# Living with Diabetes

Senior Men's Club

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Sources: Stanford University, Harvard University, Mayo Clinic

# Diabetes is a Global Epidemic

Approximately **537 million adults** (20-79 years) are living with diabetes.

The total number of people living with diabetes is projected to rise to **643 million by 2030** and **783 million by 2045**.

1 in 5 > 65 have diabetes

1 in 2 undiagnosed (232M)

4.2 M deaths

# INSULIN is “KEY”

- Much of the food that we eat gets converted to glucose which goes into our blood
- We need this glucose for energy, but it must enter our cells
- Insulin helps the cells to absorb the sugar so that the body can use it for energy
- Insulin is produced by the pancreas-a small gland behind the stomach
- Glucose fuels our bodies much as gasoline fuels a car, but the car cannot run till we turn on the engine (Key)
- In our bodies, that Key is INSULIN

# What is Diabetes

- Diabetes is a chronic disease in which a person's body is unable to either produce or utilize adequate insulin
- Lack of Insulin results in starving cells and an elevated level of sugar in the blood, a condition known as Hyperglycemia,
- Can damage bodily systems if left untreated.
- Fortunately, proper management of diabetes and regular check-ups can prevent many of these complications.

# Types Of Diabetes

## Type 1:

- Your body's immune system attacks the insulin producing cells of the pancreas almost permanently destroying all of them. So pancreas do not make any insulin or enough insulin
- Usually diagnosed in children and young adults: "juvenile" diabetes
- Occurs in 5% of cases
- Need to inject insulin every day

## Type 2:

- Your pancreas makes insulin, but your body’s cells do not respond to it and cannot use it as they normally should
- Usually occurs in middle aged and older people
- Occurs in 95% of cases
- In both types, the end result is that insulin's role in managing glucose levels in the blood is compromised.

- **Gestational Diabetes:**
  - Develops in some women during pregnancy. May or may not go away after pregnancy
- **Prediabetes:**
  - Stage before Type 2 diabetes. Blood sugar is higher than normal but not high enough to be officially diagnosed as type 2 (A1C-5.7-6.5%)
  - Afflicts more than 30% of adults in the United States

# Factors Causing Diabetes

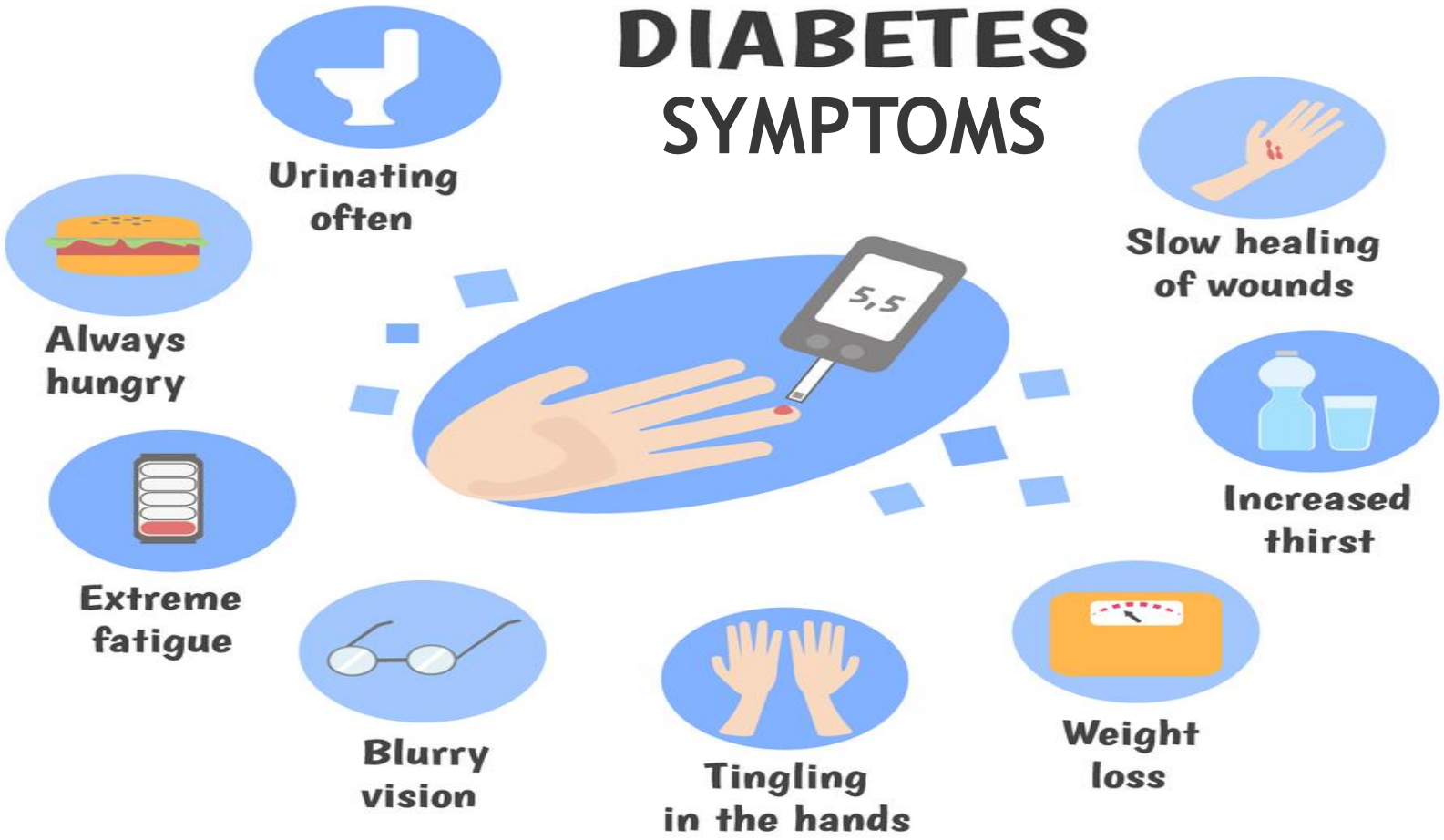
- **Type 1** diabetes is typically hereditary.
- **Type 2** diabetes has a strong link to
  - #1 FAMILY HISTORY: Studies also showed genetics play a very strong role
  - #2 RACE: African Americans, Hispanics and Asian Indians and now Chinese have the highest diabetes prevalence rate
  - #3 LIFE STYLE: The number one cause of Type 2 diabetes is obesity

