

IMPORTANCE OF THE NUTRITION IN THE DIET PLAN

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Abstract: *One of the main health determinants is an adequate diet that includes important nutrients. It manages security, slows the debilitating progression of the disease and encourages optimal development. There must be ample amounts of nutrients because the body is properly fed by nutrients. According to the average daily amount, the prescribed dietary allowance ensures the individual's nutrient requirements and maintains the homeostasis of the body. When there is sufficient nutrition, healthy everyday life (both indoor and outdoor activities) can be taken out. Nutrient deficiency may disrupt the cellular functions, muscles, organs, and the entire body. Over nutrition, as it can cause obesity as well as toxicity, is now to be prevented. Maintain homeostasis dysfunction leads to conditions or illnesses (deviation from normal health). The severe effects can be mitigated by dietary treatments for inborn metabolism errors in babies. The consumption of food depends on the interaction of the hypothalamus between feeding and pleasure centres. Food consumption can be modulated by various appetite-stimulating and appetite-inhibiting hormones.*

Keywords: *Vitamins, Nutrients, Balanced Diet, Diseases, Life cycle, Deficiency, Health care.*

INTRODUCTION

Energy sources (complex carbs, protein, and fat), essential fatty acids, essential fatty acids, nutrients, phosphorus, minerals, folic acid and choline are the basic components of the diet. Except for arginine, basic nutrients could not be synthesized or synthesized in limited amounts. Arginine can be synthesized via the cycle of urea. It is possible to synthesize a certain amount of carbohydrates de novo from methanol and protein [1]. Since they are required in large quantities, protein, carbohydrate, and fiber are referred to as macro and micronutrients, and the consumption of these important macronutrients is greater than for the other dietary nutrients, while amino acids are referred to as micronutrients because these vitamins and minerals are required in smaller amounts.

It is possible to divide up minerals into further macrominerals as well as microminerals. They are named macrominerals if the recommended daily intake of resources is much more than 100 mg. They are named microminerals or trace minerals if the recommended daily intake of minerals is less than 100 mg [2]. Water, folic acid, and carnitine are recognized as necessary nutrients, other than a nutrient. For the survival of an organism, water is necessary and takes part in different

metabolic processes. The sum of body water relies on the equilibrium between the intake of water as well as the lack of moisture [3].

Normal water consumption is approximately 2.4 L/day (including drinking water/liquid, solid/semi-solid food water, and food oxidation water) but instead, regular water loss is approximately 2.4 L/day at normal body temperature (through urine, feces, sweat, skin, and lungs). Excessive water loss due to gastroenteritis (vomiting and diarrhea) can lead to a pronounced decrease in blood pressure, leading to hypovolemic shock accompanied by coma and ultimately death. On the other hand, high water intake, particularly after the antidiuretic hormone (ADH) administration, can lead to water poisoning. Brain cell inflammation can lead to a panic attack, coma, and ultimately death.

The amount of water consumption should be sufficient for infants and lactating mothers. Owing to the high ratio of surface area to volume, infants need more water. The adequate consumption of water should not be less than 0.7 L/day for children. Additional water intake for milk production is needed for lactating mothers [4]. Choline is a lipotropic agent and is synthesized by methyl group donated by methionine in small quantities in the body (an essential amino acid). Choline deficiency can result in infiltration of the liver with fat. Carnitine is synthesized from lysine and methionine and is essential for fatty acid oxidation. Carnitine is involved in fatty acid transport through the mitochondrial membrane. The body is unable to use fatty acids as fuel because of faulty carnitine synthesis [5].

METABOLISM

Approximately 40% of the nutrition energy is converted into adenosine triphosphate through food absorption, and 60% of the power is lost as heat. Heat cannot be used for power and raises the temperature of the body. The production rate of the food is expressed in kilocalories (kcal), i.e. equal to 1000 calories per gram, from the energy radiated by the combustion process of the food in a calorimeter [6]. The quantity of energy that increases the temperature of 1 g of water from 14.5 to 15.5 °C is a calorie (equal to 4.185 J). In kcal/g, the energy extracted from macro and micronutrients (energy nutrients) is 9 for fats, 4 for carbohydrates, and 4 for proteins. The food generates fuel, which is required to power all the activities of the cell. Normal health depends on the supply of optimal energy. Energy supply from the food is utilized for the storage of energy, internal heat production, and external work [7].

