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DiabetesWatch

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

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Where we belong

The Humming Bird Logo of the International Diabetes Federation



A Symbol of Hope

One of the most remarkable creatures of the avian world is the humming bird, or colibri. Its minute size, its magnificent coloration, its long, slender and gracefully curved bill makes it very appealing, or as some might say "sweet". It has a sweetness which may have something to do with diabetes, although one is very aware that diabetes is anything but "sweet" for those who know it.

In 1984, the "Diabetes Vereniging Nederland" moved that its humming bird logo be adopted as an international symbol for diabetes research, information, communication and education, and was further seconded by SOKUDI, the Sosiedat Kurasoleno de Diabetiko from the Netherlands Antilles, who, impressed by the eager flight of this elegant bird which flies over their deep blue sea, also adopted the same symbol.

This proposal was made on the occasion of DVN's fortieth anniversary of its formation, and was accepted by the Executive Board in London in September 1984 with the understanding that national associations were free to add the humming bird logo to their individual logo if they so wished. As for the Federation, a new logo to replace the existing clouds by the bird of hope is in preparation and will be presented to the General Council in Madrid.

There are some very good reasons for this proposal to be implemented so that the humming bird becomes the international symbol of hope for the diabetes world community. Firstly, the logo is presented by the Dutch Diabetic Association, one of the best and strongest lay diabetic associations of a small country. The IDF owes a lot to the Netherlands which

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WORLD HEALTH ASSEMBLY PASSES RESOLUTION ON PREVENTION AND CONTROL OF DIABETES MELLITUS

On the 8th of May, 1989, the World Health Assembly, composed of delegations from member nations of the World Health Organization, convened in Geneva, Switzerland. For the International Diabetes Federation, and all those working against diabetes around the world, an historic first occurred during this meeting: a resolution was unanimously passed calling on both the World Health Organization and member governments to strengthen activities to prevent and control diabetes. The resolution calls for increased co-operation amongst the World Health Organization, WHO Collaborating Centres in the field of diabetes, the International Diabetes Federation, and Member States. This is the first diabetes resolution of the World Health Assembly and reflects the growing awareness that diabetes is a significant and growing public health problem in both developed and developing nations.

Cumulative data suggests

that there are at least 80 million people with diabetes, about half of which are in developing countries. In the United States alone, it is estimated that this condition remains undiagnosed in 4.5 million people. Although treatment with intensive insulin therapy and oral hypoglycemics helps people with diabetes to better control their metabolism, there is no cure. Moreover, in many countries, insulin and other diabetes supplies are not available or are prohibitively expensive. Complications arising from diabetes are leading causes of blindness, heart and kidney disease, and amputations.

The International Diabetes Federation heartily welcomes the initiative adopted by the World Health Assembly and is working towards full implementation of the resolution. The 95 National Member Associations of the Federation are working with their governments and health ministries to

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NOTICE OF CHANGE OF ADDRESS

The offices of the Philippine Diabetes Association will be temporarily housed in Room 309, Polymedic General Hospital, Epifanio de los Santos Avenue, Mandaluyong, Metro Manila. Telephone numbers are: 70-75-21, or 79-91-57.



DiabetesWatch

A publication of the
PHILIPPINE
DIABETES
ASSOCIATION, INC.
with offices at

Room 309, Polymedic General Hospital
E. de los Santos Avenue, Mandaluyong,
Metro Manila, Philippines

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PDA CONVENTION RESET TO AUGUST 7

The Annual Convention of the Philippine Diabetes Association which was postponed last December 1989, will be held on August 7 at the Nikko Manila Garden Hotel.

The program will be divided into two parts: - a morning session for physicians, and an afternoon session for lay members and physicians.

Topics for the morning session include: Pathogenetic mechanisms for NIDDM, Insulin therapy - present and future, Recent trends in oral hypoglycemic therapy, and Role of lipids in diabetes mellitus. Invited speakers are Dr. Karen Lam and Dr. Clive Cockram from Hong Kong, Dr. Anders Dejgaard from Denmark and Dr. Ricardo Fernando.

The afternoon session will discuss topics on the diet for diabetics and a new feature in the therapy for diabetes: sports nutrition. Invited speakers are Ms. Annella Orbeta and Ms. Imelda Q. Cardino.

Interested parties can call the secretariat of the Philippine Diabetes Association at Room 309, Polymedic General Hospital during office hours.

