

CRUSADE Against Diabetes

A bulletin of the Prof.M.Viswanathan Diabetes Research Centre
and M.V.Hospital for Diabetes (P) Ltd.

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> 2 ISSUE



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₹ 20/-

Infotainment ñ 2010



Ms. Maniharika- a participant at the
Oratorical Competition

Honor Ms. Janaki Sabesh, Film Artist & Regional Head-Marketing, Real Image Media Technologies, gave away the prizes to the winners.



Dr. Anand Khakhar during the interactive session

Some Excerpts from his session

Pancreas is an organ that lies behind the lower part of your stomach. One of its main functions is to produce insulin, a hormone that regulates the absorption of sugar (glucose) into your cells. Type 1 diabetes results when pancreas can't make enough insulin, causing your blood sugar to rise to dangerous levels.

A pancreas transplant is a surgical procedure to place a healthy pancreas from a donor into a person whose pancreas no longer functions properly. Almost all pancreas transplants are done to treat cases of type 1 diabetes.

This is not very common in India, as we do not have awareness on organ donation. In his message to the gathering he reiterated the importance of creating awareness on organ donation.

M.V. Hospital for Diabetes & Prof. M. Viswanathan Diabetes Research Centre organized a programme for people with Juvenile Diabetes, INFOTAINMENT – 2010 on May 29, 2010 in the Hospital Auditorium. Various informative and interactive sessions were organized.

Mr. Manjunatha, I.P.S., Inspector General of Police, Crime Branch, CID, Government of India addressed the gathering. The Guest of

Dr. Anand Khakhar, MS DNB, Fellow American Society of Transplant Surgeons (Canada, Pittsburgh & NY) presently a Senior Consultant - Liver Transplant & Hepatobiliary Surgery, Apollo Hospital, shared his expertise on "Pancreas Transplantation" which was followed by an interactive session.

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From Editor's Desk



Dr. Vijay Viswanathan

Dear esteemed reader,

I am happy to present before you the next issue of "Crusade".

The M.V.Hospital for Diabetes and Prof. M.Viswanathan Diabetes Research Centre are taking up several innovative programs to help people with diabetes and its complications, in the community.

In this issue the articles are contributed by some of our consultants and scientific staff. There is an interesting article about the footwear recommendations for diabetic foot care written by the team from Central Leather research Institute, Chennai.

I hope these articles will be interesting and informative for you.

Any comments and suggestions can be mailed to

drvijay@mvdiabetes.com.

Dr. Vijay Viswanathan,
MD, PhD, FRCP (London) FRCP (Glasgow)
Managing Director
M.V.Hospital for Diabetes (P) Ltd

Glycated Haemoglobin (HbA1C)

Dr.K.Mahesh, MBBS, MDRC

Consultant Diabetologist (Dy. Medical Superintendent)

This is a test useful in monitoring and diagnosing Diabetes Mellitus. Actually the term means haemoglobin molecule to which sugar (glucose) molecule is attached. Haemoglobin is present in the red blood cells. There are various types of haemoglobin in the body. Usually human adult haemoglobin consists of HbA (97% of total), HbA2 (2.5%) and HbF (0.5%) types of haemoglobin. HbA can further be classified as HbA1a, HbA1b, HbA1c which are collectively called as HbA, fast haemoglobin, glycohaemoglobin, glycated haemoglobin, etc. Glycated haemoglobin is the appropriate word. However the term A1C can commonly be used.

HbA1c is formed by the addition of the glucose molecule to amino acids valine in the N terminal end of each B chain of the HbA molecule. This is spontaneous process and it does not require any enzymatic mechanism. Hence depending upon the availability of glucose in the blood, the amount of haemoglobin getting attached to glucose varies and hence level of A1C will vary. It means that the level of A1C in the blood is directly proportional to the level of glucose available in the blood. The process is controlled by the concentration of glucose that the haemoglobin is exposed to and the length of time that the haemoglobin is exposed to a given concentration of glucose.

Blood glucose is increased in diabetes. This increased glucose will add to more HbA producing more HbA1c. Therefore this level indirectly indicates the level of glucose in the individual and the presence of Hyperglycemia. The life span of any RBC ranges from 2-3 months. Hence it is assumed that the level of HbA1c is reflecting the level of glucose for the last 2-3 months.

