

# The Hypoglycemic Health Association

# NEWSLETTER

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**Volume** 15 Number 2

June, 1999

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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 public bus 470 from Circular Quay - Wynyard - Town Hall - Central Railway will take you right to the **Glebe Neighbourhood Centre**, 160 St. Johns Street (Cnr Mt. Vernon St.) every 15 minutes. The entrance to the building is at the side of the building in Vernon Street. It is noted that some members are still paying membership fees of \$15 p.a. (\$10 Pensioners) instead of **\$20 p.a. (\$15 p.a. pensioners)**. Those members paying less than the full fees have been given earlier expiry dates as shown in the top right hand corner of the address labels on the envelope. Please forward \$5 to the Association to bring you to the full membership. Application forms are on the last page of the Newsletter. With rising costs the Association is struggling to survive financially and your cooperation in paying membership fees promptly would be appreciated.

The Association aims to promote complementary medicine - a combination of both conventional and natural medicine - among patients and health practitioners and to enable people to gain control over their healing through education and information. This Newsletter hopes to contribute to an understanding of clinical nutrition and other modalities giving an alternative direction in medicine.

Our Next Public Meeting will be at 2.00 PM  
on Saturday, the 5 June, 1999  
at **Glebe Neighbourhood Centre**  
160 St Johns Rd (Corner Mt Vernon St)  
and our guest speaker is

## **THERESE LEW**

ND, DBM, M. ATM

who will be speaking  
on the subject of

***“We need a  
HAPPY liver”***

**Therese Lew** is a practising Naturopath with experience in Herbal Medicine, Homeopathy, Nutrition and Massage. She is a mother of two children aged 8 and 6.

Therese has developed and run self help and stress management courses titled 'Positively Angry' and 'Massage in the Home'. She has a special interest in the biochemistry of congenital disorders and the empowering of the individual towards optimal health. She is preparing to study and research ways of supporting the body naturally in the treatment of sideroblastic anaemia (a rare disorder of red cell production because of an impaired iron metabolism). She is currently practising at the Total Therapies Medical Centre at 19 Princes Highway, KOGARAH (9553 0084)

## 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 to any library upon request.

### 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

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

libraries (state and university)

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 6 March 1999 **Rena Samios** won the lucky door prize and **Babs Lamont** won the raffle.

### 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 donated a hand-knit cardigan worth \$200 to be raffled after the sale of 50 cent tickets available at Dr George Samra surgery, 19 Princes Highway Kogarah, and also at the public meeting on the 5th June 1999.

**Please note that the Editor Jurriaan Plesman can now be reached on the internet. His e-mail address is: [jurplesman@hotmail.com](mailto:jurplesman@hotmail.com)**

# BEATING FATIGUE AND DISEASES OF AGING

By Dr George Samra MB, BS (Sydney), FACNEM

This is a topic relevant to everyone especially those over 40. When talking about fatigue we are really talking about pathological fatigue. By this we mean the kind of fatigue that contrasts with fatigue through working hard. Fatigue due to over-exertion, or lack of sleep is normal fatigue. We should also distinguish it from Chronic Fatigue Syndrome. Any chronic illness can cause chronic fatigue. Thus such diseases as tuberculosis, micoplasmata can cause patients to become tired. Metabolic conditions such as anaemia (when your blood count is low, which prevents you from getting enough oxygen to tissues) can also cause fatigue. Hormonal diseases such as hypothyroidism and poorly controlled diabetes are also associated with fatigue.

### Theories of Chronic Fatigue Syndrome

A popular theory is that CFS is caused by a virus. A virus is seen as a causative agent as in glandular fever, the Epstein-Barr Virus responsible for infectious mononucleosis,

Burkitt's lymphoma and other lymphoproliferative disorders. Others organisms blamed include the Ross River virus, the Cytomegalovirus (CMV), Candida Albicans (Thrush). The most common seems to be the Epstein-Barr Virus causing glandular fever. Somehow the virus damages the immune system, and although you may recover from the headache, nausea, fever etc., the fatigue seems to hang on. The virus may have damaged the immune system or may lie dormant in the nerve tissues of the body, such as the chickenpox virus. Having shingles is the result of a revitalised chickenpox virus, and you cannot have shingles unless you had previously chickenpox usually as a child. The virus remains dormant in nerve endings for the rest of one's life and under conditions of stress the virus might flare up. One concept explaining Chronic Fatigue Syndrome appears to be caused by a dormant virus in the body.

Other theories suggest that the viruses actually damage part of the chromosomes. Vi-

ruses may have an affinity with an allele or gene which is then responsible for creating faulty chromosomes. Some of the proteins so produced are faulty enzymes, involved in energy pathways. Thus when we have a faulty enzyme, because of a virus lodged on your chromosome, we may suffer from pathological fatigue.

With Chronic Fatigue Syndrome people are regarded as being in a different health well. They have good days and bad days, but their bad days are particularly bad. This is illustrated in **Figure 1** showing the ups and downs of persons having pathological fatigue, where "F" represents the fatigue patient and "N" the normal. The transition from "fatigue" to "normal" may be accelerated by getting all one's allergies out of the body, taking the right vitamins and minerals such as magnesium and zinc and also gamma globulin injections. To feel well, patients have to have a change in their immune system in order to drift into the "Normal" health well.

### Hypoglycemia

When considering CFS we must mention the effects of hypoglycemia. Many new members may not be fully aware by what we mean by hypoglycemia. The four main features of hypoglycemia are

- fatigue is most common
- depression and moodiness
- memory impairment or poor concentration
- history of sugar addiction (sucrophilia)

The vast majority of CFS patients have a sugar mishandling problem and they do well by a hypoglycemic diet. If your pancreas does not handle sugar properly and produces an abnormal sugar curve, your brain is not going to be nourished efficiently if you eat sugar. The word hypoglycemia means "low blood sugar" but it is more complicated than that: it is rather a reaction to eating sugar (or sugar equivalents such as fruit juice, syrups, molasses). In a normal person the blood sugar level rises quickly after eating sugar and comes down slowly back to where it started after two hours. With hypoglycemics the blood sugar level also rises quickly but comes down crashing typically after about one hour and a half or two hours after the ingestion of sugar. Normally the brain relies entirely on glucose to function, it cannot use other forms of energy. Hence the symptoms such as dizziness, moodiness, nervousness, depression and fatigue occur when the blood sugar crashes.

Most doctors understand hypoglycemia, which sadly is a bad name, to be a complication of diabetes, but few understand it in connection with Reactive Hypoglycemia. It is common. It is estimated that 5% of the population is affected. There are factors of inheritance. It is an autosomal dominant 50% inherited condition, so it runs in families. Half of your children have a good chance of inheriting it if you suffer from hypoglycemia. You probably could trace it through your parents and grand parents who displayed clues such as moodiness and tiredness and trouble concentrating: those who have good brains and are intellectually sharp and good talkers, but who did not finish high school because they could

not concentrate properly.

### The Law of Mass Action and supplements

The taking of vitamins and minerals has been a controversial topic among the medical profession for a long time. Most of the health professionals who have talked to this Association have always mentioned some supplements you should take. The point about this that there is a **Law of Mass Action** that explains why taking supplements help. This is illustrated in **Figure 2**. It is called the toxic substrate theory. If you have  $X + Y$  which represents two chemicals in your body, you need an enzyme to push them forward to make the product called  $XY$ . We need enzymes to make a chemical reaction do their work. Vitamins and minerals are coenzymes, which work with enzymes to make them work better. They are very specific to a particular enzyme. If you have  $X + Y$  and we have a coenzyme to make enzymes work better, the theory predicts that the body can rid itself more efficiently of toxins. Consider if  $X$  is poisonous and  $Y$  is entirely safe but  $XY$  the product may be completely safe too. Thus if you have enough coenzymes, which makes the enzyme work better, then you get rid of the build-up of  $X$ . The Law of Mass Action means that if you provide more of a substrate or enzyme or coenzyme and you facilitate the forward passage of the chemical reaction and you diminish the amount of toxic substrate, namely  $X$ .

