This E-book provides a guide to terms and definitions regarding nutrition and digestion - plus lots of snippets of dietary advice which relate to endometriosis

There can be some very complex terms relating to food, nutrition and digestion, so this list has been put together so you can quickly look up what a particular term means.

Some items are repeated because you may find them referred to by different names or different abbreviations.

Many people would consider diet and nutrition to be about the following:

- Proteins
Carbohydrates
Vitamins
Minerals
Fibre
Fats
Enzymes
Digestion
Energy or fuel

Well it’s a good start …. But it is a wee bit more complex than that. Read on to gain more advice about the complexities of nutrition and how it directly relates to your health ....

You will also find snippets of nutritional advice as it relates to endometriosis contained within the list below.
‘He who takes medicine and neglects to diet wastes the skill of his doctors’
- Chinese Proverb

Acidophilus (Lactobacillus Acidophilus)
Acidophilus is a probiotic bacteria which is commonly found in yogurt. Probiotic bacteria survive digestion in the stomach and help maintain the balance of ‘good bacteria’ in the lower parts of the intestinal tract. A good
balance of ‘friendly’ bacteria in the intestine reduces the risk of health problems.

**Additives**
Additives are used to preserve food and/or improve its taste, appearance, quality and stability. Many of the substances used as food additives also occur naturally in foods. Food additives are listed in the ingredients list of packaged foods and are described by their function in the food, followed by either the specific name or the number unique to each additive e.g. emulsifier (322). Food additives are given code numbers to make them easier to identify as their names can sometimes be long and complicated.

**Amino Acid**
Amino acids are the building blocks of protein. There are 20 different types that are combined in different ways to make different proteins. The body can make some of its own amino acids but some are essential meaning that they cannot be made by the body so we need to get them from food.

**Anaemic**
Having fewer red blood cells than necessary. Anaemia can be caused by heavy blood loss and can be quite common among women with endometriosis when they have heavy periods with heavy blood loss. A supplement of iron can help to address this issue.

**Antidiuretic Hormone: ADH**
A hormone secreted by the hypothalamus, a gland at the base of your brain.
Antioxidants
Antioxidants are compounds that help to protect the body against damage caused by free radicals.

The body produces its own antioxidants and they are also found in foods such as fruits and vegetables, tea, coffee, dark chocolate and red wine. Common antioxidants are vitamins C, E and A, and phytochemicals like polyphenols. Eating a diet rich in antioxidants is beneficial for health and wellbeing.

Apple Cider Vinegar
An effective natural bacteria fighting agent that contains vital minerals and trace elements such as potassium, calcium, magnesium, phosphorus, chlorine, sodium, sulphur, copper, iron, silicon and fluorine. It helps to strengthen the immune system.

Aspartame
An artificial sweetener made up of two amino acids - aspartate and phenylalanine. These amino acids are found naturally in many foods such as meat, vegetables, dairy products and cereal grains. Individually these amino acids are not sweet, but joined together they produce an intense sweet taste that is approximately 200 times sweeter than sugar.

Basal Metabolic Rate - ( BMR )
The minimum number of calories needed to maintain vital functions, such as breathing and keeping the heart beating.
**Beta-glucans**
Gums found in beans and peas that lower cholesterol levels.

**Bifido-bacteria**
These bacteria prevent the colonization of the intestine by harmful pathogenic bacteria and yeasts. They protect the integrity of the mucosal barrier which prevents harmful substances for entering the blood stream. They also assimilate B vitamins and promote bowel movements.

**Bioflavonoids**
These give colour to leaves and plants. Used to be called vitamin P. Strengthens capillary walls and helps prevent bruising. Found in fruits and vegetables.

**Biotin**
A B-vitamin that is a component of enzymes that ferry carbon and oxygen atoms between cells.

**Boron**
An essential trace mineral, known to help bones use calcium and helps to prevent bone loss. Also modulates immune and inflammatory processes.

**Butyric acid**
This is liberated in a healthy large intestine. It helps the acidophilus and bifido bacteria to stick to the gut membrane and thereby protecting it. It is required as a primary source of energy for all cells on the intestinal wall, which renew themselves every three days. It also aids the healing of the gut membrane after use of anti-biotics.
Butyric acid is a fatty acid that comes from two dietary sources: 1) unabsorbed dietary fibre that has been bacterially fermented in the gut, and 2) cow’s milk or butter. By metabolizing fibre in the colon, butyrate helps produce the energy necessary for the health of the large intestine.

The large intestine of humans hosts a huge population of bacteria. Researchers have discovered that some of these bacteria convert the soluble fibre and resistant starch that are present in undigested food into short-chain fatty acids.

One of these fatty acids, called butyric acid, has important health benefits in the colon. The colon is the longest section of the large intestine. Butyric acid helps maintain a healthy intestinal lining and has also relieved symptoms in people with inflammatory bowel disease. In addition, butyric acid may lower the risk of colon cancer.

C

Caffeine
Caffeine is a naturally occurring chemical found in plants. Common sources are coffee beans, tea leaves, guarana berries and smaller amounts are found in cocoa beans. Caffeine acts as a stimulant to the nervous system in the body, increasing mental alertness. Caffeine has a stimulant action, particularly on the central nervous and reproductive systems. It is strongly advised to avoid any caffeine on the diet for endometriosis as is puts a strain on the liver, and the liver plays a vital role in removing excess oestrogen from the body.

Calcium
Calcium is a mineral that is an important component of our bones. Dairy
foods such as yogurt, milk and cheese are rich sources of calcium, and it is also found in canned salmon and sardines with bones, some nuts, seeds and fortified foods such as soy products, orange juice and cereals.

**Candida Albicans**
A genus of yeast (fungus) that is commonly found in the human gut flora. In some individuals Candida Albicans will overwhelm the digestive and immune system. If a yeast infection develops it can lead to food intolerances and disrupt normal hormonal regulation.

**Carbohydrates**
Carbohydrates are short or long chains of sugars that play an important role in the diet and are used to supply the body with energy. Sugar, starch and cellulose are all types of carbohydrates. Bread, cereals, rice, pasta, legumes, fruit and some vegetables are all good sources of carbohydrates.

