Hypertension

What is Hypertension?

- **Hypertension** is also called “high blood pressure”
  - It can be written as HBP or HTN

- **Blood Pressure** measures the force against the walls of your arteries as your heart pumps blood throughout your body.

  It is recorded as two numbers:
  systolic on top, diastolic on the bottom
  - Systolic: force as the heart beats
  - Diastolic: force as the heart relaxes between beats
  - For example, a blood pressure measurement of 120/80 mmHg (millimeters of mercury) is expressed verbally as "120 over 80."
  - One or both of these numbers can be too high.

What is Hypertension?

- http://youtu.be/pPxnlh_WTb8

- From 1999 to 2009, the number of deaths from high blood pressure increased by almost 44%
- The estimated direct and indirect costs of hypertension was $51 billion in 2009. It may be much higher now.

Stages of Hypertension

Blood Pressure Category	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Normal	less than **120**	and	less than **80**
Prehypertension	**120 – 139**	or	**80 – 89**
High Blood Pressure (Hypertension) **Stage 1**	**140 – 159**	or	**90 – 99**
High Blood Pressure (Hypertension) **Stage 2**	**160** or higher	or	**100** or higher
Hypertensive Crisis (Emergency care needed)	Higher than **180**	or	Higher than **110**

* Based on the American Heart Association's recommendations for healthy blood pressure

Stages of Hypertension

- Pre-hypertension puts you at greater risk of getting hypertension
- Blood pressure readings can be affected by exercise, stress, or even how you are sitting. You will not be diagnosed with high blood pressure based on one reading.
  - However, if your readings stay at 140/90 mmHg or above over time, your doctor may recommend a treatment program including lifestyle changes and possibly medication.

Risk Factors : Non-modifiable

- Age
- Race
- Family History
- Certain Chronic Conditions
- Pregnancy

Risk Factors: Modifiable

- Overweight or Obesity
- Not Being Physically Active
- Using Tobacco
- Too Much Sodium in Your Diet
- Not Enough Potassium in Your Diet
- Not Enough Vitamin D in Your Diet
- Drinking Too Much Alcohol
- Stress (or how you deal with stress)

Complications

- Hypertension = "the silent killer"
  - Even though damage is being done to your arteries, heart, and organs, you may not feel any symptoms
- Over time, the damage can lead to:
  - Chest pain
  - Heart attack, heart disease, or heart failure
  - Stroke
  - Damage to your kidneys
  - Vision loss
  - Memory loss
  - Peripheral artery disease

Complications

- Your risk is affected by age, race, gender, obesity, high cholesterol, diabetes, physical inactivity, and smoking.
- According to the American Heart Association:
  - 77% of Americans treated for a first stroke have blood pressure over 140/90
  - 69% of Americans who have their first heart attack have blood pressure over 140/90
  - 74% of Americans with congestive heart failure have blood pressure over 140/90

Who Struggles with Hypertension?

- Almost 78 million, or 1 in 3, Americans have hypertension
- Of these people:
  - ~82% know they have it
  - ~75% are under treatment
  - ~53% have it controlled
  - ~48% do not have it controlled
- Almost 30% of Americans have pre-hypertension

Who Struggles with Hypertension?

Race of Ethnic Group	Men (%)	Women (%)
African Americans	43.0	45.7
Mexican Americans	27.8	28.9
Whites	33.9	31.3
All	34.1	32.7

Hypertension is more severe and develops earlier in life for African Americans. They are also more likely to develop obesity and diabetes, putting them at greater risk for heart disease.

What do you notice about the differences in gender for each group?

Who Struggles with Hypertension?

Age	Men (%)	Women (%)
20-34	11.1	6.8
35-44	25.1	19.0
45-54	37.1	35.2
55-64	54.0	53.3
65-74	64.0	69.3
75 and older	66.7	78.5
All	34.1	32.7

Women are just as likely as men to develop hypertension. However, more men than women under 45 years have it while more women than men above 65 years old have it.

What can YOU do about it?

- Be aware!
- Have your blood pressure checked regularly
- Maintain a healthy weight
- Be active for 30 minutes most days of the week
- Eat lots of fresh fruits and low-fat dairy products
- Choose foods that are lower in salt and other forms of sodium. Read food labels!
- If you drink alcohol, have no more than one drink a day for women, two drinks a day for men.
- Remember to take your blood pressure medicine.

Sodium

- Sodium helps your body regulate fluids and blood pressure. Too much sodium in your system causes your body to retain water, which puts an extra burden on your heart and blood vessels.
  - Reducing the amount of sodium in your diet may help you lower or avoid high blood pressure.
- Your body doesn't need much sodium for daily functions and fluid maintenance—only 200 mg a day!
  - However, most Americans consume more salt than they need (over 3,000 mg). The American Heart Association recommends consuming less than 1500 mg of sodium a day.

