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# Prevent Disease with Healthy Plates

Amy Shieh, Bella Tsay, Wendy Vo, Ruobin Wei

UC Berkeley Nutritional Science Students

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**You've been learning  
healthy lifestyle choices  
throughout these courses...  
but why?**

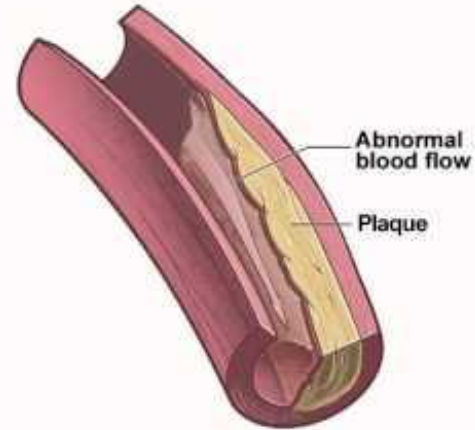
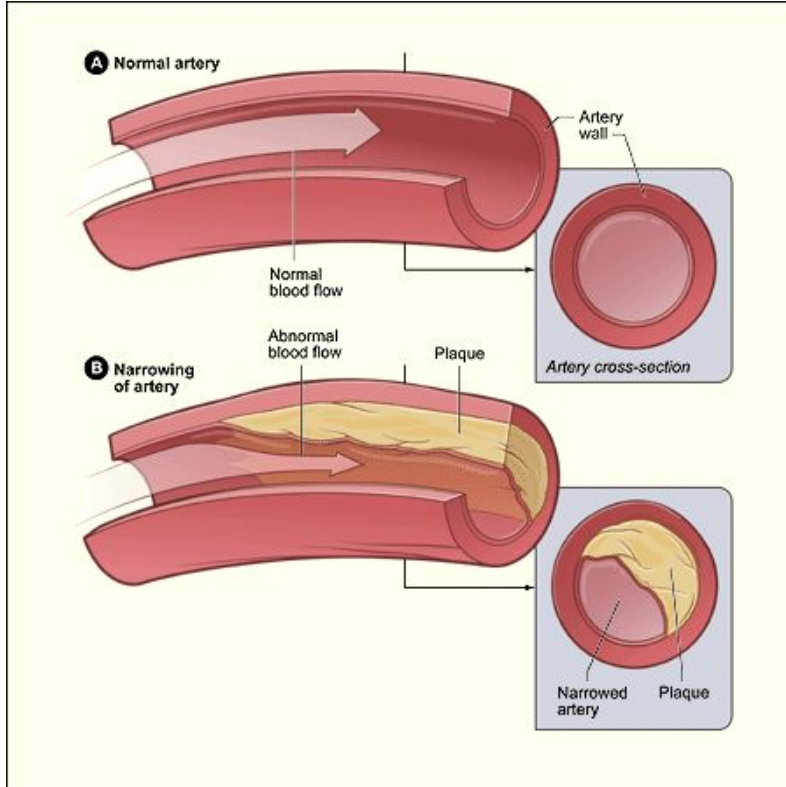
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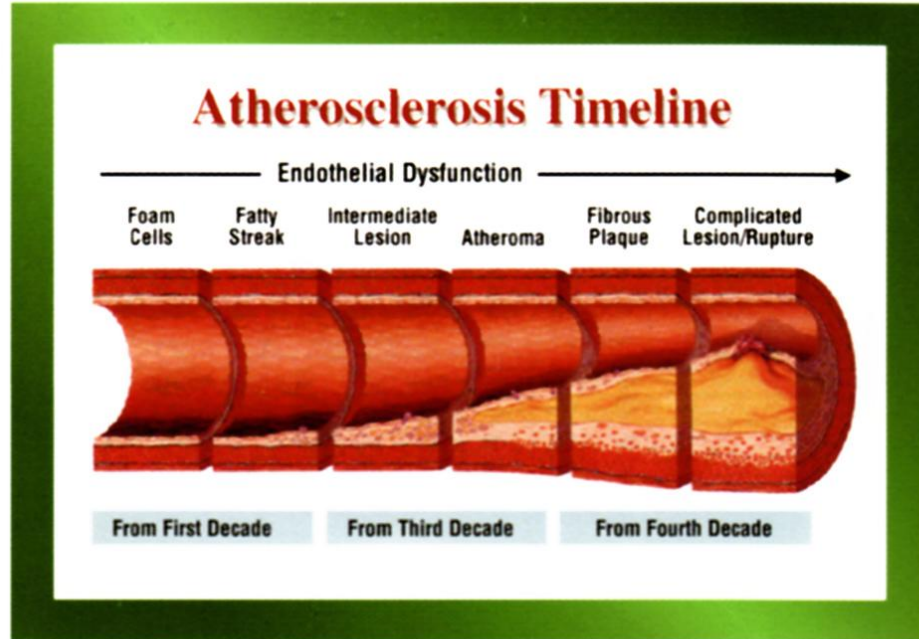
# Objectives

