

Study the Flow of a Newtonian Fluid in a Cylinder with a Peripheral Layer Using Numerical Methods

Ram Naresh Singh B. S. Sisodiya

Department of Mathematics, Sardar Patel Mahavidyalaya, Chandrapur, India

*Corresponding author: drrbs79@gmail.com

ABSTRACT

Peristaltic flows are beneficial for resolving problems with physiological flows. In order to represent a variety of fluid motions involving peristaltic, a number of problems involving distinct fluid behavior assumptions and geometrical configurations have been solved. This work considers the passage of a Newtonian fluid through a cylindrical tube in the presence of a peripheral layer of a Newtonian fluid with a different viscosity. It is determined what the relationship between flow rate and pressure difference is. In this paper, the trapping and reflux limits, as well as the pumping efficiency, are determined. The problem is analyzed numerically, and the results for peripheral layer viscosity, pressure difference, and pumping efficiency are obtained.

Keywords: Blood Flow, Artery, Arteriosclerosis

