is low blood glucose or hypoglycemia.

### Know Blood Glucose Thresholds:

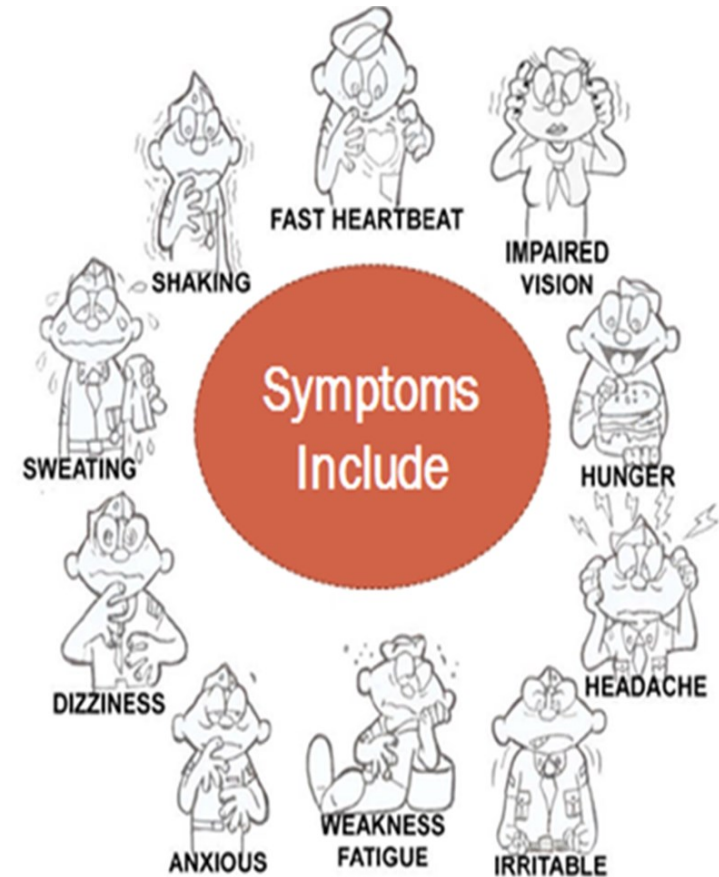
- Level 1: Blood glucose below 70
- Level 2: Blood glucose below 54
- Level 3: Any blood glucose you need assistance to treat

This topic was covered in **Module 1: Diabetes in a Nutshell.**  
**Review pages 13–14.**

### Rule of 15



\*if your blood glucose is below 54, you need to treat with 30 grams of fast carbohydrate



Fast Carb List
3-4 glucose tablets
½ - 1 tube glucose gel
3 rolls Smarties candy
3 packets sugar or 1 Tbsp. sugar
1 Tbsp. honey
½ cup fruit juice or regular soda

## Summary

This session discussed ways to reduce risk or delay long-term complications associated with diabetes. Recognizing the importance of regular routine health care appointments, blood tests, and other exams is important. This module reviewed sick day planning, hypoglycemia, and the Rule of 15 which was previously covered in **Module 1: Diabetes in a Nutshell**.



## Key Points

- Elevated blood glucose can lead to long-term complications.
- Optimizing diabetes ABCs (A1C, blood pressure, and cholesterol) can reduce complication risk.
- Urine/blood tests and other exams are used to screen for potential complications.
- Keep regular healthcare appointments.
- Stay up to date on immunizations.
- Check feet daily.
- Have a sick day plan.
- Use the Rule of 15 when you have low blood glucose readings.

## Before Next Class

- Read **Module 8: Problem Solving**
- Write down your questions
- Work on your health care goal or changing a habit/behavior

## Notes:

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