

DIABETES WATCH

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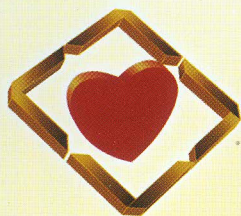
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**Managing stress,
keeping fit, getting there**

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1. Cuzi K, Consoli A, DeFronzo RA. Metabolic effects of metformin on glucose and lactate metabolism in non-insulin dependent diabetes mellitus. J Clin Endocrinol Metab 1996; 81 (11): 4059-67.
2. Landin K, Tengborn L, Smith U. Treating Insulin Resistance in hypertension with metformin reduces both blood pressure and metabolic risk factors. J Intern Med 1991 Feb; 229:181-7
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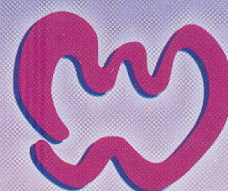
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FROM THE EDITOR'S DESK



"I feel so stressed!". We hear these words many times in today's busy, hectic, multitasking world. But what exactly is "stress"? Everyone will agree that stress is subjective and often measured by its effects such as "a rapid heart rate, a feeling of unease, chest heaviness or difficulty of breathing. Hans Selye (1956), an endocrinologist, and considered by many to be the "Father of Stress" defined stress as "the wear and tear of the body, mind and spirit. Stress has also been defined as a condition or feeling

experienced by a person when "demands exceed the personal and social resources that one is able to mobilize". Chronic stress can aggravate glycemic control and this is why psychosocial factors in the life of a person with diabetes should always be considered when aiming for control and balance of diabetes. In a study done in 2002 among type 2 diabetes patients, stress management training incorporated into a group diabetes education program resulted in a lowering of the HbA1c (thereby reflecting better diabetes control) among patients enrolled in the program compared to patients who did not receive stress management training as part of their group education.

Today's issue brings to you an article that talk about the ill effects of stress as it relates to overweight and obesity. Two other articles share about how one can beat stress through an exercise program or by exploring the wonders of the underwater world. De-stressing is a popular catch phrase nowadays and should really be part of a balanced and healthy lifestyle. Everyone should make a conscious effort to look for ways to minimize the stress in their lives everyday and not only during weekends.

Lastly, I invite you to look at 2 articles on issues that have been controversial lately (rosiglitazone and ampalaya use). I'm sure that the information given will certainly clear away some of the cobwebs that may have formed in your mind and remove the furrowed brow or anxious thought that news relating to these subjects have brought.


Ma. Teresa Plata-Que



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A diabetes-free Philippines.

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Integrity Above all, the nobility of our purpose. We serve patients, pursue education and conduct research with passion and without regard for personal gain. Honesty and transparency rule our behavior in relating with fellow members, partners, supporters and other stakeholders of our association.

Excellence Obsessed perfectionists, we expect from ourselves only the best effort. We continuously upgrade our knowledge and skills, adopt ever-improving technologies, and expand the reach of our services to attain a diabetes-free Philippines. Our mentors, generous with their knowledge and time, model excellent leadership.

Cooperation we work as one for the common good, enjoying the camaraderie, observing politeness and maintaining loyalty even in dissent. We partner with companies and other specialties that reach for the same goal. Caring for everyone's well being, we make work pleasant for members and staff.

Commitment Persistent in our search for solutions to diabetes, we have selflessly devoted over four decades to the improvement of diabetes care, education and research to prevent the onset of the disease in high risk individuals and the complications in those already afflicted by it. We take on responsibilities with diligence until their successful conclusion. We shall not rest until we achieve a diabetes-free Philippines.

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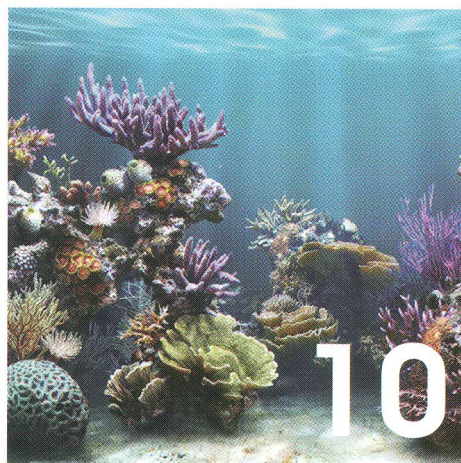
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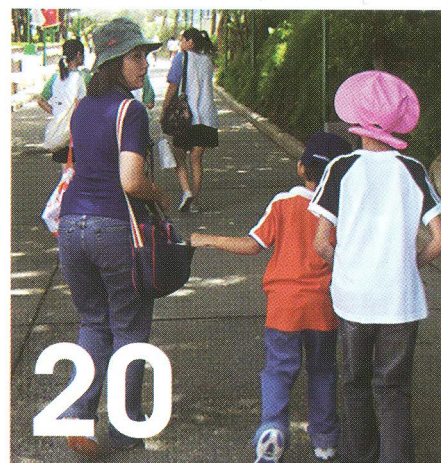
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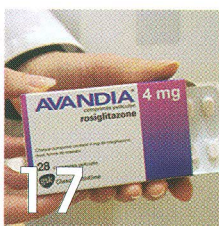
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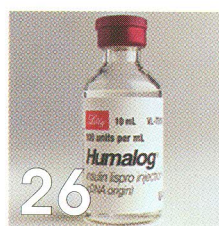
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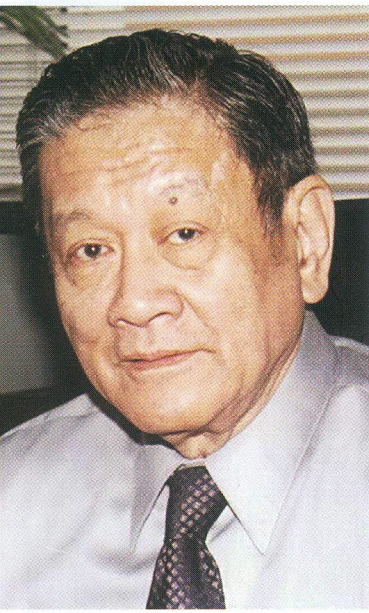
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Anti-psychotic drugs - another contributor to the metabolic syndrome!

Augusto D. Litonjua, MD
Editor Emeritus

“Antipsychotic drugs were introduced about 50 years ago, and they have helped millions of people manage their symptoms.”.

The Metabolic Syndrome is a product of the modern era. It was coined to denote a group of diseases - the combination of which could increase the risk for heart disease of the individual, together with abdominal obesity which is a sine qua non, the syndrome could include any two more of the following: high blood sugar, high serum triglycerides and/or low HDL (the 'good cholesterol'), and hypertension. Contributing to its occurrence is an unhealthy lifestyle - too much calorie dense foods and sedentary lifestyle. Now, comes the antipsychotic drugs.

Antipsychotic drugs are effective treatments for various forms of psychiatric illnesses. Today, there are two kinds of them - the so-called first generation drugs (chlorpromazine and haloperidol), and the second generation drugs, or SGAs (known by their generic names as olanzapine, quetiapine, risperidone, ziprasidone and aripiprazole). The SGAs are now commonly used than the first generation drugs because of the many medical benefits that they have compared with the older drugs.

Antipsychotic drugs were introduced about 50 years ago, and they have helped millions of people manage their symptoms. Patients who respond to these drugs can lead fulfilling community life. Without them, they can be severely disabled. Thus, these drugs have become the mainstays of psychiatric therapy.

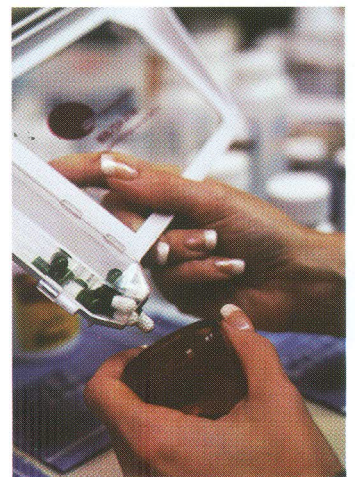
More recently, the use of the antipsychotic drugs, notably some of the SGAs have been associated with fast weight gain, different gradations of high blood sugar levels, and a lipid profile that is conducive to the hardening of arteries (increased 'bad cholesterol' or LDL, decreased HDL and high triglycerides). One will notice here the characteristics of

the Metabolic Syndrome.

Of course, some psychiatric illnesses per se have been associated with obesity and diabetes, even before antipsychotic drug treatment. But the studies which have been published are scant, and there is still doubt as to whether obesity and diabetes are a function of the illness itself (sedentary lifestyle, smoking) or its treatment. But there have been reports of severe, sometimes fatal rises of the blood sugar (called diabetic ketoacidosis) with the use of these drugs. There is also the observation that there is a higher risk of heart disease in people with psychiatric illnesses than in the general population.

