The Hypoglycemic Health Association

NEWSLETTER

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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 jurplesman@hotmail.com

Donations by professionals

Many professionals have donated $50 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)

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

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 Highway, 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: jurplesman@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 letter from Sue Litchfield (Treasurer)

I would like to personally thank all those who have so 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 wih the world in general

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!!

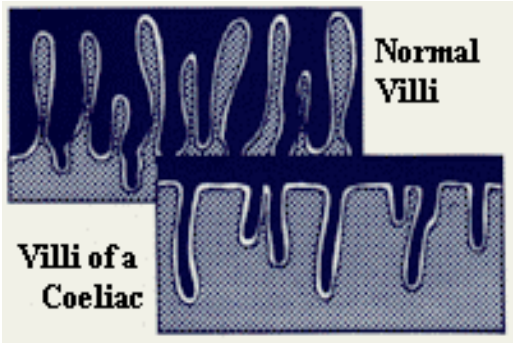
Members might be interested to know that we just have created a temporary web site at:

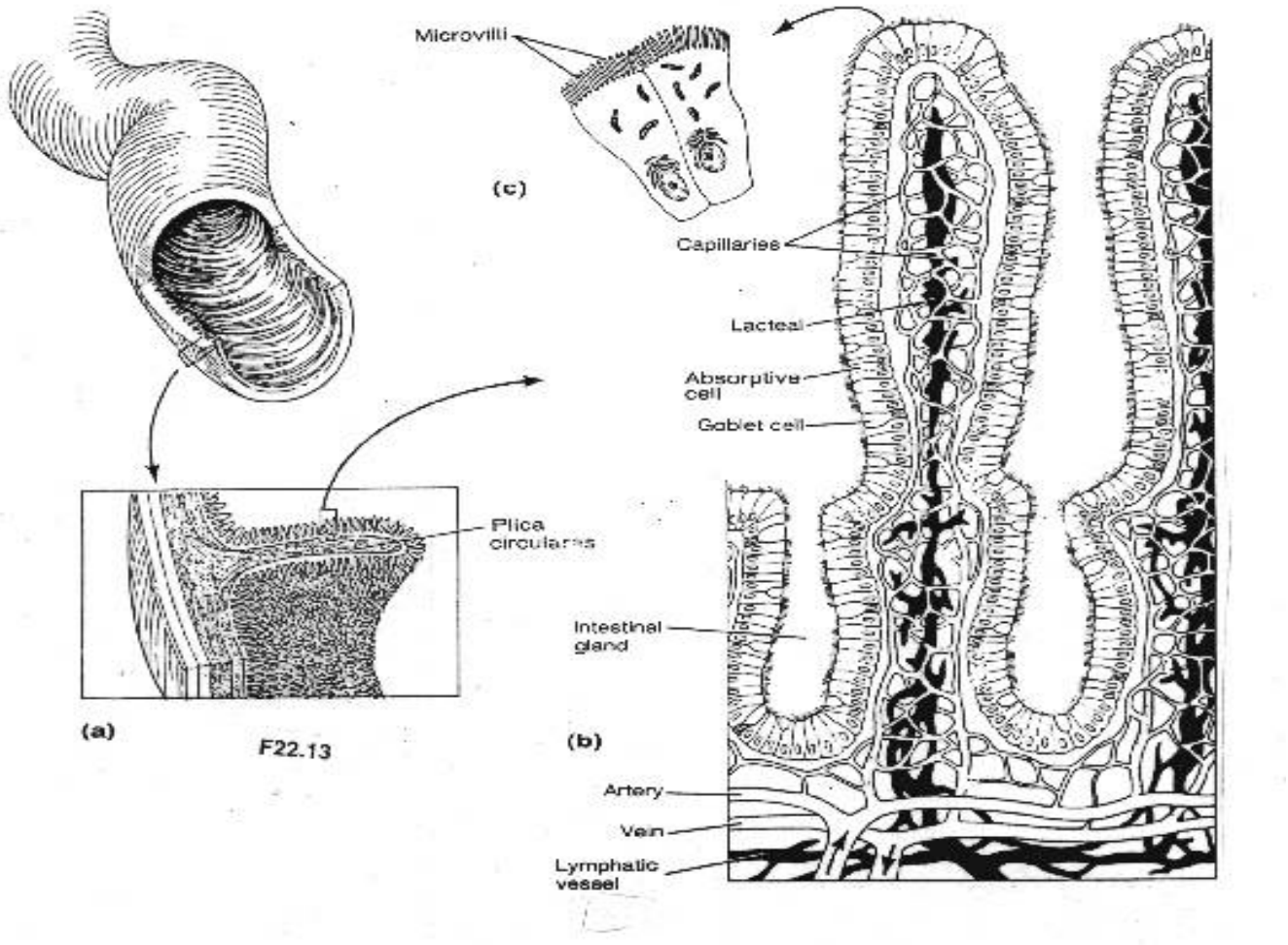
<www.companyontheweb.com/hypoglycemia_australia/>

