



Hanford Occupational Health Services

# Weight Management Week 5

Cholesterol, Blood Pressure Diabetes

Health Education

376-3939

## Carbohydrates and Fiber

- Carbs=50-60% of total calories
- Complex carbs
- Fiber=About 25 grams per day

## Protein

- Protein=20% of total calories
- Lean protein

## Fat

- Fat=20% of total calories
- Unsaturated fat

## Exercise

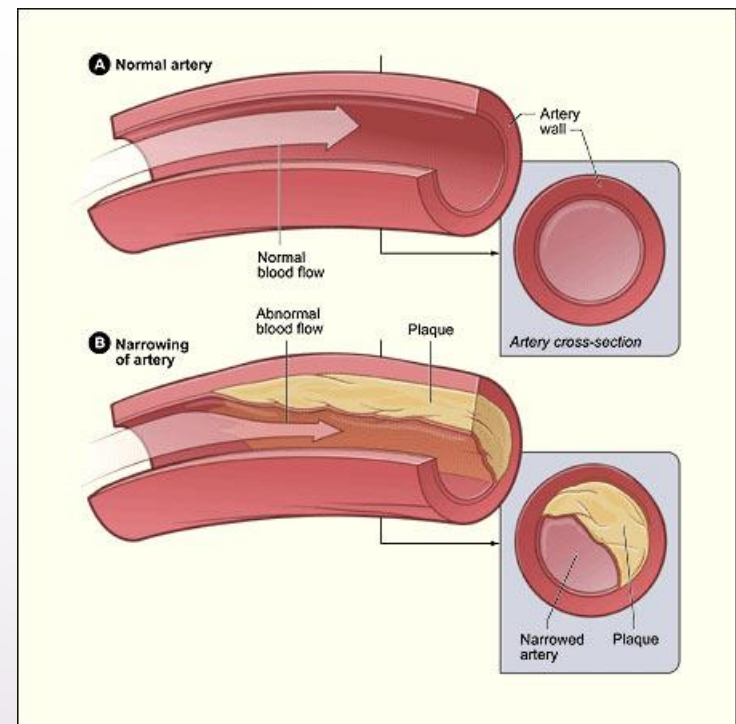
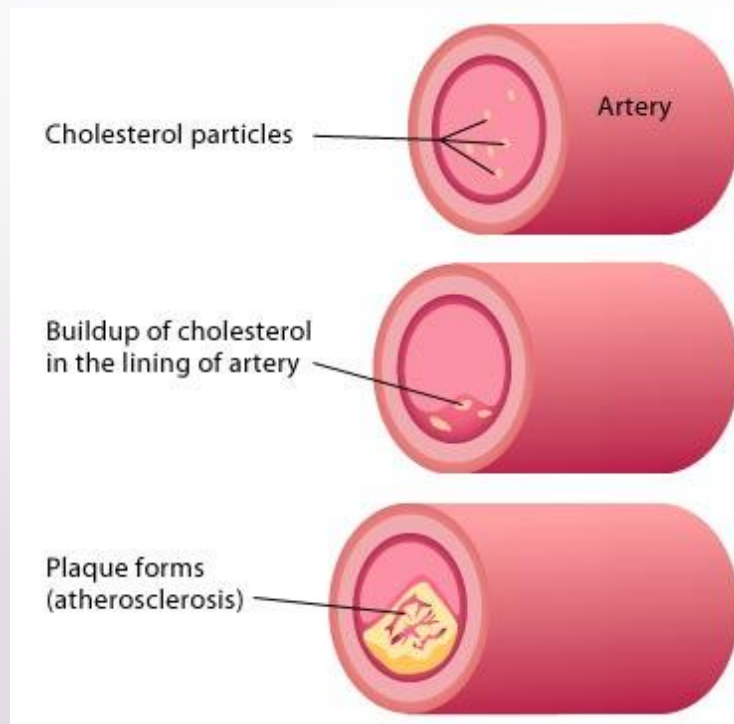
- Cardiovascular exercise and heart rate training
- Weight training for strength, bone mass, lean muscle, and injury prevention
- Stretching for flexibility, coordination, and injury prevention

# What is Cholesterol?



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- ◆ Fat-like substance (lipid) present in cell membranes.
- ◆ Cholesterol moves through the body in packages called “lipoproteins”.
- ◆ This is the **ONLY** way that fat and cholesterol can be transported in the body.

