

# The Hypoglycemic Health Association

# NEWSLETTER

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**Volume** 15 Number 3

Registered Charity CFN 16689

September, 1999

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

PLEASE NOTICE WE ARE BACK AT THE YWCA at 2 Wentworth Ave, Sydney after the renovations at that centre. Also we are now a registered fundraising organisation, which means that we are able to receive tax-deductible donations. **PLEASE NOTE OUR NEW PO BOX ADDRESS AS ABOVE.** It has come to the attention that a few members have not paid their fees. The President has sent out reminders. The expiry date is shown at the top right-hand corner of address labels. Payments can be made by filling in the application form on the last page of the Newsletter. In future receipts will be issued only upon request. The recent crisis in the availability of hospital beds reminds us again of the dismal state of health care in Australia. This crisis centres on the costs of hi-tech medicine driven along by the most powerful union in the country - the AMA. The rise in medical costs derive mainly from the flourishing 'specialists' at the expense of our family doctor. We are bombarded with weekly 'miracle cures' from international pharmaceutical corporations and the poor patients are left in no-man's land. Complementary medicine - ignored by the medical establishment - has much to offer to assist patients. By being a member of this Association you help to support and promote those health care workers who look towards nature to preserve health.

Our Next Public Meeting will be at 2.00 PM  
on Saturday, the 4 September 1999  
at **YWCA**

2 Wentworth Ave, SYDNEY  
and our guest speaker is

## **Jennie Burke**

Med Tech, M.D.(M.A.) Dip NSc, Dip M.H.

who will be speaking

on the subject of

***“Functional testing  
for a healthy body”***

**Jennie Burke**, has qualifications in Medical Technology, Medical Herbalism, Nutritional Science and was awarded a Doctorate in Medicine in Moscow (1991). A mother of two children she has a busy practice in her capacity as managing director of *Australian Biologics* a testing laboratory in Sydney. She is also Managing Director of Independent Medical Research Congress Convening Company. She is vice-president of the *International Cancer Association Network*, a charitable association also called **ICAN**, which is a support group for cancer patients. They can obtain the latest information on cancer by ringing 9251-4140. Jennie is also a member of a Scientific/Advisory Board of the German Journal of Oncology. She has given lectures at International Conferences in Australia, Austria, Switzerland, USA, China and Canada. Jennie Burke has set aside some time in her busy schedule to give our members a talk on "functional testing for a healthy body".

## 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](mailto:jurplesman@hotmail.com)

### Donations by professionals

Many professionals have donated \$50 to the Association and we have acknowledged this by **printing their business card** in the Newsletter. We hope to receive more of these requests, which would help to financially sustain the Association and be of benefit to the doctors and practitioners.

### Books for sale at the meeting

Jurriaan Plesman: **GETTING OFF THE HOOK**

This book is also available in most public

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

libraries (state and university)

Sue Litchfield: **SUE'S COOKBOOK**

Dr George Samra's book

**The Hypoglycemic Connection**

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

### The Newcastle branch of the Association

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

### Entrance fee at meetings

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

### Donations for raffle

One way of increasing our income is by

way of raffles. If any member has anything to donate towards the raffle, please contact Dr George Samra's surgery at 19 Princes Highway, Kogarah, Phone 9553-0084.

At the last meeting on the 5 June 1999 **Andrew Peet** won the lucky door prize and **Suzu Choc** won the raffle.

### Fund raising activities

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

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

**Lyn Grady** of Bowral has donated a hand-knit cardigan worth \$200 to be raffled after the sale of 50 cent tickets available at Dr George Samra surgery, 19 Princes Highway Kogarah, and also at the public meeting on the 9 September 1999.

**Please note that the Editor Jurriaan Plesman can now be reached on the internet. His e-mail address is: [jurplesman@hotmail.com](mailto:jurplesman@hotmail.com) and fax No: 02 9130 6247**

## WE NEED A HAPPY LIVER

By

Therese Lew

Naturopath, ND DBM M ATMS

When Oscar Wilde was asked if life was worth living he replied "it depends on the liver". Well I hope you will excuse the pun but it is relevant to my talk today because depending on how happy the "liver" (the organ) is will determine how happy the "liver" (the person) is and vice versa.

Let's look at why the liver is so important. Throughout the history of medicine the importance of the liver has always been respected and included in the treatment and management of health and disease. In Traditional Chinese Medicine the liver is the organ of emotion. It is viewed that when "qi" energy is stagnant, it results in "fermentation and heat" causing "fire to rise" manifesting as irritability, anxiety, moodiness, depression, aggressiveness, agitation, poor sleep, headaches and 'Anger' is the predominant emotion. When "qi" flows harmoniously through the liver then we are "happy". In Traditional Indian Medicine known as Ayurvedic Medicine the liver is highly regarded as the meta-

bolic master organ in the "Agni" (the digestive fire) which is the seat of health or disease. When there are problems with "Agni" it causes "Ama" (undigested or semi-digested material in the physiology), symptoms of high "Ama" levels are coated tongue, drowsiness after meals, weight gain and pre-menstrual and menopausal symptoms. Throughout Europe Naturopaths and Herbalists regard the liver as the main focus of treatment of all conditions and the word "happy" or "unhappy" was often used in the literature to describe the state or condition of the liver. The Hygienists often talk about "detoxifying and cleansing" the liver. The Metaphysical explanation of diseases that affect the liver is that liver related diseases are due to deep seated and unresolved "anger". We are all familiar with such phrases as "feeling liverish" and "green with envy".

### What does the Liver do?

The many functions of the liver are so numerous and varied that I will only be covering the main ones. Firstly the liver is the

largest gland of the body weighing on average 1.5 kgs, it's cell structure is unique to its functions pumping blood at the rate of 1.4 ltrs/min. It is the chemical factory changing processed foodstuffs presented to it by the stomach into biologically useful compounds available to body tissues and metabolic pathways.

The main functions include:-

**1 Fat metabolism;** by producing bile from cholesterol i.e. about 800 – 1,000mls per day then squirting it into the gallbladder. The bile is then reduced up to 10-12 fold where it is concentrated and stored and released into the duodenum when fat is present. Bile is necessary because of its detergent/emulsifying effect on the fat particles in food making it possible to absorb fatty acids and fat soluble vitamins A, D, E and K into the blood stream.

The liver produces cholesterol which is necessary for;

- bile production
- adrenocortico steroids eg cortisone, adrenalin and androgens
- formation of oestrogen, progesterone and testosterone

- the skin where high amounts are precipitated making the skin highly resistant to the absorption of water soluble substances and chemical agents. This also protects against water evaporation from the skin reducing it from 15-20 litres per day to 300-400mls per day.

The liver produces lecithin (a phospholipid, necessary for the structure of membranes of all cells). Lecithin helps transport fatty acids through the intestinal mucosa into the lymph.

2 **Carbohydrate metabolism;** by converting glucose to glycogen for storage and converting it back to glucose when blood sugar levels drop. This process is called glycogenesis.

3 **Protein metabolism;** by the deamination i.e. the breaking up of protein into its amino acid components.

The liver also converts amino acids into glucose i.e. gluconeogenesis when the blood sugar levels drop excessively. 85% of plasma proteins are formed in the liver and 15% are formed by the lymph cells.

The liver removes ammonia by converting it to urea for excretion.

4 **Blood Coagulators;** the liver is responsible for vitamin K production which is the precursor to many of the blood coagulators eg fibrogen, prothrombin etc.

5 **Hormones;** the liver converts adrenal and sex hormones eg the liver converts the potent oestrogens, oestradiol and oestrone, into an almost totally impotent oestrogen called oestriol. Because it secretes moderate quantities of the oestriol into the gut a diminished

liver function actually increases the activity of the potent oestrogens creating oestrogen dominance eg the Pill is oestradiol. Xeno-oestrogens mimic oestrogens causing pre-menstrual and peri-menopausal problems in women and low sperm count in men. Xeno-oestrogens are found in chicken, pesticides and plastics while phyto-oestrogens are found in plants such as soy beans, parsley, beetroot leaves and red clover.

6 **Vitamin storage;** the liver stores Vitamin A, D, B12 and iron.

