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Food And Nutrition**The Role of Nutrition Through The Life Course : Life Cycle Nutrition****Dr. Sonali Talavlikar**Lifestyle Coach and Director - Star Fitness, Pune
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A balanced and health promoting lifestyle includes regular physical activity/ exercise appropriate nutritious diet, stress identification and management and regular medical check-ups as and when necessary.

The role of nutrition in achieving positive health and well being is paramount. Sadly it is an often neglected aspect either due to lack of information, misinformation and these days, over information and easily accessible information which can be confusing. There are often conflicting messages reaching us about What, How and When to eat. Science and research in dietetics and nutrition has allowed us to gain a deeper knowledge about the different components of food; however this knowledge is often limited to the scientific community and not easily accessible to the general population.

In this article, we will try and deepen our understanding of nutrition, allowing us to make better food choices and incorporate this information in our day to day lives, thus moving towards positive health, vitality and well being.

A BALANCED DIET is the one that provides all the essential nutrients in sufficient quantities and in the correct proportions to promote good health. There is no 'ideal' diet which can suit everyone, as requirements of nutrients and calories will vary from person to person depending on age, sex, activity level and many other factors. Requirements also change for the same person during the life course. Most countries have their own guidelines developed by national nutritional boards or medical organizations which give recommendations regarding the consumption of different nutrients.

This considers the 'average' requirements assuming a 'standard' male or female as well as requirements at different life stages such as childhood, adulthood, during pregnancy, old age etc. Clinical nutrition looks into diet modification needed if there are any diseases or medical condition, e.g. diabetes, High B.P. etc. Sports nutrition is a special branch looking at the needs of Athletes and Sports persons

NUTRIENTS can be divided into the following groups –

1. Macronutrients which are required in larger amounts, usually measured in grams. These includes
 - i. Carbohydrates
 - ii. Proteins
 - iii. Fats
 - iv. Water
 - v. Fibre
- 2) Micronutrients : These are required in smaller amounts such as mg, microgram and smaller units, including
 - i. Vitamins
 - ii. Minerals

These nutrients have their Dietary Reference Intakes (DRI) which are reference values to plan and assess nutrient intakes of healthy people; and include –

- RDA – (Recommended Dietary Allowance)
Average daily level of intake to meet the nutrient requirements of nearly all (97-98%) healthy people.
- AI – (Adequate Intake) – Established when there is insufficient evidence to develop an RDA
- UL – (Tolerable Upper Intake level)
The maximum daily intake unlikely to cause adverse health effects (generally for micronutrients)

In the Indian context, the major food, issues are insufficient/imbalanced intake

of nutrients. With changing lifestyle and easy availability of fast foods, over nutrition and obesity are also worrying trends. A lot of social, cultural taboos and economic issues also contribute to unequal and inadequate food distribution and consumption. Considering all these points the National Institute of Nutrition has developed guidelines which in a nutshell recommend the consumption of a wide variety of food from different food groups to ensure adequate nutrition.

Foods can be divided into the following groups based on their function – each will have a major nutrient and other nutrients.

1) Energy Rich Foods – Carbohydrates and Fats

Carbohydrates are the preferred fuel in our body. One gram of Carbohydrate yields 4 Kcal.

Whole grains such as wheat, rice and millets such as jowar, bajra, ragi are good sources. Approximately 45-65% of our dietary intake should come from Carbohydrates.

Roots, tubers, certain vegetables and nuts are also good sources.

These days Carbohydrates are made into the main 'villain' and low Carbohydrate or 'no' Carbohydrate diets are a trend. In the long run these are non-sustainable and can be harmful. The brain can use only glucose (final breakdown of Carbohydrate) as fuel – low Carbohydrate can affect our alertness

and energy levels in general.

Fats – One gram of fat yields 9Kcal
Vegetables oils, ghee, butter, nuts oilseeds, milk & milk products, red meat are sources of fat. Too much or too little fat, in the diet can both be problematic. The acceptable Macro nutrients Distribution Range is 20-35% .Fats can be divided into saturated ,unsaturated and Trans fats . Trans fats which are fats whose structure has been chemically modified ,are harmful and can caused various diseases, especially related to the heart. Fats are an energy reserve, provide essential Fatty Acids (which the body cannot manufacture) dissolve fat soluble nutrients such as certain vitamins and disease fighting Phytochemicals in addition to giving flavour to food.

