Chapter11

Good Nutrition for CFS and M.E.

Why is good nutrition so important for someone with ME?

- Because deficiencies of essential nutrients may have developed before the onset of M.E., due to poor diet or stress earlier in life.
- Because digestion and absorption of food may be impaired. This can result from damage to the lining of the small intestine, or a reduction of digestive enzymes due to an intestinal infection.
- Because the immune system needs a good supply of protein, essential fats, certain minerals and vitamins if it is to function efficiently.

Changing and improving diet is one of the simplest ways of effecting progress with M.E. A special anti-candida diet is described in Chapter 13.

Guidelines for Basic Healthy Eating

- Eat regular meals, do not miss breakfast or lunch
- Use fresh, unprocessed foods as far as possible. Avoid dried, packaged, dehydrated, or canned food.
- Avoid refined carbohydrates - sugar (brown or white), white flour, polished rice, white pasta.
- Avoid alcohol, coffee, tea (except weak tea in moderation), cola drinks, chocolate.
- Have good-quality protein at least once a day.
- Have plenty of fresh fruit and vegetables.
- Have some raw vegetable in a salad every day. Vegetables - except potatoes and beans – should be cooked lightly in a little water or steamed to conserve their vitamins and minerals.
- Peel or wash fruit with skins, and thoroughly wash all vegetables, unless you know they are organically grown. Try and use them as fresh as possible.
- Be more adventurous with salads, using sprouted legumes (e.g. bean sprouts), grated carrot, grated beetroot, shredded cabbage, etc. in winter when the more traditional salad foods are out of season.
- If you already possess a food-processor, you should make full use of it to prepare finely chopped salads and thick vegetable soups.
- If you can afford it, consider investing in a juicer, which extracts much more of the enzymes, vitamins and minerals from living plants than can be obtained by liquidizing or squeezing them. Highly nutritious drinks of fruit and vegetable juice can be made, leaving only the indigestible cellulose behind. You would need to eat a very large volume of these plants to get the equivalent amount of goodness you get from the juice. Juiced fruits or

vegetables are ideal for someone with a poor appetite, or for someone who lives alone and is too ill to chop and peel food.

Vegetables and fruit are important, not only to supply a good daily level of vitamin C, but many other essential nutrients. If it can be digested, some raw food should be eaten daily, as vitamins and enzymes are partially destroyed by cooking. Irradiated foods, which may appear more fresh and attractive than non-irradiated fruits and vegetables (because they do not go mouldy and have a longer shelf life), are dead foods - their plant enzymes having been destroyed. Any value of consuming live, fresh plant food is lost by irradiation.

Protein

Protein is made up of amino acids. These are the building blocks used for repair and replacement of all body cells. They are also essential for making antibodies (which fight infection), neuro-transmitters, hormones, and the chemicals (lymphokines, or cytokines) produced by the immune system. Some amino acids can be made in our bodies; others must be supplied in food: these are called essential amino acids. For any diet to be adequate in its protein supply, it must supply enough of the essential amino acids.

So-called ‘first-class' proteins contain all the essential amino acids in the right balance. These are proteins derived from animal sources: meats, fish, eggs, and dairy products.

Second-class proteins are deficient in one or more of the essential amino acids, and come from plants. However, by combining plant proteins properly, all the amino acids are supplied, e.g. rice with lentils, wheat with beans. This principle is used by vegans to construct an adequate diet.

Although meat is traditionally regarded as a good protein food, it does have drawbacks:

1. It can be high in animal fat, i.e. saturated fat, the kind we are not supposed to have too much of
2. Unless you obtain meat from animals that have been organically reared, or from wild game, you risk consuming hormones and antibiotics which are added to animal feeds.

The best meats are:

- Organically-reared chicken and turkey.
- Venison, rabbit, pheasant and other game.
- Lamb - especially mountain lamb (sheep are usually free-ranging) - although this is not low in fat.
- Liver, heart, kidney etc. (offal) from organically-raised animals. These are low in fat and rich in other nutrients as well as in protein.

Meat is much more digestible if cooked long and slowly, as in a casserole.

