

The Hypoglycemic Health Association

NEWSLETTER

Correspondence: THE HYPOGLYCEMIC HEALTH ASSOCIATION, P.O. BOX 8, SYLVANIA SOUTHGATE, N.S.W. 2224

Phone: (02) 553-0084, Fax: (02) 588-5290

PATRON: Dr George Samra

Volume 11 Number 3

September, 1995

PRESIDENT: Steve McNaughton ,BE (NSW)
Acting Secretary: Dr George Samra
Treasurer: Kerrie Cook
Editor: Jur Plesman, BA (Sydney),
Post. Grad. Dip. Clin. Nutr.

Steering Committee **Ted Grant**
Members: **Sue Litchfield**
Joy Sharp
Patricka Sheiles

Catering Committee: **Reg Grady, Sue Choc**

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.

Please note that those members who may have overlooked to send in their fees will receive the last newsletter for this year. Membership fees have remain unchanged: \$15 p.a. per family or \$10 for pensioners and students. Nominated health practitioners receive this Newsletter free of charge to promote complementary medicine among doctors. As the Association faces financial problems it would be appreciated if health practitioners could make a contribution to the Association. We aim at building a bridge of greater understanding between patients and their medical practitioners who want medical treatment with an emphasis on natural medicine as well as orthodox treatment.

Medical treatment based on natural health and life-style changes has made great strides over the last few years. There is a great demand among medical consumers for doctors who have embraced complementary medicine. They have come to realise that drugs do not necessarily cure and that high tech expensive medicine has few answers to most modern day diseases. They expect medical centres to be a nerve centre for a variety of health practitioners: Doctors, naturopaths, dentists, chiropractors, homeopaths, counsellors, meditation teachers and so on.....and within the means of members of the community. Patient demand participation in medical treatment, whether for physical or emotional (psychiatric) disorders. Our Association aspires to fulfil these needs.

Our Next Public Meeting will be at 2 PM
on Saturday, the 2 September 1995
at the YWCA,
2 Wentworth Ave, Sydney and
our guest speaker is

Joanna Harnett ND

who will be speaking
on the subject of

“Childhood nutrition”

Our next speaker, **JOANNA HARNETT ND** is a naturopath practising as a member of the *Northern Beaches Care Centre*, a large multi-disciplinary medical centre for general practice and complementary medicine in Mona Vale. Her talk will cover childhood nutrition and our responsibility, as adults, to educate our next generation on the effect nutrition has on their quality of life. It will draw on studies associated with Attention Deficit Disorder (ADD), hypoglycemia, hyperactivity with diet. Her focus will be Mental, Physical and Spiritual Health using natural medicine and nutrition.

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

Previous Copies of the Hypoglycemic Newsletter

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

Books for sale at the meeting

Jur Plesman: **GETTING OFF THE HOOK**

This book is also available in most public libraries

Sue Litchfield: **SUE'S COOKBOOK**
Dr George Samra's book

The Hypoglycemic Connection

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

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

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

Organise local meetings

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

Our patron **Dr George Samra** has moved his practice to a new address at

**19 Princes Highway
KOGARAH 2217
Phone: 553-0084 (New number) Fax: 588-5290,**

The surgery is located only 300 meters from Kogarah Station. Follow Regent Street until you reach Princes Highway where it is located just on the left from Regent Street.

No parking restrictions apply on the highway after 10 am, and parking is also available in Stanley, Regent Street and on top of Kogarah Station.

Dr George Samra has been a leading figure in the complementary medicine movement for many years. His fees have remained within the reach of most patients and Health Card Holders are bulk-billed (except if attending private clinic).

His new medical centre hopes to involve other like-minded doctors, dentists, dietitians, counsellors, chiropractors, acupuncturists, homeopaths etc. and act as a cross referral unit such that the patient can get the best possible management approach.

Entrance fee at meetings

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

Donations for raffle

One way of increasing our income is by

NAME OF THE ASSOCIATION

Members are invited to write in for suggestions for the new name of the Association. It is intended to vote on the final name at the next Annual General Meeting in March 1996.

Here are some new names for our Association suggested by members;

By Mrs Helen Wiggett

- 1) Advancement of Better Health Association (ABHA)
- 2) Advancement of Nutritional Medicine Association (ANMA)
- 3) Advancement of Total Health Association (ATHA)

By Steve Duff

4) Holistic Health Association

By Sue Litchfield

5) THAT Society (The Healthy Approach To Society)

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 588-5290.

Mrs Woodcock won the Lucky Door Prize and **Mrs Dorban** won the Raffle Prize at our last public meeting on 3 June 1995.

Committee members

The Association is in need of your support and ask members to help out with sending the Newsletter to our members. We also need committee members and if you are interested please contact Dr George Samra's surgery at **588-5290**.

Recipes

Two pages of recipes will be included in all future Newsletters in response to many requests by members.

Technical language

Some members have asked that medical terms used in articles be clarified. Please note that from now on definitions will be given either in the text itself or in the form of footnotes.

WOMEN AND BODY IMAGE

by Nicole Samra

How are women portrayed in the media? Before answering this question, one must consider what type of media that is being referred to, and where these women are located. I have put my answer in six broad categories; magazines, Television, multimedia, stereotypes, different global standards, and perfection.

1) Magazines

Regardless whether you are looking at music, fashion, cooking, or entertainment magazines, there is one thing about women on the pages that remains the same, and that is their figure. The only discrepancy to this rule

are if it is a before or after picture of an overweight woman, or if it is an ad for maternity line of clothing.

By choosing women that are slim, pretty and happy we are putting pressure on those who do not look that way. It sets false standards, "society will not accept those who are physically inadequate", this may not be true to most people, but it may become a very general way of thinking.

What many people fail to realise about women who are plastered all over the pages of a magazine is that...

- clothes in fashion shoots are often pinned at the back to make them fit properly
- models' breasts are often squeezed together and held in place with masking tape to boost their cleavage

- they pose in ways to create the illusion of larger, leaner legs
- skin-toned stockings make legs look blemish-free
- models spend hours getting their hair and make-up done
- photographers spend hours finding the most flattering light to shoot models in
- if the finished photograph isn't perfect it can be retouched by computer

Also, women are always portrayed as youthful looking and wrinkle-free. Wrinkles show signs of ageing, and beautiful, perfect people would be young forever, if the fashion editors of magazines have their choice.

Continued on page 6

The Naturopathic Approach to Hypoglycaemia

By Rita Cozzi ND

from a lecture given at
the Hypoglycemic Health Association
meeting of 3 June 1995

When speaking on the naturopathic approach to hypoglycaemia I realize that this is a large topic and I have chosen only a few areas. I am sure most of you are well versed in the nutrients that benefit hypoglycaemia.

I would like to start off with a small quote from Ralph Waldo Emerson;

“It is one of the most beautiful compensations of this life, that no man can sincerely try to help another without helping himself”.