2) **BODY BUILDING FOODS – PROTEIN**

Proteins are involved in numerous processes in the body, including repair, formation of enzymes, hormones and antibodies, transport of substances and maintaining acid base balance. They are not generally used as a source of energy, but can provide 4kcal/gm Made up of nitrogenous compounds called amino acids, these are required in different quantities. ranging from 0.8 gm/kg body weight to upto 1.7 gm/kg body weight.

Poultry ,meat, eggs, fish, milk and milk products are animal sources while

plant sources include soya, pulses, beans and lentils.

Vegetarians are often concerned about getting enough Protein as vegetarian sources lacks some amino acids (incomplete protein) A well planned vegetarian diet can supply enough protein. Athletes and active individuals may require supplemental protein, if their diet cannot provide enough. However a protein supplement should not be the first option and should not replace food sources .Where caloric and nutritional demands are not being met, protein supplements are advisable.

3) **PROTECTIVE FOODS**

Protein can be considered in this group as it repairs the body and helps in producing antibodies. Vitamins and Minerals constitute protective foods and come from varied sources. Generally fruits, coloured vegetables and green leafy vegetables are good sources of both. Certain animal origin foods such as meat, (Iron, B12) milk (Calcium, Vitamin A) egg yolk (Vit A) are excellent sources of specific nutrients.

Vitamins and Minerals do not give energy but are converted into enzymes and co-enzymes involved in energy production.

Though they are protective in nature calling a particular vitamin 'super food' and consuming excessive amounts can cause toxicities and interactions or competition for

absorption.

Along with vitamins like A & C & minerals like Selenium, Zinc, and Chromium, coloured vegetables contain compounds like beta-Carotene, Lycopene, polyphenols which act as 'anti-oxidants'

- Let's not overlook water-since 70% of our body contains water and all the cell processes and reactions takes place in a fluid medium enough water needs to be consumed. Though there are recommendations such as 8 glasses, requirements vary by size, activity level, sweat rate, environment etc. Apart from water, food and other beverages also contribute to our fluid intake. Both excessive (over hydration) and less (hypo hydration) consumption can cause fluid and electrolyte imbalances.

Finally fibre; This component imparts bulk to the food and is found in un-refined grains, fruits & vegetables (with skin). Oats, bananas, leafy vegetables are good sources. Fibre allows the food to pass through the G-I-T easily and consuming enough quantity can prevent conditions such as constipation.

Fibre also influences the gut 'MICRO BIOME'

These are the good bacteria living in the intestine which are responsible for health not only of the digestive system, but the body in general.

To conclude, each one of us has unique nutritional requirements, which

can be met by following certain guidelines.

- 1) Eat a variety of local, seasonal and easily available food. This reduces the chances of deficiency and avoids monotony.
- 2) Be aware of how and from where your food is sourced. Storage, cleaning and cooking techniques can massively impact the nutrient levels of the food.
- 3) Minimise or eliminate highly processed foods e.g. Bread, biscuits, chips sugared drinks. These contain trans-fats and excessive amounts of sugar and sodium, all of which are harmful.
- 4) If some is good – more must be better' Excess consumption of certain foods, even if they are 'healthy' can lead to complications. Think carefully and when in doubt, consult your doctor or dietician when thinking of starting any supplement, be it protein or vitamins or any other.
- 5) Fad diets' which promise miracles such as weight loss, disease control, age reversal are often unscientific. Also, what works for one person may not work for another, Fad diets often ask that an entire food group be eliminated or drastically reduced (e.g. Carbohydrate) or that a food group be consumed in excess (Protein/Fat) Certain food items are given the epithet of 'SUPER FOODS' the consumption of which will magically take care of all nutritional problems, Be critical alert and aware of any food

related advice not coming from a reliable source (such as a professional dietician or scientific publication)

- 6) There are no shortcuts to health, eating well requires a little bit of planning and effort, but once the habit is established it has a positive impact on all aspects of our lives Remember – we are what we eat'.

Suggested Reading

Dietary Guidelines for Indians

National Institute of Nutrition

Website : <http://www.nin/res.in>