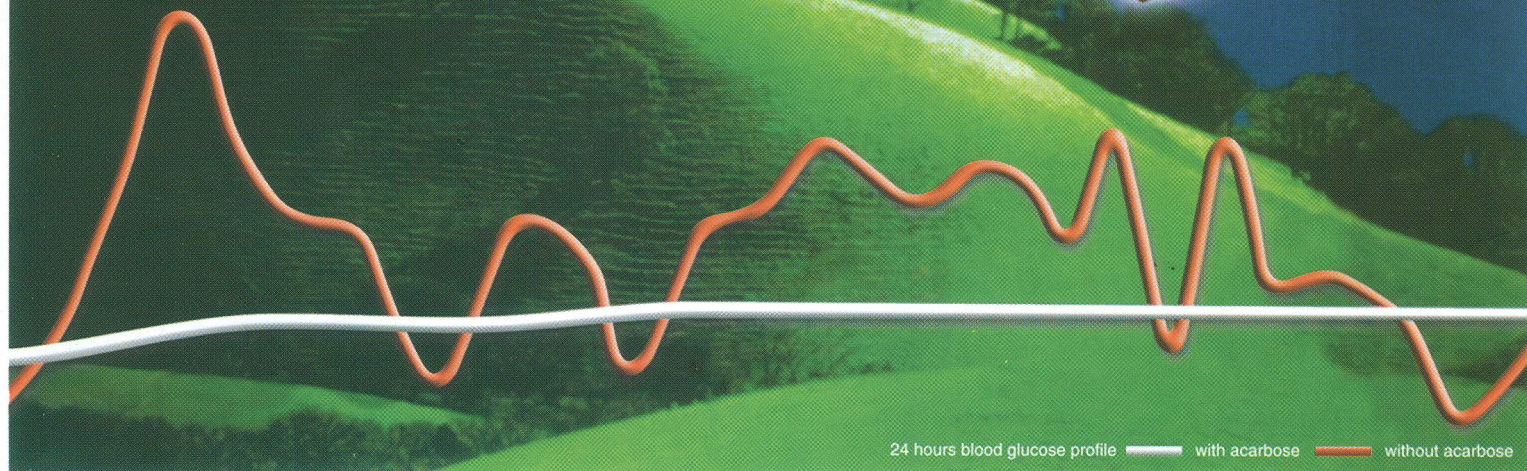
Thus, a panel of experts has recommended that the risk of the metabolic syndrome occurring during the use of the SGAs should be kept in mind. Relatives of patients should volunteer the information that there is diabetes in the family which makes the risk of getting metabolic syndrome higher. Psychiatrists, on the other hand, should do a baseline screening for the presence of risk factors and monitor these in the course of the treatment.

There is already a very good number of people in the general population who have the metabolic syndrome. It would be a greater disaster to add more to these numbers, especially if they have a psychiatric illness to boot! The antipsychotic drugs cannot be removed from the market because of the many benefits they impart. However, the metabolic syndrome can be adequately managed, even in this group of patients.



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¹Mertes G Diabetes Research and Clinical Practice 52 (2001) 193-204; ²Chiasson J-L et al. JAMA 290 (2003) 486-494; ³Hanefeld M et al. Eur Heart Journal 25 (2004) 10-16; ⁴Chiasson J-L et al. Lancet 359 (2002) 2072-77; ⁵Menelly GS et al. Diabetes Care 23 (2000) 1162; ⁶Yang WY et al. Chin J Endocrinol Metabol 17 (2001) 131-136

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EVERYTHING YOU'VE ALWAYS WANTED TO KNOW ABOUT DIABETES (BUT WERE AFRAID TO ASK...)

Roberto C. Mirasol, MD
St. Luke's Medical Center



We always hear that diabetic persons are more prone to illness and could get sick easily. This has been the experience with a lot of our diabetic patients.

This issue on DiabetesWatch will feature your questions on what we should be doing on days we are sick.. Read on and learn more!

Q A

Why am I prone to illness?

Diabetes, especially if not controlled, can worsen infection. The diabetic state especially if uncontrolled will make infection worse. You tend to have more respiratory infections or urinary tract infections than people without diabetes. There is generally decreased immunity with diabetes. Knowing this you should be careful and make a plan of action for when you are sick.

Q A

What happens to my blood sugars when I'm sick?

The illness can make your blood sugars go up. This is a form of stress to the body. Your body will release hormones to deal with this stress. These stress hormones will affect your blood sugars because they have opposite effects from your blood glucose lowering insulin. The net effect is increase in blood sugar.

Q A

What will happen to me then?

As a result, when you are sick, it is harder to keep your blood sugar in good control. You feel weak and will have poor appetite. You may have problems keeping your fluid balance. You become dehydrated. Problems with very high blood sugars might happen like Ketoacidosis (ketones in the blood and urine) leading to a diabetic coma can or in older people, a similar condition called hyperosmolar hyperglycemic nonketotic coma. Both conditions are dangerous and can be life-threatening.

Q A

What should I do when this happens?

You need to monitor your sugars more often than usual. You may need to check ketones. Drink a lot of water to prevent dehydration. Take your usual insulin doses or diabetes medications. If you are vomiting don't stop your oral medications. Sometimes you also may need extra insulin to bring down the high blood sugar associated with the illness.

Q A

I can't eat, I can't drink. I vomit a lot. What should I do? HELP!

Stick to your meal plan if you can. Drink a lot of water to avoid being dehydrated. If you are vomiting you can chew on ice chips. These fluids can decrease the high blood sugars and possibly the ketones as well. Take food which is easy on the stomach like gelatin, crackers, soups, broth, and breads. If you still are having difficulty taking in these foods you may try drinking fluids which contain carbohydrates like power drinks, regular drinks, sherbet, pudding, creamed soups, and fruit-flavored yogurt.

Q A

Still sick, should I go to the emergency room?

Go to the emergency room or call your diabetes care team if:

- you've been sick or have had a fever for a couple of days and aren't getting better
- you've been vomiting or having diarrhea for more than 6 hours
- you have moderate to large amounts of ketones in your urine
- your glucose levels are higher than 240 even though you've taken the extra insulin
- you take pills for your diabetes and your blood sugar level climbs to more than 240 before meals and stays there for more than 24 hours
- you have symptoms that might signal ketoacidosis or dehydration or some other serious condition (for example, your chest hurts, you are having trouble breathing, your breath smells fruity, or your lips or tongue are dry and cracked)
- you aren't certain what to do to take care of yourself

(These are recommendations taken from the American Diabetes Association Sick Day guidelines.)

Q A

What about other medicines? Are they safe for me to take?

When you are sick, you may be relieved by some medicines e. g. antipyretics, cough preparations or decongestants. Always check the label of over-the-counter medicines to see if they have sugar. Small doses of medicines with sugar are usually okay. Some antibiotics lower blood sugar levels in people with type 2 diabetes who take diabetes pills. Decongestants and some products for treating colds raise blood sugar levels. So be careful. When in doubt, ask your physician.

It is important to recognize when you will need professional help. When in doubt go to your doctor and he may be able to help you.

For any more queries, suggestions or comments, please call us at PDA 5311278 or e-mail me at mbmirasol@yahoo.com.



Under the sea: A grand adventure in a whole new world

Patricia Gatlinton, MD
Our Lady of Lourdes Hospital

Its summer once again, time to air the dive crate, wet suit, and other diving paraphernalia from storage and have my dive shop check out the equipment to make sure it is still sea-worthy.

I have loved the sea all my life. Blessed with whale-like blubber, I am virtually unsinkable. To dive, you need some swimming skills but it's possible even if you don't know how. But it will help you feel more comfortable and confident in the water quickly.

I did my first discovery dive in 2002. I only went as deep as 20 feet and stayed down for 30 minutes, but when I broke the water's surface, I was raving about the experience: Diving hooked me for life.

The Philippines is fortunate to be an archipelago surrounded by warm tropical waters and home to some of the best diving in the world. To dive Tubbataha, the world famous UNESCO sanctuary site in the Sulo Sea on a liveaboard boat is my ultimate goal. Meanwhile, I get my fix closer to home in Anilao, easily accessible along the SLEX and Star Tollway which has some of the best dive sites in the country.

A whole new world

My dive buddy, brother-in-law, Anton and I, leave Quezon City at 5 am. Two and a half hours and 180 kilometers later, we are in Mabini, Batangas, home

to a stretch of dive resorts with plenty of choices for everyone. We are in the water by 8 am, get our three dives in, have lunch on the outrigger and are back at the resort and ready to head back to Manila by 3 pm.

Being under the sea is a whole new world. Floating without effort, when you are perfectly buoyant you are weightless (similar to zero gravity in space), you can ride the currents and observe the life pass you by. With its infinite diversity and mostly unexplored depths, it's like our Milky Way galaxy, the last frontier of which we still know so little.

Our oceans teem with life and are awash with a myriad of technicolor forms, shapes and sizes. The friendly clown fish (of Saving Nemo fame), the menacing eel, the spiny poisonous lion fish, schools of silver jacks, the long toothed barracuda, the spotted grouper (lapu-lapu to you), giant clams, elusive lobsters, leech like nudibranchs, slimy sea cucumbers, horned starfish, the occasional white tipped reef shark, and the elusive green sea turtle are just a sampling of what you can see when you dive.

It's not as quiet as you might expect underwater. Aside from the mechanical swoosh of your regulator, the fish make noise too. There are intelligible conversations carrying on all around you. The tableau changes each time

and with every tide. The fans of soft rainbow-colored corals sway gently with the currents, the barrel sponge is large enough to swallow a diver, and the hard coral formations look like a Zen garden landscape. Each dive has its own flavor; it is never boring, even if you visit the same site several times.

Diving, like any sport, has its risks, which is why you need to learn how to properly. Diving medicine experts on the Divers Alert Network (DAN) at www.diversalertnetwork.org say that if you have diabetes, you would previously not get clearance to dive. The criteria are now more permissive.

You've got a ticket to dive

SCUBA is an acronym for "Self Contained Underwater Breathing Apparatus," which allows us to breathe compressed air from a tank underwater. To get certification, there are several internationally recognized programs. The Professional Association of Diving Instructors (PADI) Open Water Course involves lectures on the physics of pressure and buoyancy to calculation of depth tables and regular quizzes.

