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# 10. Health Benefits and Nutritional Impacts

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## 10.1 Introduction:

A healthy diet with functional properties can promote well-being and reduce disease risk. Human health development is primarily influenced by diet. Better diet strengthens the immune system, lowers the risk of chronic diseases like diabetes and cardiovascular disease, improves mental clarity, and makes pregnancies safer. A good diet promotes a safe pregnancy, reduces the chance of chronic illness, and aids in maintaining a normal body weight. Water, fiber, vitamins, minerals, proteins, carbohydrates, and fats are the seven primary nutritional kinds that a healthy human body needs to survive. Although humans may survive with fewer micronutrients (vitamins and minerals), we require a lot of macronutrients.

## 10.2 Nutrition:

Protein helps to build muscle and the immune system in our bodies. An amino acid is found in protein. Furthermore, our bodies require certain amino acids in order to function. Fats, vitamins, minerals, and fats are essential for the body's function. Saturated and unsaturated fats are present in products like cream, butter, cheese, and some chocolates. Vitamins are essential for healthy skin and blood pressure regulation. Macro minerals, such as calcium, phosphorus, magnesium, sodium, chloride, potassium, and sulfur, are needed in greater quantities than trace minerals.

Consuming foods rich in vitamins and minerals can delay the effects of aging, promote collagen synthesis, and may lengthen life span. Overeating can stress the body, so diets high in nutrients and free of processed foods increase life expectancy. Child nutrition is crucial for strong organic growth, and a healthy diet during pregnancy can impact a baby's

metabolism, physical transformation, and active organ functioning. Consuming healthy foods during pregnancy ensures that babies receive the necessary nutrients, preventing any vitamin and mineral deficiencies in their future.

High blood pressure, a significant issue in India, can lead to heart attacks, heart failure, and strokes. A balanced diet containing fruits, vegetables, whole grains, and low-fat dairy can lower the risk of heart disease and manage blood pressure and cholesterol levels. A balanced diet also improves wellbeing, providing energy, concentration, and better sleep. A balanced diet also helps maintain the immune system, protecting against infections and preventing immunodeficiency disorders.

Nutritional needs are influenced by age, gender, lifestyle, physical activity, cultural context, and local foods. Age affects vitamin C requirements, calcium, phosphorus, and vitamin D production, while gender influences the amount of nutrients needed. Lifestyle, particularly in urban societies, can lead to obesity and other health issues. Physical activity affects electrolytes, which are essential nutrients for maintaining fluid balance. Cultural context influences how people eat regularly and how food is prepared, and local foods, such as rice and chapatti, can be better carbohydrate sources for Indians.

White blood cell synthesis is aided by nutrients like vitamins and minerals, which strengthen our immune system and help us fight off illnesses. Rich in antioxidants, vitamins C and E help prevent infections in the body. Broccoli, kale, lemons, limes, and other fruits and vegetables are rich sources of both of these vitamins. Unless nutritionists advise otherwise, eating plenty of leafy greens will give your body all the vitamins and minerals it needs, negating the need for supplements. Chronic disease can be lessened and possibly prevented with a healthy diet. Thus, the key to successfully preventing.

## 10.3 Healthy Diet:

A diet high in calcium that has been followed since childhood will guarantee stronger bones and lower your chance of osteoporosis. The recommended daily intake of calcium, according to Osteoporosis Australia, varies based on age and sex. A person should consume about 2000 calories daily, with fruit and vegetables making up around half of the diet.

Proteins should make up 25%, while carbohydrates should make up 25%. A balanced diet can help maintain good heart health, improve wellbeing, and prevent diseases like diabetes and cholesterol. Unhealthy eating habits and insufficient physical activity are linked to risk factors for chronic diseases in all age groups. A healthy diet that emphasizes obtaining nutrients from a balanced diet and reduces consumption of processed foods and saturated fats can help prevent many chronic diseases, including diabetes, cardiovascular disease, and certain types of cancer. Consuming a diet rich in fruits, vegetables, green leafy vegetables, lean meat, and low-fat dairy products can help maintain strong bones and improve oral health.

Food analysis is a rapidly developing field that provides information about food composition, appearance, texture, flavor, shelf-life, safety, processibility, and microstructure. It ensures product quality, compliance with legal standards, quality assurance, nutritional value determination, and adulteration detection. Analyzing food involves sample preparation, analysis, and detection of major components and miscellaneous components. Techniques include physical techniques like spectroscopy, chromatography, electrophoresis, biochemical analysis, and sensory analysis.

