

The Hypoglycemic Health Association

NEWSLETTER

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PATRON: Mr Steve McNaughton's, BE

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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.

You probably have noticed some changes on this page. Mr Steve McNaughton has resigned because of his commitment to his company due to changes in the GST tax system. But he has remained as Patron so that his services are not entirely lost. See tribute to Mr McNaughton on page 2. Dr George Samra has been 'promoted' to the position of President and his daughter Nicole has taken over temporarily as Secretary. We are still looking for members who are willing to donate some of their free time to the works of the Committee.

Well it is the time of the year when we are anxiously awaiting the receipt of members annual fees. Please send in your fees with application forms on page 12. The financial position remains precarious because of ever increasing costs despite the work of all the volunteers. We discussed at the Committee the possible consequences from the introduction of the GST and we are not sure whether the GST applies to membership fees. If so, it would be advisable to send in the fees before the 1 June.

We are committed to inform the members, professional health care workers and the public of the latest news in regard to hypoglycemia, diabetes and other related diseases, with an emphasis on natural treatment in so far as this is possible. This is not an "alternative" but rather complementary to more traditional medicine. We hope to minimize the use of drugs in medical treatments and make members and professionals aware of different choices in clinical nutrition and other modalities.

Our Next Public Meeting will be at 2.00 PM
on Saturday, the 3 June,
2000

at **YWCA**

5-11 Wentworth Ave, SYDNEY

and our guest speaker is

Graham Price B.Sc(Hons)

who will be speaking

on the subject of

“Coeliac Disease”

Graham Price graduated from the University of NSW in 1968 with honours degree in Industrial Chemistry. His first job (1969-1971) was a Works Chemist at Crown Crystal Glass, Waterloo. From 1971-1973 he was Senior Chemist at Reckitt & Colman responsible for raw material quality control for all products manufactured at the factory. From 1973 to the present Graham worked in a family business.

Graham became involved with the Coeliac Society in 1992 through his marriage to the Secretary of the NSW Society - Cheryl Price.

He currently holds the position of Technical Officer for the Coeliac Society of Australia. He gives advice to members, manufacturers, food processors on ingredients, labelling etc. Graham is a member of the external team examining gluten issues for the Australian & New Zealand Food Authority and is a member of the Therapeutic Goods Administration sub-committee on labelling issues.

Previous Copies of the Hypoglycemic Newsletter

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

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

Books for sale at the meeting

Jurriaan Plesman: **GETTING OFF THE HOOK**

This book is also available in most public 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.

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

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.

Once again the Association has to thank **Mrs Elaine Campbell** for her generosity in donating a priceless handmade cushion for our raffle at the next meeting on 3 June 2000.

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 Gympie area. Please call Ms Bousfield at **9525-9178**

STEVIA IS AVAILABLE at Dr George Samra's surgery, 19 Princess Highway, KOGARAH, Ph: 9553-0084. The supplier of Stevia, **RosHolden** ,

can be contacted directly by ringing 9546-3638. She will post STEVIA to your home by arrangement.

PRESIDENT RETIRES

Due to business commitments including preparing for the new tax system the Committee has reluctantly accepted **Mr Steve McNaughton's, BE** resignation.

The Committee wishes to express our gratitude to Steve for the wonderful job he has done over the past 9 years as president, for his tireless efforts in promoting our cause with the community and the media, as well as with the government agencies and officials. He has helped to make this organisation the respected body it is now. He has given tirelessly his time and energy for the Hypoglycemic Health Association. We will try hard to cope without Steve at the helm. Lots of thanks and best wishes from us all.

Please note that the Editor Jurriaan Plesman can now be reached on the internet. His e-mail address is: jurplesman@hotmail.com and fax No: 02 9130 6247 Our Secretary and sub-editor Ms Nicole Samra can be reached by email at allergy2@tpgi.com.au

SUCCESS at last!

by Myrna E. Oaklands
Cardiff NSW
April 2000

Health books/magazines-vitamins-minerals-herbalsupplementsNaturopaths-Doctors-bloodtests (always normal)-allergytests-chronicfatigue-black-outs-depression. Does that sound familiar?

Well, don't go away, because I have GOOD NEWS for you!

Thirty-two years ago, while living in South America, I was diagnosed with hypoglycemia during the pregnancy of my second child. Little did I know then what that meant, however for the next 30 years I tried many different things and combinations to bring relief from what had become a nightmare to me and my family.

I learned to eat a diet with very low sugar

and I was VERY strict, but didn't understand the part that carbohydrates played in my diet. Upon returning to Australia, I found a great lack of understanding about the problem of hypoglycemia and in fact a denial by many medical practitioners. It was so frustrating to be told that the glucose tolerance tests showed a normal result when I knew differently but didn't know the reason or the solution.

In March of 1999 I began to make some changes in my diet with the help of a naturopath. Firstly, I cut out wheat and dairy products and this brought some remarkable changes. I aimed to get my cholesterol down and get off the anti-depressant medication that I had been taking for about 2 years. By October of last year I was successful in getting

off the medication and my cholesterol was coming down with the help of diet and garlic tablets. My weight also came down.

After listening to a lecture by Dr. George Samra, I had several consultations with him and adopted a new eating pattern. So now I have a low fat protein breakfast, salad vegetables for lunch with some form of protein, cooked vegetables or cereal and nuts for tea.

Fruit should be restricted to two pieces per day, never more than one at any time and always with some other food, preferably protein. Dr. Samra suggests eating 6 small meals, stressing the importance of eating every 2-2.1/2 hours.

Keeping a food diary also helped identify problem foods. I have benefited from cutting down on the amount of carbohydrate I eat at any meal and try not to eat some carbohydrates (e.g. potatoes, corn pasta) two days consecutively. It has been a challenge but the benefits far outweigh any disadvantages. My health has improved and I have good control now, thanks to the remarkable program outlined by Dr. Samra.

HOW TO PREVENT DIABETES

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

I wonder how many people here know much about Insulin. When it was discovered, for example? [Audience member During the war?] 1921, I'm sure there was a war somewhere at that stage [laughter]. But, what I'm trying to say there is that with Pancreas, with Diabetes, with Hypoglycemia, these are all modern diseases. There was virtually nothing known about them a hundred years ago. If you went to a doctor before a hundred years ago, does anyone know how you would have been diagnosed with having Diabetes? [Audience: Testing the urine for sugar] Yes, the doctor would do the taste-test for sugar in the back room.

That was the diagnostic test, but he'd also notice a nail varnish, acetone sort of breath smell. And he'd go to the back room and do the taste test then give you the bad news. Or he'd suspect it from two of the most common symptoms, Polyuria (which means urinating too much) or Polydipsia (which means drinking too much). So were stunned how the Medical Profession can ignore Hypoglycemia as a disease entity, and a part of that is the bad name. Maybe it should be called Dysglycemia, Reactive Hypoglycemia, or Reactive Dysglycemia or other names.

But even Diabetes has a very new history. Insulin being discovered in 1921 was the first hormone to actually be fully described in all its amino acid sequence. So it is a unique situation for people to have to inject themselves a few times a day with a product that keeps them alive.

Today's topic is Preventing Diabetes, or possibly how Hypoglycemics can prevent Diabetes.

I'd like to read to you from the Homepage of the Diabetes Australia Association. It says, Report on Diabetes in Australia.

In 1990, approximately 350,000 Australians had diagnosed Diabetes and an estimated 300,000 had undiagnosed Diabetes, together representing 3.8% of the total population. The figures for Reactive Hypoglycemia are approximately the same nearly 4% of the population.

