

NICED Library Newsletter

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NUTRITION - basic understanding:

Nutrition is a process in which the food that is consumed is used for nourishing our body. Good nutrition is essential for good health. Nutrition is very important for a person to grow physically and develop mentally in a proper way and to remain healthy throughout life. When a person does not eat proper food, there is a chance of improper growth - the likelihood that some organ of his body may start malfunctioning, or that he may get some disease. Poor nutrition may also influence his mental and social well-being. Thus, generally, the health of a person depends on the kind and the amount of food he eats. The right kind of food eaten in the right quantity is necessary for good health.

Health and nutrition are the most important contributory factors for human resource development in a country. Health is defined as a state of complete physical, mental and social well being and not merely an absence of disease or infirmity. Human body requires energy for day to day activities and even for resting condition too. Our body acquires energy from the food. Consumed food breaks down in our body and yields different nutrients and energy.

Nutrition surveys carried out in many developing countries have shown that the diets consumed by a large majority of the population are based on mainly on cereals, roots and tubers and contain small amounts of pulses and vegetables and negligible amounts of milk, meat, fish and eggs. The diets are in general lack in calories, proteins, certain vitamins and minerals like calcium and iron. The calorie intakes in most of the developing countries are inadequate to meet the needs of the population. A deficit of 10-20% in the calorie intake of a country will indicate that a major portion of the population do not get enough food to eat and hence suffer from under-nutrition. The protein intakes in most of the countries are low and this is reflected in the high incidence of protein calorie malnutrition among weaned infants and preschool children in the developing countries.

Nutrients that we obtained through food have vital effect on physical growth and development, maintenance of normal body function, physical activity and health. Nutritious food is, thus needed to sustain life and activity. Our diet must provide all essential nutrients in the required amounts. Requirements of essential nutrients vary with age, gender, physiological status and physical activity. Dietary intakes

In This Issue.....

1. Popular Article - Nutrition: basic understanding
2. Library News and Services
3. Newly added Publications

Editorial Board

- Dr. S. Dutta, Scientist G and Director-in-charge
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lower or higher than the body requirements can lead to under nutrition (deficiency diseases) or over nutrition (diseases of affluence) respectively. Eating too little food during certain significant periods of life such as infancy, childhood, adolescence, pregnancy and lactation and eating too much at any age can lead to harmful consequences. It is a scientifically proven fact based on researches that infants who are breastfed with mothers' milk for the first 6 months are less likely to catch many of the illnesses in the future and to suffer from chronic diseases. An adequate diet, providing all nutrients, is needed throughout our lives. The nutrients must be obtained through a judicious choice and combination of a variety of food stuffs from different food groups. These nutrients can be classified broadly into two types: a) **macronutrients** include carbohydrate, fat and protein which are required in large quantity and b) **micronutrients** include different vitamins and minerals which are needed in small quantity.

So nutrition is a total process of ingestion, digestion and absorption of consumed food, assimilation & utilization of various nutrients, which is responsible for normal growth and development of the body. Growth means increase in the physical size and development is increase in skills and function of the body in intellectual, emotional and social aspects.

The imbalance of a single or various nutrients in the body leads to malnutrition. It is of two types: (a) over-nutrition and (b) under-nutrition. Over-nutrition in early childhood is associated with the chronic diseases like obesity, hypertension, diabetes, cancer, cardio vascular diseases etc in the later life. Under-nutrition is associated with repeated infections such as diarrheal diseases & acute respiratory infections.