### Useful supplements in CFS

There are many products that will help in CFS. B12 has been mentioned having a role in CFS. High dose B complex injections, minerals such as zinc, calcium, chromium and magnesium and multiminerals are all useful. Natural substances like Royal Jelly and Coenzyme Q10, Evening Primrose Oil and MAX EPA or fishoil have all been shown to play a role.

When dealing with CFS you should also be avoiding some items in your diet. Virtually any allergy in your system will trigger a histamine reaction and other chemical processes that make you tired. Hence *it is important to avoid allergies* either in one's diet or in one's environment. Many of the food stuffs that affect CFS patients include milk and milk

products, yeast, oranges and tomatoes. You should avoid sugar which I say is not a natural part of the human diet. Cave people never ate sugar. We live in a pathological high sugar consumption society: we eat 100 times more sugar than people did a hundred years ago in England. Sugar has to be imported into England and it is easy to measure the amounts of sugar consumed there. People with CFS have problems handling sugar properly and they really do not need sugar. When your blood sugar levels go up and down they affect the brain which needs to be fed evenly.

The recommended diet for CFS patients is similar to the hypoglycemic diet, whether they are hypoglycemic or not. They should:

- keep off sugar and allergies
- eat frequent small meals every 2 1/2 hours or five or six small meals a day
- have a protein breakfast with fish, minced chicken or egg

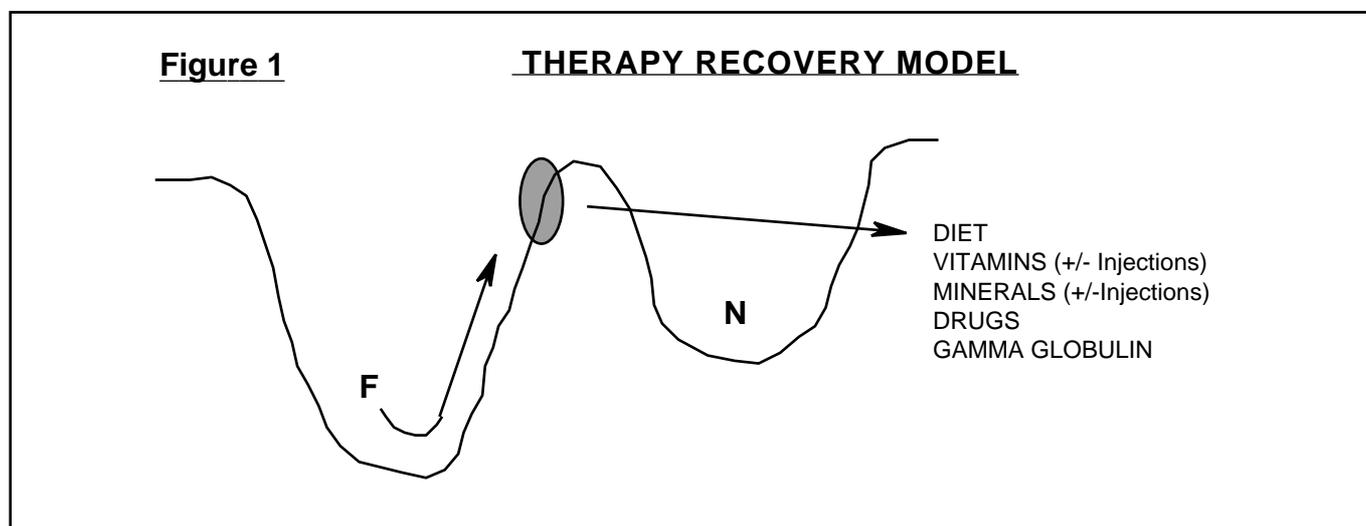
I have included a **Table 2** which shows some exciting new products that have come on the market and that are especially useful for patients suffering from Chronic Fatigue Syndrome.

### Drugs

Drugs might have a role too. Antidepressants can be used in CFS although depression may not be the major symptom. Drugs like Prothiadin, Aurorix, Prozac and other cousins of Prozac such as Cipramil, Zoloft or Aropax may be useful for particular patients. The modern antidepressants work on serotonin - a natural neurotransmitter, also called the happy hormone - by selectively inhibiting the reuptake of serotonin thus in fact increasing the amount of serotonin in the brain.

Other supplements that I use in CFS are:

- 1) Magnesium injections, or magnesium chelate or orotate
- 2) DHEA
- 3) Biospectrum 26 (Platts)
- 4) Melatonin
- 5) B-Dose Forte
- 6) B12 injections
- 7) Vitamin C infusions
- 8) Intra-Vite Injections
- 9) Coenzyme Q10



10) Multi Vitamin + Multi Mineral Combinations

There is now much research by medical scientists on Chronic Fatigue Syndrome. Dr Paul Cheyney mentions that:

“Chronic Fatigue Syndrome (CFS) is a complex illness of unknown cause. Currently, many investigators view CFS as an immune dysregulatory state characterized by T-cell activation with discrete immune defects. In addition, there are measurable neurologic and metabolic abnormalities which may arise from or exacerbate this dysregulated immune state. Clinically, CFS is characterized by debilitating fatigue that is exacerbated by minimal physical or mental effort. Other symptoms include flu-like symptoms such as aching muscles and joints, sore throat, tender lymph nodes and low grade fever. Neurocognitive symptoms such as word searching, decreased processing speed and short term memory loss are common and can be striking.

Recently, evidence of activation of the 2'-5', RNase-L antiviral pathway in CFS patients and not in healthy controls, has supported the existence of a persistent viral activation state. Increased 2'-5', RNase-L expression also links the syndrome to increased expression of alpha-interferon and its consequences. The symptomatology associated with Chronic Fatigue and Immune Dysfunction Syndrome is known to have severity levels that wax and wane. Some patients do not exhibit as much severe symptomatology as others. However, change in the severity of symptomatology is completely unpredictable. Stress, both physical and mental, is known to exacerbate this syndrome.”

Nutritional doctors should always try to justify the treatment they give to their patients. A vital rule of medicine is to do no harm and virtually all the products that nutritional doctors use are of low toxicity. Compared to the prescription your local doctor can give you from the MIMS, nutritional supplements are virtually non-toxic. The medical practice of nutritional doctors should be evidence-based. Many traditionally trained Western doctors accuse nutritional doctors of quackery, due more probably to ignorance than malice. But there is a long history of scientific evidence for the efficacy of supplements in the treatment of diseases. I will quote some of this evidence here.

**Vitamin B12**

Supplementation may reduce tiredness.

**Experimental Double-blind Cross-over Study:** 28 men and women who complained of tiredness but had normal serum B12 levels and no physical findings were given injections of hydroxycobalamine 5 mg twice daily for 2 weeks followed by a 2 weeks rest period and then a similar course of placebo injections or the same regimen in reverse order. Those who received placebo first felt significantly better in regard to “general well-being” (p = 0.006) in the second period when they received B12. Those who received B12 in the

first period noted no difference between B12 and placebo, which suggests that the effects of B12 may persist for a period of at least 4 weeks (*Ellis FR, Nasser S. A pilot study of vitamin B12 in the treatment of tiredness, Brit J. Nutr. 30: 277-83, 1973*)

**Iron**

Deficiency syndrome is associated with diminished work capacity.

**Experimental Controlled Study:** The typical work capacity of 75 women was studied. Those with the most severe iron deficiency anaemias could stay on a treadmill an average of 8 minutes less than those without anemia, and none of them could perform under the highest work-load conditions, while all of the nonaenemic group could. Lactate levels were almost twice as high in the most severely anaemic group (*Gardner GW et al. Physical work capacity and metabolic stress in subjects with iron deficiency anemia, Am J. Clin. Nutr. 30(6): 910-17, 1977*).

**Zinc (135 mg, 15 day trial)**

Supplementation may improve muscle strength and endurance

**Experimental Study:** After 15 days of supplementation with 135 mg zinc daily, isokinetic strength and isometric endurance of leg muscles were significantly improved. (*Krotkiewski M et al. Zinc and muscle strength and endurance. Acta Physiol. Scand 116(3): 309-11, 1982*)

**Vitamin C and fatigue**

Observational study: In a survey of vitamin C intake among 411 dentists and their wives, there was a significant inverse relationship between vitamin C intake and fatigue,

**Figure 2 LAW OF MASS ACTION**



with the mean number of fatigue symptoms among the low vitamin C users being double that among the relatively high users of vitamin C (*Cheraskin E et al. Daily vitamin C consumption and fatigability. J Am. Geriat. Soc.,24(3): 136-37, 1976*)

**Coenzyme Q:** 30 mg daily in divided doses

Supplementation may improve performance.