1. Atherosclerosis
  2. Heart disease/HTN
  3. Diabetes
  4. Summary/Takeaways/What to eat instead
  5. Mini-Case
  6. Featured Vegetable
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# Atherosclerosis



# Timeline of Atherosclerosis



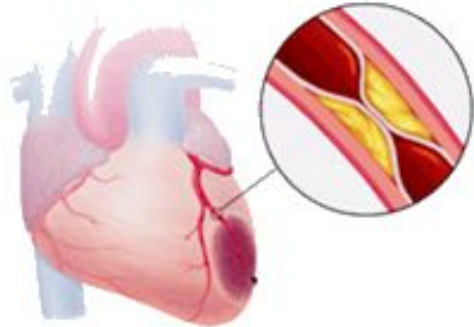
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**Why is plaque buildup  
bad?**

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# Why is plaque buildup bad?

Coronary Artery Disease



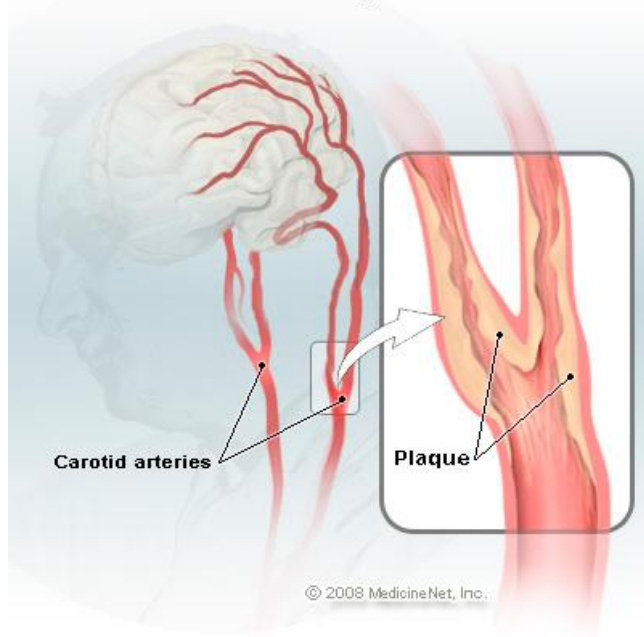
Peripheral Artery Disease



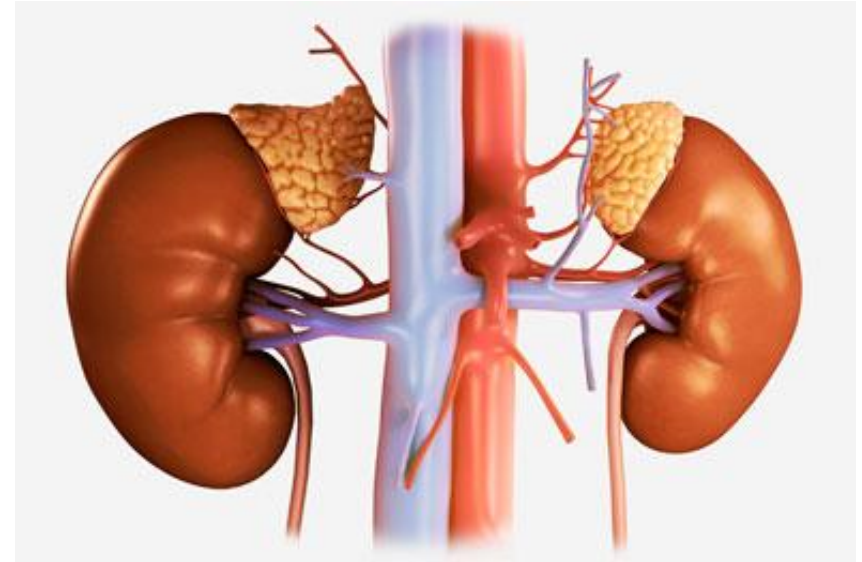
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# Why is plaque buildup bad?

