

## WHAT IS NUTRITION?

Nutrition means the provision of life-maintaining nourishment to any tissue or cell of the body without which that tissue or cell would ail and die. A nutrient is that which provides nutrition and is a constituent of food. The study of nutrition is a new and complicated science; there is much that is not yet known about the properties of food and what our bodies should or should not have in order to be healthy. Many nutritionists are in strong disagreement around some issues. The information presented here is an opinion based on a number of sources.

## WHAT NUTRIENTS DO WE NEED?

**PROTEIN:** the major source of building material for muscles, blood, skin, hair, nails and internal organs, including the heart and the brain. Enzymes (substances necessary for chemical changes such as digestion), antibodies (which fight infections) and hormones (substances that control body processes) are also formed from protein. Protein is made from simpler units called amino acids, most of which are produced in the body except for eight essential amino acids which must be supplied by our diet.

**CARBOHYDRATES:** provide calories (units of heat) for energy when broken down into glucose, a simple sugar, by the body's digestive system. Excess sugar is converted into fat and stored throughout the body as a reserve source of energy. Carbohydrates also help regulate protein and fat metabolism. (Metabolism: the chemical changes by which energy is produced from food and new material assimilated for repair and replacement of tissues)

**FATS (FATTY ACIDS):** main source of calories for energy; also involved in the utilization of vitamins.

**VITAMINS:** organic substances which regulate metabolism, help convert fat and carbohydrates into protein, and assist in forming bones and tissues.

**MINERALS:** constituents of bones, teeth, soft tissue, muscle, blood and nerve cells; part of many biological processes and reactions in the body.

**WATER:** an essential element for survival. (We should get 6-8 glasses of fluid a day, preferably between meals)

## WHERE SHOULD WE GET OUR NUTRIENTS?

**PROTEIN:** from combinations of beans, grains, nuts and seeds which provide all the essential amino acids (or from complete proteins--see DIET FOR A SMALL PLANET for an explanation of food combining for protein and recipes); soy beans and soy products such as tofu (bean curd); dairy products such as cheese, milk and yogurt; eggs; fish; poultry; meat.

**CARBOHYDRATES (SUGARS AND STARCHES):** from fruit, vegetables, grains, beans, tubers (if possible grown without chemical sprays and fertilizers; avoid waxed fruit and vegetables--the wax used is thought to be cancer-causing).

**FATS:** from oils made from vegetables sources such as soy, oliyes, safflower, sunflower seeds; nuts and seeds; olives; avocados; dairy products; eggs.

**VITAMINS AND MINERALS:** different foods supply us with the various vitamins and minerals. Yellow and dark green fruit and vegetables, for example, supply Vitamin A, citrus fruit give us Vitamin C, and dairy products supply calcium (a mineral). For a full description of the role each vitamin and mineral plays in our health, which foods supply which vitamins and minerals, and how to recognize vitamin and mineral deficiencies, refer to one of the books on the attached book list (e.g. NUTRITION ALMANAC or KNOW YOUR NUTRITION) or one of the many other books on nutrition that are available.

## WHAT ABOUT VITAMIN AND MINERAL SUPPLEMENTS?

Many physical problems, as well as chronic tiredness, nervousness, and the inability to handle stress, can be traced to vitamin and mineral deficiencies. We probably need to supplement our diets with vitamin and mineral tablets if we are not in a position to obtain farm-fresh and organic (grown without chemical fertilizers and sprays) produce. The produce that we buy most of the time has been grown in overworked soil lacking in nutrients, shipped a long way and likely to have been on the shelves for a long time. Low quality produce has fewer nutrients than it might otherwise. Our high stress lives in cities also deplete our bodies' reserves of vitamins and minerals. Pollution in the air and cigarette smoking, for example, destroy Vitamin C. Some food supplements, such as brewers yeast and kelp, are high in vitamins and minerals. Brewers yeast has all the B vitamins plus protein and 14 minerals. Seaweeds such as kelp are rich in minerals. Brewers yeast and kelp are not expensive and are available in powdered or tablet form in health food stores. Although we may need some vitamin and mineral supplements, they are not a substitute for a good diet.

NOTE: Vegetarians who do not eat dairy products need to take a Vitamin B<sub>12</sub> supplement as B<sub>12</sub> is found mostly in animal products.

