

Important differences in the results of auscultatory and oscillometry blood pressure measurement in active and sedentary population led us to the idea of the influence of tissue, which is the brachial artery compressed

across. On an artificial model we investigated possible influence of morphological structure of an arm on the accuracy of blood pressure measurement performed with indirect techniques. Results of the measurements testified,

that the thicker stripe of the insulating material between the cuff and the tubing is, the higher pressure is needed to stop the liquid dripping. In order to be able to perform this experiment, we made an artificial model of an arm, consisted of glass paper-weight, infusion set and insulating material. Measurements were performed by an aneroid tonometer. We performed the studies on two groups of subjects - subjects in the first group were randomly chosen sportsmen, that took part on the regular port check-up. The health state of the persons was not allowed to influence the results of blood pressure measurements. In the first group, there were 48 subjects.

The second group was composed of 10 subjects with big arm muscles and of 10 subjects with small arm muscles. All of the subjects in the second group were sportsmen, whose health state was not affecting the results of the blood pressure measurements. In the first group, we investigated the influence of the arm volume on the results of auscultatory and oscillometric blood pressure measurements. In the second group, we investigated the influence of the FFM (fat free mass) value of an arm on the results of the auscultatory and oscillometric blood pressure measurements. We managed to approve, that the results of systolic blood pressure measurements depend on the volume of an arm and on the FFM value. We didn't manage to approve the dependence of diastolic blood pressure measurements on the volume of an arm and on the FFM value.