You then progress to confined (pool) sessions where you learn the basics of how to gear up, clear your mask, breathe, adjust your buoyancy, equalize ear pressures, fin, proper swim posture and underwater hand signals that are crucial in an emergency. There is a final exam and

a check out dive, where you do the exercises in open water.

Certification is serious business, because the medical complications of diving can range from scratches or wounds that quickly become putrid; stings from jellyfish, anemone and coral (Look, don't touch!); a burst eardrum; life threatening "bends," from excess nitrogen bubbles in your circulation; to drowning from equipment malfunction.

If you pass the rigorous training, you receive your prized license, your ticket to dive, rent boats, hire dive masters, and buy equipment.

Tools of the sport

Scuba diving relies on specialized equipment to help you breathe under water and come up safe each time. The diver's motto: Arrive Alive! The function, quality, maintenance and upgrading of your equipment is essential because your life depends on it.

Though you can rent most equipment, it is best that you have your own basics: wet suit, mask, snorkel, weights, boots and fins.

The most important pieces are the buoyancy control device (BCD) which you strap on and around your torso, and the regulator whose mouthpiece connects you to the tank of compressed air you carry on your back. The BCD allows you to inflate and deflate air from the vest, and connects to the tank.

The regulator is your life line. It has a breath controlled valve, and monitors to tell you how much air you have left which you check regularly during the dive.

The equipment is a heavy investment on your pocket; you can rent everything from most reputable dive shops, but if you intend to dive regularly, get your

own equipment. It is also cheaper over the long term. Aside from being squeamish about renting a communal wetsuit, the only way you can be sure the equipment is working properly is to maintain it yourself.

Your first priority on reaching shore is to clean your equipment, soaking and rinsing it in huge cement bathtubs and then hanging them up to dry. The next is to fill up your dive log, and have the dive master certify the dive. To do advance courses or more technically difficult dives, you must log a number of hours and every dive counts.

Overwhelming adventure

Once you're in the water, the dive master will give you the thumbs up, then down, to signal that you may begin to descend. The adventure begins as you slowly release air from your BCD and sink into the water, feet or head first. The most vivid sea life lives between 30-70 feet. Depending on the weather conditions, that's how far sunlight can penetrate affecting visibility and the color spectrum. Descending to 100 feet is purely for

bragging rights, there is little life to see at this depth. The deeper you go, the greater the pressure, the harder it is to breath and move, and most important, the greater the risk for nitrogen intoxication and decompression sickness.

Your dive master will always plan the deepest dive (and the shortest) first. As you come out of your dive, you ascend slowly, and have a mandatory stop for a calculated time at 10-15 feet from the surface. Once back on the boat or shore, you have a resting interval in between dives (the deeper you go, the longer the interval) to allow for any residual nitrogen bubbles in your blood to dissipate.

I've been out in all conditions, even in stormy weather, with underwater currents so strong you could fin with all your might and your point of reference below hasn't moved. It's ironic that when the weather is at its worst, that's when the sea is most alive, a blender whipping up food, triggering a feeding frenzy.

On Sundays in Anilao, most divers like to drop into Cathedral, a dive site where the Philippine Navy planted a cross blessed by Pope John Paul II on the ocean floor. Because the site is popular on discovery dive tours, fish feeding is common (but discouraged) in the area.

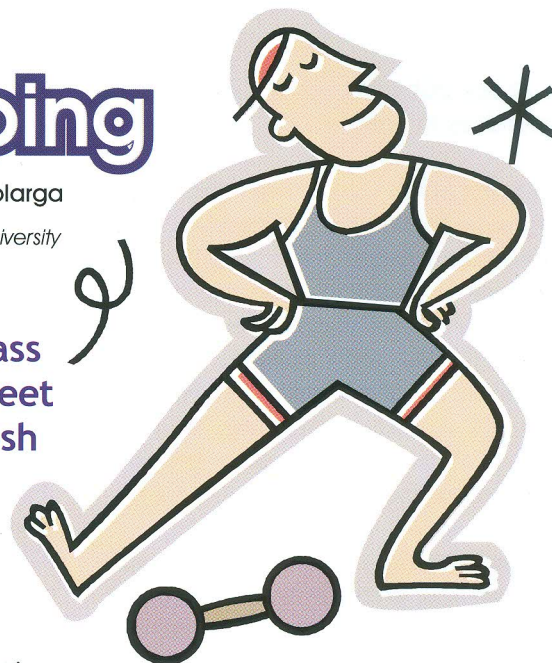
My favorite memory is of one of my early dives, kneeling on the sandy ocean bottom, in front of the cross, holding day old bread as an offering, the fish darting around my head, nibbling on my fingers, swarming all over me. It was astounding. I was overwhelmed with a sense of piety and awe. I get the same feeling every time I'm under the sea. It's what keeps you hooked, a diver's ultimate high: When you truly feel one with the ocean.



Managing stress, keeping fit, getting there

Erlinda Eileen G. Lolarga
Psychologist,
Ateneo de Manila University

To keep empty calories down, drink a nice cool glass of purified water rather than that bottle of super sweet iced tea or cold cola drink. Take time to squeeze fresh calamansi, dalandan or other available citrus fruits in season as a refreshing breakfast drink.



Trying to get healthy, fit and stress-free at middle age is really a formidable task for ordinary people like myself. I am thankful that early on in my rise as a professional at an educational institution, I made some sound decisions regarding my health. I decided to invest some of my hard-earned savings in a fitness club that offered life time memberships and gave me the following privileges: free use of gym facilities, aerobics classes, and treatment discounts. If gaining weight and keeping your figure was really harder as one grows older, I wanted to be prepared to meet this challenge. I will never be a super athlete nor do I aspire to be. But I did want to lose weight and keep the inches off by exercising regularly (at least three times a week) and by following my diet carefully (well, most of the time). How to keep going and stay motivated is perhaps the next biggest hurdle after deciding to incorporate exercise as a permanent part of one's lifestyle.

Workout Routines

Regular exercise at the gym means sweating it out on cardio machines such as treadmills, stairmasters or stationary bikes for starters. Combining this with routine weights training is the next step to help tone and firm up different parts of your body, i.e. arms, legs, abs, shoulders, lower back, etc.

Other cardio machines targeting specific areas of the body are also available to beef up workouts. To prevent boredom, better equipped gyms feature treadmills and cross-trainers fitted with LCDs that have cable TV hook-ups. I find this really cool because it actually helps me endure the discomfort of walking or running for 30 minutes or so. Aerobics classes also spice up exercise routines and could mean anything from yoga, belly dancing, pilates, or dance-inspired aerobics classes such as latin fusion or street dancing. Most beginner aerobics classes also combine low impact exercises (i.e. stretching, lifting weights) with high impact ones (jumping, going up steppers and doing quick moves with your hands and feet).

Valuing Exercise, Balanced Diet, Good Health Practices

What's so great about exercising anyway? Medical doctors say it helps to keep your cholesterol, fat, and uric acid levels down. It also relieves you of stress that builds up as you go through life's ups and downs at work, love or dealing with relationships and the world in general. Other health and beauty experts swear by its rejuvenating effects on one's skin, physical appearance, mental alertness, sense of well-being and overall vitality. In short, regularly working out helps one to feel, and be, youthful and beautiful inside and out.

Could this really be true? The only way to find out is to do it yourself. Exercise and a balanced diet is part of adopting a healthy and active lifestyle. Go out there and start walking or going up the stairs whenever the opportunity presents itself. Start reducing your time in front of the television watching endless programs and chewing on high sodium, additive-laden junk food. To keep empty calories down, drink a nice cool glass of purified water rather than that bottle of super sweet iced tea or cold cola drink. Take time to squeeze fresh calamansi, dalandan or other available citrus fruits in season as a refreshing breakfast drink. Have 5-7 servings of fruit and vegetables a day. Be adventurous and try virgin coconut oil (VCO) au natural or with oatmeal in the mornings. Try brown rice for a change. Go easy on the three C's: coffee, candies and cakes. Stay away from too much liquor and late nights out, etc., etc.

Keeping Motivated

"What" or better still "Who" keeps me motivated? Of course, first in this list could only be yourself----I, me, and myself. To be a health buff and to remain as one, you should be focused on your goals of achieving a sound mind and a healthy body ---- no matter what. This actually applies to anything else that one sets out to do in life. What helped me tremendously, apart

from already being a life time member of a gym, is that I took on the help of a personal trainer, otherwise referred to as a PT. Part of this decision had to do with a leg injury that affected my hamstrings which made it excruciatingly hard for me to walk. Physical therapists (also called PTs) at the Moro Lorenzo Clinic at the school where I work eventually got me back on my feet again with regular therapy sessions for almost four months. The 2-3 hour treatment sessions strengthened the leg but I needed to follow it up with more exercises beyond the physical therapy clinic. My knees then felt quite wobbly and I wasn't sure whether I could walk as well as I did before. I was anxious to get back my normal physical activities. It was a relief when the physical therapist in charge of me, Sol Alcantara, gave the go signal to continue the workouts at a gym. I was also mindful of the doctor's last advice to prevent further injuries of the kind I experienced---lose weight!