# Who Should Be Screened For Diabetes

**The American Diabetes Association (ADA) has developed screening guidelines for the following people to be screened for diabetes:**

- Anyone with a body mass index higher than 25 (23 for Asian Americans)
- Anyone older than age 35 (initial blood sugar screening and every three years after that)
- Women who have had gestational diabetes (screened every three years)
- Anyone who has been diagnosed with prediabetes (tested every year)

# Common Symptoms of Diabetes



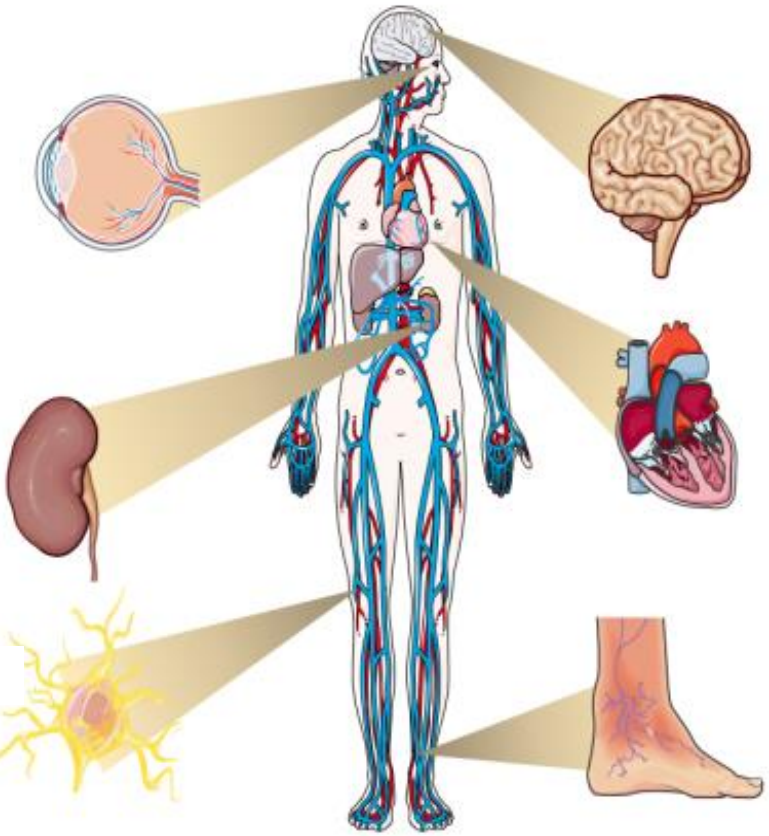
# Major Complications of Diabetes

## Microvascular

### EYE
High blood glucose and high blood pressure can damage eye blood vessels, causing retinopathy, cataracts and glaucoma

### KIDNEY
High blood pressure damages small blood vessels and excess blood glucose overworks the kidneys, resulting in nephropathy.