Capiz and Roxas City Chapter Organized

Organization of the Capiz and Roxas City Chapter of the Philippine Diabetes Association was achieved last August 20, 1989, with the following inducted as officers: Dr. Victoria P. Villarosa, president; Dr. Mathilde R. Blasurca, vice-president; Dr. Mary Jane D. Cordova, secretary and Sr. Marilyn B. Bacsain, D.C., treasurer. Members of the board of directors are: Dr. Victoria B. Arcenas, Dr. Gervasio B. Diaz, Dr. Amelia D. Dioso, Dr. Alex Chan, Dr. Carmelita de la Luna, and Sr. Rhodora A. Mojica, D.C.

The Chapter opened its teaching clinic last March and holds its educational sessions every Saturday at 3:00 to 5:00 p.m. Selected physician in charge of the clinic was

(Continued on page 7)

Diabetes Management the tailored concept from Boehringer Mannheim

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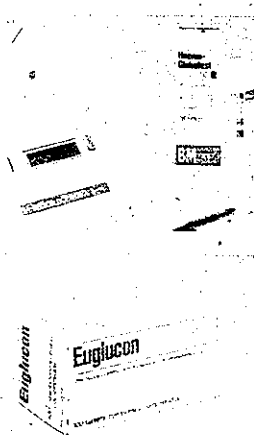


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The humming bird... (from page 1)

was the site of the 1st IDF Congress in 1952, and the Dutch Diabetic Association housed the Executive Office of the IDF for the period 1952-1956, and again from 1961-1966. Dutch diabetes-oriented physicians have voluntarily assisted in the work of the Federation over many years.

Another reason is that this tiny but energetic bird, liaising the three Americas (North, Central and South) is native only to that huge continent. The ruby-throat, one representative of more than 300 known species, is metabolically so well adapted that it undertakes a 500-mile non-stop flight from North to South America to its wintering grounds. The amazing thing is that metabolic tests have proved that the humming birds do this with not enough "fuel" to last for the journey. So how do they do this? Probably by their ability to regulate their energy consumption.

The humming bird is also unique in its courage. Females will drive off birds as large as eagles when rearing their young.

This combination of qualities - intercontinental liaison, metabolic adaption, energy and courage - makes this sweet creature an apt symbol of hope for the diabetes community in its endeavor to solve this world-wide problem by the turn of the next millenium.

- N. STIELS

Biological data concerning the humming bird: Nick Kerlin, naturalist working for the Pennsylvania Bureau of State Parks, USA in: USAIR, August 1984. Reprinted from IDF Bulletin, June 1985.

UPDATE:

ARACELI A. PANELO, M.D.

Diabetologist

JE-UM Medical Center

PANCREAS TRANSPLANTATION

The International Pancreas Transplant Registry reports a steadily increasing incidence of pancreas transplantation. Refinements in surgical techniques and immunosuppression have led to a gradual improvement in results and the effect of pancreas transplant on the complications of diabetes are beginning to be appreciated. Early reports claim that a significant effect on specific complications of diabetes is achieved if the transplant is performed early enough in the course of the disease.

Who should be the recipients and when should they get the graft?

In the early years, majority of the pancreas transplant recipients, underwent the procedure at a time when retinopathy, neuropathy and nephropathy were so advanced that it was unlikely the complications could be reversed even after establishment of a permanent euglycemic state. In addition, a good number of them had their pancreas grafts, simultaneously with or after a kidney transplant, and so were obligated to receive immunosuppression with or without pancreas transplant.

Nowadays, with the safety of the procedure having been demonstrated in diabetic patients without end stage diabetes nephropathy, pancreas transplantation is considered an appropriate option in non uremic non kidney transplant diabetic patients whose complications will be more serious than the potential side effects of anti-rejection therapy.

At the University of Minnesota, one out of ten recipients at this time have pre-morbid complications. Examples of such patients will be those with preproliferative retinopathy or those with normal creatinine and creatinine clearance levels but with proteinuria and microscopic lesions of diabetic nephropathy, or patients in whom serial examinations of the kidney, eye or nerves demonstrate progression of diabetic changes and who have inadequate control with exogenous insulin.

With further advances in medical science, however, it is now possible to identify the diabetic patients who will eventually develop the above complications, so that they can receive their transplants even at the onset of the diabetes long before any complication can be detected. Rosenblom reported that joint stiffness and high blood levels of inactive renin or IGF-I are markers for development of microvascular complications.

