Lab Activity 26

Blood Pressure & Pulse
Pulse

Carotid Pulse

Radial Pulse

Brachial Pulse
Pulse

Dorsalis Pedis Pulse

Posterior Tibial Pulse
Blood Pressure Cuffs

- BP cuffs come in different sizes.
- Be sure to choose the one that is appropriate for the patient.
Measuring Blood Pressure

• Most cuffs are marked with an O or an arrow. This should be placed near the artery.
Measuring Blood Pressure

- Place the BP cuff snugly on the patient's arm.
- Check to make sure you have found the artery.
- Line the mark on the cuff up with the artery.
Measuring Blood Pressure

- **Stethoscope**: Note how the ear pieces slant slightly in one direction.
- Make sure the ear pieces on the stethoscope are point away from you when you put them on.
- Place stethoscope on the artery, tucked slightly under the cuff.
Measuring Blood Pressure

- The cuff should be placed at the level of the heart.
- The patient's arm (or leg) should be completely relaxed.
  - Resting on the table or in their lab is helpful.
Inflate the Cuff

• A Grasp the bulb so that your thumb can easily access the valve.

• Turn the valve to the right to tighten it and pump up the cuff, turn it to the left to loosen it and deflate the cuff.
Measuring Blood Pressure

- Pump up the cuff until the sphygmomanometer reads 180 to 200.
- Loosen the valve to let a little of the air out.
- Listen for the first heartbeat, that is the top number (systolic BP)
- Continue to listen until there are no more heartbeats. The last beat you hear is the bottom number (diastolic BP)
- Let the air all the way out and remove the cuff.
Video Demonstration for Measuring Blood Pressure

- http://www.uams.edu/csc/programs/orientation/bloodPressure/TakingBP1.mov
Normal Blood Pressure

• Reference:
  • August 2004, National Heart Lung and Blood Institute – Diseases and Conditions Index

• For adults 18 and older who:
  • Are not on medicine for high blood pressure
  • Are not having a short-term serious illness
  • Do not have other conditions such as diabetes and kidney disease

• Systolic BP: Less than 120
• Diastolic BP: Less than 80
Pre-Hypertension

• Systolic BP: between 120-139
• Diastolic BP: between 80-89

• Examples: 118/82, 128/89, or 130/86
• If your blood pressure is in the pre-hypertension range, it is more likely that you will end up with high blood pressure unless you take action to prevent it.

• Note: When systolic and diastolic blood pressures fall into different categories, the higher category should be used to classify blood pressure level.
Hypertension

• **Stage 1**
  - Systolic BP: between 140-159
  - Diastolic BP: between 90-99

• **Stage 2**
  - Systolic BP: 160 or higher
  - Diastolic BP: 100 or higher
Hypotension

• Hypotension is a subnormal arterial pressure.
  • There is not enough pressure to adequately perfuse the tissues.
  • There is usually a mean arterial pressure (MAP) below 60 mmHg.
    • MAP = diastolic + 1/3(systolic-diastolic)
      Example: BP = 120/70
      MAP = 70 + 1/3(120-70) = 86.6
• People who are chronically hypertensive may feel symptoms of hypotension if their mean arterial pressure drops by 40 mmHg, even if the absolute value is still over 60.
Orthostatic Hypotension

- Orthostatic hypotension exists if the systolic drops by 20mmHg, or if the diastolic drops by 10mmHg upon sitting or standing for 3 minutes.

- **Symptoms:** headache, dimming of vision, weakness, lightheadedness, that occur as go from lying to sitting or standing position.

- **Causes:** volume depletion, diabetes, medications such as anticholinergics, Parkinson's, etc.
Measuring Orthostatic BP

• Determine the blood pressure in the supine position.
• Sit the subject up, wait 3 minutes, and check the blood pressure again.
The End