**Carotenoid**
Absorb dangerous particles, stimulate the immune system and are toxic to tumour cells. Carotenoids can be found in green and orange fruits and vegetables. Carotenoids are the pigments that make fruits and vegetables orange, red, and yellow. Dark green vegetables and fruits like kiwi contain these pigments, too, but green chlorophyll masks the carotenoids’ colours.

**Cellulose**
A fibrous carbohydrate consisting of linked glucose units that cannot be digested by the human. It passes through the body unchanged but as it is able to absorb water, cholesterol and oestrogens. It speeds up excretion time and helps the body rid itself of harmful toxins. The cell walls of all fruits, vegetables, cereals, nuts, seeds are made of cellulose.
The cleansing action of cellulose is important for women with endometriosis due to its action of mopping up excess oestrogens in the body.

**Cholesterol**
Cholesterol is a fat-like substance that has important functions in the body including an integral part of the structure of cells and being used by certain glands for making sex hormones. There are two types of cholesterol in the blood: HDL (high density lipoprotein) or ‘good’ cholesterol and LDL (low density lipoprotein) or ‘bad’ cholesterol. High levels of LDL in the blood can increase the risk of cardiovascular disease.

**Chondroitin sulfates**
A substance that is believed to contribute to the healing of joints. Is sometimes added to the supplement glucosamine to increase benefits for joints and cartilage repair.

**Chromium**
A trace mineral that helps insulin facilitate the entrance of glucose into your cells and is a requirement for energy.

**Chylomicron**
A microscopic particle, containing fats, cholesterol, phospholipids, and protein, formed in the small intestine and absorbed into the blood during digestion.

**Cis-fatty acid**
The natural form in which oils exist. Builds a strong cell membrane. Found only in cold-pressed oils.
Coconut Oil
Helps with stress relief, increased immunity, proper digestion and metabolism, and cancer. Its properties include antioxidant, antifungal, antibacterial, anti-microbial and it helps in the healthy functioning of the thyroid and enzyme systems. *A great food to include in the diet for endometriosis.*

Coenzyme
A substance that works along with other enzymes.

Coenzyme Q10
Taken as a dietary supplement and plays an important part in the production of chemical energy in the mitochondria. It serves as a powerful antioxidant. CoQ10 is accumulating evidence that it has a role in the treatment of mitochondrial disorders and counteracting some of the damage caused by free radicals and it is said to significantly enhance the immune function of the body. Aids the heart muscle in its uptake of oxygen.

Complete protein
A protein that contains ample amounts of all essential amino acids.

Constipation
Difficult, incomplete, or infrequent evacuation of the bowel. Insufficient fibre is being eaten which reduces water uptake. This leads to a build-up of harmful toxins and reduced excretion of cholesterol, and oestrogens. Related to some food intolerances, wheat, bananas, cheese and eggs can trigger constipation. Vitamin C and magnesium are known to soften stools.
Copper
This zinc-balancing mineral is important in many enzymes as well as in the production of haemoglobin, the molecule that transports oxygen. It also plays a role in the functioning of the prostate gland and the activity of the oil glands, helping prevent acne. Nerves and joints require copper for healthy functioning.

D-gamma linoleic acid (DGLA)
An omega 6 essential fatty acid found in evening primrose oil

Dietary Fibre
Dietary fibre is an indigestible form of carbohydrate of which there are three types, insoluble fibre, soluble fibre and resistant starch. Insoluble fibre helps keep the bowel regular by absorbing water which softens the bowel contents. It is mostly found in wheat-based foods such as bread and cereals but is also in nuts, seeds, fruit and vegetables. Soluble fibre, found mostly in fruits, vegetables, oats, dried beans and peas, slows down the emptying of the stomach helping people feel full for longer.

Resistant starch is starch that is not digested in the small intestine but moves to the large intestine where it is fermented by good bacteria to produce substances that help keep the lining of the bowel healthy.

Digestive Enzymes
Without enzymes human health would be impossible every metabolic function of the body requires them. Inadequate production of digestive enzymes due to illness negatively affects the breakdown of foods into the nutrients and the body’s needs. Proteolytic enzymes may be beneficial for
cancer.

**Dioxins**
A powerful toxin used in industrial processes and as an aerial herbicide. Used in 'agent orange' during the Viet Nam. Known to damage the reproductive system due to its estrogenic effect on body cells and thought to be a carcinogen. Stored in body fat so care must be taken when dieting to go slowly. Dioxins are powerful immune-suppressants, in other words they suppress the immune system.

Dioxin is thought to be responsible (or at least assist, in the development of endometriosis). Your liver needs to be able to work well and excrete dioxins from the body. **FYI - Green Tea is said to help eliminate Dioxins from the body.**

**Docosahexaenoic acid; DHA**
An omega-3 fatty acid that reduces inflammation, perhaps by inhibiting an enzyme called COX-2, which is linked to inflammatory diseases, such as rheumatoid arthritis.

**E**

**Eicosapentaenoic acid (EPA)**
An omega 3 EFA found in fish liver oils, olive oil, flax seeds/oil. The body metabolises EPA to form anti-inflammatory prostaglandins, keeps blood thin, important in prevention of heart disease, PMS and cancers.

*Omega 3 is an important supplement to take for women with endometriosis to help reduce inflammation.*
**Emulsifiers**

Emulsifiers are food additives that are added to food to help mix oil and water ingredients. An example of a common emulsifier used in food is soy lecithin.

Soy and soy by-products need to be eliminated from the diet for endometriosis due to their toxic nature following intense chemical processes, and convenience foods need to be left out of the diet for endometriosis as many contain soy lecithin. Also, soy is now grown as a 90% GMO crop, and the processing of soy into soy based food stuffs is undertaken using highly toxic processes.

**Digestive Enzymes**

Enzymes are biological catalysts: this means that they speed up the chemical reactions in living things. Without enzymes, our guts would take weeks to digest our food, our muscles, nerves and bones would not work properly and so on.

Digestive enzymes help in food digestion, breaking it down into units that can be absorbed by the small intestine and carried into your blood. These enzymes are created and found in the salivary glands, stomach, pancreas and small intestine. As we age, your body’s natural ability to create enzymes lessens. Our body functions naturally slow down as we get older, including the ability to secrete enzymes. However, this can be aggravated by an unbalanced diet high in processed food. Human saliva contains an enzyme called amylase.