Problems with immunosuppression

With the refinement of the surgical technique and the ability to identify those who are ideal candidates for transplant at an early stage, the other problem that remains to be addressed is the immunosuppression management of pancreas transplant recipients. The need to prevent rejection by generalized immunosuppression limits the application of pancreas transplants at this time to diabetics whose com-

plications would otherwise progress to a stage more serious than the potential side effects of the anti rejection therapy. Many diabetic patients fit this category, but the success rate is still very low so that wide spread application of pancreas transplantation cannot be advocated.

When the efficiency of anti-rejection therapy approaches 100% and when the risks of immunosuppression are not more than the risk of the surgery, or when the need for immunosuppression is no longer there, all type 1 patients identified to be at high risk for development of secondary complications can receive a

pancreas graft early in the onset of the disease. The limiting factor would then be the availability of donors.

Local Experience

At the National Kidney Institute, five pancreas transplantations have already been done. All of them were done simultaneously with kidney transplants since all of them had end stage renal disease secondary to diabetes. Four of them have died from severe infections. The only living transplant recipient had his new lease on life twenty months ago, in 1987.

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Regular eye exams are the best way to ensure early detection and treatment for eye problems.

WHEN TO SEE THE EYE DOCTOR

You probably already know that people with diabetes face an increased risk of vision-threatening eye disease. What you may not know is that even if your vision seems fine, eye disease may be present. You also may not be aware that there are effective treatments for many eye problems including such commonly occurring conditions as cataracts, glaucoma, and diabetic retinopathy. Finally, you may not know that early detection and treatment of eye problems can greatly reduce your risk of vision loss from eye disease.

The key to early detection and treatment is regular visits to the eye doctor. When should you see the eye doctor? The American Diabetes Association's "Eye Care Guidelines for Patients with Diabetes Mellitus" recommend that people between the ages of 12 and 30 who have had diabetes for at least five years have a "baseline" ophthalmic examination. For people over 30, the guidelines recommend having this eye exam when diabetes is diagnosed. During a baseline ophthalmic exam, the eye doctor should:

- take a history of visual symptoms (such as a history of eye surgery, eye disease, or disturbances of vision)
- measure visual acuity (how well you see) and intraocular pressure (test for glaucoma)
- dilate your pupils with eye drops and perform an ophthalmoscopic examination through

ROBERT N. FRANK
Professor of Ophthalmology
Kresge Eye Institute,
Wayne State University,
Detroit, Michigan, USA

dilated pupils. The eye doctor will be checking for diabetic retinopathy (a disease of the blood vessels of the retina) and for other diseases of the retina and optic nerve not necessarily due to diabetes.

How often should you have follow-up exams? The ADA Eye Care Guidelines suggest that, in most cases, people with diabetes (both type I and type II) have eye exams at least once a year. If problems are detected, more frequent exams may be necessary.

When to see the ophthalmologist

An ophthalmologist is a medical doctor who specializes in diseases of the eye. Ophthalmologists are trained to treat eye problems both medically and surgically. Optometrists are trained in examining the eye for any problems in refraction (how well your eyes focus, farsightedness, and nearsightedness) and in prescribing corrective lens or eye exercises. They are not medical doctors and cannot perform surgery or, in many states, prescribe medications for eye disease.

The ADA guidelines recommend that people with diabetes who have any of the following symptoms or findings should be under the care of an ophthalmologist:

■ unexplained visual problems

(spots, "floaters," or cobwebs in the field of vision; blurred or distorted vision; blind spots; ocular pain or persistent redness).

■ deterioration in visual acuity (visual ability to read books or traffic signs, or to distinguish familiar objects).

■ increased intraocular pressure (a warning sign of glaucoma). Some internists, family practitioners, and optometrists test for this.

■ any abnormality of the retina (the nerve tissue in the back of the eye that converts light into a visual image). Internists, family practitioners, and optometrists should test for this.

