

Abstract of bachelor's graduation work

**«Alteration of blood microrheologic properties in cardiovascular diseases:  
study by optical techniques»**

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Assessment of blood rheologic properties and its components is an important task of science and clinical practice. The main properties that determine blood flow are the mechanical and aggregation properties of red blood cells, which can change in pathological conditions.

In this work several optical methods were used to study the microrheologic properties of red blood cells in healthy donors and in people suffering from cardiovascular diseases such as arterial hypertension (AH) and coronary heart disease (CHD). Numerous experiments were carried out to measure in vitro parameters of red blood cell aggregation in healthy donors and patients with AH and CHD by the methods of laser aggregometry and laser tweezers. Statistically significant differences were observed between the control group and the groups with AH and CHD. The interrelation of the parameters of red blood cell aggregation, measured in vitro, with the parameters of blood microcirculation, measured in vivo, and the statistical significance of all the results were estimated.