For this reason this test is being used for indirectly knowing the level of glucose that prevailed during the

preceding 2-3 months. Estimation of blood glucose level shows only the situation prevailing at the time of collection of the sample. This glucose value is

dependant upon many factors, like the quantity and the quality of food, the time of food taken (fasting, post prandial), the treatment taken, etc. But these factors will not affect the value of glycated haemoglobin. A1C is purely dependent upon the average glucose level that existed during the previous period.

A1C test has the following advantages over the blood glucose tests.

1. A1C has less biologic variability.
2. It has less pre analytic variation.
3. Collection of samples can be made at any point of time (No fasting or timed collection is needed).
4. Relatively it is less affected by acute stress or illness related to perturbations in glucose levels.
5. It is a better index of overall glycaemic exposure.
6. The test is standardized and aligned to the DCCT and UKPDS trails.

Do You Know?



A study revealed that laughter was linked to lower blood sugar levels after a meal. But emotions such as anxiety, fear, and sorrow are known to be factors that elevate the blood glucose level.

Your body needs a mere 500 milligrams of salt-per day. When the salt intake is 20-30 gms/day, you are at a risk of high blood pressure, arterial damage and even stroke.



But measurement of glucose is not well standardized like this test.

However the A1C value cannot be relied during any situation that affects the RBC. Haemolytic anaemia, chronic malaria, major blood loss, or blood transfusion will lead to misleading results. Haemoglobin traits such as HbS, HbC, HbF and HbE will interfere with some A1C methods. Age and race may have effect on the result. There are certain limitations in using the value for diagnosis. Besides there are clinical settings such as rapidly developing type 1 diabetes where A1C level will not have time “to catch up” with the acute elevations in glucose levels. A1C cannot be used for diagnosis in pregnancy (when there is change in red cell turn over).

Different methods have advantages and disadvantages. So a method approved by NGSP is to be followed for the estimation of A1C.

Till last year this test was used for monitoring diabetes. Now it is standardized and such that the test is recommended for diagnosing DM. Value above 6.5% is diagnostic of DM. 5.7% - 6.4% refers to pre diabetes condition that can be IGT and of IFG.

Glycosylated Hemoglobin shows average values of blood sugar for 2-3 months.

If your HbA1c is

- less than 6.0% – Normal
- 6.1% - 7.0 % – Good control
- 7.1% - 8.0% – Fair control
- 8.1% - 10.0% – Unsatisfactory
- Above 10% – Poor control

Cardiac Risk Profile Investigations



Indian’s heart ages faster than a westerner’s. Recently, India is witnessing an increasing trend in the number of heart attacks and deaths due to heart attacks being reported compared to other parts of the world. In spite of several factors contributing to the heart attacks, diabetes is one of the factors for the increasing trend. In addition, rural area is reported to be having high number of heart disease due to diabetes since it has been undiagnosed for long period of time. Therefore it is recommended to assess the condition of the heart periodically by every individual, which would assist in taking appropriate measures to prevent heart diseases.

The present condition of the heart can be assessed by getting performed “cardiac risk profile” investigations

Dr. Partiban Ph.D

Head – Department of Biochemistry

done. Cardiac risk profile is a group of tests and health factors that have been proven to indicate the chance of having a cardiovascular event such as heart attack or stroke.

Cardiac Risk Profile Investigations

ECG	Total cholesterol
Blood pressure	Triglycerides
Echocardiogram	LDL, VLDL and HDL Cholesterol,
Coronary angiography	apoA lipoprotein
	apoB lipoprotein
	high sensitive C reactive protein (hsCRP)

Non HDL cholesterol the calculated parameter along with other results would indicate the presence or absence of dyslipidemia.

Dyslipidemia means deviation from the expected

normal values of various lipid levels in the blood. The most common types of dyslipidemia are, (a) High levels of low-density lipoprotein (LDL or “bad”) cholesterol, (b) High levels of triglycerides and (c) Low levels of high-density lipoprotein (HDL or “good”) cholesterol.

Bad Cholesterol (LDL) : LDLs and VLDLs indicate the presence of high-cholesterol particles. While cholesterol is necessary for various bodily functions, too much cholesterol is harmful, since excess cholesterol can be deposited in blood vessel walls. These fat deposits can lead to atherosclerosis, or hardening of the arteries, and cardiovascular disease, the number one killer. High levels of triglycerides are also associated with an increased risk of heart disease.