### NEUROPATHY
Hyperglycemia damages nerves in the peripheral nervous system. This may result in pain and/or numbness. Feet wounds may go undetected, get infected and lead to gangrene.



## Macrovascular

### BRAIN
Increased risk of stroke and cerebrovascular disease, including transient ischemic attack, cognitive impairment, etc.

### HEART
High blood pressure and insulin resistance increase risk of coronary heart disease

### EXTREMITIES
Peripheral vascular disease results from narrowing of blood vessels increasing the risk for reduced or lack of blood flow in legs. Feet wounds are likely to heal slowly contributing to gangrene and other complications.

# Self Management Tool Box for lifetime changes

- Healthy Eating
- Exercise
- Stress Management
- Monitoring Blood Sugar
- Communication
- Dealing with difficult emotions

Medication

Working with your Doctor

Avoiding complications

Action Planning

Problem solving

Thinking activities

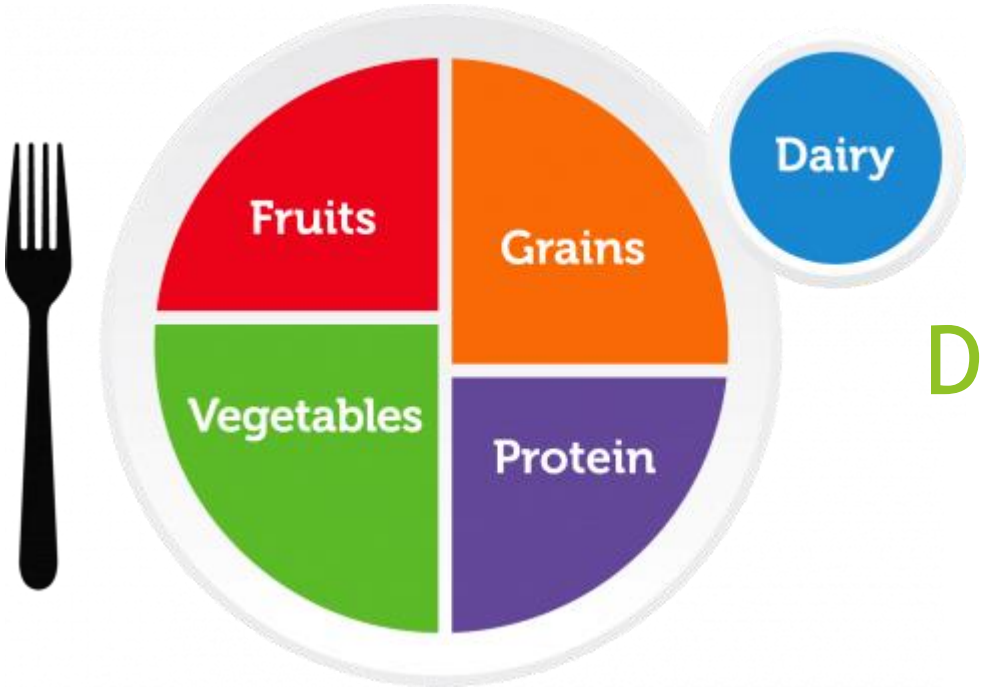
# Diet & Diabetes Management

- Helps control and regulate blood sugar levels
- Prevents long-term diabetes complications
  - Retinopathy
  - Nephropathy
  - Neuropathy
- Prevent complications and development of other chronic diseases such as high blood pressure and high cholesterol

