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DiabetesWatch

A publication of the PHILIPPINE DIABETES ASSOCIATION, INC. for the Filipino diabetic patient

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Artificial sweeteners (also known as non-nutritive, non-caloric, high-intensity or alternative sweeteners) gained popularity in the past decade owing to lower intakes of simple sugar for the management of diseases such as diabetes, obesity, dental caries and many more and the increased availability of artificially sweetened products in the market today.

Unfortunately, many people have become increasingly concerned about the long-term safety of the use of these sweeteners. Thus, this article will discuss some of the safety issues and recommended dose intake for the two most popular sweeteners: aspartame and saccharin.

ASPARTAME

Aspartame is made up of two amino acids: aspartic acid and phenylalanine. It is marketed as a tabletop sweetener under the brand name of EQUAL^{R}, and as an ingredient in food products as NUTRASWEET^{R}. It is approximately 180 to 200 times as sweet as table sugar.

The method by which aspartame was approved initially in 1974 by the U.S. Food and Drug Administration (FDA) was controversial. Many critics contend that it's approval by the FDA was too hasty in spite of the many safety issues involved. Some of these issues claim: aspartame may cause brain damage, mental retardation, endocrine dysfunction, and functional or behavioral changes as a result of altered brain activity.

The Center for Disease Control (CDC) reported several reactions to aspartame. The symptoms were headaches, mood changes (agitation, anxiety, irritability, or depression), insomnia, dizziness, and fatigue. However, the CDC concluded that overall the symptoms were mild in nature and although some individuals may have unusual sensitivities to aspartame, there is no evidence to suggest a widespread public health hazard associated with aspartame use.

The acceptable daily intake (ADI) of aspartame established by the FDA includes a safety factor of 100 times the amount. The ADI is the amount that individuals can safely consume each day on a long-term basis.

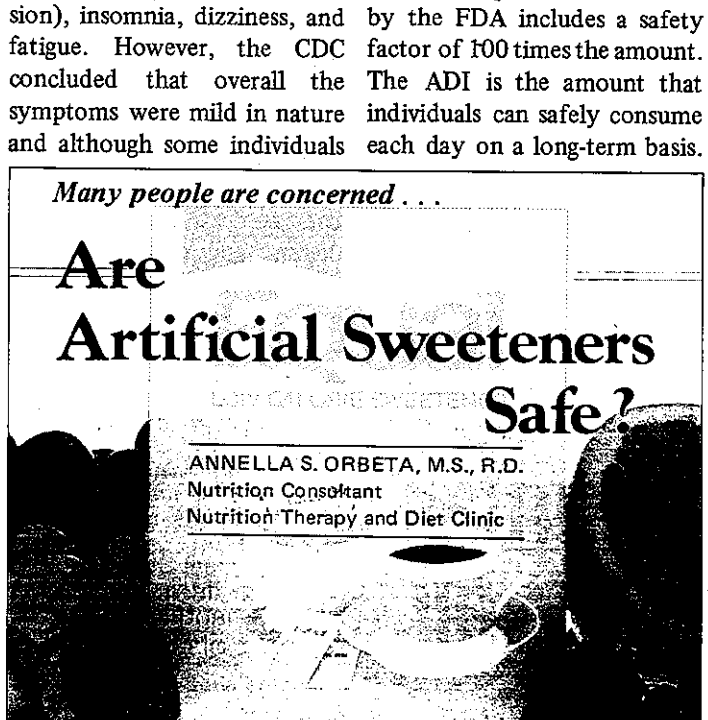

Table 1. Approximate aspartame content of beverages, products and tabletop sweeteners.

Product	*Amount*	*Aspartame (mg)*
EQUAL	1 packet	35
NUTRASWEET-sweetened beverage (fruit-flavored drink/ 10% fruit juice, carbonated beverage, powdered soft drink, hot chocolate, or tea)	12 ounces	150
NUTRASWEET-sweetened products:		
Cereal	1 cup	55
Pudding	1/2 cups	55
Gelatin	1/2 cup	55
Bar/Frozen novelty	2-1/2 ounces	55

This level was established for all age groups (except for infants, pregnant and lactating women, and phenylketonurics). The ADI also took into consideration that children usually consume more because they don't weigh as much as adults.