#### WHAT IS A BALANCED DIET?

A balanced diet is usually taken to mean a balance of proteins, grains, fruit, vegetables and fats. What we do not usually hear about is the need to have a balance between acid-producing and alkali-producing foods. The typical North American diet is far too acid-producing (from meat, chicken, fish, eggs, most grains, most nuts and cheese, also sugar, alcohol and caffeine). A balanced diet should consist of approximately 20% acid-forming foods and 80% alkali-forming foods (fruit, vegetables, sprouts, millet, buckwheat). Milk, butter and vegetable oils are neutral or near neutral. Excess acid in the blood lowers our resistance to disease, overstimulates our adrenal glands, and can contribute to arthritic and rheumatic diseases. Alkali-forming foods tend to have a calming influence.

#### WHAT ABOUT FIBRE?

Fibre or roughage comes from the indigestible parts of fruit and vegetables and plays an important part in the digestive process. Its main role is to clean residue from the bowels and facilitate elimination by preventing constipation. Our diets tend to be low in fibre because of our overindulgence in meat and refined carbohydrates. Many diseases start in the bowel, diseases which are prevalent in North America but rare in countries where a high-fibre low-fat diet is common. To increase our fibre intake we can take 1 oz of raw bran a day (bran can be added to cereals and other foods) and eat more vegetables and fruit (especially raw) and whole grains. (See THE BOWEL BOOK by D. Ehrlich and G. Wolf)

#### WHAT FOODS SHOULD WE CUT DOWN OR AVOID?

##### SUGAR

The average American eats 102 lbs of refined sugar a year! (The Canadian figures are probably very similar). Refined sugar provides quick energy by going directly to our cells, but in the process robs them of necessary nutrients which are provided when we get our sugar in its natural form from eating fruit, vegetables and grains. When we eat refined sugar, the body gets more sugar than it needs and is unable to process efficiently. The acid/alkali balance is upset, B vitamins are destroyed and unprocessed carbohydrates which aren't metabolized become poison, causing

degeneration of cells and leaving the body more prone to disease. The ability of the pancreas to produce insulin (the hormone which regulates sugar levels) is impaired by having to deal with too much sugar, and the result is hypoglycemia (low blood sugar) or diabetes (the inability of the body to metabolize sugar). Watch for hidden sugar in practically everything that comes in a bottle, box or can, e.g. cereal, bread, ketchup, peanut butter, pickles, relish, salad dressing, canned soups, packaged mixes, canned fruit and vegetables, even table salt. (Read SUGAR BLUES by William Dufty or SWEET AND DANGEROUS by Dr. John Yudkin). Too much honey can be as bad as sugar but used in small amounts is preferable to sugar as a sweetener. Make sure that it is raw natural unpasteurized honey.

## MEAT

The biochemistry of an animal changes when it is slaughtered. Meat is already in a state of decay by the time it gets to our tables and it continues to putrefy in our digestive tracts for days before being absorbed or eliminated. To make matters worse, animals raised commercially for human consumption in North America are fed grain with chemicals added and injected with hormones, antibiotics, tranquilizers and other drugs. These hormones and chemicals remain in the meat and are poisonous to humans. Sometimes chemicals are added to red meat to make it look redder. Even if we could get organically raised meat, too much red meat can lead to constipation, bowel disease, and gout, rheumatism and arthritis from the excess acidity in our blood. Fats from the high fat content in red meat raise blood cholesterol levels above normal and deposits of cholesterol in the arteries lead to poor circulation, hardening of the arteries and most likely to heart disease. Even those of us who don't want to be vegetarians should limit our intake of red meat and get our protein from fish (deep sea fish are from the least polluted waters), poultry (although commercially raised chicken and turkeys have similar problems to meat), eggs and dairy products. We can also explore the many ways to use soy beans and soy by-products and to combine beans and grains to get our protein. They are easy to obtain and less expensive than meat. There are many books available on how to prepare these foods (e.g. THE BOOK OF TOFU, DIET FOR A SMALL PLANET). In particular for people over 40 it is advantageous to eat less red meat. Red meat is especially high in phosphorus. Excess phosphorus leads to depletion of calcium from the bones leading to osteoporosis (bones becoming porous and fragile). Vegetarians who eat eggs and dairy products have higher bone density than meat eaters because their calcium intake is likely to equal their phosphorus intake, rather than be lower.

