# Diabetes Self-Management Education and Support

Module 1
Diabetes in a Nutshell

# Welcome to the VHA/DOD Diabetes Self-Management Education and Support Program

This program is a combination of homework, group activities, and facilitator-led sessions. There is a patient handbook for each module in this program. In the handbooks, you will find:

- Reading materials
- Notetaking pages
- Additional resources and/or links to videos

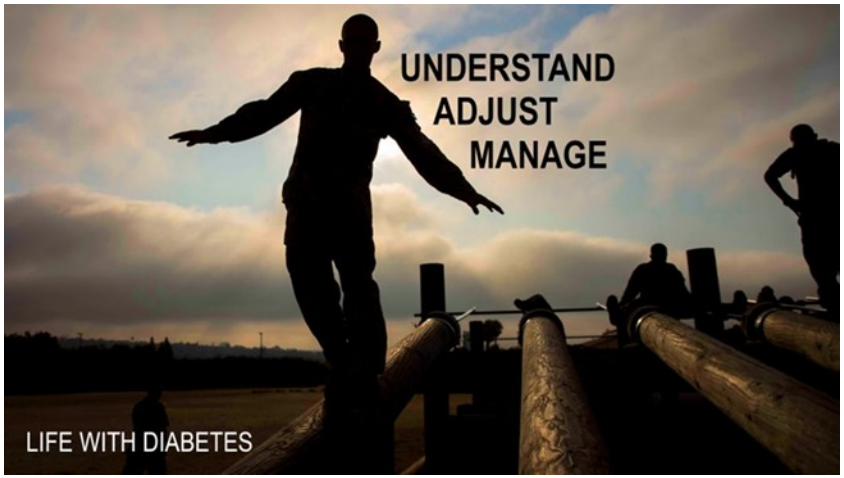
## In This Module You Will:

- List habits or behaviors that help you manage your diabetes.
- Explain basic information about diabetes.
- Define the various types of diabetes.
- Describe how diabetes affects your body.
- Recognize symptoms and possible solutions for low and high blood glucose.
- Identify emergencies related to blood glucose.

## You Can Live a Balanced Life with Diabetes!

You are taking this course because you have diabetes or have someone you care about with diabetes. Diabetes is a lifelong condition, that without treatment, can result in serious health problems.

You can learn to manage diabetes and you don't have to do it alone. This Diabetes Self-Management Education and Support program provides tools, information, and social support to help you change behaviors and successfully manage your diabetes.




## Finding Your Balance

- Understanding your diabetes, glucose, and nutrition goals, along with medication options are best to manage your health.
- Taking care of your diabetes is a journey of change and adjustment.
- Managing and utilizing self-care behaviors will lower the risk of diabetes problems.

Let's begin this journey together!

# ADCES 7 Self-Care Behaviors

## Association of Diabetes Care and Education Specialists

What do your gears look like?

_____

_____

Are some bigger or smaller?

_____

_____

Are they connected differently?

_____

_____

Do some take extra grease (focus)?

_____

_____

## What Will I Need to Do?

There are many things you can do to live better with diabetes. Most people succeed when working on one small goal or behavior at a time. For example, "limiting 1 sugary drink per day" versus "eating healthy." We suggest you choose one goal you'd like to work on first. You can work on other goals later.

No one is perfect. Each person with diabetes will have different medical needs. Each person is different in the way they react to food and medications. You and your healthcare team will need to identify what works best for you.

Be serious about your diabetes. You may have heard people say they have "a touch of diabetes" or that their "glucose is a little high." These statements suggest that diabetes is not a serious disease, but it is. Managing diabetes is not easy but it is worth it.

Diabetes is a progressive disease and may require medication changes, additional education, and other adjustments throughout the life cycle. The progression of diabetes may be slowed by choosing healthy behaviors.

There are seven areas where you could set a goal to manage your diabetes –monitoring, healthy coping, taking medications, healthy eating, being active, reducing risks and problem solving. It is important to note that your choices determine how your diabetes is managed.