#### How happy is your liver?

If you answer yes to any of the following then we may need to consider a good support program which I will cover later. Ask yourself if you suffer any of the following:-

- Fatigue, Headaches,
- Skin disorders eg dry oily patchy exzema psoriasis
- Weight problems, Energy swings, Nausea
- Female hormonal problems eg PMS, Eyes - redness soreness strain
- Mood swings, Bloating
- Poor immunity frequent colds/flu, Fatty deposits eg pterygiums
- Depression, Belching and flatulence. Muscle and joint pain,
- Hypertension, Sleep disorders, Allergies
- Hypo/hyperglycaemia, Candida

Other signs to consider are observed

through the iris (iridology) these are yellowish overlay and any lesions over the liver area. Tongue signs include white to yellowish coating and/or scalloped edges.

Nail signs are frosted opaque nails.

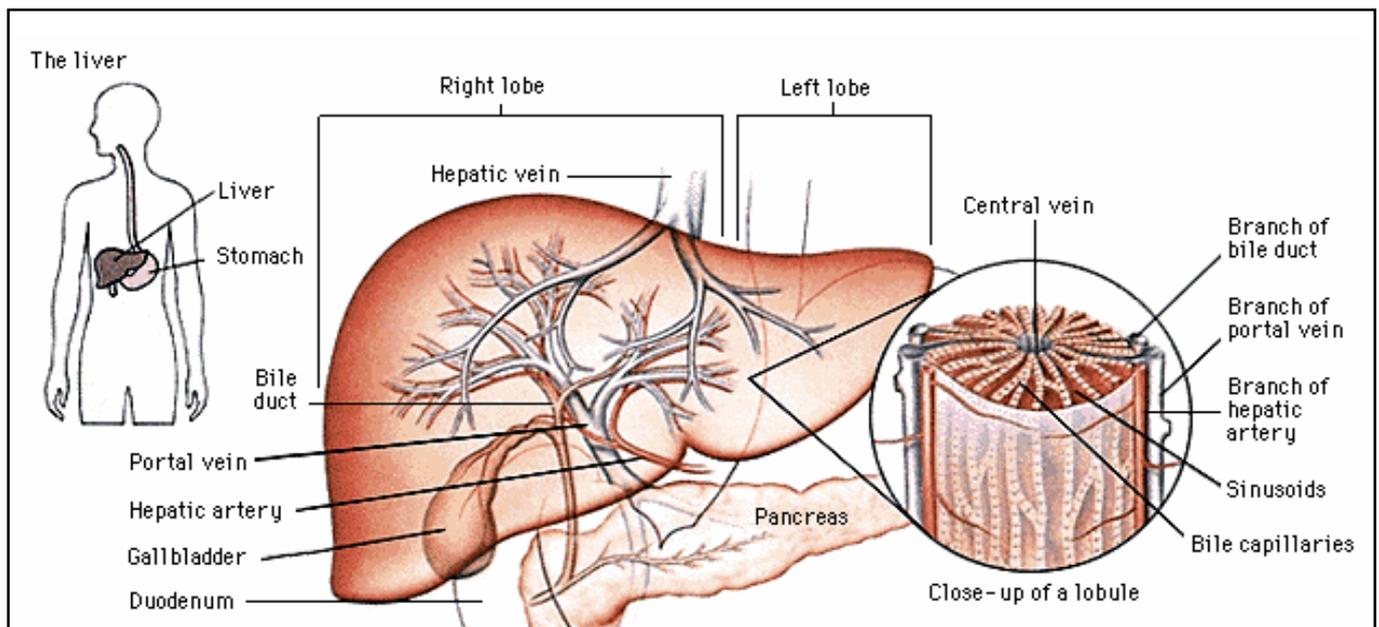
#### How to upset your liver.

- **Fats;** fatty foods i.e. fried foods, cheese, milk and dairy products, butter, processed meats eg ham and, salami are saturated fats. However we need unsaturated fats in the form of raw nuts and seeds, fish and cold pressed oils.
- Additives and Chemicals in food
- Sweets, white flour products, cakes and biscuits
- Alcohol, coffee, tea and soft drinks
- Smoking
- Overuse of paracetamol and antibiotics
- Drinking with meals
- Stress

#### How to keep your liver happy

- **By avoiding the above**
- **Raw foods;** raw foods contain enzymes which are proteins which are necessary for the breakdown and assimilation of food particles. Enzymes are naturally occurring in fruits and vegetables and are easily destroyed (along with vitamins) by heat and so we literally have to produce the enzymes ourselves and this is extremely taxing on our bodies. The ideal diet consists of 75% raw food according to many nutritionists. Sprouts are a perfect example of true living food.

• **fruits;** fruits can be grouped in terms of "food combining" according to their sweet-



From The World Book (TM) Multimedia Encyclopedia (c) 1999 World Book, Inc., 525 W. Monroe, Chicago, IL 60661. All rights reserved. World Book diagram by Robert Demerest

The liver consists of two main sections--the right lobe and the left lobe--and two small lobes that lie behind the right lobe. Each lobe is made up of hexagonal-shaped units called lobules. The close-up section of the diagram shows an enlarged view of a lobule.

World Book diagram by Robert Demerest

ness, acid and water content (see attached chart).

- **vegetables;** especially the green leafy bitter ones( chicory, endives, raducio, watercress), lettuce, cos lettuce, and beetroot leaves in particular (one of the richest source of vitamin A, Iron and oestrogenic properties), celery (contains anti-inflammatory properties and helps the elimination of toxins)

- **carrots** (fall into the same family as celery, parsnips, caraway and dill), carrot tops (rich in chlorophyll) and carrot juice is used as a liver cleanser and rejuvenator.

- **The Bitter Principle**

In vegetables and herbs, there is a factor called The Bitter Principle. This is known to activate the liver and help it to eliminate toxins (eg watercress, raducio, chicory and endives). Nature has given us the ability to distinguish between four distinctly different tastes; sweet, sour, salty and bitter. In Western diets sweet, salty and sour foods are consumed daily but bitter foods are rarely eaten. Grandmother was right to say “the more bitter it is the better it is for you”.

- **Parsley, Sage, Rosemary and Thyme**

Herbs from the garden straight to the table such as those mentioned are best. Those prescribed by a practitioner which may be in a concentrated form will greatly enhance the functioning of your liver.

The popular culinary herbs Parsley, Sage, Rosemary and Thyme are all aromatic herbs with therapeutic properties and were all traditionally used with Meat dishes and I believe this is due to their being strong digestives. They were also used as teas to promote digestion of “rich” meals. The following herbs are specifically used in most liver tonics;

Dandelion root is proven to be the most widely used liver tonics, it is very available and when roasted makes a great coffee substitute.

St Mary’s Thistle (Silybum Marianum) also known as Milk Thistle is a favourite of herbalists and was very popular in Germany.

Other commonly used Liver herbs include Barberry, Fringe Tree, Golden Seal, Globe Artichoke and Boldo. These are best taken in the powdered (tablet/capsule) form or as glycitraits – these are extracts using glycerol instead of alcohol.

- **Food combining**

When combining foods it is important to understand how the digestive system works.

Digestion starts in the mouth where the saliva and the enzyme called Ptyalin are produced to predominantly break down starches, this is stimulated by the presence of food and the chewing of food well. The chemistry of the mouth is mainly alkaline or neutral. In the stomach, however, the environment is very acidic due to the Hydrochloric Acid and Pepsin which are protein-splitting enzymes.

Let’s look at the popular hamburger. The protein beef is dealt with by Pepsin when the starchy bun goes into the mouth it is partly broken down by Ptyalin enzyme in the saliva. Once in the stomach the starch must sit and wait because the Ptyalin cannot continue to digest the starch as Hydrochloric Acid stops it. And when you include a liquid, you delay the digestion even further by diluting the enzymes.

Other examples of poor food combining is the pizza, fish and chips, meat pie, sausage roll, quiche chico roll, spaghetti bolognaise and hot dog.

Food combining is based on the grouping of foods (see chart) so that if you have a protein based meal for lunch then have starch for dinner and vice versa

- Basic principle is not to eat starchy food (i.e. avoid bread, potatoes and white rice) with protein containing foods

- avoid dessert and fruits after dinner
- avoid acid fruits (eg mango, pineapple, grapefruit, passion fruit etc) with starchy foods, (eg grains and potato) and sweet foods (eg raisins, dates, honey and bananas).

- Fats may be used with proteins, however, very sparingly.