This enzyme helps to turn starch into a sugar called maltose. When you swallow a mouthful of food, the amylase stops working because it is much too acid in the stomach. When food gets into the small intestine, more amylase is made by the pancreas and this turns the remaining starch into maltose. Another enzyme (maltase) turns all this maltose into glucose.
Glucose is then absorbed into the blood.

**The different enzymes**
There are many types of different enzymes including: digestive enzymes, food enzymes, metabolic enzymes, liver enzymes.

Enzymes are vital ingredients in many bodily functions. Healthy people produce enough enzymes to help their bodies keep illness at bay and recuperate fast. When the body is starved of any particular enzymes, your immune and digestive system will weaken.

**Enzymes in food**
Food enzymes are naturally found in uncooked fruits, vegetables and other food. They work like the enzymes created in your digestive system. They help break down food into components to fuel your body. Unfortunately, cooking food at high temperatures destroys the enzymes. This makes eating fresh, uncooked vegetables and fruits an essential part of your diet. Fruits and vegetables with higher levels of enzymes include bananas, mangoes, pineapples, lemons, papayas, apples, pears, spinach, parsley and watercress.

**Enzymes - metabolic**
Metabolic enzymes are secreted and found in your bones, blood and organs throughout your body.

There are various types of enzymes specific to particular tissues or organs. These enzymes help maintain tissue integrity and cell regeneration. Like digestive enzymes, your ability to secrete metabolic enzymes decreases as you age. When your digestive enzymes are low, your body taps into your metabolic enzymes to help process food.

**Enzymes and health**
Enzymes are essential to properly digest food, eliminate waste and clean your blood. Your body is able to create enzymes. Essential enzymes are also found in raw food. However, when diets include high quantities of refined,
processed, artificially enhanced cooked food, in which enzyme levels are drastically lowered, then your health will be affected.

**Essential amino acids**
The amino acids your body cannot manufacture. You need to obtain them from your diet. Best sources are from plant-based foods.

**Essential Fatty Acids**
Essential fatty acids are types of fat that are needed for proper function and development but need to come from the diet as they cannot be made by the body. There are two essential fatty acids - linoleic acid (an omega-6 fatty acid) and alpha-linoleic acid (an omega-3 fatty acid). Good sources of linoleic acid include cold pressed oils, some nuts (e.g. walnuts) and some seeds (e.g. sesame). Good sources of linoleic acid include canola oil, flaxseed and walnuts.

**Essential nutrient**
A nutrient essential to humans. Your body cannot manufacture an essential nutrient. You need to obtain it from your diet.

**Evening primrose oil (EPO) Gamma linoleic acid (GLA).**
The precursor to anti-inflammatory prostaglandins. A useful addition to the diet with conditions such as endometriosis, arthritis, asthma, PMS, eczema and heart disease. Stops blood becoming sticky. Should not be used by those with epilepsy or manic depression.
Fat-soluble vitamins
Fat-soluble vitamins are stored in the liver and fatty tissues, and are eliminated much more slowly than water-soluble vitamins. Fat-soluble vitamins include vitamins A, D, E and K. Most people do not require supplements of these vitamins as they are stored in the body.

Fatty acid
A chain of carbon atoms with hydrogen atoms attached and a carbon-oxygen-oxygen-hydrogen group (the unit that makes it an acid) at one end.

Flavonoids
Flavonoids are a type of polyphenol, which is a group of plant chemicals with a similar chemical structure that act as antioxidants in the body. Sources include wine, grapes, apples, tea, onions and berries. Flavonoids are found in small amounts in most vegetables and fruit.

Fibrin
See Proteolytic enzymes below - this contains important information relating to scar tissue

Folic acid
B vitamin essential for preventing foetal abnormalities and is an important vitamin to have in your diet for healthy pregnancy. It is reduced by the pill and by stress. It is also readily excreted from the body as it is a water-soluble vitamin and is not stored in the body for very long.

Many foods contain folic acid, including vegetables such as spinach, sprouts,
broccoli, green beans, and potatoes. Some bread and breakfast cereals are fortified with folic acid. However, the intake for each individual can vary.

If you take folic acid tablets (supplements) in early pregnancy you reduce the risk of having a baby born with a spinal cord problem, such as spina bifida. This is because the early development of the baby’s spinal cord requires a regular, good supply of folic acid. There is evidence that folic acid also reduces the risk of having a baby born with a cleft lip and palate, a heart defect (congenital heart disease), and the risk of a premature (preterm or early) labour. The recommended dose when pregnant is 400 micrograms (0.4 mg) a day.

**Folate**
Folate is another term for Folic acid (see above)

**Free Radicals**
Free radicals are highly reactive compounds that are produced within the body as a product of normal metabolic process and due to outside influences, such as smoking, air pollution and sunlight exposure. If the level of free radicals in the body is not controlled, they can cause damage to cells. Antioxidants produced within the body or sourced from the diet help to control the level of free radicals.

**Fructose**
Fructose is a monosaccharide (a sugar) which occurs naturally in fruit and honey. It is the sweetest naturally occurring sugar. Glucose and fructose are joined together to form the common sugar, sucrose. Fructose is also used as a sweetener in some processed foods.
**Genistein**
The estrogenic activity of genistein has the strongest estrogenic activity (otherwise known as a phytoestrogen - a plant based oestrogen). It is found in extracts of soybeans, red clover, and kudzu root. Other pulses contain much smaller amounts of genistein. Because of its strong estrogenic activity the consumption of soybeans, red clover and kudzu root needs to be eliminated from the diet for endometriosis.

There is a certain amount of confusion about phytoestrogens for some sufferers of endometriosis - phytoestrogens are helpful in blocking the oestrogen receptors in the body and thus reduce the amount of circulating oestrogens (from whatever source - natural, chemical, plant based) entering into the cells. *But having too much of the strong estrogenic phytoestrogens can make endometriosis worse - as endometriosis is fed by oestrogen.*

**Glucose**
Glucose is a monosaccharide (a sugar). Carbohydrate containing foods are broken down during digestion into glucose. The body’s cells use glucose to make energy to fuel the body. Sometimes the words blood glucose and blood sugar are used interchangeably.

**Glucosamine**
A raw material your body needs to lubricate joints and build and maintain cartilage.

**Gluten**
Gluten is a type of protein found in cereal plants like wheat, barley, rye and oats. For some people, gluten is an allergen. *It also appears to be common*
that women with endometriosis are gluten intolerant and a gluten free diet can help.

