

Do drum beats affect heart beat?

Investigate how sensory perception of sound may affect heart activity. Modify the following suggestions for the research question and hypothesis, design an experiment and carry it out. If you like, you could investigate blood pressure instead of or in addition to pulse.

Research Question:

Does listening to sound recordings of drum beats which have faster or slower tempos affect the pulse of one particular person?

Hypothesis:

Listening to a faster drum beat increases the pulse of the listener compared to an initial basal heart rate which will be obtained when the subject sits still in a quiet place for 5 minutes. Listening to a slower drum beat will have less effect.

Variables:

Dependent variable: Pulse, as measured by a pulse oximeter (or blood pressure, as measured by a cuff blood pressure monitor.)

Independent variable: listening to recordings of drum beats of different numbers of taps per minute.

Controlled variables:

Movements of the body: The person will be instructed to sit in a chair and refrain from talking and all voluntary movements throughout the course of the measurements.

Visual stimuli: The person will be asked to remain with eyes closed so that different sights will not be seen at different times.

Auditory stimuli: The experiment will be conducted in a quiet room with earphones so that there will be minimal sounds other than the recording of drum beats.

Sound production: The same earphones will be used for playing back all recordings.

Pulse (or blood pressure monitor): The same device will be used for all the experiments in order to control for variations between different devices.

Procedure:

Design and write down your procedure, in detail.

Results:

Record your results in a Table.

Analysis and Conclusions:

Analyse your results. Make graphs. Summarise your findings. Discuss the limitations of your experiment.

Repeat, modify, and redo any parts of your investigation if needed.