Good Cholesterol (HDL): HDL is lipoprotein made mostly of protein and less of cholesterol. HDLs can help to clear cholesterol deposits in blood vessels (left by another blood component called low-density lipoproteins).

High-sensitivity C-reactive protein (hs-CRP): Studies have shown that measuring hsCRP can assist in

identifying the risk of cardiovascular disease (CVD). High levels of hs-CRP, in healthy individuals have been found to be predictive of the risk of heart attack, stroke, sudden cardiac death, and peripheral arterial disease, even when lipid levels are within acceptable ranges. So far, there is no guideline on the periodicity for screening with this test.

Apolipoprotein A1 and Apolipoprotein B: Increased concentrations of Apo B lipoprotein and decreased concentrations of Apo A1 lipoprotein can be good predictors of risk of CHD.

Non HDL Cholesterol: This is also important factor in deciding the cardiovascular risk factor. Increase in Non HDL cholesterol indicates cardiovascular risk.

Dyslipidemia / lipid management screening: In most adult patients, measuring fasting lipid profile at least annually is recommended. In adults with low-risk lipid values, lipid level assessments may be repeated every 2 years.

Our laboratory provides standardized facilities to perform complete cardiac risk profile investigations.

“Our life is in our hands”

Footwear Recommendations for Effective Diabetic Footcare

Reduction of pressure, or off-loading, is an essential aspect of diabetic wound care. Foot pressures, shock and shear can be reduced with appropriately fitted footwear, insoles and socks. Total non-weight bearing, which allows the wound to be at rest, is the most ideal method of relieving pressures but it is hardly practical. It is therefore necessary that care must be taken in selecting the most appropriate footwear as any inappropriately applied device may cause additional problems like exacerbation of postural instability, acute infection, deep ulcers accompanied by additional contraindications. The guidelines for selecting the appropriate off-loading devices are:

**Gautham Gopalakrishna, Md Sadiq,
G Saraswathy, BN Das**
 Central Leather Research Institute, Chennai

Dr.C.B.Sanjeevi visited our hospital on 29th July 2010. He is an Associate Professor at Karolinska University Institute, Stockholm, Sweden and also the Karolinska institute scientific coordinator for India. He delivered a lecture on “Cell destruction and regeneration in autoimmune diabetes” for the scientific staff.

The summary of his talk was about the treatment to prevent β -cell destruction and preserve existing cells in individuals with progressive autoimmunity. He also reviewed the recent approaches currently being tested in animal models and human T1D patients.

- The ability to effectively remove all pressures from the ulcer site
- Cost effectiveness
- Ease of use
- Ability to address the characteristics of the diabetic ulceration
- Ability to encourage patient adherence

Treatment and Wound Management

The primary goal in the treatment of diabetic foot ulcers is to obtain wound closure as expeditiously as possible. The resolution of foot ulcers and decreasing the rate of recurrence can lower the probability of lower extremity amputation in patients with diabetes. Orthotics are custom made devices which serve to correct misalignments and relieve pressures in the foot. Studies have established the efficacy of footwear related pressure relieving and have concluded that in-shoe orthotics are of benefit.

Principles of Protective Footwear

Neuropathic diabetic patients with a history of foot ulceration have abnormally high pressures under the foot. These have to be reduced to prevent further risk and damage to the foot. One of the possible solutions is to use Protective or Therapeutic footwear consisting of custom designed shoes or custom made inserts. These inserts generally incorporate force redistributing features. The main characteristics of protective footwear can be summarized as shown :

<i>Covering</i>	To prevent injury from heat, objects, etc.
<i>Padding</i>	To lessen the effect of muscle-wasting and to give a soft surface for any hard, bony projections which can be felt.
<i>Moulding</i>	To increase the weight-bearing area and to take weight off the affected area.
<i>Rigidity</i>	To reduce the effect of shearing stress, to stabilise the foot and correct mobile deformity.

Variety of Therapeutic Footwear vis-à-vis Risk perception thresholds

Effective footwear management and getting patients with diabetes to realize the importance of well-fitting shoe gear is a crucial component in the rehabilitation process of the diabetic patient. Ill fitting shoes stimulate lesions, often placing patients who lack foot sensation at greater risk for complications. Research has clearly shown that podiatrists and foot-care specialists can reduce foot complications by between 45% to 75% simply by developing and implementing a comprehensive and specialized foot care regimen that employs appropriate footwear as a critical component.