Guidance From Personal Trainers



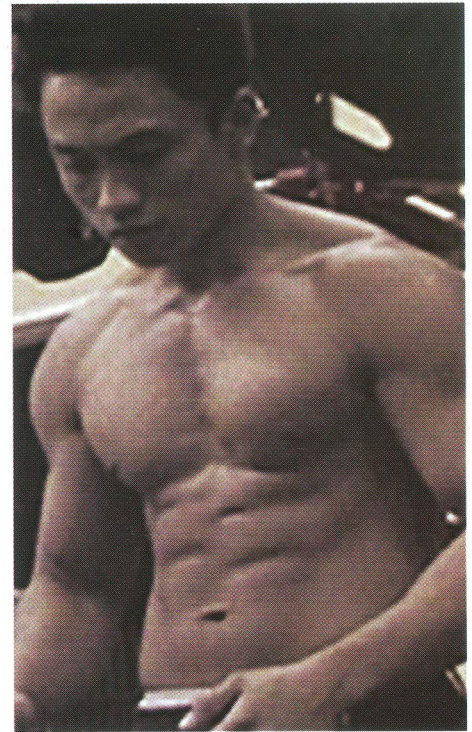
Having a PT for exercise company is a great experience. It livened up my sessions at the gym and gave it direction. The PT who works with me is quite strict and puts me to task whenever we have exercise sessions. He makes clear at the start that I must come to PT sessions on time. He ensures that I do all the sets no matter how much I complain aloud "I hate lunges!" or I shake my head reluctantly about certain routines, as if he was asking me to do the impossible. But with regular attendance (at least twice

a week) and steadfast completion of routines outlined by my PT, I was on my way to losing inches and my first 10 pounds. He also did great power stretches for me at the end of the workout. It gave me something to look forward to---a relaxing treat at the end of a grueling, sweaty workout. I look up to my PT as a model and became curious about what fitness trainers do to keep themselves fit. What do they do at the gym? According to Drix Navarro, the head trainer of Slimmers World Pasig Branch, they have a regular six-hour work shift, six days a week. On duty means being in uniform and watching over clients in general while they use gym facilities. They are expected to behave professionally, and be polite, friendly and helpful while on the gym floor. Off limits to fitness trainers is smoking on the job.

On their time off, fitness trainers shed their uniforms, don their own workout get-ups and could choose to stay inside the gym and lift weights, use the cardio machines themselves and such. Their workouts, at off-peak hours only, could last 1-2 hours at 3-4 times a week on the average. Off duty is also the time they put on their PT hat and schedule clients for personal training using their mobile phones as a convenient way of communicating reminders for PT sessions.

For leisure activities outside the gym premises, Drix, the PT in charge of my fitness program, loves to do more physical activities such as basketball, mixed martial arts, or war games. When asked about his own background before joining the gym staff, he revealed that he worked out for six to seven years and was a nursing graduate. He is also enthusiastic about bodybuilding and keeps an album to document his own progress. PTs also have healthy appetites and go for snack foods such as pesto and siopao. But they also try to keep within balanced diets, as Drix said: "Kung kain, kain talaga ng masarap, pero pag-diet na,

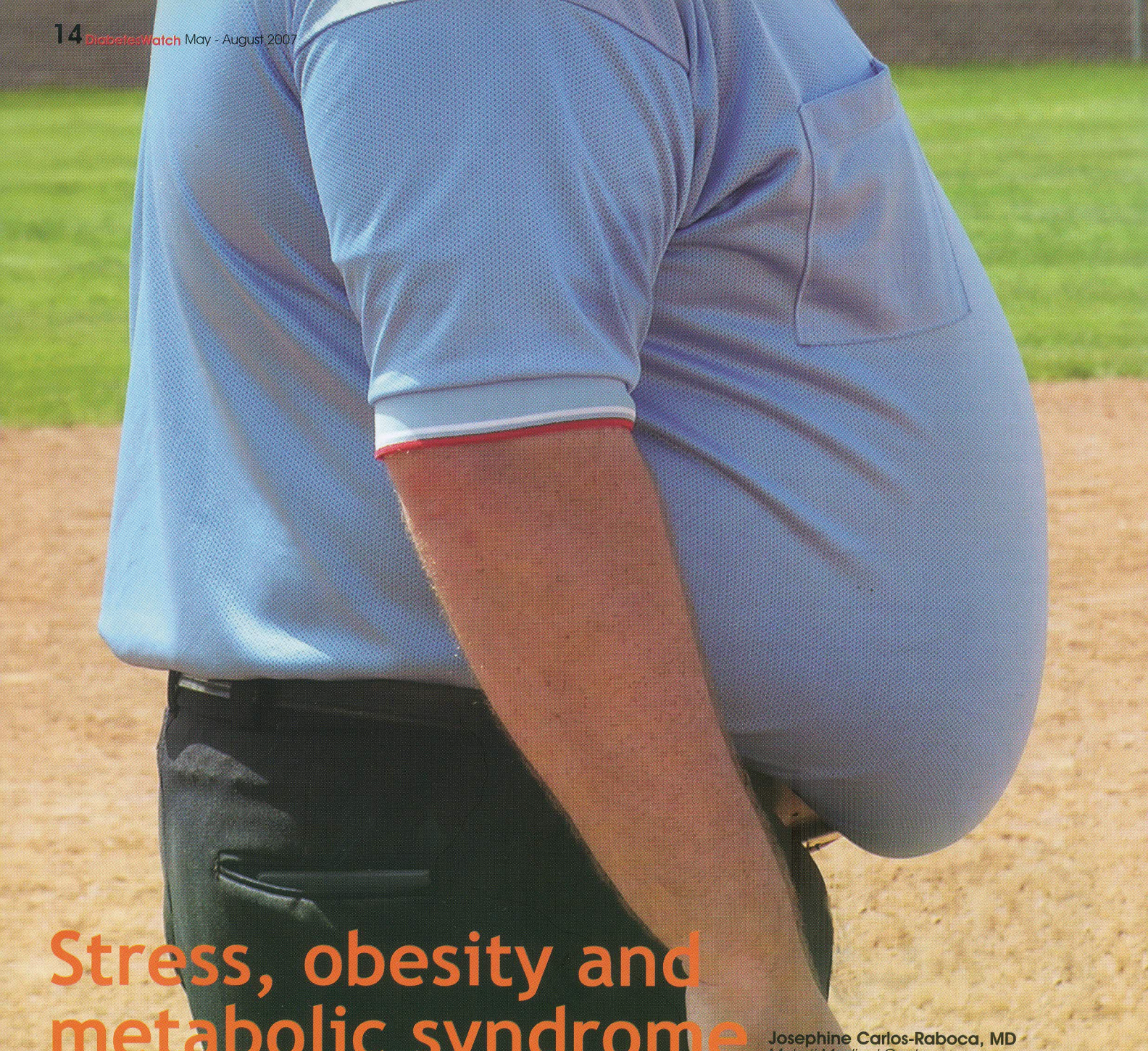
dapat strict sa diet!" This diet could include a half kilo of cooked brown



rice and one dozen boiled eggs without egg yolks for breakfast. A tablespoon of VCO first thing in the morning also helps get things moving. During meal time breaks whole wheat bread sandwiches with tuna or chicken work well too.

Getting There

I still have a long way to go as far as weight loss goals are concerned but with the first ten pounds I lost (and inches too, all around) it sure feels good to know I'm getting there, slowly but surely. Of course, there are other ways to get fit fast. Aside from personal training, there are spot treatments and nutritional counseling. Judy Banua, one of the consultants at Slimmers World Pasig Branch, runs after me about these things and offers tempting treatment packages to complement the workouts. The next ten pounds may not be that hard to melt away as long as there is unwavering determination to stay fit, healthy and strong. Now let's get to it---one, two, three, GO! **D**



Stress, obesity and metabolic syndrome

Josephine Carlos-Raboca, MD
Makati Medical Center

Obesity and diabetes mellitus are major health epidemics that the modern world has to face. The two entities are interrelated as obesity is an established risk factor for diabetes and insulin resistance. When obesity and diabetes coexist with hypertension or an abnormal lipid (fat) profile such as increased triglyceride and decreased high density lipoprotein (HDL) also known as the good cholesterol, the condition is called the metabolic syndrome, which is associated with a

high risk for heart disease and stroke.

Studies show that stress that accompanies modern living is related to the development of the metabolic syndrome and its components. Stress is defined as the disruption of a predefined steady state of the body caused by internal or external adverse forces. It is also known as the wear and tear we undergo to an ever changing environment. Stressful stimuli or stressors can be mental, physical or physiologic stimuli. Physical

stress results from too much work, poor diet, illness or smoking. Mental stress can be any devastating event, low self esteem or changes in an individual's life.

