The Hypoglycemic Association

NEWSLETTER

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The NEWSLETTER of the Hypoglycemic Association is distributed to members of the Association and to Health Professionals with an interest in nutritional medicine and clinical ecology.

The **NEXT ANNUAL GENERAL MEETING will be held at 1.30 pm at the YWCA, 2 Wentworth Ave, Sydney,** half an hour before Dr Robert Gammal's lecture as advertised below. *The **Financial Statement and Auditor's Report are on page 10.*** Many members regard this meeting as a mere formality, however they are urged to attend the AGM, especially those who would be prepared to nominate themselves for Committee members. The position of Secretary has been vacant for a number of years and Dr George Samra has been filling this position in the meantime. The Association needs members to help out at the Committee level. There are only four meetings a year and the work involved as a Committee member is not onerous. However, it requires some dedication and reliability with some spare time on hand! If you feel you qualify, please attend this meeting and become a **Committee member!**

FEES: For those members who have not as yet paid their membership fees, please note the expiry date in the top right hand corner of the address label. The fees are $15 per family or $10 for pensioners and students. Health practitioners receive this Newsletter free of charge, as part of our policy to promote natural medicine among doctors and other health professionals and this will ultimately benefit our members.

Our Next Public Meeting will be at 2 PM
on Saturday, the 5th March, 1994
at the YWCA,
2 Wentworth Ave, Sydney and
our guest speaker is

Dr Robert Gammal BDS.

who will be speaking
on the subject of

"Dental Causes of Systemic Disease"

Dr Robert Gammal BDS graduated as a dentist at Sydney University in 1974. He then practised in various locals overseas including the UK, where he studied among others Intra-Venous Sedation Techniques. He also qualified in Psychotherapy and Counselling Skills, studied hypnotherapy with the Australian Society of Hypnosis and then further studied Massage in 1980. Among other qualifications must be mentioned Acupressure, Craniosacral, Shiatsu, and many other modalities in health. He retired from dentistry in 1987 and worked full time as a masseur, during which time he also became a lecturer with the Association of Remedial Massage. In 1989, his interest was rekindled in the area of Tempero-Mandular Joint Syndrome which related to the body work he was doing. He became fascinated with some of the 'sacred cows' in dental practice which seemed to make people sick. His concerns are the use of Dental Amalgam, Root Canal Therapy, Osteitis Surgery, Neural Therapy, TMJ dysfunction and other practices producing negative systemic effects. He started back in dental practice in 1991 with the above as his guide lines. In 1993, he formed the Australasian Society of Oral Medicine and Toxicology with a group of dedicated doctors and dentists.

Any opinion expressed in this Newsletter does not necessarily reflect the views of the Association.

Previous Copies of the Hypoglycemic Newsletter

Back issues of the Hypoglycemic Newsletters are available at the NSW State Library, Macquarie Street, Sydney. They are filed under NQ616.466006/1 in the General Reference Library

Steve Duff telephone advisory service

Our life member Steve Duff is willing to talk to any person by phone on any problems relating to hypoglycemia, allergies and diet. This voluntary advice is based on his personal experiences with hypoglycemia and allergies and any problems of a more complex nature will be referred to nutritional practitioners. If you would like to have a talk with Steve, please ring him at his home on 529-8040.

Books for sale at the meeting

Jur Plesman: **GETTING OFF THE HOOK**

Sue Litchfield: **SUE'S COOKBOOK**

Contributions of articles by members and by practitioners are very welcome. If you would like to contribute an article to this Newsletter, please contact the Editor.

The Newcastle branch of the Association are still meeting with the assistance of Bev Cook. They meet on the last Saturday of each month beginning 1.30 PM to 3.30 PM at the Hillsborough Primary School. Enter the school from the Waratah Avenue. For further information ring Mrs. Bev Cook at 049-59-4369.

Organise local meetings

If any member would like to organise meetings in their local area or meet other members, we can help by advertising your name and phone number in this Newsletter.

Entrance fee at meetings

Because of increase in costs the Committee has decided to charge an entrance fee of $2 per person or $3 per family at our public meetings.

Donations for raffle

One way of increasing our income is by way of raffles. If any member has anything to donate towards the raffle, please contact Dr George Samra's surgery at 32-38 Montgomery, Kogarah.

New Theories of Chronic Fatigue Syndrome

*By **Dr George Samra***
from a lecture given on
the 4th December, 1993
at the Hypoglycemic Association.

Chronic Fatigue Syndrome (CFS) is a "pathological" fatigue lasting longer than 6 months in the absence of other disease states. Fatigue is usually defined as weariness as a result of over exertion, but I make a distinction by emphasising the pathological weariness in the absence of over-exertion or lack of sleep.

However, it should be realised that other illnesses can cause chronic fatigue, such as parasitic or infective illnesses, including TB, or metabolic disorders including anaemia, or hormonal disorders such as diabetes and hypothyroidism.

A pamphlet published by the ME/Chronic Fatigue Syndrome Society of NSW Inc. states that CFS has been known among the medical profession under different names such as; Myalgic Encephalomyelitis, Royal Free Disease, Icelandic Disease, Epidemic Neuromyasthenia, Post-viral Syndrome and many others. However, Chronic Fatigue Syndrome (CFS) is the name currently preferred by the medical profession.

Symptoms of Chronic Fatigue Syndrome (CFS)

CFS is a constellation of symptoms and signs mainly affecting the nervous system and muscle. It seems likely to be of immunological origin, according to some researchers. The onset may be gradual with no apparent trigger, or may follow a viral, bacterial or fungal infection or even immunisation. Some prominent features are profound lethargy and abnormal fatiguability. This fatiguability is out of all proportion to the level of activity responsible for it, such as having a rest for several hours to recover some strength after performing a few light household duties. Other symptoms are muscle pain and/or weakness, headaches and fluctuating impairment of concen-

Fig.1A FATIGUE HEALTH MODEL

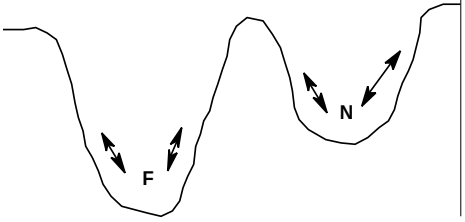
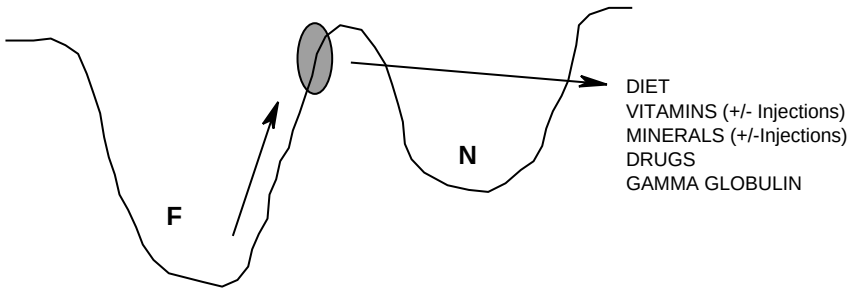
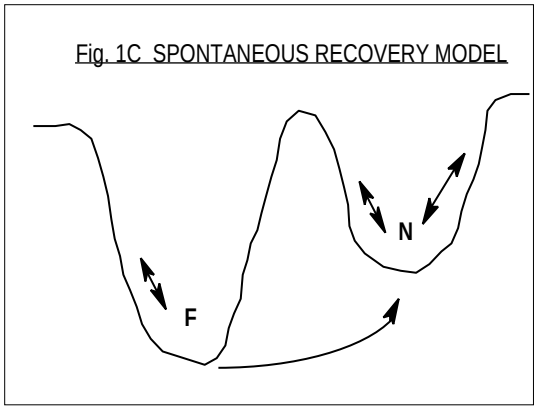