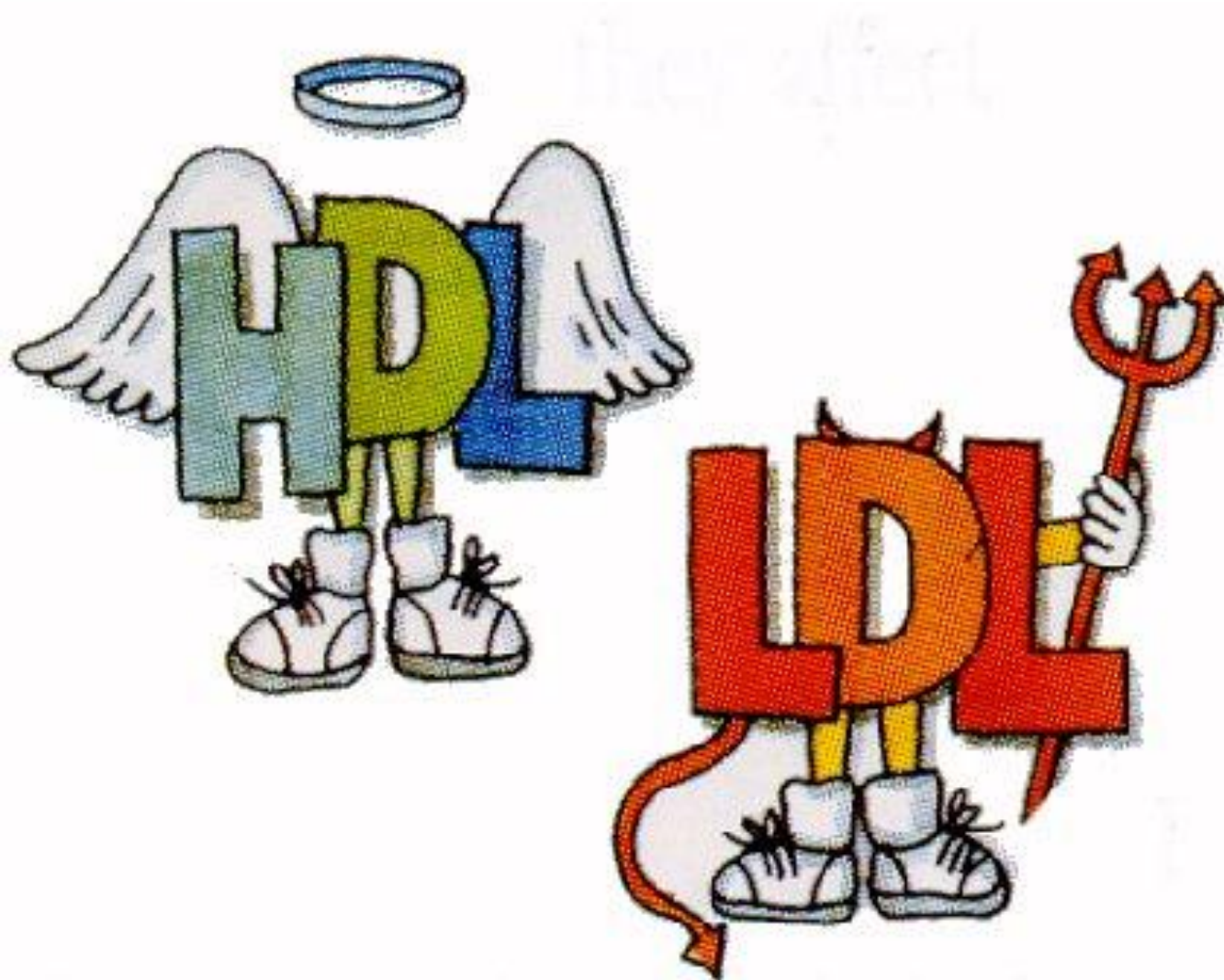


# Types of Cholesterol

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# HDL Cholesterol

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- ◆ HDL-High Density Lipoproteins
- ◆ The “Good” Cholesterol
- ◆ Protective to the body.
  - Removes excess cholesterol from artery walls.
  - Returns it to the liver for reprocessing
- ◆ Can be raised by exercise and good nutrition.