Carotid Artery Disease



Chronic Kidney Disease





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**Risk Factors**    What is this?

**Controllable**

**Uncontrollable**

Discuss and  
brainstorm

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# Risk Factors

## Controllable

- Physical Activity
  - Smoking
  - Healthy Diet
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## Uncontrollable

- Family History

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# Hypertension

Who has heard of hypertension before? Can anyone tell me what it is?

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# HTN- Hypertension

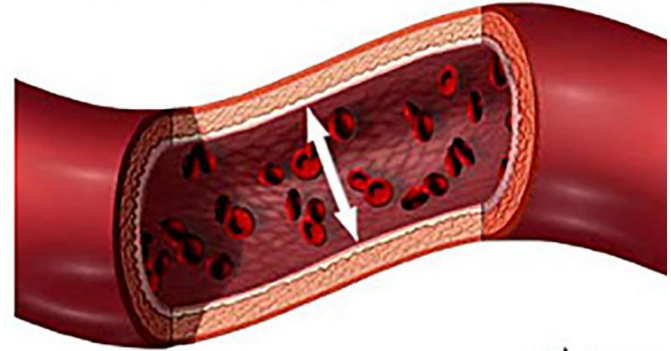
Also known as high blood pressure- which is the pressure exerted by blood onto your artery walls.

Influenced greatly by:

- Blood volume
- Constriction of muscle in artery wall

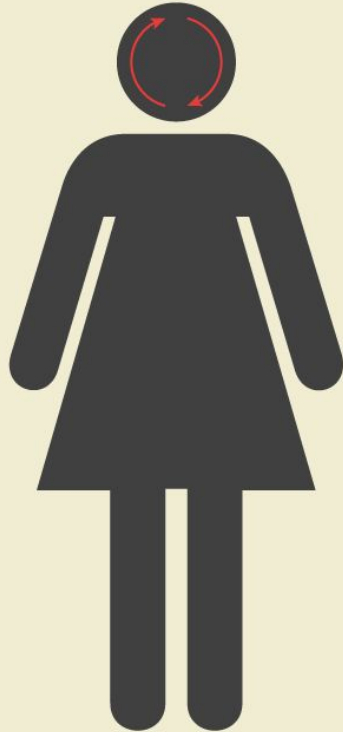
High blood pressure means your heart has to work harder

Blood pressure is the measurement of force applied to artery walls



ADAM.

## What Are the Effects of High Blood Pressure?



Forceful blood pumping due to HBP can stretch artery walls too much, creating:

Risk of rupture



Stroke, aneurysm

Vascular scarring



Traps cholesterol, plaque, or blood cells

Heightened risk of blood clots



Heart attack, stroke, and organ and tissue damage

Plaque buildup



Heart attack, stroke, and organ and tissue damage

Even before you've identified any of the above, HBP could be damaging vital organs

Heart

Brain

Eyes

Kidneys

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# Risk Factors

- Being overweight or obese
  - Smoking
  - Little or no exercise
  - Too much salt in the diet
  - Drinking too much alcohol
  - Stress
  - Ethnic background
  - History of high blood pressure in the family
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# How does salt affect your blood pressure?

Salt increases your blood pressure by...