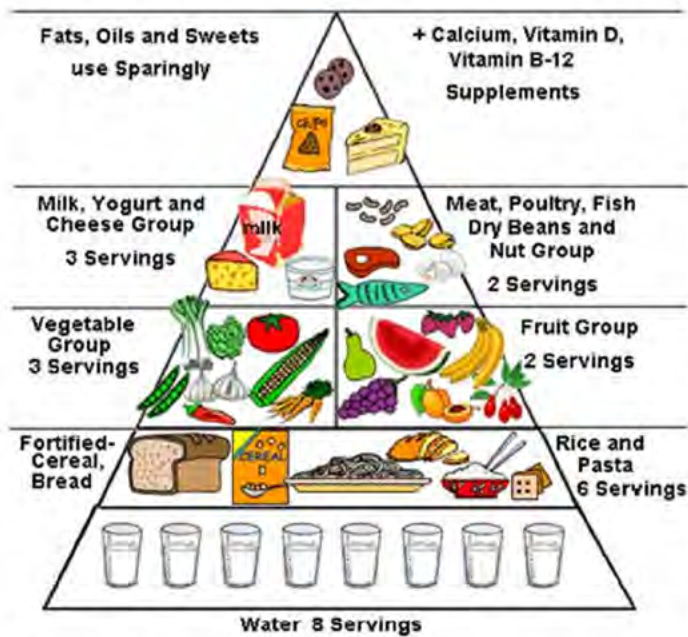
OVER NUTRITION:

A form of malnutrition in which nutrients are over supplied relative to the amounts required for normal growth, development and metabolism. It is mostly due to the change in quality and quantity of food, decrease in children's physical activity, increase in sedentary behaviours etc. and leads to obesity, hypertension, diabetes, renal disease, disorders of liver & gall bladder later.

UNDER NUTRITION:

It is defined as the outcome of insufficient food intake and repeated infectious diseases like diarrhea, respiratory infection, malaria, TB etc. In fact malnutrition, particularly under nutrition and infections are inter-related. Usually, children with under nutrition suffer from recurrent infections. On the other hand repeated infection make children undernourished. Thus, it becomes a vicious cycle that might even lead to death. Poor hygienic status such as personal hygiene, food hygiene, oral hygiene etc. are all related with recurrent infections & under-nutrition.

“Our food should be our medicine and our medicine should be our food.” – Hippocrates



BALANCED DIET (see image on left side): A diet that contains the proper proportions of proteins, carbohydrates, fats, vitamins, minerals, and water necessary to maintain good health.

The following are essential parts of a balanced diet.

Water: Take at least 8 glasses of water per day. **Fruits:** Besides being a great source of nutrition, fruits make quick and tasty snacks containing lesser calories. **Vegetables:** Vegetables are primary sources of

essential vitamins and minerals. **Grains:** Whole grains, which are prepared using the entire grain, including the hull, provide much more nutrition. **Proteins:** Meats and beans are primary sources of protein, which is essential for proper muscle and brain development. Lean, low-fat meats such as chicken, fish, and certain cuts of beef and pork are the best option. Nuts and beans, such as lentils, peas, almonds, sunflower seeds, and walnuts, are also good sources of protein. Tofu and other soy-based products are excellent sources of protein and are healthy alternatives to meat. **Dairy:** Dairy products provide calcium, vitamin D, and other essential nutrients. However, they are also major sources of fat, so it is best to choose reduced-fat or fat-free cheeses, milk, and yogurt. **Oils:** Oils should be used sparingly. Opt for low-fat versions of products that contain oil, such as salad dressing and mayonnaise. Good oils, such as olive oil, can replace fattier vegetable oil in your diet. Avoid foods that have been deep-fried in oil because they contain a large number of empty calories.



One should consume less of the following items in order to maintain a balanced diet and a healthy weight:

- 1) Alcohol, 2) cholesterol, 3) refined grains, 4) solid and saturated fats, 5) salt, & 6) sugars

Dr. K. Sarkar

Scientist F, Epidemiology Division

NICED Library News and Services: NICED Library was established with a goal towards helping the research interest of the scientists of the Institute. NICED, a premier Institute of Indian Council of Medical Research (ICMR), started as a research initiative of ICMR for addressing diarrhoeal diseases research in India in the early 1960s. Over time, the project venture took shape of an Institute that grew from strength to strength. NICED became the WHO Collaborating Centre for Research and Training on Diarrhoeal Diseases. Later on it took up the challenge of research in the area of Human Immunodeficiency Virus (HIV) infection as well. NICED Library that started with a handful collection of some books, grew along with an increasing growth of the Institute; catering to the research interest of its scientists. The library enriched its collection with books and printed journals in keeping with the mandate of the Institute. The resources drew the scientists as well as the students of the Institute to the library for their day to day references in different experimental works. Then came the digital era; the journals and books became available on the net. The digital era saw a sea change in the collection and services rendered by the Library. In keeping with the demand of time, NICED Library started online subscription of journals. With distribution of computers in different laboratories, establishment of Local Area Network for resource sharing, the services and collection of the library are now at a distance of a mouse click.