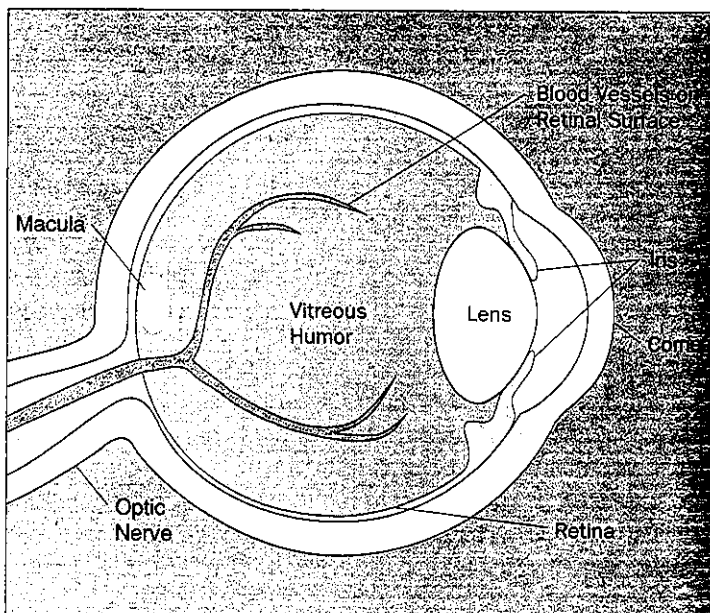
If you have diabetes, you are at risk for retinopathy. Eye doctors can easily diagnose retinopathy using an ophthalmoscope, which gives a magnified view of the inner eye.

If you have preproliferative retinopathy or proliferative retinopathy (formation of new blood vessels in the retina, which may hemorrhage), or macular edema (swelling of the central portion of the retina), the guidelines recommend you be examined by an ophthalmologist.

Eye exams are important for women with diabetes who are pregnant or planning a pregnancy. The American Diabetes Association recommends that all women with diabetes who are pregnant have an eye exam by an ophthalmologist during the first trimester. The ophthalmologist will schedule follow-up appointments as necessary.

Early detection, early treatment

With early detection, many vision-threatening eye conditions can be treated. Take cataracts, for example. Cataracts cloud the lens of the eye, reducing vision by preventing light from getting to the retina. When they produce vision loss sufficient to interfere with normal activities of living, cataracts can be treated relatively easily by surgical removal of the lens and implantation of a tiny, plastic intra-



ocular lens. This operation, usually performed as an outpatient procedure, is now highly successful in all age groups.

Another treatable eye condition is glaucoma, an elevation of the fluid pressure inside the eye that can damage the optic nerve and cause blindness. Glaucoma can be treated by medical therapy (eyedrops or pills), laser treatments, or surgery.

In recent years, advances have been made in treating diabetic retinopathy. The best known treatment for retinopathy is photocoagulation, or laser therapy. This process can help reduce the risk of visual loss and is generally effective in preventing blindness in patients who have either high-risk proliferative retinopathy (especially if accompanied by hemorrhage of new blood vessels in the retina) or severe macular edema, or both. A laser is used to make many tiny burns in the retina, destroying the abnormal blood vessels and causing reduction of the edema that damage vision. When there is very extensive bleeding or the retina becomes detached, vitrectomy surgery may be used to remove the hemorrhage and, sometimes, to repair the detached retina. Laser therapy and vitrectomy should be performed by an ophthalmologist who specializes in retinal disease and who is experienced in these procedures in people with diabetes, according to the guidelines. (Vitrectomy is a surgical procedure that removes vitreous hemorrhage or corrects for certain types of retinal detachment.)

Scientists are currently studying new ways to prevent and retard the development of retinopathy. They are looking into the effects of tight blood-sugar control and the use

(Continued on page 7)

BIENVENIDO V. CABRAL, M.D.
Ophthalmologist
Makati Medical Center

LASER Therapy

can markedly reduce severe visual loss.

Diabetics develop diabetic retinopathy when diabetes damages small blood vessels that nourish the retina at the back of the eye, preventing vessels from supplying all the oxygen and nutrients the retina needs to stay healthy. Although increasingly treatable if caught early enough, retinopathy is still a leading cause of blindness. Roughly one in 100 diabetic patients suffers from total sight loss, and others develop varying degrees of visual problems. Fortunately, it is now possible to treat the disease with the use of the laser.

What is LASER?

Laser is an acronym for Light Amplification by Stimulated Emission of Radiation. Lasers use a complex system of crystals, gases, lenses, mirrors and stimulating and cooling mechanisms to produce an extraordinarily intense beam of light. The sun or a light bulb contains all the visible colors of the spectrum as well as ultraviolet and infrared rays invisible to the human eye. By contrast, lasers produce uniform, highly concentrated shafts of a single color of light which can be precisely directed to diseased parts of the retina, a tissue about the size of a postage stamp. The inaccessibility of the retina for conventional surgery makes it ideal for laser therapy.

How does LASER prevent blindness from Diabetic Retinopathy?