## My Goal is:

_____

_____

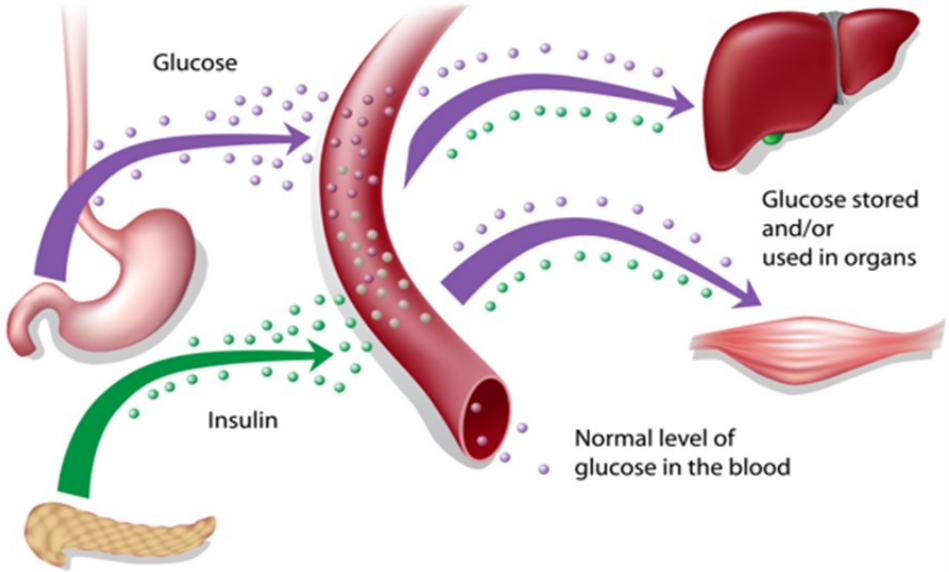
_____

_____

## Normal Glucose Metabolism

Glucose is a simple form of sugar that is used to fuel the body's cells. Here's how it works:

- The **stomach** changes food into glucose.
- The **liver** also releases glucose into the bloodstream.
- **Glucose** enters the bloodstream.
- The **pancreas** makes insulin, a hormone that enables glucose to enter most cells.
- **Insulin** enters the bloodstream and acts like a key allowing glucose to enter your cells.



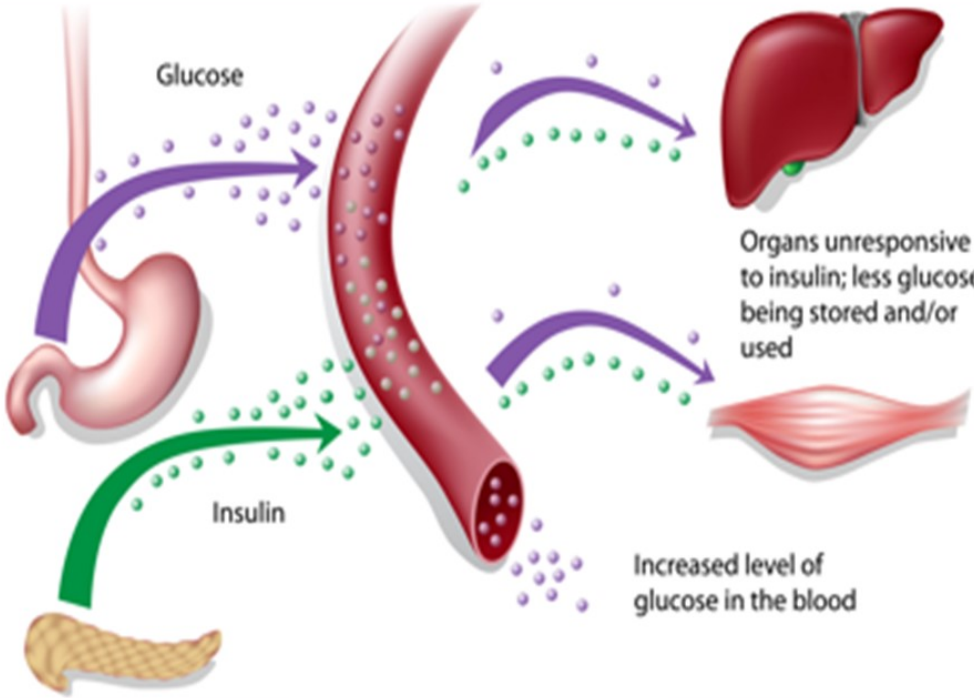

## Risk Factors

- Family History
- Weight
- Ethnicity
- Lifestyle

**Eating too much sugar DID NOT cause your diabetes!**

## Notes:

## What is Diabetes?




A chronic condition in which the body cannot produce insulin and/or use it properly.

