

Glossary

Acid	See pH
Alkali	See pH
Allergen	An allergen is any substance that triggers a state of allergy.
Amino Acid	Amino acids are the building blocks of proteins . There are about 20 of them that the body combines, in endless permutations, into the tens of thousands of proteins that the body needs. The body can make the vast majority of the huge number of the amino acids that it needs. Ten of amino acids however are 'essential' and have to be obtained from what we eat.
Aneurysm	A dilation in the wall of a blood vessel to form a blood-filled sac which can rupture and cause fatal hemorrhage.
Antioxidant	Chemical compound that neutralizes free radicals and the damage they cause. There are many antioxidants in plant food but rarely in animal products. Autoxidation proceeds by a chain reaction which continues as long as the chain carriers (free radicals) persist. Antioxidants, by reacting with chain carriers, terminate the oxidative chain reaction. There are a great number of food antioxidants of which the most common are vitamin C, vitamin E, zinc and selenium.
Atherosclerosis	Atherosclerosis is a type of thickening and hardening of the medium- and large-sized arteries. It accounts for a large proportion of heart attacks, ischemic heart disease , strokes and most aneurysms of the aorta.
Bad Carbohydrate	A carbohydrate that has a high glycemic index . It is capable of placing an unnatural stress on the body's blood sugar control mechanism. In this work Bad Carbohydrates are defined as having a G.I. higher than 65. See Chapter Five.
Base, Basic	See pH
Bioflavonoid	Bioflavonoids are a class of micronutrients that occur in plants. They cannot be made in the body but the body has need of most if not all of them. They therefore have to be obtained through eating plant food. There are six sub-classes of Bioflavonoid: flavones, flavanones, flavonols, isoflavonoids, anthocyanins and flavans.
BMI	see Body Mass Index

Body Mass Index

Body Mass Index is a useful measure of leanness or obesity. It is calculated as the individual's weight (in kg) divided by height (in meters) squared

Borderline Carbohydrate

A **carbohydrate** that has a borderline **glycemic index**. It is *potentially* capable of placing an unnatural stress on the body's blood sugar control mechanism. In this work Borderline Carbohydrates are defined as having a **G.I.** between 35 and 65. See **Chapter Five**.

Calcium

Calcium is a metallic element that is found compounded with other elements throughout nature, for example as chalk and limestone. In combination with phosphorous (calcium phosphate) it forms the major constituent of bones. Calcium is found in most plant foods and some animal products. It has the chemical symbol 'Ca'.

Candidiasis

Candidiasis is an infectious disease produced by yeast-like fungi that are commonly found in the mouth, vagina, and intestinal tract. It is usually kept under control by the immune system and helpful bacteria. See **Chapter Eight**.

Carbohydrate

Carbohydrates are a multitude of compounds composed of carbon, oxygen and hydrogen. They form sugars, starches and plant cell walls. Carbohydrates are only found in plants. When they are digested they are ultimately converted into blood sugar (glucose). The human body is best designed for 'slow' (low **G.I.**) carbohydrates as found in salads, vegetables and most fruits. It is also well adapted to **fructose**, the special sugar found in fruit. The human body is not well adapted to 'fast' (high G.I) carbohydrates. These are starches as found in cereals and potatoes, or sugars as found in table sugar and honey. See **Chapter Five**

Carnivore

A carnivore strictly speaking is member of the mammalian order Carnivore, literally 'meat eaters'. They are predators and comprise ten families. Examples from each family are dogs and foxes; bears and badgers; mongooses; hyenas; cats; sea lions; earless seals; and the walrus. Humans and other primates are not carnivores.

Cecum

The cecum, is the part of the gut that comes immediately after the small intestine and is the beginning of the colon (large intestine). Partially digested food passes to the cecum via a valve the (ileocecal valve). See **Chapter Four**.

Dairy products

Dairy Products comprise milk (whole, skimmed, dried and condensed) and processed milk such as cream,

yogurt (whole and skimmed) butter, cheeses and ice cream. The term applies to milk from all sources: cows (by far the most common), buffalo, goats, reindeer and sheep.

Eggs are not a dairy product.

Diabetes

A disorder of **carbohydrate** metabolism resulting from insufficient production of, or reduced sensitivity to, insulin. See **Chapters Five** and **Eight**.

Diverticulitis

Condition in **diverticulosis** where the diverticula become infected and inflamed.