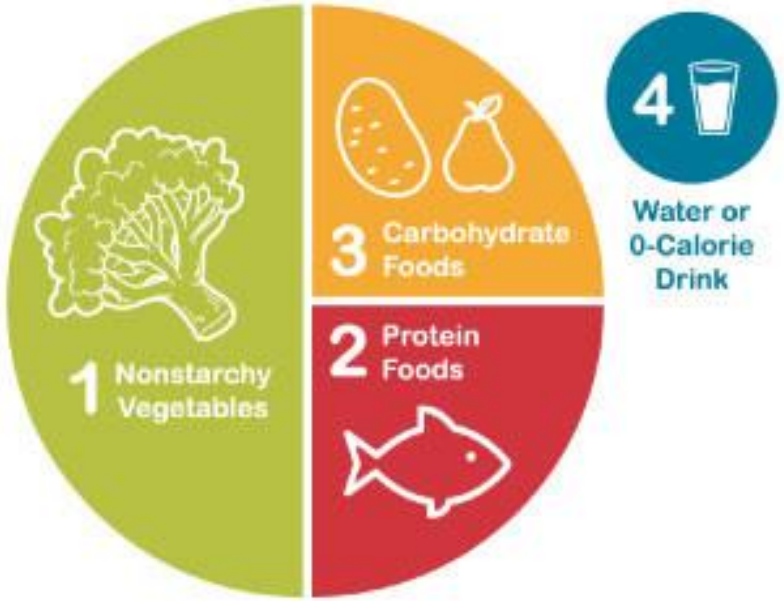
# Nutrients to Consider When Meal Planning