Increasing water retention → increase blood volume → increase blood pressure

Arteries thicken → increased blood pressure → arteries bursting or narrowing (clog)

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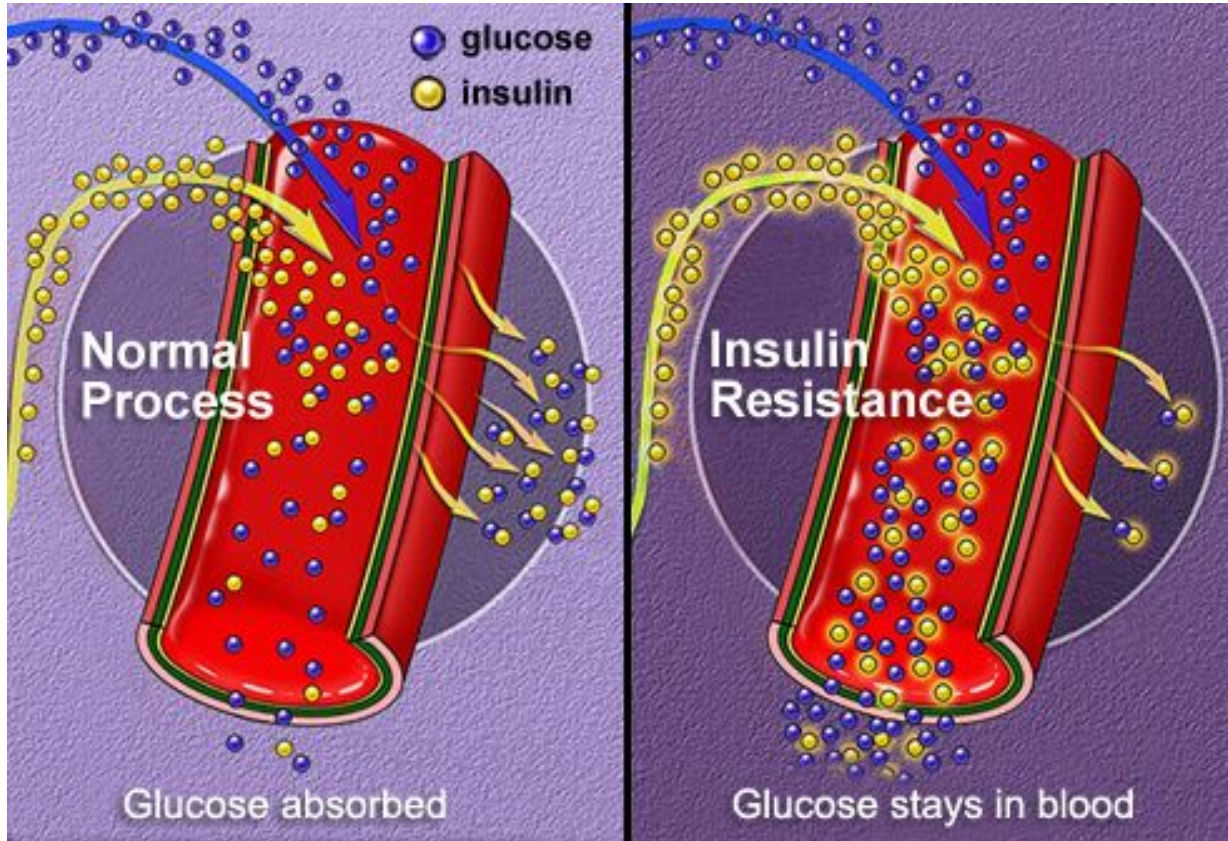
# Diabetes

Do you know about someone who have diabetes? Can somebody describe diabetes to me?

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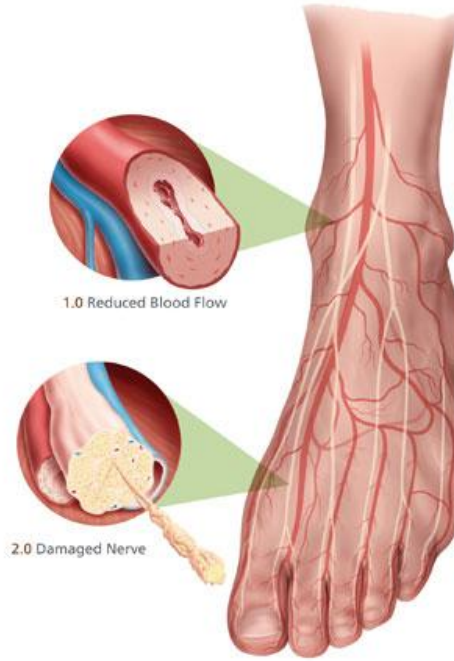
# Type II Diabetes - The Most Common



Sugar=Glucose

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# Diabetes - Related Problems



- Eyes
  - Nerves
  - Kidneys
  - Arms & Legs
  - Heart
-

Share with the Class:  
What can potentially cause diabetes?

