



Diabetes WATCH

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Can children have diabetes? Yes. Diabetes mellitus does not only occur in adults, but may also be found in children, Asian or American, rich or poor.

Case scenario

Jun-jun is a charming, friendly and playful 3 year-old boy. He has been toilet-trained since 2 years of age; however, in the last two weeks, he had frequent bedwetting at night. Because he had been drinking a lot throughout the day, his parents thought that the frequent urination was related to the increased water and milk intake. There was an attempt to solve the problem of bedwetting: no more milk at bedtime! But the problem persisted. Moreover, he has lost weight in spite of a good appetite. His parents recalled that Jun-jun has not gained weight for six months. Perhaps, he was too active, playing and running too much. He also had a recent bout with flu about a month ago.

Last Friday, Jun-jun appeared weak and preferred to stay in bed. He complained of a stomach-ache. He also had a low grade fever. He was given medicine for his pain and fever. On Saturday, he was noted to be sleeping most of the time. He missed his breakfast and lunch. He was breathing rapidly, even at rest. He was brought immediately to a hospital emergency room.

DIABETES IN CHILDREN

SIOKSOAN CHAN-CUA, MD
PEDIATRIC ENDOCRINOLOGIST
UP-PHILIPPINE GENERAL HOSPITAL

The doctor quickly examined him, ordered a urinalysis and blood tests. He could no longer drink water by mouth. So, the doctor provided intravenous fluid to hydrate him. Jun-jun was surrounded by doctors, nurses and medical technologists. His anxious parents watched closely, in tears. They called his name, and hoped that he would soon awaken.

After waiting for hours in the hospital, Jun-jun's parents were shocked to hear that their son was diagnosed to have DIABETES MELLITUS! He was in diabetic ketoacidosis, an acute complication of diabetes. Fortunately, Jun-jun's condition did not deteriorate. His condition improved within twenty-four hours.

That's the unforgettable experience of a young couple with a son with type 1 diabetic mellitus which presented in diabetic ketoacidosis.

Indeed, finding out that a child has diabetes is scary. Diabetes can be a serious illness. But people with diabetes can live long, healthy, happy lives. All they need is to learn about diabetes and take good care of themselves.

Locally, the Philippine Diabetes Association organizes an annual diabetes convention for laymen each December. Na-

(Continued on page 4)





**Philippine
Diabetes
Association, Inc.**

Unit 25, Facilities Centre
548 Shaw Boulevard
Mandaluyong City
1501 Philippines
Tel. Nos. (632) 531-1278
(632) 534-9559
Fax No. (632) 531-1278
e-mail address:
phildiab@pworld.net.ph
Infopage No. 1277-94661

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DiabetesWatch

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Philippine Diabetes Association, Inc.

Editor Emeritus
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LETTERS TO THE EDITOR

Dear Dr. Sy,

I am a 32-year old diabetic on insulin twice a day. I was excited to read in the Ask Your Dietician segment (Jan-Jun 2001) that it was okay to eat ice cream, cake and softdrinks after I exercised. Is this really true? I couldn't believe it, I thought I would check first! Thank you.

Rosa Facinal, Makati City

ED: We checked with Ms. Orbeta, and she emphasizes that you should be either underweight or at normal body weight. Also, these foods should be allowed only within your food exchange allowance for carbohydrate. Hope that helps!

Dear Rosa,

I've just had a chance to review the latest issue of Diabetes Watch. The cover is bright, colorful, very inviting. The activity guide is colorful and informative--a clever way to present the material.

One minor problem--some people might not understand the concept of "pyramids," that what appears at the base should be done most frequently and at the tip, very seldom.

Some articles might be too technical for average readers. At the very least, I'd translate the technical terms, so you don't lose readers that wish to follow the flow of the whole newsletter.

Overall, you've really accomplished quite a lot. The publication has a nice, open, inviting feel. The information provided is very useful, and you successfully address your two core groups, people with diabetes and the professionals who work with them. Congratulations!

I hope you find these comments useful.

Sincerely,
Andrew Keegan
(AKEEGAN@diabetes.org)

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Your President Speaks...

RUBY T. GO, MD
PDA PRESIDENT & CHAIRMAN



PDA MISSION & VISION

As the war against terrorism continues worldwide, the fight against diabetes also continues.

The PDA board met last month and defined the association's MISSION: a prime

mover for excellent diabetes care and prevention in the Philippines and VISION: a diabetes-free Philippines. A very ambitious vision, one that may not be attained in this age but possibly in the next generation. This mission/vision of the association, together with its values will be presented in the annual convention in December. The new PDA website, www.phildiab.com, will also

be launched.

"Emerging concepts in diabetes management," the theme of this year's convention, with Dr. Rosa Allyn Sy as chairman, will feature new approaches for an old disease and its complications. Diabetes in childhood, diabetes in adolescent women, diabetes in pregnancy and diabetes in the elderly will be highlighted -- topics which imply that diabetes management may not be the same in different stages of life. Plenary lectures include Diabetes and pregnancy, Leptin resistance, PPAR and insulin resistance -- the current researches have focused on these areas of interest. These and many more clinically relevant topics will be explored by invited experts.

Thus, amidst the economic and political crisis worldwide, we will continue with the main objective of the society, to pursue and provide new knowledge in the field of diabetes.

Somewhere in rustic Los Baños, lies a secluded and exclusive club -- the Forest Club -- which has become the permanent home of Camp Cope. The club's majority owner was Mr. Antonio Mercado, who, on his death bed relayed to his family his wish that Camp Cope be given the privilege of holding its summer camp there for as long as the club exists. And so from being shuttled from Boy Scouts grounds to the Girl Scouts camp, Camp Cope has finally come home to roost -- a generous legacy from a man who died from the complications of diabetes.

But what is Camp Cope? This was an idea born in 1995 -- a dream to provide children suffering from diabetes a place to feel that they are not singularly alone in their illness, and knowing so, help them achieve security and well-being.

The camp's activities are a blend of those gleaned from Camp Joslin by Mr. Jun Halili, the first camp administrator and Dr. Roberto Mirasol, camp director; as well as those acquired from an international camp in Melbourne, Australia by a team led by Dr. Cynthia Manabat, endocrinologist, together with Noel Zabala, Nia Mascarinas and Tricia Maranon, counselors. Other contributions have come from Dr. Beth Pacheco, medical director, Dr. Joey Miranda, program director, Ms. Susan Trinidad, over-all coordinator and nurse-in-

charge, Liza Mallari, dietitian coordinator, Jackie Oreal and Ivy Desembrana, as well as other health professionals from various satellite diabetes clinics.

The name of the camp, COPE is the guiding light of the camp, for it resounds with the intention of making the campers cope with all the facets of their illness. In fact, each letter of the word COPE also stands for the first letters of the phrase, Children Overcoming Problems Everywhere, echoing once more the primary aim of the camp.

"To offer an opportunity to share life's enjoyable experiences with others who happen to have diabetes by promoting appreciation of the important things in life" - this is the objective of Camp Cope. Has it achieved this objective in the six camps that it has held? There is an average of 22-24 campers each year, overseen by five times that number of counselors who are them-

Meanderings...

AUGUSTO D. LITONJUA, MD
EDITOR EMERITUS



selves diabetics, counselors-in-training, an exercise physiologist, and a staff composed of pediatric and adult endocrinologists, nurses and dietitians. To be at the 'graduation' of the campers is to be overwhelmed by the emotions of the participants and the campers' parents. There is that sense of belonging, of treating their disease as something they can overcome, and at the end, a desire to linger in the place - of not wanting to let go of each other. Thus, that final day finds a profusion of tears and hugs, of wanting to prolong the togetherness that has been newly found. Having always been there at that 'day' makes me believe that the camp is achieving its purpose. May it go on... and on.

