

# Effects of Non-Integral Number of Peristaltic Waves Transporting Couple Stress Fluids in Finite Length Channels

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Peristaltic flow of couple stress fluids is studied here in a finite length channel. The analysis is carried out under the assumption of long wavelength and low Reynolds number approximations. When the couple stress parameter increases, it is found that pressure diminishes, maximum averaged flow rate increases, mechanical efficiency decreases, area experiencing reflux reduces, and trapped bolus-size increases. A comparative study of integral and non-integral number of waves propagating along the channel is also done.

*Key words:* Peristaltic Transport; Couple Stress Fluid; Mechanical Efficiency; Reflux Limit; Trapping Limit.