While discussing footwear selection, the podiatrist or foot-care specialist should rely on the patient’s risk level to determine the allowable range of footwear. The patient with a high risk foot (Risk Category 3), as evidenced by a prior ulcer or amputation, Peripheral Vascular Disease (PVD), insensitivity with structural deformity or Charcot foot, should be prescribed either custom-moulded or extra depth footwear with tri-layered total contact insoles. Internal and external modifications may be added depending on biomechanics and pressure reduction needs.

Patients at moderate risk (Risk Category 2), such as those with neuropathy or PVD without significant structural deformity, have to be given a pair of properly fitting footwear with soft soles, soft uppers and appropriate insoles.

Those at low risk (Risk Category 1) without neuropathy or PVD may be prescribed a wider range of footwear which can be classified as general purpose comfort footwear but they should be re-evaluated every six months to keep track of any changes.

Footwear Recommendations

The variety of therapeutic footwear available can be summarized as shown:

<p>In-Depth Shoes (Risk Category 2)</p>	<ul style="list-style-type: none"> • Most common therapeutic shoe • Made of leather or other qualified material • Have a full length removable insole for extra room
<p>Custom Moulded Shoes (Risk Category 3)</p>	<ul style="list-style-type: none"> • Based on each person's specific foot measurement • Constructed from leather or other durable material • Must be worn with removable inserts
<p>Inserts/Metatarsal Pads/Arch Taping (Risk Category 1/2)</p>	<ul style="list-style-type: none"> • Ensure comfort • May be made to fit the individual shapes of each customer's feet • Removable for modification or replacement

Footwear Appropriate for Particular Risk Category

RISK CATEGORY 0

Characteristics	Type of Footwear
<ul style="list-style-type: none"> • Intact Sensation • Absence of foot deformity 	<p>Often patients in this category do not need special therapeutic footwear</p>
<ul style="list-style-type: none"> • No history of plantar ulceration 	<p>Recommended to wear off-the-shelf General Purpose Comfort footwear</p>

RISK CATEGORY 1

Characteristics	Type of Footwear
<ul style="list-style-type: none"> • Insensate foot • Absence of foot deformity 	<p>Footwear fitting is critical in this category</p>
<ul style="list-style-type: none"> • No history of plantar ulceration 	<p>Recommended to wear pedorthic footwear which should provide additional depth to accommodate a prescribed orthosis</p>

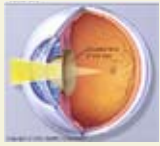
Summary

The salient features of a scientifically designed therapeutic footwear can be graphically summarized as shown



Mechanical factors play an important role in the etiology of a majority of foot ulcers. The stresses and strains experienced by the diabetic foot is different from that of the non-diabetic foot. This is because of the biomechanical abnormalities in the foot which is a consequence of diabetic neuropathy. The vital role of footwear has been proven beyond doubt in helping overcome the complications of the diabetic foot. Many foot complications due to external sources are prevented only by footwear and as such, they are a pre-requisite for the diabetic foot along with other medical treatment. However, regardless of the footwear prescribed, educating patients about proper foot gear and self-examination is paramount.

News Flash
“Doctors at a large managed care network gone on strike. MCO Officials say they will find out what the Doctors’ demands are as soon as they can get a pharmacist over there to read the picket signs.”

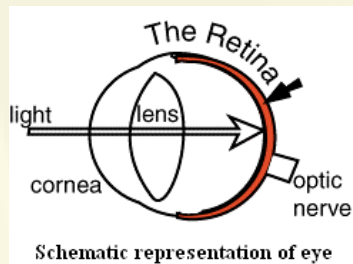


Diabetes and Cataract

The literal meanings of cataract and diabetes are themselves interesting and amusing. ‘Cataract’ means ‘waterfalls’; Diabetes means ‘excessive water falls’ (excessive urination). Diabetes has implications in cataract management and vice versa. In this article, let us discuss in brief these implications, in simple language and without much jargon.

First let us see what is cataract. The eye is always compared to a camera (though it should be the other way round). Just as the lens in a camera focuses objects, the crystalline lens in our eyes focuses for various distances.

Now let us take a closer look at the structure of the lens. We can compare the structure of a lens to that of a mango. The outer covering (skin) is called ‘capsule’. The front part of the capsule is ‘anterior capsule’ and the back part ‘posterior capsule’. The central (seed) portion is the ‘nucleus’ and the surrounding portion (pulp) is called as ‘cortex’. The nucleus thickens with age. It is very soft in younger people and as the person becomes older, it correspondingly becomes harder.