**Glutamic acid**
A non-essential amino acid abundant in both animal and vegetable proteins and found in high concentrations in the human brain. Glutamic acid is important in the metabolism of sugars and fats. Excellent sources of glutamic acid include meat, poultry, fish, eggs, and dairy products, as well as some protein-rich plant foods.

*Note - red meat and dairy are advised to be excluded from the endometriosis diet*

**Glycaemic Index (GI)**
The Glycaemic Index (GI) is a ranking of carbohydrate containing foods according to the effect they have on blood glucose levels. Low GI carbohydrates are broken down by the body slower and result in a more gradual rise in blood sugar levels. High GI carbohydrates are broken down more quickly and result in more rapid increase in blood sugar levels.

A GI of less than 55 is considered low, 56-69 is considered medium GI and a GI of 70 or over is considered high. Low GI foods are useful for everyone, and particularly for those with type two diabetes mellitus, to help with control of blood glucose levels. High GI foods can be useful for sports people as a more rapid source of glucose to fuel working muscles.

**Glycine**
A non-essential amino acid that occurs in protein foods and comes from choline in the liver and the amino acid serine. Glycine is one of the non-essential amino acids and is used to help create muscle tissue and convert glucose into energy. It is also essential to maintaining healthy central nervous and digestive systems, and has recently been shown to provide protection
via antioxidants from some types of cancer.

Glycine is considered a glucogenic amino acid, which means it helps supply the body with glucose needed for energy. It helps regulate blood sugar levels, and thus glycine supplementation may be useful for treating symptoms characterized by low energy and fatigue, such as hypoglycaemia, anaemia, and Chronic Fatigue Syndrome (CFS).

For the endometriosis diet, protein foods such as fish, beans and pulses, are the best dietary sources of glycine.

**GMO (Genetically Modified Organisms)**
Genetically modified organisms are organisms that have been modified via the introduction of genetic material and proteins from another source. All foods produced using GM technology must undergo a pre-market safety assessment and mandatory labelling requirements.

**H**

**Histamine**
A chemical that can cause blood vessels to dilate. It is secreted at the site of a wound and is one of the major factors that cause the wound to become red. It is also secreted by the immune system during and immune response to antigens. Vitamin C is antihistamine and can help with pain relief. Antihistamine drugs inhibit the release of histamine in the body. This effect can dampen pain and allergic reaction.

**Hydrogenated Fats**
Hydrogenated fats are vegetable fats that have been chemically altered by the addition of hydrogen (hydrogenation) with the purpose of making them
more solid. Turning a liquid oil into a more solid form makes it more stable for use in food manufacturing. Sources of hydrogenated fats include some cooking margarines, biscuits, cakes, pies and popcorn and many commercial frying oils.

I

Insoluble Fibre
Insoluble fibre is a type of dietary fibre that is found in cereals, the outer skins of some fruit and vegetables, nuts, seeds and often in high fibre breads. Insoluble fibre absorbs water in the large intestine which helps to soften bowel contents and promote regularity.

Iron
Iron is a mineral that is used by the body to make haemoglobin, the part of the red blood cell that transports oxygen. Iron-containing foods include red meat, poultry, legumes, green leafy vegetables and whole grain breads and cereals. A lack of iron in the diet or poor absorption of iron can lead to iron deficiency anaemia. Women with endometriosis can become low in iron due to heavy periods, so supplementing with iron is advised if sufficient iron cannot be obtained from diet.

L

Legumes
Seed based foods - beans, pulses, seeds - have a unique ability to envelop tumour cells and prevent their growth. Great alternative sources of protein from meat
Lipids
Chemical family name for fats and related compounds such as cholesterol are lipids (from lipos, the Greek word for fat).

Linoleic acid & Linoleic acid
There are two forms of linolenic acid: alpha linolenic acid and gamma linolenic acid. Both provide the body with essential nutrients and help to provide protection against some medical conditions.

The science bit .. Alpha linolenic acid (ALA) is an omega-3 polyunsaturated fatty acid. Gamma linolenic acid (GLA) is an omega-6 unsaturated fatty acid. These forms of fatty acids are also closely related to the omega-3 fatty acids found in fish oil, which are called eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

Although it is known that linolenic acids are essential fatty acids, called as such because they are not produced within the body, the exact function is still under debate. They are believed to be involved with brain development and function.

Gamma linolenic acid (GLA) in the body is used in the production of prostaglandins, which are hormone-like substances that are believed to aid in regulating the immune system.

There are supplements of GLA made from the oils of evening primrose, borage and black currant plants.

Magnesium
This white metallic element that is an essential nutrient. Magnesium
deficiency can lead to impaired nerve and muscle function. Magnesium deficiency is becoming common - it causes loss of appetite, nausea, diarrhoea, confusion, muscle tremors and spasms, lack of co-ordination. Useful with PMS and abdominal cramps. We can lose magnesium from drug treatments, stress, diuretics.

**Sources of Magnesium:**
Dark green, leafy vegetables like kale, Swiss chard and spinach are good sources of magnesium with 75mg per 1/2 cup. Almonds, cashews, peanuts and nut butters are rich in magnesium. There are many forms of supplemental magnesium which have different benefits. You can read more about magnesium at: https://www.endo-resolved.com/magnesium-for-endometriosis.html

**Manganese**
A trace mineral that is found in your body’s glands and bones. It helps metabolize carbohydrates and synthesize fats, including cholesterol. Manganese is necessary in very tiny (trace) amounts for human health. In large quantities, manganese is poisonous. Most people get enough manganese from their normal diet and good sources of manganese include nuts, seeds, whole grains, and leafy green vegetables.

**Mercury**
A heavy metal that is toxic to humans and commonly found in fish from polluted waters. It is also thought to leech into the system from mercury fillings.

**Metabolism**
The biochemical reactions of the body that are involved in the maintenance
of life. The thyroid gland and hypothalamus are related to metabolic rate. Also, the metabolic rate is responsible how foods are burnt to provide energy. Iodine and selenium are important for this process.

**Minerals**
Minerals are compounds that occur in rocks and metal ores. Plants absorb minerals through the soil, and animals get these minerals by eating the plants or by eating other animals. Some of the major minerals required by the body include calcium, phosphorus, magnesium, sulphur, potassium, chloride and sodium. Trace elements are minerals needed by the body in smaller amounts such as iron, zinc, iodine, selenium, copper, manganese, fluoride, chromium, molybdenum.

