

# Managing High Blood Pressure

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# Definition of Hypertension

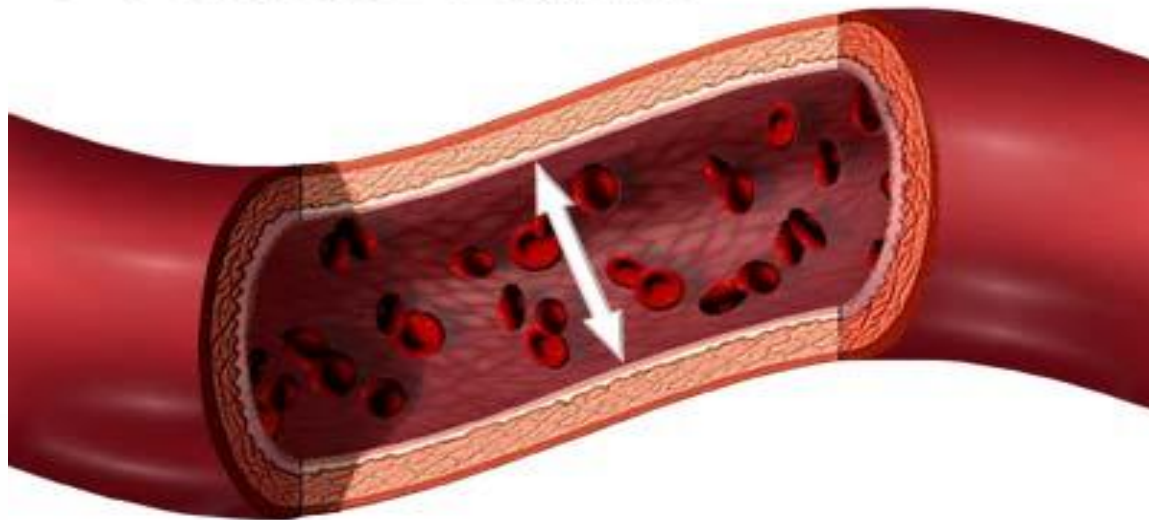
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- Hypertension is the medical term for high blood pressure.
- Hypertension occurs when the force of the blood against artery walls is high enough to cause health problems, such as heart disease.

# What is blood pressure, exactly?

- Blood pressure is the force that blood applies to the inner walls of arteries.

Blood pressure is the measurement of force applied to artery walls



# Blood pressure (BP)

- Is defined by two measurements:
  1. Systolic BP is measured when the heart contracts
  2. Diastolic BP is measured when the heart relaxes between contractions (between heart beats)
- BP is written as Systolic/Diastolic
- For example 120/80

# Hypertension (HTN): definition

- Normal BP is  $< 120/80$
- High BP is  $> 140/90$
- Prehypertension = 121-139/81-89
- Stage 1 HTN = 140-159/90-99
- Stage 2 HTN  $> 160/100$

# Cause

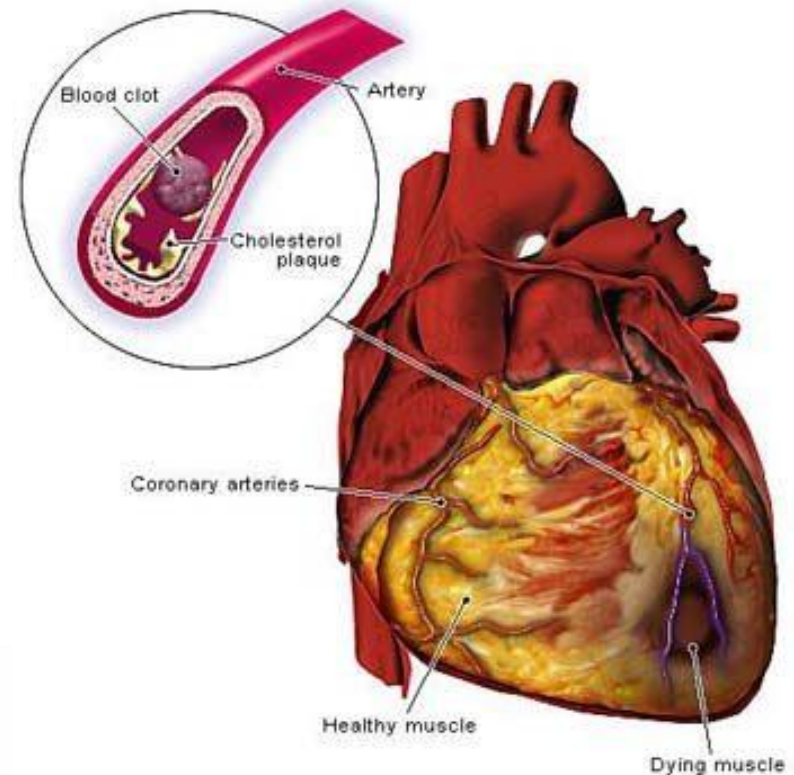
- For most adults there is no identifiable cause of high blood pressure
  - Called “essential hypertension” or “primary hypertension”.
  - Tends to develop gradually over many years.
- A few people have high blood pressure caused by an underlying condition.