Initially, the ADI was 20 milligrams (mg) per kilogram (kg) body weight. Currently, it is 50 mg per kilogram body weight. For example, a 48 kg (105 lb.) reference female's ADI is 2,400 mg or 2.4 grams aspartame per day. This translates into 16 cans of 100% aspartame-sweetened diet soft-drink per day. A 12-oz can of diet soda contains 150 mg aspartame (see Table 1).

The ADI seems quite high. However, for those who wish to take less than the ADI until long-term data are available, should consume 17 mg aspartame per kilogram body weight per day or less. For the 48 kg female, this now translates to 5 cans of diet soft-drink per day, a more reasonable level.

SACCHARIN

Saccharin, the first man-made sugar substitute, is 300 to 400 times as sweet as table sugar. Although saccharin has been found to cause cancer in experimental animals, there has been no human evidence to date that links cancer to saccharin use. However, because of its cancer-causing potential in animals, there may be an increased risk of developing the disease in the long-run.

Other than the bitter and

(Continued on page 5)

"Darak" is not a medicine . . .
it is just one source of fiber.

More On Rice Bran

AUGUSTO D. LITONJUA, M.D.
President, PDA

The last two issues of **DiabetesWatch** featured rice bran, or darak, as good additives to the Filipino diet, especially in the diet of the diabetic patient. At once, it must be said, that rice bran is not a medicine. The misconception has arisen fast. Rice bran is a cheap and ready source of fiber – which in short sequesters the sugar and the fat of the diet so they don't get absorbed, thus preventing the too much rise of the blood sugar after eating. To achieve the benefits of rice bran, it must be mixed with food!

It seems that there are several types of rice bran or darak that can be bought. The finest is called D-1 and should not contain the rough and unpalatable fibrous hull of the rice grain, called 'ipa' in the vernacular. Even then, D-1 is recommended to be strained to remove big particles. To keep it for 2-3 months, one should roast it to remove the volatile oils and moisture, then store in a well-covered jar. Refrigeration further prolongs the shelf life of the rice bran.

Some people are sensitive to the properties of the bran, – thus, gradually increasing the amount to be mixed with food over weekly intervals will promote tolerability of the rice bran, e.g., it is recommended that 1 level tablespoonful be mixed with food three times a day initially, then increased after 1 week to 1½ level tablespoonfuls three times a day, until the recommended amount of 10 tablespoonfuls can be reached over a period of weeks.

Some enterprising patients have capsulized the bran – and taken the capsules during meals. Empty capsules can be purchased from the drug store.

Other patients have incorporated the rice bran into biscuits and other native goodies. However, patients are cautioned that incorporating rice bran into their foods do not give them license to eat more. What should be the objective, is to use the rice bran as an aid to dieting, and thereby hope to decrease the medications they are on. Many patients have accomplished this.

IDF-WPR

DiabetesWatch

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PHILIPPINE
DIABETES
ASSOCIATION,INC.
with offices at Room SA 301,
Lung Center of the Philippines
Elliptical Road, Quezon City

To reduce your risk for heart disease, minimize your insulin dose with more attention to diet and exercise. The reason for this is in this article.

ATHEROSCLEROSIS AND TOO MUCH INSULIN

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Endocrinologist
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It has long been recognized that **atherosclerosis** occurs more frequently in diabetic patients than in normal people. **Arteriosclerosis**, a generic term for thickening and hardening of the walls of the arteries is responsible for the majority of deaths in most westernized societies. One type of arteriosclerosis, is atherosclerosis the disorder of the larger arteries, as of the arteries supplying the heart muscle (coronary arteries), the aorta, the arteries of the lower extremities and the arteries supplying the brain (cerebrovascular arteries). These larger vessels when involved in diabetes is called **diabetic macroangiopathy**. Involvement of the smaller blood vessels in diabetes is called **diabetic microangiopathy**. One type of smaller vessels involved are those in the eyes (retinal vessels) and can lead to blindness. When the smaller vessel of the kidneys are involved, the condition is known as diabetic nephropathy and this can lead to chronic kidney failure eventually requiring dialysis or transplantation.