**Should be 60 or higher**

- ◆ VLDL-Very Low Density Lipoproteins
- ◆ LDL-Low Density Lipoproteins
- ◆ The “BAD” Cholesterol
- ◆ Fat and cholesterol are deposited in your body by “Bad Cholesterol” lipoproteins.
- ◆ If LDL is high, so is risk for coronary heart disease.
- ◆ Can be lowered by exercise and good nutrition, weight control & medicine.

**Should be less than 130**

# The numbers...



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	Ideal	Desirable	At Risk	High Risk
<b>Cholesterol</b>	< 160	< 200	200-239	≥ 240
<b>LDL</b>	< 100	< 130	130-159	≥ 160
<b>HDL</b>	≥ 60	≥ 50	< 40	< 35
<b>Total Cholesterol Minus HDL</b>	≤ 130	≤ 160	161-189	≥ 190
<b>Ratio</b>	≤ 3.5	3.6-5.0	≥ 5.1	

# How does food contribute?

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- ◆ The more saturated fat you eat, the more lipoprotein packages are produced by the liver.
- ◆ The result is a greater build-up of cholesterol in the artery walls.



## Food that can help Cholesterol numbers:

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- Oat meal / oat bran:** contains soluble fiber which lowers LDL. (also found in kidney beans, Brussels' sprouts, apples, pears, psyllium, barley and prunes.)
  
- Walnuts & Almonds:** Rich in polyunsaturated fats, walnuts and almonds help keep blood vessels elastic.
  
- Omega 3 Fatty Acids:** Known for lowering triglycerides, but also lowers blood pressure and risk of blood clots. (In people who have already had heart attacks, Omega 3 significantly reduces the risk of sudden death.) Doctors recommend 2 servings per week. Best sources include mackerel, lake trout, albacore tuna, salmon, herring, sardines, flaxseed, walnuts, canola oil, soybean oil.

# What can you do?



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Step #1 – Reduce intake of saturated fats.

Step #2 – Reduce dietary cholesterol (animal products).

Step #3 -- Reduce total fat in your diet.

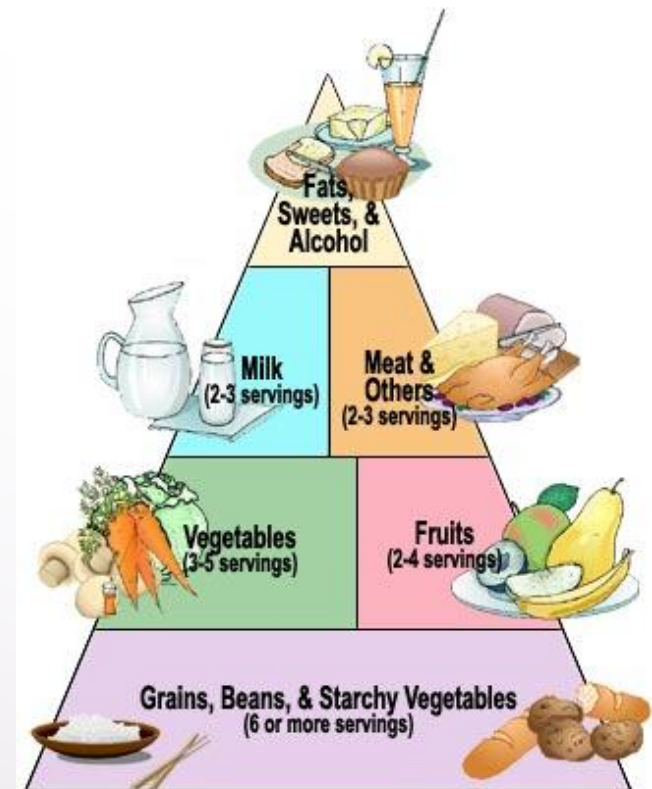
Step #4 – Increase dietary fiber.

