**SPIROMETRY**

**I.** Describe static volumes and capacities.

V, [l]

I. tidal volume V. vital capacity

II. inspiratory reserve volume VI. inspiratory capacity

III. expiratory reserve volume VII. expiratory capacity

IV. residual volume VIII. total lung capacity

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Resting breathing*** |  | **unit** |  | ***Hyperventilation*** |  | **unit** |
| Frequency |  | (breaths/min) | Frequency |  | (breaths /min) |
| tidal volume  |  | Litre (l) | tidal volume  |  | Litre (l) |
| Minute Ventilation |  | l/min | Maximal Minute Ventilation (MMV) |  | l/min |

Apneic pause in inspiration: …………………. Apneic pause in expiration:…………………….

**II. Dynamic lung volumes**

V, [l] FEV1

 FVC

 $\frac{FEV1}{FVC}$

 Time [s]

**Conclusion**

**ELEKTRIC MODEL OF AORTAL FUNCTION**

**I. Schematically redraw modeled records and describe the changes**

***Changes in stroke volume***

BP,

mmHg

|  |  |  |
| --- | --- | --- |
|  | SV=50ml | SV=90m |
| SBP |  |  |
| DBP |  |  |
| PP |  |  |
| MABP |  |  |

PP=pulse pressure, MABP=mean arterial blood pressure

Time, s

 **Change in peripheral resistance**

BP,

mmHg

|  |  |  |
| --- | --- | --- |
|  | R = 0,5–0,8 mmHg.s/ml | R = 1,2–1,5 mmHg.s/ml |
| SBP |  |  |
| DBP |  |  |
| PP |  |  |
| MABP |  |  |

Time, s

***Change in compliance***

BP,

mmHg

|  |  |  |
| --- | --- | --- |
|  | C = 0,5 ml/mmHg | C = 2,0 ml/mmHg |
| SBP |  |  |
| DBP |  |  |
| PP |  |  |
| MABP |  |  |

Time, s

***Cardiac arrest***

BP,

mmHg

|  |  |
| --- | --- |
|  | SV=0ml |
| SBP |  |
| DBP |  |
| PP |  |
| MABP |  |

Time, s

**II.Interest tasks***:*

Model and describe the changes in blood pressure during the stay in the sauna followed by a cool down (the heat reduces peripheral resistance, the cold increases peripheral resistance).

BP,

mmHg

Time, s

Model and describe the changes in blood pressure during physical activity (gradual increase of systolic output and heart rate, and then reduction of peripheral resistance).

BP,

mmHg

Time, s

Modeland describe essential hypertension (increased SV and TF by + 20%) and fully developed hypertension (return of TF and SV to the original values and increased resistance by 40%).

BP,

mmHg

Time, s

 **Conclusion**

**BLOOD FLOW IN VEINS**

Draw a diagram of veins and valves. Draw the course of the veins on the volar side of the forearm and mark the location of the flaps of your experiment.

 **Conclusion**