- Calories
- Carbohydrates
- Protein
- Fats
- Fiber
- Salt
- Alcohol

# Balanced Meals

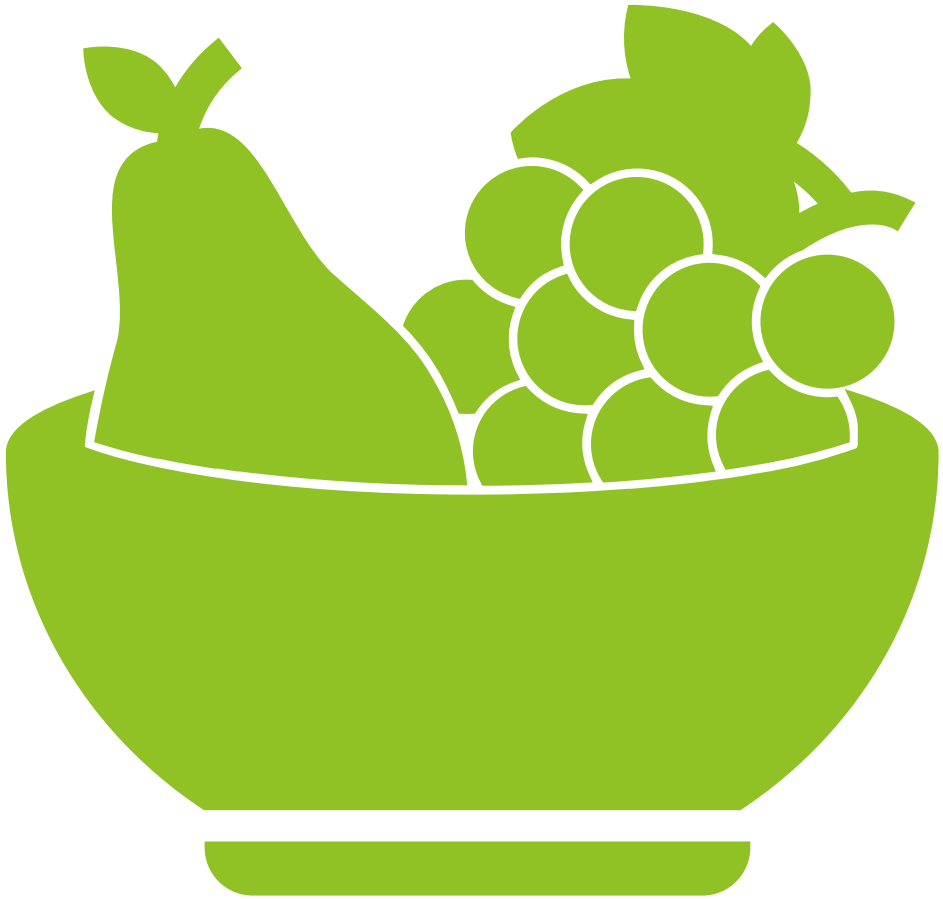


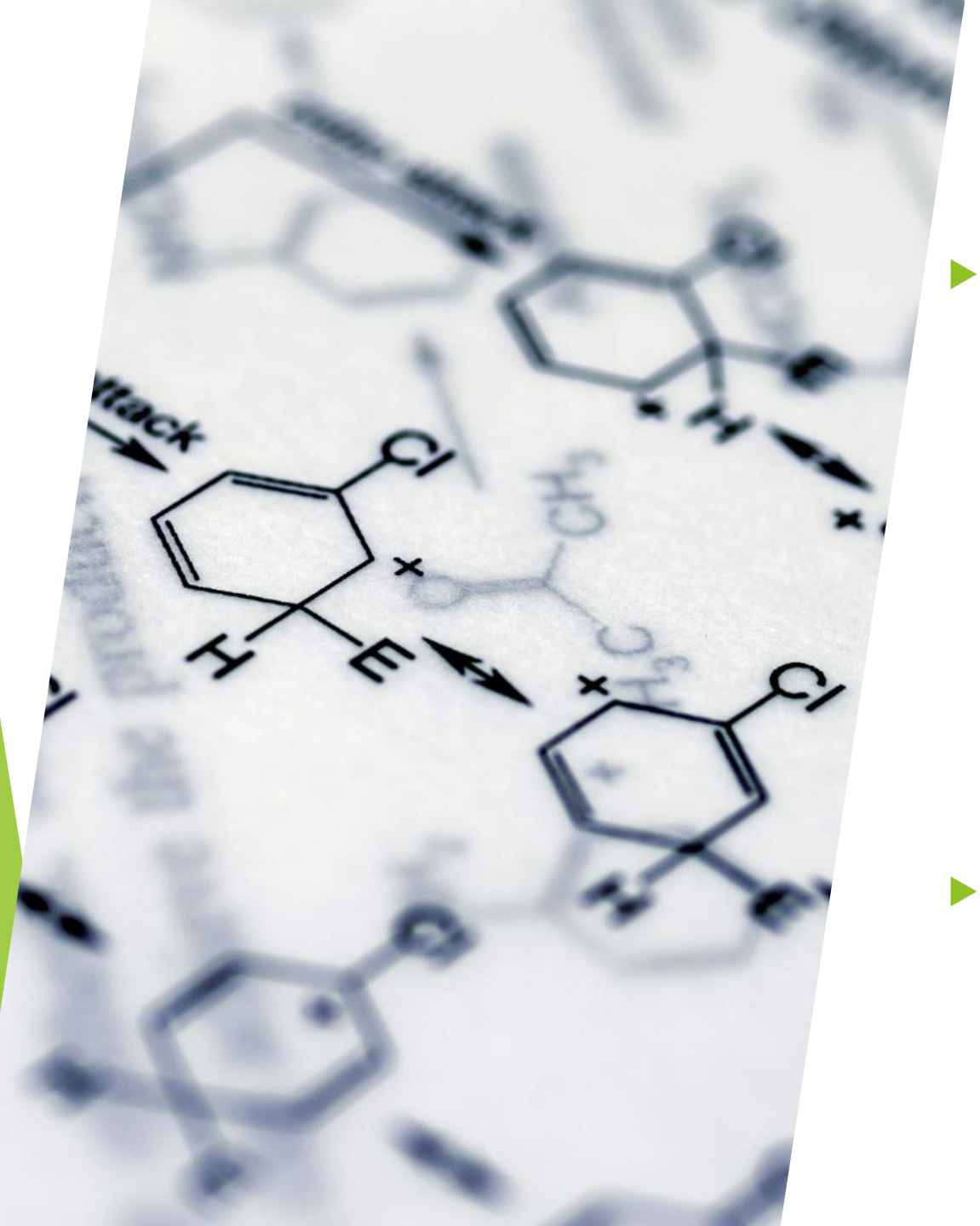

# Diabetes Plate Method



# Calories

- The energy we get from food. We each need to eat a certain amount to maintain our weight/daily activities
- Caloric needs depend on our age, gender, activity levels, height, etc.
- Consuming excessive calories can lead to weight gain which can increase risk for chronic disease
- Individuals interested in weight loss may need to reduce their caloric intake to help promote weight loss