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# Diabetes-Risk Factors

- Obesity
- Sedentary lifestyle
- Older age
- Family history
- Race or ethnicity



Family history



Lack of exercise



Unhealthy  
eating



Overweight

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Share with the class:

Having learned about the risk factors,  
what are some of the ways that you  
think can prevent diabetes?

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# Diabetes - How to Prevent it?

- Weight control
  - Exercise
  - Healthy diet
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# Summary & What to Eat Instead

- 1) Atherosclerosis
  - 2) Hypertension
  - 3) Diabetes
  - 4) Diet to prevent/ control atherosclerosis, hypertension, and diabetes.
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## **Discussion**

What do you remember about

1. Atherosclerosis
2. HTN/Heart Disease
3. Diabetes

What are the risk factors for these diseases?

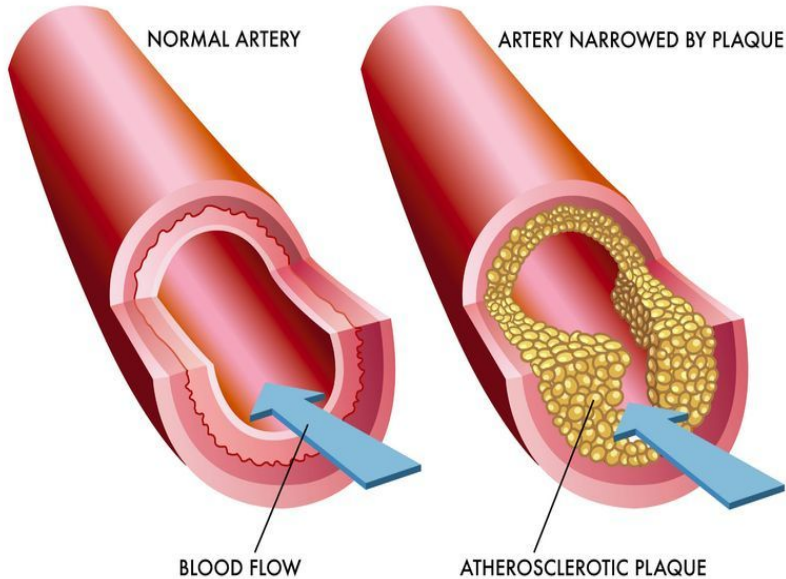
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# 1) Atherosclerosis

