# APPLICATION OF CHOSEN RHEOLOGICAL MODELS TO THE ANALYSIS OF WHOLE BLOOD FLOW CURVES

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**Hemorheology describes the flow and deformation of blood. Hemorheological studies involve measurements of whole blood viscosity, plasma viscosity, hematocrit and determination of erythrocyte deformability and aggregability. Blood is a systemic fluid of non-newtonian character and of instinct viscoeleastic and tixotropic features. Blood viscosity is one of the more important factors determining the blood flow. Blood flow in the cardiovascular system depends both on physico-chemical properties of blood and physical properties of cardiovascular system. It is predominantly determined by the whole blood viscosity. The latter, in turns, depends on the shear rate, hematocrit, erythrocyte susceptibility to aggregation, deformation and orientation, as well as on the viscosity of blood plasma. In this paper rheological models of blood flow were used in the mathematical analysis of the measured blood and plasma viscosity. Blood and plasma viscosity were measured by means of the rotary-oscillating viscometer Contravens LS40. Blood samples taken from patients after acute cerebral stroke. The experimental data were analyzed by means of three mathematical models proposed by Quemada, Ree & Eyring and Pal, respectively. The numerical analysis of experimental data was carried out by means of non-linear regression. The methods of flow curve analysis used in the current report allowed for a better estimation of red cell aggregability and deformability.**