# Symptoms

- Most people with high blood pressure have no symptoms.
- It is often discovered when your BP is taken during a routine doctors visit.
- Some people may experience a dull headache or dizzy spells.

# Complications

- Untreated high blood pressure contributes to
  - Heart disease



# Complications

- Untreated high blood pressure contributes to
  - Stroke
  - Kidney failure
  - Dementia

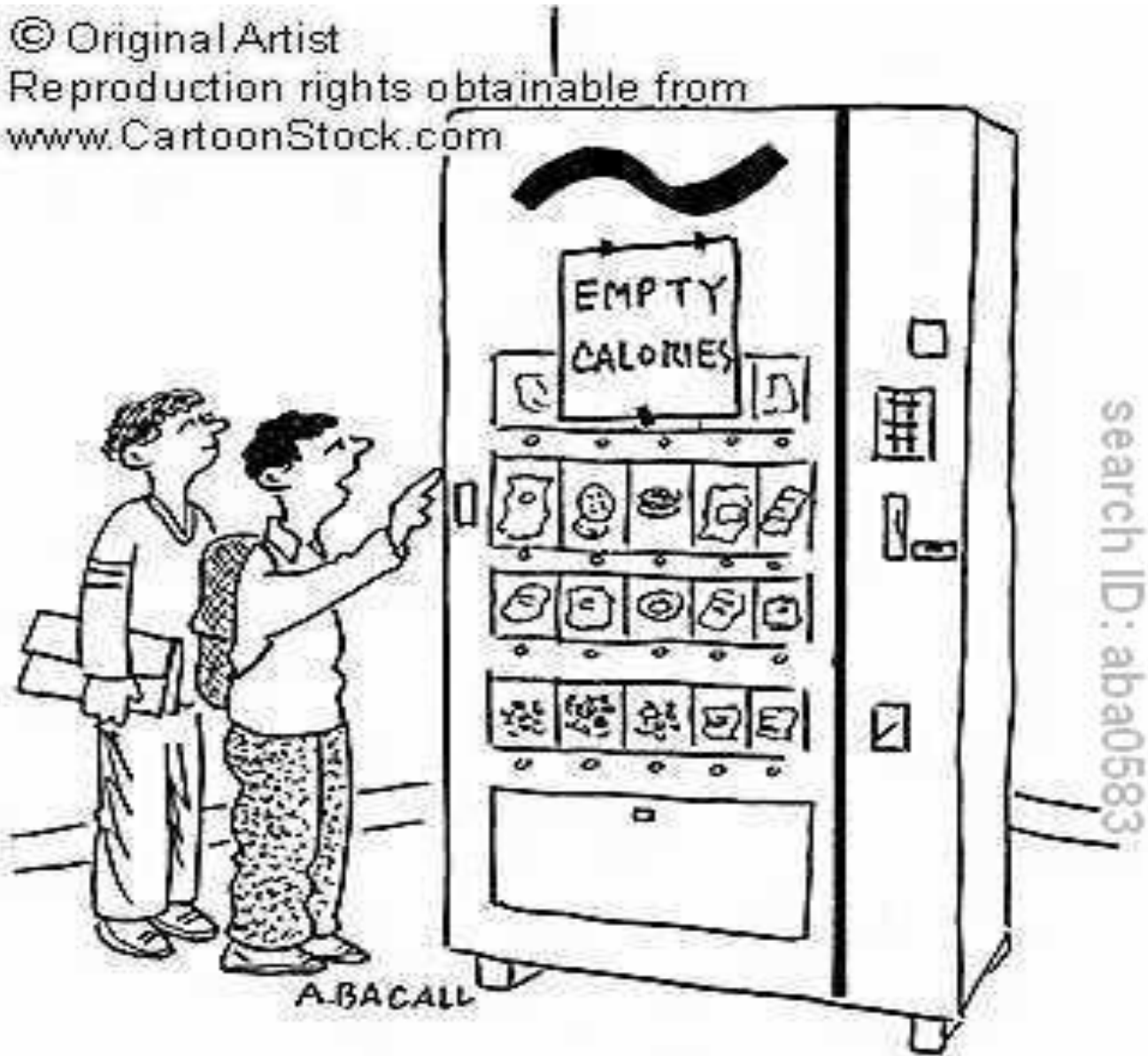
# Prevention and treatment

- You guessed it:
  - Healthy diet
  - Regular exercise
  - Lose weight
  - Stop smoking
  - Reduce stress
  - Avoid excessive alcohol intake

# Prevention and Treatment

- Diet
  - Reduce your salt intake
  - Eat more fruits, vegetables, and low-fat dairy
  - Eat more whole grains, nuts, fish, and poultry
  - Eat less red meat and sweets
- Don't drink your calories
  - Eliminate soda and fruit juice

