

## **AVOIDING NUTRITIONAL DEFICIENCIES**

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Throughout history, there have been many changes in nutritional pathways for the population of the earth. As the population has increased, shortages of food, famine, and lack of specific nutritional substances have affected certain parts of the world. Even in the US, where there is so much food available, we are currently vulnerable to vitamin and mineral deficiencies. Each year approximately 3,000 new food items, mostly processed, are introduced into the market in the US. Many of these are advertised as healthy for us, but eating too many of these processed foods may leave you with a deficit of vitamins and other food nutrients.

A nutritional deficiency can be absolute, such as lack of selenium in the soil used to grow vegetables. However, it is more likely to be a general nutritional deficiency due to dietary choices. We usually require about 1900-2400 calories per day depending on activity, and all of this caloric intake should be directed towards building and preserving body tissues and improving the aging process. If 40% of your diet is useless because it has no positive food value, then there is a relative deficiency of nutrients in your diet 40% of the time, and you will always be in a sub-optimum nutritional balance. If you obtain all of your calories from nutrient dense and calorically lean foods and eat them in the right proportions, you will maintain body weight and have optimum body function and better aging. This is a critical concern for many who believe that one or more isolated food items can change your whole health picture.

Paleopathologists have studied the food intake of our Mesolithic and Neolithic ancestors. By looking at the soft tissue and bone of bodies unearthed from several thousand years ago, scientists have concluded that deficiencies in calcium, vitamin D, vitamin C, iodine, iron, and fluoride were prevalent. In the population that lived in northern Europe where exposure to sunlight is limited, there was a higher incidence of rickets caused by a deficiency in vitamin D.

In current times, vitamin D, vitamin C, and iron deficiency does occur. These deficiencies are related to dietary intake and exposure to sunshine. There are also people who are relatively protein deficient, and these may include vegans who may not know how to combine vegetables, beans, nuts, and grains to have adequate levels of dietary protein. Protein excess is more common in the US, and vitamin C and phytochemicals are often lacking in our diets.

In the China Study by T.C. Campbell, the most comprehensive study of the effect of foods on cancer and other diseases, groups of families that were low in vitamin C intake were more likely to have a high incidence of cancer, particularly esophageal, leukemia, nasopharynx, breast, and others. Cancer rates were 5-8 times higher where fruit intake was the lowest, and this also applied to heart disease and stroke. Low levels of beta-

carotene in these studies were associated with stomach cancer. We see vitamin C deficiency in this country on people who are on the Atkins Diet because of the high intake of protein and fat, but not fruits and veggies. While vitamins can be taken, they are only partially able to make up for the loss of nutrients in fresh plant-based foods.

There is also evidence that a low-fiber intake can be associated with higher incidence of cancer and elevated blood cholesterol. When a high-fiber diet is eaten, it reflects plant-based food consumption such as beans, vegetables, and whole grains. In China, most of the population eats polished rice now, and this is associated with lower fiber consumption and lower iron levels as well. Here in the US, deficiency occurs because of an excess of bad food. It appears the combination of total fiber and other nutrients in the form of whole foods, which has a protective effect, is better than isolated fiber from a cereal box or can of powder.

Fats are necessary for a healthy body and particularly for maintaining our body steroids and hormones. However, too many fats, particularly of the wrong kind, may lead to problems such as chronic inflammation leading to heart disease, cancer, Alzheimer's disease, arthritis, and other problems. Butter, cheeseburgers, hot dogs, and ham have more than 60% fat content. Some is saturated, some is polyunsaturated and hydrogenated, and none has omega-3 fats which are needed for good health. Interestingly, the total dietary intake of "bad" fats in relation to cancer is almost one-to-one. In China, the fat content of the diet is closer to 15%, whereas in the US it is about 36% of the total diet. Animal fat intake is correlated more with breast cancer than plant fat intake. Plant fats would include those found in spinach, grains, beans, nuts, olives, and avocados, and these are not associated with the diseases caused by animal fats.

Vitamins and nutrient supplements alone do not afford protection against diseases precipitated by dietary causes. Reduced rates of cancer, strokes, heart disease, obesity and diabetes, osteoporosis, immune disease, and Alzheimer's are strongly associated with a better diet. If you eat only a small portion of lean meat, preferably fish or chicken, and eat vegetables, minimal carbohydrates, and use vinegar and olive oil salad dressing, you will improve your chances of preventing disease and obesity. In this culture, moderate obesity is a sign of good health, but this is deceptive. By maintaining good nutrition, we can eliminate that part of our diet which is not healthy and contributes to nutritional deficiencies. If you only eat one green vegetable twice a week and you eat hamburgers twice a day, you have a nutritional absence or deficiency. Many of our younger generation have 50-70% of their diet as saturated fat, sugar, bread, and pasta which have no nutritional value.

How can we prevent deficiencies in our diet? The obvious first answer is that we must not take up "space" in our caloric allotment every day with non-nutrient foods such as sugar, cooking oils, white bread, corn syrups, pasta, and almost all forms of candy. By eliminating these useless calories, good and nutritious foods can be substituted in their place, and there would not be a continued deficiency. Four vegetables and two fruits a day would improve your diet, add nutrient vitamins and minerals, reduce your protein intake, and fill the place which has been made by removing the less nutritious foods.

We need to prevent nutrient deficiencies by eliminating bad choices of food. We only have one body, so we need to make sure that we are taking full advantage of all the nutrient foods available to us to maintain our health, our body weight, and better aging.