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 jurplesman@hotmail.com**


Normal
Villi
Villi of a
Coeliac


Microvilli
(c)
Capillaries
Lacteal
Absorptive cell
Goblet cell
Plica circularis
Intestinal gland
(a)
F22.13
(b)
Artery
Vein
Lymphatic vessel

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

Home Grown Stevia

from: http://stevianow.com/growing_stevia.htm

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.

Rhonda Bampton wrote in advising members that Stevia can be obtained from ***SHIPARD'S HERB FARM***, Box 66, NAMBOUR QLD 4560 Phone: 07-5441-1101

Stevia plants should be put in rows 20 to 24 inches apart and 18 inches between plants.

Your plants will grow a height of around 30 inches and widths of 18 to 24 inches.

Stevia Seeds and Plants are available in our secure shopping cart.

Stevia plants enjoy a rich loamy soil. Stevia's feeder roots are near the surface so it is a good idea to ad compost for extra nutrients if your soil is sandy.

Stevia roots are sensitive to excessive moisture. Be careful when watering and make sure their soil drains easy. Frequent light watering is best during the summer months.

Add a layer of mulch around each plant to keep the shallow feeder roots from drying out.

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.

Arthritis: Diseases of Bones

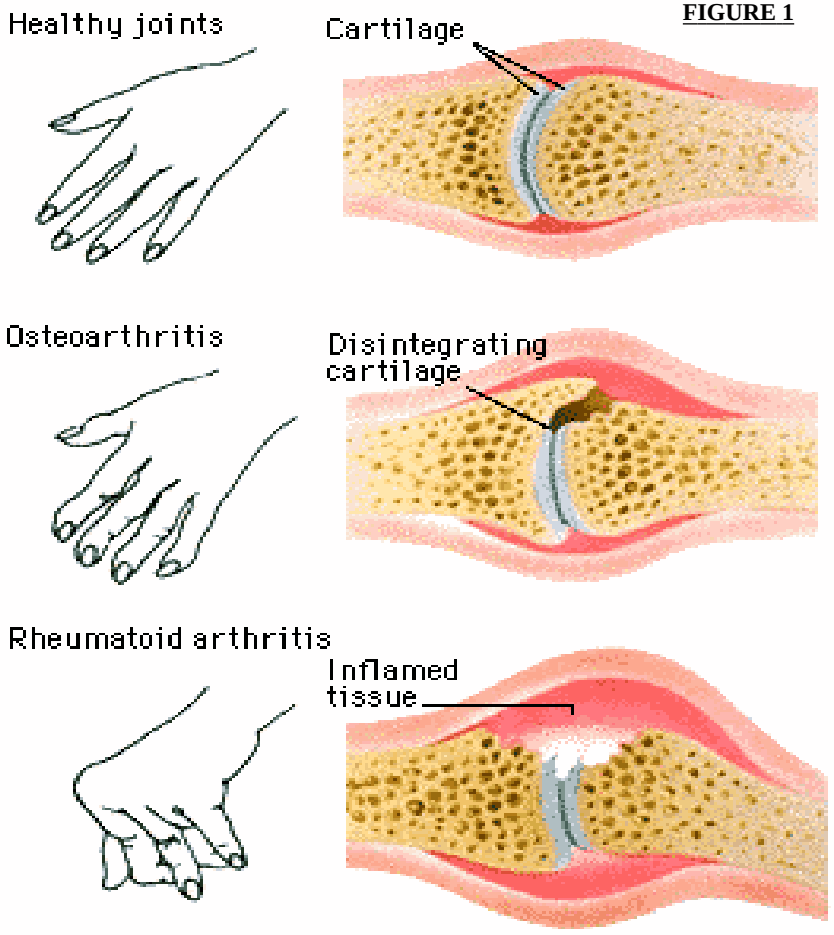
By Jurriaan Plesman BA(Psych),
Post Grad Dip Clin Nutr

