

An intelligent understanding of the relation of nutrition to health must be based upon a working knowledge of:

1. The physiology of the tissue cell.
2. The character, composition and values of foodstuffs.
3. The mechanisms of digestion and assimilation.
4. The hygiene of nutrition.
5. Some guides to adequate nutrition.

B. PHYSIOLOGY OF THE TISSUE CELL

All cells exhibit two types of functions, anabolic or constructive functions--performed chiefly by the nucleus; katabolic or destructive functions--performed chiefly by the cytoplasm.

Thus the nucleus of the cell is chiefly an organ of growth, construction, repair and reproduction while the cytoplasm is an organ of power production through energy transformation. Both of these functions are dependent upon the delivery to the cell of adequate nutritive materials and removal of the waste products.

1. Metabolism: The sum total of the chemical activities occurring in living protoplasm. For purposes of study it may be further subdivided:

Basal metabolism: The chemical reactions which are concerned with the immediate maintenance of the living state.

Growth metabolism: The whole group of reactions by which new protoplasm is produced and new supporting structure laid down.

Functional metabolism: Those reactions associated with the activities of which protoplasm is capable, i.e., muscular, nervous, or glandular, etc.

C. THE CHARACTER, COMPOSITION, AND VALUE OF FOODSTUFFS.

1. Foods - Composition and values

Normal functioning of the cells of the body, which constitutes health, requires an adequate supply of the chemicals composing the human body. These chemicals are taken into the body in the food we eat, the water we drink, and the air we breathe. The foods are needed for three main purposes:

- a. To secure energy.
- b. To build and repair tissue.
- c. To regulate body processes.

2. Sources: Soil and air are the ultimate sources of the chemicals required by the body. Plant life is the primary source of human food. Animal ~~life is~~ a secondary source.

3. Variety of Foodstuffs: Humans have found by centuries of experience and experiment that the needed chemicals can be secured from an almost endless variety of animal and vegetable sources.