## ATHEROSCLEROSIS

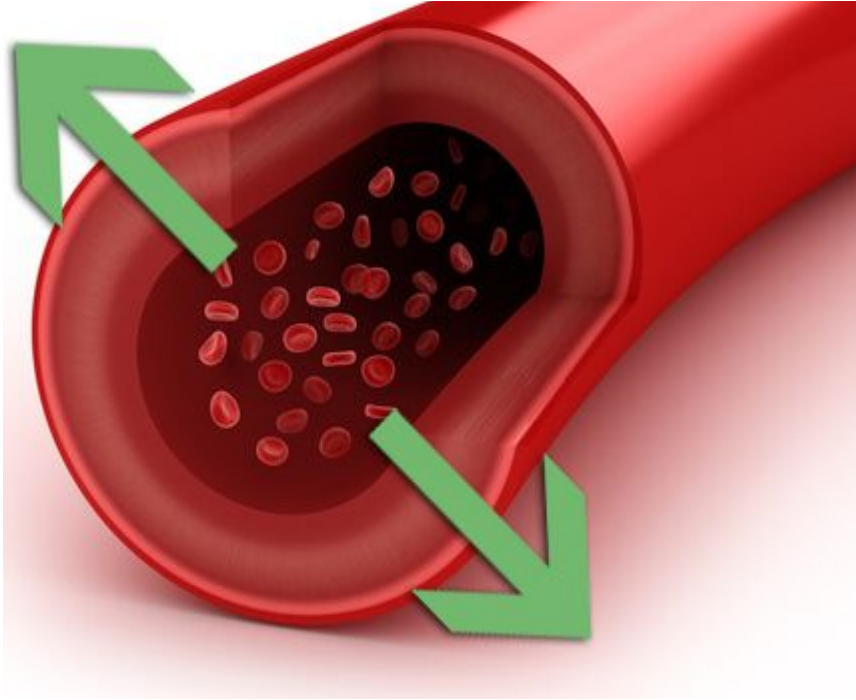


### Risk Factors

- 1) High cholesterol
- 2) High blood pressure
- 3) Obesity
- 4) Diabetes
- 5) Smoking
- 6) Physical inactivity

