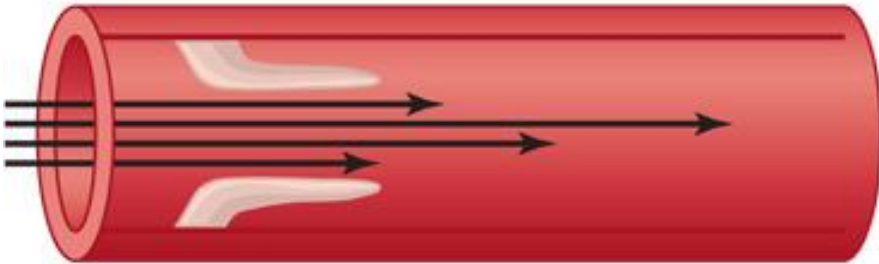


# Heart Murmurs



(a)

Normal open valve



Laminar flow = quiet

Normal closed valve



No flow = quiet

(b)

Stenotic valve



Narrowed valve  
Turbulent flow = murmur

Insufficient valve

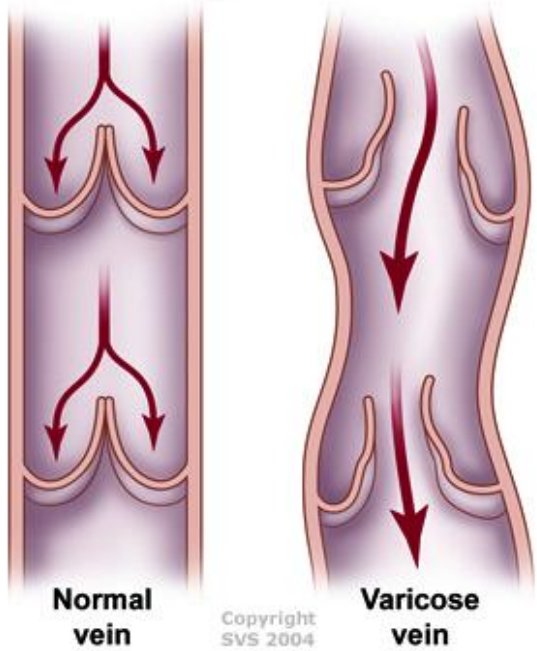


Leaky valve  
Turbulent backflow = murmur

# Laminar flow of fluids



# Varicose Veins



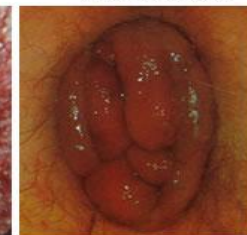
Grade I hemorrhoids



Grade II hemorrhoids



Prolapsed grade III hemorrhoids



Prolapsed grade IV hemorrhoids

# Heart murmurs

1. Exists in defective hearts when blood flow becomes turbulent (chaotic, randomness)
2. Normal blood flow through valves and vessels is laminar (smooth)
3. Turbulent flow can be caused by stenotic valve or insufficient (leaky) valve
4. It can also be caused by blood flowing between the two atria or two ventricles through a small hole in the wall separating them (septal defect)
5. A murmur heard throughout systole suggests a stenotic pulmonary or aortic valve, an insufficient AV valve or a hole in the interventricular septum
6. A murmur heard during diastole suggests a stenotic AV valve or an insufficient pulmonary or aortic valve