Step #5 – Eat more vegetable protein,  
less animal protein.

Step #6 – Weight management

Step #7 – Physical activity

Step #8 – Drugs & Medications



- ◆ High blood pressure is also known as hypertension or pre-hypertension
- ◆ Can happen when our blood vessels become hard or inflexible.
- ◆ **GOOD NEWS:** just like cholesterol, your blood pressure can be controlled by lifestyle choices

# What do the numbers mean

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- ◆ Systolic: the pressure when your heart is contracting
- ◆ Diastolic: the pressure when your heart is relaxing
  
- ◆ Systolic/Diastolic

# Blood Pressure Numbers



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Top number (systolic)		Bottom number (diastolic)	Your category*	What to do**
Below 120	and	Below 80	Normal	Maintain or adopt a healthy lifestyle.
120-139	or	80-89	Prehypertension	Maintain or adopt a healthy lifestyle.
140-159	or	90-99	Stage 1 hypertension	•Maintain or adopt a healthy lifestyle. If blood pressure goal isn't reached in about six months, talk to your doctor about taking one or more medications.
160 or more	or	100 or more	Stage 2 hypertension	Maintain or adopt a healthy lifestyle. Talk to your doctor about taking more than one medication.

**\*\*Note:** These recommendations address high blood pressure as a single health condition. If you also have heart disease, diabetes, chronic kidney disease or certain other conditions, you'll need to treat your blood pressure more aggressively.

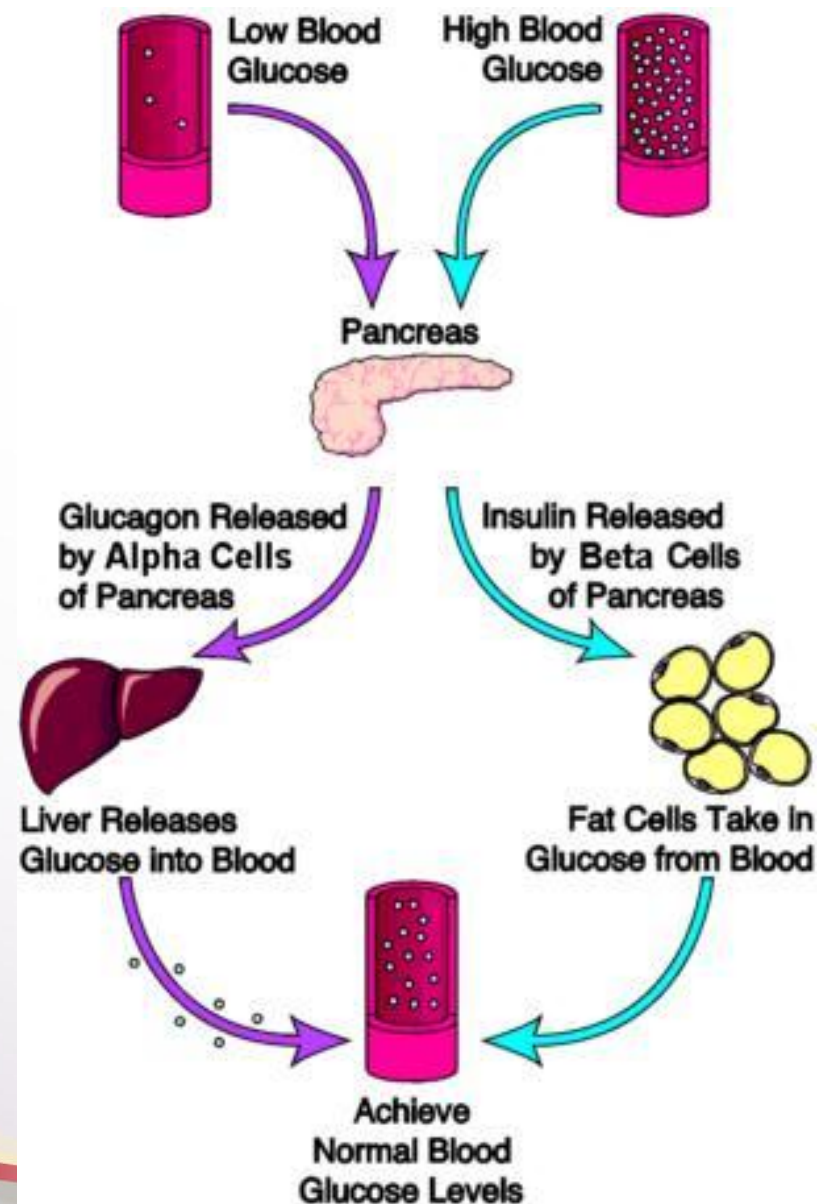
# Diabetes:

- ❖ More than 20 million people in the U.S. have diabetes (6%)
- ❖ More than 40 million people have prediabetes.
- ❖ Cost:
  - United States spends approximately \$132 billion each year on diabetes
  - \$92 billion in direct medical costs
  - \$40 billion each year in indirect costs because of missed work days or other losses in productivity
  - \$1 of \$4 Medicare dollars is spent on diabetes
- ❖ Diabetes is the 6<sup>th</sup> leading cause of death in the U.S.



# Diabetes

- ◆ Definition: Disease that affects how your body uses blood glucose (blood sugar).
- ◆ Glucose is energy for cells & brain fuel
- ◆ If you are diabetic, you have too much glucose in your blood.
- ◆ High blood glucose can lead to **SERIOUS** complications





# Types of Diabetes



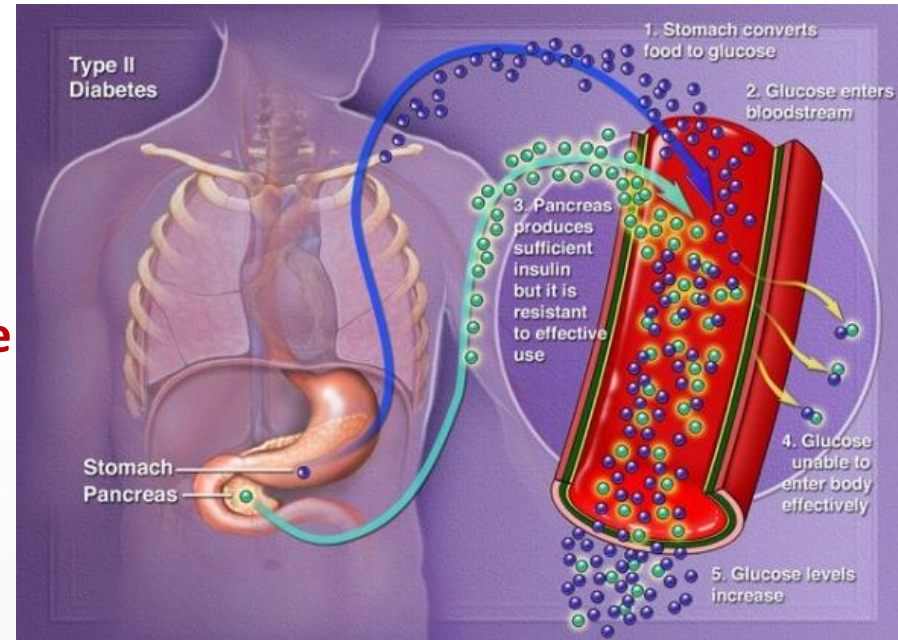
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## ◆ Type 1

- Typically appears during childhood
- Pancreas does not produce insulin

## ◆ Type 2

- **Can occur at any age**
- **Often preventable through lifestyle**
  - **(diet and exercise)**
- **Cells no longer respond to insulin**