**Mono-unsaturated fat**
A fat such as olive oil with a one carbon double bond. Such fats are liquid at room temperature, but thicken when chilled. Mono-unsaturated fats are known to reduce bad cholesterol. Monounsaturated fats are the ‘good fats’ and are found in avocados, nuts such as peanuts, almonds, cashews, macadamias and oils such as olive and canola.

**Monosodium Glutamate (MSG)**
Monosodium glutamate occurs naturally in some foods like mature cheeses, tomatoes, mushrooms and soy sauce. MSG also functions as a flavour enhancer and is sometimes added to savoury products like soups, sauces and stocks. It is displayed in the ingredient list as “flavour enhancer (monosodium glutamate)” or “flavour enhancer (621)”. You really need to leave MSG out of your diet.
**Myelin**
The fatty material that sheathes nerve cells and makes it possible for them to fire the electrical messages that enable you to think, see, speak, move, and perform the multitude of tasks natural to a living body; brain tissue is also rich in fat.

**O**

**Omega-3 fatty acids (see linolenic acid above)**
Unsaturated fatty acids found most commonly in fatty fish such as salmon and sardines. The primary omega-3 is alpha-linolenic acid, which your body converts to hormone-like substances called eicosanoids. *Omega 3 oils are the prime oils you need to include in your diet as they help to reduce the pain and inflammation caused by endometriosis.*

**P**

**Pantothenic acid**
B-vitamin vital to enzyme reactions that enable you to use carbohydrates and create steroid biochemicals such as hormones.

**Peristalsis**
Rhythmic muscular contraction in the intestines which pushes food through the digestive system. Bifido-bacteria and fibre encourage peristalsis.

**Phenylalanine**
An essential amino acid readily available in most food sources. This amino acid is important in helping your brain make active nerve chemicals that can
affect your mood (like epinephrine). Phenylalanine seems to increase endorphins in the brain to give you a more positive outlook.

**Phosphorus**
A mineral essential for strong bones and teeth. It is present in almost all foods.

**Phytic acid**
Phytic acid is found in wheat which is one of the reasons wheat and related grains are removed from the diet from endometriosis.

The highest levels of phytic acid are found in wheat and soy - in some people this locks up minerals such as calcium, magnesium, iron and zinc, and stops them from being absorbed. There are smaller amounts of phytic acid in grains like barley and oatmeal but levels of phytic acid can be greatly reduced in grains by sprouting them. Sprouted grains are excellent sources of nutrition and are very good in salads and stir fry.

**Phytochemical**
Phytochemical or phytonutrient in broad terms means any chemical or nutrient derived from a plant source. There are hundreds of phytochemicals in plants and it is believed many are yet to be discovered. Phytochemicals are thought to be beneficial for general health. Some commonly talked about phytochemicals are antioxidants such as flavonoids in fruit and vegetables, lycopene in tomatoes and polyphenols in coffee and cocoa beans. Plant sterols are another type of phytochemical.
Phytoestrogens
Phytoestrogens are naturally occurring plant chemicals that are similar in structure to the human hormone oestrogen. The most common phytoestrogens are the isoflavones found in soy beans and lignans from linseed. Phytoestrogens behave similarly to oestrogen in the body and are thought to help relieve some menopausal symptoms and potentially have other health benefits.

Phytoestrogens and endometriosis
Phytoestrogens - are plant-based compounds that act like oestrogen in the body and are found in many foods we eat. Many different plants produce compounds that may mimic or interact with oestrogen hormones. At least 20 compounds have been identified in at least 300 plants from more than 16 different plant families. Referred to as phytoestrogens, these compounds are weaker than natural oestrogens and are found in herbs and seasonings (garlic, parsley), grains (soybeans, wheat, and rice), vegetables (beans, carrots, and potatoes), fruits (dates, pomegranates, cherries, apples) and drink (coffee). Most of us are exposed to many of these natural compounds through food.

The two most studied groups of phytoestrogens are the lignans (compounds found in whole grains, fibres, flax seeds, and many fruit and vegetables) and the isoflavones (found in soybeans and other legumes). Because scientists have found phytoestrogens in human urine and blood samples, we know that these compounds can be absorbed into our bodies.

Phytoestrogens differ a great deal from synthetic environmental oestrogens in that they are easily broken down, are not stored in tissue and spend very little time in the body.

There are differing opinions about phytoestrogens’ role in health. When consumed as part of an ordinary diet, phytoestrogens are probably safe and may even be beneficial. In fact, some studies on cancer incidences in different
countries suggest that phytoestrogens may help to protect against certain cancers (breast, uterus, and prostate) in humans.

On the other hand, eating very high levels of some phytoestrogens may pose some health risks. Reproductive problems have been documented in laboratory animals; farm animals and wildlife that ate very high (up to 100% of their diet) amounts of phytoestrogen-rich plants.

Phytoestrogens behave like hormones, and like hormones, too much or too little can alter hormone dependent tissue function. For this reason, women with Endometriosis need to adjust their diet so as not to include too many phytoestrogen rich foods but a regulated amount is beneficial in helping to balance the system as a whole.

**Phyto-nutrients**
Nutrients found only in plants that are the substances that produce many of the beneficial effects associated with a diet that includes lots of fruits, vegetables, beans, and grains.

**Polyphenols**
Polyphenols are naturally occurring plant chemicals, including flavonoids, catechins, isoflavonoids, lignans and anthocyanins. They are antioxidants which may help protect against oxidative damage and are most commonly found in some fruits and vegetables, tea, coffee, soy, seeds, lentils, some dark chocolate and red wine.

**Potassium**
An important mineral contained mainly within cells, potassium helps to balance and interact with sodium in controlling blood pressure and
supporting electrical impulses across cell membranes. Potassium is found in fruits, vegetables, milk, and meat.

**Preservatives**
Preservatives are a type of food additive used to help prevent the deterioration of food by microorganisms and preserve the food quality over an extended period of time.

**Probiotics**
Probiotics are bacteria that help replenish the beneficial bacteria in the intestine. Common foods that contain probiotics are yogurt and fermented milk drinks. Maintaining a balance of healthy bacteria in the intestine is beneficial for a healthy digestive system.

