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

A keen eye will notice that further changes have taken place in the make-up of the Committee of management of the Hypoglycemic Health Association. Babs Lamont, our previous Treasurer, has resigned due to personal circumstances. The Association wish to express our appreciation for the efforts Babs Lamont has made, despite the fact that she resides in the country, which made communication with her city colleagues somewhat difficult. We are lucky that Sue Litchfield, author of "Sue's Cookbook", has offered to take the position of Treasurer. She will bring new energy and ideas to the Newsletter and will be in charge of her RECIPE CORNER and other items.

Being a charitable non-profit organisation we are totally dependent on the support of our members and it is important that membership fees continue to reach our Association to cover the ever-increasing costs of running our activities. We are keeping the fees at a minimum of $20.00 per annum ($15.00 per annum for pensioners and students) and members are encouraged to recruit new members among their friends. A large number of interested doctors and other health professionals are still receiving our Newsletter in line with our aim to foster 'complementary medicine' in the medical fraternity. Many of them have contacted us congratulating the Association for the high standard of information provided.

Remember: the development of complementary medicine builds on a wider understanding of clinical nutrition among the general population.

Our Next Public Meeting will be at 2.00 PM on Saturday, the 2 September, 2000 at YWCA 5-11Wentworth Ave, SYDNEY and our guest speaker is

Roger French

who will be speaking on the subject of

“THE MAN WHO LIVED IN THREE CENTURIES - AND HOW HE DID IT”

Roger French, when in his twenties, was sick and tired of being sick and tired. This led him to abandon civil engineering for a career in Natural Health, which included seven years as manager of the Hopewood Health Centre at Wallacia, NSW, and the past 17 years as Executive/Health Director of the Natural Health Society of Australia. Roger has a Diploma of Nutrition (natural therapies).
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.

Other libraries holding copies are: Stanton Library, North Sydney; Leichhardt Municipal Library; The Tasmanian State Library; The Sydney University; The University of NSW and Newcastle University. The Association will provide free copies in PDF format to any library upon request to juruplesman@hotmail.com

Donations by professionals

Many professionals have donated $30 to the Association and we have acknowledged this by printing their business card in the Newsletter. We hope to receive more of these requests, which would help to financially sustain the Association and be of benefit to the doctors and practitioners.

Books for sale at the meeting

Jurriaan Plesman: GETTING OFF THE HOOK

This book is also available in most public libraries (state and university)

A letter from Sue Litchfield (Treasurer)

I would like to personally thank all those who have generously given donations this year to this wonderful society of ours. So far this year we have received $661.00 that is fantastic of all those concerned.

Do you all realise that all donations over and above $2.00 become tax deduction. In order for this association to keep up the high standard of help and support given to its members all such donations will be very gratefully received.

Also if any one has any brilliant ideas for raising any extra money I am willing to listen.

Also if any one would care to do a little cooking for the afternoon tea served at our meetings I would also love to hear from those good enough to offer their services, as it gets a little much for one person to do the lot especially at some of the larger meetings.

There is another matter that somebody may be able to help out with. At the present moment we are without a secretary. Is there anyone out there that has a few basic computer skills that may be able to come to the party.

On becoming treasurer of this society I had hardly any knowledge of the computer but with many many thanks to Jur for all his patients and helpful tips I can now use the email and type a letter and keep in touch with the world in general way, Kogarah, Phone 9553-0084.

At the last meeting on the 3 JUNE 2000, SUSAN CHOC and SUZANNE SLOCOMB won the raffle and the lucky door price.

Fund raising activities

We need money, ideas, donations, bequests (remember us in your will).

Ms Bousfield has requested us to place an ad in this Newsletter calling for interested members to start a discussion group in the Gymea area. Please call Ms Bousfield at 9525-9178

Lyn Grady of Bowral has generously donated two hand-knit jumpers and poncho all of which have won first and second prizes in regional competitions. We thank her for her thoughtful donation. All of these have now been sold for a total of $200 at Dr Samra’s surgery where they were on display. The moneys received were donated to the Association.

Please note that the Editor Jurriaan Plesman can now be reached on the internet. His e-mail address is: juruplesman@hotmail.com and fax No: 02 9130 6247

The Editor would like to hear from any member with internet facilities to help him out with typing manuscripts.

A big thanks once again and I am looking forward as the new Treasurer to meeting seeing you all at the next meeting. I may add over the years I have had the pleasure of meeting or talking to most of you in association with my cook book.

All the best,

Sue

The Hypoglycemic Health Association has a web site!!

Members might be interested to know that we just have created a temporary web site at:

<www.companyontheweb.com/hypoglycemia_australia/>

with the help of Amitee Robinson who has donated some of her free time to design the web site.

We are looking for four sponsors who are willing to help us finance the web site for the sum of $100 each. It is estimated that this will cover the costs and maintenance of the web site depending on where the site will be located in the future.

Sponsors will be acknowledged on the web site. Please contact juruplesman@hotmail.com

Doctor wanted to share a practice with Dr George Samra in Kogarah. Must have an interest in nutritional medicine or keen to learn. Excellent terms and conditions. Please ring 9553-0084 for further enquiries.

Sue Litchfield: SUE’S COOKBOOK

Dr George Samra’s book

The Hypoglycemic Connection

(now out of print) is also available in public libraries.

The Newcastle branch of the Association are still meeting with the assistance of Bev Cook. They now meet at ALL PURPOSE CENTRE, Thorn Street, TORONTO. Turn right before lights at Police Station, the Centre is on the right next to Ambulance Station. For meeting dates and information ring Mrs. Bev Cook at 02-4950-5876.

Entrance fee at meetings

Due to diminishing income from our quarterly meetings we regrettably have to increase our fees. Entry fees for non-members will be $5.00, members $3.00 & families $5.00.

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 19 Princes High-

The Hypoglycemic Health Newsletter Sept, 2000, Vol 16 No 3
What is Coeliac Disease?

Coeliac disease, or gluten-sensitive enteropathy, is a genetically based permanent intolerance to dietary gluten. Untreated, it can result in severe steatorrhoea and malnutrition, and increased risk of other diseases including lymphoma and osteoporosis.

What is the Cause?

Coeliacs are sensitive to gluten (part of the protein portion of wheat, rye, barley, triticale and oats), which reacts with the small bowel lining, damaging it and causing loss of effective absorption surface area of the villi or finger like projections. The disease can occur at any age. Both genetic and environmental factors play important roles in coeliac disease. Around 10% of all first degree relatives of known coeliacs also have the disease. Environmental factors such as severe emotional stress, pregnancy, surgery, or a severe viral infection sometimes trigger the symptoms.