Fish is an excellent food, it is a complete protein, easily digested, and contains fish oils, which supply essential fats. Fish is also a good source of iodine and zinc. Even if you don't normally eat it, try and have fish at least twice a week.

Eggs are another excellent food, because even though an average egg contains only 7-8 gm of protein, it is a complete protein and easily digested. They are also a good source of cholesterol, B vitamins, vitamins A and E, and zinc. Eggs from free-ranging chickens are additive-free, and better in flavour and nutrient content.

Milk and its products (if you are not milk-allergic) are also good sources of protein. Skimmed milk is better than full-cream milk as it has less fat and more protein and calcium per volume. The best cheeses are those which are low-fat and have no added yellow colour and no mould. Plain, live yoghurt is excellent as a source of protein and calcium, and has the bacteria needed for proper balance in the colon. Some people who are intolerant of cow's milk can tolerate yoghurt, goat's or sheep's milk.

In M.E., it is important to have a good intake of all essential amino acids for any recovery to take place. If the gut lining or pancreas have been affected by a virus, there may not be enough digestive enzymes to break down protein into small enough molecules to be absorbed. Because of this, some people find it helpful to take supplements of amino acids, especially if they have frequent digestive and bowel problems, plus severe psychological symptoms.

Is a vegetarian diet suitable for someone with M.E.? It depends on what you are used to, and how you feel on a high-meat diet. It is possible to have enough high-quality protein as a lactovegetarian (i.e. vegetables and dairy products). But a vegan diet relies exclusively on protein from grains, pulses, and nuts. This may be fine for those in perfect health, but many M.E. sufferers are intolerant of wheat, and also have problems digesting pulses in any quantity, due to a lack of digestive enzymes. So a diet of bread, rice and beans may cause extra bloating, pain, and gas. A vegan diet can also lead to deficiencies of essential amino acids, vitamins B_{12} and D, zinc, iron, and calcium. Soya products - soya milk, tofu- are used in a vegan diet and contain calcium and protein, however intolerance to soya develops easily in anyone with a tendency to allergies.

So, for all these reasons, a vegan diet is not recommended to anyone trying to get better from M.E.

It is not a good idea when you are ill to change suddenly from being a vegetarian to a flesh eater, or vice versa. Your digestive system and liver may not adapt very well, so any dietary changes should be made gradually.

Carbohydrates

These provide the main fuel for energy supply. Someone doing hard exercise daily, such as a labourer or athlete, needs plenty of carbohydrates to burn. An M.E. sufferer will need much less.

Refined carbohydrates are pure starch or sugar, from which the husk and germ have been largely removed by refining. They are quickly digested and absorbed, but tend to lead to a rapid rise in blood glucose level; this is followed in two to three hours by a drop in blood glucose, which may give the unpleasant symptoms of low blood-sugar (see below).

Refined carbohydrates provide 'empty calories' - calories but no other nutrients, and little fibre. Valuable B vitamins, minerals, vegetable oils and fibre are removed in the milling process.

Complex carbohydrates are the starch together with the husk and seed-germ, such as wholewheat, unrefined oats, brown rice, other wholegrains, and potatoes with their skins. They are more slowly digested, leading to a gradual rise in blood glucose. With complex carbohydrates you have to eat a lot more in volume to give the same amount of energy as refined carbohydrate. To get 250 calories of energy, is it healthier to eat a small bar of chocolate, or four slices of wholemeal bread?

Sugar is called 'pure, white, and deadly', with good reason. It is a relatively recent addition to the diet of humans. The high consumption of sugar in sweets, cakes, breakfast cereals and canned drinks is responsible not only for tooth decay, but for obesity, diabetes, heart disease, and many other disorders. Honey is still a sugar, but marginally better, as it contains minute amounts of minerals and vitamins.

Hypoglycaemia

Low blood-sugar (hypoglycaemia) can be overlooked as a cause of many symptoms, which result not only from the blood-sugar being low, but also from blood-sugar levels falling too rapidly. Blood-sugar control may be faulty in M.E. sufferers due to involvement of the hypothalamus, where many controls of the body are situated.