Diabetes is likely to affect 900,000 Australians by 2000 and 1.15 million Australians by 2010. Australian Aborigines suffer the 4th highest rates of NIDDM in the world. You'll understand that there are two types of Diabetes, we'll get into that classification more later, but there is the Juvenile type where they

need Insulin, and the Mature type where they need tablets and or diet to control it.

Insulin-dependent Diabetic ranks as one of the most common serious childhood diseases in Australia, and is likely to have a higher incidence in children under 20 years of age than cancer, cystic fibrosis, multiple sclerosis, juvenile rheumatoid arthritis and muscular dystrophy.

Australia has very high rates of Insulin dependent and also Mature Onset Diabetes Mellitus. Females with IDDM have ten times the rates of cardiovascular mortality (that is, dying from heart attacks and strokes) compared with non-diabetic females. That's a pretty good reason to try to avoid getting Diabetes.

The incidence of gestational Diabetes is increasing, particularly in ethnic populations. Risk factors for Diabetes such as obesity and physical inactivity are increasing in Australia. Australians with Diabetes experience a reduced life-span and higher rates of eye, heart and renal disease and stroke compared to non-diabetic Australians. The total cost of Diabetes exceeds \$1 billion annually (or almost \$3,000 for every diagnosed case).

One of the handouts is titled Complications of Diabetes (**Figure 1**), and certainly with the damage to the eyes, the heart and the circulation, the risk of losing fingers and toes, urinary problems and impotence. Certainly, it is worth trying to prevent this disease.

Presentation.

The main symptoms of Diabetes are Polyuria (which is urinating too much), Polydipsia (which is drinking too much). With kids, the mother might say their child is drinking a lot more than before, they are always thirsty and never satisfied, we perform a urine test and blood test to get the answer.

Weight Loss, Urinary Tract Infections and Vaginal Candidiasis are typical diagnostic symptoms. Why you get more urinary tract infections? Sugar is a good feed for the germs to grow on.

Glucosuria and Hyperglycemia are incidental findings at clinic. If a doctor sees you and gives you a urine test or blood test, he might see a high sugar level on a blood test, or sugar in the urine, and that is a pretty good reason to investigate further.

Juvenile Diabetics frequently present in a coma. Often they have not been diagnosed, there weren't any clues, so they are in a coma by the time they are picked. It is worth

noting that the Pancreas has digestive functions as well. It's good to look for Amylase and Lipase levels and conduct digestive tests on patients, because often they need some support too.

With blood sugars, the diagnostic levels, obtained from the National Diabetes Data Group are 140mg per 100mL (7.0mm/L) for a fasting reading. Or two hours after a sugar load or meal getting a reading over 11.0 mm/L. People having random blood sugars over eleven mm/L are certainly likely to have Diabetes.

As I mentioned earlier, there are two types of Diabetes Mellitus. There is the Insulin-Dependent type that we described as Juvenile, and the non-Insulin dependent type, or Mature-onset type.

With the **Insulin-Dependent type**, it most often presents in people under the age of thirty, there is no associated obesity. They represent only 1/8 of Diabetics, and the onset is characteristically abrupt. Insulin-Dependent Diabetics are prone to Keto Acidosis, their bodies burn up different fuels other than glucose in order to feed the brain such as ketone bodies from fat because the body sugars just aren't arriving into the tissues where they are required.

Islet-Cell Antibodies are present in over 80%. What this is telling us is that Juvenile Diabetes is really an Auto-Immune disease. Beta-cell destruction involves cell mediated immune mechanisms. The site of Insulin production in the pancreas is called Islets of Langerhans, and contains Beta-cells.

The total number of Beta-cells decreases because they are destroyed by auto-antibodies, which means that their own antibodies are fighting the Juvenile Diabetics own Insulin-making cells.

Polygenetic factor susceptibility involves a HLA-D phenotype on Chromosome 6 as a predisposing factor to Juvenile Diabetes. The environmental factors are stronger than the inherited factors of Juvenile Diabetes. So much so that with identical twins, less than half of them will both have Juvenile Diabetes. The medical explanation for this is that there is probably a virus that has affected one of the twins, and that virus has triggered off Beta cell destruction in the pancreas of that twin. It is widely acknowledged now that the Roto-virus is a likely culprit.

With the **Non-Insulin Dependent Diabetes**
Continued Page 5

Figure 1

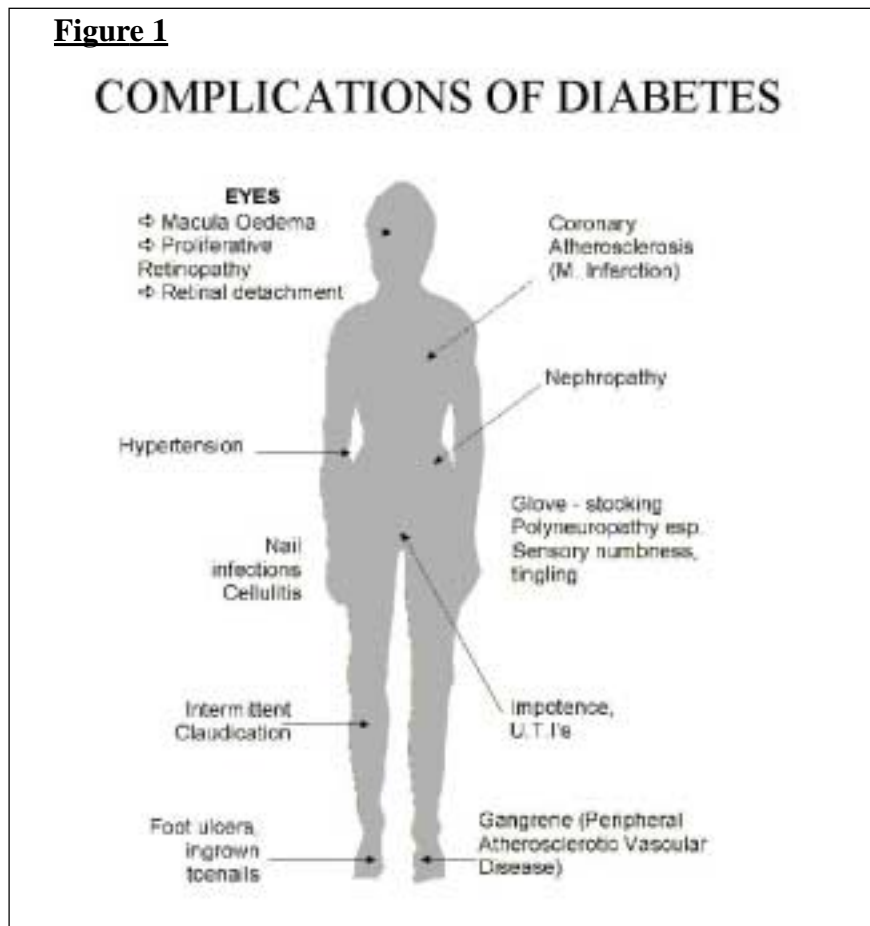
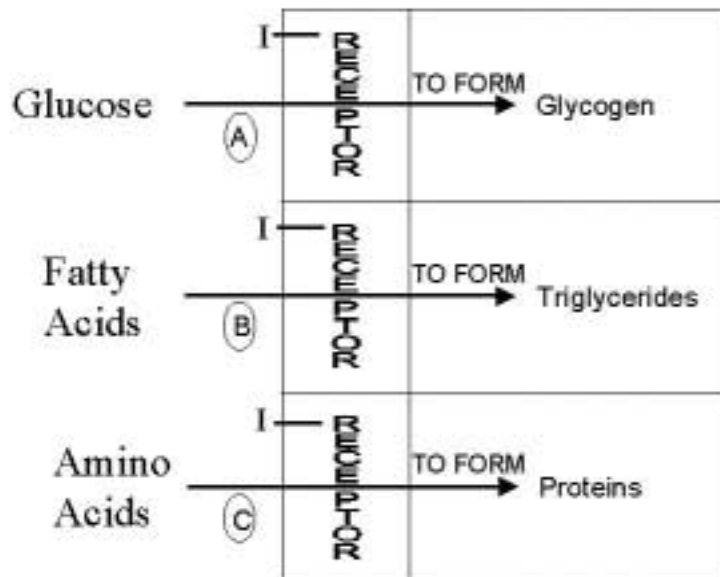


Figure 2

Insulin Facilitates Transport Across Membranes



Note:
Insulin secretion is most responsive to rising levels of Glucose.