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.

FIGURE 1



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

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 believed 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)

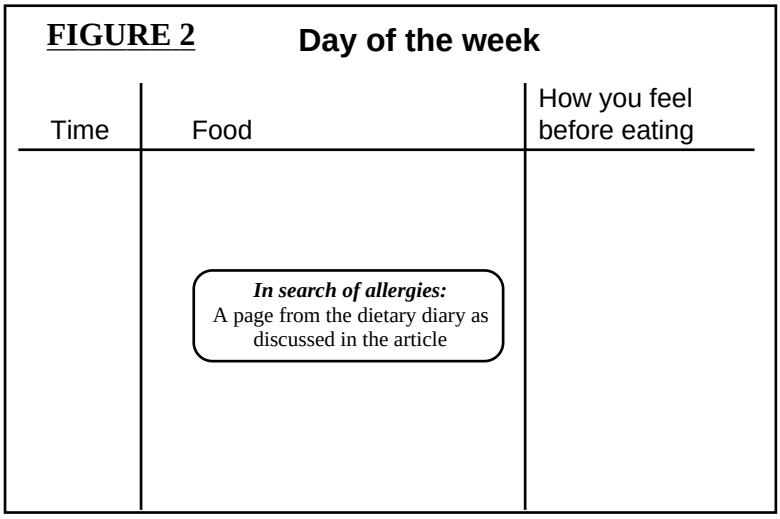
Infectious arthritis affects the larger arm and leg joints, usually following injury. Symptoms are usually masked by other illnesses and if left untreated can result in permanent disability.

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 (osteophytes) 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, diarrheoa, 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 manifest itself as arthritis. It is a collagen disease which attacks bundles of tiny reticular fibrils, forming parts of white glistening inelastic 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 glycine in collagen formation. Glycine is an important component of collagen.[1]

Gout is often classed with arthritis, although caused by crystallized 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, diclofanec (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 toxaemia 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 grand-parents' 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 the 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 implicate 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 allergies 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 al-

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, Beef, 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 columns 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 "good", 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 arthritis seem 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 simplified form:

N-6 linoleic acid —> gammalinolenic —> dihomo-gammalinolenic acid —> prostaglandins E1

N-3 linolenic acid —> eicosapentaenoic 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.

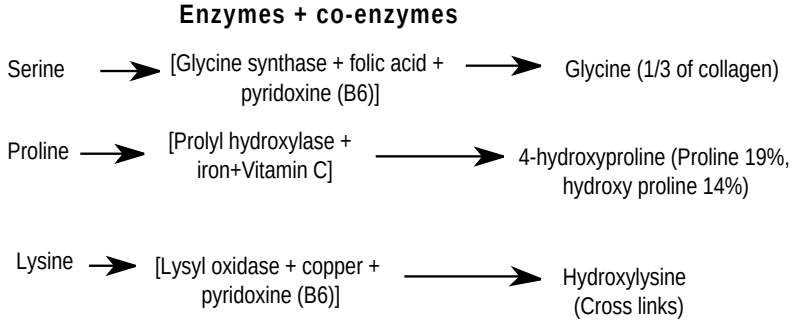
Nutritional supplements are aimed at building stronger bones and muscles, reducing inflammation and lessen the pain. It is recommended that you discuss your supplementation with your doctor to ensure that it does not interfere with any other treatment regime. Whenever possible nutrients should be obtained 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