Bacon and ham that have not been cured with nitrites (preservatives which are cancer-causing) are available at Jackson meats, 2214 West 4th Avenue, Vancouver. Grain fed organically raised meat can be obtained from Aldergrove Freezer Meats, 6234 264th Street, Aldergrove (phone 856-2116 or 530-6113).

Moore's New York style chickens (which have not been injected with hormones or plucked with chemicals) are available at Hycrest Meat Market, 2717 Granville Street, Vancouver. Naturally Health Foods Store, 747 East Broadway, Vancouver, has organically raised chickens.

### REFINED AND PROCESSED FOODS

We should avoid white sugar, white flour products (bread, pastries, hamburger rolls, spaghetti), white rice, all foods that have been processed and have chemicals added to them as preservatives, colouring agents, stabilizers, thickeners, flavour enhancers, etc. Refining foods causes loss of vitamins, minerals and essential fatty acids, leaving them low in nutrients. They are also low in fibre and merely provide hard to digest bulk. The array of chemicals we ingest with refined food is poisonous to our bodies and some are carcinogenic (cancer-causing). The "junk foods" like chips and other snack foods and "fast foods" like hot dogs and hamburgers are full of chemicals (as well as salt and sugar) and are made from refined products. Instead of refined grains, use whole wheat flour and brown rice. For snacks have nuts, seeds, dried fruit, fruit and raw vegetables. Nuts and dried fruit tend to be expensive but small quantities provide a lot of nutrients.

### OILS AND FATS

Avoid saturated (fats which turn solid at room temperature), hydrogenated (hydrogen added), processed oils (the extracting and refining of oils uses strong chemicals which destroy nutrients such as Vitamin A, D and E and leave traces in the oil); fats from animal sources; fried foods. These increase our cholesterol levels above normal, and may increase the risk of cancer. Use instead unsaturated, unhydrogenated, unprocessed, cold-pressed oils made from vegetable sources such as soy, olives, safflower, sunflower seeds. They are available in health food stores and in the natural food departments of some supermarkets. They should be refrigerated once opened. A capsule of Vitamin E opened into the oil will help prevent rancidity. All oils should be used sparingly.

### DAIRY PRODUCTS

Although milk and milk products like cheese and yogurt are good sources of protein, the milk we get now is produced by the dairy industry and is not as nutritious as raw milk from a farmer's cow. The law requires that our milk be pasteurized. This process is supposed to destroy potentially harmful bacteria (by heating the milk to high temperatures and cooling it rapidly) but it also destroys enzymes and other nutrients. Milk on supermarket shelves is also homogenized (shaken to disperse the fat content) which destroys several vitamins and minerals. Only Vitamin A and D are replaced.

It is possible to get unhomogenized milk in Vancouver from Avalon Dairies. Avoid completely processed cheese, "cheese foods" and imitation milk and cream. The best way to eat dairy products is in the form of cultured milks such as yogurt. Yogurt contains friendly bacteria which improve digestion and the absorption of B vitamins. It is easily assimilated, has more protein than milk, keeps the digestive tract free from destructive bacteria, helps prevent constipation, lowers blood cholesterol, lowers the acid content of the blood, restores friendly bacteria destroyed if we take antibiotics, and is an easily assimilated form of calcium because of its lactic acid content.

### SALT

Avoid ordinary table salt which contains only sodium chloride and use a balanced sea salt (obtainable at health food stores for not much more than the cost of table salt) which contains all the minerals. Too much salt can lead to hypertension (high blood pressure), kidney damage, and depletion of potassium, as well as the fluid retention which some pre-menstrual women experience. You can avoid salt altogether by using kelp or dulse (seaweeds available in powdered form) or a salt substitute made from herbs, dehydrated vegetables and spices (available at health food stores).

### CAFFEINE

Coffee, black tea, chocolate, cola drinks (and aspirin) all contain caffeine. Caffeine is a drug which stimulates the nervous system and leads to kidney problems, stomach ulcers and high cholesterol levels, as well as depleting the body of B and C vitamins. It has been linked with breast cysts. In menopausal and post-menopausal women, consumption of caffeine accelerates osteoporosis (bones becoming porous and fragile). There are a wide range of herbal teas and coffee substitutes available now. If you decide to go off coffee, it is important to taper off gradually or you may get headaches, constipation, nausea and other withdrawal symptoms such as depression and irritability.