Diabetes occurs in all age groups. I have worked with many children with diabetes because of my involvement with diabetes camps. Adult diabetics have a lot of problems different from children. In this issue of Diabetes Watch we tackle another group: the teenager with diabetes. The teenage years bring many changes. Having to deal with these changes plus having to deal with your diabetes is indeed daunting to many. So read on and learn from your questions.

I feel I need some independence. I want to see my doctor on my own without my parents. How do I go about it? Two things you need to prove to your parents: 1) that you are responsible and can take care of yourself; 2) that you value yourself and feel confident about your diabetes. Talk to your parents and tell them how you feel. I'm sure they will understand and allow you to go visit your doctor on your own.

I am embarrassed to talk about birth control, pregnancy, alcohol or drugs with my doctor. How can I be open up to my doctor? It is important to be at ease with your doctor. He will be your "physician-for-life" and it is necessary to have an open and honest relationship. These are "heavy questions" and your doctor will be more than happy to clear up these issues with you. You need to be clear and specific about your questions. Come prepared with a list and



Everything you always wanted to know about DIABETES...

(BUT WERE AFRAID TO ASK!)

be ready to take notes when necessary. Remember your health depends a lot on this relationship.

Should I tell my friends about my diabetes? I hide my testing supplies and syringes. I don't want them to feel sorry about my diabetes. This is one secret you need to tell your friends. If they know, then they will understand why you are not eating birthday cake or not drinking regular drinks or going slow on that pizza. If you get a hypoglycemic reaction, they will know what to do to help you. Some friends will understand and accept you and become curious about your disease. Some might see you differently. Most of your friends, I'm sure, will respect you as a person with diabetes.

Do I tell everyone about my diabetes? You may choose to do that. There is a downside to doing this. You may get strange looks and comments from some people who just don't understand anything about diabetes. You will have to explain your disease and tell them that they can't "catch" diabetes. Another option is telling only some select friends. If they are really your friends they will treat you with respect. In school, make

sure that your teachers know about your illness especially your P.E. teacher. Make sure that your school physician knows about your diabetes.

What do I do if my friends pressure me to do things which are bad for my diabetes? Be assertive and learn to say "NO". Repeat it if you must. Do not be swayed by peer pressure. You know it is not good therefore say NO! You may explain briefly why you are saying NO. Keep it brief and simple. Do not apologize.

You need to work things out to control your diabetes. Keep to your meal plan. Exercise a lot. Don't forget to monitor your blood sugars and inject insulin. There are a lot of things which you will experience as you grow up. Taking control of your diabetes is your priority. This is a lifelong process. If your sugars are in good control, hopefully you do not get the complications associated with this disease. We welcome your comments and suggestions. Please fax your questions to 532-7126 or e-mail me at mbmirasol@yahoo.com. We would like to hear from you. 

Diabetes in... (From page 1)

tional Diabetes Awareness Week is commemorated in July. Last April 17, 2001 the Pediatric Endocrine Section of the Philippine General Hospital organized a Pediatric Diabetes Awareness Day, providing an opportunity for diabetic children and their families to meet medical specialists and the members of the diabetes team (including doctors, nurse educators, dieticians), advocates and other patients. The participants learned more about diabetes and also enjoyed themselves because there were games and raffles.

What is diabetes?

Diabetes is a disease in which the body does not produce or cannot properly use insulin. Insulin is a hormone necessary for

the body to be able to use glucose. Glucose is the basic fuel for the cells in the body, and insulin brings glucose from the blood into the cells. When glucose builds up in the blood instead of going into the cells, the cells may be starved for energy. Both genetics and environmental factors appear to play a role in causing diabetes mellitus.

There are two major types of diabetes:

Type 1 - A disease in which the body does not produce any insulin, most often occurring in children and young adults. People with type 1 diabetes must take daily insulin injections for survival and well-being.

Insulin is a hormone produced by the beta cells in the pancreas and it helps cells take in the glucose they need. Sometimes, the beta cells are wiped out and can no longer produce insulin. In most people with

type 1 diabetes, there is a problem with the immune system. Cells that normally protect a person from germs attack one's own beta cells instead. The beta cells die. Without beta cells, one makes no insulin.

Type 2 - A metabolic disorder resulting from the body's inability to make enough, or properly use insulin. It is the most common form of the disease. It used to be a disease of "adults." However, nowadays, type 2 diabetes is seen earlier, and increasingly in children and adolescents.

In 2000, the American Diabetes Association (ADA) and American Academy of Pediatrics (AAP) stated in a press release that type 2 diabetes mellitus is an emerging epidemic in children the USA. The surge in type 2 diabetes mellitus in children is

(Continued on page 16)

Patient Profile:

Edgardo Jose Valenciano

"Gary V." is not only a popular singer and dancer, but is also the most high-profile Type 1 DM patient in the Philippines.

DiabetesWatch was fortunate enough to conduct an interview with Gary, who inspite of his busy schedule took time out to answer our questions.

Thank you, Gary, more power to you & God bless!

At what age and how was your diabetes diagnosed?

At the age of 14 while I was in the US. Did you have to be hospitalized for a diabetic emergency? What symptoms if any, did you experience?

Yes. In April of 1984 while promoting my first major concert, the stress and the fact that I did not eat lunch made me land in the emergency of Makati Medical for hypoglycemia. The disc jockey in the radio station said that I was mumbling nonsense and in a drugged-like state. I was falling asleep right in the booth. In Canada, I also landed in a hospital. That was more serious. I pretty much ran amuck in the parking lot of a mall. I was disoriented. I could not concentrate on the movie. I had watched a movie and forgot to lessen my insulin as I hardly had anything to eat the whole day. And I was jet-lagging. Jet lag is very dangerous for diabetics. My wife has reminded me that I have had most of my major attacks while jet-lagged.

What did you think when you heard the word Diabetes and Insulin for the first time? Was the situation and your illness explained to you? By whom?

It was like a bad dream really. I remember seeing the daughter of my uncle running from her yaya because it was time for her to take her insulin. I was about 10 years of age and I told myself that if there was anything I didn't want to have it would be diabetes. It wasn't a surprise when I found out as I knew I was suffering from something because of sudden loss of weight. The doctors in the US explained everything to me. They were very thorough in their explanation that it made it easier for me to adjust.

What sort of impact did your diabetes make on your life afterward? How did it affect you in terms of your:

a. home environment - Well it was the beginning of a new life style not just for me but for my family as well. My diet was what I had to adjust to the most. I used to hate vegetables but this time I had no choice. Checking one's sugar level was difficult because the procedures were very different then.

b. school activities (sports, academics, extracurricular glee club, etc) - I was young and daring many times especially in school and with friends. It's good that I was in the States for ten months because it taught me a lot about discipline and the importance of exercise and diet.

c. friends and "barkada" - Many times I would have to explain my condition to my friends. You see at that time there were still no machines that would check the blood except the ones in hospitals. All my tests were done by checking the urine for sugar levels. Of course I could never do the entire procedure in public so people were always curious about the disease and I would have to explain what diabetes is all about.

What sort of impact did the diabetes make on your family, siblings and parents?

My family has always been concerned with my health. Angeli, my wife, however,

has learned and studied diabetes so much that I believe she even knows it more than I do. With my kids, and wife, they eat what I eat and have had to content with my wife being with me everywhere I go for concerts (as my personal nurse) and it's hard on the kids. But really, Angeli has no choice. Most of my major attacks where when I was asleep.

Did you monitor your own blood sugar and inject your own insulin right away? If not, when did you learn to do this on your own? How difficult did you find it to learn?

I monitor myself with pricks on my fingers about 3 to 4 times daily and inject myself two to four times daily. I have been doing this for the past 22 years. It wasn't difficult to learn all these. My shots were taught to me while in the State. The first time I tried it, there was no pain and I think that one short moment changed my mind about a needle being inserted into the skin.

How do you handle the complications of insulin therapy, like hypoglycemia?

