

Reflexes

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**Introduction :**

The speed of reactions is very important in everyday life, Reaction time is a measure of the quickness an organism responds to some sort of stimulus, people also have reflexes that are quite different from reactions, reflexes are involuntary, used to protect the body, and they are faster than reaction, reflexes are usually a negative feed back loop and act to help return the body to its normal functioning stability. The classic example of reflexes are the : Patellar and Pupil reflexes, in this report the reaction time and reflexes will be compared.

**Data analysis :**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gender | R.T. light | sound | neck | leg | t.p.d top hand | palm | cheek | pupil reflex | romberg test | patella |
| m | 15 | 13 | 10 | 13 | 2.3 | 1.5 | 2.4 | P | 16.05 | P |
| f | 16 | 16 | 9 | 10 | 1.8 | 2 | 1.8 | P | 23.79 | P |
| f | 15 | 16 | 7 | 13 | 2.4 | 1.6 | 2.4 | P | 4.45 | P |
| f | 17 | 14 | 10 | 12 | 2.5 | 1.4 | 2.6 | P | 15.29 | P |
| f | 19 | 14 | 8 | 11 | 2 | 2.5 | 4.5 | p | 10 | p |
| f | 19 | 17 | 1 | 7 | 2.5 | 2 | 2 | p | 50 | p |
| f | 19 | 14 | 8 | 24 | 3 | 1.5 | 3 | p | 18 | p |
| f | 22 | 17 | 8 | 12 | 2 | 2.2 | 3.5 | p | 11 | p |
| f | 14 | 11 | 12 | 18 | 4.5 | 1 | 2 | p | 13.8 | p |
| f | 23 | 14 | 7 | 17 | 3.5 | 1.2 | 2.5 | p | 6.4 | p |
| f | 11 | 10 | 4 | 14 | 1.5 | 1.2 | 1.5 | p | 17.71 | p |
| f | 15 | 18 | 8 | 14 | 2.5 | 2.5 | 1 | p | 15.98 | p |
| f | 17 | 19 | 9 | 16 | 3.2 | 1.3 | 2.2 | p | 8 | p |
| f | 24 | 17 | 14 | 16 | 3 | 2 | 2 | p | 14 | p |
| f | 18 | 16 | 11 | 20 | 2.5 | 1.5 | 2.2 | p | 6.22 | p |
| f | 24 | 30 | 23 | 17 | 3 | 1 | 2.5 | p | 7 | p |
| f | 23 | 20 | 18 | 20 | 2.2 | 2 | 4 | p | 10 | p |
| f | 19 | 15 | 8 | 17 | 3 | 1 | 2 | p | 7 | p |
| f | 20 | 15 | 15 | 21 | 2.5 | 1.5 | 5 | p | 8 | p |
| f | 27 | 25 | 14 | 15 | 3 | 2.5 | 3 | p | 8 | p |
| m | 18 | 9 | 7 | 3 | 2 | 1.5 | 2 | p | 8.8 | p |
| Average | 19 | 16 | 10 | 15 | 3 | 2 | 3 |  | 13 |  |

**Results :**

In this experiment the reflexes of 21 subjects has been measured (Light , Sound will be compered with each other ) (Two point discrimination top hand , Palm and on cheek ) the final comparison will be between the reflex from (Leg and neck) \*note that the results are the average of the 21 subjects

Figure 1 : This graph shows that the response to light took more time than the response to sound

Figure 2 : this graph shows that response from a stimulus on the leg took more than the response from a stimulus on the neck

Figure 3 : This graph shows that the two point discrimination is grater in the top hand then on cheek then on the palm

**Discussion :**

In our experiment the 21 subjects reacted to light in about 18.81 HS (0.1881 S) and to sound in about 15 HS (0.15 S) according to A Literature Review on Reaction Time by Robert J. Kosinski, Clemson University (Unknown year) states that : reaction to sound is faster that the reaction to light (Sound ~ 0.14 – 0.16 S) (Light ~ 0.18 – 0.2 S ) which matches with our results.

In the other part of the experiment the 21 subjects reacted to a stimulus on the leg and on the neck, from our results the reaction time from a stimulus on the neck (0.1S ) took less than the reaction time on the leg (0.15 S) according to the Human Biology book ( nervous system section 5.1) says that the neurons that works in a circuit and send and receive from and to the brain and spinal cord will take less time to send that signal to a place with a short nerve (closer to the brain) such as the neck, meaning that the reaction time to the leg would take longer, which matches our results

In the last part of the experiment the 21 subjects had their two point discrimination measured on the palm which was (1.66 CM ), top of the hand (2.61 CM) and the cheek (2.58 CM ) meaning that the palm is more sensitive than the top of the hand than the cheek, according to an article LINDA J. KLEIN, in [Fundamentals of Hand Therapy](https://www.sciencedirect.com/book/9780323033862), 2007 states : that the normal two discrimination points for the palm shorter than the cheek and top of the hand, which matches with our results

**References :**

<https://backyardbrains.com/experiments/reactiontime>

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