It is very reassuring to know that your association, practitioners and other health professionals and like-minded people are willing to offer help in such conditions. There is no one regime that is going to suit every individual. There are certainly common factors which affect most hypoglycaemic sufferers. Looking at it naturopathically, we do tend to approach it a little differently. It is important to find the cause and not simply to treat the symptoms. In trying to find the cause this often opens up a Pandora's box, because there are other factors of a person's health that need to be taken into account.

Symptoms

Most of these would be familiar to you, but still need to be mentioned for the benefit of people who have recently been diagnosed.

They are: mood swings, endogenous¹ depression, acute anxiety states, poor coordination, emotional lability², forgetfulness, uncontrolled rage in some instances, sleepiness, and sometimes sleeplessness, craving for sweets, cakes, coffee, cigarettes and other drugs.

This is not an exhaustive list, but the significance is to always try and find at which level we can help you, what form of treatment is going to help you into a better tolerance of your foods and your digestive system. We are also looking at stress at a later stage.

Today we are focussing on two areas: the herbs that can help you, and not the kind of herbs that you have to travel to Timbuktu for, but rather the herbs that are available in your kitchen on a day to day basis.

An excellent book on foods that is going to help you is **THE FOOD PHARMACY** by Jean Carper. It deals with a number of foods that are beneficial to a range of health conditions.

One of the factors affecting hypoglycaemia is poor absorption of nutrients at the digestive level. We may be taking a balanced diet, yet do not extract all of the nutrients from that diet. This leads to an impaired transfer of the nutrients into the cell. In some cases heavy metal poisoning, or sometimes our genes go against us. The cause of sugar intolerance may be the hyperinsulinism or excess production of insulin as a result of a high sugar diet. Another cause may be hypoadrenalism or the underfunctioning of the adrenal glands. This may follow certain disease patterns, but also stress.

Stress for one may not be stress for another. In relation to the topic of stress I would like to mention the book called **INSTANT CALM** by Paul Wilson. The author assures us that if we say “calm” often enough, we will feel calm. I won't ask you to try this just yet. We will return to this topic later.

Garlic and onions

The first herb that I would like to mention is this well-known herb, used in the kitchen, garlic. The humble knob of garlic has been espoused for being useful for poultices, for common colds, other diseases of the immune system and in liver problems.

But other studies show that garlic has also been used in the treatment of diabetes mellitus, having been shown to have a significant hypoglycaemic action. This effect is thought to be due to the increased hepatic metabolism (liver) and the increased release of insulin and/or insulin sparing effect. Thus it has something we call a stabilizing effect. This does not mean that by just eating garlic it will give you all these benefits. Obviously, it is just another additional component in your daily intake of food to health. The question whether by cooking the garlic you destroy the active ingredients has been raised, but by eating the garlic raw it is much more beneficial. However, eating raw garlic may invite some comments by others. Having it cooked or steamed is often beneficial for the flavour which en-

hances the food. Digestion is assisted by this and the odour of garlic becomes less potent.

Cooked garlic is well digested, it should not leave you with an odour. Of course, it also depends on how much garlic you use. Some people report that after they introduce garlic into their diet they become more tolerant to it. Garlic is very important component for the health of our blood. There is some interesting research being conducted at the University of Newcastle in regard to garlic and cholesterol.

In the naturopathic literature it has been shown that garlic has blood cleansing properties, has benefits in skin afflictions, boils, carbuncles, skin rashes, protects against the common cold, infectious diseases such as typhoid and dysentery, increases the flow of bile from the liver, can be used to treat tuberculosis, bronchitis and other respiratory disorders as well as treat intestinal ailments. It is also used in treatment of high blood pressure and hardening of the arteries.

If we understand the constituents of garlic, it is clear that the basic underlying action is to help eliminate a lot of toxins. Thus as well as helping in the insulin sparing effect it helps our bodies to get rid of the toxins.

Thinking of toxins it may help to compare it with your rubbish bin. Regardless of where you live, if you don't have a regular garbage collection, then the rubbish in the bin becomes quite toxic. It must be realized that when garlic is taken in the form of tablets or capsules, it must have undergone some processing. Thus, it can never be the same as the actual raw substance. However, if you cannot take the raw substance the capsule form would be the best alternative. It is a very good way of getting the benefits of garlic into one's diet in the form of garlic oil. Still, some people do not like garlic.

In some European countries where garlic is a standard ingredient in the diet, heart diseases that afflict other Western societies, have not been a feature of the disease pattern.

If you are allergic to garlic it would be well to look at other members of the garlic family - the so-called alliums - for instance onions, leeks and chives. Then if you are still allergic to them it is probably due to the sulphur containing amino acids in them. This means that you may have to look further for some liver treatment, as the liver may not be break-

ing down the molecule. The volatile oils in the garlic and onions family are very high which in some people trigger a histamine response. People need to experiment in the preparation of garlic, such as boiling, steaming, braising etc.. Again some people may react to cooked garlic as the cooking destroys some of the natural enzymes in the garlic. Raw garlic or onion juice is quite diabolic in its taste, albeit excellent in its effect. Another reason why some people have a reaction against garlic is when they consume it for the first time, it mobilizes the toxins in the body, you have increased flatulence and accumulation of toxins. This all comes back to the bio-individuality of all of us, which governs what we can take and digest. Very few people will embark on taking garlic juice and if they do they need to dilute it in carrot juice or some other form of juice.

In looking at the onion family, it has been shown to have significant oral hypoglycaemic agents. The hypoglycaemic principle in onions is believed to be allyl propyl disulphide, referred to as APDS. There are other constituents in onions believed to have a significant role as well quercetin and anthocyanidins. Experimental and clinical evidence suggest that APDS lowers blood glucose by competing with insulin, which is also a disulphide molecule. This competing with insulin at the degradation sites increases the half-life of insulin. Therefore, insulin is in your system for longer and can work more efficiently. There are other mechanisms as well, such as increased hepatic (liver) metabolism of glucose, or increased insulin secretion, which is also being proposed as a possibility for the action that garlic seems to have. This was quoted in a trial reported in a Text Book of Natural Medicine, 1986 by Pizzorno Murray.

The significance of the whole onion family, including spring onions, garlic, chives and leeks is the beneficial action on the liver metabolism. It is important that once you have the whole herb it plays a complementary role in many areas of health, such as the cardiovascular system and cholesterol levels. What is happening now with many of our herbs is that the active constituents of herbs are being extracted for use to be prescribed for XYZ problems. One example is the herb called ginkgo in Germany, which is produced by pharmaceutical companies. This has now been put on prescription lists as well as selenium and tryptophan. If you take out one constituent you no longer have a herb, but in essence you have a drug. Therefore, when you are using garlic or onions for therapeutic purposes there are benefits in using the whole herb or food.

The ginseng family

One of the more exotic herbs you may not have in your kitchen is the ginseng family. There are two herbs in that family that are beneficial to hypoglycaemics. One is **Panax Ginseng** and the other is **Siberian Ginseng**.

This should be listed on the label to know which ginseng has been used. The Siberian Ginseng is often referred to as the red ginseng. Its Latin name is *Eleutherococcus senticosus* and Panax Ginseng is known as Chinese ginseng.