Incidence

The incidence of coeliac disease in a number of European countries is estimated at 1 in 250, with more women than men being affected. Growing awareness of coeliac disease, better diagnosis, and improved screening point to the possibility of similar figures in Australia.

Symptoms

The symptoms of coeliac disease tend to be unspecific, and vary greatly from one person to another. More than half of the common symptoms in adults, including anaemia, extreme fatigue, depression, bone or joint pain,
osteoporosis, etc are often not recognised as gut related. The similarity of the symptoms of coeliac disease with those of other diseases often result in a misdiagnosis of irritable bowel syndrome, crohns disease, diverticulosis or chronic fatigue syndrome.

Common Symptoms
The following symptoms may occur singularly or in combination.
- Anaemia iron and/or folic acid deficiencies
- Fatigue, weakness and lethargy
- Deficiency of vitamins A, D, E, K & B12
- Diarrhoea, sometimes constipation (often both)
- Flatulence, bloating, abdominal pain
- Nausea and vomiting
- Mouth ulcers
- Weight loss
- Easy bruising of the skin
- Bone and joint pain
- Miscarriages and infertility
- Low blood calcium levels with muscle spasms
- Skin rashes such as dermatitis herpetiformis

Additional Symptoms in Children
- Dental abnormalities
- Retarded growth
- Delayed puberty
- Irritability

Diagnosis
Diagnosis relies upon proving that the small bowel lining shows the typical damage (villous atrophy). This is done by endoscopy, preferable with multiple biopsies of the distal duodenum and proximal jejunum. A gluten free diet should never be started before an endoscopy as it will interfere with establishing the correct diagnosis and may delay the diagnosis of another condition with similar symptoms. A specific panel of blood tests that measure antibodies to gluten is available as a screening aid in the diagnosis of coeliac disease.

How is the Condition Treated?
The only treatment for coeliac disease is a strict, lifelong gluten free diet. By specifically removing the clause of the disease, this treatment allows all abnormalities, including that of the bowel lining, to recover and will reduce the risk of developing other associated diseases.

For more information on coeliac disease, dermatitis herpetiformis and the gluten free diets please contact
The Coeliac Society of NSW Inc
P O Box 703, Chatswood NSW 2057
Phone: (02) 9411 4100
Fax: (02) 9413 1296
http://www.coeliac.org.au

Growing Stevia from scratch can be difficult (from seeds that is). Even if you could get the seeds to germinate stevioside levels can vary greatly from plant grown from seeds.

It is best to buy starter plants. You should try and get Stevia plants that have been grown from cuttings of plants that where high in stevioside.

Young Stevia plants are sensitive to low temperatures so you should wait until frost chance of frost have past and soil temperatures are into the 50’s and 60’s before transplanting them into to your garden.

Stevia plants enjoy a rich loamy soil. Stevia plants prefer fertilizers with lower nitrogen content instead of Phosphoric acid or potash content.

Organic fertilizes fish emulsion cow manure, etc) are good because they release their nitrogen slowly.

Waiting as late as possible to harvest can intensify the sweetness of the plants due to cool autumn temperatures and shorter days while they evolve into their reproductive state.

You should cover your plants in the early frost so you can gain a few weeks growing and greater sweetness.

When it come time to harvest you should prune off the branches before removing the leaves. You can also cut the tips off the stems since they can also be high in stevioside.

If you live in a frost free climate you can leave your plants outside but do not cut the branches to short leave around 4 inches of stem. Your second year harvest will then be more successful.

You should replace the plants after 2 years with new cuttings.

Cuttings must be rooted before planting. You can use commercial rooting hormones or make your own from willow tree tips made liquid in your blender.

Dip cuttings in your preparation and plant in a rooting type soil for 2 to 3 weeks.

Once the root system has had a chance to form you can plant in a 4.5 inch pots.

Place plants in a sunny no draft location until spring.

You can grow Stevia indoors, hydroponics systems work well or a 10 to 12 inch container filled with a light weight growing mix. Again adding some mulch around the top for the swallow roots.

Home Grown Stevia
from: http://stevianow.com/ growing_stevia.htm
Many forms of arthritis can disable the joints. In a healthy joint, cartilage covers the ends of the bones. In osteoarthritis, the cartilage disintegrates and the bones rub against one another. In rheumatoid arthritis, inflamed tissue in a joint leads to erosion of the cartilage and the bones. Joints affected by severe cases of rheumatoid arthritis may stiffen in deformed positions. World Book illustrations by Charles Wellek

**Arthritis: Diseases of Bones**

By Jurriaan Plesman BA(Psych), Post Grad Dip Clin Nutr

**There are several forms of bone diseases:**

- **Arthritis** is a bone disease which may affect the cartilage, synovial fluid between surfaces of cartilage, or the synovial membrane and bone surfaces.

- **Rheumatoid arthritis** tends affect people over 40, especially women, characterized by inflammation of joints especially the synovial membrane, knuckles, second joints, arms, legs, feet, general fatigue. Membranes are fluid-filled capsules made up of ligaments or tough fibrous tissues. The membrane secretes the lubricating fluid. The inflammation of the membrane causes the cartilage to break down. Excess synovial fluid results in swellings of the joints. It can be systematic spreading to any part of the body such as lungs, eyes, nerves. Pain tends to be worse on awakening. In older people the hands become gnarled, muscle weaken, tendons shrink and bone knobby. It may cause anaemia, fatigue, weight loss, fever, stiff joints and crippling pain. The majority of sufferers have antibodies called rheumatoid factors (RF) in their blood, which is diagnostic of the disease.

**Causes:** Unknown but believed to be an autoimmune disease. This means that the immune system improperly recognizes the synovial membrane as ‘foreign’ and attacks it. It often follows a period of emotional and/or physical stress, however poor nutrition or bacterial infection may be involved. Some scientists believe such infection may have been triggered by a viral or fungal infection - streptococci, staphylococci, gonococci, hemophilus, Candida albicans - somewhere else in the body.

- **Juvenile arthritis** (Still’s disease), characterized by chronic fever, anaemia, secondarily affects the heart, lungs, eyes and nervous system. Most children recover in adult life. **Causes:** Strong evidence that it has been triggered by a bacterial or viral infection on the heels of another disease such as staph infection, tuberculosis, gonorrhea or Lyme disease (A disease caused by the bite of a tick, causing expanding skin rings)

- **Infectious arthritis** affects the larger arm and leg joints, usually following injury. Symptoms are usually masked by other illnesses and if left untreated can result in permanent disability.

