

FOOD AND THE WELL BEING

U. SAMARAJEEWA

*Department of Food Technology
University of Peradeniya.*

The importance of ensuring a nutritionally adequate diet for the well being of the human was understood by early man through experience and it has been further emphasized by different religious leaders a few thousand years back. During evolution of life, the availability and diversity of the foods in the environment played a key role in setting the evolutionary patterns of plants and animals. Food is a part of the human culture. The food culture include the type of food components derived from plants or animals, the storage, processing and cooking methods applied in their preparation and the patterns of consumption. Thus a change in cultural habits inevitably lead to changes of food consumption patterns. The diversity of food preparation and consumption patterns one observes today is the end result of such cultural changes.

As man moved from the food gathering habit to food producing habit 10,000 years ago, he started searching for methods of storing and preserving his produce for a more convenient life. He next moved into a period of use of tools and new technologies to change the appearance characters of foods towards much more attractive features. The populations that started migrating into urban centres got attracted more towards processed foods for convenience and as a means of saving time. With these changes in life styles of humans the culturally significant features of the traditional meals were replaced by commercial characteristics. Food production and processing is a commercial operation today. In present day food processing, concepts such as profiteering and imparting attractive sensory attributes occupy a more important position than nutritional quality and well being of the consumers. The high pace of activity, and decreased leisure of modern life that resulted from urbanization

has attracted the man more and more towards ready-to-eat foods. Food production has become a multi-national profit oriented engagement today.

The role played by food in well being of humans is complex. It is necessary to examine many aspects of foods in understanding their role on the well being of the humans. The types of nutrients as well as the amounts of nutrients required by an individual need be understood initially. The concentrations of these nutrients present in different foods should be identified. Based on these information the optimal amounts of food items that could contribute required levels of nutrients to a meal need to be determined. This information alone is however not sufficient. The methods of assimilation of foods in our body, the interactions between the food components, and the therapeutic effects of the food components on the human body too need to be understood.

A food could be defined chemically, as a mixture of a few hundred thousand compounds in a predetermined proportion. These compounds forming into cellular or tissue patterns incorporate a variety of other features into foods.

The composition of foods and its metabolism by humans is understood scientifically today with the assistance of a variety of techniques developed by the chemists, the use of modern and sophisticated analytical tools coupled with developments in the science of nutrition. Based on these observations a synthetic diet containing 44 essential chemicals has been designed to meet all the nutritional requirements of the human body. However, the important issues to be addressed here include whether these chemicals do not react with each other and whether the chemicals behave in the same way as from a natural foods, on ingestion.

With further developments in nutritional science, the scientists classified different chemical constituents in the foods based on the role they play in the human body. In this classification the food components are categorized into three groups as energy producing, body building and protective foods. With the introduction of this classification, the role of the food constituents that do not contribute directly towards the above functions lost their significance in our mind. At one time, the presence of fibre in foods was considered and unimportant feature as fibre does not contribute towards energy, body building or protective functions. The Western populations moved into the habit of consuming only those foods contributing one or more of the three nutrient groups. Research carried out later on the high incidence of colon cancer among the Western populations compared to the African populations made scientists realize the importance of fibre in diet. The fibre considered unimportant so far was found to play a vital role in the well being of the humans. The West is accepting rapidly the high fibre foods today. The ability of the fibre to keep some of the toxic food constituents bound without releasing in the gut and the slow release of certain nutrients at a rate best to be assimilated contribute much towards better health. The habit among Sri Lankans to consume highly polished rice (Containing little fibre) and attraction towards sensory attributes of food have established barriers in moving towards a better health through the foods. This inevitably results in unhealthy life.

As an alternative to the chemical concept of energy producing, body building and protective foods it may also be appropriate to reach for the nutritional needs through a food concept by inclusion of foods representing the six important groups, fruits & vegetables, meat & fish, dairy products, grains & pulses, yams & other starchy foods (carbohydrates), and eggs in the daily menu. Our traditional foods include components important for our well being, beyond what is described chemically under the three main food groups identified above. Recent research carried out in Sri Lanka has shown the presence of anti-cancer constituents in the bay leaves (Karapinchu) which was

considered only as a natural flavouring agent; the snake gourds (Pathola) and bottle gourds (Wetakolu) have been found to contain immunologically important anti-body generating constituents. Therapeutic value of the sulphur containing compounds in garlic is well recognized. Such constituents in foods play a vital role in developing resistance to disease causing germs and minimizing disorders leading to well being of the human beings.