They provide significant functions in the treatment of hypoglycaemia in that it helps with hypo- and hyper-glycaemic reactions. The reason for this benefit is that they are what we call "adaptogens". Adaptogens can help our system to regulate metabolic functions. If we understand the stress role between the nervous system and the glands of the body, the way these interact with the environment, nutritional and physiological stresses, this is one of the impacts on the stresses of the body.

The ginseng can help effect control centres, of the central nervous system both directly and indirectly through the adreno-cortical hormone. Therefore, toning, increasing the output or simply equalising or creating an equilibrium. This is the balancing effect which is known in herbal medicine as the adaptogenic action. Other factors include the blood parameters, blood pressure, glucose levels, insulin levels and the white cell count. If you are going to use ginseng the best one to use is Panax ginseng. The Siberian ginseng, *Eleutherococcus senticosus*, can be used as tonic. In China it is very much appreciated if you present a gift of ginseng.

A number of studies have shown that the Siberian ginseng (*Eleutherococcus senticosus*) does possess adaptogenic properties. This helps to increase non-specific body resistance to stress, fatigue and disease. The specific function of its sister Panax ginseng is much more concerned in the hypoglycaemic activities. The constituents that are responsible for this are five types of substances, and I don't want to bore you with the names of these. It is interesting to note that ginseng will increase, when necessary, serum cortisol levels in non-diabetic individuals, whilst patients with diabetes, serum cortisone levels will be reduced. In addition, a substance called DPG2,3³ only exhibits hypoglycaemic action or provokes insulin secretion in diabetic and glucose loaded normal mice. It has no effect on normal mice standard diet. This demonstrates again ginseng's non-specific balancing effect. This has baffled researchers of constituents of ginseng as it is difficult to understand how it can balance someone who has too much and another who has not enough.

It is because of the many constituents and actions of herbs that give us their beneficial effects. Like our discussion on garlic and onions, herbs should be used with other nutrients. We cannot expect a miracle to occur just by taking ginseng by itself. To have any effects at all, you have to take it for at least twelve weeks according to various clinical trials. It is difficult to advise on the use of ginseng tea, as this depends very much on how that is produced. Has it been mixed with other powders or substances? Ginseng is available

as a capsule from Vita Glow. It is important to take supplements including ginseng with a substantial meal. You need food in the stomach to help metabolize that capsule or tablet. If you are on anti-hypertensive drugs for high blood pressure or on anti-coagulants, you should check with your general practitioner first before taking supplements. But generally there are no contra-indications as prescribed, yet in special circumstances as when you undergo a by-pass operation or some other surgical procedure you must follow the instruction of the surgeon. There is very little research on the interaction between ginseng (and many other nutrient supplements) and medical drugs. Therefore when in doubt...don't!

Co-enzyme Q10

Another nutrient that is coming in the spotlight is the nutrient called Co-enzyme Q10 (CoQ10). It is an enzyme-like substance, that has been reported to be a very powerful antioxidant. If you read the literature it appears to be a panacea for everything. This always causes a certain degree of scepticism, because like anything new it becomes in vogue like the lecithin story, the wheat germ story, and then it slowly dies a natural death. In the case of CoQ10, I suspect it is like a number of other nutrients, being looked at being discovered and being investigated, only to find that it has a specific action. In a study of 120 diabetic patients, 8.3 per cent were found to be deficient in CoQ10, compared with 1.9 per cent of a group of healthy controls. The incidence of CoQ10 deficiency was higher - around 20 per cent - in patients receiving oral hypoglycaemic drugs, apparently because these drugs interfere with the metabolism of CoQ10. This nutrient is an expensive supplement in this country at present. One should be able to incorporate CoQ10 out of a good balanced diet for your needs. It is contained in some cold pressed oils. One of the American studies mentioned that it was very high in grains and organ meats.

One expert on antioxidants, Dr Kenneth Cooper, who recently visited Australia said that you can take as many antioxidant supplements as you like, but nothing will benefit you like the fruits and vegetables, which contain these substances naturally. We can augment the intake through the tablets, but at the end of the day we still need to have a balanced diet. In today's environment, specially with all the pollution in the form of lead fumes and so on, we do need more of some than of the others, depending again on our individuality.

Dandelion

This herb was known for many years as just a weed. In fact, dandelion is a nutritious healing herb with a medicinal reputation for more than seven thousand years. It is used in a number of conditions; premenstrual syndrome, hypotension, gall stones, liver remedies, it has a diuretic action if you specifi-

cally use the leaves. If you use the dandelion root it will augment not only the eliminatory process, but also helps the liver to function better. The reason I have included this herb here is that for a lot of people liver and gall bladder functions is the basis of many disease processes. Simon Mills, a famous UK herbalist, said that the basis of all diseases stem from digestion. Hence if we can improve digestion, metabolism, degradation and elimination of substances, the more efficient our bodies will be. Dandelion helps to tone, to cleanse, to improve bowel function and increases bile secretion. Dandelion is available as a tea, and dandelion root is available as a coffee beverage. If you suffer from fluid retention or have a sluggish elimination in the water department, then surely the dandelion leaf tea is more appropriate. As with all medicinal substances they should be used in moderation. One or two cups is more than enough per day for any herbal tea. There are a few exceptions in times of cold.

Beans

Beans are one of the most beneficial foods for hypoglycaemic sufferers. They include black bean, black-eyed beans, chickpeas, bonza beans, kidney beans, lentils, lama beans, split peas, white and navy beans. Perhaps there are not many beans that we have not included. Possible therapeutic benefits are: reduced cholesterol of bad type, it contains chemicals that inhibit cancer, control insulin and blood sugar, lowers blood pressure, prevents and ceases constipation. The question is: "How many beans?" Do we need a bucket a day, no. According to research a cup of beans a day is sufficient.

Legumes, as beans are known as a family, are a potent medicines for the cardio-vascular system. They help to lower cholesterol, and they impart beneficial fibre of the best kind. Professor Avni Sali, a researcher in Melbourne has also researched fibre. He states that there are different kinds of fibres, good ones and bad one. The most desirable fibre is not just wheat bran. It is the soluble kind of fibre, found in fruits and vegetables. Beans have a high concentration of this fibre. Legumes are marvellous regulators of insulin. Some studies showed that type I diabetic patients who need daily insulin shots, were virtually able to obviate the need to inject insulin. Those with type II diabetes, in the mature onset diabetes and who do not produce enough insulin, also benefited from beans.

The reason why beans have these effects appear to be that they produce such low levels of blood sugar, that the body needs to release much less insulin to keep the glucose under control. The second factor is that beans like many other vegetables are high in gums and pectins. They actually cause the creation of more receptor sites on the cells. The more receptor sites the cell has, the more efficiently insulin will function. Insulin has more places to dock and, of course, to be siphoned off.

Raw beans may cause some digestive irritation and flatulence to some people, who are not used to eat raw vegetables. By steaming beans lightly we are not damaging the nutrient content. Some beans have to be soaked before we cook them. It prepares them for digestion. Another significant point with beans is that you cannot eat them without chewing them. The role of the mouth in digestion is that it stimulates carbohydrate metabolism. It is the first step in digestion, it produces saliva which helps in the breakdown of carbohydrates. If we don't chew properly we are likely to have problems with the digestion of any carbohydrate.