# Protein

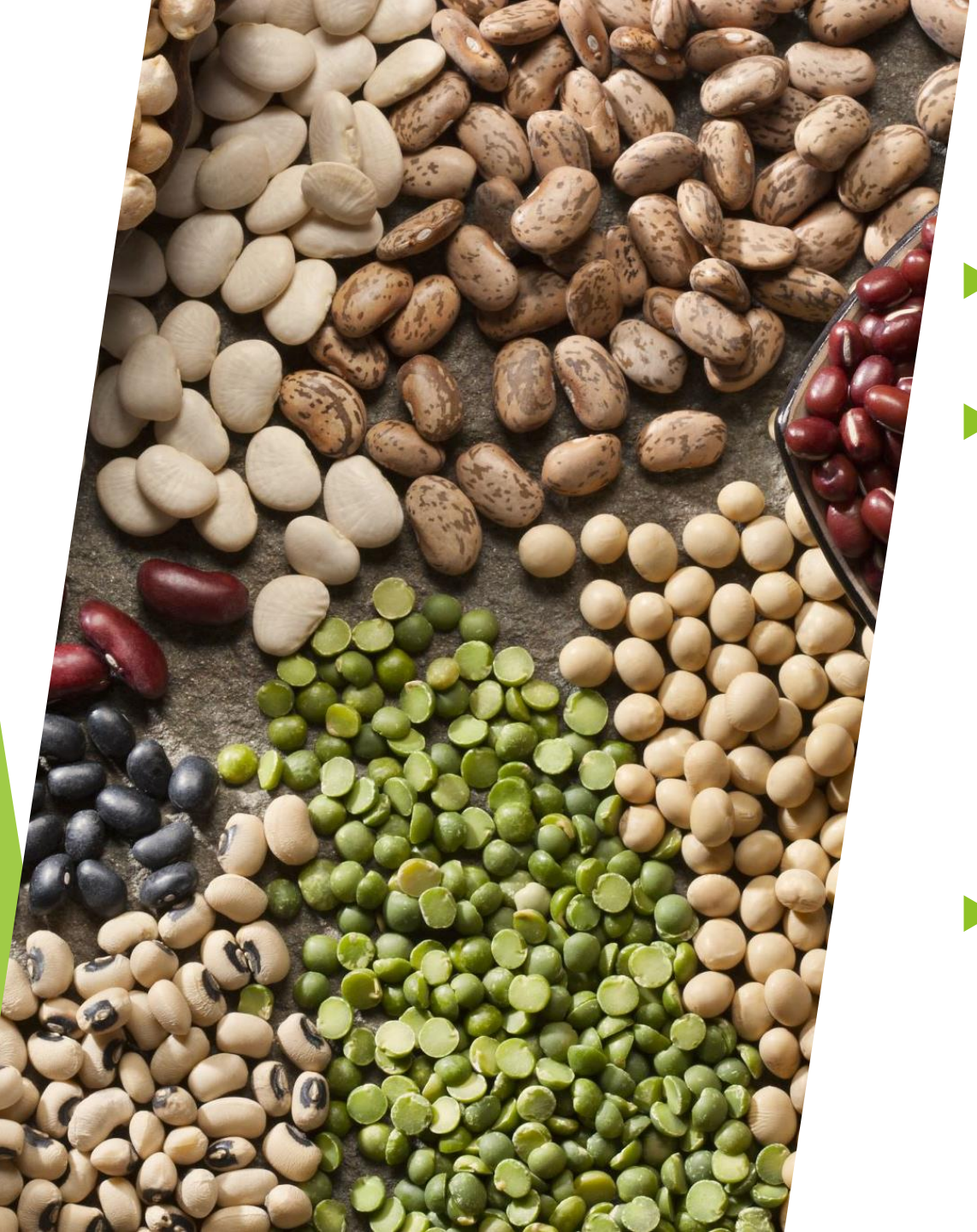
- Encouraged Sources:
  - Lean Meats
  - Fish
  - Eggs
  - Beans
  - Peas
  - Soy/Tofu
  - Nuts/Seeds
- Avoid/Limit/Reduce
  - High Processed/High Fat meats such as hot dogs, sausage, bacon
  - Fried food

# Carbohydrates

- Our body converts carbohydrates into sugars to use for energy.
- Sources: Grains, starchy vegetables, fruits, dairy, food with added sugars
- Excessive carbohydrate intake can raise blood sugar levels.

# Fats

- Choose heart health fats such as Monosaturated and Polyunsaturated fats:
  - Sources: Avocado, hazelnuts, cashews, pecans, seeds (pumpkin, sunflower, sesame, chia, hemp, flaxseed), and plant oils (olive, peanut, safflower, sesame, flaxseed, soybean, canola), and fatty fish (mackerel, herring, salmon, halibut canned tuna, shrimp, catfish)
- Avoid/Reduce/Limit
  - Saturated and Trans fat
  - Sources: Fatty meats, butter, cheese, desserts (ice cream, cakes, cookies, muffins etc.), coconut oil, palm oil, fried/processed foods



# Fiber

- Fiber rich foods help control blood sugar levels
- Sources:
  - Fruits
  - Vegetables
  - Whole grains
  - Beans/Legumes
  - Peas
- Recommendations for people >50: 21 g/day for women and 30 grams/day for men