Studies have shown that heart attacks and strokes are about two times more common in patients with diabetes than in the general population. Gangrene is at least 5 times more frequent. Blindness is 25 times more frequent in diabetics. Kidney failure is 17 times more frequent than non-diabetics.

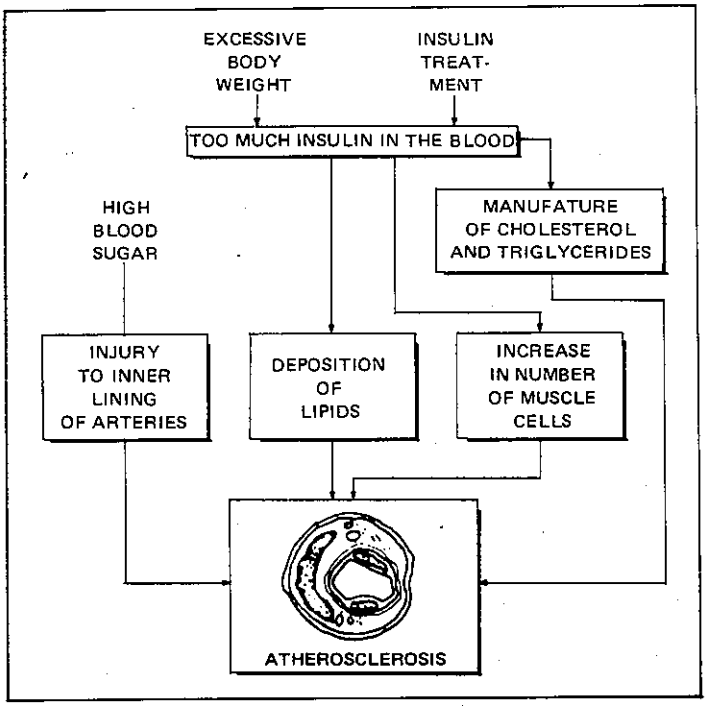
It has been estimated that on the average, the expected life span of diabetics is only two-thirds that of non-diabetics. Risk factors for atherosclerosis include high blood pressure, smoking, obesity, lipids (cholesterol and triglycerides), hyperglycemia (high blood sugar) and hyperinsulinemia. In the non-insulin dependent diabetic, insulin levels are usually elevated (hyperinsulinemia) but the body cells and tissues are resistant or do not respond to the action of insulin. In the insulin dependent diabetic, the insulin administered is sometimes more than that required.

There are several processes involved in the development of atheromatous plaques, or hard fat deposits on the arteries. Investigators feel that insulin is related to the development of atherosclerosis. Insulin may act directly on the arterial wall or may influence changes on the artery by acting on substances like cholesterol and triglycerides.

The development of an atheromatous plaque, includes injury into the inner cell lining of the arterial wall (endothelium), an increase in number of smooth muscle cells (proliferation), and uptake of lipids by smooth muscle cells and other cells such as macrophages.

Insulin stimulates proliferation of smooth muscle cell. Insulin also stimulates the synthesis of cholesterol and triglyceride in the arterial wall. Insulin does not affect the endothelial cell. High blood sugar (hyperglycemia) alters the endothelial cell, thus allowing insulin to interact with the smooth muscle cells (See diagram).

In the obese non-insulin dependent diabetic, hyperinsulinemia can be reduced by decreasing body weight, exercise and intake of a high-fiber diet. Adhering to the prescribed diabetic diet can help decrease the hyperglycemia. In the insulin-dependent diabetic, diet and exercise are essential to secure good control of blood with the lowest possible dose of insulin.



Research in the news:

Prevention Prospects

The incidence of non-insulin-dependent (type II) diabetes could be reduced up to 50 percent if obesity were controlled. That is one finding of a U.S. government report that reviews the chances for reducing the incidence of diabetes and some of its major complications.