Fig. 1B THERAPY RECOVERY MODEL





tration and other mental processes. Other variable characteristics are: disturbed balance, tinnitus (noises in the ear), visual problems, disturbed sensation and sleep patterns; problems with circulation, bladder, bowels and upper respiratory system and emotional changes. The degree of physical incapacity varies greatly from patient to patient and from day to day, or even from morning to afternoon, in the same patient.

Course

CFS runs a variable course with many people recovering after some months or years to such an extent that they can return to a normal life; others appear to recover completely but are prone to relapses if they exceed their limits of physical or mental exertion. A small number remain chronically ill with constant symptoms. The disorder does not appear to lead to irreversible incapacity or crippling. The illness is not believed to be contagious or infectious.

Diagrams of different health states

Diagrams 1A, 1B & 1C illustrate the different health states of people. CFS patients are in a different health state from "normal" patients. In figure 1A, the **Fatigue Health Model** we find that normal people have their ups and downs, but CFS patients are in a trough or well on their own as represented by "F".

Positive events such as birthdays or vitamins help one climb upwards in their health well. Negative events such as flu or stress may push one backwards in their health well. The model shows that CFS patients are in a well of their own.

The **"Therapy Recovery Model"** in Figure 1B represents the concept of CFS patients being treated through manipulation of their diet, supplementation of vitamins (with or without injections), minerals (again with or without injections), drugs and possibly gammaglobulin, (a chemically extracted protein fraction of human plasma, rich in specific antibodies against a variety of viruses). After 6 to 18 months these patients may shift spontaneously into the "normal" well ("N").

In the **"Spontaneous Recovery Model"** in figure 1C we may have a patient in whom a CFS condition has arisen suffering with a new viral attack, such as a bad flu, which is usually the trigger. These people may recover just like the normal people, and so slide into the normal health well "N".

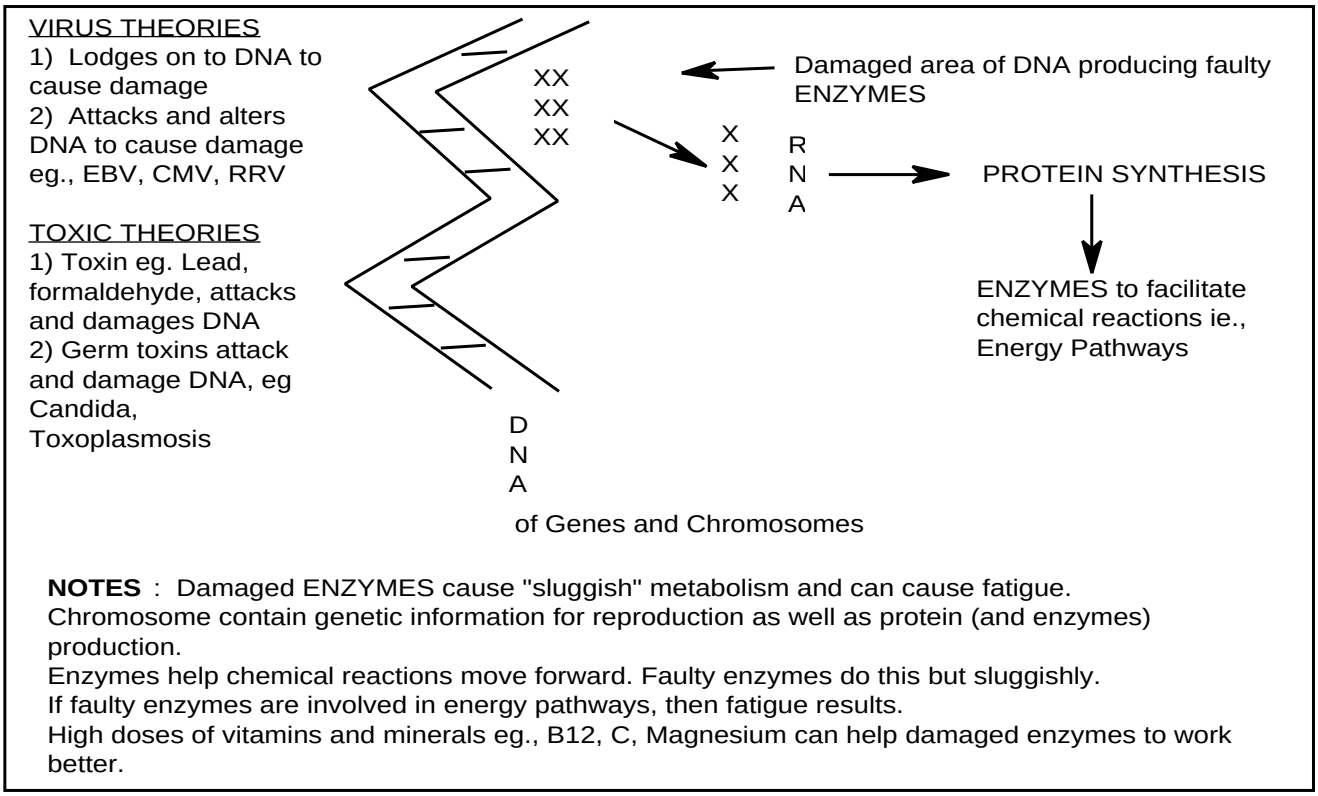
There is still scepticism among the medical profession of what they regard as modern trendy conditions such as hypoglycemia, Candida or CFS. The fact is that many CFS patients have hypoglycemia or a sugar mishandling problem as shown in a glucose intolerance test. There is an overlap between the two illnesses.

Increased consumption of mouldy foods such as yoghurt, cheese, vinegar, alcohol, Vegemite are often associated with Candida or thrush and again symptoms can cause CFS. In modern times, even moulds in our food have been specially developed and selected. In former times, if people ate mouldy food they might die as they could not pick the good from the bad moulds. Nowadays, most moulds used in the preparation of food are harmless to the vast majority of the population, except to Candida patients who are sensitive to mould germs.