**Progesterone**
A steroid hormone secreted by the female reproductive system that functions mainly to regulate the condition of the endometrium (uterus), preparing it to accept a fertilized egg. If the egg is not fertilized, the level of progesterone drops, the uterine lining breaks down, and menstruation ensues.

If the egg is fertilized (pregnancy), the placenta produces progesterone, whose effects include preparing the mammary glands for lactation. Many forms of oral contraception use synthetic progesterone. *Some women with endometriosis use progesterone cream to help with their endometriosis and reduce oestrogen.*

**Prostaglandins**
There are 2 groups of prostaglandins which are most relevant to endometriosis - *Good or Bad.*
**Good** - take part in the normal functions of the body without contributing to the processes which cause the negative effects of endometriosis

**Bad** - take part in the functions of the body which contribute to endometriosis symptoms and its negative effects i.e. pain, inflammation, digestive disturbance, connective tissue damage.

The way your body produces different types of prostaglandins can be controlled by what you include in your diet by consumption of different oils and foods. Some foods and oils will promote the negative prostaglandins because of subtle chemical reactions. In turn, other foods and oils will block that chemical reaction and stop the negative prostaglandins from being produced.

**Prostaglandins and the endometriosis diet**

There are the ‘good guys’ and the ‘bad guys’ of the prostaglandin group. The goal of a controlled diet is to block the ‘bad guys’ for their negative actions on the body, and increase the ‘good guys’ for their opposite and beneficial actions. The action of the bad guys is to increase uterine contractions, and the good guys have a soothing effect. By changing the types of oils that are taken in the diet, the production of the good guys can be stimulated, which helps with uterine relaxation. These oils are composed of omega-3 fatty acids, which lead to positive prostaglandin production.

**Excellent sources of the omega-3 fatty acid producing oils are:**

- Walnut oil
- Flax seeds/oil
- Olive oil
- Oily fish
- Pumpkins seeds

It is also important to decrease intake of those fatty acids that will stimulate the bad guys which are found in saturated fats, butter, animal and organ meat, lard. *Increasing the intake of omega 3 oils will help to reduce the inflammation and pain caused by endometriosis.*
**Protein**
Protein is an essential nutrient that is used in the body for the growth and repair of cells and to provide energy. Protein is found in both plant and animal foods. Sources of protein include meat, eggs, dairy foods, nuts and seeds, dried beans and lentils.

**Proteolytic enzymes (or proteases) - and the relationship to scar tissue**
Proteolytic enzymes, also referred to as "proteases," are enzymes that break down proteins into their smallest elements. If this breakdown of proteins happens in your gut, we call the enzymes "digestive," because they help us digest our food.

Systemic proteolytic enzymes, however, have a completely different purpose - when taken on an empty stomach, proteolytic enzymes will pass through the stomach or intestine lining and enter the circulatory system. This is why they are called "systemic" - once they enter the circulatory system, they circulate throughout the body.

The most important thing that systemic proteolytic enzymes do is to break down excess fibrin in your circulatory system and in other connective tissue. These enzymes bring nutrients and oxygen-rich blood that remove the metabolic waste produced by inflammation and excess fibrin.

Fibrin is produced in the body as a chemical product to help stop bleeding and is used in part of the healing process following injury or surgery. It has a useful purpose initially in the role of healing, however if the area in question is slow to heal, an excess of fibrin will appear as clumps of scar tissue in the site of the wound, injury or at the surgical site. Once this happens, an acute condition becomes chronic.

*For women with endometriosis this action can cause a severe excess of fibrin in the body caused by bleeding implants, scar tissue and post-operative scarring as well.*
**Fibrin (From the Encyclopaedia Britannica)**

Fibrin, an insoluble protein that is produced in response to bleeding and is the major component of the blood clot. Fibrin is a tough protein substance that is arranged in long fibrous chains; it is formed from fibrinogen, a soluble protein that is produced by the liver and found in blood plasma.

When tissue damage results in bleeding, fibrinogen is converted at the wound into fibrin by the action of thrombin, a clotting enzyme. Fibrin molecules then combine to form long fibrin threads that entangle platelets, building up a spongy mass that gradually hardens and contracts to form the blood clot. This hardening process is stabilized by a substance known as fibrin-stabilizing factor.

Excess fibrin throughout your circulatory system will severely limit the amount of blood flow to areas that need it most. To compensate for this, the body is forced to make the heart work harder and increasing your blood pressure.

Some possible indicators of excess fibrin in your system include: chronic fatigue, slow healing, inflammation and pain, as well as elevated blood pressure. Natural dietary proteolytic enzymes are found the most in pineapple, ginger root and papaya.

**Nattokinase to reduce fibrin**

Nattokinase is a fibrinolytic enzyme (The breakdown of fibrin in blood clots, esp by enzymes Fibrinolytic) and comes from in the traditional Asian food called natto. It is made from fermented soy beans. Natto is slimy in texture and has a strong smell that puts off many people. Research into nattokinase has indicated positive health benefits that might encourage people to try this traditional food.
**Nattokinase Production**
Natto is made by fermenting boiled soybeans using the bacterium Bacillus subtilis natto. During the fermentation process, this bacterium secretes an extracellular enzyme called nattokinase. The enzyme belongs to the family of alkaline serine proteases--acid-sensitive enzymes that break down proteins. After fermentation, the liquid is separated from the solid soybeans. Nattokinase is purified from this liquid, for use in dietary supplements.

* Note on soy and endometriosis - as mentioned in Soy (below) and the negatives of consuming foods made from soy - the traditional fermented soy products are fine on the diet for endometriosis - *see Phytic acid (above).*

**Supplements of proteolytic enzymes**
Preparations and dietary supplements of proteolytic enzymes have been shown to be useful for many health conditions, particularly those involving inflammation. One of these is Serrapeptase, which is taken daily on an empty stomach, so as to gain the benefits of being systemic and help to enter your system. (See Serrapeptase below)

**Pyridoxine**
Vitamin B6. Required for more than 60 enzymes and essential for DNA and protein synthesis. It influences the nervous and reproductive system and plays a vital role in immunity and avoidance of PMS symptoms. Aids infertility along with zinc.

**Riboflavin**
Vitamin B2, part of the body's antioxidant mechanism. Needed for correct thyroid function. Used alongside B5 in the reproductive system.
Saturated Fat
Saturated fat is commonly referred to as ‘bad fat’ because of its impact on blood cholesterol levels. Saturated fats are often solid at room temperature and are the type of fat predominantly found in meat and dairy foods.