- **Osteoarthritis** is a degenerative joint disease accompanied by loss of cartilage tissue in the joints. It may have been precipitated by an earlier injury or defect in the protein that makes up cartilage. In osteoarthritis the cartilage at the end of bones and spine wear away exposing the bone surfaces that rub together. Bone spurs (osteoophytes) may develop causing damage at the edges, muscles, tendons and nerves. It affects people over the age of 40, nearly everyone after the age of sixty and three times as many women as men. Contributing factors are congenital bone deformation that may run in families, misuse of anabolic steroids. Diagnosis is usually confirmed by X-rays.

- **Ankylosing spondylitis** is arthritis of the spine. It affects two and a half times as many men as women. In severe cases it may interfere with person’s ability to breath normally. In this category are: **psoriatic arthritis** and **Reiter’s syndrome**. The latter is a condition affecting adult males characterized by urethritis (inflammation of urethra), conjunctivitis (inflammation of conjunctiva “pink eye” disease) and arthritis thought to be caused by an unidentified virus (Mycoplasma). Other symptoms, diarrhoea, inflamed ankles, lesions on soles of feet. Other related diseases is **Kawasaki disease** or **mucocutaneous lymph node syndrome** a childhood disease (under age of 5) accompanied with fever, inflamed mucous membranes of the mouth, ‘strawberry tongue’, swollen lymph glands, skin rash, oedema, joint pain, diarrhoea, ear inflammation and others.

- **Sjögren’s syndrome** often accompanies rheumatic diseases which destroys the moisture-producing glands in the eyes, lungs, mouth
and kidneys. Symptoms are coughing, difficulties in chewing or swallowing, dry eyes, damage to cornea, fatigue, hair loss, muscle weakness.

Systemic lupus erythematosus is a closely related autoimmune disease, that often manifests itself as arthritis. It is a collagen disease which attacks bundles of tiny reticular fibrils, forming part of the linker collagen and the elastic fibres of tendons, ligaments and fascia connected to the skeleton. Collagen is an integral part of bone formation.

Osteogenesis Imperfecta is a rare crippling disease affecting mainly children up to the age of puberty when bone growth is at its peak. It is characterized by frequent fractures of bones due apparently to incomplete mineralization of bone. It is a genetic disorder involving imperfect development of bone tissue, also known as brittle bones. It is believed to be the result of a mutation of a single gene in collagen formation. Glycine is an important component of collagen.\(^1\)

Gout is often classified with arthritis, although caused by crystalized uric acid which lodge usually in the big toe. Treatment aims at inhibiting the uric acid synthesis, either by drugs or more natural means. This is typically a male disease because 90 per cent of people who suffer from gout are men.

Conventional Treatment: of Rheumatoid and osteoarthritis

Pain killers, aspirin, non-steroidal antiinflammatory drugs (NSAIDS) such as ibuprofen, diclofenac (Voltaren). Unfortunately, 1 in 100 people who takes these NSAIDS develop stomach ulcers or severe gastrointestinal bleeding with potential fatal consequences. Aspirin is also a vitamin C thief, by tripling its excretion in the urine and causing its deficiency. They also may be responsible for kidney and liver damage, especially in the case of Voltaren. There are many available drugs in the treatment of arthritis, many of which have undesirable side effects.

Treatment may be accompanied with thermal (heat) treatment. Swimming in a heated pool allows patients to move their affected joints and improve muscle strength. In more serious conditions doctors may use corticosteroid injections to ease the pain of affected joints.

Treatment of In infectious arthritis typically involves intravenous doses of antibiotics.

Surgical procedures: Synovectomy - removal of damaged connective tissues lining a joint cavity, which allows the body to regenerate new, healthy tissue in its place. The operation is usually in the knee. In the neck or spine bone tissues can be removed or fused. Shoulders, hips and fingers can be replaced with suitable artificial joints made from stainless steel and plastic.

Nutritional Treatment

Readers may ignore some of the technical details underpinning the rationale in the use of special nutrients, but should pay attention to the nutrients that may remedy their illness.

Nutritional treatment aims to strengthen the dysfunctional immune system which is believed to be at the core of the arthritic diseases. Selected nutrients are necessary in the synthesis of bones and cartilage. Nutritional treatment of bone diseases is in still very much in the experimental stage and will need further scientific validation to become generally acceptable. Roger French in a recent article “The Natural Way Health Way with Shingles” (New Vegetarian and Natural Health, Winter 2000, page 54-56) pointed out that many diseases involving our immune system may be caused by toxemia as a consequence of inadequate elimination of waste products from the body. This concept should not be overlooked when dealing with bone diseases.

Any nutritional treatment starts off with adoption of the hypoglycemic diet, which is similar to the diabetic diet. This is basically a natural diet suited to the individual and having regard to the person’s genetic background. The criterion is the person’s grandparents diet. Essentially, it is a diet that avoids sugar, refined carbohydrates in white bread, white rice, cakes and sugary drinks, candy bars, colas, cookies, ice cream sweetish fruits such as bananas, grapefruit, melons, honey and dates (these fruits may be reintroduced at a later stage in moderation) etc. The reason is that unstable blood sugar levels weakens the immune system by releasing excess stress hormones.

Have High protein + complex carbohydrates snacks every three hours or sooner, to provide a slow release of glucose, and to prevent the hypoglycemic dip. A high protein breakfast must be considered the most important meal of the day. Good sources of proteins are eggs, white meat as in chicken and fish. Eat plenty of green vegetables and fruits and the more varied diet the better it is. It should be noted that vegetarians have a lower incidence of arthritis, but also that they may be exposed to a B12 deficiency. Patients are advised to supplement their diets with vitamin B12 + folic acid, which will help in the proper digestion of food, formation of cells and protection against nerve damage. A local doctor should be able to give a B12 injection and prescribe the folic acid in case of a suspected deficiency.

Avoid saturated fats and salt. Try to avoid manufactured or processed food as much as possible. Be wary of genetically modified foods.