**Type 1** is an autoimmune disease usually diagnosed in childhood or young adults but can occur at any age. The pancreas is attacked and the cells to make insulin are destroyed. We don't know why this happens. Treatment for Type 1 diabetes is insulin.

**Type 2** is the most common form of diabetes. It is caused by your body not making or using insulin well plus a loss of number of insulin making cells in your pancreas. You can develop Type 2 diabetes at any age, even during childhood. This form of diabetes usually begins with "insulin resistance," a condition in which cells do not use insulin properly. At first, the pancreas keeps up by making more insulin. But the cells are "resistant", and it takes more and more insulin to get glucose into the cells. In time, the pancreas loses its ability to keep up with the body's needs.

Although diabetes is often thought to be a "sugar problem," it is really an "insulin problem." Your body doesn't respond to the insulin you have, and your pancreas makes less and less insulin over time. Treatment for Type 2 diabetes is lifestyle changes and may include oral and injectable medications.

**Gestational** is a form of diabetes diagnosed during pregnancy. Most of the time it goes away after the baby is born, however, those diagnosed with gestational diabetes have a higher risk of developing Type 2 diabetes later in life. After delivery, women should focus on healthy eating, weight management, and being active.

Video: **How Does Diabetes Affect the Body?**

## Common Concerns for People with Diabetes

| Question | Answer |
|---|---|
| What if I feel overwhelmed? | Taking care of your emotional health is important, too! We will discuss more in **Module 3 – Healthy Coping.** |
| Does diabetes mean I can't have any sugar? | All foods can fit into a healthy eating plan. We will discuss more about food in **Module 4 – Healthy Eating**. |
| Will I have to give myself shots every day? | Not necessarily. We will discuss medication in **Module 5 – Taking Medications.** |
| Do I have to join a gym? | You don't have to spend money to be active! You will learn more about planning to be more active in **Module 6 — Being Active.** |