How can stress lead to obesity and the metabolic syndrome? When the body is threatened by an adverse factor, the body evokes an adaptive response that aims to establish the steady state. The major component of this adaptive response is stimulation of pathways connecting centers in the brain to the

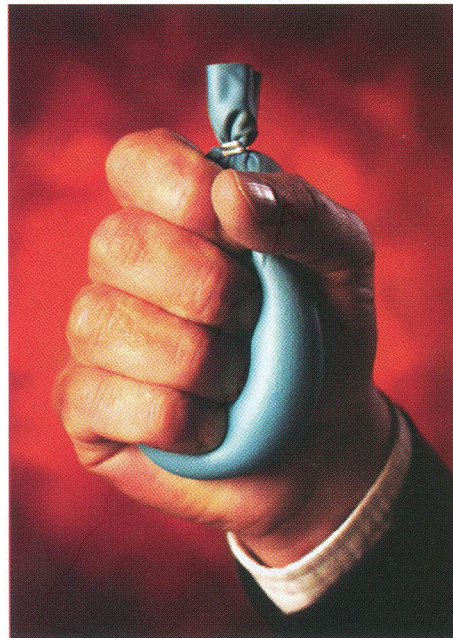
“Stress also affects the cardiovascular system. The stress hormones cortisol and adrenaline lead to structural changes in the heart and blood vessels leading to hypertension and enlarged heart.”

peripheral sympathetic nervous system and the adrenal gland (hypothalamic pituitary adrenal axis). When stimulated, the hypothalamus and the pituitary gland in the brain produce hormones known as CRH (corticotrophin) and ACTH (adrenocorticotrophin). These in turn, stimulate the adrenal glands which sit on the superior pole of the kidneys to produce steroids (cortisol and cortisone) and catecholamines (adrenaline and noradrenaline) known as stress hormones. These hormones allow the individual to adjust to stress but when this stress occurs chronically or repeatedly, it leads to maladaptation. The adaptive systems are over-activated and reset at a higher level. The persistent elevated stress hormones then predispose the individual to metabolic syndrome and many other diseases.

The steroid, cortisol regulates adipose tissue differentiation, function and distribution. In excess, it causes visceral obesity, fat that is found in the belly. Excess visceral fat indirectly measured by the waist circumference (greater than 31 inches in Asian females and 35 inches in Asian males) is highly associated with diabetes and heart disease because it produces many cytokines or molecules that affect vascular wall function and induce inflammation resulting to thickening of blood vessel walls (atherosclerosis). Among the cytokines produced by fat cells are IL-6 and tumor necrosis factor. Cytokines induce oxidative stress in the cellular level leading the formation of oxygen radicals known to cause aging, cell death and many diseases.

Belly fat is also known to produce more fatty acids that directly go to the liver causing the bad cholesterol and fats to increase, a component of the metabolic syndrome. Aside from causing blood vessel wall thickening

and cholesterol to increase, fat can add to stress hormone production. Belly fat has an active enzyme 11-B dehydrogenase that enhances cortisol production further adding to the build up of cortisol in obese patients. Cortisol causes diabetes by interfering with insulin action and secretion from the



pancreatic beta cells. It impairs the ability of the insulin to transport glucose into the cells causing blood glucose to rise.

Stress also affects the cardiovascular system. The stress hormones cortisol and adrenaline lead to structural changes in the heart and blood vessels leading to hypertension and an enlarged heart. The overactive sympathetic nervous system that leads to high adrenaline output causes an increase in basal heart rate, increased blood pressure, coronary constriction, accumulation of fat in the lining of blood vessels and electrical instability all predisposing to heart disease.

Not all people respond the same way to stress. Each person's unique combination of genes or heredity, life experience, personality and ability to

cope, modify the perception of stress and its effects on the body. Individuals with persistent psychosocial and socioeconomic handicaps such as anxiety and depression, poor economy, low education and unemployment are likely to suffer from stress and the metabolic syndrome.

A study of Swedish men found that those with chronic stress had increased ACTH and cortisol with a shift in fat distribution to the abdomen. Those with the highest chronic stress had the highest cortisol levels and the greatest belly fat. Age is another factor that modifies response to stress. In younger people obesity due to stress is not apt to occur due to the protective effects of sex hormones testosterone, estrogen and progesterone. It is at age 40, when the sex hormones decline that you see the middle age spread with a fat belly.

How do you treat stress and its effects? Psychosocial intervention to reduce stress and improve working conditions and social support are important. Regular exercise combats the negative effects of a stressful environment. Regular moderate exercise for 30 minutes a day can improve insulin action, prevent diabetes, lower cholesterol, cause weight reduction and lower blood pressure. Physical exercise leads to better adaptation of the stress system with lower cortisol and catecholamine release in response to stress. An overall sense of well being associated with exercise can lead to a better immune system.

Good nutrition helps. A low fat diet can improve cholesterol levels. Foods rich in antioxidants such as fruits and vegetables can help fight stress and its effects. Lastly, adopt a cheerful and positive attitude to cope better with stress, fight obesity and the metabolic syndrome.



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Rosiglitazone (Avandia) had been used by many patients since 1999 after its approval by the US FDA. It had proven its efficacy in lowering blood glucose as an insulin sensitizer (carrier of insulin to the muscles to exert its glucose lowering effect) and had been used as monotherapy or in combination with another antidiabetic agent or with insulin regimen.

by chance.

There are 3 large prospective trials for rosiglitazone, two of which were already completed. First, is the ADOPT (A Diabetes Outcome Progression Trial), a 4-6 year trial which involved 4,360 patients with diabetes who were randomized to receive either rosiglitazone, metformin or glibenclamide. Results of this study showed that major adverse cardiovascular events and stroke serious adverse events were rare in this population and that all treatments were comparable. The second study, the DREAM (Diabetes Reduction Assessment with Ramipril and Rosiglitazone Medication) trial also showed the same cardiovascular profile for rosiglitazone. The DREAM study included 5,269 subjects with impaired fasting glucose and impaired glucose tolerance, whom with long-term treatment with rosiglitazone will have reduced risk for T2 diabetes mellitus.

The third and still ongoing trial, RECORD (Rosiglitazone Evaluated for Cardiac Outcomes and Regulation of glycemia in Diabetics) would bear the most compelling evidence on this issue. Involving 4,458 patients, this open-label, 6-year study will tackle on cardiovascular outcomes. Because of the hype created by the NEJM article, the RECORD steering committee conducted an interim analysis (evaluation of available data even if the study is still ongoing) and results were made known to physicians for important treatment decisions.

"The interim findings do not show evidence of a significant difference in cardiovascular death and heart attack



Steven Nissen, MD

between Avandia and the control groups, and therefore do not confirm the hypothesis generated by the recently published meta-analysis in the NEJM that raised concerns about these events with Avandia," said Moncef Slaoui, chairman, R&D for GlaxoSmithKline (GSK). "They add to the weight of evidence, from both previously published long-term clinical trials and other studies, that the overall ischemic cardiovascular safety profile of Avandia is comparable to the traditional anti-diabetes treatments. Patients and physicians should find these data reassuring."

But, this interim analyses do not offer final conclusions since the study will still be completed in late 2008. To wait and see is all we could do for now, hoping that the pharmaceutical will be transparent with its updates for the public.

Rosiglitazone (Avandia) had been used by many patients since 1999 after its approval by the US FDA. It had proven

its efficacy in lowering blood glucose as an insulin sensitizer (carrier of insulin to the muscles to exert its glucose lowering effect) and had been used as monotherapy or in combination with another antidiabetic agent or with insulin regimen.

The different medical societies in the US and Europe have given their own position statements regarding this issue. Here in the Philippines, the Philippine Society of Endocrinology and Metabolism (PSEM) had published its advisory and it stated that "pending the outcome of the RECORD study and independent reviews from regulatory bodies locally and abroad, the PSEM recommends that the patient's continued use of Rosiglitazone be discussed with their respective physicians. Further, physicians should strictly adhere to approved indications of Rosiglitazone and observe precautions in patients with established cardiac disease."

We need to approach this situation wisely and calmly.

The doctors as promoters of public health.

The patients who are the endproduct consumers.

And the pharmaceuticals who spend billions of dollars for research and development to come up with a good drug.

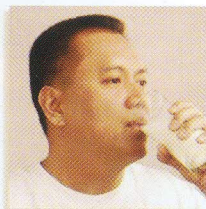
Indeed, this is a judgment call. **D**

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Can we prevent type 2 diabetes mellitus?

Editha I. Arceo-Dalisay, MD
St. Luke's Medical Center

"As early as the 70's there have already been attempts to look into prevention of diabetes. But it was in the late 90's when frenzied efforts have been seen."

Three years from now the number of people with diabetes is expected to reach 220 Million. The majority of these, 215 Million, will have type 2 diabetes mellitus. The World Health Organization has predicted that this number will balloon to 300 Million in 2030. The problem with diabetes is that it causes more than 77,000 deaths from heart disease and stroke; 12,000-24,000 new cases of blindness; 27,000 kidney failure and more than 56,000 non-traumatic amputations of the lower extremities per year. Thus if nothing aggressive is done in the next few years to prevent the onslaught of diabetes we are facing a major health problem. The WHO predicts that if the trend continues our health care systems will be unable to take care of all these patients with diabetes.

It is possible to prevent diabetes? In looking at the feasibility of preventing diabetes, three important things should be considered. These are: 1. long period of glucose intolerance; 2. screening tests can identify persons at risk; and 3. safe methods are available to modify risk factors of diabetes. The natural history of diabetes shows that a prediabetic state ensues long before frank type 2 diabetes starts. These prediabetic states are referred to as IFG (Impaired Fasting Glucose), IGT (Impaired Glucose Tolerance) or both. These conditions can be diagnosed





The studies tell us that the most cost efficient way to do it is through lifestyle intervention. This means we should start exercising - change from being a couch potato to a moving and dynamic animal. We should start eating healthy - lessen our total caloric intake, avoiding fatty foods and sugars, eating vegetables.

easily in the laboratory. Unfortunately, most of the time patients will be asymptomatic during this period. IFG is diagnosed if the fasting blood sugar (FBS) is between 100mg/dl - 125 mg/dl. On the other hand, IGT is diagnosed if the blood sugar 2 hours after a glucose challenge is 140 mg/dl - 199 mg/dl. Do we have safe methods to modify risk factors for diabetes? Yes, we do. Thus, in the last 5 to 10 years there have been a lot of studies looking into this particular problem of preventing the increasing tide of type 2 diabetes.

