

CHAPTER OVERVIEW

12: Fluid Dynamics and Its Biological and Medical Applications

We have dealt with many situations in which fluids are static, but by their very definition, fluids flow. Examples come easily—a column of smoke rises from a camp fire, water streams from a fire hose, blood courses through your veins. Why does rising smoke curl and twist? How does a nozzle increase the speed of water emerging from a hose? How does the body regulate blood flow? The physics of fluids in motion—fluid dynamics—allows us to answer these and many other questions.

Topic hierarchy

- [12.0: Prelude to Fluid Dynamics and Its Biological and Medical Applications](#)
- [12.1: Flow Rate and Its Relation to Velocity](#)
- [12.2: Bernoulli's Equation](#)
- [12.3: The Most General Applications of Bernoulli's Equation](#)
- [12.4: Viscosity and Laminar Flow; Poiseuille's Law](#)
- [12.5: The Onset of Turbulence](#)
- [12.6: Motion of an Object in a Viscous Fluid](#)
- [12.7: Molecular Transport Phenomena- Diffusion, Osmosis, and Related Processes](#)
- [12.E: Fluid Dynamics and Its Biological and Medical Applications \(Exercises\)](#)

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