**Experimental study:** 6 health sedentary males (mean age 21.5 years) performed a bicycle ergometer test before and after receiving CoQ10 60 mg daily for 4-8 weeks. Improvements in work capacity and submaximal heart rate, maximum work load, maximal oxygen consumption, and oxygen transport were noted ranging from 3-12% and starting after about 4 weeks (*Vanfraechem JHP, Folkers KJ, Coenzyme Q10 and physical performance, in Folkers K, Yamamura Y Eds., Biomed & Clin Aspects of Coenzyme Q 3:235-41, 1981*)

**Pyridoxine (Vitamin B6)**

Supplementation may increase endurance

**Animal Experimental Study (rat):** Muscle contractions were maintained longer when pyridoxine was added to normal diet I (*Richardson JH, Chenman M. The effect of B6*

**Table 1 BEATING DISEASE AND AGING**

No	10 DONT'S	10 DO'S
1	Have regular cholestrol checks	Know your cholestrol
2	Don't get overweight	Aim for 10% below ideal body weight
3	Avoid red meat and avoid caffeine	Eat lots of fish & vegetables
4	Avoid Fatty Foods	Eat 2 or 3 fruit serves per day
5	Don't smoke	Exercise eg. Walk for 30 minutes, per day, learn to meditate, stop to smell the flowers
6	Don't drink to excess	Do drink up to 2 serves per day of alcohol
7	Avoid allergy foods etc	Have 2 weekly hobbies, 1 indoor, 1 outdoor
8	Avoid airborne allergies	Learn to like soy beans, celery etc. Take calcium, GLA, Antioxidants
9	Don't hang on to negative emotions - anger, hate	Get a dog (or any pet)
10	Don't worry	Be happy

on muscle fatigue, *J. Sports Med. Phys. Fitness* 21(2): 119-21, 1981)

#### **Pyridoxine Alpha-ketoglutarate (PAK)**

Supplementation may increase endurance.

**Experimental Double-blind Study:** 20 runners were supplemented with PAK 30 mg/kg in divided or placebo. After 1 month, their endurance rose significantly as evidenced by increased VO<sub>2</sub> Max (p less than 0.005) and reduced lactic acid levels (p less than 0.005). No change was seen in the placebo group and neither alpha-ketoglutarate or pyridoxine alone showed positive effects. Results suggest that PAK is complementary to athletic training in improving the capacity for endurance exercise (Marconi C et al. *The effect of an alpha-ketoglutarate-pyridoxine complex on human maximal aerobic and anaerobic performance.* *Eur. J. Appl. Physio.* 49: 307-17, 1982).

#### **Magnesium**

Required for ATP synthesis.

Enhances transport potassium into cell

**Experimental study:** ATP stands for adenosine triphosphate which is the essential chemical for energy produced in the mitochondria in cells (power-houses of the cell). It feeds your muscle and your brain and every cell in your body. Supplementation with magnesium relieved tiredness in 198 out of 200 people in this particular trial (*In Seelig MS, Cantin M, eds Magnesium in Health and Diseases: Proceedings of the 2nd International Symposium on Magnesium, Montreal, Quebec, May 30 - June 1, 1976, New York Spectrum Books, 1980*)

#### **Magnesium happens to be my favourite treatment for Chronic Fatigue Syndrome.**

There is a Lancet report that a six-week course of weekly intramuscular magnesium sulphate (1g in 2 ml) improved the energy and emotional status of patients. Twelve out of 15 actively treated patients improved, compared with only three of 17 in a placebo group, a difference which is statistically significant. The placebo group was given saline chloride injection (salt water). This is a fascinating study. This study was carried out by Dr David Dowson at the University of Southampton Medical School. Several doctors were working on different aspects of medicine. One doctor worked with paid volunteers who were made to become magnesium depleted. They were asked to eat foods that were low in magnesium for six months. The other group was treating Chronic Fatigue Syndrome patients. The group that was magnesium deprived experienced muscle pain, they were lethargic, they did not exercise because they had no stamina. The doctors happen to be discussing their experiments and found a common interest. When the patients - both CFS & magnesium deprived - were given magnesium sulphate injections the doctors found that there was good improvements in both groups of patients.

Magnesium sulphate is however a painful injection but it can be given with a low dose anaesthetic or diluted down intravenously.

Patients receive an injection every week for six weeks and later if it helps the patient injections are given one every three weeks and one a month eventually and that is for ever. Doctors may give oral magnesium chelate after the magnesium injection course. I prefer Blackmore's Bio Magnesium. This course is monitored by regular testing of red cell mag-

nesium. It is believed that CFS patients are either low in magnesium or need a lot more magnesium than average to function normally. The magnesium is working as a coenzyme.

#### **Vitamin E**

Vitamin E a fat soluble vitamin and overlaps both topics of fatigue and preventing

## **Table 2      Exciting New Products**

**PROTECOL** for weight loss, Fatigue, Irritable Bowel syndrome

Main Components: L-Carnitine - fat mobiliser

Aloe Vera - Gut "sedative"

Resource Person: John Sutton Ph: 9603 3208 Mob: 0418203245

### **JUICE PLUS**

Four capsules per day of dried fruit & veges - improved bioavailability for Fatigue, General Health, Reactors to Synthetic Vitamins

Resource Person: Dr. Katrina Watson PH: 0419511942

### **AMBRATOSE by MANATECH**

8 Essential sugars includes, Fucose Glucose, Xylose, Fructose - promotes communications between cells in particular white immune cells. For: Fatigue, Neurological Disorders, MS, Cerebral Palsy, Parkinson's Disease, General Health

Resource Person: Dr. Nimmi Chima Ph: 9587 5900

### **BARLEY GREEN by AIM**

For General Health, Cancer, Antiaging, Chronic Illnesses - Arthritis etc. It is a natural source of powerful antioxidants C, E, Carotene, Selenium

Resource Person: Maria Keith PH 9524 1451

### **STEVIA (Stevia Rebaudiana Bertoni)**

Natural sweetener found in South America in particular Paraguay and Brazil. Claimed to be over 30 times sweeter than sugar; has no calories is safe and natural.

Resource Person: Ros Ph 9546 3638

**DHEA** An Adrenal hormone. Is a precursor of both male and female sex hormones, used for: Fatigue, Weight Loss, Poor Libido (Needs a prescription)

Resource Person: Richard Stenlake Chemist - 76 Spring St., Bondi Junction Ph: 9387 3205

ageing. It is not easy to summarize in a paragraph the properties and uses of this remarkable substance. Vitamin E is the body's most important nutrient lipid (fat) soluble antioxidant. This is important having regard that the brain has more fat than most other tissues. It protects fats in our body from the damaging effects of uncontrolled oxidation and free radicals. These uncontrolled oxidations can cause cancer, induce abnormal blood clots resulting in stroke or heart attack, and damage the DNA in our cells which controls growth, development, and programmed aging. Large doses of vitamin E have been shown to increase resistance to cancer, bacterial and viral infections, stroke, arthritis, heart attack, and even smog.

A trial in America carried out over ten years involving 200 Nursing Home patients who were given 200 mg/day of vitamin E. They were compared with a group in a different Nursing Home who were not taking vitamin E. The average patient taking vitamin E of 200 mg/day was living 3 1/2 years longer in a ten year study.

### **Gene therapy: the future medicine**

Coming to the end of this century we have seen tremendous advances in medicine. Antibiotics arrived half way through this century and they made a difference in the survival statistics. Now, the majority of children survive in Australia. Two hundred years ago only half the children would have survived to reach five years of age. Thus antibiotics have had a significant impact. However, germs are getting tougher and more resistant to antibiotics. Assuming that medical technology continues to grow, the real future of human medicine appears to lie in gene therapy. I can foresee a future when you can get a ten year old girl and screen her genes. It might take a computer about two or three minutes to go right through all her chromosome which may show that she is at risk of breast cancer when she is fifty. The doctor might then give an injection of a virus or a virus derived product which would target all her chromosomes and it would land on the right genes that would block this gene that would have caused the breast cancer.