Insulin binds to a receptor on the cell membrane allowing the entry of glucose into the cells to form glycogen, fatty acids to form triglycerides and amino acids to form protein. Insulin is an ANABOLIC hormone. At the same time it inhibits CATABOLIC processes.

INSULIN RESISTANCE

Figure 3

If there is disturbance when Insulin binds to the receptors there will be reduced Insulin activity. This condition is known as Insulin Resistance. When less glucose enters cells the blood glucose levels rise, and the pancreas responds by producing more Insulin, causing Hyperinsulinaemia.

Insulin Resistance has been estimated to occur in 25 % of adults in USA, and 1/6 of these people develop Maturity Onset Diabetes.

CONDITIONS ASSOCIATED WITH INSULIN RESISTANCE

1. Obesity
2. Maturity Onset Diabetes
3. Hypertension
4. Dyslipidaemia
5. Cardiovascular disease
6. Syndrome X Hypertension, Dyslipidaemia, Insulin Resistance
7. Others such as Recurrent Renal Calculi, Hyperandrogenism, and NASH (Non Alcoholic Steatohepatitis)

INSULIN RESISTANCE AND MATURITY ONSET DIABETES

The pancreas will produce far more insulin than normal if a person:

- Σ Has Functional Reactive Hypoglycemia;
- Σ Consumes excessive amounts of Carbohydrate foods, in particular high Glycemic Index (GI), or
- Σ Over-eats.

In the case of hypoglycemia, the pancreatic beta cells fail to produce sufficient Insulin in response to a sugar load, and Insulin Resistance may also result.

This added strain from prolonged pancreas dysfunction could ultimately cause pancreatic failure to occur, resulting in diabetes.

INSULIN RESISTANCE AND HYPERTENSION

Excess Insulin may increase Blood Pressure by:

- Σ Enhancing Sodium Retention.
- Σ Modifying Sodium and Calcium transport across membranes
- Σ Stimulating the Sympathetic Nervous System

tes Mellitus (NIDM), this is the sort that Reactive Hypoglycemics should be really wary of. It commonly presents in older patients, people over thirty years of age. NIDM is associated with obesity, and there is a gradual onset as opposed to the Juvenile type that presents very abruptly. The normal B-cell mass appears to be preserved. In other words, even though the pancreas is failing, when the pancreas is examined the B-cell mass and Islets are still in tact and there is no loss of mass. By contrast, if you examine the pancreas of a Juvenile Diabetic, their Islets and Beta-cell mass will be diminished.

NIDM patients have a delayed and decreased relative intake of Insulin, we call this condition Insulin Resistance. This is really a decreased effectiveness in restraining liver glucose uptake and muscular glucose uptake. We'll be talking a lot more about Insulin Resistance, and really one whole page of the two page handout is about Insulin Resistance.

NIDM don't always need to be on drugs. Following a strict diet without sugar also helps, certainly eating like a hypoglycemic makes a very big difference to the NIDM, often controlling their disease without medication. Weight loss is useful, and careful drug management is required.

Complications of Diabetes happen for two reasons. Firstly, the person has had Diabetes for a long time. The second, and more important reason, is that some Diabetics don't carefully manage their disease. They are a bit casual about their intake of sugars, and they don't really pay attention to things that happen to their body that needs more urgent attention. For example, Diabetics should really have an eye examination every two years to ensure everything is going well, and detect and treat eye problems early.

Eyes conditions such as Macula Oedema, Proliferative Retinopathy, Retinal detachment are much more pronounced in Diabetes, and all of these conditions can lead to blindness if Diabetes is not carefully controlled. Proliferative Retinopathy is a hallmark, it is the way specialists can often diagnose Diabetes when they are looking at the back of your eyeball. The arteries actually proliferate and grow over veins, and start blocking some of the seeing nerves of the eye in the retina. There are a few theories of why this happens. You'll hear of Diabetics having laser treatment to their retina, in an attempt to stop the arteries multiplying. The retina is the skin in the back of the eyeball that contains all of the nerve endings. People can go blind if these nerves are blocked or damaged.

There is a four times greater chance of Diabetics developing Coronary Atherosclerosis and Myocardial Infarction. Further, Diabetes complications include Nephropathy (kidney disease), Hypertension, Nail infections and Cellulitis. There is Polyneuropathy and Peripheral Neuropathy, Diabetics lose sensation in their finger tips and hands in different ways. The typical polyneuropathy in Diabetes

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PREVENTING TYPE 1 (Juvenile) DIABETES

1. Promote Maternal health during pregnancy.

Expecting mothers should:

- Avoid smoking, drinking alcohol, or taking drugs
- Eat a sensible low-sugar diet
- Avoid contracting serious Viral or Bacterial Infections

2. Promote Strong Immune System for the Child

- a) Take daily supplements until 25:
Vitamin C (1000mg 4000mg).
Zinc (10mg to 40mg).
- b) Be vaccinated against Rota-Virus if / when available against or avoid contracting Hep A, B, C, EBV, Rota Viruses.
- c) Follow a Low Immune diet:
Consume no Dairy foods.
Avoid eating beef and veal.
- d) Drink minimal alcohol, No smoking.
- e) Follow a low-sugar diet.

3. Promote Pancreas Protection Behaviour

Preventing pancreas damage by:

- Low alcohol consumption
- Vaccinate (if / when available) against or avoid contracting Hep A, B, C, EBV, Rota Viruses
- Avoiding sugar
- Supplementing diet with Vitamin C, Zinc, Chromium, Selenium and Vitamin E.

PREVENTING TYPE 2 DIABETES

1. Avoid:

- Obesity. If overweight, lose weight. Avoid over eating
- Sugar, honey, glucose Do use substitutes. Eat low GI foods.
- Excess cholesterol foods
- Excess stress, hypertension
- Smoking

2. Limit Red Meat and Alcohol consumption.

3. Exercise 30 minutes per day, 5 days per week. Walking is satisfactory.

4. Take supplements Zinc, Chromium, Selenium, Magnesium, Manganese, Multimineral, Vitamin C, Vitamin E, Multivitamin B Vitamins.

is the glove and stocking type, where you lose feeling below a certain level, and you get pins and needles, tingling and numbness. You lose sensation in your feet. A lot of Diabetics have problems with their feet because they can tread on things without realising and get ulcers and infections in their feet. For this reason Diabetics should see a podiatrist three or four times a year. Diabetics with no feeling in the tips of their fingers struggle to do buttons up.