Pollution needs to be taken into consideration. With the exponential growth of the human population on earth - at the turn of the century there were less than one billion people and now there are more than five billion people - the environment has become overused and gradually more dirty. Also the antibiotic generation has come upon us, which started since World War II with the introduction of penicillin. Although a lot more people live because of antibiotics, nevertheless these are new substances in the environment with which the body has to cope.

One might say that antibiotics are anti-Darwinian, as is perhaps medical practice in

Figure 2



general. Darwin proposed the theory of the survival of the fittest. Thus people with weak immune systems would not survive. In the past, mothers would have multiple pregnancies resulting in families of eight or ten or more children. Of these only two or three would normally survive to become adults to have children themselves. Thus from an evolutionary viewpoint even among humans there was survival only for a minority - the fittest. The principle of Darwinism is even more pronounced among fish. They may produce millions of eggs, which are then fertilized, but perhaps only a very small number would survive to eventually reproduce themselves.

Modern medicine is protecting people with weak immune systems. Every time they have a cough we give them an antibiotic and so we are perpetuating weak immune systems. Even those with strong immune systems are given antibiotics and thus are not given the opportunity to build up their own immune defences. People with weak immune systems are propagating and so are creating whole populations with weak immune systems. The exponential rise of CFS thus appears to be a valid explanation of part of what is going on.

Rule of medicine

This rule says that "when all pathological tests are normal send the patient to a psychiatrist". This is a long established rule when doctors cannot find a diagnosis. Thus, illnesses such as hypoglycemia, Candidiasis and CFS are all imagined or psychiatric illnesses. They are not psychiatric cases. Patients are rational and retain a good reality base. Very often psychiatrists do not know what to do with these people. The overwhelming temptation is to treat these patients with drugs anyway and the usual treatment is to prescribe antidepressants. It must be recognised that not all drugs are bad! Some drugs have greatly helped individual patients.

In Sydney some major teaching hospitals such as Prince of Wales and Prince Alfred are spending millions in research on CFS. The staff recognise that CFS patients are not psychiatric and are sympathetic to CFS patients.

The number of CFS patients represents between 1-2% of the population and this is definitely increasing. This is frightening because a large number of very fit and healthy people are coming down with it.

THEORIES OF CAUSES OF CFS

1) Virus theories

The main viruses that are known to cause CFS are Epstein Bar Virus or the Glandular Fever virus, Ross River Virus, Cytomegaloviruses, Coxsackie virus, germs of Candida Albicans and the germ responsible for toxoplasmosis, (a disease similar to Glandular fever but caused by a bacterium called Toxoplasma gondii). When people talk about 'Post-Viral Syndrome' they refer to the viruses just mentioned that seem to cause the trouble.

These may be identified with antibody tests, since people have an immune memory of viruses, bacteria and fungi. The immune system becomes damaged, resulting in ongoing weakness, despite recovery from the acute viral illness.

The **viral residual theory** says that the viruses lie dormant in the nervous system. For example the virus causing Shingles. This is a chickenpox virus (varicella), that may have been lying dormant for many years often since childhood. It may be reactivated by stress or immune compromise. It is characterised by painful blisters in a localised area that covers a nerve distribution of the skin. It can be on the face or on the back usually on just one side of the body.

The viral residual theory points to a possible mechanism for CFS. If a patient has once had glandular fever, the virus may have been lying dormant for many years. The patient may now be stuck with CFS, rather than with typical glandular fever symptoms.

Faulty enzyme theory of Chronic Fatigue Syndrome

This theory is favoured by me and I have been instrumental in formulating it.

Damaged chromosomes make faulty enzymes and sluggish metabolism may result. This is explained in Figure 2.

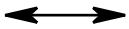
The viruses shown by x's lodge on the DNA *(deoxyribonucleic acid)* and this is essentially the virus theory of CFS. Viruses damage the DNA which in turn manufactures faulty RNA *(ribonucleic acid)* or the messenger protein, which carries information to the mitochondria within the cells. A small branch of the damaged DNA is copied on to the RNA which is the template to make proteins. Enzymes are protein molecules. But they may be faulty proteins if they come from a template of a faulty DNA molecule. Enzymes are important in chemical reactions as they facilitate chemical reactions and make them move forward. *If these chemical reactions happen to be energy pathways, then the person will be tired.*

Other theories as to the causes of CFS concern toxins, such as lead and formaldehyde which also attack and either temporarily or permanently damage DNA. The faulty enzymes being produced thus fail to neutralize these toxins. And so the person becomes toxic. Toxins produced by germs can also harm DNA. It is not so much the germs themselves as the toxins they produce. Germs may make poisons and some of these may lodge on the chromosome, damage the DNA, giving RNA faulty messages as to how to make proteins.

High doses of vitamins and minerals, such as vitamin C, B12, magnesium and so on, in their capacity as co-enzymes, can help enzymes to work better, even though they are damaged and may be working well under normal capacity. Flooding the patient with co-enzymes helps the faulty enzyme system to work better, and so may help regain energy. This is an explanation of how vitamins work for CFS patients.

Although somewhat technical, the concept of enzymes and co-enzymes pushing forward chemical reactions is reflected in the

LAW OF MASS ACTION **Figure 3**



Chemistry Law of Mass Action:

This law is explained in **Figure 3.**

Hence, if we provide a CFS patient with 'high doses' of co-enzymes or other missing substrates, we are helping the person to push forward his chemical reactions, especially the sluggish energy pathways.

Vitaglow Zinc plus C is a good source of multivitamins and minerals. It contains among others B3, B5, B6, C and zinc, which are all co-enzymes involved in the energy pathway of glucose metabolism. Some people might require more vitamins and minerals than others because of their biochemical individuality. Patients might need more magnesium or zinc to function normally, although there blood levels are perfectly within the normal range. For the most part vitamins and minerals are nontoxic and represent relatively safe therapy.

Other symptoms of CFS include depression, insomnia, anxiety, irritability, headache, muscle ache, and muscle pain, tremor, crying spells, phobias, difficulty in concentrating.

These are very similar to the symptoms of Reactive Hypoglycemia, although perhaps there is more commonness in having muscle aches and pains in CFS than in hypoglycemia and perhaps there is a slight alteration in the frequency and order in which symptoms occur.

Treatment approach

It is important to exclude other diseases, performing thyroid tests for hypothyroidism (low thyroid gland function) or tests for anaemia. Factors contributing to other disease should be excluded, eg., women with heavy periods can become chronically tired or some people just coming out of an hospital after surgery may have been bleeding more profusely than normal and may actually suffer from anaemia causing fatigue.

A **GTT** (Glucose Tolerance Test) should be able to detect a reactive hypoglycemia or glucose intolerance. About 4% of the general

population would be found to have a hypoglycemic syndrome. Amongst CFS patients poor sugar handling is not rare.