# Sodium (Salt)

Sodium is essential to many biological processes in our body. However, too much sodium leads to increased water retention which can increase blood pressure, damage kidneys, and heart disease

Sources:

Found mostly in packaged foods: Chips, cookies, cakes, savory snacks, fast food

Reccomendations:

For adults without hypertension: < 2,300 mg/day or 1 tsp/day

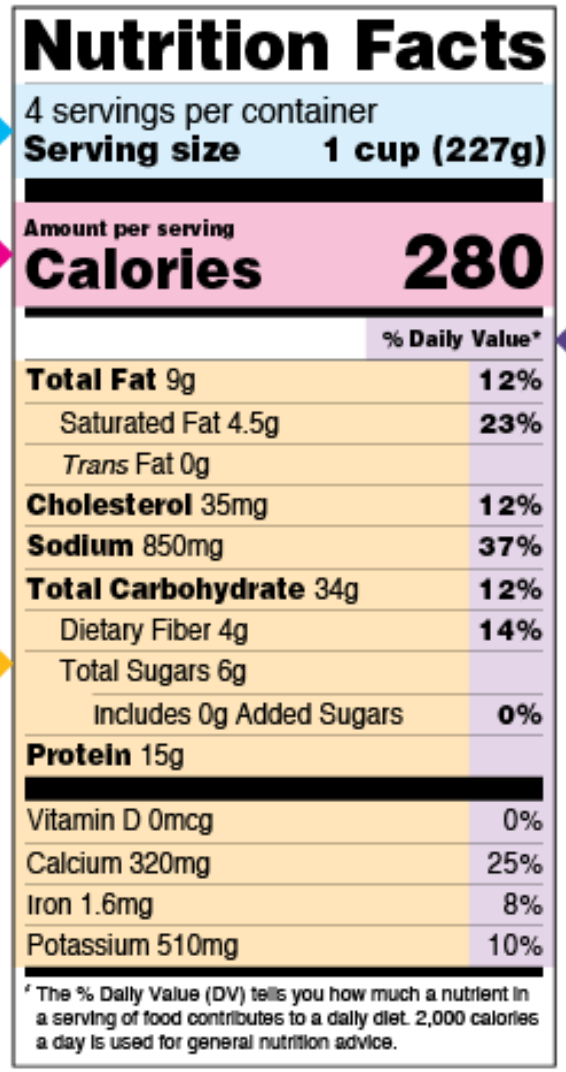
For adults with hypertension: < 1,500 mg/day or 2/3 tsp/day


# Alcohol/Sugary Drinks

- Alcohol and sugary beverages such as pop, juice, energy drinks, tea and coffee drinks can spike blood sugars
- Alcohol Recs:
  - Females: <1 drink/day
  - Males: <2 drinks/day
  - Interferes with the livers metabolic function to regulate blood sugar

# How To Read a Label

1. Serving Information
2. Calories
3. Nutrients
4. Quick Guide to percent Daily Value (%DV)
   - 5% or less is **low**
   - 20% or more is **high**



**Nutrition Facts**

4 servings per container

**Serving size** **1 cup (227g)**

**Amount per serving**

**Calories** **280**

| | % Daily Value* |
|---|---|
| **Total Fat** 9g | **12%** |
| Saturated Fat 4.5g | **23%** |
| *Trans* Fat 0g | |
| **Cholesterol** 35mg | **12%** |
| **Sodium** 850mg | **37%** |
| **Total Carbohydrate** 34g | **12%** |
| Dietary Fiber 4g | **14%** |
| Total Sugars 6g | |
| Includes 0g Added Sugars | **0%** |
| **Protein** 15g | |
| Vitamin D 0mcg | 0% |
| Calcium 320mg | 25% |
| Iron 1.6mg | 8% |
| Potassium 510mg | 10% |

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

# Guidelines for a Healthy Meal

**Recommended Amount**

- Protein

| | |
|---|---|
| 1-2 portions | 15-25 grams |

- Carbohydrates

| | |
|---|---|
| 2 or more portions low carb vegetables | 10-15 grams |
| 1-2 portions of high carb foods | 15-30 grams |
| 1 portion fruit | 15 grams |
| Total | 45-60 grams of carbs |