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 sorbolene cream is mixed with crushed **aspirin** and then applied to the skin. Pain relief can also be obtained from creams containing NSAIDS such as Voltaren 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 consists of large stores of calcium and phosphates 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-hydroxyvitamin 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 sensitive 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 against the flu when winter comes. 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.**[3]

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.**[4]

The remainder consists of hydroxylysine from which cross links are made. Its conversion from lysine requires **vitamin B6 + copper**.[5]

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.[6]

Other good sources of vitamin K are:

Vitamin K: in mcg per 100g of food,

Kale 817, 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,beef 100, Rose hips 92,

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

Zinc, together with others such as **vitamin E, C and selenium**, is a antioxidant, scavenging free radicals thought to 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 cofactor in lysyl oxidase[7], 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.[8]

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 Mgs per 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, Soya flour, full fat 4.9, Beef, liver 4.830, Oats, without husk, whole grain 4.5, Pecans nut 4.5, Split Peas 4.2, Soya 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.

Short-term studies in sufferers of osteoarthritis suggest that glucosamine sulfate may produce a gradual and progressive reduction in joint pain and tenderness, as well as improved range of motion and walking speed. Results of the trials have also shown that glucosamine has produced consistent benefits in patients with osteoarthritis and that, in some cases, it may be equal or superior to anti-inflammatory drugs in controlling symptoms. Unfortunately, the cost of this supplement may be beyond the reach of some patients.[9, 10]

As will be seen in the above illustration **vitamin B6, folic acid, iron, copper and vitamin C** [11,12,13] are essential in building of collagen, which is is a fibrous insoluble protein consisting of bundles of tiny reticular fibrils and which combine to form the white glistening inelastic fibres of tendons, ligaments and fascia. Serine is the fore-runner of glycine, an important substance in bone formation. The body produces this from glycoproteins.

Food sources o glyceine:

Glycine (gelatin a major source) is a critical component of collagen (contains 35 per cent). It retards muscle degeneration by supplying additional creatine used in construction of DNA and RNA, bile acids, promotes healing of skin, necessary in healthy nervous system function, healthy prostate, may help in preventing epilepsy, helps in mania and manic depression and hyperactivity. Excess may cause fatigue. Glycine is converted to serine and vice versa.

Gelatin 22960, Wheat Germ 2160, Horse mackerel 1940, Hake 1740, Soya flour, full fat 1680, Peanuts, roasted 1640, Salmon, flesh 1630, Beef, sirloin steak 1590, Chicken Breasts 1560, Chicken liver 1560, Beef rump 1500, Beef, liver 1490, Trout, 1470, Pork liver 1460, Mutton 1430, Soya beans, 1420, Pork muscles only 1420, Liver, calf 1420, Mackerel, 1410, Pork chops 1400, Chicken for roasting 1400, Kidneys, beef 1390, Mullet 1380, Wheat Bran 1320, Eel, 1290, Lima Beans, dry 1280, Pork, Hind leg 1230, Ham 1190, Tuna, flesh 1170, Halibut 1150, Sole, fish 1140, Herring 1130, Lobster, Crawfish, 1120, Cowpeas, dry 1080, Sheep's liver 1050, Lemon sole 1040, Catfish 1040, Walnuts, 1030, Perch, river 1010, Lobster, Crawfish, 970, Oatmeal 960, Mungo beans, Black 950, White Beans 950, Cod, 940, Flounder, fish 930, Oats, rolled 850, Caviar 830, Buckwheat flour 830, Oysters 800,

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.[14] 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 without toxic side-effects.[15] It is involved in brain function, alertness, postmenopausal osteoporosis, build muscles. Sources are:

Boron in Mcg, in 100 g of food

Mushrooms, canned 4150, 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, canned 580, Cherries, canned 570, Sweet cherries, canned 570, Oats, without husk, whole grain 568, Parsley leaf 540, Millet 520, Apricots 475, Wheat whole grain 463, Barley, without husk 458.