In the early stages of

diabetic retinopathy, the vessels grow weak and leak fluid, causing the retina to swell. When this happens, vision may become blurred. The disease may advance to the "proliferative" stage in which abnormal new blood vessels sprout along the retina's surface. These vessels are fragile and may rupture and bleed into the clear gel that fills the center of the eye, interfering with vision. Or scar tissue may form and pull the retina from the back of the eye. In either case, severe visual loss or blindness may result.

Fortunately, laser light therapy can markedly reduce the chance that diabetics with advanced retinopathy will suffer severe visual loss. During this treatment, powerful beams of light are aimed at many spots on the retina, sealing diseased blood vessels and preventing new ones from forming.

Who should receive LASER therapy?

Studies have shown that retinopathy affects not only people with Type I or insulin-dependent diabetes, but also those with Type II or the non-insulin-dependent form of the disease. After ten years, sixty percent of the patients with Type I diabetes develop at least some sign of retinopathy. The occurrence among Type II diabetics is less, but still high — about fifty percent.

During the early stage of diabetic retinopathy the patient may be unaware of its presence in the eye. Early detection of the abnormal blood vessels by the ophthal-

mologist so that laser therapy may be applied is the key to preventing severe diabetic eye complications and preserving sight. It is therefore advisable that diabetics undergo eye examination at least once a year.

How then can diabetics avoid blinding complications?

There are several ways by which diabetics can reduce the risk of developing blinding complications due to diabetic retinopathy. One, get your blood sugar under control. Generally well-controlled diabetics would have lesser chance of developing retinopathy. Two, if you have hypertension, have it treated. Studies have shown that hypertension plays a role in the development of severe retinopathy. And three, have your eyes examined by a competent ophthalmologist at least once a year in order to detect early signs of retinopathy and closely monitor its progression so that laser therapy may be applied as soon as necessary.

Who should be referred to the ophthalmologists?

All diabetics should be referred to the ophthalmologist for complete evaluation of the retina regardless of the duration of diabetes at least once a year. One should not wait for visual complaints before referring. Many times, when the patient starts complaining of visual problems, the retinopathy has already progressed to an advanced stage.

FIGHT DIABETES

Those who use calorie-free sweeteners now have a new choice. Acesulfame-K (pronounced a-see-SUL-fame-kay) has arrived to enliven the alternative sweetener drama.

The United States Food and Drug Administration (FDA) approved this new sweetener in July 1988 for use in dry beverage mixes, dry dessert mixes, chewing gum, and as a table top sugar substitute. Now consumers are getting a chance to assess this new player in the sweets field. Is it a villain or hero? That conclusion awaits user review.

Acesulfame-K (the K stands for potassium) is the first new sweetener to be marketed since aspartame (NutraSweet, Equal) entered the scene seven years ago. Acesulfame-K is a chemical substance somewhat similar in structure to saccharin. It was discovered in 1967 by Dr. Karl Clauss of Frankfurt, West Germany, while he was doing basic research to develop new materials. The new sweetener was then developed by Hoechst AG of West Germany and is now marketed in the United States by Hoechst Celanese.

Like aspartame, the new sweetener is known by different names. As a product ingredient you will see it listed as Sunette. As a table top sweetener you'll see it billed as Sweet One. It comes in packets or tablets. Each packet of Sweet One is equal to two teaspoons of sugar.

Acesulfame-K has the potential to be used in a wide variety of food products.

Acesulfame-K — sometimes shortened to Ace-K — is a white odorless, crystalline sweetener that is approximately 200 times sweeter than sucrose (table sugar). It's described as clean and fresh tasting. The sweetness does not linger like it does with some sweeteners, and users only recognize a bitter taste when it is in very high concentrations.

Ace-K reacts "synergistically" with other sweeteners. That means that when two or more sweeteners are combined, the resulting sweetness is greater than the sum of the sweetness of each alone. This characteristic can be used to reduce the overall amount of sweetener used in a product and can also reduce the product cost.

The body readily absorbs Ace-K, but does not metabolize it. Rather, the kidneys excrete Ace-K unchanged. Consequently, Ace-K does not provide any calories and should not have any effect on blood glucose.

Studies seem to bear this out. Although only a few human studies have been conducted, in them as well as in animal studies, Ace-K was not found to alter blood-glucose levels.

Advantages

What are its advantages? First, Ace-K is remarkably stable, both in liquids and during baking or cooking. That is unlike aspartame, which loses its sweetness when it is heated. This stability allows Ace-K to provide new choices of sweeteners in baked and cooked products.