After a meal is eaten there is a steady rise in blood-sugar level as the food is digested and absorbed into the bloodstream. This triggers off release of the sugar-controlling hormone insulin, produced by certain cells in the pancreas. The insulin lowers blood-sugar by pushing glucose into cells, but if a load of glucose is absorbed from the gut quickly, as happens if a meal high in sugar is eaten (e.g. two bars of chocolate), a lot of insulin is released and there may be an over-reactive fall in blood-sugar level, giving symptoms.

Symptoms Produced by a Rapid Fall in Blood Glucose

- Feeling faint or dizzy, nausea, sweating, pallor
- Rapid, weak pulse
- Feeling "spaced out', irritability
- Irrational, bizarre behaviour (like someone drunk)
- Headache, poor concentration, panic attacks, inability to make decisions
- Slurred speech, blurred vision
- Fatigue, muscle weakness, unsteady gait

- Insomnia, waking in the night hungry and not being able to go back to sleep without eating.

Any of these symptoms may occur. The earliest signs are hunger, faintness and an inability to think straight. The most common times these signs arise are II a.m.-l p.m. and 4-6 p.m., from two to four hours following a meal. If hunger itself is not present, then it may be easy to overlook hypoglycaemia as a cause of feeling unwell. If eating a meal or having a sweet drink banishes symptoms, this suggests that low blood-sugar was present.

Many people who feel terrible first thing in the morning reach for a cup of coffee not just as a stimulant, but because caffeine boosts blood-sugar-for a short time only; by 10 a.m. they are usually irritable and desperate for the next cup of coffee. Probably most accidents occur at work mid- to late morning and late afternoon, and many road accidents may be caused by low blood-sugar. How often do family rows flare up just before mealtimes?

We who live in wealthy countries have more than we need to eat, so how is it that hunger and low blood-sugar cause so many people to feel unwell so much of the time? For this problem is extremely common, as any of you who have irritable spouses and whining children at the end of the afternoon will know.

Most attacks of hypoglycaemia are rebound drops which follow a too-rapid rise in blood-sugar.

Common Causes of Reactive Hypoglycaemia

1. Consumption of refined carbohydrates, i.e. sugar, honey, sweets, chocolate, cakes, soft drinks, etc. There is a trend towards eating snacks instead of balanced meals; the snacks are often high in sugar, salt or fat, with little real nutritional value. These non-foods can produce a rapid rise in blood glucose, giving a temporary lift for an hour, followed by hypo-glycaemic symptoms. So the binger on sweet things has violent swings in blood-sugar through the day, with parallel mood changes. The long-term result of this can sometimes be pancreatic exhaustion and diabetes.

2. A reaction to an allergenic food, e.g. wheat. Hypoglycaemia may be a symptom of food allergies, and if the symptoms do not improve after following dietary advice, then food allergy should be suspected.

3. Consumption of coffee, tea, alcohol-caffeine and alcohol both stimulate the release of sugar stored in the liver without replacing it. Much of an alcoholic hangover is due to low blood-sugar, the best cure for which is a hearty breakfast rather than coffee and aspirin. People who need coffee or tea many times a day are reactive hypoglycaemics as well as caffeine addicts.

4. Nicotine also stimulates a rise in blood-sugar from liver reserves. Tobacco is no good for M.E. anyway.

5. Candida yeast overgrowth seems to lead to haywire sugar control. One theory proposed is that the yeast gobbles up the digested carbohydrate sugars, preventing their absorption, but this is hard to prove. Those who improve on an anti-candida regime usually find their blood-sugar control improves.

6. Stress, if prolonged, can cause low blood-sugar.

7. Hormonal disturbance. Many women find their sugar control worse in the 10 days or so premenstrually; this contributes to premenstrual tension and depression.

8. Nutritional deficiencies. Deficiencies of vitamin B_6, chromium, zinc, manganese, magnesium, and other B vitamins can all increase the likelihood of hypo-glycaemia. These nutrients are involved in the hormonal and chemical glucose-control mechanisms.