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## 2) Hypertension



### Risk Factors

Older age\*

Obesity\*

High sodium diet

Insulin resistance/DM

Alcohol intake >3/d

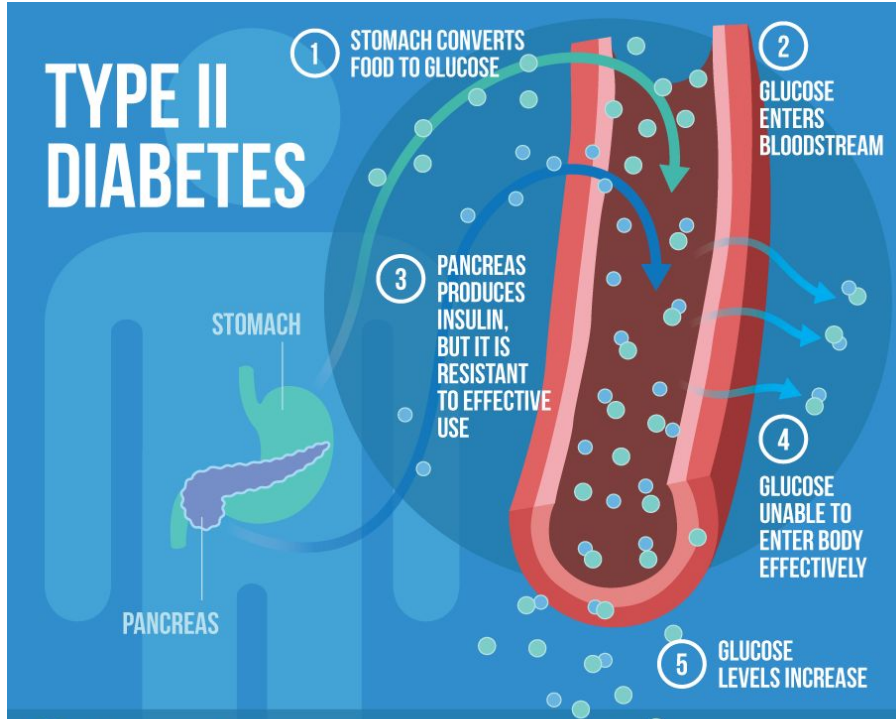
Smoking

Stress

Sedentary lifestyle

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### 3) Type II Diabetes

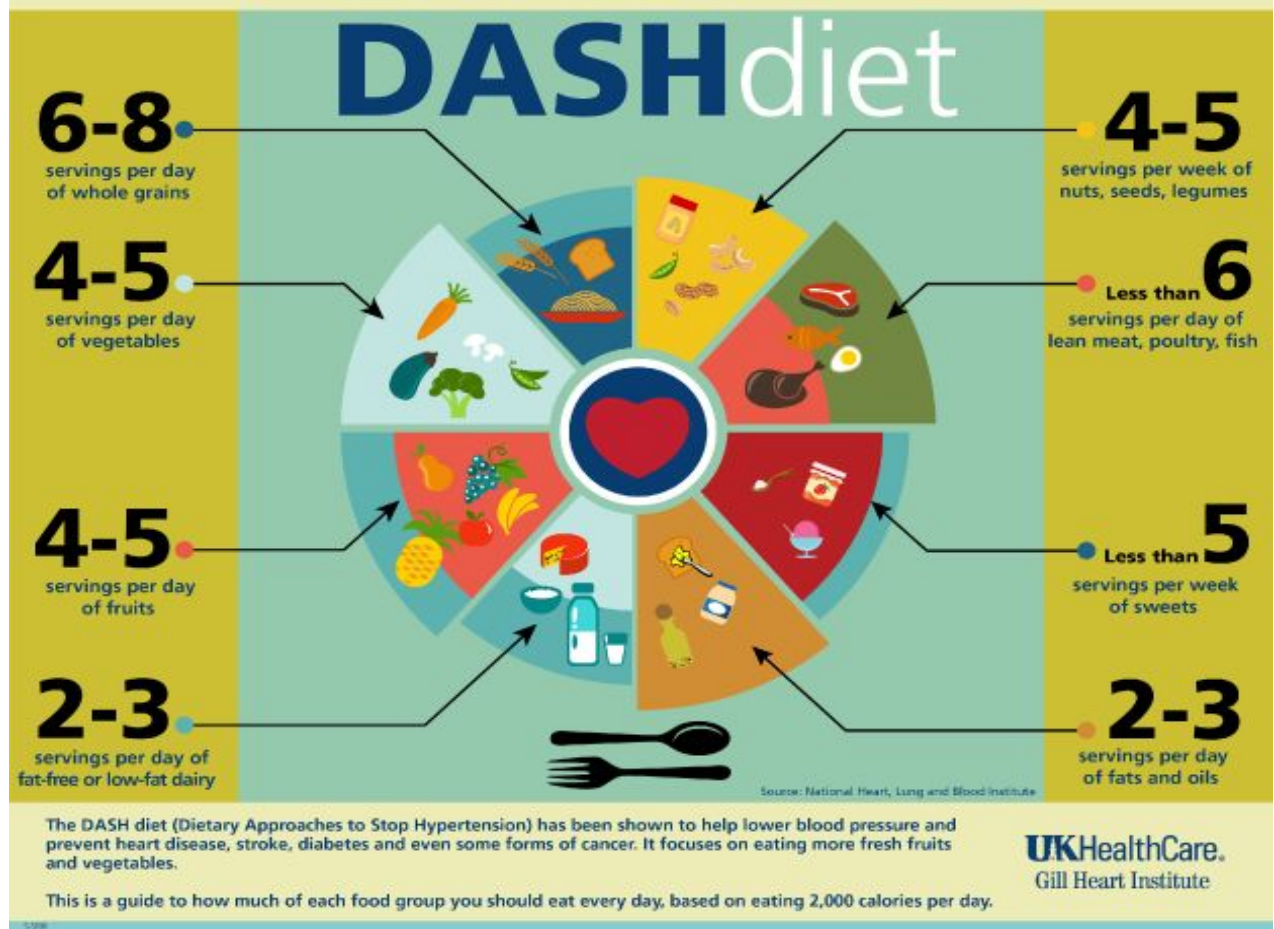


#### Risk Factors:

- Obesity
- Sedentary lifestyle
- Older age
- Family history of diabetes
- Race or ethnicity

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*How to  
Prevent or  
Control  
Atherosclerosis,  
Hypertension,  
and Diabetes?*





1 grain serving = any of the following

Grain : 6-8 serving/day. Shift from white grain to whole grain



1/2 c cooked rice or pasta



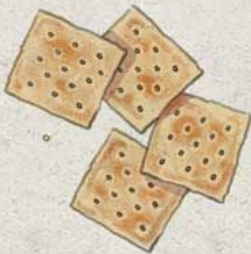
1 oz uncooked oatmeal



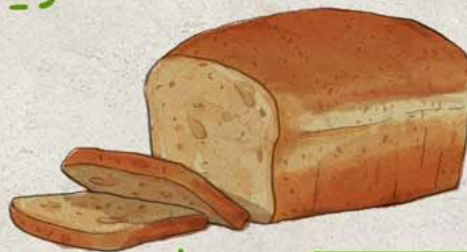
1 oz cereal



2 pcs graham crackers



4 pcs soda crackers



1 oz bread (about 1 slice)

