Taking Your Pulse

Scientific IDEA/question
How many places on your body can you feel your pulse/heart beat?

Finding your pulse: Take your pulse at multiple sites. Relate the pulse to heartbeat

Materials needed for ONE experiment
a diagram of the body and a stethoscope may be helpful

Instructions: how to perform the experiment
1. Try taking your pulse at the following sites (see diagram of body)
2. Radial Pulse: This is probably what we're most familiar with when visiting the doctor's office. Take two fingers, preferably the 2nd and 3rd finger, and place them in the groove in the wrist that lies beneath the thumb. Move your fingers back and forth gently until you can feel a slight pulsation - this is the pulse of the radial artery which delivers blood to the hand. Don't press too hard, or else you'll just feel the blood flowing through your fingers! You can even use your thumb.
3. Carotid Pulse: The carotid arteries supply blood to the head and neck. You can feel the pulse of the common carotid artery by taking the same two fingers and running them alongside the outer edge of your trachea (windpipe). This pulse may be easier to find that of the radial artery. Since the carotid arteries supply a lot of the blood to the brain, it's important not to press on both of them at the same time!
4. Femoral pulse: The femoral artery carries blood to parts of the leg. Aside from the carotid artery, it is another common site to check for a pulse in an emergency situation. Think of an imaginary line running from your hip to the groin. The approximate superficial location of the femoral artery lays 2/3 of the way in from the hip. Admin note: the other following sites can also be tried:
5. Facial artery: Gently run a finger along the lower edge of the jaw bone. Just beyond the 'chin' on either side, you might be able to feel the pulse of the facial artery.
6. Brachial artery: Flex your biceps muscle. Press your thumb or a few fingers into the groove created between the biceps and other muscles, approximately 5cm from the armpit. You should be able to feel the pulse of the brachial artery. This is the major artery supplying blood to the arms.
7. Abdominal aorta: Very thin individuals may be able to note a slight pulsation beneath the stomach when lying down in a relaxed position. This pulsation is caused by the abdominal aorta, the continuation of the aorta from the heart. At the level of the umbilicus (belly button), the aorta splits into the left and right common iliac arteries which deliver blood to the legs.
8. Popliteal artery: This artery lies behind the knee. Bend your knee slightly and feel in the soft area behind the knee
**What are you observing?**

The pulse represents the beating of the heart, specifically the ejection of blood from the left ventricle to the general circulation of the body. The ventricles (right and left) have two phases: diastole or the time when the ventricles 'rest' so they can fill with blood, and systole, the time when the ventricles contract to send blood either to the lungs (from the right side of the heart), or to the rest of the body (from the left side of the heart). Blood from the left side of the heart first enters the aorta, the largest artery in the body. The aorta branches into smaller arteries which carry blood to all part of the body.

The pulse represents the variation in blood pressure from diastole to systole. During diastole blood pressure falls, but increases after systole as the heart pumps more blood into the arteries. You feel this difference when taking your pulse. Doctors use a device called a sphygmomanometer (blood pressure cuff) to measure the systolic and diastolic blood pressures. The average adult has a systolic blood pressure ~120-150 mm mercury, an average diastolic blood pressure ~ 80 mm mercury and an average pulse of 72 beats/minute.

If you have stethoscopes try listening to your heart while taking your pulse. Your heart produces two sounds, often called 'lub' and 'dub.' The second, ‘dub’ sound coincides with the ejection of blood from the ventricles In actuality; the sound is produced by the aortic and pulmonic valves closing behind the ejected blood. The aortic valve opens from the left ventricle into the aorta; the pulmonic valve from the right ventricle into the pulmonary artery.

SEE THE DIAGRAM ON THE NEXT PAGE.......................................................... :-)


to help you find your pulse, take a look at

Mr. Bill's Arteries

- brachial artery
- common carotids aortic arch
- radial artery
- abdominal aorta
- femoral artery
- popliteal artery