

- b. Peripheral nervous system includes nerve trunks which leave or enter central system. The twelve pairs of cranial nerves, their general distribution and function; the thirty-one pairs of spinal nerves, their general distribution; the thirty-one pairs of spinal (sensory) ganglia; meaning of afferent (receptor) and efferent (effector) neuronis; association neuronis, etc.
- c. Autonomic or Sympathetic nervous system.

The ganglia; general distribution and functions of this part of nervous mechanism; connection with the central system; functions controlled by this division of nervous system.

C. EFFECTS OF MUSCULAR ACTIVITY (exercise) upon:

- 1. The Muscle Cell, and muscular system. (Refer back to earlier discussion). Its nutrition, size, production and elimination of wastes, endurance, nerve control developed through voluntary muscular exercise; immediate and remote (or ultimate) effects of exercise upon the various systems.
- 2. The Nervous Mechanism

Integration through exercise; how this is brought about. (Refer to discussion of nervous system above).
- 3. Circulatory Mechanism

Effect of sitting, standing, running in place on heart rate; on systolic, diastolic, and pulse pressures; effects of exercise of speed, of effort, and of endurance on these pressures; exercise as the chief means of strengthening and conditioning this mechanism; athletics and longevity; ("Do athletes die young?"); dangers from inadequate exercise; standard tests of cardiac efficiency; importance of physician's examination and advice if heart is abnormal in function or structure; local and general infections in relation to exercise and care of the heart; hygiene of exercise in relation to care of circulatory mechanism.
- 4. Respiratory Activity and the Respiratory Mechanism
 - a. The Normal Respiratory Rate: Before and during exercise of varying intensity and duration; effects of exercise on rate and depth of respiratory movements.
 - b. The chemical changes produced as represented in O₂ intake and CO₂ output.
 - c. The Respiratory Mechanism: Location of lungs; size; shape, aerating surface; ventilation of; vital capacity and exercise. (See back under nutrition and excretion for meaning of tidal, supplemental, complementary, and residual air). Exercise and respiratory efficiency; how muscular exercise develops and conditions this mechanism.