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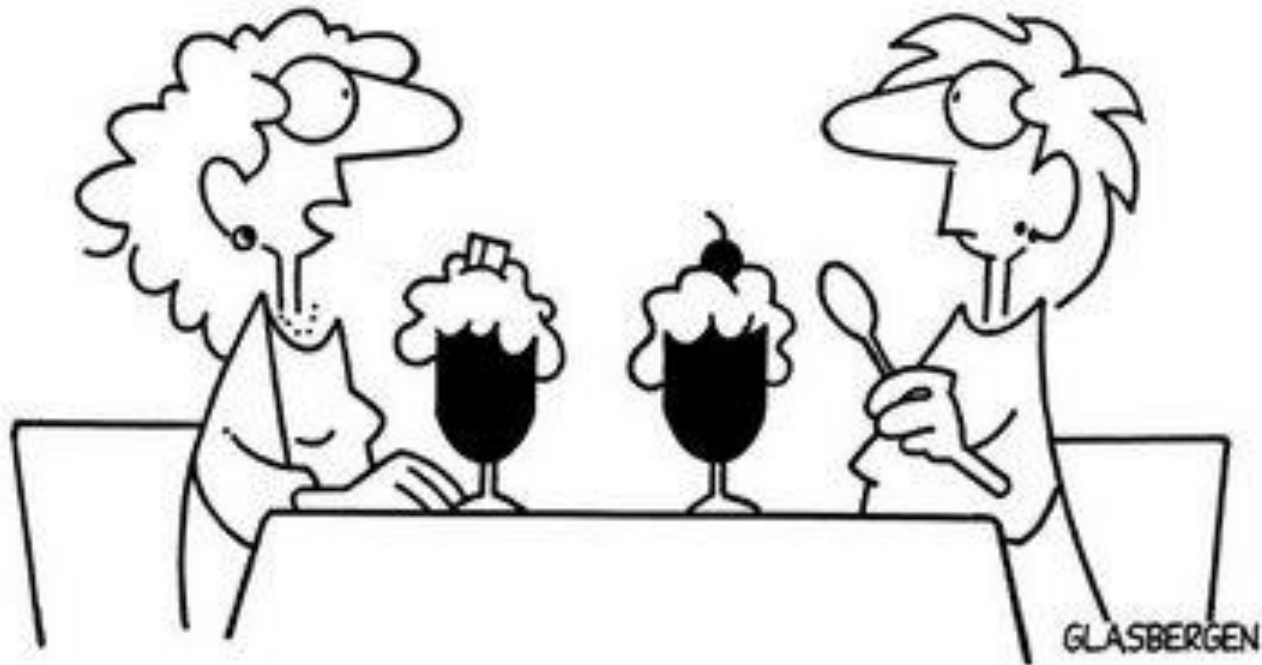
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"I saw the school nurse put that sign up."

# Diet

- Know your healthy fats
  - Fats that are liquid at room temperature
  - Olive and canola oil
  - Nuts
  - Fish
  - Avocados
  - Peanut butter
- Even good fats must be eaten in moderation

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**“If you put a crouton on your sundae  
instead of a cherry, it counts as a salad.”**

# Exercise

- Work up to at least 30 minutes of aerobic exercise 5 days a week
  - Brisk walking is a good place to start
- Weight-bearing exercise is also good and contributes to weight loss



**“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”**

# Medications

- Diuretics
  - Help lower blood pressure by causing the kidney to excrete more water and sodium
  - Hydrochlorothiazide (HCTZ) is often chosen as an initial agent to treat high blood pressure
  - Chlorthalidone, spironolactone, triamterene, furosemide

# Medications

- ACE inhibitors
  - Reduce production of angiotensin II, an enzyme that constricts (narrows) blood vessels
  - Less angiotensin II → blood vessels widen and blood pressure goes down
  - Lisinopril, enalapril, captopril etc.

# Medications

- Angiotensin II receptor blockers (ARBs)
  - Similar to ACE-inhibitors
  - Cause blood vessels to dilate which reduces blood pressure
  - Valsartan, Losartan, etc.

# Medications

- Calcium channel blockers
  - Reduce the amount of calcium that enters blood vessel cells
  - The muscle cells in blood vessels require calcium to contract
  - ↓ Calcium = blood vessels relax
  - Amlodipine, Nifedipine, Nicardipine, Diltiazem, Verapamil

# Medications

- Beta blockers
  - Act on the sympathetic nervous system to reduce heart rate and decrease the force of the heart pumping blood
  - Atenolol, Metoprolol, Labetalol, Propranolol

# Medications

- Alpha blockers
  - Relax the smooth muscle in blood vessel walls, allowing the blood vessels to widen
  - Doxazosin, prazosin, terazosin

# Other factors

- If you are diagnosed with high blood pressure, you should also be tested for
  - high cholesterol
  - Diabetes

# Most importantly...

- The internet is great, but if you have questions or concerns, ask your doctor!

MY HEART IS  
TWITTERING,  
MY STOMACH  
FEELS BLOGGISH,  
AND I MAKE A  
GOOGLING  
SOUND WHEN  
I BREATHE!

STAY OFF THE  
INTERNET AND  
COME BACK  
IN A WEEK.

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# Questions?

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