Strontium: (Non-radioactive strontium): Strontium occurs in relatively large amounts in the bones and teeth, where it contributes to bone strength. Non-radioactive strontium is extremely non-toxic and beneficial to bones and teeth. In a study 85% of subjects experience a marked reduction in bone pain and 78% displayed increased bone density. It is available as strontium lactate, depending on soil water, bone meal, can be replaced in bone by radioactive strontium from fall-out, interacts with calcium and may affect growth. Deficiency may be a cause of dental decay. **Kelp** contains 0.1% strontium.

Silicon is necessary for 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 14 ppm. 1 pmm 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 fluoroapatite 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, Crawfish, Calf's kidney, Beef, liver, Kidneys, beef, Eel, smoked, Cashews, Peanuts, roasted, Butter, Barley,without husk, Spinach, fresh, Parsley leaf, Soya flour, full fat, Whole egg, Almonds, roasted, Wheat whole grain, Coffee, roasted, Pike, river, Herring, vinegar cured, Radishes. Fluoridation of water with sodium fluoride 1.0-2.0 ppm.

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 5.7, Oats, rolled 4.54, Soya flour, full fat 4, Cowpeas, dry 3.74, Oats, without husk, whole grain 3.7, Wheat whole grain 3.67, Pecans nut 3.5, Soya 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, roasted 1.24, Rose hips 1.2, Rice, unpolished

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, eyebright, fennel seeds, hops. licorice, 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 (Harpagophytum procumbens, Myrtynia parviflora,) and Cat's Claw (Uncaria tomentosa) may be useful for inflammatory pain and in spondylosis.

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

St John's Wort (Hypericum): Arthritic pain often causes a mild depression in which case a natural herbal antidepressant such as St John's Wort may be useful as well as having a pain-relieving effect. But the herb may interact with a number of medications (bronchodilators, warfarin and some antidepressants) that should be checked with your doctor. Prolonged use may also increase 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.

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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 I 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
Rice cake spread with cashew butter

BREAKFAST
Boiled Eggs
Toast spread with "butter" and jam or marmalade Breakfast

MID 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

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

DAY NO 2 Menu

EARLY MORNING
Slice of toast spread with almond butter

BREAKFAST
Crunchola 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

NIGHTLY SNACK
Glass of " milk " flavoured with Decaf coffee

Sue's Recipes for this Issue

SOYA COCONUT DRINK

250 ml. Soya Milk
_ cup coconut milk powder
220 ml warm water
1 tab Rice syrup or Pear concentrate

Mix all the ingredients in blender, chill and serve
This will serve 2

CAROB SHAKE

1 tablespoon instant coffee Decaf is O.K.
4 Tablespoons carob powder
_ 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
2cups 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

6-tablespoon peanut butter smooth or crunchy depending on choice I like crunchy.
1-cup water

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 all add other ingredients. It may be necessary to add some 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 pork beef 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- 11/2 hours or til 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 cool. Will keep in the refrigerator Note make sure the zucchini are well covered with the brine

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Research Snippets

from
International Clinical Nutrition Review

D-Mannose for bladder and kidney infections

Frequent episodes of acute cystitis are common for many women and girls. Routine treatment for bladder and kidney infections involves antibiotics, however the condition persists in a large percentage of those treated in this manner. Persistent treatment with antibiotics may also lead to yeast infections and disruptions in normal microflora.