## My Biggest Concerns:

_____

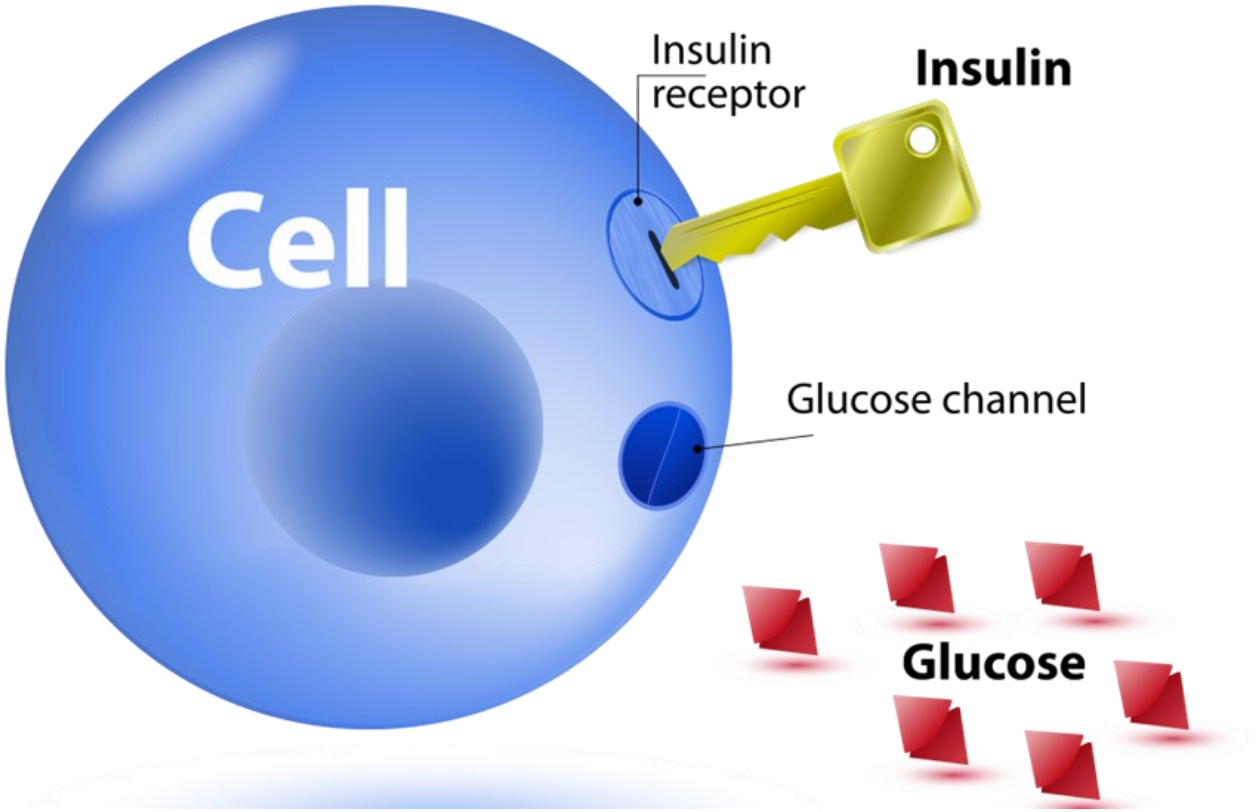
_____

_____

_____

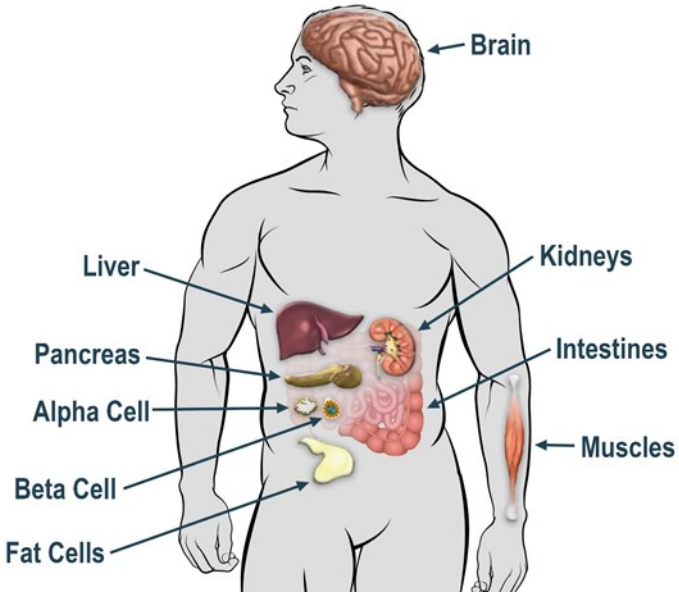
## How Does Insulin Work?

- Glucose enters the bloodstream from the liver or from the foods we eat.
- Insulin enters the bloodstream from the pancreas (beta cell).
- Insulin binds to a cell that needs energy.
- Insulin works as a "key" that unlocks the cell to allow glucose to enter.
- Glucose enters the cell and is used for fuel.
- Insulin resistance is having faulty receptors.



## Ominous Octet

Diabetes is a complex disease. There are 8 organs in your body that play a role in diabetes:




- **Pancreas** - is not releasing enough insulin for the current demand (Beta cell).
- **Increased Glucagon** — a hormone that triggers the production of glucose (Alpha cell).
- **Liver** — dumps out too much glucose.
- **Intestines** — gut hormones (incretins) that normally stimulate insulin secretion in response to food are less effective and produce lower amounts.
- **Fat Cells —** increased fat breakdown raises triglycerides in the blood which can impair insulin secretion.
- **Kidneys** — to conserve glucose as an energy source, the kidneys hold onto more glucose which keeps glucose levels high.
- **Muscles** — the receptors on your liver and muscle cells do not function properly to take up glucose, causing glucose to remain in the bloodstream (insulin resistance).
- **Brain** — brain does not properly trigger the sensation of feeling full (appetite).

## Notes:

## What is a Hemoglobin A1c?

When glucose enters your bloodstream, it attaches to hemoglobin, a protein in your red blood cells. Your blood glucose goes up and down all the time, changing every minute of the day.

