where is the kinematic viscosity and is the density of the fluid. The position along the radius of the blood vessel is measured by . The pressure gradient oscillates in time with frequency, , to simulate the pumping action of the heart:

The initial and boundary conditions for this problem are as follows:  
Initial condition:

Boundary conditions: is finite

The following constants may be used for the solution of this problem. These are characteristic of the human left main artery, human blood, and heart pumping action: