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## **Prevention of disease through food**

by Heidi du Preez

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According to a survey performed among South Africans during 2003, there is a strong belief (mean 85%) in certain foods being better for one than some other foods and a belief that some foods can actually make one healthier. There is, however, a lesser belief (mean 65%) in the link between foods and the influence on disease development and prevention<sup>1</sup>.

A society that views food as tastebud entertainment rather than a basic of well being was always bound to run into health problems. With 50% of South African women and 30% men being overweight or obese and more than 6 million cases of diabetes, we can not afford to stay ignorant about the influence of food on our health.

'Let food be thy medicine and medicine be thy food,' said Hippocrates, the father of modern medicine two-and-a-half thousand years ago. Yet today's medical profession barely works with diet, instead majoring in the prescription and distribution of high-power drugs designed to right the wrongs of decades of body mismanagement. In a survey carried out by the University of Washington, Seattle, 66.5% of doctors said they wanted more information on weight management. In the same survey, many doctors also wanted to know about diet for the prevention of disease<sup>2</sup>.

### **Micronutrients**

We are all familiar with the fat, carbohydrate and protein content of food, but are oblivious to the fact that the micronutrient content of food has the greatest impact on our health. Continuing intensive research increasingly and more consistently underscores the important role of micronutrient status in health and disease. According to a recent study, compounds found in curry and onions may help prevent colon cancer in those at risk. In the study, patients with pre-cancerous polyps in the colon who took a pill containing a combination of curcumin, which is found in the curry spice turmeric, and quercetin, an antioxidant found in onions, experienced a marked reduction in both size and number of polyps<sup>3</sup>. The anti-cancer properties of antioxidants are well known, yet constantly maligned. Curcuminoids are among the most effective. However, it is not only antioxidants that plays an important role in disease prevention, but also the microminerals, vitamins, phytochemicals and enzymes. These micronutrients work together in synergy and are present in natural wholefoods<sup>4,5</sup>. Although these nutrients are required in minute quantities, they play a vital role in every chemical reaction taking place in the body. Most of these micronutrients are lost or destroyed during food processing.

### **Food processing**

Cadmium is a toxic mineral when present at high levels in the body. There exists a strong link between hypertension and high levels of cadmium. Another toxic effect of cadmium is to increase the risk of arteriosclerosis (hardening of the arteries), whereas zinc tends to protect against this condition. High levels of cadmium is associated with processing of foods. The milling of flour to make white flour or white bread is an example. Whole wheat contains about 126 times as much zinc as cadmium. White flour contains only 33 times as much zinc as cadmium. This reflects an important degree of zinc depletion. Not only cereals, but also processed tomato and milk were found to follow this pattern<sup>6</sup>.

Furthermore, processing of food may alter its chemical structure to the detriment of your health. Evidence continues to mount that eating a lot of hot dogs, salami or other processed meat products may raise the risk of stomach cancer. Swedish researchers warn that besides salt, nitrites and nitrates, processed meats also often contain cancer-causing nitrosamines, which may be responsible for the link<sup>7</sup>. The research team found that stomach cancer risk was twofold higher in participants of the study with the highest intake of nitrosodimethylamine (NDMA) when compared with those with the lowest intake. NDMA is the most frequently occurring nitrosamine found in processed foods, especially processed meat.

## Prevention

We tend to forget, or not realise the very important physiological effect food has on the human body. The body is a sophisticated machine that consistently transforms food for energy and growth. Therefore, eating is being. Our health depends largely on the food we eat.