## Reversible Diabetic Conditions:

### ◆ Prediabetes

- Blood sugar in high range, but not high enough to be considered diabetic

### ◆ Gestational Diabetes (occurs during pregnancy)



## Type II Diabetes

1. Stomach converts food to glucose

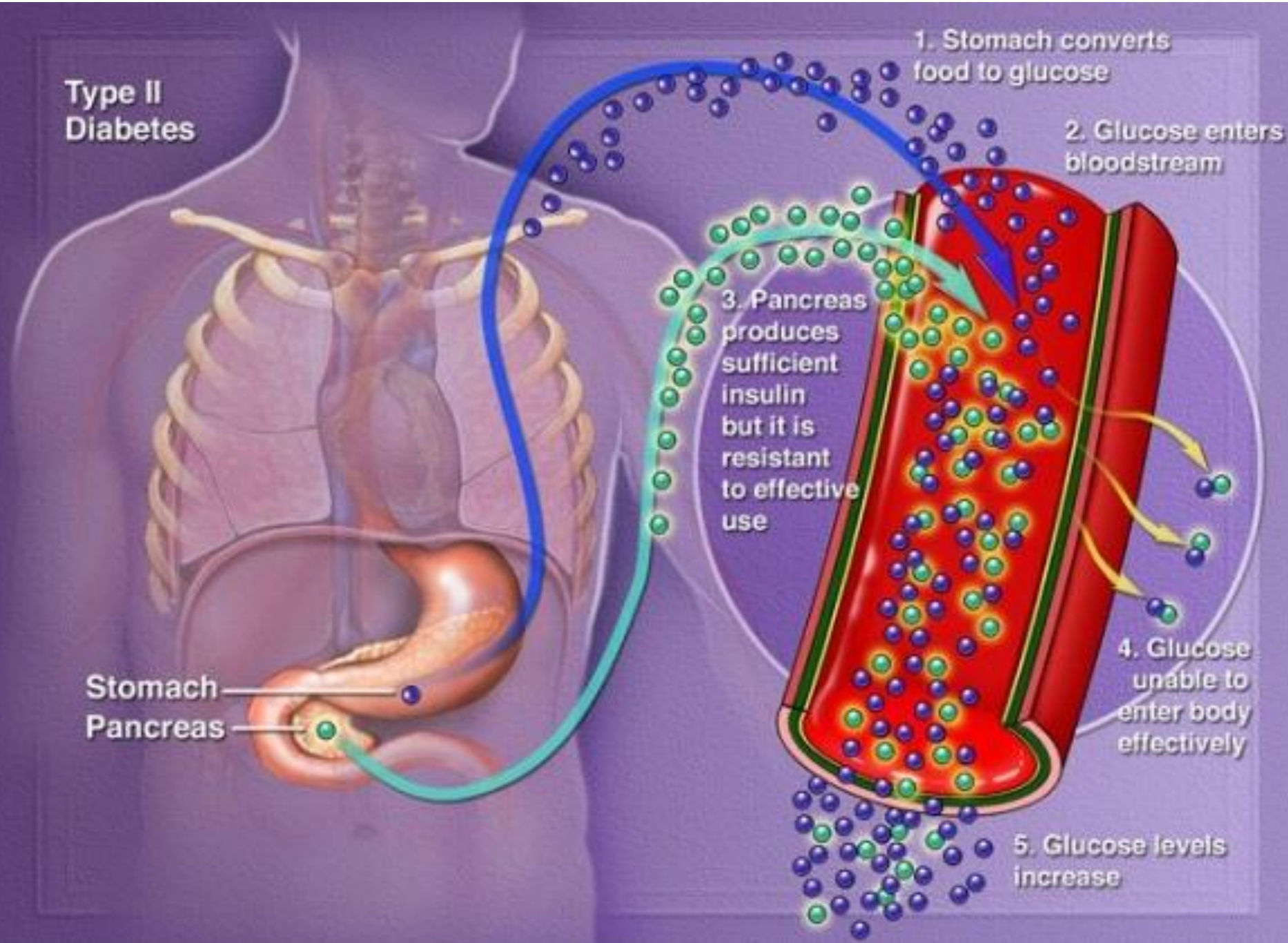
2. Glucose enters bloodstream

3. Pancreas produces sufficient insulin but it is resistant to effective use