Or when you come to the hospital and coughing your lungs out, doctors may find that the patient has a staphylococcal infection. He then may give the patient an injection that will neutralise the effects of the germ on humans. This vaccination should probably have been given to the patient when he/she was six years old.

This concept of gene manipulation is not merely hypothetical: it is in fact happening now as is recently published in a magazine.

Australian scientists are moving closer to clinical trials of a prostate cancer gene therapy which suppresses prostate cancer tumours induced in mice. The therapy involved the insertion of PNP gene into a crippled human adenovirus so it expressed PNP, an enzyme derived from *Escherichia coli* (E. Coli). PNP was then converted to a product, which was administered as part of the therapy, into 6 methyl purine which was toxic to the cells.

The therapy targeted prostate cells by di-

rect injection into the tumour, but the team had also inserted a gene switch into the virus' DNA to control PNP expression.

To test the therapy, the team injected human prostate cancer cells under the skin of nude mice to induce tumours. Untreated mice died within 80 days while some of the treated mice lived 450 days.

The team, which included Professor Pam Russell of Sydney's Prince of Wales Hospital and CSIRO scientists Dr Peter Molloy and Dr Trevor Lockett, were also working on an ovine adenovirus as a vector (carrier of disease) for the PNP gene.

These studies are still in the laboratory stage, but something useful might come off it in future years.

### **An example of aging disease.**

Dr Peter Smerdely wrote an article on male osteoporosis and aging. He made the following clinical points:

- Male osteoporosis is not as prevalent as in females but its effects are more devastating due to twice the mortality rate with hip fracture and increased levels of dependence on other people to push wheelchairs.
- Risk factors for idiopathic osteoporosis should include an assessment of bone metabolism and bone mineral density. This is usually done by means of an X-ray or nuclear scan of the hip and the lower back.
- Bone mineral density assessment may be difficult to interpret because of the high prevalence of arthritis in men. In arthritis the joints crush or collapse, they may have a higher density but it is not the original bones which may now be half the size.

### **Treatments of osteoporosis**

- General treatments such as adequate nutrition, regular weight-bearing exercise and avoidance of risk factors (such as smoking) pay a significant role.
- Calcium supplementation (1200mg/d) (approximately 750ml of milk) and vitamin D (800 iu/d) have been shown to reduce fractures in elderly population.
- In women osteoporosis is helped by giving oestrogen supplements and even progesterone, so both hormones help prevent osteoporosis. But no role so far has been shown for testosterone in preventing or treating osteoporosis in men.
- Calcitriol (the active form of vitamin D, a regulator of calcium metabolism) has been used with the approval of PBS in men with osteoporotic fracture.

There are other therapies such as Didronel (disodium etidronate), that have not as yet been approved for men but work just as well. It is being used by my private male patients with osteoporosis.

### **What controls aging?**

This is not an easy question. When we look at a healthy puppy-dog we know it will be dead in about 12 years. We might be fifty, be unhealthy, smoking, and yet outlive the puppy-dog.

A lot of work about aging is being done by Durk Pearson and Sandy Shaw who see the aging process as something going on inside the brain. They write:

"Do DNA genetic clocks ticking away inside our brains turn off our vital functions so that we grow old and die? Unfortunately, this can occur. Menopause and male pattern baldness are examples. Salmon die soon after spawning as a result of damage triggered by a pituitary gland aging clock in their brains. If the pituitary gland is removed before spawning, the salmon don't spawn and they live for many years. The human aging clocks seem to be what limit man to a maximum life span of 110 or so years. We are just beginning to understand how those clocks work." (Pearson, D. & Shaw, S.(1982), **LIFE EXTENSION; A Practical Approach**, Warner Books, NY Page 137)

"It is possible to reinstate menstrual cycling in most non-cycling older female rodents and in some human females with the drug bromocryptine (Parlodol<sup>®</sup>, made by Sandoz). Bromocryptine is a stimulant of the dopaminergic nervous system in the brain, which in turn stimulates the release by the pituitary gland of hormone-releasing factors (necessary for sex hormone production) and growth hormone (necessary for proper immune system function). The dopaminergic tract is one of the brain's systems showing the sharpest decline in activity with age - it is especially vulnerable to oxidative damage and accumulates lipofuscin throughout life. It is not yet understood just how bromocryptine reinstates menstrual cycling - resetting the clock - but it apparently involves increasing the level of dopaminergic stimulation to the hypothalamus and pituitary to the higher levels found in youth" (P139-40).

Therefore bromocryptine may be used to get menopausal women to menstruate.

As a further illustration of this principle they write (p140):

"It is possible to greatly extend the life spans of some insects by depriving their developing larvae of food and water. The larvae then become smaller in size and regress to an earlier larval development stage, failing to develop into adult insects. Given food and water again, the larvae proceed to develop normally. If deprived once again, the larvae again regress. Manipulating the maturation of the beetle *Trogoderma glabrum* in this manner, Drs Beck and Bharadwaj (1972) produced larvae that lived over two years. The insect's normal life span (from egg to death of the adult) is only eight weeks. By two years of age, very extensive genetic damage had occurred in these incredibly long-lived insect larvae, since they did not possess the quantities of protective and repair enzymes found in animals that live normally two years.

Aging clocks can turn off protective mechanisms essential to maintaining an animal's life. After spawning, salmon rapidly peroxidize and die. Major protective mechanism that they have against peroxidation before spawning cease to function afterwards, leaving them defenceless against the release by the adrenal

glands of massive amounts of pro-oxidant hormones. The "turning off" is thought to be due to hyperactivity of the adrenals triggered by the spawning. If you prevent the fish from spawning by castration, by removal of the pituitary, or by hormone treatments, they live for many more years, whereas the spawning salmon die in hours. A similar phenomenon occurs with eels. This clock mechanism is an

example where the interests of the genes (to make copies of themselves) conflicts with the interests of the individual animal. Yet another example: Female octopuses die soon after they hatch their young. But if you remove the preoptic gland (their version of the pituitary), they won't mate and will live on for years."

So there are exciting things happening in medical thinking and where it will lead to may

still be an enigma. But it should be remembered that health is a multi-dimensional problem and I have included **Table 1** "Beating Disease and Aging" showing "10 don't" and "10 do's" which will help you to preserve that precious health.

I am sure that nutritional medicine will play an important role in the new medicine of the future.

## WHAT IS HYPOGLYCEMIA?

By Lars Idema

From Internet: <http://huizen.dds.nl/~hypo/faq>

Hypoglycemia literally means "low blood sugar level". Normally a complex hormonal process provides the body with a nearly constant blood glucose concentration. When the balance of hormones becomes disturbed a situation of high blood glucose levels (hyperglycemia = diabetes) or too low blood glucose levels may occur. In case of a too low blood glucose level or rapid or high changing blood glucose levels a variety of symptoms may be experienced. This phenomena is called the "hypoglycemia syndrome".

With most hypoglycemics, symptoms can be successfully suppressed or controlled by following a diet. However, a number of diets has been proposed for hypoglycemia. Everyone is different, therefore, you should focus on the things that work for you. Please check out the Section 4 about diets.

Several types of chronic hypoglycemia exist, reactive hypoglycemia and fasting hypoglycemia being the most common. The following synonyms may be used in literature to denote the syndrome: postprandial hypoglycemia, postprandial syndrome, idiopathic reactive hypoglycemia, functional hypoglycemia, spontaneous hypoglycemia.

There is a number of diseases or conditions that produce the same symptoms as hypoglycemia. Also, there could be an underlying problem triggering your hypoglycemia. Therefore you should always consult your physician first. Some of these other diseases or conditions are potentially life-threatening. Diseases that can lead to hypoglycemia:

- \* metabolic diseases as glycogenesis, gluconeogenesis defects, galactosemia, fructosemia, breakdown disorder of fatty acids or amino acids;
- \* hormonal diseases as hyperinsulinism (rare), hypoglycemia can be caused by hypothyroid too;
- \* liver diseases, glycogenoses and gluconeogenesis defects are liver-related metabolic diseases, alcohol abuse may cause hypoglycemia too.