Impotence and urinary tract infections are also associated with Diabetes. I mentioned earlier why urinary tract infections occur. If Diabetes is poorly controlled, the arteries get bands of narrowing and pain results. Intermittent . means pain in the calf muscles and other muscles that are being used. This occurs because of blocked arterial blood (and oxygen) supplies to the muscles. When a Diabetic is careless about their disease management, it can lead to more serious and unpleasant conditions like ingrown toenail, or losing toes and feet to gangrene.

If you look at the diagram with the title Insulin Facilitates Transport Across Membranes (**Figure 2**), it shows the action of Insulin. The capital I at level A B and C is Insulin acting at the receptor site, helping glucose to enter the cell and to form Glycogen (which is like a long chain of glucose molecules stuck together). This happens in muscle and also the liver. But what people often forget, and even many doctors seem to forget is that Insulin has functions other than just sugar metabolism. Insulin facilitates transport of most nutrients across membranes, such as fats and proteins. Insulin pushes fatty acids across the membrane to form Triglycerides, and pushes amino acids from the blood to form protein. Insulin makes sugars more complex, it makes the fatty acids have longer chains and become more complex, and Insulin also converts amino acids into proteins.

Insulin is probably the major anabolic *building* hormone of the body, much more than Growth Hormone or Androgens that some athletes cheat with. Insulin is most responsive to rising levels of glucose, so even though it does all of these things like pushing fats and amino acids into the body cells, Insulin responds to the sugar levels. If the sugar levels are high, the mechanism is triggered and Insulin pushes sugar into the body cells, and also pushes fats and proteins into the body cells. Insulin inhibits Catabolic processes, and actually has the opposite reaction, stopping the breakdown of glycogen, triglycerides and proteins. So it really is a building-block hormone.

This all becomes important when we consider **Insulin Resistance. (Figure 3)**

If there is disturbance when Insulin binds to the receptors there will be reduced Insulin activity. This condition is known as Insulin Resistance. There is a reduced glucose entry into cells, blood glucose rises and the pancreas responds by producing more Insulin. So if

things go wrong at the site on the receptor where Insulin is supposed to help sugar go *into* the blood, we need to know why.

Eating too much sugar might cause problems at the receptor site and your body might not cope; or possibly the essential minerals aren't present in sufficient quantities. The body starts pumping more and more Insulin from the pancreas trying to get the sugar into the body cells. This is called Hyperinsulinaemia when one has excess Insulin.

Insulin Resistance has been estimated to occur in 25 percent of adults in USA, and 1/6 of these people develop Maturity Onset Diabetes. Insulin Resistance is a concept that is very real lately, and there are some clues as to who has it. So it is possible to actually measure Insulin levels and random Insulin levels when measuring sugar levels, and identify people that have got Insulin Resistance and high Insulin levels in their blood even if their blood sugars appear to be under control.

Obesity is a typical condition in people with Insulin Resistance. Maturity Onset Diabetes are really people that have Insulin Resistance that has gone out of control and their pancreas does not cope. High blood pressure is associated with Insulin Resistance. People with Dyslipidaemia, have high Triglycerides, high cholesterol, high LDL and low HDL.

Extra Insulin is being pumped out, this might be caused by taking too much sugar on board, or the sugar just isn't sending the message to enter the cells, or for some reason the receptor isn't receiving that message. Even though the Glucose arm is weak in the ABC diagram, B and C arms are fine so your body proceeds to make a lot more triglycerides, it also makes more fat and protein. People with Insulin Resistance have increased muscle mass, but they also have increased complex fats on board, so their Triglycerides and LDL all go above normal levels. If you have a lot more fat on board, your chances of getting cardiovascular disease (arterial disease) is much higher too.

And now onto the syndrome X that everybody is talking about. Most doctors talk about Syndrome X when they see a fat person with high blood pressure, they say "You might have Syndrome X". The doctor checks the patients cholesterol, triglycerides, and Insulin levels and if they are all above normal levels, the patient is told he has Syndrome X.

These things all tie up. We're not just talking about a disease with high blood sugar and people needing Insulin. We're talking about a disease which makes your body go into an anabolic (or building block) mode, to build up more complex fats which are blocking peoples arteries, making them more overweight and storing more fat in their body cells. So its a vicious cycle, that if you don't watch Insulin Resistance and you don't avoid HyperInsulinaemia, then bad things are going to happen, not just Diabetes. You get high cholesterol, the arteries go hard with the high cholesterol which leads to Atherosclerosis

and heart disease, then high blood pressure, and peripheral arterial disease.

There are some other conditions associated with Insulin Resistance which include, Renal Calculi (kidney stones), Hyperandrogenism (over masculinization) and Non Alcoholic Steatohepatitis (a type of liver disease). Those mechanism have predictable patterns like Syndrome X when you understand how Insulin Resistance works, with not just glucose, but other body fuels like fatty acids and amino acids.

Within Insulin Resistance and Mature Onset Diabetes, Functional Reactive Hypoglycemia is considered to be a predisposing condition. Reactive Hypoglycemia is low blood sugar as a reaction to eating sugar in the first place. It's a pancreatic problem where the pancreas produces too much Insulin at the wrong time. And it is a condition of hyperinsulinism; the pancreas makes too much Insulin. When the blood sugar crashes Hypoglycemics feel symptoms because the brain relies on blood sugar levels. One can get tired in the head, moody, and depressed. So the symptoms of hypoglycemia are really related to the fact that the brain isn't getting fuel.

Getting back to Diabetes, excessive consumption of carbohydrate foods (in particular high Glycemic Index foods) is a predisposing factor. Eating sugar, honey and glucose, or things that are regarded as being sugary by nature of the way they affect your blood sugars (the Glycemic Index) will trigger too much Insulin. If your Insulin levels continue to be high, at some time Insulin Resistance can develop and the whole syndrome affecting the heart, vascular system, cholesterol and blood pressure all take over.

Over eating is another predisposing factor, so pay attention how much you take in. The pancreas is producing more Insulin than normal in the above situation, and Insulin Resistance may lead to failure of the pancreatic Beta-cells to produce sufficient Insulin in response to a sugar load, and hypoglycemia results. When and if pancreatic failure occurs, Diabetes occurs. So when you have Insulin Resistance, eventually the pancreas is just pumping out so much Insulin it gives up trying and the blood sugar levels rise. But long before Diabetes occurs there is an attempt by the pancreas to make more Insulin to overcome the resistance of Insulin at the binding site.

Preventing Type One Juvenile Diabetes.

Understanding that this is a kids disease and occurs in people under the age of thirty, it is important to encourage maternal health during pregnancy. The mother should avoid smoking because it affects the vascular system, although it doesn't really have any direct effects on Diabetes. The mother should also avoid drinking alcohol and taking drugs. She should follow a low sugar diet during pregnancy, and if possible avoid people with viral

and bacterial infections because this might be the Roto-Virus that triggers Diabetes in the baby. If the mother is unhealthy during pregnancy and doing all the wrong things, that might well be a predisposing factor.

It is also important to promote a strong immune system for the child. Understanding that identical twins have less than a fifty - percent chance of them both having Juvenile Diabetes, there is a notion that you'd want to be the twin who didn't get it. There must be factors that help prevent developing Diabetes, for example the child without Diabetes might have a better immune system with more Vitamin C in their diet. The Vitamin C helps promote white cell competence, the lymphocytes work better because they can kill off viruses and bacteria better. With a family history of Diabetes, and you want to minimize the chances of your children developing Diabetes you have to do these things to strengthen the child's immune system.