It is believed that increase of food production and increase in purchasing power of the human divert them towards consumption of nutritionally rich foods for a healthier life. But, what is happening is contrary to this belief. Increase in income and increase in food production have in one hand has developed a tendency among humans to purchase more attractive and mostly less nutritious foods. On the other hand increased purchasing power has exposed the man to foods which are at times rich in antinutritional chemical constituents added purely to improve the sensory attributes of foods. Some of these constituents which harms the organs and change the normal metabolic mechanisms in our body result in nutritional disorders. Consumption of such foods, as well as large quantities of nutritionally rich foods have caused increased incidence of diseases of the affluent such as heart disease, diabetes, high blood pressure, obesity and cancer among the present day Sri Lankans. In the developed countries the people are adopting new controlled food habits in an attempt to move away from such diseases. The food technologists today are more concerned in producing foods containing less sugar, less salt, less carcinogenic substances and in developing technologies to minimize or remove such constituents from foods. Continuous vigilance and agitation by the consumers and introduction of more stringent food regulations have helped in diverting the populations in developed countries towards more healthy foods.

In planning new meals and menu as well as in processing new foods, a ratio of about 60% carbohydrates and 30% fat as energy sources is considered nutritionally best. The consumption of partly refined sugar, and unpolished cereals as well as partial replacement of

saturated fats in foods by polyunsaturated fat have opened avenues for better living through nutritionally more acceptable foods.

The food consumed by a person should be appropriate for his or her level of life processes and the activities. During pregnancy, more food than what is needed for a normal life should be made available to meet the changes occurring in the body. More calories are needed to meet the daily requirements. The food also should supply more calories to be stored as fat in the body for future needs during lactation. To meet these demands higher consumption of energy producing foods, as well higher doses of folic acid and iron need to be supplied. During the growth of an infant, it is more appropriate to give breast milk rich in the protein lactalbumin than cow's milk rich in the protein casein. The lactalbumin provide constituents essential to generate anti-bodies for efficient immune activity leading to a healthy life. Gradual introduction of solid foods to a child after 10 months lays the foundation early for a healthy life.

It is difficult to prevent children getting attracted towards foods with high sensory appeal displayed in the markets today. Such foods result in early exposure of the body to unlimited amounts of saturated fat as well as frequent ingestion of sugar. The latter leads to dental caries at an early age. Unlimited exposure of children to various chemical additives such as synthetic colours, and flavouring agents is not a good sign for a healthy life. At middle age, avoiding animal foods containing high concentrations of saturated fats and

cholesterol would cause much benefits towards a disease free life. Similarly, it is essential specially for females to obtain their calcium requirements as far as possible through natural foods. Research has shown that metabolism of vitamin B₆ and folic acid is suppressed during use of oral contraceptives. During such period attention to consume more of these essential constituents through foods is vital.

Insufficient intake of food components essential for well being of the body through diet, due to economic or health reasons or due to heavy consumption of synthetic foods results in poor nutritional status. It is our duty to take steps to prevent undernutrition among children right from the early stages of life. One could observe the poor nutritional status of the children in most of the rural areas in the country. In Sri Lanka, growth charts of children are maintained in almost all the households, even in remote areas by the public health workers. Most of the charts very clearly indicate that the rate of growth of the children decrease around the age of one year. It is unfortunate that no effective attempts what so ever are taken by the parents or the State to save the children from this undernutrition situation. The damage that occurs due to undernutrition in building a healthy and intelligent nation is irreparable. It is our responsibility to avoid undernutrition among the population, specially the children.

Selection of appropriate foods to meet the requirements of different stages of life, from birth to death, is a must for the well being of the humans.