First thing is to try and prevent this from happening. Monitoring my blood sugar 3 to 4 times a day helps me a lot. It also pays to know what insulin you're taking. There are fast acting and long lasting types of insulin. I take two kinds daily. When one has a hectic or physically demanding schedule, one can try taking less insulin or bring more sweets like candy or juice to prevent hypo attacks. People respond to low blood sugars differently. Symptoms may be similar but sometimes one person can start feeling it at 60 mg/dl while another may feel absolutely normal at that same level, so it is important that a diabetic remains constantly aware of the time the insulin was taken, time of the last meal, what activities were done throughout the day. The support of the family and household help is non-negotiable. It is critical in diabetes maintenance. Prayer also keeps us strong.

Did you ever attend a diabetes camp or spend time with other Type 1 Diabetics like yourself?

I wish I could but my schedules are very erratic. Perhaps one of these days I may get a chance to be part of one. Earlier in my career, I would get involved in camps of my doctor Ricardo Fernando and give inspirational messages now and then. I also

GIZMOS AND GADGETS FOR THE NEW GENERATION OF DIABETICS

PATRICIA B. GATBONTON, MD
OUR LADY OF LOURDES HOSPITAL

The young diabetics of the world today are a different breed altogether. Born in the computer and internet age, kids no longer have to contend with impure animal insulin preparations, glass syringes with large-bore needles and painful needlesticks endured by the first generations of "insulin babies" born after 1922. Indeed, the gamut of injectors, pens, palm-sized meters, as well as painless monitoring devices available right now might even target them for envy by schoolyard pals: as hip type 1 DM-techies, with the ultimate in cool gadgets.

Work on new testing technologies has advanced steadily. The development of the Continuous Glucose Monitoring System (CGMS) lets us, for the first time, actually see what happens to glucose levels minute-to-minute, and evaluate trends throughout the day. The gadgets promise to be easy to use, accurate, and most important, forego painful finger-sticks. All the devices measure glucose in interstitial fluid (ISF), a clear fluid that surrounds cells. Glucose levels in ISF are about 10% lower than whole blood levels, which in turn are about 10% lower than plasma glucose readings. ISF glucose also falls earlier and rises later than does blood glucose. These timing differences may provide an earlier reading for lows, but also a 15 or 20 minute delay as a person waits for their meter to say they're OK.

COMING SOON

GlucoWatch Biographer: The Story of My Life

Cygnus has Food and Drug Administration (FDA) approval for their transdermal glucose sensor. Its use, however, is currently limited for adults 18 years and older (sorry kids). It is the first frequent monitor to become available in the U.S. Ten years in development, the watch uses a transdermal pad, called an AutoSensor, which sticks to the skin and contains a biosensor connected to the GlucoWatch. Normally the dermis--the second layer of the skin--does not allow glucose to leak out, but our skin can be forced open by electrical stimulation. The AutoSensor discharges a low electric current that pulls glucose

through the skin. These glucose levels are transformed into an electric signal, which is converted into a glucose reading.

The GlucoWatch takes automatic measurements every 20 minutes, with alerts for highs and lows and fast changes, a trend indicator, and event markers to record activities like meals, insulin, and exercise. Because 1 of every 4 readings by GlucoWatch varies by more than 30% from the actual blood sugar, accuracy cannot be assumed. The short testing intervals and the ability to watch for trends in glucose readings helps to offset these occasional less accurate readings. The GlucoWatch needs to be checked against a standard meter after it has been in place for 3 hours. After calibration, the sensor records blood sugars for 12 hours, and must then be replaced with a new one to complete a full day's coverage. The most common problem is skin irritation, because of this, the site cannot be used for more than 24 hours. So "watch" does not mean it can be worn on the wrist like a wrist-watch. Clinical trials have begun on children and adolescents from 7-17 years of age. Cygnus is awaiting FDA approval for use of the device by this age group.

Minimed: "Minute by Minute"

While this device cannot provide the user with a continuous readout of blood glucose levels, it does the next best thing. Readings are downloaded into a physician's computer every three days and provides information useful in identifying problems and adjusting treatment programs. The design is similar to an insulin pump infusion set, with a sensor inserted through the skin and an external recorder is worn on a belt or elsewhere. This sensor measures the change in glucose in ISF every 5 minutes, and sends the information to a beeper-sized black box (called a monitor) which stores the results for three or four days. After insertion, it must be calibrated twice a day with a standard meter. The patient also has to enter insulin

doses, exercise, and meal information into both a logbook and the monitor. After three days, the monitor is taken back to your endocrinologist's office and placed in a docking station connected to a standard personal computer. Specialized software downloads the stored information for review by you and your diabetes team. The first model sports a wire attached to an outside pager-sized monitor; a later model will have a wireless device with radio transmission to a small watch-like device.

Therasense, Inc.: Listen to the Radio

Similar to MiniMed, a miniature subcutaneous sensor is inserted across the outer skin to monitor glucose levels every five minutes. It is able to store results for future analysis. A major difference: the size of the Therasense needle is less than 10% the length of MiniMed's. Because the Therasense system measures interstitial fluid, a needle only long enough to cross the outer dermis is required and makes the needle essentially pain-free. The challenge is to ensure accurate glucose readings with such a small sample size. A radio transmitter is incorporated into the part that goes on the skin. This transmits to an external unit, and ultimately to a watch or Palm device, to display the blood sugar levels. The external receiver can operate within a 10-foot radius, and can be carried in a bag or left on a bed-stand at night. The receiver will have an alarm for low and high readings. The sensors should last about 3 days and a single calibration will be required.

SpectRx: The Micro-Laser

SpectRx uses an Altea MicroPor™ laser to painlessly create microscopic pores in the outermost layer of skin, opening a path for the ISF fluid, which is collected in a patch containing a glucose sensor. The unit uses a low-cost, low-energy laser with a feature that prevents any damage to tissues underneath the outer layer of dead skin cells. They have found that glucose in pure ISF can be measured with existing, off-the-shelf glucose test strip technology. The SpectRx personal glucose monitoring technology has been licensed to Abbott Labora-

(Continued on page 10)

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Note: In controlled studies, gemfibrozil caused a significant elevation of plasma levels of HDL cholesterol. Increases in this lipoprotein fraction have been associated with lowering of the risk of death from coronary heart disease.

Warnings:
Gemfibrozil should be used with caution in patients receiving anticoagulants. The dosage of the anticoagulant should be reduced by one-half (depending on the individual case) to maintain prothrombin time at the desired levels to prevent bleeding complications. Frequent prothrombin determinations are advisable until the prothrombin level is stabilized.

Contraindications:

Gemfibrozil is contraindicated in patients with hepatic or renal dysfunction.

Usage in Pregnancy:

Safety has not been established.

Usage in Nursing Mothers:

Breast feeding should not occur during therapy with gemfibrozil.

Side Effects:

Gastrointestinal complaints were the most frequently reported adverse reactions but were usually not severe enough to necessitate cessation of therapy.

Drug Interactions:

Should be used with caution in patients receiving anticoagulants (see Warnings).

Overdosage:

Overdosage with gemfibrozil-symptomatic and supportive measures should be taken.

Dosage and administration:

Recommended daily dose is 900 to 1200 mg in single or two divided doses. The 900 mg dose is given as a single dose one-half hour before the evening meal. The 1200 mg dose is given in two divided doses one-half hour before the morning and evening meals.

