

**Human Anatomy & Physiology2 -NURS142**

**Report 5**

**The effect of hyperactivity on vital signs**

**-HR, BP, T & RR-**

**Group C:**

Yafa Abu Layya -1201212

Anfal Abu Zaida -1202663

Sabreen Maali -1200805

Ayat Abuzahra -1200538

Fatima Sumreen -1201624

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**Objectives:**

**1-** To measure vital signs -Including: Heart Rate, Blood Pressure, Temperature and Respiratory Rate- at rest and then after activity at different times.

**2-** To note the difference between rest and activity.

**3-** To identify the factors that affect the readings of vital signs.

**Introduction:**

Vital signs are a set of physiological parameters that show the general condition of the body, and are the most important indicators of how well the basic functions of the body are.

These vital signs include the **pulse (Heart rate)** that can be measured with a Dinamap pulse oximeter, the normal in adults at rest is 60 to 100 bpm, below this range indicates bradycardia and above this is tachycardia. **Blood pressure** can be measured by Dinamap as well, its normal range is 100-120 / 60-80 mmHg, and high blood pressure is considered below this pressure and above. Body **temperature** is measured with a thermometer placed in the axillary region, and the normal range is from 36.5 to 37.2°C, higher than this is considered hyperthermia, and less than this decreases in temperature. As for the **respiratory rate**, it is measured when inhaling and exhaling by looking at the movement of the shoulders and chest - that is, manually - and the normal rate for it is from 12 to 20 bpm, higher than this is tachypnea and less than it is bradypnea.

When a person performs daily exercises, and multiple activities, he is making a great effort that leads to energy consumption, so his vital signs will change. In this report we will explain the changes that occur in vital signs as a result of hyperactivity and compare them with resting state.

**Results:**

Table1: Heart rate

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Normal** | **MAX** | **3 minutes** | **5 minutes** | **10 minutes** | **15 minutes** | **20 minutes** | **30 minutes** |
| **Group A** | 82 | 109 | 103 | 101 | 98 | 91 | 83 | 81 |
| **B** | 80 | 157 | 120 | 97 | 96 | 90 | 80 | 82 |
| **C** | 104 | 168 | 124 | 115 | 101 | 95 | 90 | 87 |
| **D** | 93 | 171 | 150 | 140 | 125 | 120 | 110 | 91 |
| **Mean** | 89.75 | 151.25 | 124.25 | 113.25 | 105 | 99 | 90.75 | 85.25 |
| **SD** |  |  |  |  |  |  |  |  |
| **SEM** |  |  |  |  |  |  |  |  |

**The results: -**

**At rest:** 89.75 +/-

**MAX:** 151.25 +/-

Table2: Blood pressure **-Systolic-**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Normal** | **MAX** | **3 minutes** | **5 minutes** | **10 minutes** | **15 minutes** | **20 minutes** | **30 minutes** |
| **Group A** | 105 | 129 | 115 | 112 | 107 | 102 | 100 | 100 |
| **B** | 112 | 158 | 144 | 136 | 130 | 124 | 127 | 103 |
| **C** | 120 | 164 | 154 | 144 | 135 | 130 | 123 | 121 |
| **D** | 103 | 123 | 123 | 120 | 117 | 115 | 112 | 110 |
| **Mean** | 110 | 143.5 | 134 | 128 | 122.25 | 117.75 | 115.5 | 108.5 |
| **SD** |  |  |  |  |  |  |  |  |
| **SEM** |  |  |  |  |  |  |  |  |

**The results: -**

**At rest:** 110 +/-

**MAX:** 143.5 +/-

Table3: Blood pressure **-Diastolic-**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Normal** | **MAX** | **3 minutes** | **5 minutes** | **10 minutes** | **15 minutes** | **20 minutes** | **30 minutes** |
| **Group A** | 72 | 84 | 80 | 79 | 75 | 70 | 69 | 68 |
| **B** | 71 | 97 | 92 | 80 | 80 | 71 | 75 | 74 |
| **C** | 63 | 94 | 68 | 65 | 60 | 59 | 62 | 60 |
| **D** | 61 | 63 | 63 | 60 | 61 | 60 | 59 | 61 |
| **Mean** | 66.75 | 84.5 | 69 | 71 | 69 | 65 | 66.25 | 65.75 |
| **SD** |  |  |  |  |  |  |  |  |
| **SEM** |  |  |  |  |  |  |  |  |