4. Glucose unable to enter body effectively

5. Glucose levels increase

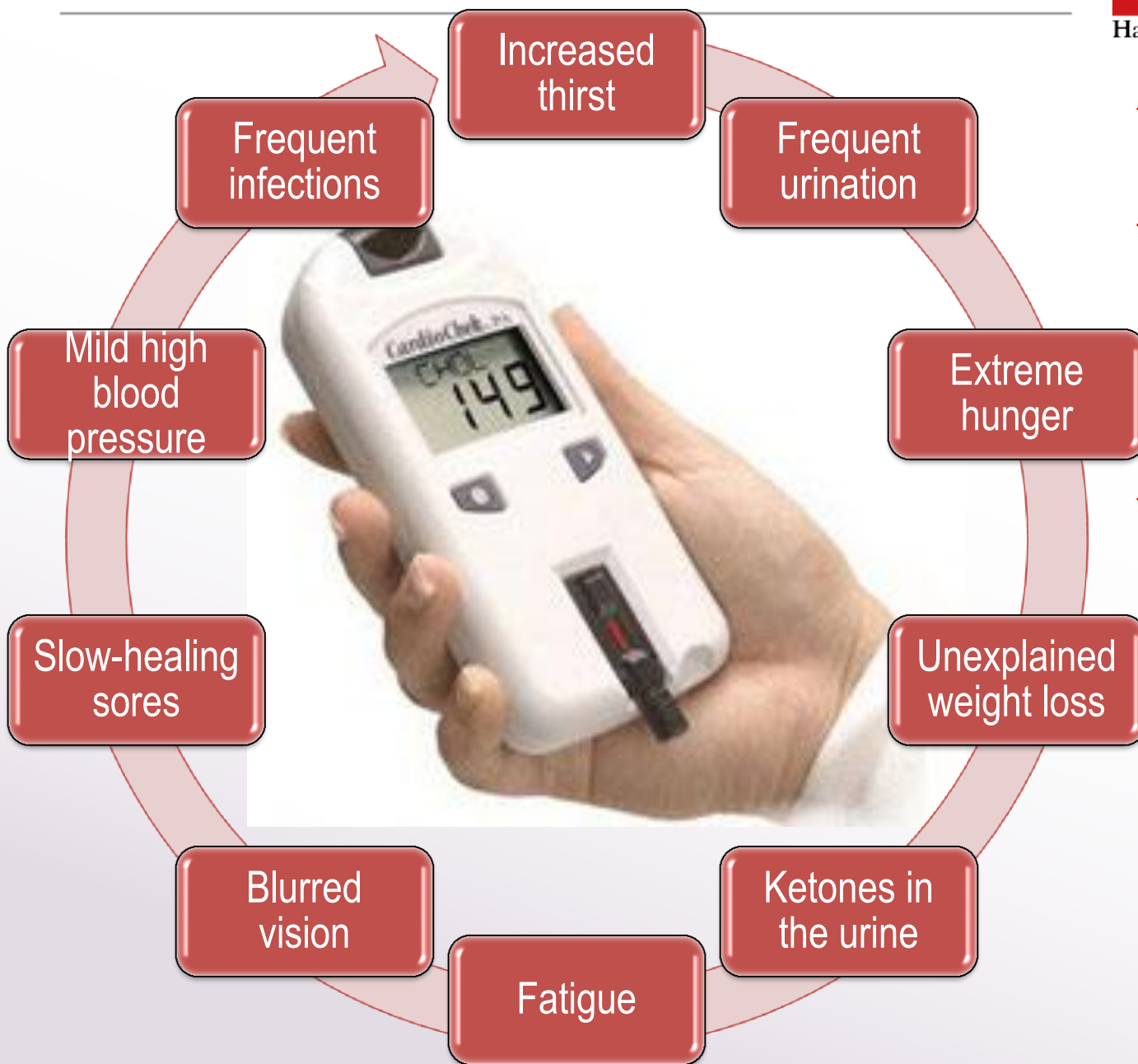
Stomach  
Pancreas



# Symptoms of Diabetes



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- ◆ Symptoms may vary.
- ◆ Those with Type 2 Diabetes or Prediabetes may not experience symptoms.
- ◆ Symptoms of Type 1 Diabetes tend to be quick and more severe.