To explain to those who are not familiar with **Reactive Hypoglycemia**, in short it means low blood sugar as a reaction to eating sugar in the first place. It is regarded virtually as the opposite to diabetes. Normally when people eat sugar the blood glucose level rises and after three of four hours returns to the normal level. In the reactive hypoglycemic person, the blood glucose level rises as in the normal person, but then comes crashing down usually 2 or 3 hours after the ingestion of sugar. The brain relies exclusively on blood glucose as an energy source and when glucose is low, the brain is deprived of its energy source resulting in tiredness, vagueness in the head, confusion, anxiety etc.

With the rapid fall of blood glucose (the sharp gradient) a strong "adrenergic" or "epinenephric" message is sent to the adrenal glands to pump adrenaline into the system. This leads to irritability, moodiness, crankiness, uptight feelings, dry mouth, muscle tension with the adrenaline trying to push the sugar level back up. This is the same hormone that we produce in a crisis situation, readying you for fight or flight.

The GTT is performed on most patients as 90% of CFS patients mishandle sugar too. The message is that they should all be off sugar. They should consume six small meals a day, 2 1/2 hours apart roughly, no sugar, honey or glucose and hopefully a good "protein" breakfast to start off the day.

CFS patients should be tested for **Candida** antibodies, but there are other methods of diagnosing Candidiasis. Typically, signs are mouth ulcers, tinea, groin rash, vaginal thrush recurrences. The majority of Candidiasis patients - but not all - have a sugar intolerance as demonstated by the GTT. It may help to take the patient off yeasty foods and prescribe Nystatin which cleans out the gut of Candida. If this makes people feel better it would mean that Candida may well have caused people to feel bad.

The doctor should also be prepared to do some vitamin and minerals manipulation; intravenous Vitamin C, painful intramuscular magnesium sulphate injections, gammaglobulin injections, vitamin B12 injections.

CFS patients should also be tested for airborne allergy and petrochemical sensitivities. Patients may be allergic to dust mite or air moulds. Some plants may have to be moved from indoor to outdoor. Patients should be aware of moulds in the bathroom. CFS patients are often very sensitive to products of petrochemical origin and they can smell diesel or perfume from a long distance. They might walk into a department store and be overwhelmed by the smell of cleaning agents used to clean the floor. CFS patients often have an enhanced olfactory sense different to other people. Even glues containing formaldehyde on their desk might be toxic to these people. Thus each patient may have to go to their individual length in cleaning up their world to function normally. I strongly recommend Trixie Whitmore's book **Chemical-free living and Recovering from ME/CFS,** (Sally Milner Pub, Beachgrove, Aust) as a valuable source of information and treatment for chemical sensitivity.

The **T-Cell Differential Test** is an immune system test looking at the T-cell lymphocytes. T-lymphocytes come from your thymus gland, whereas the B-lymphocytes come from bone-marrow. (We have clever pathological techniques these days where they can radioactively mark lymphocytes, which are sent to the laboratory. With the help of computers they can count the different types lymphocytes. This technique can differentiate between the different T-lymphocytes.) One can identify the CD4 group which are the helper lymphocytes and the CD8 group which are the suppressor lymphocytes. If the helper T-cells (CD4) are found to be low, this is usually consistent with the CFS finding. If the suppressor T-cells (CD8) are high then this is also consistent with CFS. Occasionally, both occur together. CD4 and CD8 T-lymphocytes are normal in only 10-15% of CFS cases. The T-Cell Differential Test is useful since most CFS patients have abnormal results.

The **EEG Test** (Electroencephalogram) reveals the presence of abnormal brain waves, during seizure and during sleep, and is often used as an aid in diagnosing epilepsy, brain abscesses and brain tumours. Electrodes are taped to each side of the brain and conductive jelly is used to ensure good contact. The electrodes sense the electrical impulses within the brain which are converted into signals and recorded on a moving strip of paper.

I expect that if a modified EEG is performed on CFS patients, it would show significant differences in their traces as compared to non-CFS patients, in exercise and in sleep, and may yet prove to be a useful diagnostic procedure.

Useful supplements for CFS

1) Vitamins B-Complex including parenteral injections

2) Minerals: Zinc, Calcium, Magnesium, Multiminerals

3) Natural supplements: Royal Jelly, Coenzyme Q10, Evening Primrose Oil (EPO), Hi Vita Stress, Nature's Way Peak Performance

4) Avoidances: Sugars, moulds in diet, allergy foods, petrochemical products.

A double blind study, recently written up in the Lancet (Dowson, D (1991), **Lancet, 337**:757-760) showed that **magnesium** (in the form of six magnesium sulphate injections per week) made a significant difference in CFS patients. It is a painful treatment so I am reluctant to start with this. Magnesium deficiency is marked by tiredness, poor concentration, poor memory, general malaise and aching muscle and joints. Thus CFS patients with these complaints would most likely benefit from supplements of magnesium. Malabsorption of magnesium may well be the cause of its deficiency, hence the success of magnesium sulphate injections.

If you are not sure what minerals are missing it may help to use **multi-mineral tablets.**

Nature's Way Peak Performance includes most of the fat-soluble vitamins of A, D and E, as well as B complex and C, a good spectrum of minerals such as zinc and some others. Three tablets per day has benefited many patients.

Royal Jelly can be magic to CFS patients but unfortunately for only 2-3% of them. When it works, it works wonderfully!

DRUGS

Catovit (1-4 tablets per day or 15 to 20mls per day) is a combination of B vitamins and prolintane which is a local anaesthetic non-toxic agent. There is no poison level of Catovit. If you have never used it in CFS it is important to note that a lot of CFS patients react to the red dye in the tablet and should wash it before swallowing.

Antidepressants

1) **Prothiaden** (*dothiepin*) is fairly safe antidepressant drug. It has fewer side effects than most other antidepressant drugs particularly fatigue. It helps people to remain calm in a crisis situation, but it is not recommended patients stay on these drugs for a long time.

2) **Aurorix** (*moclobemide*) is being trialled at present in the Prince Wales Hospital in a double blind study on CFS patients. It has few side effects and has definitely been beneficial in some patients. This is a kind of MAOI drug with fewer side-effects and diet restrictions (see Nardil below). Blood pressure needs to be carefully monitored.

3) **Nardil** (*phenelzine*) is another antidepressant drug, but this drug has lots of side-effects. It is a monoamine oxidase inhibitor (MAOI) - inhibiting the breakdown of adrenaline and nor-adrenaline - and certain tyramine containing foods such as matured cheese, protein of yeast extracts, pickled, smoked, fermented meat or fish etc., must be avoided in the diet. Despite its nasty side-effects, which need to be monitored, Nardil may have some role to play in the treatment of CFS.

4) Anticonvulsant drugs such as **Dilantin** (*phenytoin*) **Epilim** (*valproic acid*), have been used in CFS patients. These are simply part of the armoury that a doctor may use on a trial basis.