**The results: -**

**At rest:** 66.75 +/-

**MAX:** 84.5 +/-

Table4: Temperature

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Normal** | **MAX** | **3 minutes** | **5 minutes** | **10 minutes** | **15 minutes** | **20 minutes** | **30 minutes** |
| **Group A** | 36.7 | 37.7 | 37.5 | 37.3 | 37.1 | 36.8 | 36.5 | 36.3 |
| **B** | 36 | 36.5 | 36.5 | 36.5 | 36.5 | 36.1 | 36 | 36.1 |
| **C** | 36.2 | 37.5 | 37 | 36.8 | 36.7 | 36.5 | 36.5 | 36.5 |
| **D** | 36.5 | 37.1 | 37 | 36.9 | 36.7 | 36.5 | 36.5 | 36.5 |
| **Mean** | 36.35 | 37.2 | 37 | 36.875 | 36.75 | 36.475 | 36.375 | 36.35 |
| **SD** |  |  |  |  |  |  |  |  |
| **SEM** |  |  |  |  |  |  |  |  |

**The result: -**

**At rest:** 36.35 +/-

**Normal:** 37.2 +/-

Table5: Respiratory rate

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Normal** | **MAX** | **3 minutes** | **5 minutes** | **10 minutes** | **15 minutes** | **20 minutes** | **30 minutes** |
| **Group A** | 18 | 34 | 30 | 28 | 20 | 18 | 18 | 18 |
| **B** | 16 | 36 | 32 | 32 | 28 | 25 | 20 | 17 |
| **C** | 19 | 24 | 23 | 21 | 19 | 17 | 16 | 16 |
| **D** | 18 | 23 | 21 | 19 | 18 | 17 | 18 | 18 |
| **Mean** | 17.75 | 29.25 | 26.5 | 25 | 21.25 | 19.25 | 18 | 17.25 |
| **SD** |  |  |  |  |  |  |  |  |
| **SEM** |  |  |  |  |  |  |  |  |

**The results: -**

**At rest:** 17.75 +/-

**MAX:** 29.25 +/-

**Discussion:**

In this experiment, we calculated vital signs, including pulse, blood pressure, temperature, as well as respiratory rate, in the resting state, then in the hyperactive state, after several minutes of activity, and until returning to the resting state again.

First, in the case of rest, we calculated these vital signs that were mentioned in the natural position of the person in a sitting position and before starting any activity, so this experiment was carried out on our colleague Ayat, where we calculated her vital signs through the dinamap. We began to count the heartbeat using the radial artery to calculate the pulse rate by placing the tip of the index and middle finger and feeling the pulse near the radial bone above the radial artery. And then measure your blood pressure using dinamap. Then we took the temperature through the thermometer by placing it in the axillary region and waiting from 7 to 10 minutes until the result appears, and the last thing we measure is the respiratory rate where we set the timer for a full minute - and we should not tell the person that we want to measure his breathing, because it is possible that Control it and change it. As shown in the figures, the results are all natural.

Secondly, with regard to hyperactivity and in many periods, the first period was determined to be immediately after the activity that was running on the treadmill and we called it -the **maximum** hyperactivity-, and the other periods were divided into 6 periods, the first after 3 minutes of exercise, and the second After 5 minutes, then 10 minutes, then 15 minutes, then 20 minutes, and finally 30 minutes, we measured the vital signs we mentioned before during all these periods, and then we calculated and then we calculated the **mean standard error** (SEM), **mean value**, **standard deviation** (SD) for the HR, BP, T & RR, and also we have calculated the percentage of maximum hyper activity for each of these measurements as shown in the tables

**Conclusion:**

In conclusion, Physiological parameters included in the experiment are vital signs which are under body self-control mechanism that aim to maintain body homeostasis and make the internal environment suitable for survival when changes affect body state.

And we found that when a person makes a lot of effort, the body will get tired and his vital signs will change and he will need more oxygen, and therefore the person will breathe faster and this requires more heartbeat, so it will become faster and also the blood pressure will rise in this person as well His temperature will rise and become higher than normal.