Diabetes is becoming more common; Zinc is an important dietary mineral, between ten to forty milligrams is needed. Perhaps the children could have liquid zinc formulations as well.

Have children vaccinated against Roto-virus if and when available. The good news is that it will be available one day, but that vaccine doesn't exist yet. A low immune diet will also improve the child's chance of not developing Diabetes. The child should consume no dairy products for the first two years of his or her life. Cow protein seems to be a major factor in weak immune systems in adults, so the child should only eat small amounts of beef or veal.

As the children get older, their immune systems will be stronger if they don't take up smoking or drink a lot of alcohol, because alcohol can damage the pancreas. A low sugar diet is preferable too.

Sugar is not part of a natural human diet. We are getting so much of our food out of tins, packets and jars. If we lived on a farm, and could only eat our own animals and vegetables that would be closer to a natural human diet. You can imagine what a caveman might eat, or an Aboriginal might eat before European settlement. Certainly the diet for Aborigines has changed a lot since then, and they are now getting Diabetes at a ridiculous rate - the incidence is four times greater than their white counterpart.

Hepatitis A ad B vaccinations exist and should be given. All of these viruses listed damage the liver, but they can also hurt the pancreas. Particularly the Rota Virus is regarded as the one that triggers the auto-immune breakdown, but I wouldn't be surprised if the E-B Virus does too and immunization should be sought for a high risk child. Avoiding sugar is also away of promoting good behaviour to protect the pancreas from overwork.

Juvenile Diabetes is an immune Diabetes, so supplements are often needed. Chromium

and Zinc are very important as receptor site protectors. Selenium is the most important water soluble Anti - oxidant, it is the core of Glutathione and Glutathione reductase, which are the most potent anti oxidant enzymes in your body. They prevent damage on the inside of one's body tissue from things like Peroxide, ozone and oxygen free radicals, and neutralize the free radicals into water and oxygen.

Vitamin E is a very important supplement too, it is the most important fat-soluble Anti - oxidant. A large part of the body is adipose or fatty tissue. One needs anti oxidants that penetrate into fat-soluble components of the body.

Preventing Type 2 Diabetes.

Avoid obesity, If overweight, lose weight. Avoid over eating. If you can lose weight its good. If you are overweight and you don't over eat you are protecting yourself too. It's the excess sugar coming in that really triggers Syndrome X. A fat child can become a fat adult without necessarily going into a sick state where they are going to be at high diabetic and hypertensive risk. Avoid sugar, honey and glucose, and use substitutes if you have a sweet tooth. Eat low glycemic foods that cause blood sugars to rise slowly.

Avoid high cholesterol foods. There is a whole chain of events that Diabetes and Diabetic Complications lead to. Its no good just avoiding sugar and eating lots of bacon and eggs, and greasy food, you have to really have a health mentality when you eat. You should use low-cholesterol substitutes when available. Trim the fat off meat where you can. Remove egg yolk. Fish is very low in cholesterol, as are vegetables.

Avoid excess stress, hypertension and high blood pressure.

However, it's easier said than done. Humans are funny creatures and a lot of us are to blame for our own stress load, although most of us don't have enough clarity of mind to recognise it. A fellow turned a hundred in Adelaide last week. He was on his way to Bowls, and he was driving himself, and the journalist was in his way. The journalist asked the man what his secret to longevity was, and I suppose this man would give the best advice. The man replied that he used to worry all the time, and when he turned forty he decided not to worry anymore. He stopped worrying and never worried since.

Avoid smoking.

Smoking might not trigger Diabetes, but certainly all the bad things that Diabetes does smoking makes worse. Including all the vascular repercussions to do with vision, and peripheral circulation and to do with heart attacks.

Exercise.

Exercise thirty minutes a day five days a week. Walking is sufficient, but you should try to be in a pattern of doing something

COMPARISON OF DISEASES

	<u>DIABETES</u>	<u>HYPOGL</u>	<u>ASTMA</u>
Pancreas Pathology involved	yes	yes	no
Pancreas produces wrong amount of insulin	yes	yes	no
Sugar avoidance is important	yes	yes	no
Strong food intolerance patterns	yes	yes	yes
Auto-immune mechanisms often involved	yes	no	yes
Increased incidence of heart disease	yes	no	slightly
Increased incidence of blindness	yes	no	yes

healthy for your body. You are only given one body in your lifetime. If you abuse it and you don't feed it properly, the machine goes rusty. That rust converts to disease in time.

Supplements.

As in the case with Juvenile Diabetes, Type 2 Diabetics should take Zinc supplements. Zinc is important for Hypoglycemia, but it's also important for preventing Diabetes. Chromium is also good. You need to be on at least 30 mg of elemental Zinc a day, Legally you are only allowed to have 25 mg of Selenium in formulations, unless they are dispensed by a doctor, or a doctors prescription. Whereas, one drop of the Nutricare Sodium Selenite solution contains 25mg. To replace your daily requirement you need 50mg. But to prevent Diabetes you probably need 150mg, especially if you are a real candidate for Type 2 Diabetes.

Manganese or Magnesium tablets are also useful.

They are required at our receptor sites for Insulin. Multivitamins are useful because as you get older, your body could be failing to absorb certain minerals.

Vitamin C is an important vitamin for preventing Mature Onset Diabetes and for Hypoglycemics. It is involved in the glycolytic pathway.

A recent extract describes Vitamin E as a preventative in high doses for Diabetes. Dia-

betic benefited most in their eyes after taking Vitamin E. Retinal flow was increased from 17% below normal levels to similar to non-diabetic levels, although no change in levels of hemoglobin or sugar levels. The high intake of Vitamin E hadn't improved their blood sugar control, but it had managed to protect their retina from damage, and their kidneys from Nephropathy. There were no major adverse effects of taking high levels of Vitamin E, although there were trends towards high cholesterol levels. The beneficial effects of Vitamin E were probably due to the Anti - oxidant effects and vascular endothelium. Vitamin E was thought to prevent vasoconstriction by acting on pathways mediated by nitric acid and diglycerol alprotein kinase. Certainly, in my opinion Vitamin E is a part of Diabetes prevention. If you know of anyone with Diabetes and very bad eyesight, they should be taking at least 1800 units per day, and this might save their vision if you can convince them.

Another extract involved Karlsburg Type One Diabetes risk study of the general Population frequencies and interpretations of the four major Type One Diabetes -associated Auto - Antibodies studied in 9419 school children. If you recall we discussed Type One Diabetes being an Auto-Immune disease, rather than just a progression disease where your pancreas fails. The immune system goes wrong and this leads to a fast onset. The Karlsburg Type I (Insulin-dependent) risk study on school children aims to evaluate the

predictive diagnostic value of Diabetes-associated Auto Antibodies in the general population. School children aged 6-17 years participated in the study. From the results it was recommended that in children older than 5 years the combined anti-GAD/IA2 test with cut-off at or greater than the 98th percentile should be used for primary screening followed by testing for IAA (which is an auto-antibody) and ICA. Subjects at risk for Diabetes have two or more Auto Antibodies at or greater than the 98th percentile. Subjects at risk for rapid progression to Type I Diabetes have two or more Auto Antibodies at or greater than the 99.8th percentile. So they did Auto Antibody tests on ten thousand children and researchers were able to predict who was going to get Diabetes.