The report, "Disease Prevention/Health Promotion: The Facts," was prepared by the Office of Disease Prevention and Health Promotion in the U.S. Public Health Service.

Among the conclusions:

* Better education about diabetes care could cut the incidence of diabetic ketoacidosis by 70 percent and prevent 50,000 hospitalizations each year.
* Prompt diagnosis and appropriate use of laser photo-

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Filipinos Join International Camp

Four Filipino juvenile diabetics, a diabetes teaching nurse and a diabetologist were invited to join an international camp for diabetic children in Ehime, Japan on August 1-8, 1989.

Playing host is The Lions Club International with the following co-sponsors:

= International Study Group of Diabetes in Children and Adolescents

= Japan Diabetes Lay Society

= Ehime Diabetes Study Group

= Ehime Pediatric Association

Participating in the camp are juvenile diabetics Cristina Caliwara, Donna Macaspac, Ronald Francisco and Maria Cristina Caliwara from the diabetic clinics at Capitol Medical Center and St. Luke's Medical Center. Miss Merle Victorino, diabetes teaching nurse, and Dr. Araceli Panelo of the UE Institute for Studies on Diabetes accompanied the juveniles to the Japan camp.

A mini camp is scheduled for juvenile diabetics here in Manila when the group arrives from Japan.

N E W S

FAY L. DANO, M.D.
President, Cebu Chapter, Philippine Diabetes Association

Report from CEBU . . .

The fourth educational clinic in Cebu finally opened July 22, 1989 at the Southern Islands Medical Center (SIMC), with Dr. Anecito, Director of Region VII as guest of honor. The clinic is located at the second floor of the new outpatient department of SIMC. Supervising the clinic is Dr. Marian Denopol under the Department of Medicine whose chairman is Dr. Francisca Manulat. The clinic day is Wednesdays (the educational clinics in Cebu operate on different days).

The satellite clinic of Cebu City Medical Center wants to have its own independent clinic, and a first step is their being supplied with a glucose meter by Boehringer Mannheim. The Center has a lot of diabetic patients, both as inpatients and out-patients. However, a continuing problem is poor follow-up, as even discharged patients fail to return on clinic days.

The educational clinic in Mandaue City under Dr. Bernardita Amigo, and that at the Metro Cebu Community Hospital under Dr. Elma Baculao are doing well, and holding their clinic days regularly.

The clinic at the Sacred Heart Hospital (Southwestern University) to date has very regularly attending patients who are well motivated on follow-ups. One of the main factors remain the intelligent and accommodating teaching nurse and dietitian. Diabetic patients with complications like cataract, neuropathies and gangrene are also serviced by the educational clinic.

The Cebu Chapter meets regularly every month with the registry of diabetics well-kept.

A campaign for lay members is underway. Funds have been raised by patients to purchase glucose strips, and there is an on-going project to raise funds for the needs of indigent patients.

ANNUAL CONVENTION SET FOR DECEMBER 5

Dr. Mary Anne Lim-Abrahan and Mr. Eddie Ang were named co-chairmen of the organizing committee of the 1989 PDA Annual Convention. This is set for December 5 as a whole-day affair at the Manila Garden Hotel.

As in the past, the morning sessions will be reserved for physicians, while the afternoon sessions will be for patients and physicians alike.

The tentative program has three topics for the morning sessions. Dr. Karen Lam of the University of Hong Kong has been invited to speak on the pathophysiology of non-insulin dependent diabetes Dr. Klaus Koehl of Denmark will update the audience on some of the modern trends in diabetes care, especially on insulin analogues. Dr. Augusto D. Litonjua will talk on newer aspects of oral hypoglycemic agents.

The afternoon program for lay persons and physicians will have Dr. Koehl speak on "New Things about an Ancient Disease," while Ms. Annelle S. Orbeta who recently arrived from her training abroad will discuss recent concepts in the dietary management of diabetes. Dr. Ricardo E. Fernando will lecture on the ABCs of cholesterol and lipid metabolism in diabetes. The Convention is open to all for a nominal registration fee.