### WHAT ARE THE SYMPTOMS?

Hypoglycemia is not a disease, it's a multicausal syndrome with a variety of symptoms. Symptoms do not only show wide vari-

ation between individuals, but can also be very different with one individual, depending on among others physical or mental activities and state, the hour of the day and recent food intake.

Changes in blood glucose level can lead to the following symptoms:

*fatigue, sudden sweating, vertigo, constant feeling of hunger, mood changes, sleep problems, anxiety, nightmares, trembling hands, Candida Albicans (yeast infection) concentration/attention disorders, visual disturbances, headache, memory problems, menstruation disorders, intestinal disorders.*

When one or more symptoms pertain for a long time, the immune system is weakened. When the defense system is weakened existing symptoms may worsen and/or new symptoms develop. In that case the hypoglycemia syndrome may be present.

### WHAT ARE THE POSSIBLE CAUSES?

The exact causes of hypoglycemia are yet unknown. Several factors are involved in developing the hypoglycemia syndrome. It is clear that extra risk is present in case of:

- \* heredity if hypoglycemia or diabetes runs in the family;
- \* weakened immune system, e.g. after a (viral) infection;
- \* tumors, like an insulinoma;
- \* wrong eating habits, esp. sugar intake;
- \* prolonged use of refined food;
- \* prolonged use of drugs like antibiotics;
- \* hormonal disorders;
- \* chronic stress, bodily as well as mental;
- \* old infections, e.g. Pfeiffer disease;
- \* pancreas overload;
- \* excess physical exercise;
- \* food intolerance and allergies, e.g. celiac symptoms and hypoglycemia symptoms can be very look-alike, some people consider hypoglycemia as aside-effect of their allergy or intolerance.

For a concise discussion of several clinical causes of hypoglycemia you could visit the Hypoglycemia Homepage Holland:

### WHAT METHODS ARE USED IN DIAGNOSIS?

Regular methods:

- \* extended (6 hour) Oral Glucose Tolerance Test: a GTT tests your reaction to a concentrated solution of glucose over an extended period of time;
- \* eating pattern analysis: having checked your food diary by an expert;
- \* Dr. Harper's health test: the score on 20 health questions can give you an indication about your chances being hypoglycemic;
- \* switching to a hypoglycemic diet and noticing the difference (therapeutic diagnosis);

### Alternative medicine:

- \* applied kinesiology;
- \* Touch for Health method;
- \* elektro-acupuncture; Voll and/or Vega method;
- \* homeopathy.

### HOW DOES HYPOGLYCEMIA START?

Some people suffer from hypoglycemia from birth or childhood on, some later discovered they did, while there is also a group of people who can clearly mark the beginning of their first hypoglycemia symptoms, e.g. after stress or an infection. People who have had hypoglycemia all their life may have experiences years without symptoms while on a loose diet, just avoiding sugar. Sometimes the syndrome did come back suddenly, particularly after a stressful time or a viral infection, maybe in combination with bad eating habits or extended use of stimulants (drugs/hormones, etc.).

### WHAT CAN BE DONE ABOUT IT?

In order to be able to treat hypoglycemia it is especially important to get a good diagnosis, after which you may be able to track down the specific causes or circumstances that triggered your disease. To break out of the vicious circle of the hypoglycemia syndrome you should start adjusting your eating pattern. The following guidelines are important in the treatment.

**Editor's Note:** Lars Idema of the Dutch Hypoglycemic Association has given me permission to copy articles for publication in this Newsletter. Further articles will be published in future. I have taken the liberty to exclude some references to other internet sites.

# ***DHEA: THE MOTHER OF HORMONES***

By  
Richard Stenlake, B. Pharm.<sup>1</sup>

## Benefits:

- increases sex drive
- better health
- anti-aging
- reduced heart disease
- prevents osteoporosis

DHEA is the most common hormone in our bodies and is a natural steroid that is present in larger amounts in healthy individuals. DHEA is an abbreviation of dehydroepiandrosterone which is pronounced dee-hydro-epp-ee-and-dros-ter-own. Produced by our adrenal glands, it is a precursor for the manufacturing of many hormones in the body, 50 of which are from the adrenal glands. Maintaining proper DHEA levels ensures energy, vitality and the natural support of most functions that involve our endocrine system.

## ***DHEA & weight management***

Your body is controlled by genetics to a certain extent. If your ancestors were stocky you'll tend to be stocky as well. However, even within these confines there is potential for significant change.

As we grow older our metabolism slows down and becomes less efficient. Many factors are involved, including stress, sub-optimal nutrition, an overly processed diet, lack of exercise and pollutants in the environment.

By restoring DHEA to optimum levels it can transform your weight loss program to reality. Firstly, DHEA will reduce your body fat. Studies have shown that 13 per cent reduction of body fat can be achieved in 28 days. DHEA does not usually depress appetite, but, when taking DHEA it has been found that less fat is consumed or desired and thus there is a great potential for weight loss.

Being overweight is often tied to insulin levels in the body. When insulin levels are higher it's almost impossible to lose weight. Now insulin levels are elevated in most overweight people because of too much intake of sugar. Refined sugars in most processed foods and sweets raise blood glucose levels rapidly which leads to the pancreas secreting insulin to contract this and get the level down. The body then stores this blood sugar as fat and thus obesity. When blood sugar falls too low the adrenal glands cause glucose to be released from the liver - in healthy people - but as we get older this process slows down, so to combat low blood sugar we eat the required sugar and so the cycle consumes and the fat get fatter.

By taking supplemental DHEA a twofold effect follows. Firstly, DHEA inhibits one of

the enzymes (G6PDH) that turns glucose into fat and secondly, higher DHEA levels redirects glucose from fat storage to energy - producing pathways, producing a leaner metabolism. DHEA is not a diet pill, but studies have shown that people taking DHEA over a 6 month period saw significant increase in muscle mass without making any changes in diet or exercise.

## ***DHEA and stress***

The most important factor is control - when you're in control you can overcome obstacles and endure stress. The feeling of powerlessness or that the situation will never end, that leads to distress. We all need a clear sense of what to do and how to do it. If we lack this information, stress in various forms follows. Today stress, for the most part, is chronic (long lasting) and our adrenaline responses to this are killing us. We bottle up emotions and simmer.

As a result of stress your blood pressure rises, your digestive system is upset, your blood sugars go haywire, fats enter your blood undigested leading to clogging of arteries etc.

All this stress makes your body decrease DHEA production in favour of other stress related hormones (eg. cortisol), which in turn leads to "the dog chasing his tail" syndrome.

This is where DHEA enters the picture. Sure we must cope with stress and manage it, but it is a fact that people with optimal DHEA are not depressed individuals. It is thought that DHEA is the link between stress and depression.

Studies have shown that DHEA levels correlate directly with performance in intelligence related discussions. DHEA given to medical and psychiatric patients produces significant improvement in mood, energy, libidos and memory. One study in fact showed that with depressed patients (male and female) given DHEA (30-90 mg per day) bringing their levels to mid normal range, dramatic reductions of depression and mood elevation followed. Improvement was directly proportional to the increase in DHEA levels.

DHEA has been categorised as a neurosteroid as it is metabolised directly by the brain and has wide effects on brain chemistry, memory, mood and behaviour. It appears to increase serotonin levels naturally and may be of benefit to protect the brain against aging diseases such as Alzheimer's.

It is unfortunate that as we get older the stress in our life increases. Thus as we are naturally losing our DHEA we are also helping to destroy it with stress. Thus a stress

management program is essential before anything else. Relaxation tapes, soothing music, meditation are but a few options available. Also there are natural substances which can "buffer" the stress response to help you better handle stress, anxiety and strain. Known as adaptogens they include Siberian ginseng the herb Schizandra. By naturally controlling our stress we increase the amount of DHEA made and decrease the amount of cortisol which in turn leads to greater energy and enhanced mental and emotional health.

Thus, handling stress, in whatever way we find, is the single most important factor. However, by topping up on depleted DHEA levels we can, to a certain extent, counter the effects stress brings to our lives. The extra DHEA may make the body (eg. digestive tract, cholesterol production, cortisol production, blood pressure, etc) tone down the adverse and aging effects of stress.