Allergies play a role in arthritis

Most clinical nutritionists see the varied forms of arthritis to be part of an autoimmune disorder, whereby the body’s Defence mechanism attacks itself. There is a rapidly growing scientific literature that implicates food sensitivities as a cause of inflammatory attack on the self. One group of foods that has been placed under suspicion is the nightshade family, such as tomatoes, potatoes, tobacco, eggplant, Capsicum, chilli, pepper, except black pepper. (Alternatives to these are: sweet potatoes, cauliflower, pumpkin, marrow, choko, lettuce, celery, cucumber and other vegetables). However, when discussing food sensitivities we must keep in mind the individual biochemistry of the person, as some people may react to tomatoes, but not to potatoes. Others may react to meat from the mammalian animal kingdom (such as beef and pork), but not to chicken and fish. Patients with a sensitivity to milk products may have to avoid cow’s milk and cheeses; and use instead soymilk, soycheese or rice milk. But soy products may be a source of allergens to others. However, those with a lactose intolerance can safely consume yoghurt-type products to meet their daily calcium requirements.\(^2\)

Again others may be allergic to the citrus family and will have to avoid oranges, lemons, limes, grapefruit, kiwifruit and passion fruit in favour of apples, peas and bananas.

There are medical tests, although not all entirely accurate, such as the cytotoxic test and RAST test, which may reveal hitherto unknown allergies.

Studies have found that the following common foods may be responsible for all-
lergic reactions arranged in percentage order:

Cow’s Milk 56-67%
Wheat 43-57%
Chocolate 26-55%
Eggs 22-60%
Orange 13-52%
Benzoic acid 35%
Cheese 32%
Tomatoes 14-32%

Other possible sources of allergies are:
- Tartrazine, Rice, Rye, Fish, Grapes, Onions, Soy, Pork, Peanuts, Alcohol, MSG, Walnut, Beer, Tea, Coffee, Nuts, Goat’s Milk, Corn, Oats, Cane sugar, Yeast.

Most doctors can perform cytotoxic tests that can isolate specific foods responsible for allergic reactions.

Nowadays, we must include genetically modified food among the suspect sources of allergies.

Search for food sensitivities

One popular home test for allergy is by means of a Dietary Diary, as illustrated above. One can use the pages of a writing book to represent each day. FIGURE 2

The hypoglycemic diet consists of three hourly high protein snacks, so the first column gives an indication of the space of time between meals. A long time between snacks may induce a hypoglycemic reaction.

The second column lists all the foods consumed for later identification for allergies.

The third column shows how one feels before eating the snack. The consumption of an allergen very often resembles an addiction and gives the person a good feeling after consumption. For example, sensitivity to cow’s milk often causes an immediate reaction that could increase an adrenaline upsurge. This would increase the blood glucose level, feeding the brain with energy. This could make one feel ‘good’, but soon excessive insulin levels could crash the glucose levels and cause one to crave for further cow’s milk. This addiction is not unlike the addiction to nicotine. It should be noted that tobacco belongs to the NIGHTSHADE FAMILY and polymyositis patients are especially advised to stay away from tobacco smoke.

One way to start off the dietary diary is by listing foods that you suspect may be causing allergies and recording them in the diary. One should be aware that many allergic foods have a ‘threshold level’ below which no allergic reaction is experienced.

By keeping a dietary diary one is able in a matter of weeks to pinpoint suspect food sensitivities. By avoiding these for four days and then reintroducing them after that period of abstention one should experience a severe adverse reaction, if that food was indeed an allergen.

Prostaglandins and inflammation

Arthritic conditions are primarily inflammatory reactions.

Inflammatory reactions is common to all forms of arthritis. Inflammation involves the production of localized inflammatory hormones. There are three broad kinds of these hormones, called prostaglandins - first isolated in the prostate gland - which cause inflammatory reactions. These are named prostaglandins series 1, series 2 and series 3 or PGE1, PGE2 PGE3. The inflammatory prostaglandins (PGE2) are responsible for triggering the release of histamine in surrounding tissues. Prostaglandins are derived from essential fatty acids such as

1) N-6 linoleic acid prevalent in vegetables oils (sunflower seeds, wheatgerm, corn oil, walnuts).
2) arachidonic acids derived from such food items as meat, milk, eggs and
3) N-3 linolenic acid derived mainly from fish, but also present in flaxseed oil (linseed), pumpkins seeds, walnuts and green leaves.

The inflammatory prostaglandins - prostaglandin series 2 or PGE2 - which promote inflammation are derived from arachidonic acid and are responsible for effects, some of which are "bad", but most of which are "bad". Excess of PGE2 may depress immunity (bad), lubricate arteries (good), increase clotting (bad), constrict arteries (bad), cause inflammation (bad). People with arthritic conditions see to produce excess prostaglandins series 2 synthesised from arachidonic acids derived from meat, milk and eggs or land animal products.

Prostaglandins series 1(PGE1) - the non-inflammatory tissue hormones - produced from N-6 linoleic acid have the following effects: enhance immunity, elevate moods, reduce clotting, relax arteries, are anti-inflammatory, lower cholesterol and move brown fat, all of which are desirable.

Prostaglandins series 3(PGE3) lubricate arteries, reduce clotting, lower triglycerides, all of which are desirable.

Thus if we could increase the prostaglandins series 1 & 3 we could inhibit the inflammatory reactions that is so common in arthritis. However, some people lack the necessary enzymes to metabolize the essential fatty acids into these beneficial prostaglandins. The problem is that N-6 linoleic acid needs to be converted to prostaglandins series 1; and N-3 linolenic acid needs to be converted to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) as follows in simplifed form:

N-6 linoleic acid —> gamma-linolenic acid —> dihomo-gamma-linolenic acid —> prostaglandins E1
N-3 linolenic acid —> eicosapentanoic acid (EPA) —> docosahexaenoic acid (DHA) —> prostaglandins E3

The enzyme required to convert N-6 linoleic acid and N-3 linolenic acid is called delta-6-desaturase or D6D.

Delta-6-desaturase is a fragile enzyme and is sometimes absent in some people such as diabetics and hypoglycemics. Those patients are then advised to take Evening Primrose Oil and Max EPA (Fishoil capsules) that bypass the defective delta-6-desaturase. Patients will soon experience a reduction of inflammation and pain.

Nutritional supplements are aimed at building stronger bones and muscles, reducing inflammation and lessen the pain. It is recommended that you discuss your supplement health with your doctor to ensure that it does not interfere with any other treatment regime. Whenever possible nutrients should be obtained from natural food sources as they often do their work in conjunction with other nutrients in food. Also commercial supplements are expensive and often out of reach for people in most need of supplements.

