

A MATHEMATICAL MODEL FOR BLOOD FLOW AND CROSS SECTIONAL AREA OF AN ARTERY

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Abstract

The purpose of this work is to study the effect of blood flow and cross sectional area in artery. The cross sectional area plays an important part in order for the blood to flow smoothly through the blood vessels. A small change in the value for the cross sectional area may affect the amount of blood flow rate through the arteries which also may affect the blood pressure. This paper deals with the study of blood flow which was derived from Navier-Stokes equations. A system of non linear partial differential equations for blood flow and cross sectional area of the artery was obtained. The governing equations are solved numerically by using finite difference method.

Key Words : *Newtonian fluid, Finite difference technique, Arterial blood flow.*

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