Theme of the Convention is: "Target: Superior Diabetes Care for the Nineties."

UE Institute for Studies on Diabetes Opens

RICARDO E. FERNANDO, M.D.
Director, UE Institute for Studies on Diabetes

The University of the East (UE) Institute for Studies on Diabetes was formally inaugurated in a mass and ribbon-cutting ceremony on June 16, 1989 with three honorary members of the board present. Dean Shigeaki Baba from Japan, Dean Elena Ines Cuyagkeng from the Association of Philippine Medical Colleges Foundation, and Professor Paul Zimmet from Melbourne, Australia were joined by Dean Joven Cuanang of the UE College of Medicine and Dr. R.W.K. Gee from the World Health Organization. Other members of the honorary board who were absent were Dr. Leo Krall of the Joslin Clinic in Boston, Mass, USA, Mrs. Luz Banzon Magsaysay, wife of the former Philippine president, and Dr. Nilo Rosas, Director of the Bureau of Higher Education of the Department of Education, Culture and Sports.

Established in cooperation with the UE Ramon Magsaysay Memorial (RMM) Medical Center, the Institute is located at the fifth floor of the College of Dentistry Building. It aims to develop a new breed of doctors called diabetologists in this country where recent statistics put the prevalence of diabetes at 4.1% of the population 20-65 years old. The figure claims a million diabetic Filipinos, mostly in their productive years, since the age incidence peaks between 40 and 60 years. An added cause for alarm is the apparently increasing number of young diabetics now presenting in our hospitals and clinics, youngest reported being ages 3-6 months old.

Diabetologists are specialists in internal medicine who possess a concentrated and ongoing interest in diabetes mellitus. They continue to provide general medical care to their patients but at the same time are abreast with the most up-to-date solutions to the problems of the diabetic. They give instructions to diabetics and their relatives as well as guidance to doctors, nurses, dieticians and other paramedical personnel. The institute proposes to develop clinicans prepared to practice, to teach, to study further, to go into research adventures, and to write. It seeks to tackle problems in understanding the disease, recognition and diagnosis, therapeutic approaches, prevention and control of complications, and securing commitments from patients, families, community and government.

The Institute was the fruit of more than ten years of popular post-graduate courses. Burdened by many limitations especially logistics, the Institute got underway with thirty four students, mostly fellows and junior consultants, and with the generous help of very gracious godfathers. It offers a two-year course leading to the degree of Master of Science in Internal Medicine, Major in Diabetes.

Part of the Institute is a "soon-to-open" charity ward for diabetic patients (eight beds to begin with) which at the moment is still struggling for a chance to come out. A few well-meaning donors have started a fund drive that is still at its very infant stage. Hopefully, more sensitive philantrophists in the upper bracket of our society will respond to the great need for proper care among our less fortunate patients.

Cagayan Chapter, PDA Organized

The Cagayan Chapter of the Philippine Diabetes Association was organized formally with the following as officers : Dr. Roberto de los Santos, president; Dr. Edgardo Ricardo, vice-president; Dr. Irma Salvanera, secretary and Dr. Marlon Sabatin, treasurer.

Aside from the officers, the members of the Board of Directors consist of: Dr. Magnolia Reyes, Dr. Teresita Flores, Dr. Emmanuel Ruiz, Dr. Ramelo Ramirez, and Dr. Ronald Guzman.

The site of the Diabetes Educational Clinic is at the sprawling Cagayan Valley Regional Hospital in Tuguegarao.

Are Artificial . . .

(from page 1)

metallic aftertaste of saccharin, adverse reactions reported have been scarce.

Recommended maximum intakes of saccharin are 500 mg per day for children and 1,000 mg per day for adults (except pregnant and lactating women in which case saccharin use is not recommended). A diet soda contains 150 mg of saccharin. Approximately 20 mg of saccharin is equal to a teaspoon of table sugar.

Moderation is the key to the safe use of artificial sweeteners. They should be used in the context of a nutritious, well-balanced diet. The major benefit, however with the use of these sweeteners, is the improvement in the quality of life. Many people appear to be unwilling to do without sweet-tasting foods.