5) Sometimes we can help a patient by relieving some of the symptoms of CFS, such as the relief of pain with **analgesics.** If patients are very uptight they may need some mild

(Continued on page 9)

DIET AND CANCER

by
Karen Heyman

Could your diet save you from cancer? Your diet could well save you from cancer. The affluent western diet has much to answer for when we learn that 6,190 men and 4,637 women died in N.S.W. from cancer in 1990 [8]. With so many changes in western eating patterns taking place over the last few decades, there has been a dramatic increase in diet related diseases, especially cancer [2:376]. The National Academy of Sciences estimates that 60% of women's cancers and 40% of men's cancers are related to nutritional factors [31:98].

At this point, it is useful to see what the word cancer refers to. The Australian Family Medical Advisor explains that "cancer is not a single disease", but "a process that can affect any organ of the body" with different symptoms and prospects for recovery. When genetically damaged cells in a part of the body begin to grow rapidly and in a disorderly fashion, they form abnormal masses of tissue called cancers. If the cancer process is unchecked, it may shed harmful cells, called metastasis which will spread to other organs of the body. The person's energy reserves are then misused and wasted, which may result in death [2:107; 6:453].

Transformation of normal cells into cancer cells is attributed to damage in the genetic coding or inheritance material of the cell (DNA). The genetic coding located in the cell's DNA is responsible for making very specific proteins, which carry out the survival and house keeping duties of the cells. So these damaged cells, simply reproduce defective cells which cannot perform the jobs for which they were designed [2:376; 13:32].

Sources of cell damage

Dr. Michael Fenech, an Australian researcher from the Department of Human Nutrition, C.S.I.R.O., Adelaide has implied that many of us unknowingly have diets that are high in substances capable of causing cancer [13:32,35]. There are two main sources of these cancer causing substances. They come from outside and inside our bodies.

Outside of the body, cancer causing substances may be derived from pesticides, cooked and irradiated foods and are known as genotoxins and carcinogens [13:33-34]. Pesticide derived genotoxins and carcinogens enter our diet as man-made and natural pesticides. Man-made pesticides represent a very small amount of pesticide contamination compared with the naturally occurring larger amount grown by plants, such as solanine (from potatoes) and chaconine (from tomatoes). To reduce the amount of toxins and carcinogens from man-made pesticides, we can purchase organically grown fruit and vegetables, ensure that they are well washed and that damaged areas are removed. The genotoxins and carcinogens in naturally occurring pesticides serve to protect plants from insect and animal attack. Commercially important plants are usually those which are already highly resistant to disease or those which have been especially genetically engineered to be resistant. For this reason, Fenech suggests research needs to be performed to ascertain the safety of such "new [resistant] strains of vegetables and fruit" [13: 34].

Fenech also states that cooking derived genotoxins and carcinogens account for the many polynuclear hydrocarbons and heterocyclic amines contaminating our food. We produce a mass of polynuclear aromatic hydrocarbons (PAH's) when charcoal barbecuing (e.g. Benzo-alpha-pyrene) and a host of heterocyclic amines from pan-frying, grilling and roasting of such foods as meat, fish or chicken. During the browning of carbohydrate rich foods, a new group of free radicals have been identified with the names of furfural and glyoxal. These are produced in the toasting of breads and baking of pastries.

To reduce the amount of genotoxins and carcinogens caused by the cooking processes, Fenech recommends that some kitchen practices need to be modified. He advises that we cook our foods for shorter periods of time at temperatures below 150 degrees centigrade in areas which are well ventilated.

In order to extend their commercial value, foods are cured or treated by exposure to radiation. T. Webb and T. Lang declare that irradiation creates potentially harmful products and simultaneously destroys the natural vitamins and essential components in food, which assist the body in fighting disease. According to the British Medical Association's Board of Science, irradiated foods can have a long term adverse medical effect on the population and for this reason the Board has challenged the U.K. Government for stricter safety standards in testing methods [30: 43,45,46].

Inside the body, cancer causing substances called free radicals are liberated during food digestion by the release of certain enzymes in the liver [5: 22;13: 34]. They are defined as atoms or molecules with an unpaired electron and are produced in normal metabolism through the breakdown of peroxidised fats and radiation. They are a major source of DNA damage and cancer [27: 793].

Fenech [13: 32] informs us that the means by which genotoxins and carcinogens as well as free radicals damage the genetic codes is by;

a) chemically bonding with the DNA of those genetic codes;

b) severing the DNA strands of our genetic codes; or

c) disrupting the choreography of DNA elements during cell reproduction.

Protection against cell damage

Our initial protection against cell damage lies in actively avoiding foods which contain chemicals that are bitter, acrid, astringent and pungent to our sense of smell and taste [13: 34]. We can also choose to incorporate in our diet very powerful anti-oxidants namely vitamins A, B, C and E as well as selenium and zinc important for their anti-oxidant behaviour [13: 35; 31: 103-115; 6: 195,201]. On the physical level, the digestive system simply sheds cells on a regular basis which have come in contact with harmful substances. On the biochemical level, the liver and gut conduct detoxification operations to rid the body of the offending substances. When damage to the DNA has occurred, the cells endeavour to repair themselves. However, such repair job cannot be 100% complete [13: 34].

Common diet related cancers

From a sample of 20 articles, all but one published this year, it appears that most research activity centred around bowel and breast cancer. Both of these cancers have strong dietary factors.

BOWEL CANCER

Forbes [14: 27] claims that bowel cancer is associated with a western diet. It occurs most frequently amongst the highest socioeconomic classes (professional, executive and administrative workers). The longer people of non-western backgrounds live in Australia, the more likely they are found to accept a western diet. This change in diet could lead to the development of colon cancer. The part played by heredity is significant to the following extent. If a person has a close relative with colon cancer or polyps, then that person has a three-fold chance of getting colon cancer.

However, if a person has more than one relative afflicted with the disease, then the chance of getting colon cancer jumps to ninefold [14: 27]. Given this situation, diet becomes even more important.

The highest incidences of bowel cancer occur in western societies where the beef consumption is high. We may avoid the risks of developing colon cancer by reducing animal fats and alcohol intake, increasing fibre, having adequate vitamin A, calcium, ascorbate (vitamin C), selenium and other antioxidants. These can be found in such foods as cruciferous vegetables (eg. cauliflower, Brussels sprouts, cabbage and broccoli) [14: 27,30].

Dietary components

Scientific literature on bowel cancer refers to factors such as dietary fibre (1: 61-63; 11: 147-148), calcium supplementation (33: 109-111) and the cholesterol dependence of cancer cells (4: 1-7,22-23).

1. Soluble and Insoluble fibre

Dietary fibre has already stimulated much research interest as evident in the reviews and continues to do so in subsequent studies. One review on dietary fibre by J. Dwyer supported the role of fibre as well as beta-carotene and vitamin C in lowering the risk of colon cancer, while the other by L.M. Ausman did not [11: 147-148; 1: 61-63].

P. Harris (19: 44) discussed the advantages of insoluble fibre and the disadvantages of soluble fibre. He asserts that insoluble fibre absorbs free radicals and protects the colorectal lining from cancer. However, soluble fibre may enhance colorectal cancers according to Harris [19: 43,44].