As early as the 70's there have already been attempts to look into prevention of diabetes. But it was in the late 90's when frenzied efforts have been seen. In 1997, a study was published looking into the effects of exercise, proper diet and a combination of both among patients with prediabetes in Da Qing, a province of China. It showed that proper diet conferred a 33% risk reduction in progression to type 2 diabetes, exercise a 47% risk reduction and the combination of both a 38% risk reduction. This is a clear proof that among Asians, if we adopt a healthy lifestyle we will be able to prevent type 2 diabetes.

Across the globe, in Finland, a prevention study was also undertaken. They enrolled 552 prediabetic subjects and half of them were put into the intensive lifestyle modification group. In this group, the patients were advised to lose weight, reduced their total fat intake, reduce their saturated fat intake, increase the fiber in the diet and increase their physical activity. After three years, they have found out that those subjects who belonged to the intensive lifestyle group did a lot better - the intensive lifestyle intervention resulted in a 58% risk reduction in the progression to type 2 diabetes. Two years after the study was terminated, the subjects were retested. Those who belonged in the intensive lifestyle intervention group were still doing well - there was a persistence of the effect. Two years after the risk reduction in the intensive lifestyle intervention was still high at 44 %. So this prevention study in Finland proved that healthy lifestyle can prevent diabetes and the effects of healthy lifestyle on the body are persistent.

A similar study was also done in the USA. In the Diabetes Prevention Program in the USA they compared the effects of intensive lifestyle intervention and a drug, metformin on type 2 diabetes prevention. After 3 years, they found that intensive lifestyle intervention resulted in 58% risk reduction in the progression to type 2 diabetes and metformin in a 31% risk reduction. So this is another powerful study reiterating the beneficial effects one gets from adopting a healthy lifestyle.

Other drugs that have been studied as

far as diabetes prevention is concerned are acarbose among prediabetic patients and orlistat among obese patients. These 2 drugs also prevented progression to type 2 diabetes, 21.5% with acarbose and 37% with orlistat. The latest study on diabetes prevention involved the use of rosiglitazone. The trial called DREAM showed that use of rosiglitazone among prediabetic subjects can lead to a 61% risk reduction in the progression to type 2 diabetes.

So, we can really prevent type 2 diabetes! The studies tell us that the most cost efficient way to do it is through lifestyle intervention. This means we should start exercising - change from being a couch potato to a moving and dynamic animal. We should start eating healthy - lessen our total caloric intake, avoiding fatty foods and sugars, eating vegetables. And for those of us who are overweight and obese make a serious attempt to lose weight!

But the real first test is finding out if we are prediabetic. If you are 30 years old and above and have first degree relatives who are diabetic, obese or overweight, hypertensive, have abnormal cholesterol, have given birth to large babies, have had an abortion or still birth GET tested for diabetes. Go to your doctor and tell your doctor you want to find out your glucose status.

Remember, prevention is still better than cure. So, don't wait to be told you are diabetic. Do something with your life because diabetes prevention is not a dream but a reality!



KITCHEN CORNER

Tea for Diabetes?

Mia Chavez Fojas, MD



All tea that you see comes from one plant named *Camellia sinensis*. The tea leaves undergo different processing techniques and blending creating more than a thousand variations of tea. Depending on the way in by which the leaves have been processed, tea can be classified into 3 categories: black, oolong and green tea.

Black tea is most popular in Western countries. Some of the more familiar trade names are English Breakfast, Irish Breakfast, Darjeeling, Ceylon, Assam and Keemun. After leaves have been gathered and allowed to wither, these are oxidized for several hours. During oxidation, water evaporates out of the leaves to absorb more oxygen from the air. This produces dark brown to black tea leaves, which when brewed, would give out a robustly strong flavor. Black tea contains the highest caffeine content compared to other teas, i.e. 50-65% that of coffee.

Oolong is partially oxidized tea. Caffeine content is between that of black and green teas. Taste and aroma of oolong compare very well to those

of fresh flowers or fresh fruit.

Green tea is a popular beverage in Asia. It is made up of leaves that or not oxidized at all. The freshly gathered leaves are immediately rolled and fired or rapidly heated. When brewed, green tea would have a more herbaceous flavor. This also contains less caffeine, i.e. 10-30% of coffee.

Aside from being part of rituals and ceremonies, tea, in Asian cultures, is believed to have many therapeutic uses. Green tea, for example, is considered to have anti-inflammatory, anti-oxidative, anti-mutagenic and anti-carcinogenic effects. Others have suggested that drinking tea may prevent onset of type 2 diabetes. Are these findings unfounded? Can tea actually be used for type 2 Diabetes? Out of the three classes of tea, the preparation that has roused the interest of more scientists is green tea. Green tea extract contains polyphenols (epigallocatechin, catechin, epicatechin and their gallates), teanin and caffeine. It also contains a newly discovered vitamin called pyrroloquinoline quinone.

A retrospective cohort involving 25 communities across Japan (n=35,690) was conducted by the Japan Collaborative Cohort Study for Evaluation of Cancer Risk. This was a 5-year follow up survey wherein the group used questionnaires to determine consumption of coffee, black, green and oolong teas, and physician-diagnosed diabetes at baseline and at the end of 5 years. The researchers

“The researchers concluded that oolong tea may be effective in lowering plasma glucose levels of patients who already have type 2 diabetes taking oral antihyperglycemic agents.”

found out that those who drank 6 cups (200mL/cup) or more of green tea and 3 cups (170mL/cup) or more of coffee per day were less likely to develop diabetes. All the data gathered in this paper, however, were self-reported. The researchers did not do blood tests on participants, so the data may not be that accurate.

Another group tested the effect of green tea on 22 healthy volunteers. Oral glucose tolerance test was done 10 minutes after the volunteers drank the suspension of green tea powder (1.5g/150 mL hot water). The results showed that basal glucose was not affected significantly, compared with those who took purely hot water. Postprandial hyperglycemia, however, was significantly lower among those who took the green tea extract ($p < 0.05$).

To determine which serum proteins actually mediated the effects of green tea on hyperglycemia among diabetics, the same Japanese researchers of the prospective trial conducted another test, this time involving diabetic mice. Blood glucose levels were measured 2 hours after administration of green tea powder suspension at different concentrations. The analysis confirmed that blood glucose levels were significantly lower among those mice given the extract at 150 mg/kg and 300 mg/kg. Blood insulin levels were unchanged. Several serum protein levels changed as well during the treatment. Among these, a hemoglobin-related protein involved in hyperglycemia, significantly decreased after green tea

administration. The authors speculated that these may possibly be glycated hemoglobins. Hemoglobin A1c is currently used as a tool to determine glucose control among diabetics.

The green tea extract used in the latter studies on humans and mice were taken from fresh raw leaves of tea, picked in May in Nan-Tou County, Taiwan. The tea leaves were immediately used without drying, steeped in hot water at 95 °C for 30 minutes and condensed under reduced pressure. In the human study, tea powder at 1.5g was added to 150 cc water at 80 °C and then whipped with a bamboo stick.

Another report proposed that the flavonoid epigallocatechin gallate in green tea repressed hepatic glucose production.

Oolong tea was also studied for its anti-hyperglycemic effects. Researchers did a randomized cross-over trial wherein 20 type 2 diabetics who were already on anti-hyperglycemic agents were either given oolong tea or water for two weeks each, with a 2-week washout period in between. Oolong tea was prepared with 5 tea bags (15g of tea leaves) steeped into 1,500 mL of boiling water

for 10 minutes. The preparation was taken in 5 divided doses in a day. Plasma glucose and fructosamine decreased significantly ($p < 0.001$ and $p = 0.001$ respectively) after drinking oolong tea but did not change after drinking water. The researchers concluded that oolong tea may be effective in lowering plasma glucose levels of patients who already have type 2 diabetes taking oral antihyperglycemic agents.

The mechanism of the antihyperglycemic effects of tea is still uncertain. Current data available may not be enough to recommend these concoctions either as a preventive modality or treatment for type 2 diabetes. An advantage, however, is that there were no reports of significant adverse effects in all the studies mentioned. Nevertheless, one cannot deny the soothing effect that is attained from simply enjoying a warm cup of tea anytime of the day.

Note: Herbal teas do not use leaves from tea bushes.

A tip for your green tea: Don't use fully boiling water. Brew. Don't boil.



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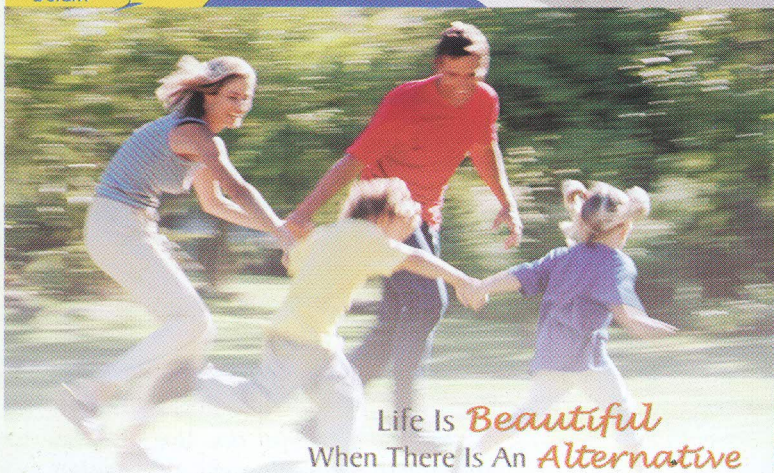
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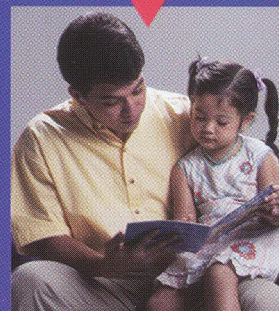
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For those with diabetes, every day is a fight -- a fight to manage the disease and its impact on their daily lives. Diabetes continues to be a growing pandemic and is the world's fourth leading cause of death by disease. Diabetes affects more than 240 million people worldwide and is expected to affect 380 million by 2025. In the recent Philippine NNHES survey, it is estimated that 4 million Filipinos are diabetics. The rising prevalence of this chronic and silent killer is indeed a public health concern as well as an economic burden to all afflicted with this disease.