# Risk Factors for Type 2 Diabetes

- ◆ Weight
- ◆ Inactivity
- ◆ Family History
- ◆ Race
- ◆ Age
- ◆ Gestational Diabetes
- ◆ Polycystic Ovary Syndrome
- ◆ High Blood Pressure (140/90)
- ◆ Abnormal Cholesterol Levels
- ◆ High levels of triglycerides





# Complications from uncontrolled blood sugar

- ◆ Cardiovascular Disease
- ◆ Nerve Damage (neuropathy)
- ◆ Kidney Damage (nephropathy)
- ◆ Eye Damage (retinopathy)
- ◆ Foot Damage (minor wounds can lead to serious infection)
- ◆ Skin/Mouth Conditions
- ◆ Brain Problems (increase risk of Alzheimer's)
- ◆ Cancer



# Testing for Diabetes

## ◆ Who should be tested?

- Anyone with a BMI over 25 with additional risk factors (any age)
- Anyone over the age of 45
  - Note: If initial tests are normal, be screened every 3 years



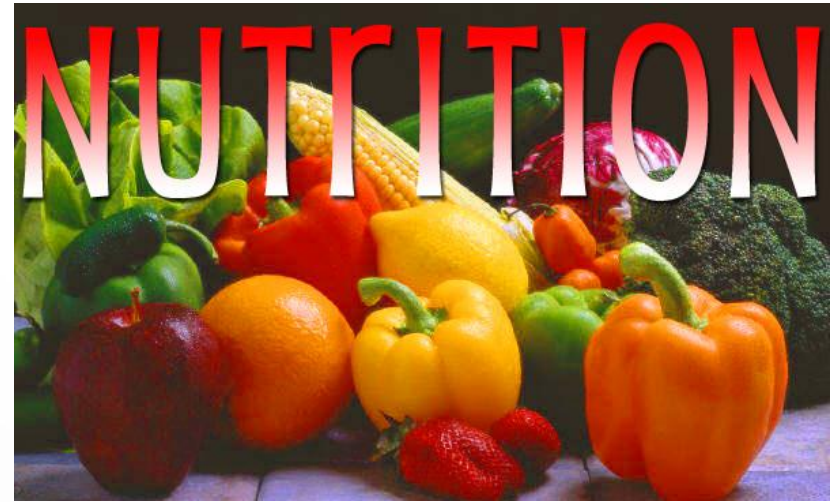
## Types of Tests

- ◆ A1C Test: average blood sugar level for past 2-3 months
  - A1C of 5.7-6.4% suggests prediabetes
  - A1C of 6.5% or higher (on 2 separate tests) indicates diabetes
- ◆ Random Blood Sugar Test: taken regardless of last food
  - 200 mg/dL or higher suggests diabetes
- ◆ Fasting Blood Sugar Test: 8-12 hour fast
  - 100-125 mg/dL indicates prediabetes
  - 126 mg/dL indicates diabetes



# Treatment

- ◆ Healthy Eating
  - Fruits, vegetables, whole grains, lean protein
  - Limit saturated fats, processed foods, sugar, sodium
- ◆ Health Weight
  - 5-10% weight drop can significantly help
- ◆ Physical Activity
  - 150 minutes per week MINIMUM
- ◆ Blood Sugar Monitoring
- ◆ Medications





## Other lifestyle changes

- ◆ Schedule an annual physical
- ◆ Schedule an annual eye exam
- ◆ Keep immunizations up-to-date
- ◆ Pay attention to your feet
- ◆ Control blood pressure/cholesterol
- ◆ Take care of your teeth
- ◆ Quit tobacco
- ◆ Limit alcohol use
- ◆ Manage Stress





# LEARN

The word 'LEARN' is written in large, bold, red 3D block letters. A black mouse cursor is positioned over the letter 'N', with a thin black line extending from the cursor towards the letters.

## ◆ Diabetes Support Group

- When: the 3<sup>rd</sup> Wednesday of each month (except November & December)
- Time: 5-6 pm
- Where: Columbia Basin College Health Science Center  
891 Mansfield (room 249)  
Richland, Washington
- For information, call 942-2620.



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For questions or to set up an appointment  
with a Certified Health Coach for one-on-  
one assistance, please contact:

HEALTH EDUCATION  
376-3939