ACADÉMIE
DE NANCY-METZ
Liberté
Égalité
Fraternité

Activity: Heart rate

Your **heart rate** is the number of times your heart beats per minute. Your heart rate is commonly called your pulse. Your target heart rate is based on age and can help you check the intensity of your exercise.

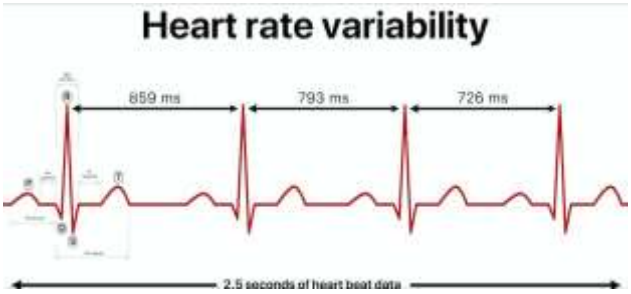
Objective: Measuring your pulse with the accelerometer of your smartphone.

The accelerometer can detect very small movements, and we're going to use it to measure your heartbeat.

In Fizziq app:

- Select absolute acceleration in the Measurement tab.
- Lie on your back and place your smartphone vertically over your heart, pressing lightly.
- Start recording data and stop breathing for ten seconds. Then stop recording and include it in your experiment notebook.
  Analyze the graph.
  Determine your heart rate in beats per minute.

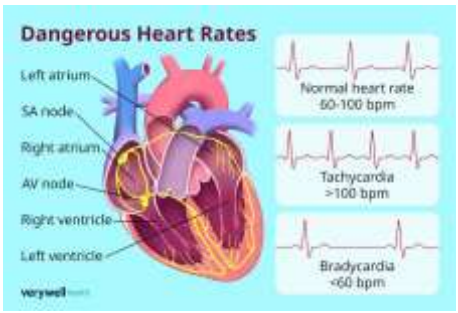
Doc 1 : Heart rate variability



- ***Take the measurement over several periods*** *using the cursor (clic on the image). Explain clearly how you have done. Why do we do the measures on many periods?*

- **Jump up and down a few times, then take another measurement**. Does your heart rate change? Repeat the measurement as best you can.

Doc 2 : Heart rates



A normal resting heart rate is between 60 and 100 beats per minute if you are sitting or lying and you are calm and feeling well.
If you have a resting heart rate lower than 60, you may have bradycardia. A heart rate lower than 60 doesn't always signal a medical problem. It could be the result of taking a drug such as a beta blocker or other medication. A lower heart rate is also common for athletes. That's because their heart muscle is in good condition and does not need to work as hard. A low amount of physical activity doesn't usually change the resting heart rate much. Heart rate may also be lower while sleeping.

If you have a resting heart rate of over 100, you may have tachycardia. A high heart rate isn't always a sign of a problem. It could be a sign or symptom of another condition that may be temporary.

- **Comment on your measurement.**

TO SUM UP : Present all the activity orally in 5 minutes

The experiment must be clearly described
The measurements must be clearly explained
The conclusion about the measure must be presented and justified.
Scientific vocabulary given in the documents must be correctly used