Ways of Avoiding Hypoglycaemia

1. Eat regular meals, if necessary eat four, five or six smaller meals instead of two or three per day. Try and stick to a regular pattern; the body clock comes to expect food at particular times, and delaying a meal by an hour or more can bring on symptoms.

2. Eat a decent breakfast, probably the most important meal of the day for a low Mood-sugar person. A cup of coffee and a slice of toast is not much to combat overnight starvation, yet millions of workers expect to get a morning's work done on just that. If you can't face food first thing, have some fruit and something more substantial a bit later.

3. Avoid sugar and refined starches. The answer to low blood-sugar is not to have a lot of sugar, which perpetuates the problem, but rather food that provides a more gradual rise in blood-sugar. Have more protein, with low-carbohydrate meals, or else have more complex carbohydrates. Sugar-free muesli for breakfast will provide more protein, and fibre, than cornflakes or white bread; it takes longer to be digested and gives a more gradual blood-sugar rise.

However, for M.E. sufferers, there is an exception to this no sugar rule: you may need a boost to your blood-sugar if you suddenly become faint, sweaty and near collapse between meals. On such an occasion, eating two biscuits or sucking some glucose sweets will revive you enough so you can get home, or get to the kitchen to obtain something more substantial. This emergency measure may be essential if you get an attack of hypoglycaemic symptoms, especially if away from the house. This is not the same behaviour as regularly eating bars of chocolate or having sweet puddings. In spite of my anti-sugar propaganda, I try to remember to keep some glucose sweets or fruit in my handbag for emergencies.

Fats
Fats delay absorption of food. The classic British breakfast of eggs and bacon lasts all morning, as compared with cornflakes or toast. Bacon may not be ideal, but having eggs, or extra butter or margarine, or a little pure vegetable oil added to muesli, may be helpful.

Night Hunger.
If you are a kitchen-raider at 3 a.m., have your evening meal later, or have a pre-bedtime mini-meal - a milky drink late in the evening can be helpful, so long as milk is not a problem. Keep biscuits or crispbread or a sandwich ready on your bedside table. Avoid caffeine, cola, alcohol, and nicotine. Remember that continuing mental or emotional stress lowers blood-sugar.

Nutritional Supplements to Help Blood-sugar Control
It may be worth taking a chromium supplement such as chromium GTF (200 micrograms daily), although a good multivitamin and mineral pill should contain some chromium. Chromium GTF, plus all the B vitamins, have been found to benefit both hypoglycaemia and diabetes. The best natural source of chromium is brewer's yeast, which is fine so long as you are not yeast allergic.

Not all people with M.E. nave hypoglycaemia, and not all hypoglycaemics have M.E. There is quite a lot of overlap in the symptoms, though, and the likelihood of having an unstable blood-sugar seems to be high among M.E. patients, especially during a relapse. M.E. people most at risk of low blood-sugar attacks are those who continue to do too much, those who cannot reduce stress levels, and those who eat badly or infrequently.

Fats
We are being urged to reduce our fat consumption as part of a healthier diet. What is more important is to change the balance, to have more essential fats and less saturated fats, which are mostly of animal source.

Essential Fatty Acids (EFAs)
These are found in good-quality, polyunsaturated vegetable oils and margarines, nuts and seeds, most vegetables, and in fish, especially oily fish.

They are essential for life and cannot be manufactured in the body, so have to be eaten in the diet. Apart from needing fat as a store of available energy and for insulation, we need essential fatty acids because they form the main structure of cell membranes and walls in every body cell; they are also needed to make highly active substances which are vital for all body functions. 80 per cent of the white matter of the brain is made from essential fatty acids; nerves have an insulating coat, called the myelin sheath, also composed of the same fatty acids. (Hence the old saying 'fish is good for your brain'.)

Fatty acids are divided broadly into two groups, called saturated and unsaturated. The saturated fats tend to be hard, are found in meat, lard, cheese, butter, hardened margarines, and overheated oils.

The unsaturated fats tend to be liquid or soft at normal temperatures. When unsaturated fats (e.g. vegetable oil) are heated they take on hydrogen atoms and become saturated, hence losing their value.