### 10.3.1 Nutri Foods:

Foods that have been fortified contain additional vitamins, minerals, and micronutrients. Micronutrients are required for numerous vital bodily processes. Cannot produce micronutrients on separately. It must originate from the food. During processing, food manufacturers incorporate micronutrients into their products.

They produce minerals and vitamins in their compounds. When added to food, these compounds have no discernible tastes, textures, or scents. Certain micronutrients are present in some foods by nature, but they are lost during cooking or storage. Food producers reintroduce those nutrients through food enrichment. Fortified foods lack those nutrients by nature, in contrast to enriched foods. People add more nutrients in the diet by adding them to foods. All of these nutrients can also be found in other foods, such as vegetables and meat. It can be challenging to eat enough of these items due to cost, allergies, dietary preferences, surroundings, and other issues.

Since the 1920s, American food manufacturers have been fortifying food to ward against diseases linked to poor nutrition. To improve the milk's ability to absorb calcium, for instance, vitamin D is added to cow's milk.

Most fortified foods are processed and packaged, Breakfast cereals, Bread, Eggs, Fruit juice, Soy milk and other milk alternatives, Milk, Yogurt, Salt. Fortified nutrients are Nutrients added to fortified foods include: Folic acid, Vitamin A, Vitamin ,6 ,Vitamin B12,Calcium,Vitamin D, Vitamin E, Iron, Iodine.

### 10.3.2 Fortified Foods:

The fortification standards in India allow for the addition of micronutrients to foods to prevent or reduce deficiencies, correct inadequate nutritional status, meet recommended intake, maintain health, and improve food quality. Mandatory fortification is based on public health need and can be specified by the Food Authority. Heme iron is not used in food articles.

Fortified processed foods, such as cereals and milk, provide 15-30% of the Indian adult RDA of micronutrients. High Fat Sugar Salt (HFSS) foods are excluded from this category.

## 10.4 Impact of Healthy foods and Nutrients:

Now a day more products of forties foods in word for example Carrot is a rich source of β-carotene, fiber, and essential micronutrients, which can inhibit cancers and prevent free radical scavengers.

However, due to it perish ability and seasonality, carrots cannot be readily available throughout the year. Dehydration during the growing season can be used to preserve carrots and create value-added products. Carrot containing 50% of carotenoids and fibers, can be used to supplement foods and reduce prices. Successful development of carrot products from fresh, semi-finished, and dehydrated carrots could meet consumer trends and efficiently utilize carrot pomace. People are passing hectic life due to urbanization. They do not have enough time to cook foods and are becoming habituated to consume fast foods and something like that. Ponnanganni leaves are cultivated in India especially Tamil Nadu

people used commonly the prepare the green soup powder, Analysis of the nutrient content and microbial content of green soup powder, and standardize the acceptability of the soups, to cost analysis and popularize of green soup powder.

Alternanthera sessils washed the thoroughly and kept it for drying in room temperature for 8 days. Greens Powder has roasted it for 20 minutes' grinds to a fine powder. Green gram dhal was roasted it for 15 minutes' grinds to a fine powder, pepper was roasted it 5 minutes' grind to fine powder, cumin was roasted it 5 minutes' grind to fine powder.

Corn flour was taken; Parboiled rice flour was taken. It acts as a thickening agent and it is a shining agent salt was taken. It gives the taste of the product. Ponnankanni keerai soup powder nutritive value was moisture 6.10, calories152.35 Kcal, protein 10.37gm, fat 1.78g, vitamin A1057.75mcg, vitamin C 60.35 gm, calcium 351.25, iron 11.45gm, fibre2gm were evaluated of 100 gm green soup powder. The microbial count was analyzed 2.2×103 cfu/g of the sample in the total viable count. Total coliforms <0.3bassessed up to 90 days. The product was popularized in Thoothukudi self-help group women and school students.