- Neutral foods (eg avocado, pawpaw, green vegetables, eggplant, carrots and mushrooms) may be eaten with either protein or starches.

- **Filtered water**

Drink more every day, the proverbial 8

**TABLE 1**

**Basic Food Groups**

**Starches:** Potato, rice, corn, bananas, biscuits/cake, cereals/grains, pumpkin, lentils, buckwheat.

**Proteins:** Cheese, yoghurt, nuts, seeds (sunflower and sesame), nut butters, beans (eg soya etc), chicken, fish, meat, eggs, coconut.

**Concentrated fats/oils:** Butter (unsalted), oils (cold pressed), cream, mayonnaise, olives, coconut.

**Acid Fruits:** Grapefruit, oranges, pineapple, mandarins, lemon, tomatoes, kiwi fruit, strawberries, passion fruit.

**Sweet Fruits:** Bananas, all dried fruits, persimmons, ripe mango, custard apples, sweet grapes, figs.

**Sub-acid fruits:** Apricots, plums, grapes, apples, pears, nectarines, peaches berries, cherries, mango.

**Neutral fruits:** Avocados, paw paw.

**Vegetables:** All vegetables and sprouts neutral with the exception of potato, pumpkin, sweet potatoes, beetroot.

**High water-containing fruits:** Melons, grapes. These should be eaten alone or

**TABLE 2**

**Read down the first column and then across for the combination**

|                 | Protein | Starch | Fats/Oils | Vegetables | Sweet Fruits | Sub-Acid Fruits | Acid Fruits |
|-----------------|---------|--------|-----------|------------|--------------|-----------------|-------------|
| Proteins        | Yes     | No     | Yes*      | Yes        | No           | Yes*            | Yes         |
| Starch          | No      | Yes    | Yes*      | Yes        | Yes          | Yes*            | No          |
| Fats/Oils       | Yes*    | Yes*   | Yes*      | Yes*       | Yes*         | Yes*            | Yes*        |
| Vegetables      | Yes     | Yes    | Yes*      | Yes        | Yes          | Yes             | Yes         |
| Sweet Fruits    | No      | Yes    | Yes*      | Yes        | Yes          | Yes             | No          |
| Sub-Acid Fruits | Yes*    | Yes*   | Yes*      | Yes        | Yes*         | Yes             | Yes         |
| Acid Fruits     | Yes     | No     | Yes*      | Yes        | No           | Yes             | Yes         |

\* denotes combinations to be used only in moderation

glasses. Current research allows you 2 glasses of red wine as well, but your liver won't like it. As a rule avoid drinking any fluids with meals as this dilutes and weakens the digestive enzymes. Soup should be regarded as a meal and had on its own.

- **Your daily liver flush**

Drink a warm glass of filtered water with a squeeze of lemon juice first thing in the morning.

- **Avoid constipation**

Raw vegetables and fruit, drinking water throughout the day and an adequate fibre diet will help prevent the growth of unfriendly organisms in the bowel and therefore the resorption of toxins through the bowel wall into the blood stream which in turn will overload the liver.

- **Our second liver**

The skin, our largest organ, is also known as the second liver, is responsible for eliminating up to

1 kilogram of metabolic waste daily!

Dry brushing not only helps to eliminate from your skin, it also stimulates the circulatory and lymphatic systems. Using a Natural Fibre Bristle Brush with a long handle, brush your skin vigorously all over avoiding your face and any broken skin including rashes. Start with the soles of your feet and work your way up the legs, hands, arms, back, chest, neck and scalp. Make sure it is DRY BRUSHING i.e. before your daily shower or bath. Feel the Difference!

- **Mineral salts**

Sodium sulphate is necessary for secretion of bile and mobility of all intercellular fluid

Potassium chloride for the mobility of all glandular and lymphatic fluids

Magnesium phosphate is necessary for enzymatic action, high concentrations are found the liver, kidneys and muscle

- **Specific nutrients**

B Complex vitamins; Choline, Biotin, Inositol, B12 and Folic Acid

Antioxidants; Vitamins A, C and E

Amino Acids; Taurine, L-cystein, L-glutamine, Methionine, Glycine

Minerals; Zinc and Magnesium

Essential Fatty Acids (EFA); Omega 3 and Omega 6

Lecithin

### **Liver exercises**

Diaphragmatic breathing; deep breathing through yoga and aerobic type exercise, eg walking, swimming and cycling

The Liver pump; Side bending as you breath out with right hand placed flatly over the liver area as you until you can go no further. Repeat this 5 times.

- **Reflexology**

A good foot massage or spa will do, however, specific pressure over the corresponding liver point in the Right foot will send messages back through the nervous system to stimulate the liver.

- **Bodywork**

The thoracic spine is the area whereby the nerves exit the spinal cord to supply the liver, (eg deep tissue massage, osteopathic treatments etc)

- **Relaxation and rest**

Take the time to REST YOUR BODY.

In today's fast pace it is easy to get caught up in the demands of work, home and no time to play, we need to stop on a regular basis.

### **Little Livers**

Don't forget the little livers, our children, they can teach us so much about correct food combining if we just watch and observe them. For example, have you ever observed how children eat from the same food group at any one time and they have "food fixations" ? Well don't despair if your child will only have the meat on his plate or will only eat sweets, or fruit or raw carrots or dry bread or seems to live on milk, because he can only digest one thing at a time. I agree that they need more variety for nutrition, the way to get Johnny interested in other foods is to introduce one thing at a time so as not to overwhelm his appetite.

### **BIBLIOGRAPHY**

**Medical Physiology** Guyton, AC (1986)

**Food Combining** Tim Spong and Vickie Peterson (1990)

**Gastro Intestinal Health** Steven Peikin

**The Liver Cleansing Diet** Dr Sandra Cabot

**Fit for Life** Harvey and Marilyn Diamond

**Raw Energy** Leslie and Susannah Kenton (1984)

**Why am I so Tired?** Leonie McMahon

**The Australian Passport to Health,** Steven Cottingham (1996)

## **WHAT IS THE RIGHT DIET FOR HYPOGLYCEMIA?**

*By Lars Idema*

*of The Dutch Hypoglycemic Association*

**F**irst of all, a diet is very personal. 'Right' only means 'right for you', so you should find out what diet is appropriate for your condition. It is true that there are several diets that help people to control their hypoglycemic symptoms. All these diets are blood sugar regulating diets and have the following in common:

- frequent small meals/snacks, depending on your needs 1.5 to 2 hours;
- no sugar, honey, or products containing sugar (check food labels);
- no adrenal stimulants as caffeine (found in coffee, coke and diet-coke, black tea), no alcohol, no chocolate (cacao is a stimulant too) and no nicotine;
- take care with fruit juice (no more than 1 glass) and high-sugar fruit as dried fruit, bananas or grapes, see Section

4.4;

- no other simple carbohydrates as white bread and white flour.

Next to these, there are several methods to slow down absorption and even out your blood sugar values even more:

- use mixed meals, i.e. combine carbohydrates with proteins/fat, e.g. cracker with cheese/peanut butter;
- use high fiber food (whole grains, vegetables);
- snack before going to sleep.

### **WHAT DIETS CAN BE FOLLOWED BY HYPOGLYCEMICS?**

People who try to control their hypoglycemia symptoms generally are on one

of the following diets (in random order):

**1. DIABETES DIET** — This diet is fairly high in carbohydrates, about 50-60% carbohydrates, no sugar is allowed, use complex instead of simple carbohydrates: brown bread/rice, etc. Frequent meals are also highly recommended.

**2. KRIMMEL DIET** — The Krimmel diet is very akin to a standard diabetes diet, but it limits starchy foods as bread, pasta, rice, potatoes and corn, and recommends non-starchy foods as carbohydrate source instead. Krimmel has a 'food ethic' that is low protein, high •complex• carb, and low fat. The ratio is 10-12% protein, 50-65% carb, and 20-30% fat and has to be maintained in a structured fashion according to Krimmel. Patricia and Edward Krimmel are authors of the "*Low Blood Sugar*

*Handbook*" and "*Low Blood Sugar Cookbook*". Information about the Krimmels' HELP-institute can be found in Section 10.4, and also on the Web at: <http://www.dynanet.com/~bodychem/>.