In addition, Ace-K's long shelf life assures the consumer that stored products will still be sweet when they are consumed.

Finally, Ace-K is the only sweetener on the market that

is not required to carry some type of health or safety warning.

Before Ace-K was approved by the FDA, it was tested in over 50 international studies for over 15 years with no adverse effects reported. The sweetener is approved for use in more than 25 countries. In Great Britain, the first country to give it approval, Ace-K has been used for more than five years with no reported problems.

The FDA evaluated a series of animal feeding studies. These studies in dogs, mice, and rats did not show any harmful effects that could be attributed to the sweetener.

Using the highest feeding level in a long-term rate study, the FDA then used a 100-fold safety factor in setting an acceptable daily intake level, or ADI.

This means that the maximum amount approved for consumption by a human in one day is less than 1/100th of the amount that caused no harmful effect when fed to animals. That acceptable level is 15 milligrams of sweetener to one kilogram of body weight. (The amount of the sweetener a child could eat would be less because a child weighs less.)

This provides a large margin of safety.

Each packet of Sweet One contains 50 mg of Ace-K. The ADI is equal to a 132-pound (60 kg) person eating 18 packets of Sweet One per day,

or the equivalent of about 36 teaspoons of sugar.

This is far above the amount of Ace-K scientist expect people to consume, but not completely outside the range of the possible.

Explaining An ADI

It's important to understand what the ADI means.

This is the amount of a substance that can be eaten in the diet daily without appreciable risk on the basis of all known facts. This means there is a practical certainty that injury will not result even after a lifetime of exposure. The set level is therefore not a toxic level.

If you eat more than the set level, you just reduce the large safety factor. And, if you consume more than the ADI in any given day, you are only reducing the safety factor for that day. You shouldn't make a habit of it, but it is not a cause for alarm.

The debut of Acesulfame-K was not without controversy, however. Like all sweeteners, it has received some bad press. The consumer interest group, Center for Science in the Public Interest, expressed its concern that tumors found in some rats were caused by eating the sweetener.

After comprehensive re-examination of the studies, the FDA disagreed, and concluded that the tumors were typical of what routinely could be expected and were not due to the sweetener.

FDA approval of the use of

ACESULFAME K

A new sweetener arrives

PHYLLIS CRAPO, R.D.

Reprinted from
Diabetes Forecast
November, 1989

Ace-K in hard and soft candies is now pending, and approvals for its use in baked goods and soft drinks are being filed.

Not Perfect

Although Ace-K has many advantages, it is still not the perfect sweetener. Like other high intensity sweeteners, it does not provide the functional or structural qualities that are needed in many baked goods. That means it will not give the same texture to baked goods that sugar does. Consequently, some sugar, or a suitable alternative, must still be used in food processing or in home recipes to get a desirable product.

As a starting point in your own kitchen, you can begin experimenting by substituting half of the sugar called for in a recipe with the suggested amount of Sweet One. If, for example, the recipe called for one cup of sugar, you would use one-half cup of sugar and six packets of Sweet-One. You could then further adjust the recipe, if necessary, to get a product you find acceptable.

For Those With Diabetes

Those people with diabetes, however, must consider yet another factor.

Because Ace-K is so very sweet and so little is needed to provide sweetness, the company packages it with glucose or dextrose as a carrier.

You should be aware that there is one gram of glucose in each packet of Sweet One. Although this may be an insignificant amount in one packet, when you use many packets the amount of glucose can add up.

People with renal failure or others who might need to limit their potassium intake should also be aware that this product contains small

amounts of potassium.

Keep in mind, too, that although you may use some Sweet One to alter recipes that use large amounts of sugar, you still may not come up with a recipe that meets the American Diabetes Association guidelines of less than 1 teaspoon of sugar per serving.

If, however, the altered recipe with Ace-K provides less than one tablespoon of sugar per serving, it could be a better choice for use on an occasional basis.

Your dietitian can help you figure how to use Sweet One in your favorite recipes and your meal plan.

Acesulfame-K has the potential to be used in a wide variety of food products, and is currently being used in more than 100 products worldwide. Its availability gives food manufacturers more flexibility in the choice and combination of sweeteners for a given product. And it gives the consumer the potential for a greater variety of low-calorie food products and improved taste options.

Although Ace-K is definitely not a villain, and yet not a perfect hero, it is a good new player.

Capiz and Roxas . . .