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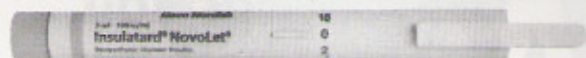
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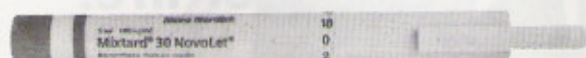
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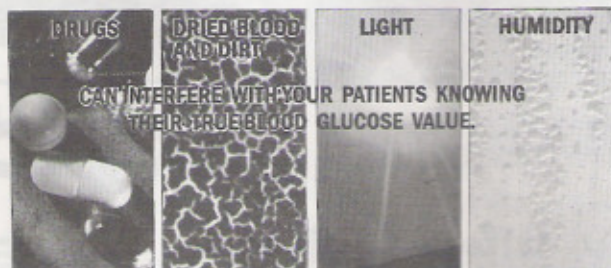
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 - Reduces hypersensitivity to adrenalin



The Simple Truth About Blood Glucose Monitoring

In the real world,
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CAN INTERFERE WITH YOUR PATIENTS KNOWING
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Delivering Accuracy in Your Everyday Monitoring,
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Working Together for a Healthier You



* Kitchen Corner *

GRILLED CHICKEN *with* GARLIC SAUCE

6 servings
per serving size: 3-4 oz with 2-3 tbsp sauce

1/3 cup minced parsley
5 garlic cloves, minced
1/3 cup lemon juice
1/4 cup olive oil
1 tsp paprika
1 tsp cumin
dash cayenne pepper
1-1/2 lb chicken breast slices, pounded to
1/4 inch thickness
1 tbsp olive oil for brushing on turkey while
grilling

1. In a blender, blend all sauce ingredients together
2. Grill or broil the chicken breasts 6

inches from the heat source, brushing with olive oil to keep moist. Grill on each side about 4 minutes.

3. Top each slice with some of the sauce (about 2-3 tbsp per slice).

Nutrition information:

Lean meat exchange	: 4
Calories	: 229
Total Fat	: 12 gm
Saturated fat	: 2 gm
Calories from fat	: 108
Cholesterol	: 75 mg
Sodium	: 52 mg
Total carbohydrate	: 2 gm
Dietary fiber	: 0 gm
Sugars	: 1 gm
Protein	: 28 gm

CHOICEcolate Cheesecake Mousse

Pour 3/4 cup very cold chocolate CHOICEdm into a mixing bowl. Add the contents of 1 envelop Sans Sucre Chocolate Cheesecake Mousse. Using an electric mixer, blend on lowest speed until mix is blended. Slowly increase the mixer speed until the highest speed is reached, whipping for a total of 5 minutes. Pour into 4 dessert

dishes and refrigerate 2 hours before serving.
Amount per serving :

Calories	: 102
Carbohydrate	: 12.5
Protein	: 4.75
Fat	: 3.5

Winning Entry, Camp Cope
Recipe Making Contest, May 2001

Ask Your DIETICIAN

CELESTE C. TANCHOCO, RD
SCIENTIST I AND CHIEF, NSTD, FNRI

1. My child was recently diagnosed to have diabetes. He is obese and loves to eat. I can't prepare his lunch box for school. What are the healthier options available in school canteens that he can buy?

Remind him/her to select simply prepared foods instead of those that are fried or have sauce or gravy. It is best to choose foods that are roasted, baked, broiled and boiled. Avoid foods prepared with large amounts of sugar and with too much fats.

Healthier options available in school canteens that he can buy are:

1. unsweetened fruit juice or vegetable

juice; better if pulp from the fruit is put back in the juice

2. Salad: vegetables or fresh salads without dressing already added. Use lemon wedge or vinegar. Combine a sugar substitute with lemon juice for a calorie free sweet and sour dressing.

3. Soup: clear instead of creamy soups.

4. Avoid salad-type filling as they are often high in fat. Chicken without skin, low fat cheese and lean meat are acceptable fillings.

5. Meat: Choose meats which are roasted, baked, grilled, braised or broiled. Trim off all visible/excess fat. Remove the

skin of chicken. Request that meat be served without gravy or sauce.

6. Fruit: Select fresh fruit with high fiber such as pineapple, chico or unsweetened fruit juices.

7. Vegetables: Choose stewed, steamed, boiled or seasoned with herbs/spices and prepared without sauce, butter or margarine.

8. Rice and Equivalents: Choose plain boiled rice.

9. Bread and Equivalents: Choose plain breads and rolls, soda crackers, plain muffins, biscuits, pretzels, unbuttered popcorn, tacos, tortillas.

10. Desserts: Fresh fruit, for dessert, nonfat or lowfat icecream, frozen yoghurt, fruit sherbet, popsicles, water, ice and fruit juice bar.

2. We have a strong family history of diabetes. What "after school" snacks can I serve my kids before they do their homework or sports activity?

The best composition of snacks is not known. However, sandwich, pasta, congee or noodle soup are good examples. The snack should be based on the child's preference and activity and insulin therapy integrated into this pattern.

Snacks should not be too close to mealtime, at least 1 hour or more before meals. If the child is not hungry at meal times; make the snack smaller, or serve them earlier.

3. Are "kool-aid" and other diet sodas safe for my 10 year old diabetic son?

"Kool aid", a fruit flavored drink, is categorized as a sugar equivalent and may not be recommended for your 10 year old diabetic son. Diet soda contains an artificial sweetener, aspartame, which has been approved by the Bureau of Food and Drug Administration. Artificial sweeteners should be used in moderation (1/2 of the allowable dosage). It is established that up to 50 mg of aspartame per kilogram of body weight a day is safe to consume and most people consume much less than this level. A can of diet softdrinks (12 oz) contains 150 mg aspartame. Thus, a 10 year old child whose desirable body weight is 28 kg may consume about 700 mg aspartame or about 4 cans of diet softdrinks.

4. How can I control my growing son's appetite? He needs to maintain a normal blood sugar level since he is diabetic.

To control your son's appetite, food

Gary V.... (From page 5)

do occasional inspirational talks and performances for the less privileged diabetics in cooperation with other companies and foundations.

How did your being a Type 1 DM contribute to your character development?

I guess it has taught me to be more disciplined, it made me realize that my life is really in the hands of my creator -- Jesus. I'm 37 years old and I can still do what I love to do, my eyes are okay, and by God's grace and mercy, I have no complications. All these are statements of God himself that if we trust in Him whether we are ill or not, we will see Him work in miraculous ways. It made me treasure life even more. It constantly teaches me how to be patient although sometimes I have difficulty in this area as being quick tempered can also be part of a symptom of high sugars.

What is the most important factor that has helped you cope with your Type 1 DM?

God. My faith and my wife's support have been factors that have kept me alive. *You have been cited by numerous young Type 1 DM's who have heard you speak at diabetic camps as an inspiration to them. What would you like to say to those who you will reach for the first time in this interview?*

Do not let Type 1 DM bring you down. Believe me, I have survived and will go on surviving because of the goodness of my God. He is your God too. I know it's not easy and it can get very frustrating at times but take heart. Be disciplined, get into sports, eat right, His eyes are on you. And lastly, remember that nothing is impossible in Him who gives both you and me strength. And to the families of diabetics, remember that diabetes is a disease that the family should share. Selflessness, patience, perseverance, understanding and a lot of prayer

will see you all through. The battle is the Lord's but the victory is ours !!!!

Has your attitude toward your Type 1 DM evolved since you were first diagnosed?

With my renewed faith I can deal with it in a more mature way now. Before I would deliberately take high doses out of irritation due to high sugar and my wife and I would really have arguments as this is very, very dangerous and I could go into coma. In recent years, I have come to realize that many people love me and depend on me and I owe it to them to take care of my life. I owe it to my Creator as well so He can continue to mold me into the man He created me to be... in spite of my limitations.

DiabetesWatch would like to thank Mr. Alvin Z. Miranda from Glaxo-SmithKline, a current PDA board member for coordinating this interview.

Gizmos.... (From page 6)

tories, who are pursuing its development.