**3. HAI DIET** — The Diet of the Hypoglycemia Association, Inc. This diet is adequate (fairly high) in protein, limits carbohydrates and uses slightly more fat. In the initial phase 100 g of complex carbohydrates and 100 g of protein are proposed as a daily intake. Complex carbohydrates are to be obtained from vegetables, nuts/seeds, and a limited amount of fruit, not from starchy foods like bread, pasta, rice, etc. In the second phase (after 3-6 months) some rice, bread, etc. can be built gradually into the diet.

**DR. ATKINS DIET** — This diet is very low carbohydrate and high in fat. The goal of the diet is to reach and maintain ketosis, the state of fat burning. If one eats less than 30-50 g carbohydrates daily ketosis, a side-product of fat burning, instead of glucose, will provide the body with fuel. By means of urine test strips one can test the level of ketosis. The diet is designed to allow people to lose weight, but some hypoglycemics claim to have gotten their symptoms under control too, as the diet contains virtually no carbohydrates to trigger their hypoglycemia. Further info can be found at the Low Carbohydrate Diet Information Center:

<http://ncms.clever.net/lowcarb/>.

**THE ZONE DIET** — After the book "The Zone" by Barry Sears, a biomedical researcher. In his book Sears promotes a diet with a 40% carbohydrate, 30% protein and 30% fat ratio. Some Zone resources on the Web:

**FIT FOR LIFE DIET** — Harvey and Marilyn Diamond, authors of the "Fit for Life" book. The Diamonds strongly support (just like e.g. Dr. Hay) eating in food combinations. In this theory a meal should either exist of (complex) carbohydrates (like lettuce and potatoes or bread and vegetables), or proteins (bacon and eggs). Fruit and vegetables are considered neutral. In addition, during the morning (until noon) eating fruit is promoted. Don't eat fruit with or after other meals, but in between of meals. Only natural sugar in fruit allowed, no additional.

**DR. FREDERICK'S DIET** — Dr. Carlton Frederick's diet, as described in his Low Carbohydrate Diet, consists of high protein, low carbohydrate, no sugar. It can be considered as an early version of the HAI-diet (which nowadays recommends •adequate• protein, instead of just high).

**PRITIKIN'S DIET** — Consists of no fat & only 3 oz (100 g) of protein and primarily carbohydrates. This diet claims it helps hypoglycemia too.

**PROTEIN POWER DIET** — from the

book *Protein Power* by Drs. Michael and Mary Dan Eades. This is a protein-rich, moderate-fat, low-carbohydrate diet designed to help one lose weight and also bring one's insulin levels into balance. The diet consists of Intervention and Maintenance. Intervention Part I: 30 grams of carbohydrate per day. Intervention Part II: 55 grams of carbohydrate per day. Once desired weight and/or stable insulin levels have been reached, you begin Maintenance, where your carbohydrate level is 30% more than your protein intake.

**CARBOHYDRATE ADDICT'S DIET** — from the book *The Carbohydrate Addict's Diet* by doctors Heller and Heller. A carbohydrate addict is a person who suffers from hyperinsulinism, i.e., their body produces too much insulin when they regularly consume carbohydrates. Hyperinsulinism produces strong cravings for carbohydrates, making it hard to stop eating them once you start. With this diet you can eat 2 or 3 meals a day and an optional snack. All but one meal must be low carb, with no food having more than 4 g carb per serving. The other meal, called the Reward Meal, is 1/3 low carb veggies, 1/3 protein, and 1/3 carbs (anything you like).

#### **WHEN SHOULD I NOTICE ANY EFFECTS OF A DIET?**

Generally, at least two to three weeks are usually required to show marked change. At first you may (not necessarily) feel worse as a result of withdrawal symptoms. After that, a period comes in which one feels better. It is possible that you go through a second dip after which you will gradually feel better day by day. So when evaluating a diet, try it for at least two to three months before switching to another.

#### **IS FRUIT OR FRUIT JUICE OK?**

It depends. Generally, fruit is ok, and healthy too. A lot of hypoglycemics can tolerate small amounts of fruit. All fruit contains a combination of fructose and glucose, in a range of proportions. The glucose portion is what causes problems with hypoglycemia. Fructose can be converted to glucose in the body, but very slowly; it has about 10% as much effect on blood glucose as does glucose, perhaps even less. Just be careful with the fruits that contain higher amounts of carbohydrates, as bananas and grapes. Dried fruit is a no-no too. If you do have problems after eating fruit, try eating smaller amounts of it, along with some protein and fat, e.g. yogurt.

Some care should be taken with fruit juices. When the fruit is pressed to juice, some of the natural (absorption slowing) fiber is removed, causing a somewhat higher rise in blood sugar than fruit does. This rise may trigger hypoglycemic symptoms a few hours later. Consider juice as food, not as a drink. Drink juices in small amounts, using them as a thirst quencher (i.e. drinking several glasses within the hour) might get you into trouble several hours later. Diluting juice with water might be a better idea if you like some taste to your water.

More care should be taken with bottled juices from the supermarket. Some of them are pure juice from pressed fruit (mostly from concentrate). However, some cheaper brands have sugar added, and are likely to cause you trouble. When in doubt, read the labels. Vegetable juices without added sugar are ok.

Some hypoglycemics use orange juice as a life saver: when they feel their hypo symptoms coming up, they take a few sips (less than half a glass!) to increase their blood sugar levels a bit. A few sips are sufficient to prevent further symptoms, but not enough to trigger your hypoglycemia again.

#### **DO SUPPLEMENTS LIKE CHROMIUM HELP STABILIZING?**

There are several indications that nutritional supplements (vitamins, minerals and trace elements) can help partially restore normal metabolism or suppress the symptoms of hypoglycemia. The difficulty is that everyone is different, and that our hypoglycemia can have different causes. Therefore, not all people show equal benefit when using a supplement. Some feel even worse when taking a particular supplement that others swear by.

Swallowing vitamins and other nutritional supplements by perfectly healthy individuals has become pretty normal in our society. We should not forget that good eating habits and balanced meals (ok, that's a problem for many) provide for all biochemicals our body needs. The hypoglycemic body could need some help, though, because the endocrine system is out of balance. I would advise you to see a doctor or nutritionist before taking any supplement. In addition, I would like to emphasize that supplements are exactly what the word means: helpful 'additions' to your hypoglycemia diet, and by no means a replacement of it.

#### **Popular supplements taken by hypoglycemics are:**

- chromium (helpful with blood sugar regulation; available with different binding elements: Glucose Tolerance Factor, picolinate or nicotinate)
- B-vitamins (supports metabolism, also helpful to people who are on a low-carb diet and therefore are on B-vitamin shortage)
- C- and E-vitamins (some use it as a rescue/remedy supplement, other people for stabilizing)

There are many more supplements, some of herbal origin, some containing a glandular extract. In May 1997 a survey about supplements and their effects was organized by the Hypoglycemia Survey Team of the Hypoglycemia Mailing List.

#### **WHAT IS THE GLYCEMIC INDEX?**

The glycemic index is a measure for the effect of certain food on your blood glucose level, ranging from 0 to 100 %

Zero corresponds to no rise in blood sugar, and 100% to a blood sugar rise as high as with

a pure glucose intake. The high index foods should be avoided by hypoglycemics.

#### WHAT DO THESE DIET RATIOS LIKE 40/30/30 MEAN?

They indicate the ratios of macronutrients in your daily menu, by convention: Carbohydrates / Proteins / Fats. The ratios are expressed in percentages of total energy requirements (occasionally grams ratios are used). Human energy requirements depend mainly on activity level, gender, and age. For exam-

ple: a 40 year old with medium activity level would need approximately 2500 kCal/day (male) or 2000 kCal/day (female).

Sometimes diets are listed in grams, like 130/100/100 g. In that case the •net• grams of digestible nutrients is meant. E.g. if a food list states that "100 g of yoghurt" contains 5/4/2 g, 11 g of nutrient total, then 89 g must be water and fiber (no calories). You can convert these grams to calories yourself: carbs and proteins supply 4 kCal/gram, fat supplies 9 kCal/gram. Oh, FYI: alcohol supplies 7 kCal/gram. SI-minded folks can convert the calories to Joules:

1 kCal = 4.184 kJ.