NICED Library that used to provide service to the scientists of the Institute now serves the scientists of sister institutes of ICMR spread across the country along with serving the researchers of Medical Colleges in and around Kolkata.



Resources: Apart from the journals and books the library has a collection of thesis, non book materials like digital copies of scientific posters, e-books. The other e-resources of the Library include JGate, Cochrane Database, and some online journals. These e-resources have been made available by ICMR. J gate is a database that houses around 44,704 journals. Full texts of most of the journals are available. If full text is not available, it locates the library which has the particular journal so that a request could be sent to get the full text access. This way it acts like a union catalogue. Cochrane is a database that is meant for doing systematic research and Meta-analysis. ICMR has made it available free for the entire country. Apart from these, ICMR has made available some high impact journals to all the sister institutes three very popular and high impact magazines. These are Nature, Science, Lancet, New England Journal of Medicine and British Medical Journal.

Services : The resources are varied and are available on different platforms. In absence of any federated search engine, that searches multiple databases and make available the result to the users on single platform, it is the task of the Library staff to see that the available resources are made good use of by the users by making them available through a host of services.

Library automated service : NICED Library has LIBSYS, a library automation software. The Online Public Access Catalogue (OPAC) makes available the collection of books and journals of the Library.

Selective Dissemination of information (SDI) service : This is a very important service that NICED Library provides to its scientist only. This service is customized to the research

Newspaper Clipping Service: NICED has always been in the news for the various health services it renders to the people of West Bengal in joint venture with that of the State Health Department. NICED library maintains the newspaper clippings of the news that highlights the activities of the Institute. Apart from that Library also maintains the different health news that come out in the newspapers for reference of the users.

Current Awareness Service : The newly arrived books are displayed in the notice board of the Library to make the users aware of the newly added collection. The Table of contents of the core journals are emailed to the scientists to make them aware of the articles that have been published.

Basic Search

Search

Full Text Only

Peer-Reviewed Journals

Professional & Industrial Journals

Citation Analysis Service : This service is required by the scientists during their assessment as well as during their application for any advertised post. This service is regularly provided by the Library. Before the Scientific Assessment Committee (SAC), to highlight the Institute's performance, Impact factor of the publications of the scientists over the years are provided by the Library. This gives an overall impression of the Institute's research performance.

Indexing Service : There are many publications that are not indexed in abstracting and indexing databases like Pubmed etc. Articles published in these journals are indexed by the Library and emailed to the scientists of the Institute for their awareness and research purpose.

Maintaining the webpage of the Institute : Webpage is the most important face of the Institute to the world's scientific community. Library has been bestowed with the responsibility of updating information of the various activities of the Institute in the web page.

Publications : Library brings out NICED Library Newsletter on a half yearly basis. Library also helps compiling and editing information of the Annual Report of the Institute. Annual Report is again a very important document of the Institute. NICED Library has been the nodal point in bringing out this important document of the Institute.

Newly added Publications of Scientists

1. Alam J, Ghosh P, Ganguly M, Sarkar A, De R, Mukhopadhyay AK. Association of Intact dupA (dupA1) rather than dupA1 cluster with duodenal ulcer in Indian population. *Gut Pathog.* 2015 Mar; 28:7:9.
2. Barman RK., Jana T, Das S, Saha S. Prediction of intra-species protein-protein interactions in enteropathogens facilitating systems biology study. *PLoS One.* 2015 Dec; 10(12):e0145648.
3. Datta P, Das S. Mammalian antimicrobial peptides: promising therapeutic targets against infection and chronic inflammation. *Curr. Top. Med. Chem.* 2016; 16(1):99-129.