Selenium
An important antioxidant and cancer-prevention mineral that varies in availability depending on its content in soils in different areas of the world. Selenium - when taken together with vitamin E has been reported to decrease inflammation associated with endometriosis, as well as immune system booster.

Serine
An amino acid that can be made in your tissues from glycine or threonine, so it is considered nonessential. Has an important role in metabolism.

Serotonin
A neurotransmitter that makes you feel relaxed and improves mood. Approximately 90% of the human body’s total serotonin is located in cells in the gut where it is used to regulate intestinal movements. The other 10% is synthesized in serotonergic neurons of the central nervous system, where it has various functions.

These include the regulation of mood, appetite, and sleep. Serotonin also has some cognitive functions, including memory and learning. Modulation of serotonin in the brain through the synaptic pathways is thought to be a major action of several classes of pharmacological antidepressants.
**Serrapeptase**
Serrapeptase is a proteolytic enzyme. This enzyme is naturally processed and was discovered in the silkworm intestine. Studies reveal powerful anti-inflammatory effects. Serrapeptase digests nonliving tissue, blood clots, cysts, arterial plaque and inflammation in all forms. You can purchase serrapeptase as a dietary supplement.

**Silicon**
Important for tissue strength, silicon, usually referred to as silica, is the most commonly found element in the earth’s soil and in foods. It gives strength and firmness to the body tissues - the bones, cartilage, connective tissues, arteries, and skin.

**Slippery elm**
A herbal remedy which soothes irritated tissues especially mucus membranes such as those in the digestive tract.

**Sodium**
Sodium is a mineral that is a component of salt. While our body requires a certain amount of sodium to maintain proper functioning, too much has been associated with increased blood pressure in some people.

**Soluble Fibre**
Soluble fibre is a type of dietary fibre that is thought to help in lowering cholesterol levels. Betaglucan is a type of soluble fibre found in high amounts in oats and barley. Fruit and vegetables, dried beans and lentils are other sources of soluble fibre.
Soy (see also phytic acid above in relation to soy)
Two isoflavones found in soy (genistein and daidzein) are promoted by the food industry for everything from menopause relief to cancer protection. But these compounds in soy have been discovered to ‘demonstrate toxicity in oestrogen sensitive tissues and in the thyroid’ as noted by researchers. That last sentence is rather important for women with endometriosis in relation to diet and nutrition.

This is a list of health hazards of soy as reported by health specialists:
1. High levels of phytic acid in soy reduce assimilation of calcium, magnesium, copper, iron and zinc. Phytic acid in soy is not neutralised by ordinary preparation methods such as soaking, sprouting and long, slow cooking. High phytate diets have caused growth problems in children.
2. Trypsin inhibitors in soy interfere with protein digestion and may cause pancreatic disorders. In test animals’ soy containing trypsin inhibitors caused stunted growth.
3. Soy phytoestrogens disrupt endocrine function and have the potential to cause infertility and to promote breast cancer in adult women.
4. Soy phytoestrogens are potent antithyroid agents that cause hypothyroidism and may cause thyroid cancer. In infants, consumption of soy formula has been linked to autoimmune thyroid disease.
5. Vitamin B12 analogues in soy are not absorbed and actually increase the body’s requirement for B12.
6. Soy foods increase the body’s requirement for vitamin D.
7. Fragile proteins are denatured during high temperature processing to make soy protein isolate and textured vegetable protein.
8. Processing of soy protein results in the formation of toxic lysinoalanine and highly carcinogenic nitrosamines.
9. Free glutamic acid or MSG, a potent neurotoxin, is formed during soy food processing and additional amounts are added to many soy foods.
10. Soy foods contain high levels of aluminium which is toxic to the nervous system and the kidneys.
11. The various negative effects of soy weaken the immune system. *For the list of reasons above, all soy products and foods that may contain soy are ideally excluded from the diet for endometriosis. The only safe foods derived from soy are those that are made from the fermenting process like tamari.*

**Sterols**
Natural compounds found in oils in grains, fruits, and vegetables. Phyto-sterols, more commonly known as plant sterols, have been shown in clinical trials to block cholesterol absorption sites in the human intestine, thus helping to reduce cholesterol.

**Sugars**
Also known as saccharides, sugars are the smallest form of carbohydrates. When we digest carbohydrate containing foods they are broken down into single sugars for absorption into the blood. Naturally occurring sugars include fructose (mostly found in fruits) and lactose in milk.

Glucose is naturally present in some fruits and honey and sucrose is found in sugar cane and sugar beet. Cakes, biscuits and soft drinks contain added sugars.

**Sulphur**
Sulphur is an important part of several amino acids (the building blocks of protein), especially methionine and cysteine. This major mineral helps the body resist bacteria, cleanses the blood, and protects the protoplasm of cells...
**Thiamin**
Vitamin B1 - This is a sulphur and nitrogen compound, and was the first of the B vitamins to be isolated and identified, helps ensure a healthy appetite.

**Trans-fats**
There are two sources of trans-fat. Firstly, trans-fat is found naturally, in small amounts, in some animal foods, such as beef and dairy.

The second source of trans-fat is created when liquid vegetable oils go through a process called partial hydrogenation, which is used to improve the stability of oils. Partially hydrogenated vegetable fats are used by food manufacturers because they allow longer shelf-life and give food desirable taste, shape and texture. Commercially produced trans-fat are found in margarine, biscuits, crackers, fried foods, pastries, baked goods, and other processed foods made with partially hydrogenated oils.

It is now commonly viewed that these trans-fats are bad for health, especially the man-made trans fats used in commercial food production as these will go through various chemical processes to make the finished product. In fact some dietitians are saying that butter is better for you than margarine because they are more natural.

*For women with endometriosis, all trans-fats need to be avoided. The natural trans-fats promote the negative prostaglandins that are responsible for inflammation and pain, and the commercially made trans-fats can give rise to serious health problems. Apparently, many bottles of commercial oil made for cooking are actually rancid before you even open them, because of the high temperature treatments and chemical processes they have been through. This is why cold pressed natural oils like olive and almond are much better for you.*
**Triglycerides**
Triglycerides are the main constituents of vegetable oil (typically more unsaturated) and animal fats (typically more saturated). High levels of triglycerides in the bloodstream have been linked to the risk of heart disease and stroke.