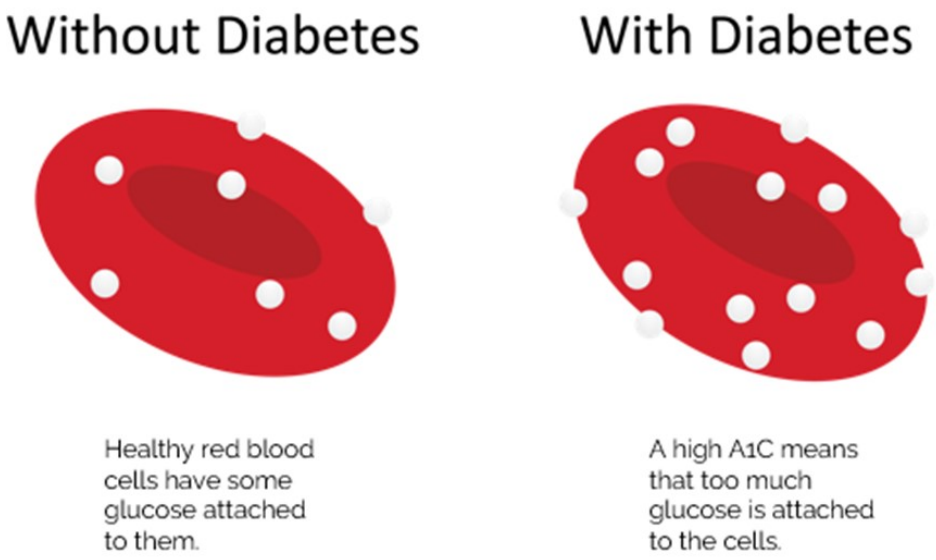
The Hemoglobin A1c or HbA1c test measures your average blood glucose levels over the past 3 months. This test gives your healthcare team an idea of how you are managing your diabetes over time or how your diabetes treatment is working.

The A1c test measures the percentage of your red blood cells that have sugar-coated hemoglobin. Many factors can cause your A1c to vary such as anemia (low iron), recent blood transfusions, dehydration, and sickle cell.

Higher A1c levels are linked to diabetes complications. We will discuss more about reducing risks for complications in **Module 7 – Reducing Risks.**

Reaching and maintaining your individual A1c goal is important.

**My doctor and I agreed that my A1c should be: _____**




Video: **Real Patients: Type 2 Diabetes Lifestyle**

For an increasing number of individuals, diabetes is a serious but common condition that can be managed to remain as healthy as possible.

Let's hear some patient's thoughts about diabetes.

# High Blood Glucose – "Hyperglycemia"

When your blood glucose is running higher than 200, you have high blood glucose or hyperglycemia. This occurs when the body has too little insulin or when the body can't use insulin properly. High blood glucose can happen suddenly (because of illness or food intake) or it may develop over time.

**Common Causes**

- If you have Type 2, your body may have enough insulin but it is not as effective as it should be
- You may not be taking enough medication
- You have stress from an illness, such as a cold or flu
- You ate more than planned or exercised less than planned

**Symptoms**

- High blood glucose
- Blurry vision
- Hungry
- Tired, fatigued, drowsy
- Frequent urination, going to the bathroom a lot
- Extreme thirst

**Treatment**

- Take your medications as prescribed. We will discuss more in **Module 5 – Taking Medications**.
- Call your healthcare team if you experience these symptoms for more than 3 days and you don't know why.
- Drink plenty of water or sugar-free fluids to prevent dehydration
- Test your blood glucose every 4 hours. We will discuss more in **Module 2 – Monitoring**.
- Cut back on the amount of food (carbohydrates) you eat. We will discuss this more in **Module 4 – Healthy Eating**.
- Exercise (unless blood glucose is above 240 mg/dL). We will cover this in more detail in **Module 6 – Be Active**.

