

Effects of pressors and position on blood pressure and heart rate

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**Introduction**

Many studies presume that blood pressure and heart rate are affected by pressors ( heat, cold ) and position when measuring, that these vitals will increase with the effects of pressors, some other studies states that these parameters are not affected by pressers and position, in this experiment the blood pressure and heart rate for 20 subjects were measured from different site and under the influence of different pressors. In this report we will see the relationship between them and compare our results with existing studies.

**Data analysis:**

Figure 1 : describes the effect of cold pressor on the mean arterial pressure ( MAP ) and it is clear that cold pressor causes significantly increase in blood pressure

P value = 0.002295

Figure 2 : describes the effect of hot pressor on the mean arterial pressure (MAP) and it is clear that hot pressor (50°c) does not significantly change the mean arterial pressure

P value = 0.237

Figure 3 : describes the change on the mean arterial pressure due to the change of position. It is clear that there is no significant difference between these two sites ( Left and Right arms)

P value = 0.232727

 **Discussion**

A study by Ilkka Korhonen was published on the International Journal of Circumpolar Health (2006) states that all types of cold exposure cause a raise in systolic and diastolic blood pressure ( MAP) due to the increase of the sympathetic nervous activity which cause vasoconstriction that will lead to the increase of the mean arterial pressure, and that matches with our results. Another study by Jill seldai Schulman published on Healthline (2018) states that when thermoreceptors pick up a higher amount of warmth in the environment vasodilation will occur which will cause a higher blood flow towards the skin in an effort to dissipate any excess warmth you are feeling which will cause the blood pressure to decrease, and that does not match with our results due to lack of data. An article published on Harvard health blog By Patrick J.Skerrett (2012), States that the pressure in left arm and right arm shouldn’t be significantly different, and this difference only occurs when there is a problem in the body ( Heart disease, blockage, strokes, and other cardiovascular conditions ) and that matches our results

**Conclusion**

All in all, the three relationships shown in the report had a different result that even matched or didn’t match with other studies , this could be due to lack of data, and other measuring issues. However, with this little data we managed to build the three relationship ( with cold pressors and hot pressors the mean arterial pressure will increase ).