## ***DHEA and women***

Today cardiovascular disease, breast cancer, lung cancer are increasing causes of premature death in women. All three have significant stress, diet and lifestyle factors. More than 75 per cent of chronic disease victims are women, which is also true for depression and fibroalgia. These facts are alarming and there is no explanation, but women today are experiencing unprecedented levels of stress and face that burden without support factors that were once available (ie., family unit per se).

A number of critical factors contribute to the stress induced breakdown of the human body and mind.

Most important to this discussion are the gender differences in adrenal strength and DHEA productions.

Men produce approximately 30 per cent more DHEA than women. The ovaries produce but a small amount the majority coming from the adrenal gland. Also, ovarian failure at any age (injury, disease, surgery or menopause) accelerates a decline in DHEA production.

Men produce significant DHEA in the testes, but the decline in production is steeper than women and thus by age 70 both have approximately the same levels of DHEA in their bodies.

Because women depend mainly on adrenalin production of DHEA it follows that stress will have a markedly greater effect on their sex than men. Stress control increase DHEA production considerably but supplementation of DHEA is often not only indicated but in my view most beneficial.

DHEA is converted to testosterone (and others). However, as we know women also require testosterone and generally at age 40 a woman's level is half what it was at age 20. Thus, extra testosterone is essential, and it is your power hormone, it gives increased feelings of competence and strength. It also increases your libido - not just the desire for sex but the desire for life!

Studies have shown that through taking DHEA (5-50 mg per day) resulted in increased muscle tone and improved protein synthesis for tissue repair, leading to an important metabolic advantage and greater physical ability and psychological well being.

Another study showed that women with above average levels of DHEA showed a much lower risk of developing breast cancer. Maintaining DHEA levels at prime peak will strengthen bones and decrease the risk of osteoporosis.

Together with an exercise program peak levels of DHEA will optimise energy production and that energy will not be limited to skeletal muscles. Energy will also go to the brain, nervous system, immune system and adrenals. In scientific terms these functions are revitalised to a higher level of efficiency and power. This upward spiral of capacity will improve attitude; and attitude will change your life!

#### **DHEA and sex**

DHEA has twofold effect in sex drive. Firstly, in sexual arousal, desire and orgasm and secondly, it helps generate the energy required to fulfil our desires.

Androgens (male hormones) appear to be particularly critical in the arousal stage of libido, having powerful effects on both endocrine (hormonal) and neurological (mental and emotional) systems. Women need these factors just as much as do men, although in smaller amounts and not just to increase libido. Female androgen deficiency is characterised by impaired sexual functioning, fatigue, depression and headache. Thus androgen replacement therapy is often a neglected area and only few doctors appreciate its use in menopausal women.

It has been shown that in women significant amounts of DHEA is converted to testosterone and androstenedione and DHEA also provides other benefits including conversion in the skeleton to bone - preserving oestrogens. Thus DHEA appears to be nature's all-purpose energising sex and health hormone.

To remain sexually active it is possible by daily supplements of DHEA to regain and improve sexual performance. To reverse the aging diminished desire, both mentally and more importantly, physically, these doses of DHEA increase blood levels of testosterone and it has been noted that female libidos have been increased even more than their male counterpart. This is because proportionately more DHEA in females is converted to testosterone.

DHEA will not instantly turn a middle-aged man or woman into a sex machine, but as an integral part of a longevity and vitality

program DHEA can make a tremendous difference, and it is far superior to any of the pharmaceutical options available today.

As a footnote, men and women taking a wide range of prescription drugs commonly experience decreased libido, erectile dysfunction, ejaculation delay, and orgasmic dysfunction. The main offenders are antipsychotics, antidepressants, mood stabilising agents, minor tranquillisers and hypotensives.

In conclusion, it is an established fact that DHEA produces greater energy, increased muscle mass and strength, and an overall feeling of well being.

In men there is no age-related decline in testosterone as there is with DHEA. Thus there is no male menopause corresponding to women's mid-life decrease in oestrogen production. Men do experience significant biochemical and psychological changes, but these cannot be linked to a dramatic decrease in testosterone. This sexual activity in men (50-70) is not related to testosterone levels. DHEA has a wider spectrum of effects and benefits and a high level of DHEA confers more than sex enhancement. Keeping DHEA levels near prime peak (age 25) appear to improve overall immunity, increase energy, decrease body fat, strengthen bones and decrease the risk of heart disease and cancer. Testosterone on the other hand only affects some of these factors.

In women in middle age DNA triggers a shut-down of her reproductive system known as menopause. This, in turn, sets in motion a decrease in immunity, accelerated bone loss and greater risks of heart disease. By taking DHEA women may be able to postpone menopause. In limited trials with peri-menopausal women (ie., in their late 40's just starting to experience menopause) DHEA administration resulted in restored menstrual regularity, heightened libido and enhanced sexual enjoyment.

Life is complex, and so we naturally seek simple solutions - one pill that will do it all. It's not that simple, it's what you do and how you live. An informative new study found that sexual activity in older men and women is related more to physical activity and social and personality factors than any hormone level. So look closely, DHEA will help but it's not everything. Look at your lifestyle and if necessary, modify it.

If you're 50, now you want those years in front to be active and vibrant so take action now, don't wait! You have the tools to work with and incredible resources to use, so make your life change for the better.

#### **IT IS IMPORTANT TO NOTE:**

- DHEA can be obtained from Richard Stenlake Compounding Pharmacy
- A doctor's prescription is required for this product
- DHEA may be claimable under most private health cover

<sup>1)</sup> Richard Stenlake Chemist, 169 Oxford St, BONDI JUNCTION NSW 2022, TEL 02- 9387-3205, FAX: 02-9389-3821

## **STEVIA LIQUID CONCENTRATE & STEVIA LEAF BEVERAGE**

(From The Internet)

As of September 18, 1995 the FDA announced that Stevia can be sold and consumed as a dietary supplement for nutritional benefits.

This reversed an earlier action when the FDA determined that Stevia could only be used as an external product.

Scientific research has revealed that Stevia contains nutrients that may aid the body in effectively regulating blood sugar. In some South American countries, it is sold as a helpful aid to people with diabetes and with hypoglycemia. Other studies show that it inhibits growth and reproduction of some bacteria and other infectious organisms, including the bacteria that cause tooth decay and gum disease. There are many other benefits that seem to be associated with adding Stevia to one's diet.

The primary compounds of Stevia that are responsible for its taste are steviosides and rebaudiosides. The extract of stevia is approximately 30 times sweeter than cane sugar, or sucrose, yet has only 1/300 of the caloric value. In addition Stevia can be used in both HOT and COLD, and thus can be used in baking. This unique extract is even water soluble! This is a water-based extract with nothing added, no calories, either!

A number of studies have been conducted using Stevia in a variety of therapeutic applications. Several preliminary studies in Paraguay and Brazil have examined the herb's hypoglycemic action. Researchers found that hypoglycemic diabetics showed approximately 35 per cent drop in normal blood sugar levels six to eight hours after consuming Stevia extract. Other studies have concluded with similar results. These studies, coupled with a substantial amount of empirical evidence, have led physicians in Paraguay and Brazil to prescribe Stevia in the treatment of diabetes.

Surprisingly, Stevia does not seem to have the same blood sugar-lowering effect on normal, non-diabetics. This adaptogenic attribute is just one of the safety features. Research also reveals that Stevia inhibits reproduction and development of bacteria and other infectious organisms. Studies show that in the presence of Stevia extracts, Streptococcus mutans, Psuedomonas aeruginos, Proteus vulgaris, and other detrimental microbes are unable to thrive. Stevia extract has even demonstrated an ability to inhibit the development of tooth decay. Today in China the herb is used as an appetite stimulant, digestive aid, and to assist weight management. Preliminary studies show that long term use of stevia may have a cardiogenic effect.

Well over 1000 tons of Stevia extract are

consumed every year by the Japanese, with no reports of toxicity. Just recently (September 95) the FDA lifted the ban on Stevia, but there's a catch: the herb can only be sold as a food supplement, not a food additive. This means Stevia cannot be sold as a sweetening agent, but simply as the health-enhancing dietary supplement it truly is. Efforts continue to persuade the FDA to reclassify Stevia as a GRAS (Generally Regarded as Safe) ingredient, but in the meantime no one can deny its health-promoting properties as a food supplement.