From the above it is clear that Evening Primrose Oil and Fish Oil (Max EPA) are essential supplements to reduce arthritic inflammation. Eating deep sea fish three times a week should provide ample essential fatty acids, as well as other nutrients such as selenium, calcium, other vitamins and minerals present in sea food. Other sources of essential fatty acids are Flaxseed Oil, Walnut Oil which contain the precursors of both kinds of EFAs (Omega 6 & 3), mentioned earlier.

Ginger Ginger Root (Zingiber officinale) tea, made when the ginger is shredded and fused in water provide ingredients that are shown to reduce the pain of arthritis. These can also be obtained from Ginger powder, obtainable from many Asian shops. Another

FIGURE 3

AMINO ACIDS IN COLLAGEN FORMATION

Enzymes + co-enzymes

Serine —> [Glycine synthase + folate acid + pyridoxine (B6)] —> Glycine (1/3 of collagen)

Proline —> [Prolyl hydroxylase + iron+Vitamin C] —> 4-hydroxyproline (Proline 19%, hydroxy proline 14%)

Lysine —> [Lysyl oxidase + copper + pyridoxine (B6)] —> Hydroxylsine (Cross links)
natural analgesic (pain killer) is a topical cream and ointment of Cayenne (Capsicum species). When applied to the skin capsaicin, the active ingredient acts by inhibiting a neurotransmitter in nerve cells, called substance P, which sends pain impulses to the brain. A commercial product goes by the name of ZOSTRIX. Another effective pain killer is when sorboline cream is mixed with crushed aspirin and then applied to the skin. Pain relief can also be obtained from creams containing NSAIDS such asVoltaren Emulgel. As creams, these analgesics avoid some of the side effects when taken as drugs. Consult your local pharmacist.

**Calcium/Magnesium** are important minerals in the bone formation, the intake of these should be in the ratio of roughly 2:1. Although milk is a rich source of calcium, it is not considered a good source of calcium to many people because of its potential as an allergen. In fact some studies claim that it can cause a calcium deficiency. Supplements are available as part of a bone-building formula. If taking magnesium be careful if you have a kidney disorder.

Dosage should be Calcium 2,000mg, Magnesium 1,000mg daily preferably in chelated form.

Good natural sources of both calcium and magnesium are:

**Calcium, Magnesium: Foods that contain both calcium & magnesium.** Approximate figures represent respective mgs/100 g food, please note the ratios:

- Milk, dried skimmed, 1290.00, 110.00, Parmesan Cheese, 1180.00, 41.20, Kelp, 1050.00, 740.00, Gouda cheese 45% fat, 820.00, 28.00, Edam Cheese 30% fat, 800.00, 59.00, Cheddar Cheese, 752.00, 29.86, Cheese, general, 750.00, 45.00, Mozzarella Cheese, 632.00, 24.00, Camembert cheese, 600.00, 19.00, Blue Cheese, 526.00, 39.00, Dulse, 296.00, 220.00, Rose hips, 257.00, 104.00, Almonds, roasted, 252.00, 170.00, Collard leaves, 250.00, 57.00, Parsley leaf, 245.00, 41.10, Hazelnuts, Cobnut, 226.00, 156.00, Chocolate, Milk chocolate, 214.00, 86.00, Kale, 212.00, 31.00, Parsley, 203.00, 41.00, Soya beans, 201.00, 220.00, Soya flour, full fat, 195.00, 247.00, Figs,dried, 193.00, 70.00, Dandelion greens, 187.00, 36.00, Salmon, canned, 185.00, 29.55, Water cress, 180.00, 34.00, Coffee powder, 168.00, 390.00, Dandelion leaves, 158.00, 36.00, Coffee, roasted, 146.00, 201.00, Egg Yolks, 140.00, 16.00, Pistachio Nuts, 136.00, 158.00, Brazil Nuts, 132.00, 160.00, Chives, 129.00, 44.00, Tofu, 128.00, 111.00, Goat’s milk, 127.00, 14.00, Spinach, fresh, 126.00, 80.00, Chick-peas, dry, 124.00, 155.00, Mungo beans, Black, 123.00, 243.00, Milk, skimmed, 123.00, 14.00, Sunflower Seeds, 120.00, 38.00, Yoghurt, Milk, 120.00, 12.00, Beet Greens, 119.00, 106.00.

Some **alkaline foods** promote calcium absorption such as avocados, corn, dates, fresh coconuts, fresh fruits (except cranberry and plums), fresh vegetables, raisins, soy products.

**Bone formation**

Bones consist of large stores of calcium and phosphorus in the form of crystals, known as hydroxyapatite. These crystals are composed of calcium phosphate, calcium carbonate with small amounts of magnesium, fluoride, sulphate and trace elements. These are formed from substances supplied in the blood from the action of bone forming cells, or osteoblasts. These cells secrete an organic matrix, composed largely of collagen proteins which become hardened by deposits of hydroxyapatite. Thus collagen serves as deposits of bone materials. This process is called bone deposition. On the other hand, the loss of bone material, as in osteoporosis, is called bone resorption which dissolves hydroxyapatite under the influence of other cells in the bone, known as osteoclasts. Osteoclasts excavate passages through bone tissues by enzymatic action. They become activated in the presence of parathyroid hormone secreted by four small glands attached to the thyroid gland, and they control calcium levels in the blood. The maintenance of proper blood calcium levels (2.5mmol/L) in healthy people is crucial in muscle contraction and a host of other biochemical processes in the body.

**Bone formation** is also dependent on the presence of **Vitamin D** (about 400 IU daily). A derivative of this vitamin, 1,25-dihydroxyvitamin D3, promotes intestinal absorption of calcium and phosphate. The sun synthesizes vitamin D from 7-dihydroxycholesterol in the skin in a complex biochemical pathway. Thus most people living in a sunny climate should not be deficient in vitamin D. However, sun sensitiv people, or those with limited outdoor living, might want to obtain it in supplemental form. A good natural source is Cod Liver Oil. This can be obtained in capsule form. It has both vitamin D and A which will also protect the skin from the sun. Vitamin D dosage should not exceed 1000 IU as this may be toxic.

**Collagen formation**

Understanding the formation of collagen, as the frame-work of hydroxyapatite crystals, becomes important if we want to help the body rebuild bones through nutrition. One third of collagen consists of glycine, derived from serine, both non-essential amino acids, meaning they are produced in the body from other protein substances. Amino acids are the basic units from which proteins are made. But the conversion of serine to glycine requires **folic acid and vitamin B6**.

