Blood pressure

Effect of body position and physical exercise

Data analysis and evaluation

Experiment was accomplished by:

..............................................................

..............................................................

..............................................................

..............................................................

..............................................................

Teacher:

..............................................................

Date and time:

..............................................................

Subject's

Name: ............................................. Height: ...............................

Age: ............................................. Weight: ...............................

sex: male / female
Aims of the practical lesson (brief definition in a few sentences)

Introduction (can be continued on a separate sheet if needed)
1. Factors and physiological changes influencing human blood pressure
   (summary of the most important facts in regard to the analysis of the practical data)
2. Methods and materials (schematic enumeration)
3. Technical details of the practical exercises (preparation of the subject, explanation of the exercises)
A. Data and calculation

Measure the systolic and diastolic blood pressure and pulse (BPM) and give them accordingly in the table! Calculate the arterial mean pressure!

<table>
<thead>
<tr>
<th></th>
<th>systole [Hgmm]</th>
<th>diastole [Hgmm]</th>
<th>pulse (beat/min)</th>
<th>Arterial mean pressure [Hgmm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>measured on the left arm:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lying down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standing up</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>after exercise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>measured on the right arm:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Summary and discussion of data

1. Effects of body position

a) How did blood pressure and pulse rate change when the subject changed his/her body position?

b) Give appropriate physiological explanations accounted for the above effects!
c) Sudden change of the body position from lying to standing often causes dizziness or –mainly in the elderly - fainting. How can you explain this phenomenon?

2. Comparison of blood pressure and pulse rate values between the left vs. right arm

a) Did blood pressure values differ in case measurement was carried out in the left or in the right arm? Why? Give a physiological explanation the observed findings!

b) Did pulse rate values differ in case of left or right arm measurements? Why? Explain the observed findings!
3. Effects of physical exercise

a) How did muscle exercise influence blood pressure and pulse rate? Systolic or diastolic blood pressure values were changed to higher extent upon the exercise?

b) According to the observed changes, was the subject well-trained for physical exercise? Explain your answer!

C. Definitions

systole: ........................................................................................................
systolic pressure: .........................................................................................
diastole: ........................................................................................................
diastolic pressure: .........................................................................................
arterial mean pressure: ..............................................................................