It is the imbalance of too much saturated fat in relation to unsaturated that leads to deposition of excess fats inside blood-vessel walls, which leads to heart disease, high blood-pressure, strokes, etc. Eskimos living on their natural diet, which is very high in fish oil, are renowned for their low rate of obesity and lack of the diseases known to most Western societies, in spite of a high level of total fats in their diet. They are protected because of the unsaturated fats in fish oils.

Processed vegetable oils and hardened margarines are actually worse for you than butter or cream, because they contain types of saturated fatty acids that block the body's utilization of the good, essential fats. Not all polyunsaturated fats are essential fatty acids. The important EFAs are linoleic acid, linolenic acid, and those derived from fish oils.

So why all this emphasis on EFAs in M.E.?
Essential fatty acids are needed to make, among other things, prostaglandins, which have very important functions.

There are numerous types of prostaglandins, and their function is to regulate the biochemistry and enzyme activities of all body cells. They are very active, but very short-lived. There are many prostaglandins, one in particular is of interest in M.E.: it is called PGEI, and is derived from linoleic acid, an essential fat present in vegetable oils.

Some of PGEI functions (relevant to M.E.)

Improves circulation of blood
Lowers blood-pressure
Restores normal shape and movement of red blood cell;
Inhibits inflammation
Activates T lymphocytesin immune system
Has effects on transmission at nerve endings and nerve conduction

PGEI is found to be low in diabetics, people suffering hardening of the arteries or many psychiatric disorders and in allergic people.

There are various things which may block the synthesis of PGEI from linoleic acid, and cause a lack of this important prostaglandin. These include: Deficiency of zinc, magnesium, biotin, vitamin $B_{6,}$ alcohol, chemicals, diabetes, and viral infections.

The block in the stages from linoleic acid to PGEI can be bypassed if gamma linolenic acid - known as GL4, and one of the substances made en route - is supplied directly in the diet. GLA occurs naturally in certain seeds, especially the seeds of the evening primrose and blackcurrants, the main sources of commercially-prepared GLA supplements.

So, from knowing that viral infections can block production of PGEI, one can understand why, in chronic and persistent vital infections, many symptoms develop due to lack of PGEI, especially allergies.

Linoleic acid makes another prostaglandin, called PGE2, via arachidonic acid, which also occurs in meat. The PGE2 series have different actions to PGEI, that is, harmful ones: They make smooth muscle contract and promote platelet stickiness - platelets are the tiny cells in the blood that form clots. They also produce inflammation, reddening of skin, and swelling – all unpleasant symptoms.

Arachidonic acid, a product of linoleic acid, itself leads to inflammation. So, if a diet is high in arachidonic acid (meat) but low in linoleic acid (vegetables), there will tend to be greater production of the pro-inflammatory PGE2 series and less of the anti-inflammatory PGEI series. A diet with a greater amount of vegetables and fish relative to meat will tend to produce relatively more of the PGEI prostaglandins, hence less inflammation, allergies or clotting.

Prostaglandin 3 series and related substances are formed from alpha-linolenic acid, found in beans, wheat and spinach, and from eicosapentaenoeic acid (EPA), found mainly in fish oils. The PG3 series are important in preventing thrombosis.

It is currently thought that a combination of essential fatty acids from vegetable oils, nuts and seeds, and those in fish oils is best for health.

This can be achieved by eating generous amounts of a wide range of vegetables, including green leafy vegetables daily, having about four teaspoons daily of a pure unrefined vegetable oil (cold-pressed olive oil is best), for example as a dressing on salads, using a high-quality unsaturated margarine, avoiding oil used for deep frying (better to use a little olive oil for occasional frying), and eating fish two or three times a week. The best fish are herring, mackerel, sardine, tuna, whitebait, shellfish, and roe.

Some people may need to take supplements of EFAs, primarily of gamma linoleic acid (GLA), which is marketed as oil of evening primrose or blackcurrant seed oil. This is recommended for M.E. sufferers, especially if they have become allergic.