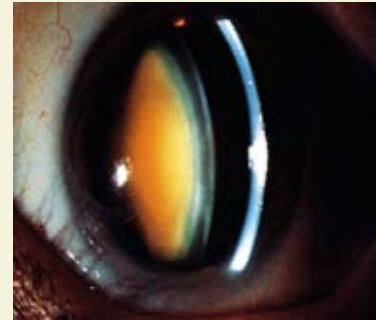
Any opacity or cloudiness in this crystalline lens is called ‘cataract’. Depending on the location of cataract, it is classified into various types. The most common types of cataract are ‘Nuclear sclerotic cataract’ in which the nucleus hardens and ‘Posterior capsular cataract’ in which the posterior capsule is opaque.

Cataract may occur because of age (senile cataract), injury (traumatic cataract), by birth (congenital cataract), due to diseases like diabetes (diabetic cataract) or various other reasons.

The symptoms of cataract depend on the amount of cataract and the position of

cataract. Early cataracts don’t cause any visual problems. Nuclear sclerotic cataracts may cause changes in the glass power, usually a myopic shift, i.e. the patient’s power becomes more minus. This is beneficial to some patients since their near vision becomes clear even without glasses. This is called ‘second sight’. But this is only temporary because the distant vision will become worse with more hardening.

Posterior capsular cataracts cause visual symptoms even in early stages, since they occur in the centre of the lens. They cause intolerable glare, especially during night driving. (Imagine driving at night wearing a glass, which has scratch marks right in the centre). Posterior capsular cataracts are more



Nuclear sclerotic cataract



Normal Vision

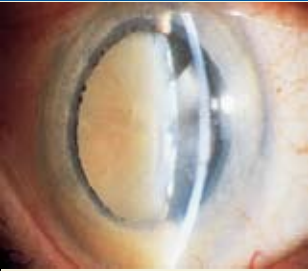


Cataract Vision

common in diabetics, even in younger individuals. As the cataract progresses the visual symptoms become worse. The clarity of vision becomes worse. When the cataract matures, the patient will hardly be able to see his/her own fingers.

The treatment of cataract is essentially surgical. There is no proven medical treatment for cataract. We, as Indians, should be proud of the fact that cataract surgery was invented by ancient Indians. The cataract is removed surgically and is replaced with an artificial intraocular lens. The cataract surgery was done manually earlier, which was replaced by a procedure called as ‘Phacoemulsification’.

In phacoemulsification, the eye is entered through a


Matured Cataract

small, self-sealing incision (2-3mm) in the cornea (black part of eye); a small opening (around 5mm) is made in the anterior capsule of the lens (remember the front portion of the mango skin!); the hard nucleus is broken into pieces using an ultrasound probe; the broken nuclear pieces and then the remaining cortex is aspirated through the same probe. Into the remaining bag, an artificial intraocular lens (5-6mm in size) is inserted. Since this lens is foldable, it is able to enter

through the smaller incision.

Though very simple to explain, a lot of expertise and

technical finesse is required to perform this procedure. Nowadays, phacoemulsification is performed under topical anaesthesia itself (only anaesthetic drops are applied to numb the eyes; no injections are given). Cataract surgery is one of the most commonly performed procedures (in the whole body) and also one with the most successful outcome. Intraocular lens is the most commonly implanted artificial implant in the body. Hence one need not have any unnecessary fears regarding cataract surgery.

Then the subsequent question rises, when to plan for the cataract surgery? The timing of surgery is purely

subjective, i.e. it depends on the visual needs of the patient and thus varies from patient to patient. The general consensus is to choose the option of surgery when you find that

your day to day activities are affected by cataract. The other indication for cataract surgery, especially in a diabetic, is when visualisation of the retina is precluded by the presence of cataract.

Now, let us see about the implications of diabetes on cataract and vice versa.

1. Diabetic patients have an earlier incidence of cataract than the general population. Studies indicate that in patients with Type-I DM, there are structural changes in the crystalline lens. Hence these patients are more prone to develop cataract in younger age itself.