### What is Stevia?

- \* What is Stevia?
- \* Is Stevia Safe?
- \* I have heard that stevia has side effects?
- \* What are the benefits of Using Stevia?
- \* Where is Stevia Grown?
- \* What are the types or forms of Stevia?
- \* Does Stevia have the same qualities as sugar in cooking recipes?
  - \* Will Stevia break down at high temperatures like saccharines or aspartame?
  - \* Will Stevia act as a "fuel" for yeast in baking as sugar does?
  - \* Why is Stevia just coming onto the market?
  - \* Why does Stevia cost so much?
  - \* How come diet soft drinks are not sweetened with Stevia?
  - \* Does Stevia have any effect on hypoglycemia?

### What is Stevia?

Stevia is of the Composite family, related to lettuce, marigold and chicory. It was "Officially" discovered in the late 19th century by Dr. Moises Santiago Bertoni. He was given samples of the plant and he reported that "one small piece of the leaf will keep the mouth sweet for an hour". He named the plant *Stevia Rebaudiani Bertoni* in honor of a Paraguayan chemist name Rebaudi. Bertoni found that the Guarani indians had been using the leaves of the plant to sweeten bitter teas and as a sweet treat.

### Is Stevia Safe?

Stevia has been used since pre-Columbian times with no reports of ill side effects. Stevia has also withstood years of research that has proven Stevia to be safe for human and animal consumption.

### I have heard that stevia has side effects?

+ **Toxic?** No. Stevia has been used in Japan since 1970 and there have been no reports of toxicity or other sideeffects.

+ **Mutagenic?** No. The Japanese Food and Drug Safety Center has found stevia no to be a mutagenic. Only one study has shown stevia to be potentially a mutagenic and this study has been criticized for errors in procedure. Scientist in Great Britain said that according to the study's formula, distilled water is mutagenic.

### + A contraceptive?

Two studies showed stevia to have a con-

traceptive effect. The first study was done in Uruguay over 30 years ago and since then no one has been able to reproduce the results. The second study was done by a graduate student in Rio de Janeiro and the results and methods have been questionable. Multiple other studies have shown that stevia has no contraceptive effect.

### + Is Stevia Safe?

Absolutely. Stevia has been used around the world with NO reports of stevia overdose or toxicity to humans in the past forty years.

### What are the benefits of Using Stevia?

Studies have shown the following benefits from using Stevia in one's diet. These benefits have not been approved or confirmed by the FDA.

- + Sugarless with no calories
- + Will not effect blood sugar levels like sugar does.
- + 100% Natural 250 to 300 times sweeter than sugar
- + Heat stable to 200 degrees Celsius (392 degrees Fahrenheit)
- + Non-fermentable
- + Flavor enhancer
- + Plaque retardant Anti-caries (prevents cavities)
- + Recommended for diabetics
- + Non-toxic Extensively tested in animals and Extensively used by humans with no adverse effects.

### Where is Stevia Grown?

Originally stevia grew wild in the highland region of Northern Paraguay and Southern Brazil. It was later cultivated for use as a sweetener until the introduction of sugar cane by the Spanish and Portuguese. Today Stevia is grown around the world from China, Japan and other Asian countries to South America, Europe, India, the Ukraine and even North America.

### What are the types or forms of Stevia?

Types of Stevia:

#### - Stevia Leaves

- + Fresh Leaves: Most pure form. 8-12% sweet glycosides: 5-8% Steviosides and 1-2% Rebaudioside A.
- + Dried Leaves: Dried form of the fresh leaves. Used in brewing herbal teas and for making liquid extracts.
- + Tea Cut Leaves: Cut into small pieces and sifted to remove twigs and other unwanted matter.
- + Ground Leaves (Powder): The dried leaves ground into a fine powder. Usually about 10-15 times sweeter than sugar. Used in teas and cooking but does not dissolve.

#### Liquid Extracts

- + Dark A concentrated syrup derived from the dried leaves. Usually in a water and alcohol base. Sweetness varies between manufacturers. This form will offer the greater amount of benefits from the stevia plant.

- + Clear A solution of powdered steviosides dissolved in water, alcohol or glycerin.

### Powdered Extracts

- + 40-50% Sweet Glycosides The processed form of the leaves to concentrate on the sweet glycosides by removing unwanted plant matter. An off white powder. Commonly referred to as "Stevioside".
- + 80-95% Sweet Glycosides - The processed form of the leaves to concentrate on the sweet glycosides by removing unwanted plant matter. An off white powder. This powder is 200-300 times sweeter than sugar. Quality of the powder depends on purity of the glycosides (i.e. 80-95% pure) and the ratio of Rebaudioside A over Stevioside. The higher the ratio, the better the product. Commonly referred to as "Stevioside".

### Other Forms

- + Due to the great strength of the Powdered Extracts, it is common to add a filler to "tone" down the strength so that the Stevioside is easier to use and more palatable. These fillers are usually some form of non-sweet food additive that has little to no nutritive value such as lactose or maltodextrin.

### Does Stevia have the same qualities as sugar in cooking recipes?

No! The molecular structures of sucrose and Stevioside are completely different. Sucrose (Sugar) when heated will caramelize making such delights as cookies, fudge and ... caramel, a possibility. Stevia will not. Some sweets, like caramel, is not possible, yet, but other sweets like cookies and fudge are possible if you can figure out how.

### Will Stevia break down at high temperatures like saccharines or aspartame?

No! The fact that stevia is heat stable is one of the real great properties of Stevia. Stevioside is heat stable to about 200 degrees Celsius (392 degrees Fahrenheit). So it can be used in almost any recipe.

### Will Stevia act as a "fuel" for yeast in baking as sugar does?

No! Stevia is non-fermentable and therefore will not act as a food source for yeast. (This is why stevia is great for anyone suffering from Candida!) Breads will still rise when baked but just not as big.

### Why is Stevia just coming onto the market?

Stevia has been around for a long time, even in the United States. Early studies on stevia go back to the 1950's but the United States is a nation chin deep in bureaucracy, dirty-politics and corruption. In the 1950's the sugar industry fought to prevent the use of Stevia in the United States. Today, the manufacturers of Nutrasweet (aspartame) have practically bought the FDA to prevent it's approval as a food additive and therefore a sugar substitute. If you don't believe me, contact 60

Minutes of CBS. In the Spring of 1997 they aired a report on how Nutrasweet "bought" influence with the FDA to force the approval of a sweetener that is now blamed for the illnesses and deaths of thousands of Americans.

#### **Why does Stevia cost so much?**

There are many reasons actually.

- 1) Stevia is a plant that has to be cultivated before it can be used as a sweetener. This requires large investments of capital to buy plants, farms, equipment, etc. to grow and harvest the plants. There is also the expense of the equipment to process the leaves into the pure stevioside.
- 2) When compared to sugar and the artificial sweeteners, yes, it is expensive. Stevia is not widely cultivated like sugar is. Sugar is also a very expensive product to grow and process but with hundreds of countries growing and processing sugar, economics becomes a major factor in price. As for the chemical sweeteners, face facts, its nothing but a blend of cheap chemicals. That is why it is so profitable.
- 3) There are also some people in this business (stevia business) that either have inefficient and expensive suppliers or they are actually (yes I know this is hard to believe) overpricing for the sake of money. They sell low quality stevia and/or they sell stevia using tricky and even confusing marketing practices.

#### **How come diet soft drinks are not sweetened with Stevia?**

The answer is simple: Money! The diet soft drink market is HUGH, worth billions of dollars and the manufacturer of Nutrasweet is not about to share that market. So the armies of lobbyists were called in to make sure the FDA did not allow the use of Stevia as a food ingredient thereby protecting their market. Nutrasweet has a patent on aspartame and that patent guarantees big profits where Stevia is a natural plant that can be grown by anyone and everyone.