Research (Behan, 1990) has shown that people with M.E. benefit from taking EFA supplements. The supplement needs to contain GLA and fish oil - e.g. Efamol Marine - and a minimum of 3 grams per day is recommended.

Fluids

In an average day, someone may drink four cups of coffee, three cups of tea, a glass or two of wine or a pint of beer, and perhaps a can of sweet fizzy drink. All these contain too much caffeine, as well as possibly too much sugar.

What is wrong with water? Many people rarely drink it, and the chemical chlorinated taste of most tap water is certainly off-putting. Water tastes better if it is spring water, or is filtered. Chlorine, lead, copper, nitrates and most agrochemicals can be removed from tap water by using a domestic water filter. An average person should drink at least two pints (a litre) of water a day in one form or another, in addition to the fluid already in food, and much more in hot weather or if ill.

During an M.E. relapse or period of severe illness it is advisable to increase daily fluid intake to four pints (two litres) or more by drinking warm water between meals. This will help the kidneys to flush out toxins and other products of the body's reaction to the virus.

Many M.E. people have digestive problems due to a lack of digestive enzymes and stomach acid. If you drink fluids with, or just after, your meal, the digestive juices are diluted .and digestion is weakened. It is better to drink fluids between main meals, i.e. at least half an hour before or two hours after.

Fibre

Fibre is the indigestible residue (celluloses, pectins, gums and mucilages) composed of cell walls in plant foods, which passes right through the intestines and forms part of the faeces. It has no nutritional value of itself, but it is essential to provide bulk in the large intestine (colon). Its chief property is absorbing water, making a bulky stool which passes more quickly and smoothly through the colon to the rectum for evacuation.

Lack of fibre may result in:

- Constipation. Besides being uncomfortable, constipation contributes to piles, varicose veins, and undesirable effects of food residues remaining too long in the colon - fermentation, absorption of toxins, etc.
- Diverticulitis, gallstones
- A higher risk of cancer of the colon
- Too high a level of cholesterol (hence risk of heart disease)
- Alteration in the balance of the bacteriae in the colon, which may favour overgrowth of undesirable bugs, such as Candida albicans. This imbalance is called dysbiosis, and may be implicated in many other illnesses.

In spite of much publicity, wheat bran is not the best source of fibre. It may cause problems-bloating, gas, pain, a spastic colon - in people who are wheat intolerant, which includes many M.E. sufferers. Wheat fibre is also high in phytates, which inhibit absorption of magnesium, calcium, iron and zinc. Phytates are only a problem in added wheat bran or in unleavened breads and are broken down in the leavening process of normal bread.

The best sources of fibre are a high intake of mixed fruits and vegetables, wholegrains (including oats and unrefined rice), and some pulses.

To summarize, here are the guidelines for a basic healthy diet:

Include	**Avoid if Possible**
Complex carbohydrates (wholegrains, brown rice)	Additives, colourings
Fish	Sugar, refined starches
Lean meat, poultry, game, organ meats (liver, etc.)	Alcohol, cola, caffeine
Eggs (free range), milk, low-fat cheese, yoghurt	Processed meats
Lots of fresh vegetables	Foods high in animal fat
Mixed salad once or twice daily	Tinned fruit
Nuts and seeds (e.g. in muesli)	Pastry, fried foods
Potatoes	
Fresh fruit	
Pulses in moderation (if tolerated)	
Pure vegetable oils	

Use fresh ingredients where possible, and organically-reared meat if obtainable. Wash all vegetables well. Eat regular meals, maybe four or five small meals a day there is any tendency to low blood-sugar.

Do not spend valuable energy travelling long distance to buy organic food, unless you have a freezer to make a bulk buy of meat worthwhile. In an ideal situation, it would be best for all M.E. people (and indeed the whole population) to eat food that is 100 per cent free from chemicals. There is a greater awareness now about the hazards of chemicals, and many supermarkets label foods that are organically produced; it is also worth asking your local retailers if they can obtain organically grown food.

However, some organic vegetable produce is very expensive, and if imported may not be fresh, and mouldy food is even worse than non-organic fresh food.