(from page 2)

Dr. Soledad L. Diaz, with Dr. Mary Jane D. Cordova as associate. Ms. Rhodora Apelo, Ms. Edel Degala, Ms. Ruth Stella Borres, Ms. Elizabeth Lim, Ms. Jocelyn Dalmacio and Mr. Valentino Sereneo are the nurse educators. Ms. Librada Azagra and Ms. Narcisa Rebustes are the dietitians, and Ms. Merlinda de Isidro and Mr. Glennidy Venturanza are the medical technologists.

The staff of the clinic plans to conduct monthly outreach programs in the different municipalities of Capiz.

World Health . . .

(from page 1)

strengthen diabetes care, treatment, and education programs. Additionally, regional WHO/IDF efforts are working towards achieving the same goals. At an international level, WHO and IDF are continuing active cooperation through the WHO/IDF Steering Committee and Executive Committee. Future plans include collaboration in the development of the IDF Educational Foundation, telecommunications activities, insulin availability programs, and a worldwide "anti-diabetes" day to be held in conjunction with the 14th IDF Congress, 23-28 June 1991 in Washington, D.C., USA.

Research is the key to finding a cure for diabetes and improving its care. In 1987 alone, IDF Member Associa-

tions contributed over US \$14,000,000 to diabetes research programs. The increased awareness about diabetes arising from resolutions of this type should help to further develop and fund such programs and move us all in the direction of our final goal: preventing and curing diabetes mellitus.

When to see . . .

(from page 5)

of a class of drugs known as aldose reductase inhibitors. It is thought that these drugs may prevent the buildup in the retina of certain harmful products of sugar metabolism.

Because the changes that occur with retinopathy may happen without any noticeable symptoms, regular eye exams are crucial for early detection and treatment.

Join the PDA — Fight Diabetes!

GLIPIZIDE MINIDIAB

MINIDIAB pharmacokinetics are more advantageous than those of other sulfonylureas

Drugs	Time (hr) to peak effect	Half-life, T _{1/2} (hr)	Duration of action (hr)	Metabolites	Overall excretion
Chlorpropamide	8-10	30-60	22-65	4 (active)	100% in 10-14 days
Glibenclamide	2-5	10-16	16-24	6 (partially active)	59% in 1 day 95% in 5 days
Gliclazide	2-6	10-12	4-24	8 (inactive)	98% by renal route in 48 hr
Glipizide	1.0-2.5	2-4	6-24	4 (inactive)	97% in 1 day 100% in 3 days

• "Glipizide evoked a more pronounced and more rapid increase of plasma insulin and correspondingly greater and faster blood glucose reduction than did glibenclamide."

• Thus, likelihood of hypoglycemia is minimized "As glipizide (Minidiab) is rapidly eliminated, and as there is no evidence that its metabolites are significantly active, the risk of long-lasting hypoglycemia should be small when using glipizide. In contrast, glibenclamide has provoked serious, and even fatal hypoglycemia in several cases; it is possible that this risk is increased in patients with renal insufficiency due to accumulation of an active polar metabolite. A similar risk is well recognized in the case of chlorpropamide."

Uncontrolled diabetes invites bacterial infection and, conversely, untreated bacterial infection makes it difficult to control diabetes. It is a well known fact that even minor wounds in diabetics do not heal fast because persistent infection from ordinary skin

bacteria, which do not bother normal people, may result in a chronic, slow healing skin ulcer. Other skin problems such as recurrent boils and large carbuncles are earmarks of a diabetic. Internally, more serious infections such as pyelonephritis (kidney infection), pneumonia, and septicemia (blood infection) tend to be more life-threatening in the diabetic individual. The earlier the onset of the disease (juvenile diabetes), the more frequent and the more serious is the occurrence of infection.

There are number of reasons

Why Infections are Frequent in Diabetics

BENJAMIN LIMSON, M.D.
Infectious Disease Specialist
Makati Medical Center

why diabetics do not resist infections well. All diabetics have impaired defense mechanisms against germs. Their "immune system" do not function normally. White blood cells (leukocytes), our circulating guardians in the blood against agents of infections, perform badly as a result of complex metabolic abnormalities associated with diabetes. For instance, persistent high blood sugar levels inhibits the capacity of neutrophils (a type of white blood cell) to attack, engulf, and digest bacteria. This functional defect