#### **Does Stevia have any effect on hypoglycemia?**

According to the report "Effect of the Stevioside and of the aqueous extract of Stevia Rebaudiana (BERT) Bertoni on the glycemia of normal and diabetic rats" By: Professor Carlos Eduardo Pinheiro, Presented to the II Brazilian Convention on Stevia rebaudiana (Bert) Bertoni - September 1982, they found that the use of Stevia did not produce any significant glycaemic effects in normal or diabetic rats. In other words, stevia does not add sugar to the blood stream as sugar or even fruit can do. This allows the body to regulate the blood's sugar levels naturally. Of course if you drink tea with stevia with a twinkie, all bets are off but if you are careful with your diet, stevia is a wonderful way to satisfy your cravings for sweets without sugar.

**Editor's Note: Stevia is available in Australia from Ross Ph: 9546 3638**

## **Hormone-Like Pollutants**

Pesticides and other industrial chemicals have been recently shown to have hormone-like activity. They act as weak oestrogens and may contribute to such disorders as breast cancer, a decline in sperm counts and a rise in testicular cancer.

In the Columbia River Basin, researchers found that young otters whose livers have absorbed insecticides have penises and testicles half the normal size. And several studies have found that sperm counts have dropped among European men exposed to some of the chemicals.

A group of researchers working at Tulane University in New Orleans have developed a novel chemical screening system using genetically engineered yeast cells which contain genes that code for the human oestrogen receptor. When oestrogen-like chemicals are placed in this system they bind to the receptor and the culture turns blue. The intensity of blue reflects the strength of the chemical

When this system was used to conduct individual tests on four major pesticides - dieldrin, endosulphan, toxaphene and chlor-dane - there was little or no response. They were very weakly oestrogenic at most. In fact, you would need to use 100,000 times the concentration to get an effect similar to the body's natural oestrogen. However, when 2 of these chemicals were added together, such as endosulphan and dieldrin, the mixture was 160 to 1600 times more potent than the individual chemicals tested alone.

This preliminary data certainly suggests that low dose environmental "chemical cocktails" may be inducing previously unpredicted damage to the immune system, nervous system and reproductive system. The most insidious aspect of these findings is that we really don't know which of the thousands of possible chemical combinations are likely to cause the most damage to the body and those most affected are are more likely to be children, elderly or the ill. It certainly makes you take a closer look at the availability of chemical free air, water and food.

## **Research Snippets**

### **Diabetic Neuropathy responds to Alpha-lipoic acid**

In the Alpha-Lipoic Acid in Diabetic Neuropathy Study of 328 patients, the total symptom score (pain, paresthesia and numbness in the feet) decreased significantly in patients treated with intravenous infusion of 600mg or 1200mg alpha-lipoic acid (ALA) per day over three weeks. There was a significant reduction in symptoms in the group treated with 600mg ALA per day compared to the group on placebo. In the Deutsche Kardiale Autonome Neuropathic Studies, 73 patients with cardiac autonomic neuropathy (diagnosed by reduced heart rate variability) were randomly assigned to oral

## **Nestle adds sugar to VITARI**

### **Open Letter to Members of the Association from Yvonne Banks**

Dear members.

**I am writing to let you know that the ingredients in Vitari have been changed and that it now contains SUGAR.** Other than that the container stating that the product is now even smoother' there is no indication that sugar has been added except by reading the ingredients.

Now what I would like you to do is to take the time and write to **Nestle Dairy Products**, details below, voicing your opinion on this, as this product is on our SUGAR FREE FOOD LIST and could be eaten by all. Now due to this change Diabetics, Hypoglycemics, people wanting to lose weight and any other people who do not wish to consume sugar in their diet for whatever reason, cannot eat this food.

For myself, I ENJOY my VITARI, I am hypoglycemic and enjoy something sweet and this met my needs well. I realise Peter's make a Carbohydrate Modified Ice Cream but unfortunately I do not tolerate DAIRY PRODUCTS well, so therefore this is not an alternative for me.

I ask once again that you take the time to write and also ask your family and friends, as I have spoken to Karen Andrews from Nestle and she said the decision to add SUGAR can be reversed if enough people write in requesting reversal of the decision. If you haven't the time to write, please ring as the contact phone number is a 1800 number which is at no cost to the caller.

Karen Andrews  
Nestle Dairy Products  
254-294 Wellington Road  
MULGRAVE VIC 3170

Phone: 1800 633 200

If this decision is not reversed VITARI will have to be taken off our SUGAR FREE LIST and then it is one more food LESS that we can eat.

Thanking you  
Yvonne Banks

intake of 800mg ALA or placebo daily for four months. There was a significant improvement in the ALA group compared to the placebo group. No significant side-effects were reported. Intravenous treatment with 600mg per day over 3 weeks is safe and effective and oral treatment with 800mg per day for 4 months may improve cardiac autonomic dysfunction in non-insulin dependent diabetes.

Ziegler D, Gries FA (1997), Alpha-lipoic acid in the treatment of diabetic peripheral and cardiac autonomic neuropathy, **Diabetes** 46: S62-S66

**Vinegar reduces glycaemic response.**

Factors that influences the insulin responses in hypoglycemics and diabetics are important in controlling the condition of unstable blood sugar levels in. These factors include gastric emptying rate and the rate of food digestion and absorption. Therefore whole legumes and grains produce a low insulin response by being slow to digest. Organic acids produced by fermentation of vegetables and bread have been shown to affect the insulin response. This study gave subjects one of two meals, differing only by 20g white vinegar, which

comprised 50g starch, 15.3 protein and 12.0g fat. The meals were eaten one week apart after an overnight fast. Paracetamol was used as a marker to detect the rate of gastric emptying. Glucose levels were lower in the group consuming the vinegar. Results indicate that consumption of vinegar with meals delays gastric emptying and reduces the glycaemic response.

Liljeberg H, Bjorck I (1998), Delayed gastric emptying rate may explain improved glycaemia in healthy subjects to a starchy meal with added vinegar, *Eur j Clin Nutr* 52: 368-371

**Cream Cheese reduces glycaemic response**

Cream cheese reduces glycaemic response. In France milk consumption with breakfast is common, however this would not be suitable for people with lactose intolerance. Twelve healthy male volunteers were given both breakfasts: traditional with and without cream cheese. They had a lesser glucose and insulin response than the glucose and water drink. The study showed that the addition of cream cheese to a traditional French breakfast decrease the hyperglycaemic response (lowered blood sugar level). The authors also observed the same effect with fat-free cream cheese but have not published the data. They also commented that the addition of a small amount of protein alters the glucose response.

Pelletier X, Donazzola Y, Berber-Latreille M et al (1998), Effect of cream cheese consumption on the glycaemic response to the meal in healthy subjects, *Nutr Res* 18(5): 767-774

**Traces of melatonin found in Feverfew, Huang-Qin and St John's Wort.**

Based on historical and anecdotal evidence Feverfew (*Tanacetum parthenium*), Huang-qin (*Scutellaria biancelensis*) and St John's Wort (*Hypericum perforatum*) have been used to treat disorders of the nervous system. Feverfew is claimed to reduce the severity of migraine headache. Parthenolide, a sesquiterpene lactone, is believed to be the active compound in feverfew, but is now thought that melatonin in these plants may also play a role. Melatonin was found in the commercial preparation of feverfew, *Tanacet*. Higher levels were found in the green leaves of feverfew. *Tanacet* tablets contain about 70-80 ng of melatonin and producers recommend 1-2 tablets per day. Melatonin was also found to contain high levels of melatonin, which could explain some of the effects of the herbs. Further research is necessary.

Murch SJ, Simmons CB, Saxena PK (1997), Melatonin in feverfew and other medicinal plants, *Lancet* 350, 1598-1599

**Magnesium lowers hypertension**

Sixty untreated or treated patients with essential hypertension greater than 140/90 mm Hg received 20 mmol/day magnesium oxide or placebo for 8 weeks. BP were measured at home. BPs were significantly lower with higher BP having more effects.

Kawano Y, et als.(1998) Effects of magnesium supplementation in hypertensive patients: assessment by office, home, and ambulatory blood pressures, *Hypertension* 32(2), 260-265

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**Do you have hypoglycemia? YES/NO Does a family member |**

**hypoglycemia? YES/NC**

**1999 MEETING DATES ON SATURDAYS**

**6th MARCH - 5th JUNE - 4th SEPTEMBER - 4th DECEMBER**