Insoluble dietary fibre comes from the insoluble cell components of monocotyledonous plants, whereas soluble fibre comes from the soluble components of dicotyledonous plants. Monocotyledons are characterised by a structure in which the insoluble polysaccharide fibres are more available than in the plant cell structures of dicotyledons. Edible examples for monocotyledons include grasses, corn, wheat and rye, and for dicotyledons, beans potatoes and tomatoes [23: 95,762].

In contrast with Harris, Dr. Robert Buist identifies the advantages of soluble fibre. According to Buist, soluble fibre has a very important role to play in lowering cholesterol in the blood. Two grains which Buist advocates for lowering cholesterol are oats and barley (both monocotyledons). He claims the oats lower blood cholesterol through absorption by the gelatinous part of the fibre, whereas the barley manages to influence enzyme activity in the liver affecting a reduction in cholesterol production [5: 81-82].

2. Phytic acid

E. Graf and J.W. Eaton report that there is an antioxidant component in a variety of dietary fibres [17: 12,17]. This component is called phytic acid and it behaves like an antioxidant by chemically bonding with free radicals especially those from degraded red meats. Phytic acid is found in various fibres in different amounts. Dry weight percentages of phytic acid for the following fibres include -

Oats	0.8	Barley	1.0	Peanuts	1.9
Rice	0.9	Corn	1.1	Lima beans	2.5
Wheat	0.9	Soybean	1.4	Sesame seeds	5.4

3. Calcium

Werbach shows studies suggesting that calcium supplementation is protective of bowel cancer, however Zimmerman could not support this [31: 110; 32: 109,111]. The theoretical significance of calcium in the diet is that it counteracts the cancer causing effect of bile acids and fatty acids by reacting with them. The soapy substance formed from this reaction is then more easily transported through the colon because of its solid characteristics. In this way, it is believed that the colon and rectum are protected from cancer [33: 109,111].

4. Diet

The benefits of the following two studies are limited by inappropriate methodologies. In Italy, a relation between the diet of two different areas and the bowel cancer indicator relating to differences in cell growth (associated with bowel cancer) has been proposed by Caderni (et al) [7: 267]. This finding suggests that a diet low in complex carbohydrates and fruits is associated with bowel cancer. However, they admit that their methodology is questionable. In China, Guo (et al) have identified another factor for the cause of bowel cancer, which is less common in western society, namely the gastrointestinal parasite schistosoma (flukes or flatworms causing the disease schistosomiasis) [18: 17-19]. When this condition is accompanied by a diet high in animal foods, salt-preserved vegetables and beer, while low in fresh green vegetables, the risk of colon cancer is much greater.

It seems that vitamins with their antioxidant function and fibre with its absorbing function may well have a dietary role to play in the prevention of bowel cancer. It will be interesting to see to what extent these dietary components overlap with those revealed in breast cancer research studies.

BREAST CANCER

Breast cancer is the most common cancer in women from 25-35 years of age and the most common cause of death for women from 35-50 years of age. However, 1% of the incidence of breast cancers occur in men [14: 33].

As in bowel cancer the part played by heredity is significant in breast cancer. Women with mothers or sisters who have breast cancer are two to three times more likely to develop the disease than women in the population at large [14: 35].

Similarly, breast cancer is also associated with the highest socioeconomic classes [6: 203]. Women are cautioned to limit the amount of animal fat which they consume, because "a diet high in saturated fats will increase the production of the female hormone oestrogen" [14: 34,43; 6: 192]. Forbes claims that oestrogen is the most potent causative agent in breast cancer [14: 33].

Dietary components

Scientific literature on breast cancer reveals that dietary fat should not exceed 15% of calorie intake [10: 7] and that of the antioxidants vitamin A, C, E and selenium, only vitamin A was effective in breast cancer prevention [15: 407-408].

1. Dietary fat and calories

Dietary fat and calories are featured as a cause of breast cancer in the review literatures and studies of L.A. Cohen (et al), E. Barrett-Connor, N.J. Friedlander and F. Levi (et al) [10: 7; 3: 397; 24: 333]. Earlier information shows the need to reduce fat intake from 38% to 20%, but more recent studies have even suggested that it should be reduced to 15% of total calorie intake (based on animal and human studies) in order to avoid tumour promotion. In addition to fat and calories, Levi also identifies alcohol as a strong risk factor in breast cancer.

C.M. Williams and K. Maunder argue that meat may be associated with breast cancer [32: 266]. Their study shows that a diet high in meat produces inflammatory prostaglandins which antagonise hormones and influence lipid production [29].

Prostaglandins are a class of lipid-soluble hormone-like regulatory molecules derived from arachidonic acid and other polyunsaturated fatty acids [24: 978]. More polyunsaturated fats (fish, sunflower seeds and beans) and less saturated fats (meats) should be eaten for the production of beneficial prostaglandins to ensure a healthy circulation, stimulate the immune system and minimise cellular damage [6: 192].

S.A. Broitman (et al) examine the dependence of cancer cells on cholesterol [4:1-7, 22-23]. This represents further support for the low fat/low calorie diet. The reason for this, they explain is that unlike healthy cells, cancer cells are unable to produce cholesterol for cell growth. Cancer cells therefore may obtain their cholesterol from the fats in our diet.

2. Antioxidants (e.g. vitamins)

Foods which provide protection against breast cancer were found to be vegetables supplying the beta-carotene and vitamin E as well as fibre, which limits available fats for estrogen production [25: 333]. Studies have shown that both beta-carotene and vitamin E are effective antioxidants i.e. reduce lipid peroxidation [16: 210-211; 5: 29]. However, K.N. Prasad stresses the importance of using the natural and most active form of vitamin E namely, d-alpha-tocopherol succinate, instead of the synthetic forms. The reason for this Prasad indicates is that the natural d-alpha-tocopheryl succinate form of vitamin E can inhibit tumour growth in cultures [28: 487]. Vitamin E also plays a strategic role in pro-

tecting the omega-3 fatty acids in our tissues [5: 53]. The presence of omega-3 fatty acids in the diet is important, because this group of fatty acids is easily incorporated into membranes of fast growing tumours. If tumour cell membranes contain these acids, then they are less robust and therefore more susceptible to attack from our own immune system according to L.J. Jenski (et al) [22: 135,144].

M. Garland (et al) suggest from an examination of studies on vitamins A, C, E and selenium, that only vitamin A proved to have a protective role against breast cancer [15: 407-8]. The precursor of vitamin A is acquired through the diet in the form of the provitamin beta-carotene. This provitamin is converted in our livers into vitamin A, which protects our bodies from over-exposure to cancer producing chemicals and stimulates our immune systems [6: 193].

The synthetic, commercially available vitamin A however must not be used in large doses, as it can be toxic to the liver. The recommended daily allowance of vitamin A must not exceed 5,000 international units [6: 193]. Regarding this limitation, a "new regulation under the Therapeutic Goods Act, 1989" will come into effect in January, 1994 [20: 5].