Premenstrual tension

In the premenstrual syndrome the cells are more receptive to insulin in the premenstrual period, causing relative hypoglycaemia, resulting in carbohydrate craving. This explains why PMT sufferers would kill, as it were, for a chocolate bar at certain times of the month. Nutrients that are very beneficial are the B6 and B group vitamins.

Alcohol

It is now well accepted that alcohol consumption can actually induce hypoglycaemia, especially on a empty stomach. It will cause a decreased blood sugar and an increased need for the refined foods. The higher sugar consumption will reactivate hypoglycaemia. One of the best nutrient groups to help stabilise that problem is the B-complex vitamins.

Stress

Any level of stress whether it is getting wet, getting cold, running late, getting caught in the traffic, not finding a parking place, getting across the Sydney Harbour Bridge every morning, all these different things are stress factors to all of us. We have to learn to make stress work for us. We need some level of stress because without it we wouldn't be out of bed in the morning. We need it to stimulate our adrenal constellation. Our ancestors knew what stress was. If they were hunting a wild animal the adrenalin would give them the power and energy to capture that animal. Now we have stresses of a different kind and it is important to recognise what a stress is to you. For those people who have little experience in dealing with stress techniques I'd like to recommend the book **INSTANT CALM** by Paul Wilson. It talks about meditation, breathing, massage, it talks about how a state of mind can be a stress. If we can change some of our outlook on a situation, this can be a destressor. Very often we worry about the worst thing that can happen and then it is not so bad at all. The nutrients that help us to cope and deal with stress is, of course, the B-group nutrients. The B-complex vitamins encompasses the B1, B2, B3, B6, choline, inositol, B12, folic acid and others. Magnesium also helps us in coping with stress, as well as potassium for the nervous system. All of these nutrients come to us

in the diet, but sometimes because of the level of stress we are often in a deficit, as we are burning up more than we have. The B-group nutrients are water-soluble, they are not stored in the body for a long period at all. They are found in the whole grain foods, but because of food processing often many nutrient are missing. Brown bread, for example, has the brown colour added to it, the vitamins added and some fibre added to make it look wholesome.

Chromium

The micronutrient chromium should not be overlooked. Studies have shown that chromium is essential in carbohydrate and lipid metabolism. We don't have enough dietary chromium. It is associated with onset diabetes, cardiovascular disease and often the early stages of hypoglycaemia. Too much consumption of simple sugar increases the problem of insufficient dietary intake of chromium. Studies indicate that if chromium is supplemented to individuals with elevated blood sugar after a glucose load, there is a decrease in blood sugar. Hypoglycaemic individuals respond to supplemental chromium by an increase in their hypoglycaemic blood sugar values, enhanced insulin values and a reduction of their hypoglycaemic symptoms.

Personality and sugar

There is a review article on the role of low blood sugar and personality. First it enumerate the causes: 1) high sugar diet leading to hyperinsulinism, 2) hypoadrenalism, stress leading to adrenal exhaustion, 3) alimentary or surgical procedures leading to rapid stomach emptying or dumping syndrome. Patients with hypoglycaemia of various aetiology [causation of disease] tend to show the same personality pattern, suggesting that hypoglycaemia causes personality disorders. Many patient with symptoms of anxiety, irritability, depression, fatigue, sugar craving, and premenstrual tension have shown improvement or complete remission with nutritional treatment.

The elderly

Increased needs of nutrients among the aged are often found among those suffering gastrointestinal bleeding dysfunction, orthostatic hypotension⁴, hypoglycaemia and malnutrition. It was found that a program of nutritional treatment among the not-so-young reduced significantly the number of problems. Among the pensioners the diet suffers the most.

I would like to conclude this talk with another quote:

"Use the talents you possess,
for the woods would be very silent,
if no birds came except the best".

Footnotes

- 1) Endogenous - originating from within the body.
- 2) Emotional lability - characterized by

- 3) rapidly shifting or changing emotions. DPG2,3 refers to 2,3-diphosphoglycerate, a substance in the red blood cell that affects its affinity of haemoglobin for oxygen. In its absence, haemoglobin unloads less oxygen in passing through tissue capillaries. It is the end product of glucose metabolism and functions as a feedback control system that regulates the release of oxygen to tissues.
- 4) Orthostatic hypotension: an excessive fall in blood pressure when an individual assumes the erect position. Also called 'postural hypotension'.

Continued from page 2
Women and body image
 by Nicole Samra

2) Television

Like magazines, television portrays women as perfect beings. All mothers are supposed to be like Mrs Brady from the Brady bunch. There is no such thing as a generation gap. All young girls should look like Rachel Hunter, "it won't happen overnight, but it will happen". But what if "it" doesn't happen? Should women get plastic surgery, or use more of the so-called miracle ingredients?

Especially on television snaps, women who are not absolutely perfect are the social misfits, that is, their social lives are non-existent. This could also set a standard "nobody likes those who are physically inadequate". Maybe this is how the social groups of teenagers develop. The "in" or "cool" groups are the people who look perfect. Needless to say these people may appeal confident and popular, but sometimes good looks don't make up for insecurities. It could also explain why low self-esteem illness develop, like chronic depression, anorexia and self-destruction.

Sometimes when people on television who appear to be perfect do promotions for causes like "say no to drugs and alcohol" it can create a positive reaction. Women may be convinced that she is good looking and popular without it, and they could be too. This is a positive side to advertising, not all of it is destructive plans to change a woman into something she is not.

3) Multimedia

Suppose you were to use a computer to obtain a simple attire on a woman's body. What body shape would be given? Now suppose you were to print this cut and it was the height that you are, if you were to compare the body to your own. Would they be that similar?

Multimedia is the future. One day people won't even have to leave their home to live comfortably. All they will ever need can be supplied by computer screen. If the computer starts portraying women unrealistically, won't the standards for perfection in women increase yet again? All information can be con-

tained on computers, but they do not make mistakes, people do!

It is those people who are programming computers today who fail to realise that they could be potentially creating a bomb. As different trends come in, the woman being portrayed will change in shape, but this is impossible for every woman on the face of the earth. Another standard will be set, "if I am physically inadequate in my body shape, technology and trends will leave me behind".

One thing technology will never fully capture is emotion. If the woman on the screen is smiling, and you can see her dancing around, and singing, how could you tell that she has just heard good news, or is in hysterics over bad news?

4) Stereotypes

The woman stereotype is the one we spend hours trying to look, sound and want to be like. They could be on television; they could be posing for you on the front of the magazine; they could be singing on the video clip; or they could be that ever-popular, ever-fashionable

"By choosing women that are slim, pretty and happy we are putting pressure on those who do not look that way. It sets false standards, "society will not accept those who are physically inadequate", this may not be true to most people, but it may become a very general way of thinking."

girl that is all over the place. Everything these stereotype women have, every other woman desires.

Whether these women are saying "save the earth, recycle and live in peaceful wilderness like me" or "smoke Alpine cigarettes and end up on a beach on the Caribbean with a babe like him too" they are influencing our every day lives. Would we ever have dreams without these women?