Examples of High Sodium Foods

- **Processed foods:** About 75% of dietary sodium comes from processed foods, such as bread, prepared dinners like pasta, meat and egg dishes, pizza, cold cuts and bacon, cheese, soups, and fast foods.
- **Natural Sources:** Foods such as cheeses, seafood, olives and some legumes may have a higher-than-expected sodium content. For example, 1 cup (237 milliliters) of low-fat milk has about 100 mg of sodium
- **Added Salt:** Many recipes call for salt, and many people also salt their food at the table. Condiments also may contain sodium. One tablespoon (15 milliliters) of soy sauce, for example, has about 1,000 mg of sodium. Salt added at the table accounts for only 6% of dietary sodium.
- **Medications:** Many over-the-counter cold and flu preparations contain decongestants which can raise your blood pressure. Look at the active and inactive ingredients lists for words like "sodium" or "soda." Note the amount of sodium in the medication. A statement of sodium content must appear on labels of antacids containing 5 milligrams or more per dosage unit.

Alternatives to Sodium

For Meat, Poultry, and Fish:

- Beef: Bay leaf, marjoram, nutmeg, onion, pepper, sage, thyme
- Lamb: Curry powder, garlic, rosemary, mint
- Pork: Garlic, onion, sage, pepper, oregano
- Veal: Bay leaf, curry powder, ginger, marjoram, oregano
- Chicken: Ginger, marjoram, oregano, paprika, poultry seasoning, rosemary, sage, tarragon, thyme
- Fish: curry powder, dill, dry mustard, lemon juice, marjoram, paprika, pepper

For Vegetables:

- Carrots: Cinnamon, cloves, marjoram, nutmeg, rosemary, sage
- Corn: Cumin, curry powder, onion, paprika, parsley
- Green Beans: Dill, curry powder, lemon juice, marjoram, oregano, tarragon, thyme
- Greens: onion, pepper
- Peas: Ginger, marjoram, onion, parsley, sage
- Potatoes: Dill, garlic, onion, paprika, parsley, sage
- Summer Squash: Cloves, curry powder, marjoram, nutmeg, rosemary, sage
- Winter Squash: Cinnamon, ginger, nutmeg, onion
- Tomatoes: Basil, bay leaf, dill, marjoram, oregano, parsley, pepper

Potassium

- Potassium helps balance the amount of sodium in your cells. If you don't get enough potassium in your diet or retain enough potassium, you may accumulate too much sodium in your blood.

Good Sources of Potassium

- Sweet potatoes
- Potatoes
- Greens
- Spinach
- Mushrooms
- Lima beans
- Peas
- Bananas
- Tomatoes, tomato juice and tomato sauce (look for low-sodium versions)
- Oranges and orange juice
- Cantaloupe and honeydew melon
- Grapefruit and grapefruit juice
  - *Talk to your healthcare provider if you're taking a cholesterol-lowering drug
- Prunes and prune juice
- Apricots and apricot juice
- Raisins and dates
- Fat-free or low-fat (1 percent) milk
- Fat-free yogurt
- Halibut
- Tuna
- Molasses

Exercise

- Being physically active is one of the most important steps you can take to prevent or control high blood pressure.
- It also helps reduce your risk of heart disease.

Exercise

- It doesn't take a lot of effort to become physically active! Try doing one or more of these activities most days of the week:
  - Take a brisk walk (with a friend, your dog, or alone)
  - Climb stairs
  - Bicycle
  - Take a fitness or aerobics class
  - Play a sport
  - DANCE!
- Don’t overdo it, and make it fun!

Medications

- **Diuretics**: Sometimes called "water pills"; they work in the kidney and flush excess water and sodium from the body
- **Beta-Blockers:** Reduce nerve impulses to the heart and blood vessels. This makes the heart beat slower and with less force. Blood pressure drops and the heart works less hard.
- **ACE Inhibitors:** Angiotensin converting enzyme (ACE) inhibitors prevent the formation of a hormone called angiotensin II, which normally causes blood vessels to narrow. The ACE inhibitors cause the vessels to relax and blood pressure goes down.
- **Angiotensin Antagonists:** Angiotensin antagonists shield blood vessels from angiotensin II. As a result, the vessels become wider and blood pressure goes down.

Medications

- **Calcium Channel Blockers (CCBs):** Prevent calcium from entering the muscle cells of the heart and blood vessels. This causes the blood vessels to relax and blood pressure goes down.
- **Alpha-Blockers:** Reduce nerve impulses to blood vessels, allowing blood to pass more easily; blood pressure goes down
- **Alpha-Beta-Blockers:** Work the same way as alpha-blockers but also slow the heartbeat, as beta-blockers do. Less blood is pumped through the vessels and the blood pressure goes down.
- **Nervous System Inhibitors:** Relax blood vessels by controlling nerve impulses. Blood vessels to become wider, and blood pressure goes down
- **Vasodilators:** Directly open blood vessels by relaxing the muscle in the vessel walls, causing the blood pressure to go down.