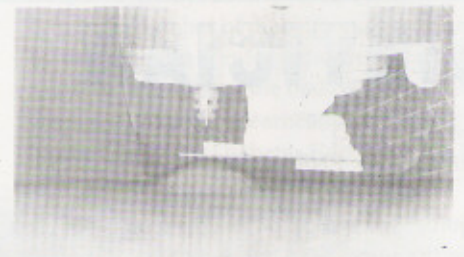
Kumetrix, Inc.: The Amazing Micro-needle

Kumetrix is engineering silicon micro-needles designed to draw blood and perform chemical measurements. Their micro-needle is about the size of a human hair, and has been integrated with a micro-reservoir or cuvette. This permits painless testing. The system is a hand-held, battery-powered, electronic monitor similar to today's meters, that holds a cartridge loaded with up to 10 disposable sampling devices. To take a measurement, the cartridge is loaded into the monitor and pressed against the skin. The micro-needle penetrates the skin and draws a tiny volume of blood, 1/100th the size of a drop (100 nanoliters), into the disposable needle. Chemical reagents then react with the glucose to produce a color. The color is analyzed using a laser light and the blood-glucose concentration is known. The silicon micro-needle is likened to a

mosquito bite minus the enzymes that cause irritation, redness and swelling.

Integ: A Hole in One

Small amounts of interstitial fluid are analyzed by placing a 1.4-mm hole in the dermis to obtain a sample. No blood is drawn which causes far less pain than today's lancets. The sample size is one microliter, about one 50th the size of a drop. The device, called LifeGuide is pressed against the skin on the forearm (less sensitive than fingertips) for less than 30 seconds to obtain a reading. A small, hollow lancet collects a tiny drop of interstitial fluid to obtain the reading. Some concerns about water-based activities like swimming diluting the ISF glucose exist because the hole is so small. Tests using a standard glucose oxidase sensor are believed to be underway. Integ says it plans to price its device at \$250 or less.



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Jas-pens
In the Philippines, we have available



the pen injection systems that are convenient, colorful and sporty. Ultra-fine, ultra-short needles are available for traditional syringe users.

Two birds with one meter

Medisense Optium, also from Abbott, allows for testing of both glucose and serum β -hydroxybutyrate (a ketone body, a marker for diabetic ketoacidosis which is a diabetic emergency) with the same meter. A range of 3.5-5 μ L of blood is needed and results are processed in 20-30 seconds.

Tomorrow is a day away

Although the newest technology we looked at claim to be "bloodless" and "painless," most still require a needle to be applied or left in place. Calibration with a conventional meter is also still necessary. And no matter how small, a mosquito sting is still a sting. But, kids today really can't complain, they do have it better. They (and we) can only dream of the day when "bloodless" and "painless" are really so. Maybe tomorrow, and tomorrow is just a day away.



I MUST, I CAN, I WILL OVERCOME DIABETES

Theme of Diabetes Awareness Week
July 22-28, 2001

JOSEPHINE CARLOS-RABOCA, MD
MAKATI MEDICAL CENTER

I Must --- eat the right food, exercise regularly and take my medicine religiously.

I Can --- achieve good diabetes control even though it may be difficult at times.

I Will --- overcome diabetes by having a long useful life devoid of complications.

This was the theme of the Diabetes Awareness Week 2001. Twin celebrations were held at Festival Mall Alabang, Muntinlupa and Harrison Plaza, Manila. This was preceded by a fun walk led by Dr. Tommy Ty Willing from the Cultural Center Complex to Harrison Plaza. Guest Speakers included Dr. Zainal Ariffin Omar, Medical Officer of the Non-Communicable Diseases, World Health Organization Asia-Pacific and Dr. Rolando Enrique D. Domingo, Assistant Secretary of the Department of Health.

Gary Valenciano, a type 1 diabetic himself, drew crowds and inspired people with his discipline in achieving good diabetes control. He remains free of complications

after long years of diabetes. Celebrities like Maribeth Bichara and Vince Gomez, a PBA player, who actively promote exercise and physical fitness graced the celebration.

Diabetes Awareness Week brought together people with diabetes and their health care teams from the different diabetes clinics in the country. This year a cheering competition was held. First prize winners were the teams from Clark Air Base Hospital at Harrison Plaza and Philippine General Hospital at Festival Mall. The Board of Judges was led by no less than Mr. Philip Juico, former commissioner of the Philippine Sports Commission and Commissioner Cynthia Carrion of the Philippine Sports Commission. Other judges were Dr. Lina Lantion-Ang, Dr. Susan Yu-Gan, Dr. Ruby T. Go, and Mrs. Lourdes Zafra.

Throughout the week, an intensive course for diabetes educators was held participated in by 15 diabetes teams. This brings the number of diabetes clinics trained by the Diabetes Center nationwide to 110.

The activities of the diabetes awareness week are annually spearheaded by the Philippine Center for Diabetes Education led by

its president, Dr. Augusto D. Litonjua and its executive officer, Mrs. Susan B. Trinidad, in cooperation with Philippine Diabetes Association headed by Dr. Ruby T. Go, the Faculty of the Diabetes Center and pharmaceutical companies. This is also supported by the Department of Health.

Dr. Cynthia Halili-Manabat and Dr. Josephine Carlos-Raboca (yours truly), coordinated this year's activities as they have over the past several years. With the increased awareness of diabetes among Filipinos, we hope to detect more people at an early stage but better yet, prevent it or its early onset by promoting a healthy lifestyle. We are also calling for sustained diabetes awareness activities throughout the year by the diabetes clinics of the Diabetes center, as well as in government hospitals.



IDF Shares Life to 15 Filipino Children with Diabetes

ROSA ALLYN G. SY, MD
CARDINAL SANTOS MEDICAL CENTER

Committed to uplift the lives of children with diabetes, the IDF consultative section on Childhood and Adolescent Diabetes chaired by Prof. Martin Silink and co-chaired by Mrs. Lorna Mellor has taken charge of a noble project conceived by IDF immediate past president, Mrs. Maria de Alva, and approved by the executive board early last year. The project's primary objective is to help indigent children with diabetes in their medical needs, with the ultimate aim of preventing complications. As reported in the previous Diabetes Watch issue, the Philippines was chosen as one of the 2 pilot sites for the project.

In July, 2001, the non-government organization based in Australia, coordinated internationally by Dr. Graham Ogle and Hope Worldwide, sent-in its one-year financial support for the project. The project intends to support as many indigent diabetic children as possible. However, because of the increasing cost of supplies and insulin and the limited budget provided, the local committee headed by Dr. Rosa Allyn Sy (Diabetes Center), Dr. Elizabeth Ann Fernando (ISDFI) and Dr. Sioksoan Cua (UP-PGH Section of Pediatric Endocrinology) with the approval of the national committee decided to choose 5 children from each center. The working group chose the

beneficiaries of the project according to the needs assessment criteria set by Hope Worldwide and the three centers.

15 children from the three (3) centers: Philippine Center for Diabetes Education Foundation Inc. (Diabetes Center), UP-PGH Section of Pediatric Endocrinology and the Institute for the Study of Diabetes Foundation Inc. (ISDFI) were selected and will receive full support for their medical needs for a period of one year. The Diabetes Center kids are Harold Cister, Vanessa Lancaster, Eiffel Legaspi, Marlon Malapitan and Maricar Raga; ISDFI kids are Katherina Balverde, May Lord Dimalaloan, Hazel Eusebio, Hernani Gomez, and May Rose Namoso; UP-PGH kids are Honard Buena, Apple dela Cruz, Shaira Ferrer, John Vincent Goldonez, and Michelle Taglinao. These children are followed up closely by Dr. Joey Miranda, Margaret Galilea and Carridad Santos. Dr. Graham Ogle, the director, came to Manila from November 15-17, 2001 and visited the centers involved and met some of the project's beneficiaries.

The three centers and the beneficiaries are truly gratified to receive this support from the IDF. Even at this early stage, the centers are exploring other venues to expand and continue this noble ADOPT A CHILD WITH DIABETES PROGRAM.



Ask Your... (From page 9)

should be distributed throughout his waking hours, since a large amount of food taken at one time will cause his blood sugar level to increase abruptly.