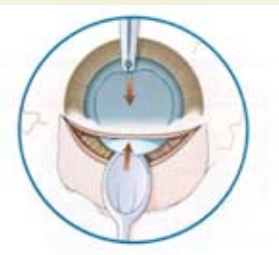
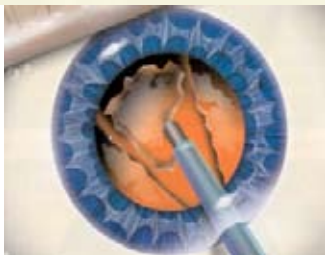
2. As we have seen earlier, posterior sub capsular cataract is more common in diabetic patients; it is sometimes referred to as 'Diabetic cataract'. Since this type of cataract is central in position, it causes glare and early visual difficulties and may need early surgical intervention.

3. In patients with dense cataracts, visualization of the retina (the sensitive back part of the eye, equivalent to the film in a camera) becomes difficult. Diabetic retinopathy can lead to irreversible loss of vision. Hence, in patients with higher risk of diabetic retinopathy, early surgery might be necessary, even if the patient doesn't have significant visual difficulties.

4. During cataract surgery, the patient's glycemic control should be in normal range. Patients with kidney disease, heart disease or foot infection should be assessed well before taking them up for surgery. Rapid preoperative glycemic control is not desirable. Though nowadays cataract surgery has become a day care procedure, it is preferable to admit a diabetic patient for at least a day to monitor the glycemic control.

5. Cataract surgery can worsen the progression of diabetic retinopathy, especially diabetic macular oedema (swelling of the centre point of the retina). Hence detailed evaluation of the retina and treatment, if necessary, should be done before cataract surgery.

6. The intraocular lens to be implanted has to be chosen properly, since some types of lenses may


Manual Method

Phacoemulsification

New CE for MVH & MVDRC

"Dr.J.Nagarathnam, MBBS, DPH, DIH, has joined M.V.Hospital for Diabetes and Prof.M.Viswanathan Diabetes Research Centre as CHIEF EXECUTIVE OFFICER.

He had worked as Chief Medical Director, Eastern Railway, Kolkatta and Director, Medical Services, Apollo BramWell Hospital, Mauritius before joining this hospital.

interfere with treatment of diabetic retinopathy later.

7. After the surgery, patients have a general tendency to relax. Glycemic control during postoperative period is very essential for good healing and prevention of infection. So monitoring glucose levels during this period is equally important.

Cataract surgery in a diabetic patient is not the responsibility of the ophthalmologist alone. It should be a team work involving the ophthalmologist, diabetologist, nephrologists and even the podiatrist.

Everyone in this world has a 'right to sight', let's not diabetes deprive one of this right. Have a clear view about diabetic eye diseases and in turn, have a clear view of the world.

Recent Publications in National/International Journals

1. A paper titled **Incidence of Fluid Retention among South Asian Type 2 Diabetic Patient Initiated on Rosiglitazone Therapy** was presented at American Diabetes Association meeting held in the month of June, 2010.
2. A paper titled **Knowledge and outcome measure of HbA1c testing in Asian Indian patients with type 2 diabetes from a tertiary care center** was published in the August, 2010 edition of Indian Journal of Community Medicine



Enjoy Desserts When You Have Diabetes

Mrs. Sheela Paul B Sc, DND, MA & **Ms. Vimala** M Sc
Dieticians.

Dessert is a course that typically comes at the end of a meal, usually consisting of sweet food. Most desserts tend to be highly processed and often prepared with added sugar. Sweet, meal-capping treats are always tempting. But when you have type 2 diabetes, sweets are more than just extra calories. You also have to think about how the foods you eat will affect your blood sugar.

Contrary to the misconception on intake of sugar/glucose leading to hyperglycemia, recent studies

have proved that eating sugar or carbohydrates such as potatoes, bread, etc has similar effects on blood glucose levels. Hence, blood glucose levels can be maintained in the normal range even with intake of desserts and/or sweets. Though, the sweet does not provide any important vitamins and minerals, they may be high in fats and calories but while including them in the meal plan one must make sure that it provides necessary nutrients.

Community Programme Chennai Slim & Fit

Overweight and obesity are increasing at an alarming rate in the modern world. Even among children it has become a big concern. Due to Urbanization and modernization the lifestyle of people in urban areas has changed drastically. The consumption of calorie dense food, reduced physical activity and spending leisure time in front of Television and Computers are probable causes that lead to overweight and obesity among the younger generation.