D-mannose, at a dose of 1.0 - 2.5 g in water, has been found to be effective in the treatment of bladder and kidney infections cause by *E.coli*. D-mannose is a stereoisomer of glucose found in ***cranberries*** and this may explain the effectiveness of cranberry juice in the treatment of such infections. The mechanism of action of D-mannose is not like that for antibiotics. The glycoprotein or lectin present on *E.coli*, which allow these bacteria to adhere to the walls of the urinary tract, appear to be coated by D-mannose, diminishing the *.coli's*, adhesive ability. The *E.coli* are then rinsed out with normal urination.

Wright J (1999), D-mannose fore bladder and kidney infections, **Townsend Letter for Doctors & Patients,** July 96-8

An Egg a day may not raise cholesterol levels

For those wishing to lower cholesterol levels and prevent coronary heart disease (CHD) a common recommendation has been to reduce egg consumption. However, epidemiological studies on egg consumption and risk of CHD are sparse. The objective of this studies, therefore, was to examine the association between egg consumption and risk of CHD in both men and women. The participants included 37,851 men aged 40 to 75 and 80,082 women aged 34 to 59 all of whom were in good health at the commencement of the study. After adjustment for age, smoking and other potential CHD risk factors, the researchers found no evidence of an overall significant association between egg consumption and risk of CHD or stroke in either men or women. However, the researchers conclude that in diabetic participants, "the apparent increased risk of CHD associated with higher egg consumption warrants further research".

Hu Fb, Stampfer MJ et al (1999), A prospective study of egg consumption and risk of cardiovascular disease in men and women, **JAMA 281(15):** 1387-94

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 manipulation of neurotransmitters to bring about a desirable symptomatic response. Efforts to treat this disorder by addressing underlying causation have been largely overlooked. Stimulants such as dextro-amphetamine (dexedrin) or methylphenidate (Ritalin) are often prescribed as they block dopamine reuptake in nerve endings via dopamine transporter, thereby improving behaviour and cognitive function. These drugs are associated with a high prevalence of adverse effects and their long-term safety has not been studied. In light of this, the recent explosion in the rate of prescribing stimulant drugs to treat ADHD may need to be questioned.

The functional medicine approach to ADHD involves defining, quantifying and treating the antecedents, triggers and mediators 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.

Lyon M (1999), A functional medicine approach to attention deficit hyperactivity disorder (ADHD), **Proceedings of The Intercellular Communication & Medicine in the Next Millennium Symposium** 49-88

INTERNATIONAL CLINICAL NUTRITION REVIEW

By Editor

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Dietary niacin may prevent UV-dependent skin cancer in mice.

The observed rise in the incidence of non-melanoma skin cancer (3-6% per year) is possibly due to increased lifetime exposure as a result of greater longevity and depletion of the ozone layer. A previous study suggested that the use of sunscreens alone may be inadequate to prevent skin cancer development. In a mouse model of photocarcinogenesis, topical nicotinamide was reported to protect against immunosuppression and the induction of skin cancer. This study examined the role of dietary niacin (vitamin B3) in reducing photoimmunosuppression and photocarcinogenesis in mice. It also studied the effect of dietary niacin on skin nicotinamide-adenine dinucleotide (NAD) levels, an important component for the repair of ultraviolet-induced DNA damage. Mice were fed a diet supplemented with niacin (0, 0.1, 0.5 or 1.0%) and then exposed to ultraviolet radiation at the rate of 30 minutes per day, 5 days per week for 22 weeks.

At 26.5 weeks after the first ultraviolet exposure, results indicated that skin cancer was reduced from the control levels of 68% to 6)5, 48% and 28% with dietary niacin supplementation of 0.1%, 0.5% and 1.0% respectively. Gensler and colleagues therefore argue in favour of a 'dose-dependent preventative effect of oral niacin on photocarcinogenesis and photoimmunosuppression and establish the capacity of oral niacin to elevate skin NAD levels'.

Gensler HL, Williams T, Huang AC, Jacobson EL (1999), Oral niacin prevents photocarcinogenesis and photoimmunosuppression in mice, **Nutr Cancer 34(1):** 36-41

THE HYPOGLYCEMIC HEALTH ASSOCIATION
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