- *Metabolic Rate:*

The supply of energy is limited by basal metabolic rate energy expenditure (BMR). BMR is characterized as the minimum energy expenditure required to perform the body's basic physiological functions and the body's vital life processes (heart rate, respiratory rate, etc and to maintain the tissue's metabolic functions when a person is at rest and awake. Thus the BMR is

called the metabolic cost of living." The BMR measurement is taken at a comfortable thermoneutral temperature (about 25 °C) at least 12 hours after a meal in space. At maximum physical and mental rest, the subject must be (standardized conditions). 4,82 kcal is released by one liter of oxygen intake used to oxidize food. Fig.4 are showing factor which are responsible for the varying metabolism rate in different person [8].

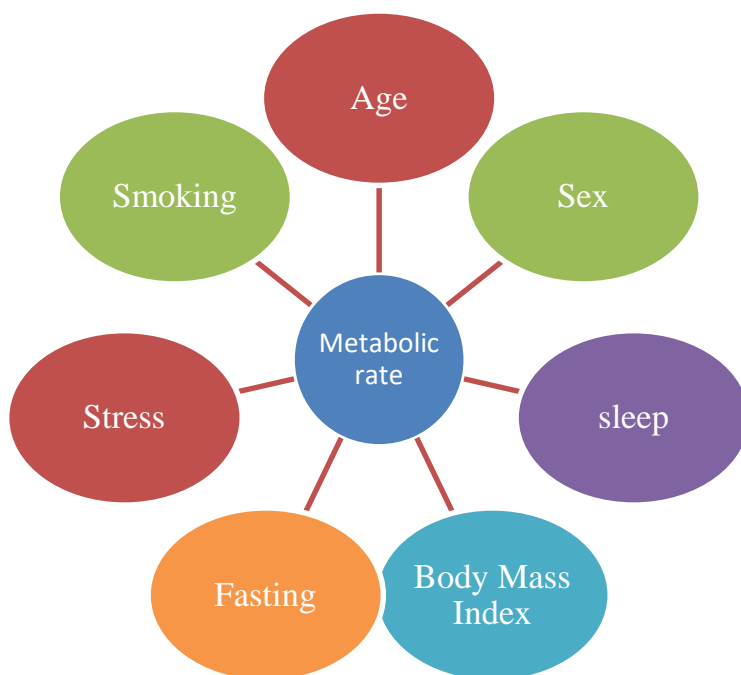


Fig. 4 Factor Affecting the Metabolic Rate

Oxygen expenditure (milliliter per unit time) is calculated by a spirometer (oxygen-filled chamber utilizing a machine to absorb carbon dioxide) in addition to is correct to average temperature and pressure. The metabolic rate is calculated as

$$\text{Metabolic rate} = \text{liters of oxygen consumption per unit time} \times 4.82 \text{ kcal}$$

An appropriate diet must have an energy content that is sufficient to provide the basal metabolism requirement. The BMR is about 1800 kcal/day for males (about 60 kg) and about 1400 kcal/day for females (about 50 kg) [9]. Active individuals need more calories (80-100 percent) above the BMR [agricultural workers, swimming every day for an hour, jogging for around 1 hour, rowing (15 strokes/min), blacksmith, etc.] Different factors and diseases/disorders depend on the metabolic rate (total energy consumption per unit time) [10].

CONCLUSION

Human nutrition, which includes anatomy, cell biology, anatomy, immunology, chemical engineering, anthropology, pharmacy, and other areas, is a multidisciplinary science. For the preservation of health, understanding human nutrition is important. Health issues associated with addiction, lifestyle-related illnesses, social health issues, and inadequate management of food safety as well as food standards are highlighted due to negative health effects. It highlights age-related decreases in cognitive functions, dietary interventions, and additional interventions for healthy aging. Throughout the world, mental illnesses are normal. This includes the role of nutritional therapies for psychological illnesses. Nutritional treatments are addressed for cancer and different illnesses, lifestyle-based diseases, including health issues related to addiction. It reviews prevention measures for food-borne including water-borne infections as well as diarrheal disease control and nutritional therapy. The present paper is a succinct but detailed account of health matters of the human environment, diet and nutrition.

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