EXPERIMENT
PLAY-DOH PULSE

Introduction

As your heart beats, it pushes blood from the heart to your entire body through a system of arteries. As blood is pushed through the arteries, it produces a rhythmic throbbing. This rhythm is called a pulse. A pulse is located where an artery is compressed by a bone, for example, your wrist and your neck. Because a pulse throbs to the same beat as your heart, the pulse is a great way to measure the rate your heart beats without the need for special tools like a stethoscope. However, sometimes it can be difficult to locate your own pulse. We are going to make that job easier by creating a Play-Doh pulse meter.

Materials

1. Play-Doh or modeling clay
2. Toothpick
3. Minute timer or stopwatch

Directions

1. Roll a small amount of Play-Doh or modeling clay into a dime-sized ball. Slightly flatten the bottom by setting it on a hard surface.
2. Stick the toothpick half way into the top of the Play-Doh. You have created your pulse meter!
3. Rest your arm facing up on a level surface such as a table or counter. Place the pulse meter on the inside of your wrist, just below your thumb.

4. Observe the toothpick as it goes up and down with each pulse of your arteries. If you are having trouble seeing the toothpick move up and down, you may need to move your Play-Doh pulse meter around a bit until you get it on the correct spot. Once you see your toothpick moving up and down, you've found your pulse!
5. To determine the number of beats per minute, set a timer or stopwatch for 10 seconds. Count the number of times the toothpick moves up and down during those ten seconds. Multiply this number by 6 to get your beats per minute.

Deep Exploration

1. Physical activity can change the number of heart beats per minute. Try jumping rope or jogging in place for 15 seconds and then measuring your beats per minute using your Play-Doh pulse meter. Why do you think you had a higher count after moving versus standing still or sitting?
2. There are many other reasons why a pulse might change. Try standing versus lying down, while watching a scary movie versus a comedy, and in the heat versus in the cold. Why do you think your pulse changed in these different situations?

Materials

Step 1 & 2

Step 3