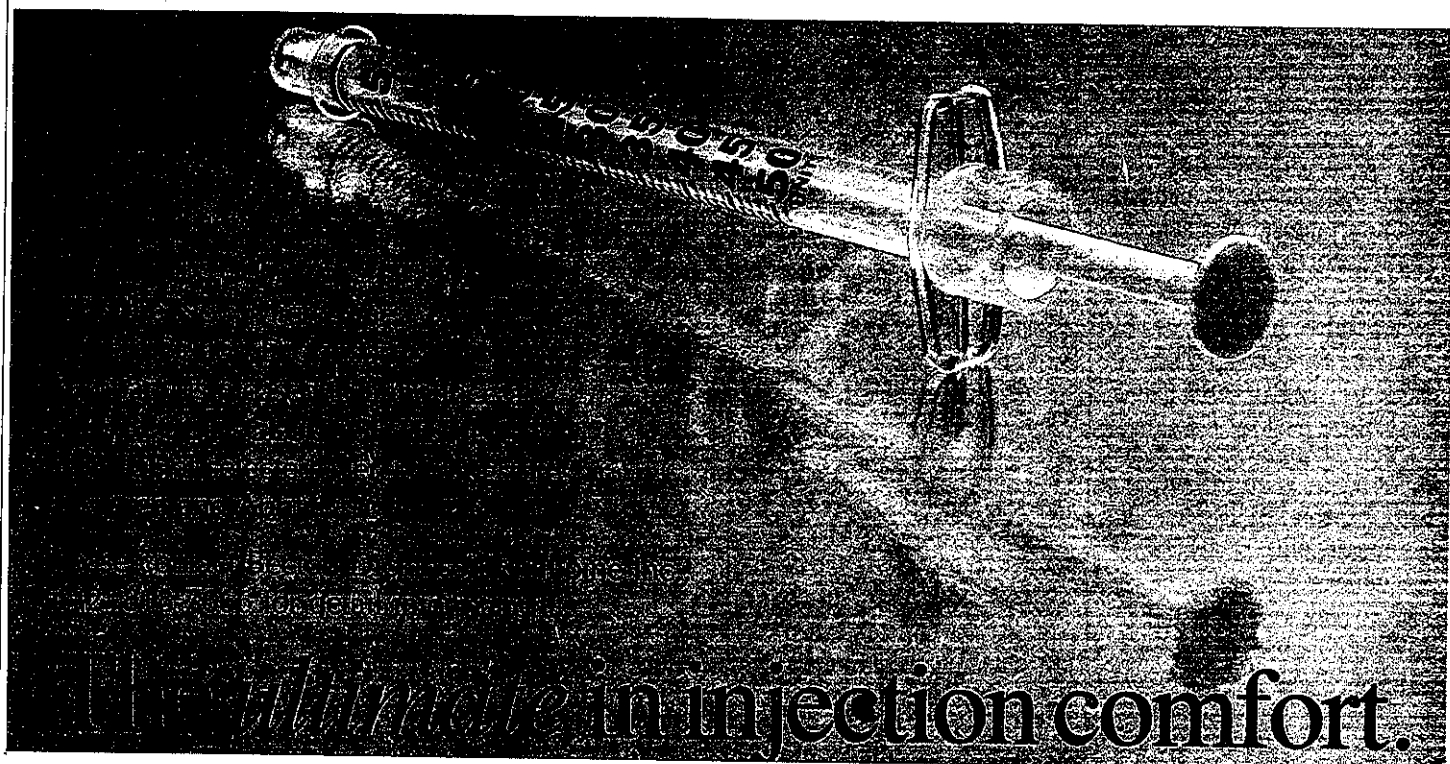
is also manifested in the defensive role of other white blood cells, namely, the "killer lymphocyte", "antibody-producing" lymphocyte, and "helper lymphocyte" (the central coordinators of the immune system).

To compound the problem, uncontrolled untreated diabetes is associated with the defective blood circulation to many parts of the body, especially the peripheral areas, as a result of occlusion of blood vessels. Cholesterol deposits and blood clots (thrombosis) are formed in major arteries

as well as microscopic blood vessels (micro-circulation). Poor blood supply and poor oxygen supply invites infection and the net result is gangrene (dead tissue). Thus a diabetic may eventually lose toes, a foot, a leg and even both legs due to gangrene.

To prevent infections in diabetics, the diabetes itself should be properly treated by diet, insulin or other anti-diabetic drugs. The blood sugar should be maintained as much as possible at normal levels. The diabetic must be protected from injuries, even minor ones. All infections should be treated promptly no matter how minor. All factors that would impair further the immune system should be corrected. Infection in the diabetic cannot be totally eradicated but it can be effectively minimized with proper care.

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