With a view to reduce obesity among school children, the Prof M. Viswanathan Diabetes Research Centre has launched a Slim & Fit Campaign. The children and their parents have been advised about healthy lifestyle, dietary

modification and psychological counselling is given to assist them in reduction of weight. The DRC staff visit these schools periodically for monitoring the physical health of the students, counseling, etc.

The approximate cost for this campaign to cover FIVE schools for ONE Year is estimated to be Rs. 1Lakh. A donation of Rs 5 Lakhs will enable us to cover 25 schools.

We seek your generous help to take this initiative to more and more schools and make our children fit and confident to face their future.

Your contribution will be entitled for income tax exemption under Section 80G.

Strategies for enjoying the desserts

- Even after eating sweets, he/she has to substitute small portions of sweet for other carbohydrates containing foods in the meals and snacks. (i.e. if a person wants to have desserts in a meal, then he should replace any other carbohydrate content of his meal. The total amount of carbohydrate ingested during the meal will remain the same.
- Eat a small serving of the favorite dessert, instead of something common.
- Satisfy your sweet tooth with fresh or dry fruits.
- Share desserts with your friend or family member.
- Reduce the amount of sugar or fat in your favorite recipes.
- Choose low calorie and low fat desserts.

When you have type 2 diabetes, the best dessert options are the least processed, so instead of limiting your dessert options to traditional sweets, broaden your definition to include raw or baked fruit. Raw fruit tends to be low in fat, high in fiber, and naturally sweet. Baking raw fruit, concentrates the natural fruit sugars producing an even sweeter taste while retaining the other wholesome qualities of the fruit. Fruit that is in season tends to be tasty, reasonably priced, and easy to “dress up” with simple ingredients.

Tips for making Diabetes-Friendly Desserts

Palm Fruit (Nungu) Sago Payasam (Serving size 8 cups)

Ingredients

- 100gm Nungu • 50 gm sago – soaked in water • 25 gm Vermicelli • 500ml milk • 2 cups water • 3 crushed green cardamom • 25 gm cashews • 10 gm almonds • 2 tsp ghee • sugar free- as required • saffron – little • salt-a pinch



Directions

1. Heat ghee in a pan and fry vermicelli, cardamom, crushed cashews, almond pieces and keep it aside.
2. Boil milk in the pan and add water, sago, vermicelli and cook well.

3. When sago and vermicelli is cooked, add little saffron.
4. Add crushed nungu.
5. Turn off the flame and mix the sweetener as required.
6. Refrigerate for 20 mins and serve chilled.

Nutritive values per serving :

Energy	Fat	Protein	Carbohydrates
101 kcal	4.1 gm	3.4 gm	15.4 gm

FRUIT and VEG PEEL HALWA (Serving size: 4 cups)

Ingredients

- Apple peel ½ cup • Mango peel ½ cup
- Carrot peel ½ cup • Beetroot peel ½ cup
- Tomato peel ½ cup • Milk 200 ml
- Wheat flour 2 tbsp • Ghee 2 tsp
- Almonds 25gm • Sugar free as required



Directions

1. Grind all the peel together in the mixer with 2 spoons of milk.
2. Heat kadai and add remaining milk and bring into boil.
3. Add ground peel mixture into boiling milk and mix well.
4. Add wheat flour and ghee little by little and cook until the mixture leaves side of the kadai.
5. Turn off the flame and mix the sweetener as required.
6. Garnish with chopped almonds and serve cold.

Nutritive values per serving:

Carbohydrates	Protein	Fat	Energy
15.4 gm	3.4 gm	4.1 gm	101kcal

1 cup= 150ml

Note:

One cup of dessert can be substituted for one cup of rice or one chapatti or 50-100g of fruit. But not on a regular basis, as it has too much of sweetener.

News And Events

A camp was conducted together with Freedom Trust for diabetic foot amputees, at the hospital auditorium on 22 June 2010. In this camp the amputees were given free artificial limbs.