There's been lots of talk lately about this class of drugs and its effects on diabetic complications. Here's what we know.

Aldose Reductase Inhibitors & Diabetic Neuropathy

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Dept. of Neurology, Mayo Clinic
Rochester, Minnesota

The newspaper headline was an eye-catcher: "New Cure For Neuropathy, Retinopathy, and Kidney Failure." The researchers quoted compared their work to the discovery of insulin. The story was exciting and sensational. Unfortunately, it was also excessive, with unsupported claims that went well beyond what we know.

That headline – and others across the country – was about the benefits of a class of drugs called aldose reductase inhibitors.

Though these drugs are of considerable interest and should be thoroughly investigated, there is no hard evidence yet that they prevent or cure any of the complications of diabetes.

But the aldose reductase inhibitor drugs do show some promise. Researchers are particularly hopeful that these drugs may help prevent or control diabetic neuropathy, which can cause limb pain, loss of the sense of touch, foot ulcers, impotence, and malfunction of internal organs.

Large-scale clinical trials of these drugs are underway. Such studies, though they may take years to complete, are the only way to prove the effectiveness of new medications.

While researchers are patiently awaiting the outcome of these studies, they're trying to understand how these drugs might work.

Reprinted from Diabetes Forecast, May 1989, pp. 41, 43 & 44.

The ABCs Of Neuropathy

Diabetic neuropathy damages the nerve fibers that run throughout the body. Peripheral nerves connect the spinal cord to muscles, skin, blood vessels, and organs. There are three types of peripheral nerves: sensory, autonomic, and motor. Sensory nerves carry information to the brain. Autonomic nerves are not consciously controlled. Motor nerves control muscles.

The most common variety of neuropathy is called distal sensory polyneuropathy, which strikes both sides of the body. The legs and feet are usually affected, although the hands may be also. People with this form of neuropathy may experience pain and a prickling sensation with loss of feeling. This type of neuropathy tends to develop only after many years of inadequate blood-glucose control. Investigators believe that good control of blood-glucose levels may prevent or improve this polyneuropathy, but proof is needed.

The next most common variety of neuropathy are the so-called proximal neuropathies, in which the thigh muscles are often affected. The symptoms of weakness and pain tend to affect one side more than the other.

Another form of neuropathy affects the autonomic nerves, such as those of the bladder and intestinal tract. Autonomic neuropathy can cause disorders of the stomach, bowel, bladder, and sweat glands, and it can lead to impotence (an inability to have an erection) when it affects the nerves that control erection.

Finally, there are less common varieties of neuropathy that affect nerves to the eyes and head. Cranial neuropathy affects the cranial nerves, which are connected to the brain and control sight, eye movement, hearing, and taste. This neuropathy often affects the nerves that control eye muscles.

Often, someone with neuropathy may have more than one type of neuropathy. For reasons that are poorly understood, symptoms of neuropathy may vary from person to person.

Are You At Risk?

Although as many as 65 percent of people with diabetes show mild abnormalities in their nerves when they are tested, only a small percentage, perhaps 5 to 10 percent, actually have symptoms of the complication.

Two important studies supported by the National Institutes of Health will help scientists assess why some people with diabetes develop neuropathy and some do not.

The first study is called the Rochester Diabetic Neuropathy Study and is supported by the National Institute of Neurologic and Communicative Diseases and Stroke. Investigators are determining the frequency and severity of various types of neuropathy in people living in the Rochester, Minnesota, area. They're looking at possible risk factors for neuropathy, including degree of blood-sugar control; the duration, kind, and severity of diabetes; high blood pressure; smoking; and level of blood fats. More than 300 people with diabetes are participating in the study. Preliminary results will be available in about18 months.

In the second study, the National Institutes of Health is conducting an important, large-scale clinical assessment of the effect of two levels of blood-sugar control (very tight compared with conventional) on complications of the eyes and nerves. Known as the Diabetes Control and Complications Trial, this nationwide study should provide a definitive answer to the question that has been asked for so many years: How important is tight control of blood glucose for preventing or slowing complications of diabetes? Results will not be available until 1991.