A 'normal' healthy diet contains about 300-400 g carbohydrates, 60-70 g protein, and 70-90 g fat per day on average. Hypoglycemics generally can't tolerate these amounts of carbohydrates, so most hypoglycemic diets have limited carbohydrate content, and therefore increased protein and fat intake to provide for the energy.

The most up-to-date copy of this FAQs can always be obtained from:

**Hypoglycemia Homepage Holland:**  
<http://huizen.dds.nl/~hypofaq>

## DIABETIC NEUROPATHY

By Richard Stenlake  
Compounding Chemist

**D**iabetic neuropathy is a disease most commonly caused by high blood sugars, and is the most common complication of diabetes. The cascade of effects of diabetic neuropathy can be, in the end role, catastrophic. By this I mean diabetic neuropathy can lead to peripheral<sup>2</sup> vascular disease, which leads to infection, which is the major cause of chronic foot ulceration which can in turn lead to amputation. This is not a pretty picture.

The most common form of diabetic neuropathy is distal symmetrical polyneuropathy<sup>3</sup> - a condition where the nerves affected are the far reaching nerves seen in the hands and feet, normally on both sides, involving more than one nerve. These nerve problems can appear at any time but significant clinical neuropathy can develop within the first ten years after diagnosis of diabetes and the risk of nerve damage increases the longer a patient is diabetic. It is more common in patients over forty who are smokers and don't keep their blood sugar under control.

#### Neuropathy and the Diabetic Foot

Although diabetic neuropathy is all encompassing, it can in fact be further dissected into its major classes.

**Peripheral Neuropathy** diminishes or destroys the patient's ability to perceive trauma to the plantar surface of the foot. This combined with arterial insufficiency frequently results in chronic, non-healing foot ulcers.

**Sensory Neuropathy** limits or destroys the patient's ability to perceive deeper pain and, for example, a puncture wound on the foot would not be felt and ulceration would likely precipitate.

**Autonomic Neuropathy** reduces sweat production leading to dry scaly skin and eventually to fissuring or cracks that in turn wel-

come bacteria which leads to infection.

**Peripheral Vascular Disease** is a common complication of diabetes and has ominous complication for patients with foot ulceration. Because of the reduced blood flow, tissues are not receiving sufficient oxygen and nutrients, which weaken the defence mechanisms against invasion of bacteria - the healing process also being affected.

#### Causes

The exact cause is not known but studies have shown that high blood glucose levels affect many chemical pathways to the nerves, causing a buildup in the nerve of a chemical known as *sorbitol* while decreasing the chemical called *myoinositol*. High blood glucose also damages both large and small blood vessels that carry oxygen and nutrients to the nerves. Thus, it follows that if there is not enough blood being delivered to the nerve, its ability to work must be affected.

#### Treatments

##### Gamma Linolenic Acid

Patients with diabetes have been shown to have a disturbance in the metabolism of the *n-6 essential fatty acids*. The conversion of dietary linoleic acid to its polyunsaturates is inadequate, disturbances of these essential fatty acids and the prostaglandins<sup>4</sup> derived from them cause a variety of microvascular, haemorrhological and other abnormalities leading to reduced blood flow and neural hypoxia. This will in turn produce an escalating cycle of further hypoxia<sup>5</sup> through the generation of oxygen free radicals and aggravation of neural capillary endothelial<sup>6</sup> damage. Endoneural<sup>7</sup> hypoxia impairs nervous impulses as the nerve coating (myelin sheath) is severely damaged or even destroyed. Furthermore, depletion of polyunsaturated acids leads to impaired nerve metabolism and structural abnormalities. The recommended dose is 100-200mg per day. The best sources are borage or blackcurrant oils or the more expen-

sive evening primrose oil.

#### Inositol

Inositol is the fundamental ingredient of cell membrane and is necessary for proper nerve, brain and muscle function. Neurotransmitters such as acetylcholine and serotonin depend on inositol to function properly. The loss of inositol from the nerve cell is a major cause of decreased nerve function. In 1983 it was found that inositol supplements may improve nerve conduction velocities in diabetics and thus be beneficial in the treatment of diabetic neuropathy. To supplement diabetic treatment, doses of 1000-2000mg per day is indicated.

#### Nifedipine

From all the available information it would appear that reduced nerve blood flow is implicated in the etiology of diabetic neuropathy. *Nifedipine* is a calcium channel antagonist which has a direct vasodilatory effect on vessels, nerve conduction, hypoxic resistance and capillary density. It has been found that in diabetic patients suffering with 'black toes' treated with a topical *nifedipine gel*, their condition returned to normal within a two week period. In higher concentrations the effects on gangrenous toes have been promising. Stiff fingers due to vascular deprivation have also shown marked improvement.

It should be noted here that in a study at RPAH, patients taking *simvastin* developed sensorimotor neuropathy but had partial or complete resolution after withdrawal of treatment. Thus *simvastin* should be considered among the causes of peripheral neuropathy and should be withdrawn if muscle weakness or sensory disturbances occur. Thus I would recommend that any patient on a 'statin' should be evaluated for clinical symptoms of myalgia. Moreover any patient on a 'statin' should receive supplemental antioxidants plus Coenzyme Q10.

## Neuropathic Pain

There is a common pathway for neuronal susceptible pain. It is complex to explain but the pain is due to actions at basically two pain receptor sites both very different in etiology. If one can use antagonists that block these receptor sites pain can be alleviated.

Examples of antagonists are *gabapentin*, *amantadine* and *ketamine*. They are potent pharmaceuticals and as such require a doctor's prescription. However much study is being done on them, both in the form of injectable and oral preparations, and as transdermal gels that have the advantage of not causing any gastric side effects.

To show the benefits of topical preparations there is a study showing the effectiveness of a 500mg tablet of aspirin compared with a 750mg gel of aspirin. The level of analgesia attained with the gel was more effective and there was no active drug in the plasma after topical administration. The use of *ketamine* both orally and transdermally has been found to have been extraordinary with

regard to neuropathic pain relief in the areas of fibromyalgia, glossopharyngeal<sup>8</sup> pain, and cancer related pain.

The use of this new pain technology has changed the face of traditional treatments. In all areas of extreme pain this art of compounding and combining different pharmaceuticals in lower doses has more rapidly reduced or alleviated pain, and for longer periods of time (sometimes days) with fewer side effects. Because pain differs in intensity and pain thresholds vary from person to person, pain is individual and treatments should be compounded likewise.

These notes are a mix of many papers and lectures attended and as such I would like to acknowledge all the people responsible for them.

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## Footnotes

- 1 ) **Diabetic Neuropathy** - Disease of the nervous system due to diabetes.
- 2 ) **Peripheral** - pertaining to the outside surface, or surrounding area.
- 3 ) **Distal symmetrical polyneuropathy** - Distal means furthest away (from head), symmetrical - very similar in relative place (both sides), polyneuropathy - a condition in which many peripheral nerves are afflicted with a disorder.
- 4 ) **Prostaglandins** - Hormone-like substances with various function (contraction of blood vessels, smooth muscles) and mediators in inflammatory processes.
- 5 ) **Hypoxia** - Deficiency of oxygen in tissues
- 6 ) **Endothelial** - referring to the single layer of cells lining the heart
- 7 ) **Endoneural** - referring to coverings of nerve fibres
- 8 ) **Fribo** - pertaining to fibre, myalgia - diffused muscle pain, glossopharyngeal - pertaining to the tongue and pharynx.

# Allergy, Intolerance, Sensitivity

by Dorothy R. Schultz

From

Hypoglycemia Association, Inc. Box 165  
Ashton, MD 20861-0165  
(Founded in 1967)

From: <http://www.fred.net/slowup/hai181.htm>

**T**he Hypoglycemia Association [American] cannot give you a specific diet for hypoglycemia because each individual has different tolerances. Everyone must determine for himself what he can and cannot eat. However, some of us would struggle for a long time with this advice without guidelines, and we feel it is best to start with a suggested diet, give it a fair trial, and then make changes. Until we give up all the questionable substances, we cannot tell if we can tolerate them. Even then some "unquestionable" ones may also cause problems. BEWARE of "New and Improved" foods which may have new additives which you may not tolerate, such as flavor enhancers or the like.