4. Dey A, Molodecky NA., Verma H, Sharma P, Yang JS., Saletti G, Ahmad M, Bahl SK, Wierzbza TF, Nandy RK, Deshpande JM, Sutter RW, Czerkinsky C. Human circulating antibody-producing B cell as a predictive measure of mucosal immunity to Poliovirus. PLoS One. 2016 Jan; 11(1):e0146010.
5. Ghosh P, Sarkar A, Ganguly M, Raghwan, Alam J, De R, Mukhopadhyay AK. *Helicobacter pylori* strains harboring babA2 from Indian sub population are associated with increased virulence in ex vivo study. Gut Pathog. 2016 doi: 10.1186/s13099-015-0088-z.
6. Jaiswal A, Sarkar S, Das P, Nandy S, Koley H, Sarkar BL. Trends in the genomic epidemiology of *Vibrio cholerae* O1 isolated worldwide since 1961. Int J Antimicrob Agents 2015 Oct; 46(4):460-464.
7. Mandal RS, Saha S, Das S. Metagenomic surveys of gut microbiota. Genomics, Proteomics Bioinformatics 2015 Jun; 13(3):148-158.
8. Mukhopadhyay AK. Mapping of cholera cases using satellite based recording systems to investigate the outbreak. Indian J Med Res. 2015; 142:509-511.
9. Park JY, Kim DR, Haldar B, Mallick AH, Kim SA, Dey A, Nandy RK, Paul DK, Choudhury S, Sahoo S, Wierzbza TF, Sur D, Kanungo S, Ali M, Manna B. Use of the data system for field management of a clinical study conducted in Kolkata, India. BMC Res. Notes 2016 Jan; 9(1):20.
10. Payne A, Mukhopadhyay AK, Deka S, Saikia L, Paul Nandi S. Anti-Vibrio and antioxidant properties of two weeds: *Euphorbia serpens* and *Amaranthus viridis*. Res. J. Med. Plant 2015; 9(4):170-178
11. Roy S, Datta S, Das P, Gaind R, Pal T, Tapader R, Mukherjee S, Basu S. Insight into neonatal septicaemic *Escherichia coli* from India with respect to phylogroups, serotypes, virulence, extended-spectrum- β -lactamases and association of ST131 clonal group. Epidemiol Infect. 2015 Nov; 143(15):3266-3276.
12. Samanta P, Ghosh P, Chowdhury G, Ramamurthy T, Mukhopadhyay A. K. Sensitivity to Polymyxin B in El Tor *Vibrio cholerae* O1 strain, Kolkata, India. Emerg Infect Dis. 2015; 21(11):2100-2102.
13. Shetty V, Ballal M, Lingadakai R, Mukhopadhyay A K. Determination of *Helicobacter pylori* virulence genes in clinical isolates of symptomatic patients from south coastal region of Karnataka – a preliminary work. Austin J Gastroenterol. 2015;2(1): 1031.
14. Singh P, Kumar D, Prasad Y, Ramamurthy T, Sarkar B L, Sharma NC. Prevalence of multidrug resistant altered *Vibrio cholerae* O1 isolates among diarrhoeal patients in Delhi during 2008-2012. Indian J Appl Res. 2015 April. 5(4): 624-628.
15. Sinha D, Ghosh, AK, Mukherjee S, Biswas R, Biswas T. Porin differentiates TLR mediated proinflammatory response of follicular zone B cell from TLR-unresponsive IL-10 expressing marginal zone B cell. Cytokine 2015 Dec.;76(2): 193-205.
16. Sinha R, Koley H, Nag D, Mitra A, Mukhopadhyay AK, Chatterjee BD. Pentavalent outer membrane vesicles of *Vibrio cholerae* induce adaptive immune response and protective efficacy in both adult and passive suckling mice model. Microbes Infect. 2015; 17(3):215-227.
17. Wabale VR, Joshi AA, Bharadwaj RS, Chowdhary AS, Sarkar BL. Acute gastroenteritis (age) due to *V. cholera* El Tor Ogawa in Mumbai —a 5 year study. Int J Pharm Bio Sci. 2016 Jan; 7(1): (B) 226 – 230.