# Low Blood Glucose – "Hypoglycemia"

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

**Common Causes**

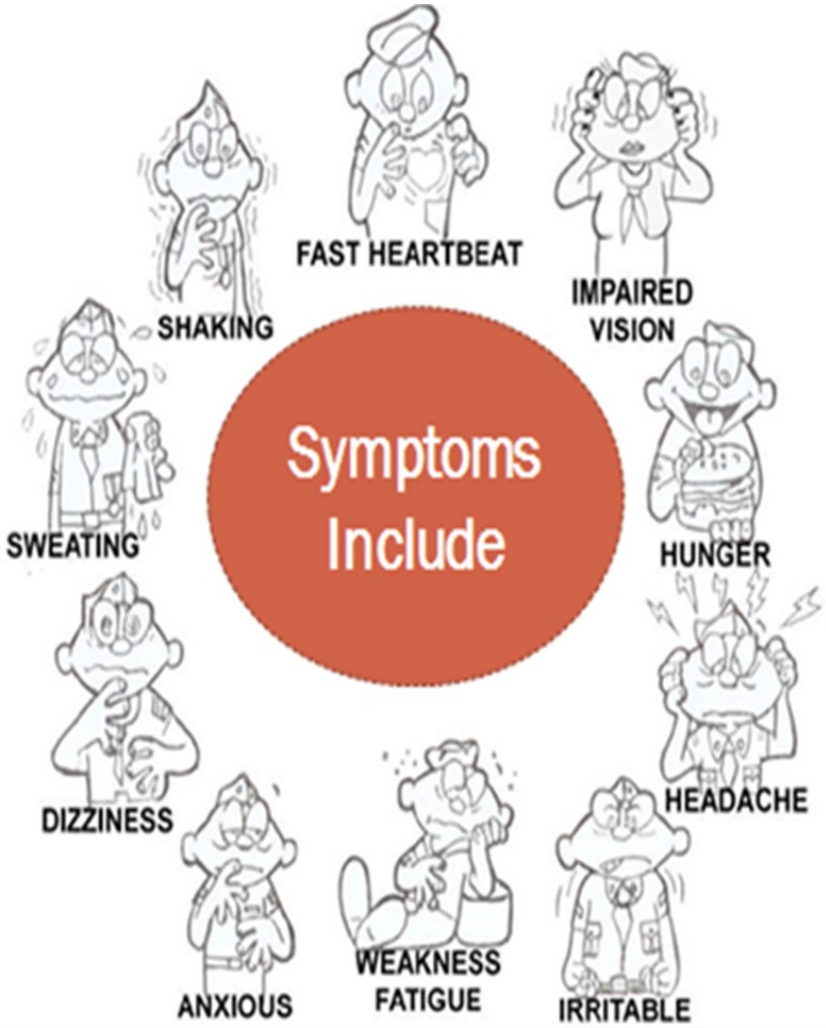
- Skipped or delayed meal
- Possibly taking too much medication
- Lack of money or access to buy food (food insecurity)
- Timing related to eating, physical activity and taking medications
- Drinking alcohol (on an empty stomach)
- Extreme hot and humid weather exposure
- Unexpected changes in your schedule
- Spending time in high altitude areas
- Accidental medication duplication

**Symptoms**

- Fast or pounding heartbeat
- Impaired vision
- Hunger
- Headache
- Irritable, crabby
- Weakness, confusion
- Dizzy, fainting
- Sweating
- Shaking or trembling
- If untreated, coma or death

**Treatment**

- Rule of 15



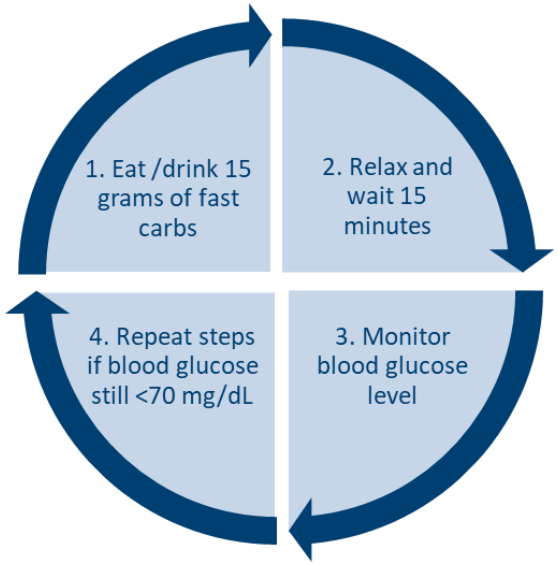
# Rule of 15

**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

**Blood glucose less than 70**

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




**Remember:**

- Wear a medical identification bracelet or necklace
- Always carry a “fast carb” with you
- Check your glucose before driving
- Never drive if glucose is low
- Call your provider or healthcare team if you have repeated low blood glucose

| 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 |

**Extreme Hypoglycemia:**

- A very low blood glucose can cause confusion, a loss of consciousness and/or seizures.
- Do NOT attempt to give anything by mouth.
- If prescribed, family and friends may use a glucagon kit if you are unable to treat yourself. Make sure to train family and friends on how to inject it.
- Call emergency services if you do not have a kit.
- Tell your healthcare team if you have ever had a low glucose that you needed someone to help you treat.

**Glucagon Emergency Kit**

## Sick Day Guidelines

- Tell someone how you are feeling – engage your support group.
- Stay hydrated – drink plenty of water and/or sugar-free fluids.
- Keep eating.
- Continue medications as prescribed unless instructed otherwise by your healthcare team (including basal insulin).
- Test your glucose regularly:
  - **Type 1**: check every 2-4 hours when sick. If above 250, ketones are positive, or glucose constantly high, call healthcare team or go to the hospital.
  - **Type 2**: check every 4-6 hours when sick. If very high (>300) after 2-3 checks call your healthcare team or go to **nearest ED**.
- Discuss the use of any over-the-counter medication with your healthcare team.

## Sick Day Kit

Always have these supplies on hand:

- Healthcare team phone number
- List of friends or family members who can check on you
- Glucose monitoring equipment
- Thermometer
- Acetaminophen, if doctor approved
- Decongestant, if doctor approved
- Sugar-free throat lozenges
- Anti-diarrheal medicine, if doctor approved

## Notes:

## Sick Day Plan

Developing a plan will be easier to manage your illness at home. Discuss the following with your provider or healthcare team:

- When should you ask for help?
- How often should you eat/drink?
- What should you eat and drink?
- What medications should you continue to take?
- How often should you test your blood glucose?
- Should you wear a medical ID bracelet or necklace?

Review the list of foods to eat or drink when you are sick. Each item equals **15 grams of carbohydrate.**

| Food Item | Amounts |
|---|---|
| Fruit juice | ½ cup or 4 oz. |
| Soda (not diet) | ½ cup or 4 oz. |
| Jell-o (not sugar-free) | ½ cup |
| Popsicle (not sugar-free) | ½ twin |
| Sherbet | ¼ cup |
| Saltine crackers | 6 crackers |
| Ice Cream (vanilla) | 1/2 cup |
| Pudding (sugar-free) | ½ cup |
| Pudding (not sugar-free) | ¼ cup |
| Thin soup (vegetable, chicken noodle) | ½ cup |
| Thick soup (cream of mush-room, tomato) | ½ cup |
| Macaroni noodles, rice | 1/3 cup cooked |
| Toast | 1 slice |

## When Should You Call Your Healthcare Team?

- If you are unable to eat or drink
- If you have diarrhea or vomiting for more than 6 hours
- If your glucose stays over 300 or under 70
- If you have not eaten normally for 24 hours
- If you have a fever of 100.4◦F or higher
- If you aren't certain what to do to take care of yourself
- If you can't stay awake
- If your ketones are positive

## When Should You Call 911?

- If you have chest pain or shortness of breath
- If you have trouble breathing
- If you have numbness or tingling in arms or hands, trouble walking or stumbling
- If you are experiencing drowsiness or confusion, or can't think clearly

If you go to the hospital or emergency room, immediately tell doctors and nurses you have diabetes. Always wear your diabetes identification bracelet or necklace in case you're not able to talk to the doctors or nurses.

## Notes:

## Summary

This session introduced the 7 self-care behaviors, provided basic information about diabetes, and discussed how diabetes affects the body. Module 1 also explained causes, symptoms, and treatment of hyperglycemia (high blood glucose) and hypoglycemia (low blood glucose) and identified emergencies related to blood glucose.

## Key Points

- Diabetes is a chronic health condition that affects how your body turns food into energy.
- There are 7 self-care behaviors that can help you manage your diabetes.
- With diabetes, your body doesn't make enough insulin or can't use it as well as it should.
- Use the Rule of 15 when you have symptoms of low blood glucose.
- If you get sick, your blood glucose can be hard to manage. You may not be able to eat or drink as much as usual, which can affect blood glucose levels. Create a sick day plan so you are prepared.

## Before Next Class

- Review Module 2: Monitoring
- Write down your questions
- Work on your healthcare goal or changing a habit/behavior

# Notes:

# American Diabetes Association®
## Education Recognition Program

The American Diabetes Association Recognizes this education service as meeting the National Standards for Diabetes Self-Management Education and Support

If you have any concerns about the diabetes education you receive

Please call
**1-888-232-0822**

or

write
**American Diabetes Association**
**Director, Education Recognition Program**
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**Arlington, VA 22202**

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