One begins with the Hypoglycemic Diet of adequate protein and fat, and unrefined carbohydrates with no sugars, no refined starches, no caffeine, no alcohol, and no tobacco. Grains containing gluten, such as corn and wheat may not be tolerated. Since many food products contain sugars (anything ending in "ose" such as glucose, dextrose, maltose, etc.) and/or grains, labels must be checked. Sugars can be listed in several forms in the same item which, when added up, can be significant. Next the caffeine in weak tea and decaffeinated coffee should be suspected, then milk, processed

cheese, and eggs. Additional foods may include peanuts (which may contain mold), beef, tomatoes, citrus fruits, chocolate, soy, MSG, sulfites and aspartame (Nutrasweet/Equal). As one becomes stabilized on medical and dietary therapies, he can cautiously try some baked potato skin with just as much potato as adheres to the skin, or a small amount of brown rice, or some gluten free grains such as quinoa (keenwha), amaranth, and soy. Phase II of the diet gives more suggestions.

### Allergens

The substances in foods that cannot be handled by some individuals are called "allergens". There are other common allergens such as "inhalants" (dust, pollens, fungi, molds, mildew, smoke, perfume, sprays, air fresheners), "drugs" (aspirin, antibiotics, serums), "infectious agents" (bacteria, viruses, fungi, animal parasites), "contactants" (chemicals, animals, plants, metals), "physical agents" (heat, cold, light, pressure from tight clothing, radiation).

### Examples

#### Molds and Dust Mites

Employees in the 2 year old municipal building in Bridgton, Maine suffered from chronic sinus problems, headaches, colds,

nosebleeds, and dry throats. (Portland Press Herald, 8/17/91) Analysts had identified dust mites and molds as possible culprits which may have resulted from past flooding or poor ventilation after carpet shampooing. Over \$14,000 had been spent to fix the problem. (The poor ventilation may also have resulted in a lack of oxygen which is absolutely necessary for the utilization of blood sugar for energy. HAI)

### Laboratory Chemicals and Mushrooms (fungi)

In 1970 HAI member Stephen A. Levine, PhD. went to the University of California at Berkeley to start a 4 year fellowship in the Dept of Genetics (Let's Live 5/80) He developed his first chemical allergies in the laboratory, but did not realize it until later. As an agricultural biochemist he chose to work on producing bigger and better mushrooms, but discovered that the part which forms the fruit produces carbon monoxide gas at a certain stage of growth. This, plus the toxic chemical he also worked with, contributed to the destruction of his immune system even though the Santa Cruz area has clean ocean air.

He began to have adverse reactions to foods and lost his motivation to work. Quitting his job, he went to several allergists who

told him to simply avoid the foods and chemicals that caused his symptoms. He became allergic to almost everything. Phyllis Saifer, M.D. found a almost total absence of antibodies in Class A which showed that he couldn't possibly defend himself against bacterial and viral infections. From California he went to Dallas where he lived in an environmental unit at Brookhaven Medical Center, where everything was as free as possible of inhaled and ingested agents which could cause symptoms. Fasting for 4 days, he had every possible ache and pain that he had had before plus a craving for food. Sleeping 18 hours a day, he was in a daze when awake. Testing of foods began and cheese, his favorite, caused headache and a devastating hunger. After testing other foods, 15 acceptable one were discovered.

Leaving there, he had to find an inexpensive and comparable place to live, ending up in a storage shed made of wood and concrete and wearing a charcoal mask to filter out the chemicals. His friends and family did not understand and he was very lonely except for two understanding neighbors. He thought he would try some vitamins, testing them one by one, but after 3 1/2 months he became allergic to his typewriter. Continuing to try vitamins and minerals, he found that a single brand of **adrenal tissue** gave him a dramatic boost. After 4 1/2 months on the supplements, he was getting stronger and in 6 months we able to move back into his home and begin to eat a greater variety of foods. The formulas he developed have enabled him to suppress 90-95% of his symptoms as long as he faithfully takes them and avoids severe stress.

As a result of his experience, he founded *The Allergy Research Group*, Box 489, 400 Preda Street, San Leandro, CA 94577. (510)569-9072

### **Wheat**

The reactions caused by allergens vary from individual to individual but these substances evoke general characteristic symptoms. "Wheat" causes itching of the skin, extra mucous, and gastrointestinal distress, but is especially apt to produce mental reactions of tension, fatigue, paranoia, and agitation. Look for twitching of muscles occurring in the calf muscles, on the back, or in the face. Wheat is likely to produce arthritic joint pains. Persons with celiac disease have a marked impairment of absorption of food from the intestine. They cannot handle the gluten in wheat, rye, oats, and barley, nor the protein in cow's milk. This is usually a hereditary defect.

### **Corn**

Characteristics of corn are such symptoms as excessive mucous, stuffy nose, sore throat, cough, itching skin, tension, weakness and sore muscles. They also may be nausea, stomach ache, bloating, and gas. It is very difficult to avoid since it is found in hundreds of food items, medications, containers, gummed wrappers, powders, and some plastic food wrappers.

### **Milk**

The symptoms characteristic of milk are a flush, itching, nausea, vomiting, diarrhea, bloating, gas, stuffy or runny nose, or the development of many mental symptoms.

### **Food Intolerances**

The protein in milk may be an allergen. Persons who lack the enzyme lactase cannot digest lactose, (a milk sugar) thus milk is for them a toxic substance. Lactase deficiency has been reported in 10% of Caucasians and 70% of others. "Lactase deficiency leads to fermentation of lactose with the production of lactic acid, which is absorbed into the blood and ties up calcium and magnesium, precipitating an acute deficiency of calcium and magnesium." Patients with anxiety neuroses have been found to show an excessive rise in lactic acid (lactate); experiments have shown that anxiety symptoms and attacks can be induced by injections of lactate. Allergies manifest themselves particularly at birth, at puberty, and after age thirty — three stressful periods of life.

### **Examples**

#### **Milk and Sugar**

When one of our HAI members was growing up in Texas there was a set of non-identical twins in the school whose mother sent notes to the teachers advising them not to let the twins have any milk as they were highly allergic to it. As children sometimes do, they would trade something in their lunch for milk or a food with milk in it. Within 30 minutes, they would be uncontrollable. It would take several hours to calm them down.

Alexander Schauss, a Probation Officer in California, discovered that, along with all the junk food consumed by chronic offenders, they consumed unusually high amounts of milk. He said that it is incredible how much they drank—up to a quart every two to three hours. They crave it. (Let's Live, 11/80).

At the Age of Five, B.D. had had tubes placed in his ears 3 times and her tonsils and adenoids were gone. His mother reported to Jonathan V. Wright, M.D. at the Tahoma Clinic, "Even with all that, he keeps on getting earaches, one cold after another, coughs, a runny nose resulting in more antibiotics and decongestants."

After a family history, Dr. Wright asked what she ate which was, "toast, and peanut butter, or a TV type cereal and milk for breakfast; lunch at school, hot dogs, sloppy joes, carrot sticks, celery, gelatin, after school root beer and crackers or cookies or a granola bar; dinner beef, chicken or fish, potatoes or rice, one or two vegetables, corn, beans, or broccoli, and sometimes lettuce salads." She has milk every meal and prefers white bread. She had dark circles under her eyes and fine horizontal creases in her lower lids which were slightly puffy. Her nose was runny, and she looked pale. Dr. Wright stated that the dark circles showed that she was allergic to some of her food although previous scratch tests by another doctor showed her only allergic to

yeast. He explained that she should omit milk and dairy products but also that they needed to go over something more basic; refined sugar and processed food. The mother asked what sugar had to do with earaches? Dr. Wright said, "Not just with earaches, but infections in general. Sugar significantly interferes with the ability of white blood cells to kill germs." Asking about birthdays and Christmas, the doctor replied, "Why make him more susceptible to infections for his birthday?" (Let's Live 7/88)

Trying to Plan Around His Food Allergies was very difficult for his mother but, with the help of books, the health food store, and the Tahoma Clinic, got the job done. In 1988, at age 11, B.D. had had no earaches, no infections requiring antibiotics and only 3 colds in the 6 years since she had "completely and permanently changed our family's ideas about food."