Diverticulosis

Diverticulosis is a condition where abnormal grape-like pockets ('diverticula') form in the wall of the intestine. It is a condition common in the West where a low fiber diet is common. There are usually no symptoms, although occasionally there may be bleeding.

DNA

Deoxyribonucleic Acid. This is the famous genetic code discovered by Watson and Crick and for which they were awarded a Nobel prize. DNA is present in every single body cell and is the blueprint from which the body is constructed and maintained. When new cells are born, or have to be maintained or change their function, the blueprint is consulted to by other chemical compounds to define how the construction work should be carried out.

Eicosapentanoic Acid (E.P.A.)

A fatty acid commonly found in certain types of fish. In the body, the essential fatty acid, alpha-linolenic acid is converted into E.P.A. on its way to the production of 'favorable' prostaglandins and similar substances. By consuming E.P.A. directly a short cut is taken to the formation of these helpful compounds.

Eicosonoid

Active compounds derived from **essential fatty acids**. There are three main classes: prostaglandins, thromboxanes and leukotrienes. These collectively are responsible for an amazing collection of body responses. They dilate or constrict blood vessels; excrete or retain urine; conserve or excrete sodium; modulate ovulation; stimulate uterine muscle contraction; provoke or calm menstrual cramps; induce therapeutic miscarriage; prevent or promote clotting; cause platelets to adhere to artery walls (**atherosclerosis**); enhance or inhibit inflammation; provoke or calm hypersensitivity (anaphylactic) reactions, allergies, and autoimmune diseases; modulate the functioning of the digestive tract; enhance or inhibit the contraction of the smooth intestinal muscles; inhibit stomach secretions; promote

bone demineralization (resorption) and hypercalcemia (excess calcium in the blood).

Enzyme

a substance that speeds up a chemical reaction without itself being altered in the process. They are also known as catalysts. Enzymes intervene in a multitude of body reactions. An example is ptyalin in saliva. It converts starch to glucose in seconds when otherwise it would take hours.

Essential Fatty Acid

Of the twenty or more fatty acids only two are 'essential', that is, they can only be obtained the diet. They are linoleic acid and alpha-linolenic acid. Informally they have been called vitamin F₁ and F₂ respectively. The recommended daily intake has not been formally determined, but it is commonly thought to be no more than about 1 gram each in an ideal ratio of 1:1. See **Chapter Five**.

Fats and Oils

Oils are simply fats that are liquid at room temperature. Anyone who has put a bottle of olive oil in the refrigerator will have seen how the oil turns solid – it becomes a fat. It is nevertheless exactly the same compound and readily turns back into oil at room temperature. Technically the words 'fats' and 'oils' are interchangeable. See **Chapter Five**.

Favorable Carbohydrate

A carbohydrate that has a low **glycemic index**. It is one that does not place an unnatural stress on the blood sugar control mechanism. In this work Favorable Carbohydrates are defined as having a **G.I.** below 35. See **Chapter Five**.

Fiber

Dietary fiber is the natural packaging of plant foods that are not digested in the small intestine. The chief categories are cellulose, hemicelluloses, pectins, gums, and lignins. Pectins and gums are viscous fluids rather than 'fibrous'. Some types of fiber increase the bulk of the feces and thereby relieve constipation and reduce **diverticula** formation in the colon. Pectin and guar gum slow gastric emptying and contribute to satiety. Dietary fiber is partly digested in the colon where it is fermented by gas-producing bacteria. The volatile fatty acids (acetic, butyric, or propionic) are produced that contribute to colon health. 'Soft' fiber, the kind best for humans, is found in vegetables, nuts, and fruits. 'Hard' fiber is found in whole grain cereals and bran.

Free Radical

An oxidizing compound that is formed in the body or is induced by external agents (such as ultra violet rays, tobacco smoke and alcohol). Free radicals cause a lot of damage to cells and **DNA**. The body has means of

neutralizing them by the use of **antioxidants**. The free radical is a molecule that contains at least one unpaired electron. Because of their odd electrons, free radicals are highly reactive. At worst they tear open intact molecules, cannibalizing parts of them to complete their own electron pairs and, in the process, generating new free radicals. Thus an exploding chain reaction is set in train that can cause huge damage out of all proportion to the initial provoking agent.

Fructose

A simple sugar (or monosaccharide) commonly found in fruit and in some vegetables. It sometimes combines with **glucose** to form a disaccharide, **sucrose** or table sugar. Fructose, unlike sugar, is slowly and harmlessly metabolized.