Another third of collagen consists of 4-hydroxyproline and hydroxyproline, derived from another non-essential amino acid, proline. Their conversion depends on an enzyme requiring **vitamin C and iron**.

The remainder consists of hydroxylysine from which cross links are made. Its conversion from lysine requires **vitamin B6 + copper**.

Lysine is an essential amino acid that needs to be supplied in the diet.

Good sources are:

- Pork, fried liver, skim milk, flounder (baked), Parmesan cheese, tuna, canned in oil drained, soya flour, poultry, turkey, Edam cheese, sirloin steak, trout , chicken breasts, beef (roast), Mackerel, pickled herring, salmon (canned pink), pork (roasted) Cheddar cheese, fish, cod (canned), Halibut, veal, veal roast, haddock, raw, prawns (cooked), liver (cooked), Lima beans, chicken liver, lamb (leg), cottage cheese, chickpeas dry-raw, pork, (loin), pumpkin seeds, liverwurst, pork, ham, lamb (rib), pistachios, peanuts (roasted), peanut butter, lentils (cooked), boiled egg, soybeans (cooked).

**Vitamin K** is generally thought of as having a role in the synthesis of blood clotting factors. Vitamin K is also required for the production of a non-collagen protein by osteoblasts called osteocalcin which chelates (claws and holds on to) the calcium and holds it in place within the bone. Osteocalcin levels is a good marker for bone growth. Some studies have shown that women with higher intakes of vitamin K were less likely to fracture hips. People who consumed lettuce daily were shown to have a 45% reduced risk of hip fractures. This study showed that consumption of spinach and broccoli - also sources of vitamin K - did not show this benefit.

Other good sources of vitamin K are:

- Vitamin K: in mcg per 100g of food, 446.00, Chives 380, Spinach, canned 290, Grape seed oil 280, Brussels Sprout, 275, Chick-peas, dry 264, Black tea 262, Water cress 250, Spinach, fresh 240, Spinach, New Zealand 240, Lettuce 200, Soya flour, full fat 200, Soya beans, 190, Cauliflower 150, Egg Yolks 147, Wheat Germ, 131, Mungo beans, Black 130, Beef, liver 100, Beef, liver 100, Broccoli 100, Cabbage 100, Liver,broth 100, Rose hips 92.

**Zinc (30mg daily) and copper (3mg daily) and manganese**

Zinc, together with others such as vitamin E, and selenium, is an antioxidant, scavenging free radicals though be responsible for the autoimmune disorder underlying the bone diseases. Zinc is involved in over 200 enzymes (as a co-enzyme) in the body. Zinc is required in bone formation and is often deficient in people with arthritis. Superoxide radicals are known to play a role in arthritis and cataract formation. Intracellular defence against them is the enzyme superoxide dismutase, which requires zinc, copper and manganese. Sometimes one sees people wearing a copper bracelet as a source of copper. In this way copper is absorbed through the skin. Make sure the copper band remains clean.

**Copper** is also a co-factor in llysyl oxidase, an important enzyme in the production of cross links in bone formation (See illustration). Sometimes a copper deficiency may lower pain threshold levels. When men with a copper deficiency were replenished with copper (Cu) supplementation, enkephalin levels in the pituitary and central nervous system rose and reduced the sensation of pain in one
study. Some studies have shown that excess zinc supplementation may interfere with copper absorption and it was suggested that zinc sources ought to be from natural food. Some sources are:

**Zinc:** in Food 100g

| Oysters 45, Wheat Bran 16, Wheat Germ, 12, Liver, calf 8.4, Yeast, dried Baker’s 8, Brewer’s Yeast (GTF) 8, Cocoa (dry powder) 7, Ginger Root 6.8, Pork liver 6.350, King Crab 6, Lamb 5.3, Crabs 5, Soy flour, full fat 4.9, Beef, liver 4.830, Oats, without husk, whole grain 4.5, Pecans nut 4.5, Split Peas 4.2, Soy beans, 4.180, Milk, dried skimmed 4.1, Blue Cheese 4.1, Beef, sirloin 4.070, Oats, rolled 4.060, Brazil Nuts 4, Edam Cheese 30% fat 4, Gouda cheese 45% fat 3.9, Cheddar Cheese 3.9, Liver, beef 3.9, Beef rump 3.860, Egg Yolk 3.8, Chick-peas, dry 3.540 |

**Bromelain** (3 times daily as directed on label) found in pineapple helps to stimulate the production of prostaglandins and in the digestion of proteins. It is excellent in reducing inflammation. Pineapple must be fresh as freezing and canning destroy enzymes.

**Glucosamine sulfate** (500mg 3 times a day on an empty stomach), a constituent of cartilage, has been evaluated for the treatment of osteoarthritis in several studies. Available data suggest that glucosamine decreases pain and improves function in osteoarthritis. Glucosamine sulfate is shown to be as good as ibuprofen for osteoarthritis of the knee.

**Boron** is known to play a role in the hydroxylation of hormones and could therefore have an indirect influence on bone formation. Boron is known to be involved in vitamin D metabolism. Boron and vitamin D deficiency has been reported to be associated with bone malformation in chicken. It helps in the metabolism of calcium, magnesium, phosphorus and prevents their excretion in urine. It is a trace mineral that has been shown to induce remissions of symptoms in significant numbers of patients with osteoarthritis with no toxic side-effects. It is involved in brain function, alertness, postmenopausal osteoporosis, build muscles. Sources are:

**Boron in Mgs in 100 g of food**

| Mushrooms, canned 415, Cucumber 3630, Mushroom, cultivated 1820, Peas, seed, dry 1800, Peanuts, roasted 1700, Wheat Germ, 1650, Black tea 1590, Almonds, roasted 1400, Raisins, Dried Grape, Sultanas 1200, Peanuts 1200, Avocados 955, Rose hips 880, Cod, 824, Walnuts 760, Pecans nut 760, Figs, dried 710, Buckwheat 680, White cabbage 600, Apricots, sweet, canned 570, Limes,信任 570, Sweet cherries, canned 570, Oats, without husk, whole grain 568, Parsley leaf 540, Mill 520, Apricots 475, Wheat whole grain 463, barley, without husk 458 |