In conclusion, one is not really trying to prevent Diabetes, but is actually looking to prevent diabetic complications such as blindness and amputation of limbs. It is important to stop smoking, limit alcohol intake, follow a low-sugar diet, avoid the Rotovirus, eat sensibly and avoid allergy foods such as dairy, take Selenium and Vitamin E as you get older. Reactive Hypoglycemics should be taking Vitamin C, Zinc, Manganese, Magnesium and Chromium, but particularly Chromium and Zinc.

REFERENCE LIST

From the Internet at
<http://www.mediconsult.com>
 Diabetes Care 1999; 22:1245-53
 Diabetologica 1999 June;42(6):661-70

Carbohydrates, Hypoglycemia and Obesity

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

Carbohydrates are the major source of energy and play an important part in hypoglycemia.

Carbohydrates can be divided into simple carbohydrates (sugars) and complex carbohydrates (starches). Most of these are found in grains and vegetables together with the vitamin and minerals necessary to metabolize them in the body into their end-product glucose.

Simple carbohydrates are found in cakes, chocolates, sweets, sweet drinks, sweetened cereals and table sugar. These are called simple carbohydrate that provide energy but no nutrients. It is thought that the consumption of excessive amounts of simple carbohydrates over a long period of time is mainly responsible for the development of hypoglycemia and late adult onset diabetes.

Before the body can use these carbohydrates as a source of energy they need to be broken down in the intestine to glucose, fructose and galactose. Fructose is known as fruit sugar and galactose is milk sugar being a component of milk.

Table sugar consists of molecules of glucose and fructose, therefore it is called a disaccharide. It is broken down in the digestive system immediately to glucose. The blood carries glucose to the various parts of the body where cells uses it for energy.

The fructose portion must first be converted to glucose in the liver. Excess glucose is stored in the muscle and liver tissues in the form of glycogen which may be thought of a string of beads of glucose. Other names for glycogen are animal starch, heparin and tissue dextrin. In an adult there may be about 250 grams of glycogen in the muscles and 100 gram in the liver in the fed state. Excess glycogen is stored as fat and this is one reason to claim that the consumption of excess sugars over a long period of time is a major cause of obesity.

Galactose, like fructose is converted to glucose in liver tissues.

The levels of glucose - the end products of carbohydrates - is controlled by insulin secreted from the beta cells of in the islets of Langerhans in the pancreas. It functions to move glucose, amino acids and fatty acids out of the blood and into the cellular cytoplasm (or simply cells). Another pancreatic hormone - *glucagon* - secreted from the alpha cells of the islets counters the action of insulin and stimulates the conversion of stored glycogen back into glucose.

In diabetes the absence or shortage of insulin, or the inability for insulin receptors in

cells to respond to insulin - called insulin resistance - prevents glucose from entering into cells. The total carbohydrate load is responsible for the development of hypoglycemia or diabetes. The bulk of these should come from complex carbohydrates, however when we add the high proportion of simple carbohydrates, we finish up with an overload of carbohydrates.

It is estimated that the average American consumes the equivalent of 25 teaspoons of sugar each day derived from carbohydrates. That is equivalent to about 60 kg per year. Most of these come from lollies, cakes, biscuits, cookies, pies, ice cream, chocolates and sweet drinks. If we just could cut down on these delicacies we would not be vulnerable to the sugar disease that is gripping modern society.

Nutritionists classify the sugar according to the chemical structure.

Glucose (also called dextrose), fructose and galactose are classed as monosaccharides or a group of simple sugar containing carbon atoms ranging from three (trioses) to seven (heptoses).

Disaccharides are formed from monosaccharides and include table sugar or sucrose, lactose (milk sugar from which galactose is made), maltose found in certain plants and in the human body when starches are broken down.

Polysaccharides are the starches, glycogen, dextrin, inulin and cellulose made up of thousands of disaccharides molecules that often do not taste sweet. They are found in such foods as potatoes, rice and legumes.

All sugars eventually break down to glucose in the body. This has led some scientists to conclude that sucrose - white sugar - should not be blamed for the array of health problems characterized as "hypoglycemia", depression, yeast infections and hyperactivity and so on. They claim there is no hard scientific evidence to back it up. Medline rarely deals with hypoglycemia in the sense that hypoglycemic patients experience. I could only find one or two references to *dysglycemia* - a medical term that would come close to hypoglycemia as understood by our members and many thousands of others world-wide who visit hypoglycemia web sites on the internet.

Modern medical research is driven by the dollar sign. Hypoglycemia cannot be cured with drugs as yet, but diabetes - its inevitable sequence - can be controlled by drugs.

The treatment of hypoglycemia by medical practitioners does not attract big rewards: consultation time is more akin to nutritional counselling and this may be considered wast-

ing valuable medical consultation time. Furthermore the political influence of the world wide sugar industry would prohibit any campaign to restrict the consumption of sugar; that man-made substance that is mainly responsible for the sugar disease.

Thus sufferers of hypoglycemia will have to rely on themselves to get better. They will need to obtain the information to deal with their disorder and this is a major aim of this Association.

Obesity and hypoglycemia

The finger is often pointed to fat as the most single cause of obesity and also that obesity leads to atherosclerosis and insulin resistance. Perhaps it is the other way around. There is some good evidence to show that high blood sugar levels are the main culprit in the development of atherosclerosis. Glucose oxidizes readily and the oxidation of sugar explains the Maillard reaction. When glucose and protein combine (called glycosylation) they produce Amadori like products as when we are heating proteins and sugar in cooking. Food can become yellow brown. The oxidation of glycoproteins in humans produce similar Amadori products - superoxide radicals and hydrogen peroxide that can attack cross-linking of proteins, the elasticity of membranes leading to stiffening of heart muscles, arteries and lungs. (Florence et al. 50).

We have endogenous enzymes to protect us against these attacks such as superoxide dismutase, pyruvate kinase, lactate dehydrogenase, glutathione reductase, but when superoxide radicals flood the system as when we overload ourselves with glucose, or when we have deficiencies in vitamins and minerals that work as co-enzymes, the body soon succumbs to the degenerative processes of aging. Diabetic complications are signs of early aging.

The oxidation of lipids from compounds is called lipid peroxides which attack the membranes of arteries leading to atherosclerosis. With high sugar levels there is a limit to how well the body can deal with free radical attack. The necessary enzymes put a great demand on co-enzymes - vitamins and minerals - to help in the fight against oxidation.

As to fatness causing insulin resistance, again this could be the other way around. Excess glucose is stored in the body as glycogen, which in turn is converted to fat and deposited in specialized fat cells (adipocytes).

It seems that insulin resistance is due to an overload of glucose over a long period of time. Insulin receptors in cells are said to "not to respond to insulin" in the movement of glucose from the blood into the cells. Is this the

cells' way of defending against the onslaught of sugar? By inactivating insulin receptors in the membrane of cells, the blood sugar level rises with the result that more insulin is produced, trying to lower the levels. Hence we have hyperinsulinism and hyperglycemia. It could well be that when the switch is turned and receptors are willing or forced to accept more glucose the high insulin and glucose levels precipitate a crash and we have a hypoglycemic dip.

Alcohol causes such hypoglycemic dip and then the body will rely on adrenaline to quickly convert glycogen - or stored sugar - back into glucose. But excess adrenaline is also the flight/fight hormone that brings alcoholics into conflict with other people. Alcoholic aggression often result in domestic violence.

The overload of sugars also causes obesity and not the other way around. These sugars that have no where to go, become glycogen and then are converted to fat deposited in fat cells.