G.I.

See **Glycemic Index**.

Glucose

Also called dextrose, is a simple sugar (monosaccharide) found in fruits and honey. It is essential in just the right concentrations in the blood stream to supply energy to the muscles and the brain. Too high a level is known as **hyperglycemia**, too low a level is known as **hypoglycemia**.

Glycemic Index

This is a measure of what a carbohydrate does to blood sugar levels. The glycemic index (G.I.) for **glucose** (blood sugar) itself is defined as being 100. Most foodstuffs have an index less than 100. See Appendix One.

Granivore

A creature that gains most of its food supply from seeds. Granivores are chiefly birds. See **Chapter Four**.

Herbivore

Strictly speaking a herbivore is a creature that obtains most of its nutrition from grasses, like the cow, the horse and the sheep. Sometimes a herbivore is defined as a creature that consumes mainly plant food. See **Chapter Four**.

Histamine

Histamine is a chemical messenger involved in a number of complex biologic actions. It interacts with cell receptors to elicit changes in many different bodily functions. Histamine contracts muscles in the gut, the uterus, and the lungs; relaxes fine blood vessels; increases permeability of capillary walls; removes products of cell damage; combats allergens; stimulates stomach acid; stimulates the heart beat; modifies lymphocyte immune reactions. Histamine has a neurotransmitter role, but its function is unclear.

Hominoid

Creatures that have a human-like body shape. Technically any of a superfamily of primates including

	recent hominids, gibbons, and pongids together with extinct ancestral and related forms
Hormone	Hormones are chemical messengers sent by one tissue in the body to instruct other tissues via the bloodstream. They regulate a host of bodily activities. Hormones are either steroids or amino acids (proteins).
Hydrogenated Oil and Trans-fatty Acids	These are much the same thing. They are made artificially by manufacturers who want to turn an oil solid at room temperature. In effect, they are converting polyunsaturated oils (like sunflower oil or corn oil) into saturated fats . They are commonly found in margarine and in many bakery products like cakes and cookies. These artificial fats are just as bad for health as the real thing, saturated fats. See Chapter Five .
Hyperglycemia	A state of abnormally high levels of glucose in the blood stream during which the excess glucose is directly toxic to the nervous system. See Chapter Five .
Hyper-insulinemia	A state of abnormally high levels of insulin in the bloodstream. See Chapter Five .
Hypoglycemia	A state of abnormally low levels of glucose in the bloodstream. Symptoms are varied but include mental impairment, irritability, sugar craving, confusion, tiredness, and seizures. See Chapter Five .
Insulin	Insulin is a hormone secreted by the pancreas when blood sugar (glucose) rises. Its chief role is to encourage muscle and fat cells to take up glucose from the bloodstream and thereby reduce the blood sugar level down to normal. Insulin acts on many other body functions too. See Chapter Five .
Inulin	A sweet tasting substance that occurs particularly in roots and tubers such as the dahlia and the Jerusalem artichoke. The inulin molecule is a small, inert polysaccharide that readily passes through the digestive system. Because the body does not absorb it, it has a low or zero G.I.
Irritable Bowel Syndrome (I.B.S.)	An extremely common disorder that is probably due to a disturbance of the motility of the whole intestinal tract. The symptoms vary from watery diarrhea to constipation and stomach cramps to nausea. See Chapter Eight .
Ischemic Heart Disease	An inadequate blood supply to a region of the heart due to a constriction or obstruction of a blood vessel.
Lactivore	A creature which obtains its nourishment from the milk