### GOOD EATING HABITS

Besides what we eat, how we eat is also important. Digestion starts in the mouth; it is therefore important that we chew our food slowly and carefully. Our digestive systems tend to shut down when we are under stress, so we should be as relaxed as possible at mealtimes to avoid indigestion. We should pay attention to our bodies' needs and eat when we are genuinely hungry, not just because it's our usual mealtime. Overeating

is never a good idea; just before bed is a particularly bad time to overeat as all our body systems, including the digestive system, slow down when we are asleep. And remember that nutrition and good eating habits are only one part of good health. It is also very important to get regular exercise, fresh air and sunshine, and to avoid excessive stress. We realize that it is very difficult to lead healthy stress-free lives, given the economic and social pressures we live under in this society. Planning nutritious meals, spending more time preparing them and trying to find the extra money for good quality food and supplements may be an added stress some of us would find hard to deal with. Still, a good diet is essential for physical and mental health, and there are ways that a healthy diet can be maintained economically (e.g. by using dried beans, grains and tofu instead of meat for protein).

## THE FOOD INDUSTRY

Most of us no longer grow our own food and raise our own animals, or buy our food directly from farmers. Food production, processing, packaging, transportation and marketing have been taken over to a large extent by big business (agribusiness) whose motive is to make money, not to supply us with the best quality food possible. To increase the profits of the food industry, poor quality food is made to look good and easy to prepare by the addition of chemical dyes, preservatives, flavourings, antioxidants, thickeners, emulsifiers and bleaches, and by fancy packaging and advertising. Hormones are fed to cattle and poultry to make them fatten quicker. The chemicals and hormones we then ingest are dangerous to our health. (See ADDITIVE ALERT by Linda Pim). In many Third World countries where many people are undernourished, the same big corporations use large areas of land for cash crops such as coffee, tea and sugar cane instead of for food. Half the grain production of the world is fed to animals. It takes 7 lbs of grain to produce 1 lb of useable meat. The grain thus lost could be used to feed a lot of people rather than the meat eaters of North America and the profitable meat industry. (See FOOD FIRST by Frances More Lappé). Our choices are directed and dictated by the economics of the food industry. Many cheap nutritious foods are not available in supermarkets and are often not familiar to us.

## WHAT CAN WE DO?

The availability of good nutritious food is decreasing and the cost increasing. It is hard when our food dollars seem to buy less each week to put out the extra money for good quality food. Eating well does not have to be too costly but it may take some effort to change our food and shopping habits in order to have both nutritious and economical meals. These are some things we can do:

1. Be informed. Read books (and if possible take courses); there is information available on how to prepare nutritious, economical meals with ingredients that may be unfamiliar to some of us.
2. Share this information with friends.
3. Join a food co-op. This means more time than shopping in a supermarket because members are usually required to put in some voluntary work time, but the savings can be worth it and food co-ops usually try to stock good quality food. Co-ops are non-profit with a markup added to the cost of buying the food to cover overhead expenses.
4. Be aware of what the food industry is up to. If enough of us refuse to buy inferior or dangerous products, the food industry will have to make some changes. Boycotts are one way that consumers can have a say in what the food industry sells us.



## BOOK LIST ON FOOD AND NUTRITION

Dr. Paavo Airola: Are You Confused?, How to Get Well and Every Woman's Book (Health Plus Publication).

All useful reference guides but don't believe everything he says--check other opinions.

Nutrition Search Inc: Nutrition Almanac (McGraw-Hill)

An excellent reference on nutrition; includes role of nutrition in disease.

Frances Moore Lappé: Diet For a Small Planet (Ballantine Books)

Non-meat ways to get adequate protein (includes recipes); excellent introduction on the politics of food.

Adelle Davis: Let's Eat Right to Keep Fit (Signet Books)

Good information on how vitamins and minerals work but don't follow her advice without checking other sources.

Ann Kent Rush: Getting Clear (Random House)

A book about body work for women with a fascinating section on women's attitudes to food.

Susie Orback: Fat is a Feminist Issue (Berkley Medallion Books)

"Fat is not about food. Fat is about protection, sex, mothering, strength, assertion and love."

Linda Clark: Know Your Nutrition (Keats Publishing Inc.)

Know your vitamins, minerals and supplements.

W. Shurtleff and A. Aoyagi: The Book of Tofu (Ballantine Books)

How to make tofu and many recipes.

Janie Coulter Hartbarger and Neil J. Hartbarger: Eating For The Eighties: A Complete Guide to Vegetarian Nutrition (The Saunders Press)

Sound and easy-to-live-with information on nutrition.