- Fat

| | |
|---|---|
| 1-2 portions | 10-15 grams |

- Snacks (2) 25gms x2 =50 gms carbs

# Example of a meal-Shrimp salad with bread roll and side of fruit

| Menu items | Portion size | Protein | Carbohydrates |
|---|---|---|---|
| Shrimp<br>Salad greens<br>Tomato<br>Hard Boiled eggs | 2ozs<br>2 cups<br>1 cup<br>1 | 14<br>4<br>2<br>7 | 0<br>10<br>5<br>0 |
| Low fat dressing | 2 tbs | 0 | 0 |
| Bread roll | 1 | 6 | 30 |
| Butter or margarine | 1 tbsp | 0 | 0 |
| Fresh fruit cocktail | ½ cup | 0 | 18 |
| TOTALS | | 33 | 60 |

# Healthy Eating Means:

- Eating a variety of foods to ensure the body gets all the required nutrients
- Eating our meals and snacks regularly allows time for the body to produce and use enough insulin to have enough energy throughout the day
- Eating breakfast everyday is important because it helps fuel the body after resting and fasting
- Eating the same amount of food from day to day helps maintain weight and avoid snacking.

# Meal Timings

- “Fixed Regimen” Insulin
  - Those who take the same amount of insulin at the same time each day or those who take pills that increase insulin secretion or insulin sensitivity
  - Recommendations: Eat at the same time every day to prevent low blood sugar
- Flexible Regimen Insulin
  - Those who adjust the dose and timing of insulin each day
  - Recommendations: Do not need to eat at the same time as long as they appropriately adjust and time their insulin dose for how much they plan to eat.
- Oral Medications
  - Those who take medications that do not usually cause low blood sugar i.e Metformin
  - Recommendations: Do not need to eat at the same time every day

# Exercise

- Exercise helps promote heart health and can increase insulin sensitivity
- Recommendations:
  - 150 minutes/week of moderate intense exercise or 75 minutes/week of vigorous exercise
    - Brisk walking, Tai Chi, Yoga, swimming, running
  - 2 days of resistance training
    - Weight lifting, body weight exercises, resistance band training, etc.

# Self Management Tool Box for lifetime changes

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- Monitoring Blood Sugar
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# How to balance diet, exercise, and medication

- If on medications, talk to your doctor about if you need to adjust the timing and frequency of your meals
- Create a daily chart to plan your meals, exercise, and time of medications (action plan)
- Record symptoms you experience daily (problem solving)
- Pay attention to signs and symptoms of low blood sugar: Dizziness, falls, headaches, confusion, extreme fatigue, abnormal

# Prevention Of Hypoglycemia

- Low blood glucose levels (hypoglycemia) may occur with some commonly used  medications (such as insulin)
- Symptoms may include hunger pangs, racing heartbeat, shakiness, sweating, and inability to think clearly.
- Sugar must get into the body quickly to prevent permanent harm and relieve symptoms.
- Keep a glucagon kit or glucose tablets handy.

# Monitoring and testing

- Measuring blood sugar is **key** to monitoring and controlling your diabetes.
- **Regular A1C (glycated hemoglobin) testing**

  A1C measures average blood sugar level for the past 2-3 months.

  Diabetic: 7%  Prediabetic: 5.7-6.5 %

**Fasting blood sugar test**

- Fasting 80-130 mg/dl  <180 mg/dl 2 hrs after eating
- **Urine test** measures ketones

# Treatments for Diabetes

- **Monitoring** of your blood sugar
- **Insulin injection-Individualized treatment (**long acting and fast acting**)**
- **Oral or injected drugs**
- **Bariatric surgery**
- **Lifestyle changes**

# Lifestyle recommendations for diabetes:

- **Identify yourself:** Wear a tag or bracelet that says you HAVE DIABETES
- **Schedule a yearly physical and regular eye exam:**
- **Stay up to date on your vaccinations**
- **Pay attention to your feet:** Wash your feet daily in lukewarm water. Dry them gently, especially between the toes
- **Control your blood pressure and cholesterol:** Eating healthy foods and exercising regularly can help control high blood pressure and cholesterol.

# “Sitting is the next smoking”

- Obesity is a major cause of diabetes’
- 1 pound of fat =  3500 calories.
- To lose 1-2 lbs you need to cut 500-1000 calories per day
- 1 Mile of brisk walking 15-20 mins = about 100 calories
- 1 Apple = 80-100 calories
- ¼ cup peanuts = 215 calories
- 3 cups plain popcorn. Air popped =90 calories
- **CHOOSE YOUR FOODS WISELY!**

# LETS GET MOVING!

Thank You