What most people forget who idolise these women is, they still have very human qualities even if they do appear to be perfect. Every one will be insecure at some time or another, and will never be fully satisfied with anything, even if it is nice to believe that there's one person who is so unlike this.

To what extent should we worship the stereotypes? Well, as much as we would like to blame these women for the low self-esteem illnesses, we can not because everyone has idolised another being at one time or another, and as long as this continues, there will always be standards to reach perfection. No matter what anyone does, these standards will always exist. If you lock a person up in a closet for his life, he will fantasise and idolise anyone outside the closet. It is a no-win situation.

5) Different global standards

It seems common sense that role models

will be different in different places. For most of the countries of the North (a geographical and economic term for wealthier, more industrialised countries) the standards will always be similar. If voluptuous figures are in vogue in Europe, it is only a matter of time before Australian women strive for these figures. It is the same with any trend. It is the way some women perceive perfection to be achieved.

In Africa, a woman's life could revolve around the man she plans to marry and whether or not she is good enough for him. She may improve her chances by being fat, or putting yellow paints in her hair, or by doing ancient rituals to prove her purity.

In America, a woman's life may revolve around her family. Could she get her family's shirts any whiter or brighter? When is the next dental appointment? Could she improve the taste of her casseroles and meat loafs? Her idols could be the lady on the Napisan ad, a woman who hosts the cooking show, or the editor of a 'woman's day'. Her family could expect her to have a slim figure, a good eye for fashion, and a understanding personality.

While these qualities all are humanly possible, one may never be "perfect".

6) Perfection

Perfection is one thing that can never be achieved by a human being. Women will never look perfect, but they will all be beautiful in different ways. Beauty isn't a person's figure, or being assertive, or having blue eyes, or the length of a person's hair. It is the aura that they generate, the compassion and empathy that they show, and most importantly the love, respect and pride they have in them. Only when a human possesses all these qualities will they ever be perfect.

Perfect people will also make mistakes, but they will have the honesty to admit it, and the courage to change.

NUTRITIONAL VALUES OF AUSTRALIAN FOODS

By Barbara Wright RN

I bought this excellent book, published by the Australian Government Publishing Service, four years ago. It costs me \$16.95 at the time.

The book came out of the 5 volumes of the Composition of Foods, Australian series, which gave information on up to 80 nutrients in 1600 foods for health workers, dietitians, nutritionists and the food industry.

The list of foods in alphabetical order show the contents of proteins, carbohydrates, cholesterol, fibre, energy, fats sugars, starch, water and many vitamins and minerals. Foods are

Continued page 10

Fructose: a natural sweetener

by Jur Plesman, BA Post Grad Dip Clin Nutr

What's sauce for the goose is sauce for the gander. Thus when it is argued that fructose may be a suitable alternative sugar to diabetics, it could be suitable to hypoglycemics. Fructose is an energy-yielding sweetener coming from different natural sources (fruit, berries, and vegetables) or is added to soft drinks, bakery products, and lollies. Another rich source of fructose is honey, however, honey consists of about 30 per cent glucose and 43 percent fructose¹. Fructose is absorbed at one fifth the rate of glucose through intestinal wall and tastes about 1.70 sweeter² than sugar. The glucose content makes honey unsuitable for hypoglycemics and diabetics. Nevertheless, it should be realized that raw honey - that is unprocessed honey - is said to contain an enzyme called glucose oxidase which converts glucose to hydrogen peroxide (an antibacterial agent) and gluconic acid the moment it is diluted^{3,4}. The implications are not clear. During processing this enzyme is destroyed. I am not aware whether any tests have been conducted to measure the glycemic⁵ reaction to raw honey, as compared to the normal

commercial honey, which has a glycemic index of 87. Suffice to say that honey should be avoided⁶.

Because of the low glycemic index⁷ of fructose, it may be an alternative as a sweetener for those diabetic patients who like sweet foods but are liable to high postprandial (after meal) glucose concentrations. Of course, if you plan to consume fructose and you have a hypoglycemic condition or you are diabetic, it is important to discuss this first with your medical practitioner.

The problem with the glycemic index is that it measures the percentage of the area under the curve of the glucose tolerance test⁸. However, hypoglycemics are interested in the drop of blood glucose concentration after ingestion of glucose. A drop of 2.8 mmol/L (50mg per 100ml) per hour or 1.9 mmol/L (35mg per 100 ml) per half hour is indicative of the hypoglycemic syndrome⁹. Any severe crash of glucose levels would cause an adrenergic reaction - increase in adrenaline - which is seen to contribute to the "symptoms" of hypoglycemia. The glycemic index does not

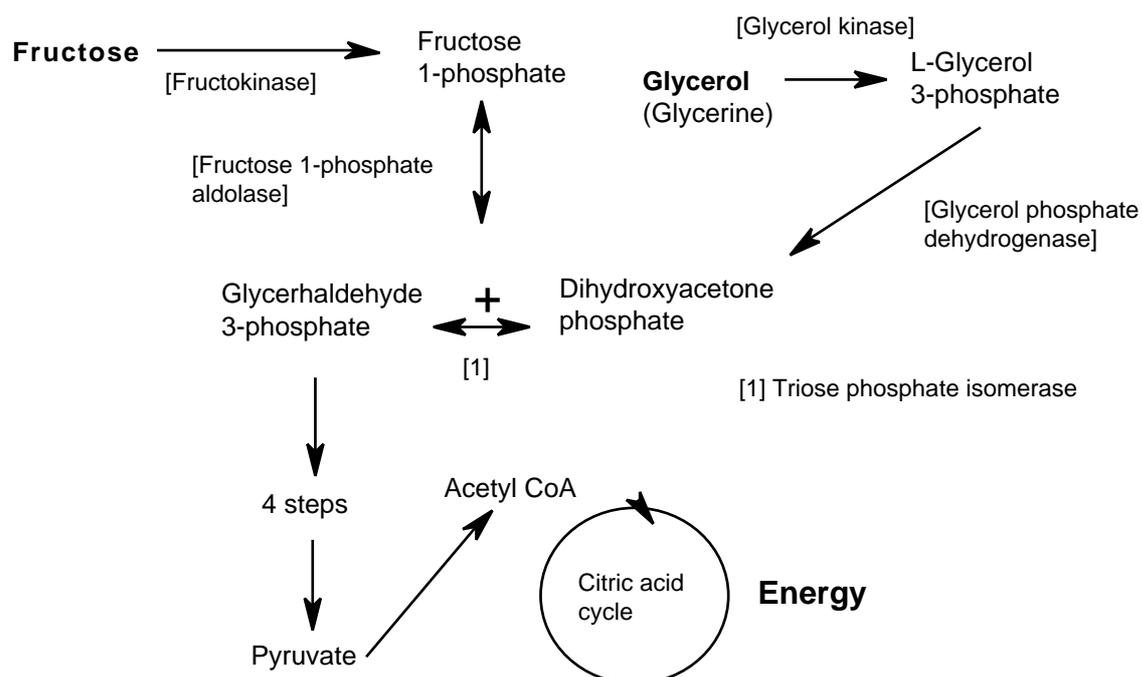
appear to reflect the extreme fluctuations in blood glucose levels, common among hypoglycemics. A more useful index would have been one that is based on means (or averages) of blood sugar levels every half an hour over say four hours in a Glucose Tolerance Test (GTT). Hence the low glycemic index of fructose could hide the true reaction by hypoglycemics to fructose.