**Manganese** (60 mg daily for 2 weeks, then reduce to 2mg daily in supplemental form). Manganese (Mn) stimulates the production of a group of protein like molecules in bones called polysaccharides. These compounds provide structures upon which calcification take place. Manganese deficiency causes impairment of bone formation, remodeling and repair. Manganese and calcium should not be taken together as they compete for absorption. Good source are:

**Manganese In Mgs in Food100g**

| Black tea 73.4, Wheat Germ, 11.42, Hazelnuts, Cobnut 5.4, Oats, rolled 4.54, Soy flour, whole fat 4, Cowpeas, dry 3.74, Oats, without husk, whole grain 3.7, Wheat whole grain 3.67, Pecans nut 3.5, Soy beans, 2.71, Parsley leaf 2.7, Chick-peas, dry 2.14, Rice, polished 2, Walnuts 1.97, Blueberries, canned 1.9, Almonds, roasted 1.9, Millet 1.9, Lima Beans, dry 1.79, barley, without husk 1.65, White Beans 1.62, Peanuts 1.6, Apricots, dried 1.5, Coconut 1.31, Rye 1.3, Split Peas 1.3, Buckwheat 1.3, Peas, seed, dry 1.25, Peanuts, rolled 1.24, Rose hips 1.2, Rice, unpolished |

Flavonoids help in the formation of cartilage and connective tissue, for healthy nails, skin and hair and aids in the absorption of calcium. It is known to be required in rats, chicken and other animals. Silicon also reduces the bioavailability of aluminium and thus could be protective against the development of Alzheimer’s disease. Lettuce contains 8% of silicon. Other good sources are:

**Silicon in Mgs per Food 100g**

| Oats, without husk, whole grain 425, Egg, Whole egg 300, Barley, without husk 188, Parsley leaf 12, Turnip 12, French beans, String Beans 10, Hazelnuts, Cobnut 10, Bananas 8, Wheat whole grain 8, Leeks 6, Blueberries, Bilberries, Huckleberries 5, Peas, seed, dry 3, Cucumber 3, Blackcurrants 3, Mandarins 3, Tomatoes, ripe 2.7, Tomato 2.7 |

**Fluoride:** (Electrically charged form of fluorine). Naturally the fluoride content of water ranges between 0.05 and 1 ppm in water is said to protect against dental caries. Fluoride is said to increase bone formation and the number of osteoblast. It is an essential element required in the diet to form bones and teeth. It is incorporated into hydroxyapatite to form fluorapatite which causes hydroxyapatite to become larger and harder. This is important for growing children. It is deposited in bone, teeth, excreted in urine, associated with dental health, small amounts prevents dental caries, osteoporosis, arteriosclerosis, but excess causes fluorosis. Water fluoridation is a controversial social issue. Boron is known to counteract adverse effects of fluoride toxicity. Sources:

**Black tea, Walnuts, Pork liver, Lobster, Calf’s kidney, Beef, liver, Kidneys, beef, Eel, smoked, Cashews, Peanuts, roasted, Butter, barley, without husk, Spinach, fresh, Parsley leaf, Soy flour, full fat, Whole egg, Almonds, roasted, Wheat whole grain, Coffee, roasted, Pike, river, Herrings, vinegar cured, Radishes. Fluoridation of water with sodium fluoride 1.0-2.0 ppm.**
1.1. Whole Wheat 1.1, Blackberries 0.894, Blackberries, commercial 0.894.

S-adenosylmethionine or SAM (200mg three times a day) is a kind of muscle and collagen building amino acid methionine.

Niacinamide a form of vitamin B3 is necessary for healthy skin, improves function of the nervous system, metabolism of carbohydrates and is antiinflammatory.

Found in brewer’s yeast, broccoli, carrots, cheese, corn flour, dandelion greens, dates, eggs, fish, milk, peanuts, pork, potatoes, tomatoes, wheatgerm and in the herbs: alfalfa, burdock root, catnip, cayenne, chamomile, chickweed, evilbright, fennel seeds, hops, lico-rice, mullein, nettle, oat straw, parsley, peppermint, raspberry leaf, red clover, rose hips, slippery elm and yellow dock.

Herbal remedies

**Alfalfa** contains all the necessary vitamins and minerals for bone formation.

**White willow bark** (Salix alba) for pain relief, follow instructions on package, should be standardized to contain 15% salicin.

**Devil’s Claw** (Harpagophytopracumbens, Myrtynia parviflora,) and **Cat’s Claw** (Uncaria tomentosa) may be useful for inflammatory pain and in spondylitis.

Other herbs: bregima tea, buchu tea, burdock root, celery seeds, corn silk, horsetail, nettle, and parsley tea and yucca.

**St John’s Wort** (Hypericum): Arthritic sensitivity to sun light.

**Devil’s Claw** (Hypericum) in previous Newsletters.

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**St John’s Wort** (Hypericum): Arthritic sensitivity to sun light.

**Conclusion**

The nutritional remedy of bone diseases aims at the underlying causes of arthritic conditions and may one day become a replacement for the palliative medical treatment that is available to most people now. In this age of degenerative diseases that afflict modern humans, science is showing the way how complementary medicine - a combination of the old and the new - is helping people to achieve better health by living in harmony with their environment.

A SAMPLE OF A MENU

by Sue Litchfield

The following two menus are samples only, that hopefully would give everyone a a guide to a better diet.

All the recipes are in my cookbook, but many of them have been printed in previous Newsletters.

If any more help is needed please do not hesitate to ring me on: 02-9971-5657 or email: <litch@grip@bigpond.com>

**EARLY MORNING SNACK**

Ryvita “cheese” with a dill pickle

**LUNCH**

Tuna and Salad Sandwich a piece of fruit or a biscuit

**MID AFTERNOON SNACK**

Pineapple Nut Biscuit

**PRE-DINNER**

Glass of flavoured mineral water potato chips

**DINNER**

Roast Lamb
Roast potatoes
Roast pumpkin
Boiled peas

**SLIPPER**

Flavoured milk e.g.Goats or Soya with carob powder

Soya milk chocolate

**NIGHTLY SNACK**

Glass of “ milk “ flavoured with Decaf coffee

DAY 2 Menu

**EARLY MORNING**

Slice of toast spread with almond butter

**BREAKFAST**

Crunchoila or Muesli with Goats or soya milk grilled Fish

**MID MORNING**

Tub of Goats Yoghurt sweetened with Rice Syrup

**LUNCH**

Sweet potato risotto tossed salad

**DINNER**

Stir fried Chicken and mixed vegetables

Boiled Rice

Apple Crumble

**MID MORNING**

Tub of Goats Yoghurt sweetened with Rice Syrup

**LUNCH**

Sweet potato risotto tossed salad

**DINNER**

Stir fried Chicken and mixed vegetables

Boiled Rice

Apple Crumble

**NIGHTLY SNACK**

Glass of “ milk “ flavoured with Decaf coffee

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CAROB SHAKE

1 tablespoon instant coffee Decaf is O.K.
4 Tablespoons carob powder
1 cup hot Soya milk or milk of choice
2 cups hot apple juice