The simple theory of obesity is that the person ingest more energy than we spend, in other words we consume more calories than we use in energy. One pound of fat is the equivalent of 3500 kcal. The accumulation of 25 lb of excess body fat by a 28-year old male results from the overconsumption of $25(3500) = 87,500$ kcal. Hence according the theory we become fat. This does not explain why it is that fat people remain fat over time. The theory would predict that the person should become fatter and fatter and fatter. Some mechanism stops him/her from becoming exponentially fatter over time. Followers of this theory are known as calories counters.

The calories counters have not been very useful in overcoming the problem of obesity in the Western world. The body of healthy females have about 25% of fat and that of healthy males 17%. Obesity is defined as being 20% more fat than those of healthy people. About 30-40% of people in the West are said to be overweight, and we may conclude that the calorie counters have done little to change the profile of obesity.

Perhaps we should consider obesity as one of the symptoms of hypoglycemia and that the treatment of obesity should be similar to that of hypoglycemia and diabetes.

New directions into the problem of obesity.

The latest research in obesity has taken a

new and exciting new direction. It is based on the discovery that fat cells (adipocytes) can regulate their own "obesity", by sending a chemical messenger called "leptin" to a part of the brain - the hypothalamus - saying that it has had enough food. 'Please tell your master to stop eating "I am full"'.

The theory is that the receptors in the brain cells are dysfunctional and do not respond to leptin. Hence the fat cells send out more leptin and it has been found that overweight people have high concentrations of leptin in their blood. This is not unlike the story with insulin - resistance to hormonal messages.

The fat cell theory dates back to 1970 and it is suggested that fat cells once formed will never go away. They may shrink individually when one is dieting, but they are there ready to feed themselves all the time.

A normal person may have 30 billion fat cells, but a person being 30-60% above their ideal weight may have 100 billion fat cells. A massively obese person may have 200 billion fat cells or more.

Excess fat is stored in these fat cells (adipocytes) in the form of *triacylglycerols*. Triacylglycerols occur in many different types and contain a variety of fatty acids differing in chain length. Humans store a few hundreds gram of glycogen in the liver and muscle, barely enough to sustain the body's energy needs for a day. In contrast an average 70 kg man has 12 kg of triacylglycerols stored in his fat cells enough to sustain him for 8 weeks. The synthesis of triacylglycerols is influenced by insulin *which promotes the conversion of carbohydrates into triacylglycerols*. Thus in hyperinsulinism - another term for hypoglycemia - there is tendency for carbohydrates to be converted to fat. Once the production of insulin is inhibited as in diabetes, patients are unable to utilize not only glucose, but also fail to synthesize fatty acids and amino acids from carbohydrates into triacylglycerol. They show increased rates of fat oxidation (atherosclerosis) and they may also lose weight. Triacylglycerol is subject to autoxidation when combined with oxygen, and the body protects itself against this by the inhibitory action of vitamin E, by various enzymes and possible by vitamin C (ascorbic acid). Diabetics will have a greatly increased demand for these antioxidants, compared to non-diabetics. Therefore the treatment of diabetes as well as hypoglycemia must include antioxidant supplementation!

The set point theory says that the body has a set weight it tries to maintain and revert back to whenever you lose weight. One study suggested that a diet high in fat and sugar raises the body's set point to a higher weight, making it even harder to lose extra pounds. Proponents of this theory, which is highly controversial, say that the body's set point can be lowered by exercise and a diet low in sugar and fat.

The fat cell theory also explains why it is that many obese people find it hard to maintain their reduced weight. When the number or size of fat cells diminish, it is conceivable that less leptin is produced and because leptin is a "stop eating hormone" the person is bombarded with hypothalamic messages to eat more to feed the starved fat cells.

The theory could also suggest that the massively obese person is in a similar position as the diabetic, in that following a long period of *leptin resistance* fat cells can no longer produce leptin (hypoleptinism) so that the hypothalamus does not receive messages to stop eating.

Thus we have now two resistance syndromes: one involving insulin and the other leptin. Both hyperinsulinism and hyperleptinaemia are related and associated with high sugar intake over a long period of time. It is unlikely that a "cure" will be found in the near future. The lesson to be learned is that prevention of hypoglycemia, diabetes and obesity must start at a much earlier age. If we want to stop the development of these sugar diseases we should intervene in the first ten years of life. This is precisely the time when children are exposed to an endless 'advertising program' supported by the sugar industry (and parents) to consume more and more refined carbohydrates - in the form of sugar!

Refined carbohydrates are man-made and it is the refined carbohydrates that clearly do the damage, and not the overall carbohydrate intake as the sugar apologists would have it. Humans were evolved over the billion years to consume complex carbohydrates and the question is can we survive the sugar age of civilization.

Reference: Florence TM & Setright RT (1994), *THE HANDBOOK OF PREVENTIVE MEDICINE*, Kingsclear Books

The editor
Dear Jur,
It was most interesting reading the latest issue of our newsletter.
I'd like to comment on the article about the herb fenugreek. I have quite a few health probs. Hypoglycemia, MS, ankylosing spondylitis and hypogammaglobulinanaemia. The latter causes me to be very susceptible to chest infections.
But I've really been on top of them lately. Just one puff of a steroid preventative aerosol daily and some vitamin C powder and I'm fine....IF.... I have at least one cup of fenugreek tea daily.

For me it works as an expectorant. I used to cough at length and with much effort to try and get up the small amount of phlegm I had on my lungs. One cup of fenugreek tea and any chest mucous just comes up effortlessly and of its own accord.
For our readers I can give two examples of the fenugreek available. At Newton's Pharmacy in the city you can buy the fenugreek seeds. These I grind up in my electric coffee grinder. (You can also pound them with a hammer in a cloth (Editot) Or, the powdered fenugreek can be purchased from some health food stores or some spice retailers.
The ground seeds can be brewed in a

teapot on their own or with other herbal teas. The residue from the self-ground seeds can be added when cooking dishes such as the lentil/ rice stew I make and there is no waste. Otherwise it ends up in the compost.
A teaspoon of the powdered herb is placed in a mug, hot water added and stirred. It does have a drawback that it can jell and you may need to stir it at times while drinking the liquid.
So it's up to the individual as to which variety they use. Fenugreek is a very cheap expectorant compared to those I used to purchase from the chemist and it's easy to use.
Yours sincerely,
Barbara Wright

WHAT IS MELATONIN?

By Richard Stenlake

MELATONIN is a natural-occurring hormone in our bodies, produced by the pea-sized gland in our brain called the Pineal Gland. The Pineal Gland maintains normal and seasonal hormone levels. It is responsible for readying us for sleep when darkness falls, and stimulating us into wakefulness at dawn, when it shuts down the hormone's production. This gland functions as the master gland that oversees the operation of other glands. It is part of the body's controls over our growth and development from infancy through to adulthood.

During the 1980s the hormone became the subject of intense study throughout the world, with research continuing today. New discoveries and claims are being made 'almost weekly' about the powers of MELATONIN, but it will require years of additional research to verify these effects.

SLEEP DISORDERS - Undisputed is MELATONIN'S power to treat the underlying cause of a variety of sleep disorders (such as insomnia, disrupted sleep and stress related sleep problems) by resetting our internal clock. When the Pineal Gland receives messages that dusk has fallen, production of MELATONIN begins. Unfortunately, production of MELATONIN progressively decreases with age. The steepest decline appears to commence at around 45. By age 60, the Pineal Gland produces about half the amount of MELATONIN it did at age 20. Quality of sleep in older people appears to be proportionate to the amount of MELATONIN secreted.