John W. Tintera, M.D., and endocrinologist, wrote that all his allergic patients had poorly functioning adrenal systems. The body stresses are handled by these glands. The allergens are foreign substances, some of which have to be neutralized chemically. They, as well as walking, running, arguing, are normal stresses and, in the body which is not allergic, a highly complicated chain of reactions takes place to fight the invaders. Persons with poor adrenal systems have a built-in weakness in handling stresses. These allergic patients "were treated and improved of their allergies with injections of beef adrenal cortical hormones in the balance drawn up by nature." (The adrenalin from the center of the glands was removed so only the hormones from the cortex were received by the patient) This is no longer available but whole gland tablets and sub-lingual solutions are.

In a large series of cases manifesting allergic symptoms, several findings were constant if, in addition to the adrenal cortices, other glands were involved, he wrote: These are:

1. Relative lymphocytosis (a large number of lymphocytes - white blood cells)
2. Eosinophilia (a large number of eosinophils - one of the white blood cells)
3. Low flat glucose tolerance curve or reactive hypoglycemia
4. Hypometabolism - low Basal Metabolic Rate (normal P.B. I., T-3 and RaI uptake)
5. Hyponatremia (low levels of salt in the blood)

### **Comparison of Adrenal Glands of Laboratory Rats and Wild Rats**

For over 100 years, laboratories in Norway have used rats. 100 years compares to 5,000 years in human history. In Archives of Environmental Health, Richard A. Kern, M.D. reports on a researcher named Richter who found that the lab rats had adrenals which were 1/3 smaller than those of the wild ones. Dr. Kern says it is difficult to make a rat

allergic to anything. To do so one must remove most of the adrenal glands. So, it appears that this gland must have some important bearing on one's susceptibility to allergies. The wild Norway rat needs a full size adrenal gland so he can get away from his enemies. Primitive man - much more free of allergies - still needs the power of his adrenals in an emergency for the ability to fight or flee.

*Goodbye Allergies*, a book by Judge Tom R. Blaine, led me to my treatment for hypoglycemia and allergies in 1964 by Mahlon C. Hinebaugh, M.D. who is now retired. Judge Blaine describes his lifelong problem with allergies and his treatment by John W. Tintera, M.D. (deceased) with diet and adrenal cortical extract.

A soldier stationed at Ft. Belvoir, Va, called HAI in 1980 saying that he had been abusive to his wife and three children and that they had been separated for 3 years. He also had re-

cently found out that he was hypoglycemic and was receiving treatment and a diet. Realizing why he had been so irritable with them he wanted to reunite with his family. When he said that they were in Enid, Oklahoma I said, "That's where Judge Blaine lives." So he contacted the Judge to ask for his help. A few months later we received a manuscript telling the story of his marriage of 16 years and the divorce. A note was written on the cover, "To Dorothy Schultz with best regards from the author. P.S. Your letter, together with Bulletin #86 and information regarding Judge Blaine played a tremendous role in making the ending of this article possible. When I retire from the U.S. Army in January, 1981, I will return to Enid. We will be remarried shortly after that."

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## *Here's the latest information on diabetes research (Part I)*

*As presented at the American Diabetes Association's  
59th Annual Scientific Sessions, 19-22 June ,*

From the Internet at <http://www.mediconsult.com>

### **Depression Takes Heavy Toll on Diabetics**

**R**ecent studies indicate that depression precedes Type II diabetes in 90 percent of people with both illnesses. What does that really mean to you?

Researchers from the University of Oregon Health Sciences Center conducted a study of 10,000 people, 5,000 with Type II diabetes and 5,000 without it. The two groups were similar in other ways such as age and gender. The team hoped to answer three questions:

- Are diabetics more likely to be depressed than those who don't have diabetes?
- What types of medications are depressed diabetic people likely to be taking?
- What are the costs of treating a person with diabetes, depression, or both?

They found that 62 percent of diabetics are more likely to be depressed than people without the disease. Among diabetics, those who are depressed are more likely to be taking insulin than managing their diabetes through diet and oral medications.

Diabetics are less likely to be taking antidepressant drugs. Of those who are being treated, most are on the same medications as any depressed patient; serotonin re-uptake inhibitors, such as Prozac, Zoloft, or Paxil. They also were taking more tricyclic antidepressants, such as Elavil. However, the researchers were uncertain if they were taking

the antidepressants at the higher doses needed to treat depression or at the lower doses used to treat peripheral neuropathy, a common complication of diabetes.

As for costs, depressed people use more services and spend more money than average, whether or not they also have diabetes. In fact, it costs about the same amount to treat a diabetic without depression as it does to treat a depressed person without diabetes. Having both diseases increases costs considerably.

Treating the depression was shown to increase an individual's adherence to his or her treatment plan, improve blood glucose control, as well as improve the individual's psychological outlook.

From any perspective, untreated depression in Type II diabetes carries a high cost, financially, physically, and mentally.

### **Chromium Picolinate Improves Insulin Sensitivity**

Chromium picolinate has been suggested as a way to help reduce insulin levels, thereby, controlling glucose levels in the blood. Its action appears to be independent of weight loss or amount of body fat.

When discussing diabetes, you may have heard the term "insulin resistance." Aside from the obvious meaning that your cells are resistant to the normal effects of insulin, what does it mean? Researchers from Wake Forest University School of Medicine say it means

that you're well on your way to developing Type II diabetes, even though it could take years. Your body's job is to keep blood sugar levels within a narrow range. If the insulin you have isn't effective, you compensate by making more insulin. Eventually, the beta cells in the pancreas fail as they struggle to keep up with increasing demand. Over time, as the effectiveness and the quantity of insulin decrease, blood sugar rises, resulting in Type II diabetes.

This is a common progression into diabetes, particularly if you're obese. Researchers note that nutrition and exercise can have a profound effect in halting this progression, but maintaining weight loss over a long period of time has proven a stubborn enemy. This research team's study did find evidence that chromium picolinate, while not directly reducing insulin levels, did increase cell sensitivity to insulin. If the insulin that's there is being used successfully, the body signals the pancreas to stop making insulin. Without this message, the pancreas will stop producing insulin, which theoretically should decrease insulin levels.

Researchers called for further study into these findings using more specific measuring tools to monitor insulin action and glucose control. These studies are presently underway. If their results are similar, your doctor's advice might change to eating healthy, exercising regularly, and taking chromium picolinate.

### **Exercise Good for Diabetic Mother and Her Baby**

If you're pregnant and have gestational diabetes, you should be up and moving. According to researchers from St. Louis School of Medicine, exercise is underutilized both for preventing and treating gestational diabetes.

In their study, women who had developed Type II diabetes during their pregnancies (gestational diabetes) showed significant benefits from exercising. Additionally, in women with precursor conditions for diabetes, exercise prevented the disease from developing.

Physical inactivity can cause hyperglycemia, increased fat storage, increased free fatty acids, and an increase in the size of your individual fat cells (adipose hypertrophy). This last condition leads to cells becoming resistant to insulin, which makes you more hyperglycemic, and the cycle continues.

Aspects of your metabolism are magnified by 35 to 50 times by simply contracting your skeletal muscles. This includes how much glucose your cells take in and how fast they burn it up.

Present recommendations include exercising 45 minutes at least three times a week. More than one hour of continuous exercise increases the risk of a hypoglycemic reaction. Avoid lying on your back or standing still. Do not participate in sports that require balance or contact. Non-weight bearing exercises, such as swimming, are best. Make sure you're maintaining adequate calories and fluids, and avoid hyperthermia.

*Hyperthermia*, a body temperature higher than 103 F (About 40°), can occur simply from exposure to high outside temperatures or from heat produced by exercising. This can be dangerous for the baby, particularly in early pregnancy when it's linked to neural tube defects.

Researchers stress that exercise must begin before the thirty-third week of pregnancy for it to have any benefit. Exercise used in the study was aerobic with moderate resistance. If you haven't been exercising, you'll need to build up to this level slowly. Blood glucose was monitored continuously, and if glucose levels did not stay below 105, the women were given insulin.

More than 90 percent of the participants were able to follow the plan, which involved moderate exercise three times a week. Most kept their glucose levels under control without using insulin.

### **Teen Diabetics Need Counseling Before Getting Pregnant**

A study of female teens with Type I diabetes revealed an alarming lack of knowledge about how their disease affects their reproductive health. Researchers from the University of Pittsburgh conducted a study of 88 females, with an average age of 17 and one-years that had been diagnosed with Type I diabetes at least eight years earlier.