Encourage your child to eat slowly. A child can detect hunger and fullness better when eating slowly.

Discourage eating meals or snacks while watching TV. Try to eat only in designated areas such as the dining room or kitchen. Eating in front of the TV may make it difficult to pay attention to feelings of fullness, and may lead to overeating.

Try using smaller plates for your child so that his portion does not appear meager. Let him know that once he is finished, that he will have a chance for seconds.

Make meals last more than 15 minutes. To experience feelings of satiety or satisfaction at meals, we all need a certain amount of tasting, sucking, chewing, and swallowing. If we eat too fast, we often need more food to be satisfied. By eating slowly, we can be satisfied with less food.

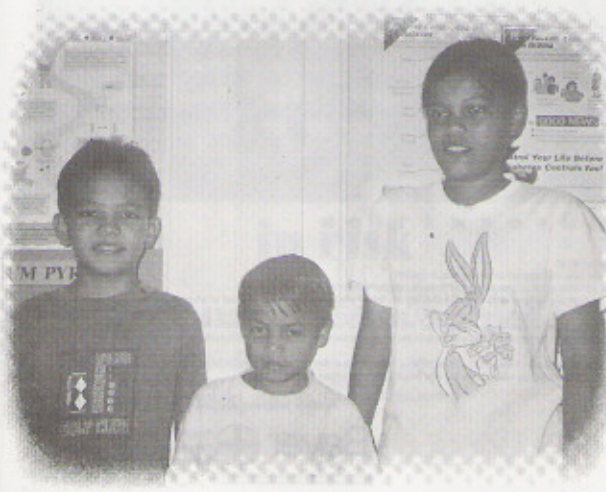
Encourage your child to eat fiber-rich foods such as whole wheat bread as well as fresh fruits and vegetables since fiber helps in weight reduction. It makes you feel full faster, reducing total caloric consumption.

If your child wants to drink more fruit juice, dilute the juice with water or diet soda pop or offer a piece of fruit instead which takes longer to eat and is more filling.

If your child wants more food, offer "free" foods such as sugar-free popsicle, Kool Aid, Jello and nonstarchy vegetables; foods containing less than 20 kilocalories and 5 g carbohydrates per serving can generally be eaten freely.

5. Whenever he attends birthday parties, my child is exposed to cakes, ice cream and loot bags full of chocolates, candies and gums. What shall I tell him if he asks to have a "little?"

If your child asks to have "a little" of these foods, try to explain to him that these foods are high in energy, sugar and fat which are not good for his condition. In such a situation, he may be allowed to choose one item from among these at a time if his sugar is in good control. The mother should consult the dietician about her child's total energy requirement and the caloric content of foods usually consumed, so that she can guide him/her on the serving size he/she is allowed.



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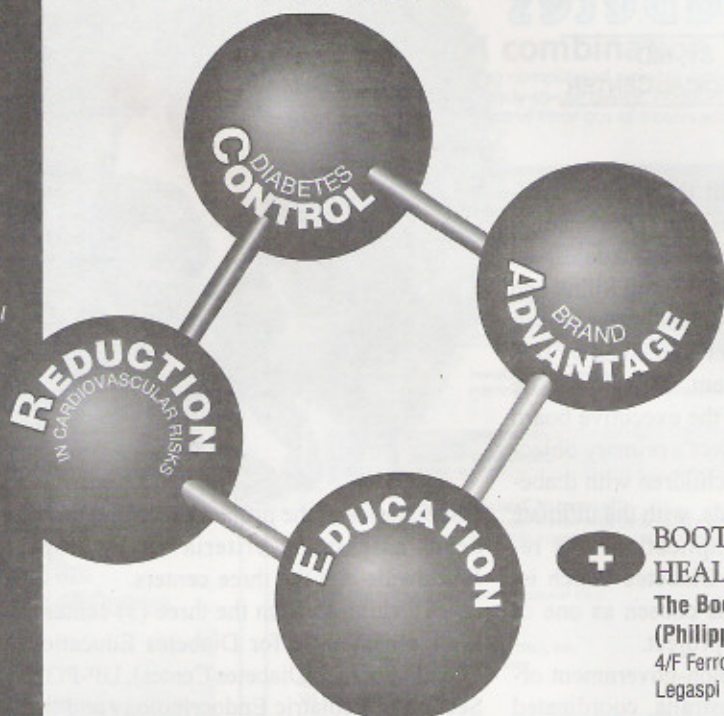
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P R E S C R I B I N G I N F O R M A T I O N



FORMULATION: One Glucobay 50mg tablet contains 50mg Acarbose. One Glucobay 100mg tablet contains 100mg Acarbose.
INDICATIONS: Glucobay is recommended to patients with diabetes mellitus inadequately controlled with diet alone, oral and/or hypoglycemic agents or insulin.
CONTRAINDICATIONS: Hypersensitivity to Acarbose. Patients under 18 years. Pregnancy and lactation. Conditions which may be aggravated by increased gas generation in the intestinal tract.
SIDE EFFECTS: Commonly flatulence and bloating; rarely diarrhea and abdominal pain. Patients may suffer more intense intestinal side effects if they do not follow their prescribed diet. In case of an increase in liver enzymes without any symptoms, Glucobay treatment should be stopped.
INTERACTIONS: Dose sugar (sucrose) and sugar foods can easily cause abdominal pain and diarrhea during Glucobay treatment because of increased fermentation of carbohydrates in the colon. Anacardic, choleretic, laxative, medicinal substances and those containing digestive enzymes should be avoided since they may reduce the effectiveness of Acarbose. Glucobay (Acarbose) in combination with sulphonylureas or insulin may potentiate the hypoglycemic effects of these drugs. However, when administered alone, Glucobay does not cause hypoglycemia.
DOSE/ADMINISTRATION: Unless prescribed otherwise, 1 tablet Glucobay 50mg, three times a day during the initial phase. Later 1 tablet Glucobay 100mg, three times a day, maximum daily dosage, 2 tablets Glucobay 100mg three times a day. The dose can be increased after initial phase of 1-2 weeks (or later, if necessary). Glucobay tablets should be taken after the first mouthful of each main meal.
PRESENTATION: Glucobay 50mg box of 100's. Glucobay 100mg box of 100's.

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Medical Sciences

The first shot of insulin was given in 1922 to a 14 year-old boy with diabetes named Leonard Thompson. Due to the impurities of the pancreatic extract, he developed an abscess in one of the injection sites. Since that first shot, improvements have been made in the preparation of insulin. Recombinant DNA technology has made it possible to shift from animal insulins to human insulin in the 1980's. DNA technology has also led to the synthesis of newer insulin analogs.

INSULIN ANALOGS

The ideal insulin should mimic normal pancreatic secretion. In the healthy person, the pancreas secretes insulin continuously, even at night, to regulate blood sugar levels. This is called basal insulin. At meal-times, insulin is secreted in short bursts within the first ten minutes of the meal and returns to basal levels after 3-4 hours.

Changes in the conformation and protein sequence in the 2 chains (B and A) of the insulin molecule can modify its characteristics. This is the principle behind the synthesis of insulin analogs. Under the category of rapid acting insulin analogs are the already available Lispro Insulin (Humalog by Eli Lilly) and the soon to be available Insulin Aspart (NovoRapid). In Lispro, lysine and proline were interchanged at the B28 and B29 positions while in Aspart, aspartic acid replaced proline in B28. Because of these changes these analogs dissociate faster once injected. The onset and peak of action are faster than the regular human insulin formulations. The duration of action is shorter,

like the natural meal induced insulin secretions. Thus, they can be injected just before meals and are more convenient to use. In contrast, the regular short acting insulins need to be injected 30 minutes before a meal. The fast acting insulin analogs have the advantage of better postprandial blood glucose control with fewer episodes of hypoglycemia. Overall glycemic control however, may be similar with the regular insulins regimens.