It is impossible to remain healthy on an incorrect diet regimen. Most of the chronic and degenerative diseases, from which we suffer today, are a direct result of our poor eating habits. Quality wholefood, *unprocessed*, is the foundation upon which vibrant health and wellbeing are built<sup>4,8</sup>. Our modern westernised diet is a far cry from that of our pre-historic ancestors<sup>9</sup>, who did not suffer from the same chronic and degenerative diseases we experience today. The food we consume today, is either deficient in vital micronutrients, or biological incompatible with our human system. We don't consume food in its most natural state, and even if we do, it is still depleted in some of the vital micronutrients compared to food of 100 years ago. Before the hybridisation of pineapples, it used to contain proxeronine, a very important alkaloid. In the body proxeronine is converted to xeronine by an enzyme proxeroninase. Xeronine is a pivotal ingredient in a wide range of normal biochemical reactions that help the body heal itself. Today proxeronine is only found in abundance in the noni fruit. Furthermore, the bulk of most people's diet consist of processed food, in which the micronutrients are further depleted, the chemical structure of the food is altered and many synthetic chemicals are introduced that is foreign to the human body<sup>9</sup>. Therefore, the two main reasons for malfunction at the biochemical and cellular level is firstly the fact that we do not consume all the vital micronutrients we need to sustain the chemical reactions taking place in our bodies. Secondly, through the consumption of processed food, we are bombarded with altered food substances, synthetic ingredients and heavy metals that will ultimately bring about physiological changes, which is experienced as symptoms of the chronic and degenerative diseases we suffer from today.

The importance of a balanced natural wholefood diet can not be stressed enough<sup>8</sup>. Nature inherently contains all the necessary preconditions for health and vitality when left undisturbed. If this intrinsic balance, between food and the biochemistry of the body, is disturbed in the slightest way, disease starts to set in. Malfunction at the biochemical and cellular level always precedes the onset of any chronic disease.

Prevention is possible and must be the model of choice in fighting disease. It means that doctors and health therapists should identify cases of biochemical and naturopathic malfunction before labelled disease has set in, and to reverse the malfunctions before they have caused structural damage and killed significant numbers of cells. However, ultimately prevention means taking responsibility! This responsibility lies with the patient. Nutrition is not the only determinant of our health, but is surely one of the factors over which we have the most control. It's our choice as to what we put into our mouths. Let prevention itself be the cure!

## Price to pay

Can we really afford it to be ill? It is important to take the cost implications of disease prevention into consideration. Improved micronutrient nutrition is being increasingly recognised as a successful intervention strategy with the potential to decrease annual hospitalisation costs relating to birth defects, low birth weight or premature birth and coronary heart disease. Ten years ago in the USA this related to a reduction of 40, 60 and 38% respectively of these diseases, resulting in a saving of nearly US\$20 billion per annum<sup>10</sup>. In a more recent report reference was made to 14 million cases of preventable heart disease, 1.2 million cases of cancer, more than half a million strokes and 2500 children with preventable neural tube defects in the USA alone. The potential annual savings in the health care budget would be 89 billion dollars through the delaying of the onset of heart disease, stroke and osteoporosis by five years<sup>11</sup>. If only the health insurance companies could realise the value of disease prevention through food. Members should be able to get credits for consulting with a Nutritional Therapist or registered Dietician.

## Immunity

It is well known and widely accepted that poor nutritional status is associated with an increased susceptibility to infections. Micronutrient deficiencies impact adversely on immune function including the humoral immune response, mucosal immunity, cell mediated immunity, phagocytic function and the complement system. The strategy for the prevention of AIDS should be supportive of the concept that the immunomodulatory role of defined micronutrients has a potentially very significant advantage in terms of disease prevention, health care costs and, indirectly, quality of life. Moreover, as with any other disease, the influence of moral and social values, poverty and hygiene factors should also be kept in

consideration. It is not only anti-retroviral medicine that would improve AIDS patients' quality and years of life.

## Conclusion

Our current attitude to food is far from the principles laid down by Hippocrates. The time has come for medicine to return to its roots, and to give everyone the means and the information to eat their way to better health. Instead of only prescribing high-powered drugs, doctors would better serve the aims of achieving healthy patients by drawing food and diet into their repertoire. However, because of heavy work loads and scant resources, doctors rarely manage to seek out nutritional data for themselves. They should therefore tap into the existing knowledge-base of Nutritional Therapists and registered Dieticians, ensuring that every doctor has a nutritional specialist to whom they can refer. This will ensure that balanced advice is given to the patient. With a better understanding of health and food, they can then take responsibility!

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