	of its mother. In practice this term applies to the unweaned young of mammals. See Chapter Four .
Law of Unintended Consequences	Fanciful term applied to the commonly observed phenomenon that people in trying to 'fix' one problem often create unexpected side-effects that are worse than the original problem. See Sorcerer's Apprentice Syndrome .
Legume	Synonymous with pulse . Legumes are the dry fruit of the family Fabales. Important legumes are alfalfa, beans, broom, clover, lentil, pea, peanut, soybean and vetch. Legumes are high in protein.
Leukotriene	Any of a group of eicosanoids that participate in allergic responses. Leukotrienes are potent chemicals that dilate blood vessels and constrict bronchial air passages.
Micronutrient	A compound (as a vitamin, flavonoid or mineral) essential in minute amounts to growth and health.
Mono-unsaturated fat	These are harmless oils , heat stable and most famously represented by olive oil. Although harmless, they are still empty calories and the body will be better off without them.
Oil	See Fats and Oils
Omega 3 Oil	These are polyunsaturated oils with the first double bond at the third position on the fatty acid chain. The essential fatty acid alpha-linolenic acid is the most important representative.
Omega 6 Oil	This is a family of polyunsaturated oils with the first double bond occurring at the sixth position on the fatty acid chain. The essential fatty acid linoleic acid is the most important representative.
Pancreas	<p>The pancreas consists of two kinds of tissue: endocrine and exocrine. The latter produces pancreatic juice, a combination of digestive enzymes that empty via a duct into the small intestine.</p> <p>The endocrine tissues of the pancreas, the islets of Langerhans, secrete the hormone insulin and glucagon into the bloodstream.</p>
pH	pH is a measure of the acidity or alkalinity of watery solutions. pH ranges between 0 (most acidic) to 14 (most alkaline). Liquids that have a pH between 0 and 7 are acidic. Liquids that have a pH between 7 and 14 are alkaline. Pure water is neutral (neither acidic nor alkaline) and has a pH of 7. See Chapter Five .
Pleistocene	The Pleistocene Epoch began about 1,600,000 years ago and ended roughly 10,000 years ago. This was the

	<p>time when our ancestors were evolving in tropical Africa in harmony with their environment.</p>
Poly-unsaturated Fat	<p>A class of fat that has more than one double carbon bond. They are usually liquid at room temperature. There are two major families of polyunsaturated fats, Omega 3 and Omega 6. They are chiefly represented by vegetable oils and marine (fish) oils.</p>
Potassium	<p>A soft, white, highly reactive metal with a silvery luster. In nature it is abundant in combination with other elements. In the human body it carries out, inter alia, essential cellular electrolytic functions in tandem with sodium. Potassium is found abundantly in vegetation, particularly some fruits. Chemical symbol, 'K'.</p>
Primate	<p>These are mammals that share many basic body characteristics and have been classified into the Primate Order. The Order comprises humans, apes, monkeys, and related creatures such as lemurs and tarsiers.</p>
Prostaglandin Protein	<p>See Eicosanoids</p> <p>Proteins are complex molecules made up of amino acids. There are more than 50,000 different kinds of protein in the human body. They are the chief constituents of muscle, skin and blood cells and of hormones, enzymes and many other essential molecules.</p> <p>Proteins from animal sources like meat, fish, milk and poultry are sometimes known as 'hard' proteins because they are harder to digest and metabolize. They contain problem constituents like sulfur and phosphorous that have to be disposed of by the liver. Plants contain proteins. Legumes and nuts (both of which are a form of seed) are particularly rich in protein, richer in many cases than animal protein. Young plants (like the ones that humans eat – salads and vegetables) are richer in protein than mature leaves. Proteins from plants are sometimes known as 'soft' proteins since, on the whole, their digestion and metabolization are easier.</p> <p>Problems arise both when too much and too little protein is consumed. In general, people in the Western world eat far too much protein leading to diseases like acidosis, osteoporosis and kidney disease.</p>
Pulse	<p>The edible seeds of various leguminous crops (as peas, beans, or lentils). Used as a synonym for legume.</p>
Purslane	<p>A small, fleshy annual plant of the genus <i>Portulaca</i>,</p>

with prostrate, reddish stems, egg-shaped leaves attached by the narrower end, and small yellow flowers that open in the sunlight. From the earliest mentions by the ancient Greeks until recent times, purslane stems and leaves were eaten regularly as a salad or cooked like spinach. Today the variety 'kitchen garden purslane' is still grown in Europe as a potherb. Purslane is remarkable for its richness in the **Omega 3** oil, alpha-linolenic acid, one of the success secrets of the Cretan diet. (**Chapter Three**). Purslane is also extraordinarily rich in antioxidants such as alpha tocopherol, beta-carotene, vitamin C and glutathione. It is a great source of other micronutrients like calcium, phosphorous and iron. There is a movement to encourage the cultivation and consumption of this superbly nutritious vegetable.

Rickets

also called vitamin D deficiency, is a disease of infancy and childhood characterized by defective bone growth and typified by bandy or bowed legs. In the absence of vitamin D, calcium is not properly absorbed and utilized by the body. Vitamin D is a steroid hormone that is produced in the skin by the action of sunlight. This is normally sufficient for most people and it is unnecessary to obtain vitamin D from food. People who live in high latitudes, or who do not often go out of doors, should nevertheless take pains to get some sunshine from time to time.