The long acting insulin or basal insulin should provide constant insulin levels 24 hours a day without any peak of action so it is less prone to include hypoglycemia especially when combined with the short acting insulins. The first of this class with clinical significance is Glargine (Lantus by Aventis). Two arginines are added to B30 and glycine is substituted at A21. The onset of action is about one hour. Glargine is

prepared in an acidic medium and cannot be mixed with other insulins as it would immediately precipitate.

The other peakless long acting insulin analog under study is Detimir by Novo Nordisk. It prolongs insulin action by adding a fatty acid to lysine at B29 and removing threonine at B30. It then binds to albumin instead of forming a depot in subcutaneous tissue. Basal insulins can be used singly but more often are combined with preprandial injections of short acting insulins or with oral hypoglycemic drugs in type 2 diabetics. Being acidic, there have been reports of slightly increased injection site pain with Glargine.

NON INJECTIBLE INSULINS

Injectable insulins are not only painful but also inconvenient



and cumbersome to use. Alternative routes of delivery have been sought for since insulin was discovered such as oral, transdermal, nasal, rectal and inhaled insulin. The intestinal lining is impermeable to large molecules like insulin which become inactive when digested to smaller peptides. Nasal and oral sprays are being tried but are poorly absorbed. Like in the transdermal route, an absorption promoting substance (enhancer) needs to be added but this promotes adverse reactions such as local irritation.

The pulmonary route is the most promising as the alveoli or lung spaces are rich in blood supply with a wide surface area, about 100 square meters or half the size of a tennis court. The Inhaled

Therapeutic System can deliver insulin in dry powder, which is dispersed in fine particles by aerosol. No enhancer is added. By slow deep inhalation, insulin can reach deep into the lung and is absorbed into the blood. Pfizer and Aventis as EXUBERA will co-market this in 2002. In 3 month long studies in both type 1 (73 patients) and type 2 (51 patients) diabetics conducted by Dr. Jay Skyler's group, inhaled insulin can replace the meal-time injections of short acting insulin but still needs to be combined with an injectable basal insulin. In extended use for 2 years, they have shown sustained effect and no adverse reaction in pulmonary function. Lung and heart problems should be excluded before use. Novo Nordisk and Eli Lilly are developing inhaled insulins using the Aradigm AERx and Dura Spiros Systems respectively.

Insulin analogs and inhaled insulins are not expected to replace the conventional insulins. But definitely, the prospects are bright for people with diabetes with the promise of more treatment options.

NOVEL INSULINS:
INJECTIBLES AND NONINJECTIBLES

JOSEPHINE CARLOS-RABOCA, MD
MAKATI MEDICAL CENTER



Diabetes in... (From page 4)

related to the obesity epidemic in the past decade. In Asia, a similar trend has been noted because of sedentary lifestyle, poor dietary habits in addition to genetic predisposition. In the Philippines, we have noted the rise in the obese pediatric population, particularly in the middle-upper socioeconomic classes. Consequently, we also began to see type 2 diabetes mellitus in children and adolescents in our country.

Acanthosis nigricans, dark hyperpigmented velvety skin lesions usually found at the neck and axillary areas of obese children, is the cutaneous marker for insulin resistance. Hyperinsulinemia is detected in the obese children.

The presenting symptoms of type 2 diabetes mellitus in children could be mild, non-specific, or serious with complications, such as wound abscess, cataract and hypertension.

Most children are diagnosed with type 2 diabetes during middle to late puberty. But, as children have become increasingly overweight and less active, more type 2 may be seen younger prepubescent children (as young as 4 years old).

To prevent obesity and type 2 diabetes mellitus, we need to make major lifestyle changes - what we eat, how we eat, the amount we eat and how frequently we exercise.

The following criteria can be used to

screen for type 2 diabetes mellitus in children:

1. overweight
2. family history of type 2 diabetes mellitus in first and second degree relatives
3. race/ ethnicity (e.g. Asian)
4. signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigricans, hypertension, dyslipidemia, and polycystic ovarian syndrome).

What is good diabetes care?

Blood glucose monitoring

Many people with diabetes can live long, healthy lives by keeping the blood glucose levels within a good target range, which can be done with meal planning, exercise and insulin. One needs to check the blood glucose levels regularly. Ideally, a patient with diabetes, particularly type 1, should do home glucose monitoring at least twice a day. To check the blood glucose, one needs a drop of blood. Place the drop on a special test strip. A device called a glucose meter tells how much glucose the drop of blood contains.

Keeping the blood glucose levels near the normal range will not only make the diabetic patient feel better right away, but also help him or her stay healthy in the future.

It is important to keep a good record of blood glucose monitoring, which is the best way to assess success of diabetes care.

Therapy

Children with type 1 diabetes should

receive insulin therapy as instructed. The dosage of insulin may need to be adjusted depending on age, weight, and presence of infection or stress.

Management of type 2 diabetes mellitus include diet modification, exercise, use of oral hypoglycemic agents, and also insulin when hyperglycemia cannot be controlled by those measures and when achieving good glucose control is urgent.

Problems

Diabetes can cause three types of problems:

- high blood sugar (hyperglycemia)
- low blood sugar (hypoglycemia)
- chronic complications -over time, high blood glucose levels may hurt the eyes, kidneys, nerves or heart.

When a type 1 diabetic child has injected an amount of insulin too much for the food or exercise that day, low blood glucose often follows. Most times, low blood glucose levels in children cause only mild symptoms that are easy to spot: shakiness, sweating, nervousness, or drowsiness. Children with a mild reaction get better quickly after having a snack that has carbohydrates, such as juice, milk, or raisins.

At times, the challenges of diabetes care can seem endless as the patient and the family try to maintain adequate control while trying to maintain a normal family life. Take things step by step, and get support from your health care team. 

Diagnosis:.... (From page 19)

joint mobility, osteopenia, and necrobiosis lipoidica diabetorum.

As a young diabetic, it is important for you to visit your endocrinologist regularly in order for him to assess how well you are. Your height and weight are good measures of DM control. Poor gains in height and weight and delayed pubertal development are often seen in children with persistently poor blood sugar control. On the other hand, if you are gaining too much weight, you may be injecting too much insulin.

When you prefer to inject insulin in a particular site (e.g. abdomen), after some time, you will notice a bulge in the area. This is called lipohypertrophy. Stop using this site right away and start rotating your injection sites. Your doctor can give you guidelines on this.

Limited joint mobility means you are unable to flex or bend certain joints because of skin thickening in the area. This is seen

with poorly controlled DM. The joints in the fingers, wrists, elbows, neck and spine may be affected. This development of early joint limitation may lead to early development of kidney, vascular and foot problems. Low bone mineral density (osteopenia) has been reported in children with DM. Although the long- term clinical significance has not been established, we can guess that this may have effects on the calcium balance, bone strength and possibly, growth. Necrobiosis lipoidica diabetorum are round red spots (sometime ulcers) seen on the skin of the lower legs in patients with poorly controlled DM. The exact cause is unknown and treatment is still controversial. Some have used aspirin. If you should see any of these, please see your doctor right away.

Having diabetes should not spoil your life. Know your diabetes: its ins and outs and learn how to live with it. By achieving near normal blood sugar levels you can prevent the onset and progression of complications. The choice is yours. 

Parental role... (From page 20)

needs and demands of their child, but also how to better deal with themselves. Parents should let their child take part in the activities specially tailored for them. Diabetic children's camps provide activities that make the child feel better about themselves.

The parents should help their diabetic child live as normal a life as possible. The diabetic child should be able to feel that he is loved unconditionally. He should be spared from feelings of unreasonable guilt and incompetence. He should be made to live in an environment that guarantees opportunities for exploration and discovery, development, growth, autonomy and achievement.

The diabetic child should be made to realize that he is the master of his future and the controller of his diabetes. 

