Outline
1. Stroke volume extrinsic factors – hormones
2. Stroke volume extrinsic factors – reduced venous compliance
3. Effects of exercise
   1. purpose of blood
   2. cardiovascular center
   3. on cardiac output
   4. on blood vessels
4. Effect of aerobic training

1. Extrinsic factors – stroke volume
2. Stroke volume extrinsic factors – reduced venous compliance

3. Effects of Exercise:

Purpose of blood:

Cardiovascular center starts exercise response:
Effect of exercise on cardiac output:

Effect of exercise on blood vessels
Effect of exercise on direction of blood flow

![Diagram showing blood flow at rest and during vigorous exercise](image)

**At rest**
- **CO = 5.8 L/min**
- Brain: 13%
- Kidney: 19%
- GI: 24%
- Skin: 9%
- Other tissues: 10%
- Skeletal muscles: 21%

**Vigorous exercise**
- **CO = 25.6 L/min**
- Brain: 3%
- Kidney: 1%
- GI: 1%
- Skin: 2.5%
- Other tissues: 0.5%
- Skeletal muscles: 88%

**KEY CO = cardiac output**
5. Effect of Aerobic Training

Hypertrophy of heart