Cognizant of the impact of this problem to the **UNDERPRIVELEDGED**, the Philippine Society of Endocrinology & Metabolism partnered with Eli Lilly Philippines and launched the **PSEM-Lilly Insulin For Life** program during the 2007 PSEM Annual Convention held last February 3, 2007 at the Hotel Sofitel, Manila. Beginning in 2008, **PSEM-Lilly Insulin for Life** will provide free insulin vials & syringes for life at no cost to two (2) deserving patients in the Philippines who meet specific medical and socio-economic guidelines. Unlike traditional donation programs that deliver drugs through hospitals or other third party distribution organizations, Lilly insulins will be delivered /dispensed directly to patients by their treating physician.

To be a recipient of PLIFE, patients must 1) require insulin treatment for maintenance, 2) be an upright and moral Filipino citizen (male or female), 3) provide proof of income within program guidelines, 4) not have private or public prescription coverage, 5) be nominated by a PSEM member, 6) be approved by the PSEM board of directors (4) , Lilly President (1) and a representative from DSWD (1). The award is not transferable and convertible to cash.



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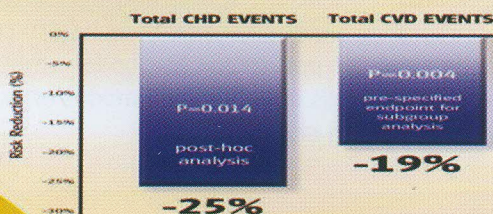
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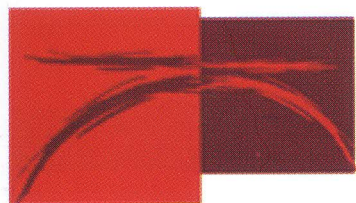
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DIABETES NEWS



BRIDGES

Bringing Research in Diabetes to
Global Environments and Systems

BRIDGES is a programme initiated by the International Diabetes Federation, www.idf.org to fund translational research* projects in diabetes prevention and treatment to provide the opportunity to 'translate' lessons learned from clinical research to those who can benefit

most: people affected by diabetes.

BRIDGES is seeking the best ideas from the global multidisciplinary community interested in diabetes in the form of Requests For Proposals (RFPs).

The **BRIDGES** project seeks to solicit proposals that support cost effective and sustainable interventions that can be adopted in real world settings, for the prevention and control of diabetes. Projects should be based on interventions

already proven to be effective in trials to prevent and treat diabetes, to improve care of type 1 and type 2 diabetes and delay its complications. The interventions proposed should have the potential to be widely disseminated to clinical practice, individuals and communities.

The scope of the funding is to **help communities around the globe** to identify special needs related to intervention and prevention.

Important deadline for this round of application:

02 November 2007: Deadline to receive the application form

Applications received after that date will be considered for next round

January 2008: Announcement of grantees

New IDF Consensus on Prevention of Diabetes

The **International Diabetes Federation (IDF)** is a worldwide advocate for millions of people with diabetes, representing 200 diabetes associations in more than 150 countries. It recently released a new consensus statement on diabetes prevention, in answer to the **December 2006 United Nations General Assembly Resolution**. The United General Assembly Resolution clamors for a more consolidated movement against this impending catastrophe (diabetes).

The new IDF consensus recommends that all individuals at risk of developing type 2 diabetes be identified through opportunistic screening by doctors, nurses, pharmacists and through self screening.

Professor Paul Zimmet, director of the International Diabetes Institute and co- author of the consensus, reiterated that through great "political will", this will create an environment that will allow individuals to make lifestyle changes in which



International Diabetes Federation

type 2 diabetes mellitus will be prevented. This however entails a concerted effort on all countries to support the UN Resolution through development and execution of National Diabetes Plans. These plans, will therefore involve legislative changes among all nations of the government including health, education, sports and agriculture. With diabetes portending a globally escalating health care cost, it is now the time for politicians to ponder whether they will allocate more funds or venture on modes of prevention by supporting lifestyle changes!

RIMONABANT ISSUE

Rimonabant, an anti-obesity drug manufactured by Sanofi-Aventis received so much criticism from the panel of US FDA ' Endocrinologic and Metabolic Drugs Advisory Committee. This is due to the risk /benefit profile in individuals with a body mass index (BMI) of $>30\text{kg/m}^2$ or in individuals with a BMI of $>27\text{kg/m}^2$ accompanied by at least one co-morbid condition.



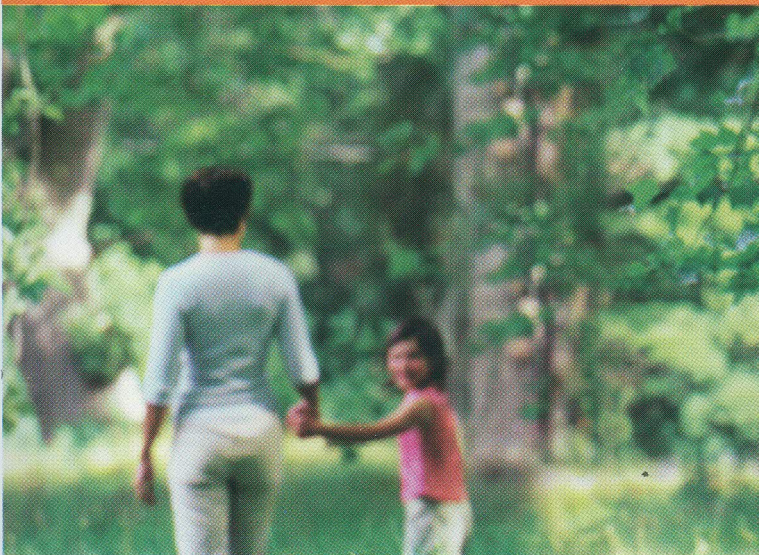
The panel was concerned about the increased risk of neurological and psychiatric side effects, particularly seizures, depression, anxiety, insomnia, aggressiveness and suicidal thoughts among patients randomized to the drug.

Recently, suicidal thoughts and even successful suicides were found to be 30% higher among patients taking rimonabant. As Dr. Paul Woolf (Crozer-Chester Medical Center, Upland) puts it, "we don't have enough patients who are on this drug for a long time to know what's going to happen down the road, and we have enough concerns".

The group presenting data on rimonabant disclosed that one quarter of obese subjects taking the drug lost 10% of their body weight after a year, while half of the subjects lost about 5% of their original body weight. They also disclosed that the neurological and psychiatric effects of the drug were seen more commonly in people with a history of depression or neurological problems. According to them, this risk can be managed by making this conditions contraindications to taking the drug and by the formulation of a risk management plan for physicians.

There is still hope for the maker of rimonabant, the panel agreed that more data should be gathered before discrediting it as a potential anti-obesity drug. Future trials will be the answer if it will be approved for future use.

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1. Rendell et al. Skin Blood Flow and Current Perception in Pentoxifylline Treated Diabetic Neuropathy. *Angiology* Volume 43(10):843-851 pp. 1992
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PDA ON THE MOVE

PMA Annual Convention, Edsa Shangri-La Hotel

Crowne Plaza Hotel, Ortigas
January 28, 2007

The Philippine Diabetes Association has been cited by the Philippine Medical Association as its Most Outstanding Affiliate Society last May 26, 2007. The conferment was staged at the Edsa Shangri-La Hotel. The PDA has been given distinction for a sundry of activities and programs like conducting lay forum and CME for colleagues, education on preventive management of diabetes, avant-garde networking and press conferences, tri media coverage, publication of the Diabetes Watch Magazine. The PDA is also very much involved in national and international conferences, Initiating research grants and introducing nationwide endorsements during diabetes awareness week.



Land Bank Health Fair

Land Bank of the Philippine, Head Office, Manila
April 27, 2007

The PDA has been given a free booth during the Land Bank of the Philippines Health Fair. The event was held at their main office in Manila last April 27, 2007. The Booth promoted the PDA's advocacy thru public information, posters, flyers, magazines and educational cds.

50th Anniversary of Glucophage

SM Mall of Asia, Pasay City
April 21, 2007

Merck Serono Philippines celebrated the 50th Anniversary of Glucophage at SM Mall of Asia, Pasay City last April 21, 2007 with the theme "1 day, 1 kilometer, 1 purpose". The event kicked off at 8am with a kilometer walk around the mall. This was participated in by the general public, doctors and medical managers and representatives of Merck, Inc. The program further raised the Move Against Diabetes (MAD) for life campaign. Free medical check-ups, blood pressure and capillary blood glucose determinations capped the successful occasion.