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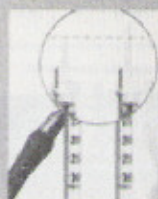
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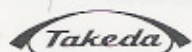
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Medical Sciences

DIAGNOSIS: DIABETES WHAT'S NEXT?

SYLVIA CAPISTRANO-ESTRADA, MD
PEDIATRIC ENDOCRINOLOGIST
UP-PHILIPPINE GENERAL HOSPITAL

So, you've been diagnosed with diabetes. What now? Your endocrinologist has prescribed insulin and a set of rules to keep your blood sugar within certain levels. You have been advised to exercise regularly and eat a balanced diet that you must strictly follow. Why should you? Why make the effort to keep your diabetes "under control?" What's in it for you?

The reason: you want to decrease the risks of complications...delay their onset.

DIABETIC COMPLICATIONS. What are they?

When a child has had diabetes (DM) for a few years, some organs of his body are damaged because of the prolonged exposure to high blood sugar. These effects are called **complications**. The eyes, kidneys, nerves, blood vessels and feet are particularly sensitive to high blood sugar and with time, show the ill effects. These complications are described below.

Eye problems. RETINOPATHY refers to damage to the retina, the area at the back of the eye that has blood vessels and nerves. When DM is uncontrolled, the retina is slowly damaged and as this occurs, the eye tries to repair itself by growing more blood vessels... a condition called proliferative retinopathy (PF). This blocks eyesight. The occurrence of PF is related to poor diabetic control, long duration of DM, high blood pressure and increased blood lipids. Treatment is by laser or eye surgery.

Although PF usually occurs 10-15 years after the diagnosis of DM, it has been reported in younger children too. Therefore, it is recommended that all adolescents be examined for PF every year after having had DM for at least 2 years; and after 5 years in pre-pubertal children with DM. Good blood sugar control delays the onset and progression of early retinopathy.

CATARACTS or clouding of the lens of the eyes is another complication. In children, they are called stellate cataracts and have occurred in parents having DM for less

than 5 years. Needless to say, this causes poor eyesight and can be treated only by eye surgery.

Young diabetics occasionally experience **ERROR OF REFRACTION** or blurred vision and difficulty of focusing one's eyes at the time of diagnosis. This is a temporary problem. In a few weeks, the body adjusts and the refractive errors vanish. Therefore, the prescription of eyeglasses should be delayed. The diabetic must be re-evaluated after 3 months to see if indeed he really needs the corrective lenses.

One of the earliest signs of malfunctioning kidneys is the finding of minute amounts of protein (microalbuminuria, MA) in the urine.

Kidney problems. The kidneys are progressively damaged when DM remains poorly controlled over a long time. This condition is called **DIABETIC NEPHROPATHY (DN)**. It affects 30% of insulin dependent diabetics (IDDM). In its full blown

As a young diabetic, it is important for you to visit your endocrinologist regularly in order for him to assess how well you are. Your height and weight are good measures of DM control.

phase (overt DN), diabetics have high blood pressure, protein spillage in the urine and failing kidneys. Overt DN is corrected only by dialysis or kidney transplantation. By history, this usually happens after 15-20 years of diabetes. Evidence supports that good DM control delays the progression to overt DN. One of the earliest signs of malfunctioning

kidneys is the finding of minute amounts of protein (microalbuminuria, MA) in the urine. When this happens, efforts to control DM must be exhausted. Medications are given to slow down or even stop further kidney damage. MA can occur after 2-5 years of diabetes. Therefore, the current recommendation is to screen the urine for MA after 2 years of DM in adolescents and after 5 years in pre-pubertal diabetics.

Nerve problems. DIABETIC NEUROPATHY is nerve damage that also results from poorly controlled DM. These include numbness, "pins & needles" sensation in the legs and

feet, loss of vibratory sense and decreased reflexes. Fortunately for children with DM, neuropathy is not very common. However, screening for early nerve dysfunction is recommended because if picked up early, neuropathy can be reversed by improved DM control.

Vascular problems. High blood pressure, high cholesterol and a sedentary lifestyle in older diabetics put them at a higher risk of heart attack and stroke. The primary problem is narrowing of blood vessels from deposits of cholesterol and lipids in their inner walls. Our young diabetics will grow old too. They can prevent the onset of these problems by stricter blood sugar control, regular exercise and proper diabetic dietary management.

Foot problems. Children with DM must be extra careful with their feet. Flat feet and other foot problems must be corrected early because these may increase the risk of DM foot problems later. Among the adult diabetics, it is not uncommon to hear about leg amputation. The usual story starts with a wound that does not heal and becomes infected. Because of the persistently high blood sugar and poor blood supply to the foot, the infection spreads further causing some areas of the foot to decay. When the infection becomes widespread and poses a threat to the patient's life, amputation becomes the only option.

I have outlined the more common long-term complications of diabetes. There are other complications associated with DM that one must be aware of: impaired growth and development, lipohypertrophy, limited

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PARENTAL ROLE IN THE CARE AND MANAGEMENT OF DIABETES IN CHILDREN

Beyond the doctor is the family." This statement captures the essence of comprehensive care needed in managing diabetes in childhood. There are many aspects of parenting which allow parents to do more for their diabetic child, more than just taking him to the doctors and buying the prescribed medications.

Being "gatekeepers," parents can control the type and amount of food and beverages that are made available in their homes. This includes whatever the child can have to eat when the family dines out. To some extent, they also have influence and control over the child's choice of food and drinks in school. This being the case, parents should be aware of the importance of food, not just as a source of nourishment, but also as a source of complications of this disease if left unchecked. Parents should realize that their child's good health cannot be left to taking pills or having shots alone.

As role models, parents influence the development of their child's attitude towards food and beverage intake, leisure and recreation, work and other physical activities. Parents by their very lifestyle set the standard of general health.

Having defined parents as gatekeepers and role model, the parents of a diabetic child should be able to create a home environment that supports the non-medical aspects of treating the disease. The general

JOSEPH A. REGALADO, MD, MA
PEDIATRICIAN-PSYCHOLOGIST
CARDINAL SANTOS MEDICAL CENTER

"home" atmosphere should not be one that emphasizes restriction; instead, it should be one that positively promotes alternatives. Parents should seek information regarding food preparation that is not solely limited to the amount of sugar and calorie counts, but more importantly those that rate high on palatability and taste. If these factors in

Parents should realize that their child's good health cannot be left to taking pills or having shots alone.

The parents should help their diabetic child live as normal a life as possible.

food choices are not considered, then food consumption as prescribed becomes a burdensome activity that is literally hard to swallow. This can be achieved by doing research and consultations with dietitians and nutritionists, doctors or even parents of other diabetic children.

The diabetic child should be allowed to choose physical activities he or she enjoys, so that they will not feel imposed upon. Emphasis should be placed on having fun and not on the number of calories burned. The child should be persuaded and not forced into it. If a child's enjoyment in an

activity is not ensured, then he will perceive that activity to be a form of physical punishment masquerading as a game. The natural reaction would then be resistance. If parents join the child in the activity, the likelihood of them getting into it is enhanced many-fold.

Parents should provide diet and activity holidays - periods when the diabetic child is allowed a certain degree of reprieve from diet restrictions. He may be allowed sweets and other food choices normally not permitted. This should be done in coordination with the doctor so that the necessary adjustment in the dosage schedules of insulin can be made accordingly.

Similarly, the diabetic child should also be given activity breaks - and be allowed to just play, even if such activities are non-active plays. Again, the time allotted for this has to be controlled and limited.

Above all, parents must remember, *"a child is a child and he will always savor a life of play and fun, discovery and freedom."*

Setting up support groups among parents and among diabetic children themselves is a great step. A parents' support group is indispensable, in order to have a greater understanding of the disease itself, but also to gain a greater appreciation of their role as parents. The group can also help these parents cope not just with the

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The Brighter Side of Diabetes

by:
Dr. Allan S. Hernandez