Blend all ingredients until smooth and frothy. Serve warm in cold weather

ROLLED OAT SLICE

2 ripe mashed bananas
2 egg whites slightly beaten
2 cups rolled oats
1/3 cup chopped dried fruit of choice

Mix all the ingredients well together and allow settling 15-20 mins
Line a lamington with a layer of foil and a layer of baking paper. Spread evenly into tin. Bake in 180°C oven for approx. 30 mins

SATAY SAUCE

1 crushed clove garlic
2 teaspoon Rice syrup or pear concentrate
2 tablespoons Tamari Soya sauce
Lemon juice to taste
Coconut milk or water for thinning

Put peanut butter and water in a saucepan and stir over gentle heat until well mixed. Remove from heat and add other ingredients. It may be necessary to add extra coconut milk or water to make a thick paste. Check as it maybe necessary to add extra lemon juice
N.B By adding extra coconut milk this makes a great sauce for Barb-b-que chicken or even lamb. Also by making this sauce thicker it makes a great dip

SATAY ROASTED CHICKEN

Sauce as above
2 cloves garlic
1/3-cup yoghurt of choice
2 tabs lemon juice
8 mixed chicken pieces

Preheat oven to 180°C.
Combine sauce, garlic lemon juice and yoghurt
Place chicken in a baking dish and brush generously with the satay sauce mixture and bake for 1-1 1/2 hours or till cooked brushing the chicken with sauce occasionally.

MUSTARD PICKLES

3-4 Zucchini
1 _ teas sea salt
1 tab dried wasabi powder( available at all Asian stores and most large supermarkets)
1 tab oil
3 tabs Rice syrup
2 tabs Brown rice vinegar Rice vinegar will do if brown rice vinegar is unavailable
Slice zucchini into thin Pieces. Combine rest of the ingredients in a large saucepan Bring to the boil. Place zucchini in a heated jar, pour over the marinade and allow settling 15-20 mins

Attention deficit hyperactivity disorder: A functional medicine approach is best?

All forms of this disorder are referred to now as Attention Deficit Hyperactivity Disorder (ADHA) with the acknowledgement of 3 main subtypes: predominantly inattentive, predominantly hyperactive and combined type. Currently, the leading hypothesis explaining the behavioural and cognitive manifestations of ADHD suggest that there is diminished function of polysynaptic dopaminergic circuits belonging to the executive centres within the brain’s prefrontal lobes. These centres are largely inhibitory and are responsible for impulse control and the ability to maintain sustained attention.

Research suggesting a multifactorial aetiology to ADHD, however, has been accumulating. There appear to be genetic predisposing factors, environmental toxic overload factors, nutrient insufficiencies including essential fatty acids, magnesium, zinc, iron and thiamine, all potentially involved in triggering ADHD. Studies have shown improvement in behaviour and school performance in ADHD children whose diets are free from sugars, artificial flavours, colours and preservatives.

Other studies have linked ADHD to food allergy or food intolerances. Exposure of food antigens may result in mucosal oedema and poor digestive and absorptive functioning leading to numerous nutritional insufficiencies.

Continued page 12
Some data suggests that disruption in normal gut flora from antibiotic use or other factors may be a significant factor in the aetiology of ADHD. It has also been shown that both cellular and humoral immunity can be abnormal in children with ADHD. Immune dysfunction may be either directly inherited or a result of nutritional, toxicological or atopic factors.

The current medical approach to ADHD relies almost entirely upon pharmacological factors. Result of nutritional, toxicological or atopic function may be either directly inherited or a mal in children with ADHD. Immune dysfunctions have yet to be trialled, but may be cognitive-enhancing and neuroprotective. Ginkgo biloba may be given. Extensive studies have shown that ginseng extracts have favourable effects upon attention, cognitive processing and memory. While Ginkgo too has cognitive-enhancing and neuroprotective effects. Standardized extracts of St. John’s Wort have yet to be trialled, but may be helpful in the management of behavioural and mood problems in this disorder.

The functional medicine approach to ADHD involves defining, quantifying and treating the antecedents, triggers and media tors contributing to each individual’s condition. Allergens and parasites/pathogenic microflora, for example, are identified and the gut is repaired and reinoculated with acidophilus and so on. Addictions to “junk” and fast foods and sugars are addressed while dietary levels of vegetables, fibre and foods containing the basic macro nutrients and micronutrients are increased. Botanical extracts derived from American ginseng in combination with Ginkgo biloba may be given. Extensive studies have shown that ginseng extracts have favourable effects upon attention, cognitive processing and memory. While Ginkgo too has cognitive-enhancing and neuroprotective effects. Standardized extracts of St. John’s Wort have yet to be trialled, but may be helpful in the management of behavioural and mood problems in this disorder.

Dr Robert Buist, Editor in Chief of the ICNR, has indexed the International Clinical Nutrition Review which will be updated in the last issue of each year. This makes the series of International Clinical Nutrition Review a valuable commodity in one’s private library for anyone who is interested in the scientific basis of clinical nutrition.

Researchers from all corners of the world review medical and other scientific literature and cull out the latest news on the clinical application of nutrients in the treatment of disease. The serial also publishes in-depth-editorials written by experts on various topics of concern to clinical nutritionists. No longer can it be argued that this new branch of medicine is without scientific foundation.

A “must” for naturopaths and doctors with an interest in nutrition, practitioners and interested members of the public can subscribe to this quarterly publication by sending $54.00 (New Zealand Subscribers $64) to:

Integrated Therapies
PO Box 370
MANLY NSW 2095
Australia
http://www.intacad.com.au

Serious students might also consider the one year correspondence course in Nutritional Medicine. The course is registered with ATMS and the $850 fee includes all texts, tapes and study guides as well as subscription to ICNR.

Please write to the above address for the Hypoglycemic Health Association

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2000 MEETING DATES ON FIRST SATURDAYS
OF MARCH - JUNE - SEPTEMBER - DECEMBER

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