The natural provitamin beta-carotene does not cause toxic side effects in large amounts as the liver controls the amount converted into vitamin A. Beta-carotene reduces lipid peroxidation and is therefore a powerful antioxidant [16: 210-211]. The only sign of an excess of beta-carotene in the diet is a harmless bronze skin colour which is only temporary [6: 193].

Although the role of vitamin C and selenium in protecting against breast cancer risk was not recognised in the review literature, interest in their potential value continues [15: 407-8; 26: 344]. Subsequent studies demonstrate that the growth of cancer cells in animal cultures is inhibited by the selenite and selenate forms of selenium, which is found in garlic. Selenite is the stronger anti-oxidant of the two forms of selenium and this protective effect is enhanced by vitamin C.

E. Jacobson finds that niacin has a protective role in animal cell cultures against carcinogens [21: 415]. Niacin is part of the vitamin B complex group and has been studied by her in relation to cancer in women. Consequently, Jacobson believes that the minimum daily requirements for niacin must be re-set in the light of this new finding rather than continue to reflect the now dated discovery of pellagra (disease associated with skin, digestion and mental disorders resulting from poor diet).

H.N. Christensen claims that vitamin B2 (riboflavin) has a powerful antioxidant role, when serving as a component of an enzyme to combat oxidative damage to cells [9: 150].

Summary

A number of dietary components seem to be appearing consistently in a favourable light and a number in an unfavourable light. These dietary components have the same influences for both bowel and breast cancers.

Those favourable components include insoluble fibre, antioxidising vitamins, selenium and polyunsaturated fat sources (fish, nuts and grains). This diet is characterised by fresh fruits and vegetables. Consequently, the free radicals formed during digestion are dealt with physically by the fibre and biochemically by the antioxidants. Furthermore, fibre and antioxidants are so well represented in this diet that comparatively small amounts of genotoxins and carcinogens are readily absorbed and biochemically processed.

The unfavourable dietary components include saturated fat sources such as red meats, high calorie foods, processed carbohydrates, salt-preserved meats and vegetables, charcoal-grilled and smoked meats along with the alcohol beverages. This diet is over laden with genotoxins and carcinogens long before it is eaten. Added to this is a high volume of free radicals produced during digestion of saturated fats. These dietary liabilities far outweigh the compensations, especially when fibre and antioxidants are under-represented.

Conclusion

From the 20 research articles surveyed regarding diet and cancer, a dietary pattern for lowering the risk of bowel and breast cancer has emerged. This dietary pattern is characterised by low fat and low calorie foods with a high fibre content, including plant and fish protein, raw fruit and vegetables and minimal cooking. Implementing aspects of this low cancer risk diet will provide enjoyment and good health as well as mitigate some of the fear of cancer.

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RECIPES

COCONUT SLICES

Kindly set in by
Lyn Jone

1 cup of margarine
2 cups of coconut
2 cups of flour (equal parts of rice, soy and arrowroot flours)
1 teaspoon of bi-carb. soda
2 teaspoons of cream of tartar
1 cup of milk (any type of milk)
2 tablespoons of rice syrup

If you can tolerate dried fruit, add a few currants.

If you would like the recipe more like cake add 1 egg and use less milk.

Sift the three flours, bi-carb and cream of tartar. Place the margarine and rice syrup into a saucepan and heat until melted, do not boil, add this to the coconut then add the sifted flour mixture and milk alternatively until evenly mixed.

Bake in Lamington tin at 160c Fan Forced oven for 35 minutes.

Cut into slices.

SPANISH CREAM

Recipe kindly sent in by Mrs. Darby.

Make up 2 cups of powdered goats milk
2 dessertspoons of gelatine
vanilla to taste
sweetener of your choice
2 eggs

Beat the egg yolks and sweetener, place in a saucepan with the milk and when nearly boiling add the vanilla. Allow to cool then stir in the gelatine which has been dissolved in a little hot water and when cold fold in the stiffly beaten egg whites. Mix well and put in the refrigerator to set. Serve with fruit or just on its own.

Conitinued from page 5

"New Theories of Chronic Fatigue"
by Dr George Samra

sedatives, in the early stage. It is better to try first natural sedatives such as **valerian. Acupuncture** is an other remedy that may relief symptoms of pain or tension without increasing fatigue.

This is an exciting new area of medicine and we are at a pioneering stage of what might lie ahead in the future for medicine.

Albert Einstein's quote is appropriate to conclude with::

"No solution to a problem was ever achieved by thinking at the same level that was existing when the problem was conceived."

Research reports from

NUTRITION CARE-NUTRISEARCH

BULLETIN of December 1993

GARLIC AND INTERMITTENT CLAUDICATION

This study evaluated 80 patients who received either a placebo or 800 mgs of powdered garlic a day. The patients pain-free walking distance was used as the confirmatory parameter. There was a significant increase of 46 m walking distance amongst the garlic-treated group versus the placebo group. However, the improvement in walking distance in the garlic-treated group did not occur until the fifth week of treatment, being connected with a simultaneous decrease in platelet aggregation. The authors conclude garlic may be an appropriate agent for long-term intermittent claudication.

"Effects of Garlic Coated Tablets in Peripheral Arterial Occlusive Disease" Kieswetter H., et al., ***Clinical Investigator***, 1993;7:383-386

FROM BEER TO CRACK

This study evaluated 1,108 twelfth-graders from the New York State public and private school systems, for the ages at which first-use of 5 classes of drugs occurred: alcohol, cigarettes, marijuana, cocaine and crack. These results showed the use of at least 1 illicit drug, alcohol or cigarettes, commenced at the earliest stage. This was followed subsequently by stages involving marijuana and cocaine. Crack was the last drug in the sequence to be used. These results confirm the important role of alcohol among males and cigarettes among females and the onward progression into various drug classes. The age of first drug use at a lower stage is a strong predictor of further progression.

"From Beer to Crack: Development Patterns of Drug Involvement", Kandel, Denise, PhD. And Yamaguchi, Kazua, PhD., **The American Journal of Public Health**, June 1993; 83(6): 851-855

CHOLESTEROL AND GARLIC

This study evaluated 42 healthy individuals, mean age of 52 years, all with elevated cholesterol levels. In a double-blind fashion, each participant received 300 mgs 3 times daily of standardized garlic powder tablets or placebo. After 12 weeks of treatment with the standard garlic, cholesterol levels were significantly reduced compared to the placebo group who showed virtually no change in their condition. LDL cholesterol was reduced by 11% in the garlic group compared to 3% reduction in the placebo group. There was no change in the HDL cholesterol, triglycerides, serum glucose, blood pressure and other monitored parameters. Further, the garlic preparation was tolerated without any odour problems. Kwai, created by Lichtwer Pharma GmbH in Berlin, Germany, was the standardized garlic tablet used. Garlic's principal active ingredient appears to be allicin, a sulphur containing compound. The Kwai compound provides approximately 1.3% allicin, which corresponds to an allicin release of 0.6% per dried garlic tablet.