MVH @ Media

16 FROM THE SOUTH
Strategies to prevent diabetes require more allocation, says study

Chennai: With rising costs of Diabetes predicted to reach the 1000 billion mark (in Rupees), diabetologists stress the urgent need for policy makers to allocate resources for strategies to prevent diabetes and manage its complications. Extrapolating direct and indirect estimates to the Indian population based on a survey, it was predicted that the annual costs (both direct and indirect) for diabetes in 2010 would be Rs.1,541 billion. A direct cost of Rs.1,241 billion (83%) was predicted in the recent paper published in the journal of Diabetes Research and Clinical Practice by Shobana Tharakar, Arutselvi Devanarajan, Satyavani, Kumpala Arangan, Vijay Viswanathan et al. The study also highlights the need for policy makers to allocate resources for strategies to prevent diabetes and manage its complications. An earlier WHO report predicted that by 2025, 427 million people will be affected by diabetes. A total of 10 million were reported in India.



Do not make the mistake of assuming that diabetes is an illness that only adults need fear. Dr Vijay Viswanathan explains that even children can become victims, if not properly cared for...

Chennai: About 50 per cent of patients paid with mortgaged property and loans at high rate of interest. Further, Dr. Vijay said the economic costs of unmet diabetes are beyond the scope of the study, and underestimate the real burden. In 2008, an article in the Indian Journal of Endocrinology and Metabolism by Dr. Vijay and Dr. K.M. Venkatesh said that the economic cost of diabetes in India was estimated to be around Rs.4,970 crore. Simultaneously, the increased hospital admission rates and increased duration of diabetes had an effect on increasing the cost. Dr. Vijay explains that diabetic patients with poor glycemic control had indirect costs three times higher than those with good control, stemming from more losses in productivity and income. It is no secret that India is among the nations with the highest per capita out-of-pocket spending on health care. This study established that the expenditure of patients for treatment and management of diabetes in India increased monthly through the year.

Diabetes in Children
The organs affected by uncontrolled diabetes are the eyes, the kidney and the heart, as well as the brain. Previously, the onset of diabetes meant a wide range of associated complications were around the corner. A sedentary lifestyle and abnormal eating patterns can lead to resistance in the production of insulin, a condition that will, gradually, lead to over diabetes and cardiovascular disorders. Studies suggest that both school students and young adolescents are overweight. The prevalence of obesity-related disorders was more noticeable in girls than in boys of the same age group. In addition, there is also an alarming growth in cholesterol levels and insulin

Children show the way in overcoming fear of diabetes
Oratorical contest for those with juvenile diabetes held



EXHIBING CONFIDENCE: T. Manjushree of Vijayawada speaks on juvenile diabetes at a function organized by MV Hospital for Diabetes, Rajapet, on Monday.

Chennai: The world did not come to an end for T. Manjushree (13) of Tirunelveli who was diagnosed as having Type 1 insulin-dependent diabetes three years ago. "Diabetes is not scary if we take insulin and eat diet regularly. I take sugar-free chocolates and eat fruits," she said. "I am hale and healthy now," she said. According to N. Sri Radhakrishnan (13), who was diagnosed with diabetes at the age of two, being diabetic is not "diabetes is a boon, not a curse." A school topper in Class X, she aims and plans to take up medicine to help people with diabetes.

India to spend \$32bn on diabetes care in '10: Study
New Delhi: A study on the financial burden of diabetes on the common man in the country has found that 60% of diabetics — irrespective of their socio-economic status — pay out-of-pocket for the expenditure incurred for treatment and management of the disease from their personal savings. The study, titled 'The Socio-economic burden of diabetes in a Developing Country: A Population-based Cost of Illness Study', conducted by the MV Hospital for Diabetes and Diabetes Research Centre in Chennai, says the direct economic cost of payment made by patients or making loans with interest rates as high as 30%. The situation is especially acute for those patients whose monthly income is Rs 30,000 or less. Around 60% of them have to mortgage or sell their property just to keep their blood sugar level under control. While among the rich, around 37% have empty pockets but to finance their treatment while dipping into their savings. Those with a monthly income between Rs 10,000 and Rs 30,000, 72% pay from their savings, and 17% take loans to pay for their treatment. Published in the 'Diabetes Research and Clinical Practice' — a specialist journal of the Indian Diabetes Federation (IDF) — the study reveals that 81% of the higher income group pay their medical bills from their personal savings. Through health insurance coverage was observed only among the high income group, the figure was 40% in a study of 25%. With a sample size of 4,477 — of which 1,000 had diabetes — the study makes an important finding into the financial burden. On an average, a diabetic in India spends Rs 20,000 annually on diagnosis and treatment of the ailment, and its attendant complications. These will increase to Rs 30,000 in 2025 in India, according to the study.