**Tryptophan**
An essential amino acid well known for its ability to dramatically affect the levels of the neurotransmitter - serotonin - the compound that makes you feel better. *See serotonin above*

**Tyrosine**
An essential amino acid necessary for dopamine and norepinephrine - the alertness neurotransmitters.

The subject of amino acids is huge - you can do further research to obtain a better understanding - but the list here is aimed to give you a brief insight and sign-post you in directions so that you can learn more about the complexities of the bio-chemical make-up of the body and the complex inter-reaction of all these compounds.

**V**

**Vitamins**
**Vitamin A**
A vitamin found primarily in fish liver oils and some yellow and dark green vegetables, functioning in normal cell growth and development. Deficiency causes roughening and hardening of the skin, night blindness and deterioration of mucous membranes in the lung etc. Exists in two forms:
Vitamin Retinol and Beta carotene. Excess amounts of vitamin A is toxic.

**Vitamin B complex**

Water soluble vitamins found primarily in yeast, liver, eggs, and certain vegetables. Taking too much of one B vitamin can cause shortages of the others. Lowered by the pill. Also produced in the small intestine by bifido bacteria.

**Vitamin B1**

Vitamin B1, also known as thiamine, helps fuel your body by converting blood sugar into energy. It keeps your mucous membranes healthy and is essential for nervous system, cardiovascular and muscular function. Vitamin B1 is found in many foods including yeast, cereal grains, beans, nuts, and meat.

**Vitamin B2**

Vitamin B2, also called riboflavin, works with other vitamins in the B complex to process calories from carbohydrates, protein and fat. Your body needs it for growth and red cell production, and adequate riboflavin intake promotes healthy skin and good vision. Vitamin B2 is a water-soluble vitamin. It is found in green leafy vegetables.

**Vitamin B3**

Vitamin B3 is also called niacin. Like all the B-complex vitamins, it is important for converting calories from protein, fat and carbohydrates into energy. But it also helps the digestive system function and promotes a normal appetite and healthy skin and nerves.

**Vitamin B6**

Vitamin B6 also known Pyridoxine helps brain function and helps the body convert protein to energy. Commonly deficient especially in those using the Birth Control Pill, HRT or other sex hormone drugs. Deficiency can cause depression, urinary tract cancer or dermatitis.

**Vitamin B12**

Vitamin B12 helps to keep the nervous system (brain, nerves and spinal cord) healthy and assist in the production of red blood cells. Low levels of B12 can lead to anaemia. Common food sources of B12 are found in meat, eggs and dairy products, therefore it is advisable to supplement this vitamin for
Vitamin B12 and folate
Vitamin B12 and folate work together to help the body produce red blood cells. They also have several other important functions:
- vitamin B12 helps to keep the nervous system (brain, nerves and spinal cord) healthy
- folate is important for pregnant women because it reduces the risk of birth defects in unborn babies. Folate can be found in green leafy vegetables.

Vitamin C (Ascorbic acid)
Water soluble vitamin (not stored in the body) present in rose hip powder and chilli peppers. Lowered by pill hormones, smoking and tetracyclines. Actions - Anti-viral, anti-bacterial, anti-histamine. Smokers are deficient as each cigarette burns up 25mg Vit C.

Vitamin D
Fat soluble vitamin (meaning it is stored in the body) that is produced in response to skin exposure to the sun. Also found in fish oils. Deficiencies in Vitamin D cause rickets. Deficiency may cause problems in hormone formation.

Vitamin E
Fat soluble vitamin (meaning it is stored in the body) that belongs to the tocopherol family and found in wheat germ oil, cereals, egg yolk. Rats fed a Vitamin E deficient diet have fertility problems. Important in preventing sticky platelets and blood clots.

Vitamin K
Fat soluble vitamin (meaning it is stored in the body) has two forms phytomenadione (plant origin) and menaquinone (animal origin) and is required for normal blood clot formation. Found in alfalfa, spinach, cabbage, fish meal.

Vitamins
Vitamins are essential micronutrients that are used in the body for a variety of processes. They are classified into two groups - fat soluble and water soluble. The fat-soluble vitamins are vitamins A, D, E and K. The B group vitamins (B1, B2, B3, B12), folate, biotin and vitamin C are water soluble.
W

**Water soluble vitamins**
Vitamins that dissolve in water, thus you excrete any extra in your urine.

**Whole-grains**
Whole-grains are seeds of plants like wheat, rye, corn, barley, rice and oats that store the nutrients plants need to reproduce. Wholegrain foods contain the three natural components of the grain kernel - the bran (outer layer), germ (middle layer) and the endosperm (inner layer).

Whole-grains will increase the intake of fibre in your body and will assist with digestion and help to reduce constipation. But don’t overdo it otherwise your constipation will be worse.
*Note - wheat and rye are excluded from the endometriosis diet as these grains aggravate the symptoms of the disease*

X

**Xylitol**
A natural sweetener available from health stores, it is a safe sweetener for people with diabetes and does not impact on insulin levels.

Y

**Yoghurt**
The active culture of bacteria in yoghurt called lactobacillus helps fortify the immune system. Studies show use of yoghurt in the diet triples the production of interferon which the immune system uses against cancer cells. Choose brands that state “contains live or active cultures” on the package. You can obtain yoghurt from cow’s milk, goat’s milk, sheep’s milk.

Dairy is advised to omit from the endometriosis diet, however the best yoghurt for women with endometriosis is that made from goat’s milk as it is easier for the digestive system, easier to assimilate as it contains lower level of lactose than yoghurt made from cow’s milk and is less inflammatory.

Z

Zinc
Zinc is a mineral that plays a part in many functions in the body including wound healing and can be found in oysters, beef and wholegrain breads and cereals. Protects nerve and brain tissue and bolsters the immune system.

The subject of diet and nutrition is very complex, and this A to Z guide just touches the surface of this topic. I hope you have gained some valuable insights so far.

You will find some great advice about the diet for endometriosis at:
https://www.endo-resolved.com/diet.html
There is also a collection articles related to diet and endometriosis which you will find at:
https://www.endo-resolved.com/diet_advice.html

AND.....

You will also find a comprehensive list covering the subject of supplements, vitamins and herbs for endometriosis at:

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