"Can Garlic Reduce Levels of Serum Lipids? A Controlled Clinical Study", Jain, Adesh K., MD et al., **American Journal of Medicine**, June 1993; 94: 632-34

GALLSTONES AND VITAMINS C

This article examines the importance of vitamin C in activating cholesterol 7 *a*-dehydroxylase, the rate-limiting enzyme in the breakdown of cholesterol to bile acids. Vitamin C reduces the concentration of cholesterol in the bile, thereby lowering the risk of developing gallstones. In guinea pigs, reduced vitamin C levels lowered the activity of the enzyme and directly increased the risk of developing gallstones. The risk factors in humans of contracting gallstones include obesity, ageing, estrogen treatment, pregnancy and diabetes. Vitamin C was reduced in all these

Continued on page 10

HYPOGLYCEMIC ASSOCIATION
FINANCIAL STATEMENT
YEAR ENDED 31 st DECEMBER 1993

INCOME			EXPENDITURE			
Cash -at bank 31/12/92		3186.81	Newsletter -printing		719.50	
Members subscriptions			-editor's expenses		680.60	
-1993	1635.00		-postage		647.30	2047.40
-1994	815.00	2450.00	Stationary, catering, etc			396.01
Donations		95.00	YWCA rentals			457.00
Meetings proceeds & Sales			Federal and state taxes			15.29
of books		371.30	Bank charges			9.00
Bank interest		62.74	Cash -on hand 31/12/93			73.16
			-at bank 31/12/93			3167.99
		6165.85				6165.85

AUDITOR'S REPORT TO MEMBERS

I have audited the accounts of the Hypoglycemic Association for the year ended 31 December 1993.

In my opinion, the financial statement as presented has been properly drawn up so as to give a true and fair view of the affairs of the Association for the year under review.

Signed

K E KEELAN
Hon. Auditor

K E KEELAN
Hon. Auditor
10 Arcadia Street
GYMEA BAY NSW 2227

5 February 1994

The President
The Hypoglycemic Association
PO Box 8
SYLVANIA SOUTHGATE NSW 2224

Dear Sir,

Attached is my certified summary and report to members following my review of your Association's financial records for the year ended 31 December 1993.

Revenue for the year decreased by $245.30 as against 1992, due to minor falls of income in each category, but appears to be of little concern.

Expenditure for the year increased by $363.88 as against 1992, due mainly to additional costing in production of your 'newsletter' (including related postage).

Overall, both income and expenditure for the year were quite comparable with those for 1992 and adequate funds have again been maintained to provide for the Association's normal future requirements.

Yours faithfully,
Signed
K E KEELAN
Hon. Auditor

MINUTES OF THE ANNUAL MEETING OF THE 6TH MARCH 1993 AT THE YWCA,
2 WENTWORTH AVE. SYDNEY

The meeting commenced with the Auditor's Report by Mr K E Keelan being unanimously accepted and approved as a true and accurate record of the Association's financial situation and the Committee of the previous year was re-elected.

The Committee comprised of:

Steve McNaughton	President
Joy Sharp	Treasurer
Dr George Samra	Acting Secretary
Jur Plesman	Editor

Steering Committee

Ted Grant
Mildred Grant
Sue Litchfield

Signed
Jur Plesman
Acting Secretary

Nutricare-Nutrisearch

continued from page 9

groups. The author believes reduced levels of vitamin C may be a contributing factor of developing gallstones.

"Ascorbic Acid and Cholesterol Gallstones", Simon, JA, **Medical Hypotheses**, 1993; 40: 81-84

Nutricare-Nutrisearch

continued

MULTIPLE SCLEROSIS AND PROSTATE CANCER

Mortality rate from prostate cancer are significantly correlated with multiple sclerosis prevalence and mortality. Evidence shows that colon cancer, dental caries and Parkinson's disease are also associated with multiple sclerosis. The author notes these diseases may have a common correlation being a defect in vitamin D metabolism. Evidence suggests vitamin D plays a role in immune regulation, possibly effecting multiple sclerosis.

"Multiple Sclerosis and Prostate Cancer: What do Their Similar Geographics Suggest?", Schwartz, Gary G., **Neuroepidemiology**, 1992; 11: 244-254

1994 MEETING DATES

5th MARCH - 4th JUNE - 3rd SEPTEMBER - 3rd DECEMBER

Chronic fatigue syndrome - Wikipedia. A yoga class can help you gain some muscle strength without being stressful.Â There are no new treatments for chronic fatigue syndrome. In Dr. Altman's pervious, well covered, answer there are very good resources referenced. Until the cause (or causes) of CFS are found a definitive treatment can't be developed. Chronic fatigue syndrome (CFS) is an illness characterized by persistent and relapsing fatigue, often accompanied by numerous symptoms involving various body systems. The etiology of CFS remains unclear. Despite considerable worldwide efforts, no single etiology has been identified to explain the development of chronic fatigue syndrome (CFS). It is likely that multiple factors promote its development, sometimes with the same factors both causing and being caused by the syndrome.Â New theories about the pathophysiology of depression and the action of antidepressant treatment proposes that mood disorders are caused by structural or functional changes in particular molecules and signalling pathways in the brain, and that antidepressants function by counteracting these molecular changes. Chronic fatigue syndrome (CFS) is a long-term illness with a wide range of symptoms. The most common symptom is extreme tiredness. CFS is also known as ME, which stands for myalgic encephalomyelitis.Â New guidelines on CFS/ME are currently being developed by NICE. The draft guidelines suggest structured exercise programmes, such as graded exercise therapy (GET) will no longer be recommended to treat CFS/ME. Once the full guidelines are published we'll update this page to reflect any changes. Read more information about the draft guidance from NICE. Symptoms of chronic fatigue syndrome (CFS/ME). The main symptom of CFS/ME is feeling extremely tired and generally unwell. In addition, people with CFS/ME may have other symptoms, including Chronic Fatigue Syndrome (CFS) is defined by an unexplained fatigue, that lasts at least 6 months, causes a 50% reduction in activity, and displays four or more of the following signs or symptoms: (a) self-reported memory or concentration impairment; From: xPharm: The Comprehensive Pharmacology Reference, 2007. Related terms: Posttraumatic Stress Disorder. Psychopathology. Cognitive Behavioral Therapy. Eicosanoid Receptor. Chronic fatigue syndrome (CFS) is a complicated disorder characterized by extreme fatigue that lasts for at least six months and that can't be fully explained by an underlying medical condition. The fatigue worsens with physical or mental activity, but doesn't improve with rest. Other characteristic symptoms includeÂ The cause of chronic fatigue syndrome is unknown, although there are many theories â€” ranging from viral infections to psychological stress. Some experts believe chronic fatigue syndrome might be triggered by a combination of factors. There's no single test to confirm a diagnosis of chronic fatigue syndrome. You may need a variety of medical tests to rule out other health problems that have similar symptoms.