

Lions District 410E - Information on food intake and immunity

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Many Lions Clubs are assisting communities who are food insecure through the provision of food parcels, soup kitchens or meals.

The information in this brief is to help those who are interested in the link between food and immunity. Helping to alleviate hunger is an important first step, if this action can also maintain or improve health, then it is even better.

Understanding the Immune System

The immune system is the system that provides with body with defence mechanisms against harmful microorganisms (these are called pathogens). The body reacts to the presence of potentially harmful bacteria, viruses or parasites with an 'immune response' which acts to destroy the invading pathogen. This response requires energy and nutrients. For optimal immune function a person needs to have good nutrition. If the person's nutritional status is low the immune response may be weakened, the infection is then able to take hold. The body then needs more energy and nutrients to overcome the infection, and so, a vicious cycle begins.

Nutrients of particular importance for the immune system

Many nutrients are needed by the body, they will be supplied through a healthy eating plan. The nutrients work together to keep all the body's systems functioning. There are no miracle foods or supplements that will 'boost' or 'repair' any system in the body that is not functioning well.

PROTEINS are the backbone of the immune system. The antibodies produced by the immune system, are proteins. Protein can be easily obtained from a mixed diet. Legumes, when combined with cereals, supply all the amino acids needed by the body. They are also the best dietary source of dietary fibre (see the last point below). Protein is often sold as supplements, but if there is not enough energy in the diet the protein will be burnt to supply kilojoules, rather than used as a building block. Food sources are the best sources, unless recommended for an individualised therapeutic diet by a dietitian.



FATS: A high fat intake can lead to a depressed immune system, especially if the fats are in foods that have a low nutrient content (such as many fast foods). However omega-3 fatty acids (as found in fish with fatty flesh, pilchards, sardines, mackerel) may improve the immune function.

VITAMINS AND MINERALS are needed by the body in small amounts, and several play a role in strengthening the immune, and other, systems. Vegetables and fruits are good sources of many vitamins.



- Vitamin A is especially important in keeping the linings of the lungs and gut healthy to present a barrier to infection. B-carotene is found mainly in dark green, yellow, orange and red fruits and vegetables. These include spinach, morogo, pumpkin leaves, red peppers, yellow sweet potato, hubbard squash, butternut, pumpkin, carrots, and mangoes. Liver is one of the best sources of vitamin A. The B-carotene in vegetables is more easily absorbed if the vegetable is lightly cooked and served with some oil.

- Vitamin C helps in the recovery from infections and wound healing. It is found particularly in citrus fruits (orange, grape fruit, lemon, naartjie). Guavas, mangoes, maroelas, tomatoes and potatoes are also good food sources.
- Flavonoids and phytosterols are substances found in fruits and vegetables, but which are not nutrients. They play an important role in the immune system and in the prevention of cancer and other diseases. Flavonoids are found in citrus fruits, apples, red grapes (also grape juice), carrots, onions, broccoli, cabbage, cauliflower, Brussels sprouts, peppers and green tea. Phytosterols are found in a large number of foods, eating a variety of vegetables and fruit will ensure a good intake. Seafood, peas, nuts (including peanuts), seeds (sunflower and sesame) and whole-grains are particularly good sources of phytosterols.
- Alcohol can interfere with immunity by depleting the body of vitamins that are required by the immune system, especially if alcohol replaces a healthy eating plan.

DIETARY FIBRE found in whole grains, legumes, vegetables and fruit, is not digested in the intestinal tract. It is fermented by 'good' bacteria in the gut, the products produced by fermentation have positive health effects. More lymphoid tissue is found in the gut than anywhere else in the body, this tissue supports immune responses.



STARCHY FOODS are staple foods for most people in the world. Best choices for relief feeding are those that are fortified (by law) with micronutrients often in short supply. This includes maize meal, bread and wheaten bread flour. You may see the logo on the packaging. These foods are the most economical source of food energy, and eating enough of them will help prevent the body burning protein as an energy source.