Nevertheless, in clinical studies fructose has either improved metabolic control of diabetic patients or caused no significant changes. In patients susceptible to hypertriglyceridemia¹⁰ high doses of fructose should be avoided because of a potential hypertriglyceridemic effect. Long-term experiences with the use of fructose from large scale controlled studies on diabetic patients are lacking.¹¹

Fructose supplementation in diabetes mellitus was advocated before insulin was discovered¹². Fructose elicits a lower glucose and insulin response in healthy individuals and in individuals with diabetes. This may be due because it is rapidly removed from the

Figure 1

Fructose and Glycerine Metabolism



blood and is metabolised mainly in the liver, where it is phosphorylated and converted into two molecules of glyceraldehyde 3-phosphate and then enters into glycolysis to form pyruvate^{13, 14}. In fact, both fructose and glycerine¹⁵, a substance used by hypoglycemics to avoid sugar cravings, enter the glycolytic pathway where they join glyceraldehyde on the way to the citric acid cycle (Figure 1). Large doses of fructose, though, can cause abdominal pain and diarrhoea. It should not be given to people with a fructose intolerance¹⁶ or to patients with alcohol poisoning since it enhances the oxidation of methyl alcohol to formaldehyde¹⁷. Other non-insulin requiring sugars are sorbitol¹⁸, mannitol, inositol (muscle sugar, B vitamin), and xylitol¹⁹, all of which should be used with caution. The significance of these sugars are that insulin suppresses growth hormone²⁰ release and may, therefore impair the immune system's ability to destroy atherosclerotic plaques, bacteria, viruses and cancer cells. Since an important amount of growth hormone is released during the first hour and a half of sleep, it is particularly important not to eat table sugar (sucrose) or foods containing large quantities of it within a few hours of bedtime²¹.

Short-term studies have now shown that substitution of fructose for sucrose in the diets of individuals with diabetes improves glycaemic control and does not appear to have substantial side effects^{22, 23}.

Studies are still needed to ascertain that long-term fructose consumption has a sustained beneficial effect in diabetes and is devoid of deleterious side effects.

Other researchers (Otto C et al.) "conclude that a patient with type II diabetes may benefit from replacing glucose and glucose-equivalent carbohydrates with fructose or xylitol"²⁴. The same conclusions were drawn by Koivisto et al.²⁵.

However, Henri et al.²⁶ sound a more cautionary note and report that fructose can cause insulin and triglyceride levels to rise dramatically, and hence be potentially harmful, in a subgroup of NIDDM subjects who have concomitant pronounced hypertriglyceridemia. They also warn that large doses of fructose should be avoided by subjects with gout because of the hyperuricaemia^{27, 28} which may result.

The question whether fructose could have a suppressant effect on subsequent food intake and therefore have a role in obesity was reviewed by Moyer et al.²⁹. They failed to come to a firm conclusion and recommended further research in this respect.

Strangely enough, the Diabetes Education and Assessment Programme of the Royal North Shore Hospital lumps fructose together with maltose, glucose, lactose and honey. "They have the same effect as sugar (sucrose) so keep to a minimum"³⁰.

This is in contrast to a more balanced stance taken by the American Diabetes Association Inc. In one study the authors found a

reduced glycemia in people with IDDM and NIDDM on a twenty per cent fructose diet, however at the expense of increased total LDL-cholesterol levels. In a second opinion it was stated that fructose can help lower blood glucose levels and may decrease the need for insulin or oral agent dosage and thus a decrease in insulin-induced atherogenesis. A report in 1968 said that laevulose (fructose) was converted to glycerol phosphate at a more rapid rate than dextrose (glucose) and that this indicated why fructose rather than glucose favoured the formation of glycerides³¹. But further careful studies of the lipid-altering effects of fructose are still considered to be necessary³². It is interesting that as far back as 1971, Roger Williams reported that the liver tissues of individuals with high blood-fat levels took up fructose five times as rapidly as individuals whose blood-fat levels were lower³³. What came first the chicken or the egg?

Lois Schmidt³⁴ compared the results of glucose tolerance tests of eight patients with non-insulin dependent diabetes mellitus (NIDDM) given variable amounts of glucose or fructose. There was little increase in plasma glucose from fructose until 50 g was administered. As with the plasma glucose response, the plasma insulin response to the maximum dose (50 g) of fructose was less than that of the 50 g dose of glucose. However, there was a comparatively large increase in insulin and C-peptide responses. Thus although fructose did not cause an increase in plasma glucose until the largest dose was given, insulin and C-peptide responses were very sensitive to fructose administration. Hormonal regulation of liver glucose production is different for glucose and fructose. It is difficult to come to any firm conclusion with the small number of subjects in Schmidt's study.

Mean per capita consumption of sugars in the United States is 95 g/day, of which 50 per cent is from fructose. The latter comes from high-fructose corn syrup, sucrose metabolism and fructose itself (as in fruits and honey).

On the whole, it seems that fructose supplementation - a practice advocated before insulin was discovered - elicits a lower glucose and insulin response in healthy individuals and in those with diabetes. Provided that reasonable amounts are used it does not appear to affect lipoprotein metabolism or result in gastrointestinal symptoms.

It is clear that more definitive research is required before a final recommendation can be made to diabetics as well as hypoglycemics. It is unlikely at this stage that fructose can replace oral hypoglycaemic agents, but studies thus far seem to suggest that in the majority of diabetic patients fructose supplementation could allow a reduction in the dosage. For those with unstable blood sugar levels as among hypoglycemics it would seem that fructose may offer more stable blood glucose levels and thereby avoid the debilitating wild fluctuations. This is supported by

Levin et al. who compared results of GTT's of fructose and glucose during exercise³⁵. Let us hope that medical or health practitioners will confirm the predictions suggested in these studies and shift "the flipping of the literature around" into the world of clinical application for the benefit of patients.