**Unite For Diabetes**

Crowne Plaza Galleria, Manila
July 12-13, 2007

A meeting was held at the Crown Plaza Galleria Manila last July 12-13, 2007 with the theme "Unite For Diabetes". The event was organized by PSEM, PDA, ISDF and Diabetes Center Philippines. Professor Martin Silink, current IDF president graced the event.

**PDA Special Lay Forum**

Century Park Hotel, Manila
July 14, 2007

A special lay forum was organized by PDA at the Century Park Hotel Manila



last July 14, 2007. A total of 165 participants mainly composed of diabetic patients willing to learn more about the disease took part in the affair.

PDA'S UPCOMING ACTIVITIES**34th Diabetes Workshop**

August 10 -11, 2007
Century Park Hotel, Manila

Lay Annual Convention

November 17, 2007

PDA Annual Convention

November 20 -21, 2007
Century Park Hotel

3rd Course on Diabetes and Vascular Disease

November 22- 23, 2007

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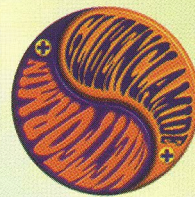
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*Reference: Physician Education Tracking Study, February 2003. Based on a study in the self-monitoring blood glucose (SMBG) industry involving 1,540 patients who contributed 31,359 samples over 27 months.

AMPALAYA FORUM: *Can we now use Momordica Charantia (ampalaya) for the treatment of type 2 diabetes?*

Cecile Jimeno, MD
UP-PGH Medical Center

Last May 2, 2007, the Philippine Society of Endocrinology and Metabolism (PSEM) held the "Ampalaya Forum" as a venue to present and discuss the available basic and clinical researches regarding the use of *Momordica Charantia* for the treatment of Type 2 diabetes mellitus. This meeting was in response to the circular of the Department of Health Secretary Francisco Duque reinstating ampalaya (*Momordica Charantia* Linn.) as a scientifically validated herbal medicinal plant. During the forum it was clarified that the circular only covers the use of the leaves of the ampalaya (Makiling variety) for the treatment of Type 2 DM, and not the fruit/seeds or other varieties of the plant. This new circular therefore only partially reverses the previous circular of the DOH in 2003 (Circular No. 196-A s 2003) that classified ampalaya as a folklorically-validated herbal medicinal plant due to the absence of any research evidence supporting its use as a drug for the treatment of diabetes. Some confusion resulted from the new circular because some companies producing other ampalaya products attempted to ride the band wagon by promoting their own products, even if these tablets or capsules are produced from ampalaya other than the Makiling variety, and are derived from the fruit and seeds.

The primary basis for this recent reclassification of ampalaya back to

its previous status as a scientifically validated herbal medicinal plant is the Phase 3 clinical trial that was completed by the National Integrated Research Program on Medicinal Plants (NIRPROMP) comparing the efficacy and safety of *Momordica Charantia*, L (ampalaya Makiling variety) leaf tablet and glibenclamide among patients with Type 2 DM. Ampalaya was compared against a commonly prescribed and



Momordica Charantia

used oral* antidiabetic agent, glibenclamide which is available in the Philippines under many brands and generic preparations.

The main speaker during the forum was Dr. Nelia Maramba of the NIRPROMP and the U.P. College of Medicine who was the supervising investigator of the study; her team also included Dr. Jaime M. Purificacion, the principal investigator and Dr.

Herbert Ho, study consultant. Other guests were officials and representatives from the Philippine Institute of Traditional and Alternative Health Care (PITAHC), representing the Department of Health; the Philippine Council for Health Research and Development (PCHRD); Bureau of Food and Drugs (BFAD); U.P. College of Medicine Department of Clinical Epidemiology; Philippine Society of Endocrinology and Metabolism (PSEM); the Philippine Diabetes Association (PDA); and the Institute for the Study of Diabetes Foundation Inc (ISDFI).

Dr. Maramba's presentation included a review of preclinical studies involving the administration of ampalaya to mice and rats, where they were able to identify that the young leaves are the most effective and safe part of the ampaya plant. The ampalaya leaves that were tested in these initial studies were those from Makiling, Cavite, Batangas, Cotabato and Los Baños, but only the Makiling variety consistently produced the anti-hyperglycemic effects in rodents. Although the ampalaya fruit was demonstrated in foreign studies to have anti-diabetic properties, the margin of safety seemed narrow with reports of persistent vomiting in treated animals.

The initial data on humans showed that only doses of 60 mg/kg/day and above of ampalaya showed significant decrease in the FBS and HbA1c, and that the drug was well tolerated with

“Ampalaya leaf tablet given at 100 mg/kg is generally safe and well tolerated, but there appears to be a need for further research using this herbal medication either as monotherapy in comparison with other drugs or as a combination or adjunctive treatment for a broader range of patients, before we can recommend its use as an anti-diabetic agent.”

patients complaining only of the bitter taste. There were no adverse drug reactions or side effects noted. Pooled total number of patients for the 3 trials that were cited is however quite small at only 75 Type 2 diabetes patients, mostly females with an average age in the early 50's with mild to moderate elevations of blood sugar, except for one trial that included patients with severe hyperglycemia (FBS 261-300 mg/dL).

The main bulk of the presentation was regarding the recently completed Phase 3 randomized controlled, double blind trial that was conducted in 2000-2004 comparing the efficacy and safety of *Momordica Charantia*, L (ampalaya) leaf tablet at 100 mg/kg/day (using 500 mg tablet preparation) versus glibenclamide at 5 mg once a day. Included were 260 Type 2 DM patients allocated to ampalaya (128) and glibenclamide (132 patients). Included were Type 2 DM with an average age in the mid-40's who were either newly diagnosed, previously diagnosed but never on drug therapy, those with erratic drug intake or on drug therapy but have stopped for at least one year prior to the trial. The initial fasting blood sugar of patients who were included is $183.8 \text{ mg/dL} + 38.22$ ampalaya group vs $189.3 + 35.05$ for glibenclamide, while HbA1c was $12.3 + 2.1$ for ampalaya and $12.2 + 2.24$ for glibenclamide. The study was conducted for 12 weeks and a comparable improvement in blood sugar parameters were seen for both groups, showing that ampalaya at 100 mg/kg/day is comparable to glibenclamide at 5 mg once a day. The routine laboratory safety tests also did not show any significant change from baseline for both groups, although

those given ampalaya complained of some nausea (10) and vomiting (5) during week 3, which disappeared during the course of treatment.

After Dr. Maramba's presentation, the other speakers spoke on the roles of the DOH and PCHRD in supporting and spearheading research on the use of herbal medications. There was also a critique on the drug trial where some methodologic issues were raised which might affect the interpretation of the results. The other speakers also raised other issues like the practicality of taking this drug considering that at a dose of 100 mg/kg/day, 10 tablets of 500 mg is taken per day. They also recommended that further studies be done using the ampalaya tablets on a broader spectrum of patients and even in comparison with other drugs.

In summary, the data so far seems to show that the Ampalaya leaf tablet given at 100 mg/kg is generally safe

and well tolerated. In this group of 260 relatively newly diagnosed uncomplicated patients with Type 2 DM and with mild to moderate blood sugar elevations, ampalaya leaf tablet of the Makiling variety has comparable efficacy to a common anti-diabetic agent, glibenclamide at a dose of 5 mg once a day. However, given that this is the only fairly large trial to date, there appears to be a need for further research using this herbal medication either as monotherapy in comparison with other drugs or as a combination with other drugs, for the treatment of a broader range of patients. At this point, we cannot yet recommend its routine use as an anti-diabetic agent until we can get more information from its use in a bigger number and more varied type of patients. Ampalaya leaf tablet of the Makiling variety is currently not yet available and cannot be bought in any pharmacy; its preparations so far are available only for research purposes. **D**

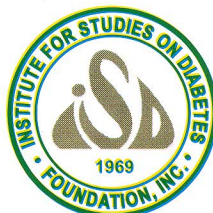
The Lighter side of Diabetes

by Dr. Allan Hernandez

UNKNOWN TO MANY, DIABETES WAS COMMON DURING THE PIRATE DAYS ...



IN FACT, DUE TO HARSH ECONOMIC CONDITIONS, COMPLICATIONS WERE QUITE COMMON.



Position statement on ampalaya use in diabetes mellitus

Prevention and treatment of diabetes mellitus are our major concerns of our organizations. We welcome a truly medicinal plant like ampalaya if scientifically proven and accepted in the treatment of diabetes.

In 2003, we issued our position statement cautioning the public against indiscriminate use of the ampalaya-derived products in people with diabetes due to lack of sufficient evidence to support its efficacy and safety for diabetes. We sounded the call for more clinical studies so physicians and patients will be guided.

The ampalaya leaf tablet Makiling variety has undergone pre-clinical studies in animals as well as Phase I & II clinical trials. A recent unpublished clinical trial (Phase III) involving 260 uncomplicated diabetic patients using ampalaya leaf tablets formulated using young leaves of the Makiling variety showed a blood glucose lowering potential comparable with that of low dose glibenclamide, a standard anti-diabetic drug. This ampalaya leaf tablet is being registered as a new prescription drug under monitored release as part of post-marketing surveillance. We believe that this post marketing surveillance on ampalaya leaf tablet will generate more clinical data on a broader range of diabetic subjects.

Our position remains unchanged. Ampalaya-derived products as supplements/nutraceuticals still cannot be considered standard care for diabetes mellitus at this time. The public is cautioned against indiscriminate use of any part of the ampalaya plant, especially if there is no efficacy and safety data on that particular product.

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Full prescribing information available upon request.



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