**Figure 10.1: Nutrient Content in the 100g of Green Soup Powder:**

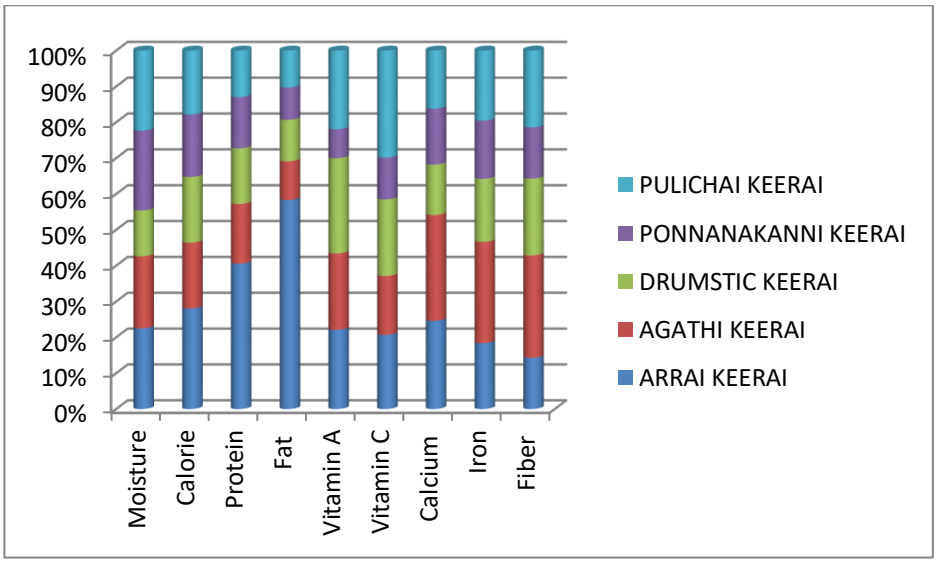
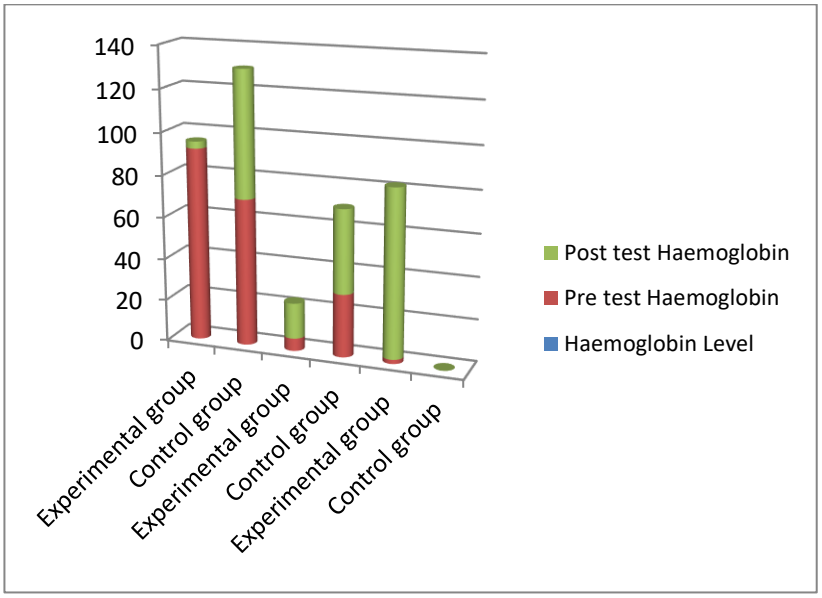



**Figure 10.2: Pre and Post Test On Hemoglobin Level of the Respondents**




The practice healthy snacks for children. Benefits of vallrai and its usage in the brain activity and this product improve the memory power for school children. The vallarai was incorporated in nutritive balls. Prepare vallari powder and incorporated in nutritive balls. Sensory evaluation was done using a score card, nutrient analyzed were energy, protein, carbohydrates, vitamin C, calcium, iron, zinc, magnesium, iodine. shelf life and cost was analyzed of the products and assess the toxicity and PH values the popularized of the products to Holy Cross Home Science Matriculation School, Thoothukudi. 100gm of nutritive balls 358.1 kcal of energy,88.08g of carbohytrtes,10.78g of protein, 35mg vitamin C, 5g of fiber 98.6mg of cacium,59.6mg of magnesium 9.0mg of iodine.5mg of zinc and has 36 mg of iron. No toxicity and PH value is normal. The quality of the product not changed in room temperature 37°c for 90 days and -18°c for six months. Memory test conducted pre and post well improvement.

Millets kulfi ice was prepared using quality millets, cow's milk, sugar, cashew nuts, and cardamom from Thoothukudi market. The main ingredients from millets grains were processed into milk form using a mixie, grounding, and filtering. Sugar, cashew nuts, and cardamom were ground, and cow's milk was added.2.5 kg millet,1.5 kg sugar, 200 gm cashew nuts, 100 gm cardamon powder.,50ml milk, then keep it in to a room temperature for about 5 to 10 mines. Then transfer it in to kulfi tray. Then keep it in to refrigerator -18°C.