Cause And Defect

Scientific answers rarely are short and tidy. Explanations about possible causes of neuropathy fill pages and are by no means complete.

One question that scientists are debating is whether high blood-sugar levels cause neuropathy. There is some evidence can interfere with the normal action of nerves.

Explanations about possible causes of neuropathy fill pages and are by no means complete.

It is doubtful that glucose damages nerves directly. More likely, raised glucose levels begin a cascade of biochemical events that affect nerve fibers directly. Or, it may be that raised glucose levels lead to changes in oxygen-carrying red blood cells, cause blood cells to stick to each other, reduce blood flow, or damage blood vessels that nourish nerve fibers.

One attractive hypothesis that scientists are considering involves a buildup of abnormal sugars. When blood sugars are high in people with diabetes, the body starts using a pathway involving the enzyme aldose reductase as a way to get rid of excess glucose. This leads to the production of fructose and sorbitol, which the body has difficulty breaking down.

When sorbitol accumulates and becomes trapped where it shouldn't be within nerve fibers, it might interfere with how the nerves transport materials in nerve fibers. Interrupt these pathways, and the result could be nerve damage.

But too much sorbitol may be only half of the problem. Enter the compound myoinositol. Researchers have known for years that people with diabetes pass large amounts of myoinositol in their urine. That means vital tissues may have low stores of this important compound. Low nerve myoinositol may reduce nerve conduction and possibly even cause injury to nerve fibers, according to researchers Douglas Greene, M.D., of the University of Michigan, Albert I. Winegrad, M.D., of the University of Pennsylvania, and Anders A.F. Sima, M.D., Ph.D., of the University of Manitoba in Canada.

Is there evidence that sorbitol and fructose are elevated and that myoinositol is decreased in people with diabetes having neuropathy? Investigators at the Mayo Clinic in Rochester, Minnesota, have shown that fructose and sorbitol are increased in the nerves of people with diabetes. More important, the more these sugars accumulate, the more severe the neuropathy. The Mayo Clinic researchers suggested that the increase of sorbitol may be related to the development of neuropathy.

In this same study, however, Mayo Clinic investigators did not find reduced myoinositol in the nerves of people with diabetes.

Where do aldose reductase inhibitors (ARIs) fit into the story? The ARI drugs block the enzyme aldose reductase and prevent the buildup of sorbitol and fructose in tissues. Some research studies suggest that ARIs may prevent a decrease in levels of myoinositol.

Investigators haven't stopped here in their research into the causes of neuropathy. There is now considerable evidence that the altered structure and function of small blood vessels providing oxygen to the nerves are somehow involved in the development of diabetic polyneuropathy.

Phillip Low, M.D., and his colleagues at the Mayo Clinic have found that the amount of oxygen and blood flow is decreased in animal models of diabetes. Investigators in Sheffield, England, found that the blood coming from the feet of people with diabetes has too

(Continued on page 8)

Aldose Reductase . . .

(From page 7)

that very high levels of glucose, even for short periods of time, much oxygen. This suggests circulation problems, with the result that nerve tissues do not get enough oxygen.

ARIs can prevent the thickening of one of the wall components of tiny blood vessels in the retina of the eye. Such thickening is present in experimental galactosemia, a disease having features in common with diabetes.

But is there direct evidence that ARIs prevent or cure diabetic neuropathy or decrease the symptoms? Studies are underway to answer the question.

Testing . . . One, Two, Three

About two decades ago, investigators in pharmaceutical houses reasoned that aldose reductase inhibitors (ARIs) might prevent neuropathy.

The first aldose reductase inhibitor to be clinically tested was Tolrestat (Ayerst/Wyeth Laboratories). These tests were followed in turn by Sorbinil (Pfizer Pharmaceuticals) and by Statil (ICI Pharmaceuticals Group). Tests on animals showed that these are all powerful ARIs.

Some of the first reports were enthusiastic. But they were based on few patients and short times. Knowing that neuropathy develops slowly, many investigators believed long-term trials were needed.