Saturated fat

In a saturated fat, two hydrogen atoms are attached to each carbon atom (three on the terminal carbon atom). There are no carbon double bonds. In general, the more saturated fatty acids there are in a **triglyceride** the more solid it is at room temperature. Beef fat is highly saturated, chicken fat less so. The body has not been designed to work with most kinds of saturated fat. They block proper functioning of **essential fatty acids** and their **eicosanoids** resulting in diseases like heart disease, hardening of the arteries, thrombosis, high cholesterol levels and depressed immune system.

Savanna (also Savannah)

Savanna is any tropical or subtropical grassland characterized by scattered trees or shrubs, a dry season, and brush fires. African savanna grasses are either high grasses 5 to 15 feet tall or short grasses about 1 foot tall. The trees, many of which are acacia, are usually thorny and small-leaved. Groups of trees such as palms or cactus-like species and single trees such as baobabs are also common. There are large

herds of grazing animals predated by lions, leopards and cheetahs. The bird life includes ostriches, eagles, falcons and vultures.

Sodium

Sodium is a soft, malleable, highly reactive alkali metal with chemical symbol 'Na'. In compound form it is abundant in nature, especially as sodium chloride (table salt). It is needed by the body as a micronutrient for various biochemical reactions but salt in excess is harmful. Sodium occurs naturally in modest levels in most vegetation. This is about right for human requirements.

Sorcerer's Apprentice Syndrome

So-called after the Paul Dukas musical interpretation (l'Apprenti Sorcier) of Goethe's story made famous in Disney's Fantasia. In Fantasia Mickey Mouse, as the sorcerer's apprentice, has been given the task of fetching water from the well. To save himself the trouble, Mickey casts a spell on a broom to fetch the water for him. Unfortunately Mickey, who was meddling in matters he only half understood, didn't know the spell to *stop* the broom fetching water even though the tank was now full. The sorcerer's house filled up with water as the broom carried on inexorably fetching water as Mickey panicked.

The Sorcerer's Apprentice Syndrome is the fanciful term applied to the commonly observed phenomenon that people in trying to 'fix' one problem are often meddling in things they only half understand and thus make the situation worse. See **Law of Unintended Consequences**.

Starch

Consists of thousands of linked glucose units. Enzymes rapidly convert starch back to glucose. That is why starches have a high G.I. Starch is the main component of cereals, grains and potatoes.

Striation

A thin scratch mark as though made by a nail.

Sucrose

A disaccharide consisting of conjoined glucose and fructose molecules. It is otherwise known as (table) sugar.

Sugars

Any of numerous sweet, colorless, water-soluble compounds present in the sap of seed plants and the milk of mammals. They make up the simplest group of carbohydrates. Sugars include **glucose** (dextrose); **fructose** (levulose); invert sugar, maltose; and lactose (milk sugar).

Thrombosis

The formation of a blood clot in the heart or in a blood vessel. Common causes are: injury to a blood vessel, 'thick' blood (platelet stickiness), artery inflammation,

fatty plaque formation (atherosclerosis), **aneurysm**, confinement in bed, abnormally large numbers of platelets, abnormally high levels of fats in the blood.

Thromboxane

Is any of a number of related hormones responsible for blood platelet agglomeration. Under the influence of thromboxanes, platelets adhere to one another and to blood vessel walls. Other prostaglandin mechanisms oppose platelet 'stickiness' when necessary. Under many dietary errors explained in this book, this finely tuned mechanism is disrupted. On the whole, Westerners have a strong tendency to produce too much thromboxane and as a result suffer excessively from blood clotting disorders.

Trans-fatty acid

See **Hydrogenated Oil**.

Triglycerides

An ester of three fatty acids attached to a glycerol molecule. They are by far the most common form of fats in the diet and in the body. Triglycerides are deposited in animal tissues as storage for food energy. High triglycerides in blood circulation indicate either a high fat consumption or a poor metabolism of ingested fats. The body accumulates fat and metabolizes it as the energy requirements of the body demand it. See **Chapter Five**.

Vitamin F

Name given in the past in some countries to **essential fatty acids**. This use has not been formally adopted in scientific nomenclature but is still used informally, as in this work, as a useful shorthand for these vitamin-like substances.