The product was tested for shelf-life, nutrient content, microbial content, cost, and organoleptic evaluation. The newly prepared recipes were demonstrated to a group of 50 members in Thoothukudi. Mixed millets kulfi ice has high calories 314 kcal, finger millet has low calories 288.4 kcal. Mixed millets has high protein 8.10g, Koda have protein 6.57 g. Total fat was high in mixed millets 14.4 g, in finger millet 12.3Calcium was high in mixed millets 311mg, in pearl millet 218 mg. Iron was high in mixed millets 6.3 mg, in koda 0.45 mg. Fiber was high in kodamillet 6.6 mg, in pearl millet 1.8 mg. The analysis of microorganism such as Total bacteria count, Total fungal count, Total yeast count. They examined once in 15 days and it was evaluated organoleptically. The cost of each koda kulfi ice was Rs.20, pearlt kulfi ice Rs.20, finger millet kulfi ice Rs.25, foxtail kulfi ice Rs.25 and mixed millets kulfi ice Rs.30. sensory analysis (94%), with finger millets kulfi ice got the high score all the millet ice was highly nutritious and children were got healthy kulfi ice.

**Table 10.1: 100 gm of Millet Kulfi ice Nutrients**

| Sr. No | Nutrient | Koda millet kulfi ice | Finger millet kulfi ice |
|---|---|---|---|
| 1 | Calories(kcal) | 291 | 288.4 |
| 2 | Protein (g) | 6.57 | 6.92 |
| 3 | Total Fat (g) | 13.2 | 12.3 |
| 4 | Calcium(mg) | 224 | 302 |
| 5 | Iron(mg) | 0.45 | 5.5 |
| 6 | Fiber(g) | 6.6 | 2.3 |

## 10.5 Health Benefits of Fortified Foods:

They are reasonably priced. Foods rich in specific nutrients might be pricey. For instance, although fish is a fantastic source of omega-3 fatty acids, some people may find it too expensive to purchase on a daily basis. Omega-3 fatty acids are a useful fortifier for milk, eggs, and other goods. These goods frequently cost less while maintaining a comparable level of nutrients. They avert illnesses linked to poor diet. The prevalence of diseases like rickets linked to vitamin deficiencies has decreased because to fortify diets. Some vegetarian and vegan diets, for instance, lack essential vitamins, such as B12. In these

situations, fortified plant-based milk, cereals, and spreads containing the vitamin might be a smart choice. However, nutrient deficiencies, or eating only enough of a nutrient to prevent a full-blown deficiency, still affect a lot of people. They come in handy when expecting. Women are expecting require more food than usual because they are nurturing a developing child now still not be getting enough vitamins even if eat more. Nutritious foods can help bridge the gap.

For instance, many fortified items contain folic acid. Pregnancy-related folic acid deficiency reduces the chance of birth abnormalities. They safeguard senior citizens. The body absorbs fewer vitamins and minerals as become older. To maintain strong bones, improve digestion, and fend off cardiac problems, fortified meals it keeps the human body micronutrient levels in check.

They foster children's development. Compared to adults, children are more likely to experience dietary deficits. Enough vitamins and minerals are required by their bodies to maintain growth. Foods that are fortified can improve kids' nutrition. They foster children's development. Compared to adults, children are more likely to experience dietary deficits. Enough vitamins and minerals are required by their bodies to maintain growth. Children's nutrition can be improved by fortified foods in addition to a balanced diet.

### 10.5.1 Restriction for Fortified Foods:

Foods fortified to a Limit are a limit to how much fortified food can safeguard and enhance your health. Combined with unhealthy meals. A food product is not necessarily nutritious just because it has been fortified. Foods that have been fortified frequently contain excessive levels of carbohydrates, fats, sodium, and other substances that can cause issues like obesity. Overdosing on vitamins could be risky. Your diet may contain excessive amounts of vitamins and minerals, which could be hazardous. It is more likely that taking medications or supplements will cause this than eating foods that have been fortified. Examine the labels on products. Aim to avoid consuming any food that contains more than 200 times the daily recommended intake of any given nutrient. A healthy lifestyle should include eating foods that have been fortified. Make an effort to consume as many nutrients as possible.

## 10.6 Conclusion:

The essential nutrients are vitamins, minerals, protein, fats, water, and carbohydrates. People need to consume these nutrients from dietary sources for proper body function. Essential nutrients are crucial in supporting a person's reproduction and good health.

## 10.7 Reference: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5. The Advantages, Disadvantages and Lessons from *Sight and Life* Programs by Rebecca Olson ***,** Breda Gavin-Smith, Chiara Ferraboschi **and** Klaus Kraemer Sight and Life, P.O. Box 2116, 4002 Basel, Switzerland * Author to whom correspondence should be addressed. *Nutrients* 2021, *13*(4), 1118; https://doi.org/10.3390/nu13041118 Submission received: 27 February 2021 / Revised: 23 March 2021 / Accepted: 26 March 2021 / Published: 29 March 2021