With longer trials and more people, the benefits of ARIs were less clear. A small difference in nerve conduction favoring ARI over the placebo was reported in some studies, but not in others.

Recently, however, two repors tend to support the idea that ARIs may be important in the prevention and treatment of neuropathy. Both were published in the September 1, 1988, issue of the New England Journal of Medicine. The first study was done by myself and my collagues at the Mayo Clinic. We reported that Sorbinil could normalize the nerve content of sorbitol and fructose in people with diabetes using that drug. The second study was done by Anders A.F. Sima, M.D., Ph.D., and his colleagues from Toronto, Winnipeg, and Ann Arbor. They reported that Sorbinil may actually repair damaged nerve fibers.

But these are just two studies on limited populations. More long-term clinical trials are needed before the Food and Drug Administration should release ARI medications to the public. Indeed, it may take 500 participants, or more, randomly assigned to ARIs and placebo for a period of four years to show a meaningful difference in the state of peripheral neuropathy. Some drug manufacturers are considering such long-term studies. Even if results of these studies are positive, however, the drugs may not be released for another five or six years.

Ultimately, whether these drugs will be extensively used in practice will depend on whether they are found to be effective and nontoxic (nonpoisonous). Already there is information that some of the promising ARIs may be too toxic for general use.

And there are other concerns. How long must these drugs be taken? What will the cost be? Are other therapies less risky?

The final word about ARIs remains to be written.

FIGHT DIABETES
Be a PDA Member

Where we belong . . .

INTERNATIONAL DIABETES FEDERATION WESTERN PACIFIC REGION

IDF-WPR

The International Diabetes Federation (IDF) has been divided into the so-called IDF Regions of Africa, East Mediterranean, Europe, North America, South and Central America, Southeast Asia and West Pacific. The Philippine Diabetes Association belongs to the Western Pacific Region (WPR), together with Australia, China, Fiji, Hong Kong, Japan, Korea, Malaysia, New Zealand and Singapore as regular members. Taiwan and Indonesia are probationary members.

The logo of the Western Pacific Region is the nautilus shell. Prof. Shigeaki Baba, Secretary-General of the IDF-WPR explains the choice of the logo.

"Nautilus shells first appeared in the sea of the Ordovician period, and then split up into various types. There appeared a variety with a cylindrical shell, and also with a coiled shell like the Nautilus shells presently existing. Then followed the Devonian Period when the ammonite variety developed. Later ammonite shells became extinct, but the Nautilus shell, a so-called living fossil, has survived on this earth for the past four to five hundred million years. Now it is found only in the Western Pacific. This is one reason for its adoption as the IDF-WPR logo.

There is further explanation for the design. There are many things which can be expressed as "beautiful" in this world. Such things as beautiful figures, beautiful colours, beautiful voices, beautiful hearts, all enrichen human lives. The true nature of this beauty is created by the norm and harmony, which one could call a secret of the Universe. The Golden Section, used as the criterion of beauty, is one of the standards of mathematics in the form of Fibonacci numbers. The spiral, based on this Golden Section, is referred to as the Golden Spiral; a perfect shape representing the harmony of the Universe, reproduced in the coil of the Nautilus shell. Within the motion of the Universe there are systems which work in a centripetal direction, and spiral systems, and it has been the principle of dynamic progress which belongs to the latter. The beautiful form and harmony of the Nautilus, which has so long lasted on this earth, signify eternal development.

Thus we have chosen the Nautilus shell as the logo of the IDF-WPR. The design was created by artist Akira Yamaguchi."

Prevention Prospects

(Continued from page 3)

coagulation therapy can reduce the incidence of severe vision loss 60 percent in people with the advanced form of diabetic eye disease (retinopathy).

* Anti-high blood pressure treatment could cut by more than 50 percent the rate at which diabetic kidney disease progresses.
* Strict control of blood glucose among women with diabetes can drastically cut the incidence of infant death.
* Control of obesity could reduce the incidence of gestational diabetes by 33 percent.

from Diabetes Forecast, May 1988