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## Discussion

- 1) How does your grain intake compare?
-

1 vegetable serving =  
any of the following

4-5 serving a day

1/2 c raw nonleafy vegetables



1 c raw leafy vegetables



1/2 medium potato



1/4 c mashed potato



10 pcs french fries



1/2 c tomato sauce



3/4 c vegetable juice



1/2 c cooked vegetables



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## Discussion

- 1) How does your vegetable intake compare?
-



1 fruit serving = any of the following

1 medium-sized fruit



4-5 serving a day

1/2 medium banana



3/4 c fruit juice (100%)



1/4 c dried fruits



1/2 c chopped, canned or frozen fruit



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## Discussion

- 1) How does your fruit intake compare?
-

**Protein: up to 6 servings/a day. Focus on lean meat, poultry, and fish**



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## Discussion

- 1) How does your protein intake compare?
-



## Dairy: 2-3 servings/ day. Focus on non-fat and low fat dairy

1 dairy serving = any of the following

1 c milk



1/2 c low-fat/nonfat frozen yogurt



1 1/2 oz low-fat cheese



1/2 c low-fat cottage cheese



1/3 c nonfat dry milk powder



1 c low-fat/nonfat yogurt



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## Discussion

- 1) How does your dairy intake compare?
-

Fat and Oils: 2-3 servings per day. The DASH diet allows you to include fat and oil in your diet but in very limited amounts.

1 added fat serving =  
any of the following



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## Discussion

- 1) How does your fat intake compare?
-



1 nut, seed or legume serving =  
any of the following

4-5 serving per week



2 T sunflower seeds



2 T peanut butter



1/2 c cooked peas



1/2 c cooked beans



2 T sesame seeds



1/3 c nuts

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## Discussion

- 1) How does your beans/legume intake compare?
-

1 sweet serving = any of the following

## Less than 5 serving per week

1 T jelly, jam or preserves



3/4 c lemonade or fruit punch



1 T sugar



1/2 c gelatin dessert



1 popsicle



3/4 c soda



1 oz jelly beans



1 T maple syrup



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## Discussion

- 1) How does your sweets intake compare?
-



# SALT

## Salt ≠ Sodium



Salt is made up of 2 minerals:

**40%  
Sodium**

**60%  
Chloride**

When you read food labels, look for **sodium**—it's the one that **causes the health problems**

We should be eating  
**less than  
1 teaspoon**  
of salt per day

Good news is, **if you follow DASH, you're already almost there**—that's because it has *far fewer* processed foods (which have loads of salt)!

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# Improve the Following Diet

Breakfast: 1 cup of orange juice; one slice of chocolate cake

Lunch: 3 slices of pepperoni pizza; 1 cup of coke

Dinner: 1 hot dog; 1 medium fries; 1 cup of ice cream



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# Featured Vegetable



Nutrition Facts per Serving	Nutrition Facts per Serving	Nutrition Facts per Serving
Calories 40 Calories from Fat 0	Calories 40 Calories from Fat 0	Calories 40 Calories from Fat 0
Total Fat 0g Saturated Fat 0g Unsaturated Fat 0g Trans Fat 0g Cholesterol 0mg Sodium 0mg Total Carbohydrate 10g Dietary Fiber 3g Sugars 4g Protein 1g	Total Fat 0g Saturated Fat 0g Unsaturated Fat 0g Trans Fat 0g Cholesterol 0mg Sodium 0mg Total Carbohydrate 10g Dietary Fiber 3g Sugars 4g Protein 1g	Total Fat 0g Saturated Fat 0g Unsaturated Fat 0g Trans Fat 0g Cholesterol 0mg Sodium 0mg Total Carbohydrate 9g Dietary Fiber 1g Sugars 4g Protein 1g
Vitamin A 20% Vitamin C 220% Calcium 2% Iron 4%	Vitamin A 170% Vitamin C 470% Calcium 2% Iron 4%	Vitamin A 8% Vitamin C 460% Calcium 2% Iron 4%

**Green Bell  
Pepper**

**Red Bell  
Pepper**

**Yellow Bell  
Pepper**



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**Discussion: Brainstorm  
healthy ways to cook and  
prepare bell pepper**

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# References

<https://www.drugwatch.com/actos/type-2-diabetes/>

<http://www.nhlbi.nih.gov/health/health-topics/topics/atherosclerosis>

<http://pinoydashdiet.com/get-started/know-the-basics/dash-food-groups/>

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