JETLAG - Another proven function of MELATONIN is its ability to reset the body-clocks of air travellers who cross time zones. MELATONIN, in its role as regulator of the internal body-clock, can be taken as a supplement to help allay those feelings of disorientation and the fatigue that make up jet-lag. In a similar way MELATONIN supplements have also proved a boon for shiftworkers whose normal sleep patterns are thrown out due to constantly-changing rosters.

ANTI-AGING - Studies consistently indicate that MELATONIN is an anti-

oxidant, boasting twice the power of Vitamin E. While much work needs to be done in this area, the findings have implications for many conditions associated with aging, such as heart disease, cataracts and Alzheimer's disease. MELATONIN is proving to be a potent free-radical scavenger. It is so effective at disarming and neutralising free-radicals that many scientists believe it could well be the most effective of anti-oxidants. Free-radicals can alter the DNA of our body cells and damage proteins which build our muscles, blood, organs, nails and hair, and also disrupt the body in numerous other ways. Free-radical damage has been linked to many of the so-called age-related diseases, including arteriosclerosis and cancer, as well as the unwelcome cosmetic consequences of wrinkled skin and greying hair.

Thus MELATONIN, taken as a supplement, could well slow down the aging process and decrease the incidence of brain damage and cancer. Importantly, the role MELATONIN plays in keeping us youthful is tied to its basic power to allow us a good night's sleep. We generally feel better able and more ready to take on the problems of modern-day living when we've had a good night's rest. WHERE CAN YOU OBTAIN THE MELATONIN SUPPLEMENT? MELATONIN is readily available over the counter in the U.S.A. In Australia it is available through pharmacies and health food shops, where it is sold as a dietary supplement. No therapeutic claims can legally be made for it.

MELATONIN can be obtained through the Compounding Pharmacy at 169 Oxford Street, Bondi Junction, where Richard Stenlake has operated his business for over 20 years, and where it can be individually compounded for your specific needs and requirements, from pure ingredients sourced from throughout the world and meeting strict pharmacopea standards. Richard Stenlake is also able to compound many other products that have become unobtainable, such as SCOP PATCHES and CAPSOLIN OINTMENT. As a matter of course, it is recommended that patients consult their local doctor before taking MELATONIN, as certain conditions may not be conducive to this compound.

RecipeCorner

by Sue Litchfield

Fruit Slice

Ingredients:

5000 grams mixed fruit or fruit medley
1 cup no added sugar pear juice
2 tabs glycerine
1/3 cup rice flour
2/3 cup soya flour
2 teas baking powder
1/2 teas guar gum

Place the fruit in a saucepan add fruit juice and bring to boil. When cool add rest of ingredients. NOTE a little more juice may be needed if the mixture appears to be little on the dry side. Place in a loaf tin lined with baking paper. Cook in slow oven for approx. 1-1/2 hour.

Pineapple Nut Biscuit

Ingredients:

1440 gram can unsweetened crushed pineapple pieces
1 cup chopped nuts of choice (e.g. pecan almonds etc)
1/2 cup pepitas, 1/2 cup sesame seeds
1/2 cup sunflower seeds, 1/2 cup shredded coconut
1 cup puffed rice, 3 cup rice flour
1/4 cup rice syrup, maple syrup, or fructose
3 tabs margarine or butter pending allergy
1 teas baking powder, 1 teas cream of tartar
1/2 teas salt,
2 eggs
pineapple juice if needed

Beat eggs, mix with pineapple, rice syrup, coconut seeds, and nuts mixing well. Add melted butter, mix well. Combine dry ingredients add puffed rice, and fold into the rest of the other ingredients. Adding a little extra pineapple juice if the mixture is a little too dry.

Place a dessert spoon of mixture at a time into a lightly greased oven tray. If you like to place a nut on top of each biscuit and bake on top shelf of mod oven 170-180 C. for 20-25 mins or till golden.

LEMON BUTTER (Goes well with Sponge or Muffins)

Melt 60 gms. of butter in bowl placed over simmering water. Add grated rind and juice of 2 lemons, 3 beaten egg yolks and 2 tbs. Equal. Stir with wooden spoon until mixture thickens. Cool. Place in sterilized jars and store in refrigerator.

SCONES

2 1/2 cups of wholemeal S.R. Flour, 1 tsp. salt, 1/2 tsp. baking powder, 125 gms. butter, 1 cup milk.

Sift flour and baking powder into bowl. Melt butter and pour onto milk. Make a well in centre of flour and pour in liquid. Mix quickly to a soft dough. Mixture should be wet but not sticky. Turn onto floured surface. Knead lightly and quickly. Cut into rounds with scone cutter. Bake at 230 deg.C. for 12-15 mins.

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By Editor

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Milk Thistle

by Jurriaan Plesman

Milk Thistle (*Silybum marianum*) is a weed belonging to the sunflower family and is widely distributed in many parts of Europe. Other common names are: Holy thistle, Marythistle, Marian thistle, St Mary's thistle, Spotted thistle, Variegated thistle. But it should not be confused with the Australian Milk Thistle (*Sonchus oleraceus*).

Milk thistle has been intensively studied in the medical literature in relation to liver disorders such as hepatitis, chemical pollutants, drug and alcohol toxicity, atherosclerosis, gallbladder disease (gallstones), immunodepression, psoriasis, cirrhosis, detoxification of heavy metals (lead, mercury, cadmium, arsenic), cirrhosis, infectious mononucleosis (glandular fever) or fatty degeneration. Its active ingredient silymarin speeds up recovery from jaundice and is a powerful antidote against the deadly *Amanita phalloides* mushroom. It shortens the course of viral hepatitis and minimizes the post hepatitis complications. The power of Milk Thistle lies in the fact that it protects the depletion of glutathione in the liver. This substance is a tripeptide in liver cells that together with a selenium dependent enzyme, glutathione peroxidase, render toxic hydrogen peroxides into harmless substances that are then excreted from the body. Studies have shown that Milk Thistle can increase glutathione concentrations by up to 35 per cent. Glutathione is formed from three amino acids:


glutamate, cysteine and glycine. Cysteine derives from methionine, an essential amino acid - that need to be obtained from food. The conversion involves steps from methionine -> homocysteine --> cysteine. The last conversion is dependent on B6, B12 & folic acid. When there is a deficiency of these vitamins high levels of homocysteine result and these have been associated with the development of atherosclerosis.

Milk thistle has few side effects and is considered one of the safest herbs used in medicine. In some people it may have a slight laxative effect which lasts no longer than a day or two. Milk Thistle not only protects the liver, but has the ability to stimulate the growth of new liver cells.

The use of Milk Thistle becomes important in many skin diseases that are a sign that the liver fails to filter out toxins, as in psoriasis, acne, eczema and dermatitis.

It has helped in nausea, itching, bloating, lack of appetite, headaches, sinus problems, bad breath (halitosis) and chronic fatigue. If you are working or living in a sick building, outgassing toxic chemicals, Milk Thistle may give you relief.

Sometimes it can be used in conjunction with a detoxification diet: day 1: vegetables only, day 2: add rice, day 3: add fruits (lemon juice, salads, day 4: add fish and other proteins. Flaxseed powder in a glass of water would help to clean the bowel, add the essential fatty acids (omega 6 & 3) provide bulk and absorb bacteria and toxins. Some studies have shown that silymarin applied as a cream can protect against skin cancer.

 **THE HYPOGLYCEMIC HEALTH ASSOCIATION**
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MEMBERSHIP APPLICATION

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Surname: _____

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

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