

---

---

---

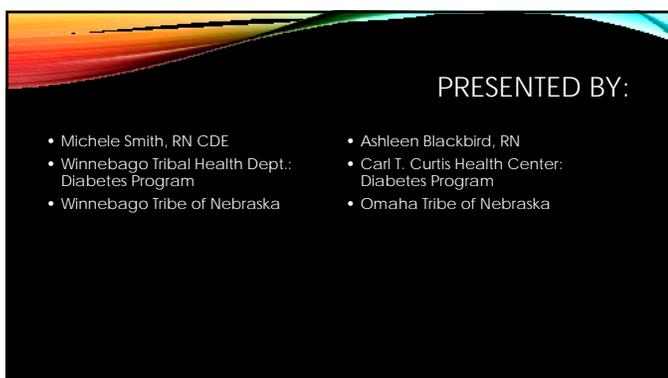
---

---

---

---

---



---

---

---

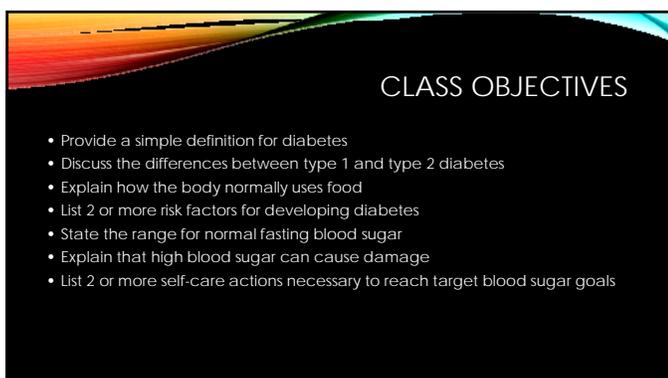
---

---

---

---

---



---

---

---

---

---

---

---

---

### A SIMPLE DEFINITION OF DIABETES

- Diabetes is too much sugar in the blood and not enough sugar in the cells.

---

---

---

---

---

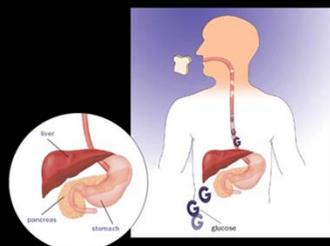
---

---

---

### PATHOPHYSIOLOGY OF DIABETES

- When you eat, your body breaks food down into glucose.
- **Glucose** is a type of sugar that is your body's main source of energy.



---

---

---

---

---

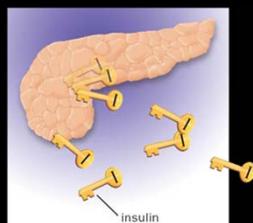
---

---

---

### PATHOPHYSIOLOGY OF DIABETES

- As blood glucose rises, the body sends a signal to the pancreas, which releases **insulin**.



---

---

---

---

---

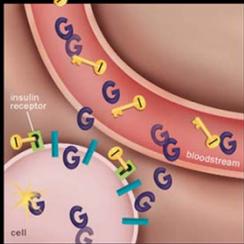
---

---

---

### PATHOPHYSIOLOGY OF DIABETES

- Acting as a key, insulin binds to a place on the cell wall (an **insulin receptor**), unlocking the cell so glucose can pass into it. There, most of the glucose is used for energy right away.




---

---

---

---

---

---

---

---

### CAUSES AND RISK FACTORS

- **Causes:**
  - Your insulin may not work well
  - Your pancreas may not make enough insulin
  - Or your pancreas may not make insulin at all

- **RISK FACTORS:**
  - Overweight
  - Inactive
  - Over the age of 30
  - Have one or both parents with diabetes
  - Family members with Diabetes
  - Gestational diabetes

---

---

---

---

---

---

---

---

### DIAGNOSING DIABETES

	Fasting	A1c
Without Diabetes	70-99 mg/dL	Less than 5.7
Pre-Diabetes	100-125 mg/dL	5.7-6.4
Diabetes	126 or greater mg/dL	Greater than or equal to 6.5

---

---

---

---

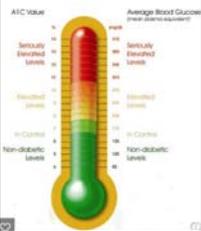
---

---

---

---

### WHAT IS AN A1C?



The graphic shows a thermometer with A1C values on the left and Average Blood Glucose (mg/dL) on the right. The thermometer is divided into three color-coded sections: green (bottom, non-diabetic), yellow (middle, in-control), and red (top, diabetic). The red section is further divided into 'Slightly Elevated Levels' and 'Elevated Levels'.

- The A1C test gives you a picture of your average blood glucose (blood sugar) control for the past 2 to 3 months.
- The results give you a good idea of how well your diabetes treatment plan is working.
- In some ways, the A1C test is like a baseball player's season batting average. It tells you about a person's overall success. Neither a single day's blood test results nor a single game's batting record gives the same big picture.

---

---

---

---

---

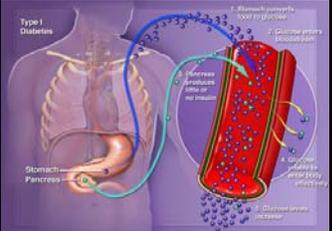
---

---

---

### TYPE 1 DIABETES

- This occurs when the pancreas makes little or no insulin at all.
- These patients must take insulin to survive.
- You **MUST** monitor your sugar actively!
- Blood sugars go up with eating, and will not come down without insulin.