When it comes to health it is better to err on the side of caution and experiment only in consultation with your health practitioner. The snag is that as with most products in the natural health industry, the retail price of fructose is about ten times more expensive than sugar (or sucrose) and this may well leave us with little fructose to sweeten the pill of diabetes or hypoglycemia.³⁶

Footnotes

- 1) Crane E, (1980), **A book of honey**, Oxford University Press, page 168. An enzyme invertase, produced by the bees' hypopharyngeal glands 'inverts' the sucrose from plants into glucose + fructose. (page 48) Australian honey appears to have the greater fructose content, compared to European honey.
- 2) **Martindale, The extra pharmacopoeia**, 1972, p 81
- 3) Crane (1980), Glucose oxidase in honey inhibits bacterial growth, page 49. Gluconic acid gives honey a pH of 3.4 to 4 which makes it inhospitable to bacterial growth.
- 4) Crane, E., (1975) **Honey: A comprehensive survey**, Heinemann, London, pages 191-2. and **Encyclopaedia of food agriculture & nutrition**, McGraw Hill, 1977.
- 5) Terms such as glycemia, glycaemia, glyemic, glycolysis contain the Greek word "glykis"=sweet. They refer generally to blood sugar, or sugar. Glycolysis refers to the loosening (splitting) of sugar molecules.
- 6) Nevertheless honey in the form of 2 doses of 125 g honey can be used in conjunction with B6 injection 100mg, in the treatment of acute alcoholic poisoning. This leaves patient free from desire of further alcohol, **Martindale p 1970**
- 7) Fructose has a glycemic index of 20, compared to sugar 59, honey 87 and glucose 100, "The glycemic index isn't all it's cracked up to be" **Hypoglycemic Newsletter**, March 89, 9
- 8) Thornburne AW, Brand JC, A Stewart Truswell, (1986), The glycaemic index of foods, **Med J Australia**, May 26, 580-582
- 9) Smara, Dr George (1984), **The hypoglycemic connection**, MINT, Sydney, p 19
- 10) Hypertriglyceridaemia excess triglycerides in the blood: triglycerides are fatty acids formed in combination with glycerol. They form a normal part of the human diet, but when eaten in excess they may become a problem. Excess triglycerides along with cholesterol are deposited on the inside of the walls of arteries causing hardening (atherosclerosis). They may contribute to strokes and heart attacks in susceptible people.
- 11) Matti IJ, Uusitupa il, "Fructose in the

- diabetic diet". **Am J Clin Nutr** 1994 Mar; 59 (3 Suppl):753S-757S.
- 12) Gerrits PM & Tsalisian, E, "Diabetes and fructose metabolism", **Am J Clin Nutr** 1993 Nov;58 (5 Suppl): 796S-799S
 - 13) Stryer, L (1988), **Biochemistry**, WH Freeman & Co, NY page 356-357,
 - 14) Glycolysis is the breaking down of sugars (mostly 6 carbon molecules) into simpler substances (such as glyceraldehyde -> pyruvate, which are 3 carbon molecules) to provide energy in the body. Nearly all glycolytic enzymes require magnesium, Lehninger, AL (1982), **Principles of biochemistry**, Worth Pubs, NY, page 403
 - 15) Glycerine or glycerol is used by hypoglycemics to overcome sugar cravings during hypoglycemic dips. Glycerine is taken by mixing it with water or fruit juice. It provides energy whilst by-passing glucose, thereby avoiding an insulin reaction.
 - 16) This may be due to a deficiency of the enzyme fructokinase, a rare (4/50,000) autosomal recessive trait common among Jews. **Harrison's principles of internal medicine**, 1971, p 541, or due to absence of enzyme 1-phosphofructoaldolase. Patients with fructose intolerance should not take sorbitol as this is converted to fructose in the liver via the enzyme L-idoitol dehydrogenase.
 - 17) Martindale, **The extra pharmacopoeia**, 1972, p 68
 - 18) Sorbitol is not easily transported in or out of cells and thus accumulates intracellularly, drawing water in by osmosis. This may lead to cataracts, retinopathy (non-inflammatory disease of the retina) or neuropathy. Oral quercetin - which inhibits aldose reductase, an enzyme involved in the synthesis of sorbitol from glucose - given to diabetic rodents have resulted in reduced sorbitol accumulation in lens tissues. Werbach (1987), **Nutritional Influences on Illness**, 179.
 - 19) These sugar alcohols (called polyols) reach the small intestines unchanged and are absorbed into the blood stream and metabolized in the liver. They are not degraded in the mouth by saliva enzymes and therefore do not contribute to dental caries. Xylitol (relative sweetness 80-100) is considered to provide protection against dental caries. Other disaccharide polyols - Maltitol, Lactitol, Isomalt - are hydrolysed (split into) in the small intestines by alpha-amylase into 50% glucose and 50% sorbitol or mannitol.
 - 20) Growth hormone (GH) is a polypeptide hormone released by the anterior (frontal) lobe of the pituitary gland in the brain. GH plays a crucial role in growth and repair as well as stimulating the immune system. The GH peaks during sleep especially young people. Deficiency of GH is often found in small or older people and in obese people.
 - 21) Pearson, D & Shaw, S (1982), **Life extension: A practical scientific approach**, Warner Books, page 373. Theoretically, more stable blood glucose levels provided by fructose consumption may also settle insulin levels and thereby boost the beneficial effects of growth hormones during sleep.
 - 22) Gerrits PM & al. 1993
 - 23) However, studies show that fructose like sugar contributes to the development of dental caries.
 - 24) Otto C, Sonnichsen AC, Ritter MM, Richter WO, Schwandt P. "Influence of fiber, xylitol and fructose in enteral formulas on glucose and lipid metabolism in normal subjects", **Clin Investig** 1993 Apr; 71(4): 290-3
 - 25) Koivisto VA, Yki-Jarvinen HTI. Fructose and insulin sensitivity in patients with type 2 diabetes, **J Intern Med** 1993 Feb; 233(2): 145-53
 - 26) Henry RR, Crapo PA, Thorburn AW. Current issues in fructose metabolism. [Review], **Annu Rev Nutr** 1991;11: 21-39
 - 27) Hyperuricaemia - excessive uric acid in the blood. Uric acid is produced by the breakdown of certain foods - prawns, shellfish, liver, sardines, meat concentrates and game birds - and normally excreted via the kidneys. When kidneys fail to function properly excess levels build up in blood, causing crystal to form in the lining of joints. (Usually big toe causing excruciating pain) Prevalent among males (one in every 150 in Australia) between ages 30 to 50. Alcohol is said to be a contributor.
 - 28) **Lancet** 2:528, 1967
 - 29) Moyer, AE, Rodin, J, Fructose and behavior: does fructose influence food intake and macronutrient selection? (Health effects of Dietary Fructose), **AM J of Clin Nutr**, Nov 93, 810S(5)
 - 30) Diabetes Education and Assessment Programme, RNSH, **The traffic light guide to food**, p 64
 - 31) **Lancet** ii, 1968, 1178
 - 32) Sachson, R, Metabolic effects of dietary fructose in diabetic subjects, **Clinical Diabetes** March-April, 94, 44.
 - 33) Williams, RT (1971), **Nutrition against disease**, A Bantam Book, p 88
 - 34) Schmidt, L Metabolic response to fructose, **Clinical Diabetes**, Jan-Feb 94, 20
 - 35) Levine L, Evans WJ, Cadarette BS, Fisher EC, Bullen BA (1983), Fructose and glucose ingestion and muscle glycogen use during submaximal exercise, **J of Appl Physiology**, 55(6), 1767-1771
 - 36) It is now possible to obtain fructose from Oppenheimer Pty Ltd, (Wholesalers), 31 Hill Rd., Lidcombe Phone: 748-3111. Mr Steve Lucas of Soul Pattison Chemist, 211 Oxford St Bondi Junction (Phone: 389-3227) has agreed to supply members of the Association 2 kg lots of fructose @ \$7.00 per 2 kg. Please ring before ordering.

