KEY CONCEPT

The circulatory system transports materials throughout the body.
Arteries, veins, and capillaries transport blood to all parts of the body.

- Arteries carry blood away from the heart.
  - blood under great pressure
  - thicker, more muscular walls

Diagram:
- Artery
  - endothelium
  - smooth muscle
  - connective tissue
  - arteriole
  - valve
- Capillaries
- Vein
  - venule
Veins carry blood back to the heart.
- blood under less pressure
- thinner walls, larger diameter
- valves prevent backflow
Capillaries move blood between veins, arteries, and cells.
• Blood pressure is a measure of the force of blood pushing against artery walls.
  – systolic pressure: left ventricle contracts
  – diastolic pressure: left ventricle relaxes

**Systolic pressure** occurs when the left ventricle contracts. **Diastolic pressure** occurs when the ventricle relaxes. You can write these numbers as a fraction in which systolic pressure is always on top.

\[
\frac{120}{70} \quad \text{systolic} = \text{numerator}
\]

\[
\frac{\text{diastolic}}{\text{denominator}}
\]

• High blood pressure can precede a heart attack or stroke.
Lifestyle plays a key role in circulatory diseases.

- Some choices lead to an increased risk of circulatory diseases.
  - smoking
  - long-term stress
  - excessive weight
  - lack of exercise
  - diet low in fruits and vegetables, high in saturated fats
• Circulatory diseases affect mainly the heart and the arteries.
  – artery walls become thick and inflexible
  – plaque blocks blood flow in arteries