The diagram shows a human torso with the pancreas highlighted. It illustrates the process of insulin production and its effect on blood sugar. Labels include: 'Type 1 Diabetes', 'Stomach/Pancreas', 'Pancreas produces little or no insulin', 'Blood sugar normally goes up after eating', 'Insulin helps control blood sugar', and 'Disturbed insulin response'.

---

---

---

---

---

---

---

---

### TYPE 1 DIABETES

- Your liver hears your tissue screaming and dumps its stored sugar into the blood vessels.
- Your blood sugar is clogging your blood vessels
- Pressure is building in your blood vessels
- Your vessels begin to weaken from the pressure or you may get a blood clot
- Severe damage is being done as tissue dies from hunger.
  - Kidney Damage
  - Nerve Damage
  - Eye Damage
  - Heart Damage
  - Blood Vessel Damage

---

---

---

---

---

---

---

---

### TYPE 2 DIABETES

- You do not make enough insulin or your insulin will NOT penetrate the cells to get in (Not the right key to unlock door)
- May have to take insulin and pills to control your blood sugar levels
- You should monitor your blood sugar actively
- Blood sugars are high all the time
- Blood sugars go up when eating, and will not come down without insulin or exercise.

---

---

---

---

---

---

---

---

### TYPE 2 DIABETES

- Your tissue is screaming for sugar (food)
- Your liver hears your tissue screaming and dumps its stored sugar into your blood vessels
- Your pancreas keeps dumping more insulin into your blood vessels
- Your blood sugar and insulin into your blood vessels
- Your blood sugar and insulin are clogging your blood vessels
- Pressure is building in your blood vessels
- Your vessels weaken and damage to tissue happens
  - Kidney Damage
  - Nerve Damage
  - Eye Damage
  - Heart Damage
  - Blood Vessel Damage

---

---

---

---

---

---

---

---

### WHERE DOES ALL THAT EXTRA INSULIN GO??

---

---

---

---

---

---

---

---

### ACANTHOSIS NIGRICANS (AN)

- Extra insulin is absorbed into the skin. This leaves darkened patches of skin, usually on the back of the neck.



---

---

---

---

---

---

---

---

### HYPERGLYCEMIA SYMPTOMS

- **Symptoms:**
  - Increase thirst
  - Increase urination
  - Blurry vision
  - Feeling tired
  - Weight loss
  - Nausea, Vomiting
  - Abdominal pain
  - Slower healing of cuts wounds
- **How to manage:**
  - Work with your doctor to adjust your care plan
  - Test blood regularly
  - Make healthy food choices
  - Get regular exercise
  - Reduce stress in your life

---

---

---

---

---

---

---

---

### HYPOGLYCEMIA SYMPTOMS

- **Symptoms:**
  - Shakiness
  - Hunger
  - Irritability
  - Cold sweat, clammy feeling
  - Trouble concentrating
  - Can lead to unconsciousness
- **Treatment:**
  - Test blood sugars (if possible)
  - Eat or drink 15 grams of carbohydrates
  - Retest in 15 minutes
  - If still too low, repeat steps 2 & 3
  - Eat a meal within the next hour

<http://www.diabetesselfmanagement.com/videos/avoiding-hypoglycemia-part-1/>

---

---

---

---

---

---

---

---

### OTHER HELPFUL SKILLS:

- How to test a blood sugar
- Trouble shooting insulin injection Flex pens

---

---

---

---

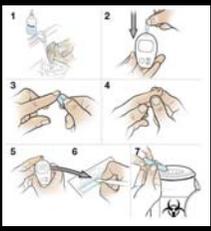
---

---

---

---

### HOW TO TEST A BLOOD SUGAR



---

---

---

---

---

---

---

---

### INSULIN FLEX PENS

**Injecting with an Insulin Pen**



**Get the Pen Ready**  
1. Tear off paper tab from needle.  
2. Wipe tip of pen with alcohol.  
3. Score needle onto pen.

**Prime the Pen**  
4. Turn pen dial until you see a "2" in the dose window.  
5. Hold pen with needle facing up. Push button in.  
6. Look for a drop of insulin at tip. If no drop, repeat steps 4 and 5.

**Dial the Dose**  
7. Turn pen dial to your dose.

**Choose the site**  
8. Pinch up skin if needed.

**Inject**  
9. Push needle into skin.  
10. Press dose button in.  
11. Hold for 10 seconds.

**After Injecting**  
12. Remove needle from skin.  
13. Place large cap on needle; turn counterclockwise to remove needle from pen.

---

---

---

---

---

---

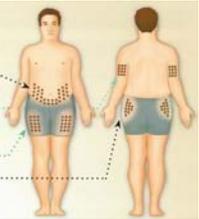
---

---

## WHERE TO INJECT INSULIN

**Where to Inject**  
You can inject insulin in four sites. Change your sites on a regular basis to avoid build up of scar tissue.

- **Stomach:** Inject at least two inches away from the navel, scars, and moles.
- **Arm:** Inject into fatty tissue on the back of the upper arm.
- **Thigh:** Inject into the middle or outer part of the thigh, at least 4 inches above the knee and at least 4 inches down from the top of the leg.
- **Buttocks:** Inject into the hip or "wallet area."



---

---

---

---

---

---

---

---



What You  
Don't Measure  
You Can't Possibly  
**IMPROVE!**

---

---

---

---

---

---

---

---