NATURAL MEDICINE: HOW TO HELP SURVIVE CANCER

by
Dr Joachim Fluhrer

Most people today, facing an illness and the medical profession, want to have greater knowledge and take responsibility for their own lives and their destiny.

Unfortunately, the incidence of cancer continues to rise and has taken over heart disease as the major cause of death in Australia. Early detection is at present the biggest single factor in improving long term survival. Prevention in the long run is the most logical and important tool in reducing the incidence of cancer mortality in this country. The treatment of diagnosed cancer is still focussed on therapies which try to eliminate or destroy the

tumour. These treatments are surgery, radiotherapy and chemotherapy.

Genetic engineering has received much attention recently and might promise possibilities. New and less toxic medications, often derived from natural sources are being trialled. Non toxic irradiation like Hyperthermia and are others are gaining respect. In addition to removing or treating the "cancer-tumour", treating the "cancer-disease" is most important. This is our focus here at the Sydney Natural Medical Centre and the Supportive Cancer Therapies. "Removing" (surgery) or "killing" (chemotherapy/radiotherapy) will not change the cause or causes, the promoting factors, the trigger factors, nor the healing and curing abilities.

The four steps in how to help to survive cancer are:

- 1) Nutritional program. Good healthy diet with lots of fresh fruit and vegetables, less animal products, fat and process food.
- 2) Antioxidant therapy. The major antioxidants like Vitamin A, C and E will help preventing cancer, support during chemotherapy and radiotherapy and will increase the chance of long term survival.
- 3) Immune Therapy. A healthy immune system is responsible for preventing cancer and its recurrence. A healthy diet, exercise, antioxidant and immune enhancing plants extracts, such as Echinacea, Phytolacca and many others all have a positive effect on the immune system.

- 4) Mental and emotional support and change. Meditation, support groups, music therapy, voice toning and keeping positive have demonstrated extraordinary healing abilities and are very important in the overall outcome in cancer disease.

The Sydney Natural Medical Centre is conducting weekly seminars informing patients about options in supportive cancer therapy, focussing on the four steps.

For further information, phone the Sydney Natural Medicine Centre on 977 7888, 15 South Steyne, MANLY 2095.

ARE CHEMICAL RESIDUES IN FOOD A WORRY?

*by CSIRO
Division of Human Nutrition
Author: Dr B Siebert
Contact: Dr Ivor Dreosti
(08) 303 8837*

The foods we eat, even unprocessed foods, contain an array of chemicals. Some, such as proteins, sugars and fats are organic human nutrients while others such as potassium, calcium and sodium are inorganic nutrients. Vitamins and trace elements are important micro nutrients. In addition plant and animal products contain various quantities of chemicals, some of which are naturally at various concentrations. Others have been introduced by man. Farming land is treated to increase the yield of crops or pastures, usually due to natural deficiency of elements in the soil. Such use of supplements or fertilizer does not necessarily increase the level of particular elements above that which occurs naturally under adequate conditions. Other treatments aim to increase yield by way of removal of exotic "invaders" in the form of insects, fungi or other plants which restrict production.

These treatments come under the general heading of "pesticides", all invaders being considered pests. More specifically such insecticides, fungicides and herbicides are used in addition to other chemicals in order to kill a wide range of organisms.

Because the active ingredients of some pesticides have been shown to have cancer

Continued from page 6 Nutritional values of Australian Foods

by Barbara Wright RN

also identified by their trade names for easy reference.

The effects of cooking are indicated for each food, thus illustrating any nutrient loss in the cooking process. Another book costing \$9.95 has been published called "Food for Health", which gives nutritional values of 650 foods.

These books can be bought at the Australian Government Bookshop, 32 York Street, Sydney (Phone: 299 6737 or fax:: 262-1219)

causing properties, and because some do not degrade in the natural environment or indeed in the human body, there is a fear by the general public of the risk to human health and, accordingly, a view that these compounds should not be used in agriculture. Another factor that has raised the profile of the residues of pesticides is the fact that analytical chemists are now able to detect minute amounts of these compounds in foods. Because of their toxic property some pesticides have now been withdrawn from sale and government regulations limit the quantity of residue permitted in farm produce. The number of times that these limits have been exceeded in recent years has been limited to less than 1%, and the consumption of pesticide residues in food is minimal.

Nevertheless, partly because of long term dietary exposure has not been examined closely and partly because of public concern, the CSIRO Division of Human Nutrition has studied the effects of a number of the most common pesticides used in South Australia. Four pesticides were fed for a period of three months to rodents (equivalent to five years in humans) at a level considered non-toxic in acute poisoning terms. Substances capable of causing cancer can show chromosomal damage in body cells but in the case of two insecticides and two fungicides frequently and intensively used in the production of garden vegetables, fruit and cereals, no chromosomal aberrations could be detected in three of the pesticides (which included an organo-chlorine insecticide, and an organo-phosphate insecticide and fungicide).

There was a slight tendency for chromosomal damage in the case of the carbamate-based fungicide. This general lack of effect of commonly used pesticides is not to say that some highly sensitive people might not show some reaction to pesticides in food.

For trade, ecological and general environmental health reasons, there are moves to

lessen the quantities of pesticides in food products. If used correctly it appears that residues of the pesticides that are in use are not likely to be a measurable cause of cancer in the Australian community.

Antioxidants & Cardiovascular Disease

*By CSIRO
Division of Human Nutrition
Contact: Dr Mavis Abbey
(08) 224 1844*

High levels of low density lipoproteins (LDL), the major cholesterol carrying particles in the blood increase the risk of developing cardiovascular disease. The risk is increased further if LDL are damaged in the body by oxygen free radicals. Oxidised LDL are taken up in the wall of the artery much more rapidly than undamaged LDL, where they accumulate leading to the development of atherosclerosis.

Dr Mavis Abbey, head of the Lipid Research Unit, is conducting research to investigate the factors which influence the extent of oxidation damage to LDL. A recent human study in which subjects consumed antioxidant vitamins tablets (vitamin E, vitamin C and beta-carotene) for three months showed that their LDL was protected from oxidative damage for a longer period than LDL from subjects who did not consume the antioxidant vitamins.

Another human study showed LDL from subjects consuming a poly-unsaturated fat-rich diet (eg. sunflower oil) oxidised faster LDL from subjects consuming a diet rich in mono-unsaturated fat (eg. olive oil).

There are a number of naturally occurring compounds in foods which have antioxidant properties (eg. vitamins and phenolic compounds).

Future antioxidant research in the Lipid Research Unit will be conducted in line with food and agricultural industry needs. Methods have been established which will enable foods or isolated compounds to be tested for their effects on LDL oxidation in vitro for clients in the food and agricultural industries.

Animal studies will allow the degree of atherosclerosis to be determined in relation to administration of the test compounds, and human dietary studies will enable the efficacy of the compounds to be evaluated in relation to protection of LDL.

1995 MEETING DATES

4th MARCH - 3rd JUNE - 2nd SEPTEMBER - 2nd DECEMBER