Seventy-three of the teens were still in high school, and the rest were in college. Half of the participants were Roman Catholic and most were white and well off. Forty percent of the

teens were sexually active.

The nurses discovered that 63 percent of the girls had never asked anyone how diabetes could affect pregnancy. Twenty-three percent admitted they knew nothing about the subject, and none of them had been told to get preconception counseling.

The girls reported feeling very susceptible to problems, but said they were unaware of the risks diabetes could have on them or their babies. Only 85 percent of the sexually active teens used birth control all the time, and just 17 percent used a combination method to protect against both sexually transmitted diseases and pregnancy.

A few previous studies linked diabetes with infertility. However, this may be due to a smaller window of fertility, as females with Type I diabetes tend to start menstruation later and experience menopause younger. Menstrual cycle dysfunction further disrupts fertility.

Once pregnant, a diabetic woman is more likely to get morning sickness, urinary tract infections, retinal changes, hypertension, and hydramnios (excess amniotic fluid). The baby is likely to be large, possibly requiring a cesarean section, and has a higher risk of hypoglycemia, hypocalcemia, and hyperbilirubinemia in their newborn days. However, the most serious risks are birth defects, particularly heart abnormalities, and stillbirth.

The nurses encouraged the girls to get information on their disease and pregnancy risks BEFORE getting pregnant. They encouraged the mothers to act as gatekeepers and help their daughters or granddaughters by providing them information on this topic.

### **Liver's Role in Diabetes Gets Closer Look**

Ordinarily, the organ most associated with diabetes is the pancreas. After all, that's where insulin is made. However, researchers from Boston presenting at the 59th Scientific Sessions of the American Diabetes Association suggest that the liver deserves a closer look.

This team of researchers bred genetically altered mice, so the insulin receptor cells in their livers would not respond to insulin. Under normal conditions, when an increase in insulin is detected the liver stops producing glucose and starts storing excess glucose as glycogen in your liver and muscles. Both processes lower your blood sugar level.

Since the mice livers couldn't detect whether or not insulin was present, the liver had no way of knowing how much glucose was in the blood. A significant increase in blood sugar was found, a condition called hyperglycemia.

Sometimes your cells become desensitized to insulin, and glucose can't get into your cells even if insulin is present. This is called insulin resistance, and it too can cause hyperglycemia.

Despite the pancreas releasing more insulin, glucose remained high, leading researchers to believe that the cause was the liver's inability to detect high insulin levels. This, in

### **MEMBERS THAT HAVE MADE DONATIONS TO THE ASSOCIATION ARE:**

Belik, Lydia  
Bridle, Marina  
Jaccoud, Anna  
Preston, Caryn  
Sara, Catherine  
Sleeman, Rosemary  
Wiggett, Helen  
Wright, Barbara

### **THERE ARE 9 PROFESSIONALS WHO HAVE MADE DONATIONS AMONG THESE ARE:** (Names published with permission)

Beim, Mim - Surry Hills, NSW  
McMahon, LJ - Killara, NSW

The Editor apologizes for the delay in the acknowledgement or if any names have been omitted. The error is due to administrative oversight, and any further donations will be properly announced, unless sponsors do not wish their names to be published.

Any donations to the Association are now tax-deductible as we are a registered fund-raiser under the Act.

turn, indicates that the liver plays a much larger role in keeping blood sugar levels stable than previously thought.

A few other interesting observations were made about these mice. Their livers had not developed properly. They had dysfunctional tissue, damaged cells, and more fat in their liver tissue. Albumin, a protein that helps keep the fluid content of the blood constant, decreased by 50 percent.

From these congenital malformations of the mice's liver, the researchers concluded that insulin must play an important role in normal liver development. They also noted that the mice's pancreases produced less insulin.

Having the insulin receptor knocked out caused these mice to become hyperglycemic and their cells to become insulin resistant. Since all this knowledge has only recently been discovered, further research into the liver's role in diabetes is needed, and this new information must be incorporated into current understanding of diabetes.

### **New Inhaled Insulin Gets High Marks**

A vulnerable time for many Type II diabetics occurs when oral medications fail, and they're told they must take insulin. Many people have an aversion to giving themselves injections and, as a result, their diabetes goes uncontrolled. Now, inhaled insulin might be an alternative. Researchers from San Diego have completed a clinical trial comparing the use of inhaled insulin and oral hypoglycemic agents to the use of oral hypoglycemic agents alone.

The group using both treatments clearly did better at the four-, eight- and 12-week check-ups. Fasting blood sugar levels dropped

an average of 75, and their HbA dropped by two. However, people taking only the oral hypoglycemic agents showed no changes. Both tests measure how well your blood sugar is controlled.

The 65 participants had Type II diabetes and HbAs of more than eight, despite taking the oral medications. During the study, the oral agents were continued for both groups and the experimental group also used the aerosol insulin three times per day, after each meal. Some people also used it at bedtime.

The inhalation device is a large, clear chamber with a mouthpiece at the base. A blister pack containing powdered insulin is inserted.

and when the trigger is pulled, it's released into the chamber, forming a cloud.

Using the mouthpiece, you inhale for three to five seconds and then hold it another three to five seconds. If the chamber is clear, you've gotten your insulin. About three units of insulin are delivered, taking effect faster than 10 units injected.

Another side effect of insulin injections is the hypoglycemic reaction that often occurs after the injection. In this study, the average occurrence of hypoglycemic events was only one-half of a reaction per participant, per month. Only one was severe enough to require assistance. The control group had no hypoglycemic events, which is not surprising considering they had no improvements in their glucose level.

The participants in this study were so happy with the results that they all chose to continue with the therapy after the study concluded.

## INTERNATIONAL CLINICAL NUTRITION REVIEW

By Editor

Dr Robert Buist, Editor in Chief of the ICNR, has indexed the **International Clinical Nutrition Review** which will be updated in the last issue of each year.

This makes the series of International Clinical Nutrition Review a valuable commodity in one's private library for anyone who is interested in the scientific basis of clinical nutrition.

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

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## Research Snippets

### *Spirulina inhibits HIV replication*

Spirulina has been found to inhibit HIV-1 replication in human T-cell lines, peripheral blood mononuclear cells (PBMC), and Langerhans cells (LC). In this study an aqueous extract of the blue green filamentous algae *Arthrospira platensis* at concentrations ranging between 0.3 and 1.2 mg/ml reduced viral production by approximately 50% in PBMCs. The extract inactivated HIV-1 infectivity directly when preincubated with the virus before the addition to human T-cell lines. Antiviral activity was found to occur in

### Update on Stevia

Stevia, an alternative sweetener, is now also available in herbal form. It is obtainable at Newton Pharmacy, York Street, opposite the Queen Victoria Building. The dried herb can be mixed with the tea. The Editor would be pleased to receive any information from members of other sources for Stevia.

both the polysaccharide fraction and also in the fraction depleted of polysaccharides and tannins.

Ayehunie S, Belay A, Baba TW, Ruprecht RM (1998), Inhibition of HIV-1 replication by an aqueous extract of *Spirulina platensis* (*Arthrospira platensis*), **J Acquir Immune Defic Syndr Hum Retrovirol 18(1): 7-12**

### Atopic Disease and Infant feeding

Infants with a family history of atopy (allergies) are followed in this five-year prospective study. 216 children were randomly assigned either to be fed exclusively for 6 months, a partial whey hydrolysate or conventional cow's milk formula or a soy formula. After 5 years infants fed breast milk and whey hydrolysate had a lower incidence of atopic disease and severity of eczema reduced. Food challenges also showed a lower occurrence of food allergy in breast fed and whey hydrolysate fed infants.

Chandra RK (1998), Five-year follow up of high risk infants with family history of allergy exclusively breast-fed or fed partial whey hydrolysate, soy and conventional cow's milk formulas, **Nutr Res 18(8): 1395-1411**



**THE HYPOGLYCEMIC HEALTH ASSOCIATION**  
P.O.Box 830, KOGARAH NSW 1485

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

## 1999 MEETING DATES ON SATURDAYS

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

His doctors now say they left him needing an urgent liver transplant, writes the BBC's Tristan Quinn. It should have been one of the happiest days of his life. But Jim McCants looks back on his youngest son's high school graduation with mixed emotions. As he sat down next to his wife Cathleen in the university auditorium, just outside Dallas, Texas, she turned to look at him.