YBN University, Ranchi

Basal Metabolism Learning objectives After the end of this unit, the students will be able to:- Understand what basal metabolism is.

Explain factors that affect basal metabolism. Definition Basal metabolism: is the energy required to carry on vital body processes at rest, which include all the activities of the cells, glands, skeletal muscles tone, body temperature, circulation, and respiration. In persons who are generally inactive physically, basal metabolic needs make up the largest part, about two thirds, of the total energy requirement. Factors affecting basal metabolism Size and shape. the greater the skin area, the greater will be the amount of heat lost by the body and, in turn, greater the necessary heat production by the individual. E.g. tall person needs more food than short person with the same weight.

Age and growth They are responsible for normal variation in basal metabolism. The relative rate is highest during the first and second years and decreases after that, although it is still relatively high through the ages of puberty. During adult life there is a steady decrease in rate with a marked drop in old age. Sex Sex probably has little effect on metabolism. Women have a lower metabolism than men. Women usually have a less fat and less muscular development than men. Climate Climate has little effect on BMR, which is always measured in a room temperature. Racial Differences in metabolism have been noted. Eskimos have been reported to have a BMR above accepted standards. State of nutrition In starvation or under nutrition the BMR is lower.

Diseases

Diseases such as infection or fevers raise the BMR in proportion to the elevation of the body temperature. The internal secretion of certain glands such as the thyroid and the adrenal, affect metabolism. Hyperthyroidism accelerates metabolism by increasing production of thyroxin. Sleep, Sleep varies depending on individuals, some are restless and others are quiet. Pregnancy After four months of gestation the BMR will increase. Discussion questions 1. What do you understand about basal metabolism? 2. Explain factors that affect basal metabolism.