Inauguration of M.V. Centre for Diabetes at Bangalore

M.V. Hospital for Diabetes, Royapuram, Chennai, an ISO 9001:2000 certified institution and WHO collaborating centre for research, education and training in diabetes, established since 1954, is a pioneer in diabetes care. It was a moment of pride and great pleasure for the management and staff of M.V. Hospital as the Bangalore centre was the first branch that was opened outside Tamil Nadu.

Sri Veeranna Mathikatti, Chairman, Karnataka Legislative Assembly presided over the function. Justice Ramamohan Reddy, Judge, High Court of Karnataka was the chief guest. Sri Thangaraj, Principal Secretary, Urban Development, Government of Karnataka and Sri K. N. Subba Reddy, Ex. MLA were the guests of honour.

The chief guest Sri K. N. Subba Reddy, Ex. MLA is seen lighting the lamp at the inaugural function. Towards his left is Justice Ramamohan Reddy, Judge, High Court of Karnataka, towards his right Sri Veeranna Mathikatti, Chairman, Karnataka Legislative Assembly, Sri Thangaraj, Principal Secretary, Urban Development, Govt. of Karnataka, and to the extreme right is Dr. Vijay Viswanathan, Managing Director, M.V. Hospital for Diabetes, Royapuram, Chennai.

Dr. Vijay Viswanathan addressing the gathering during the inauguration of M.V. Centre for Diabetes at Bangalore on 10th April 2009.

The facilities available at the Bangalore centre are shown on page 12.
Dear valued reader,

The latest issue of Crusade focuses on different aspects of diabetes.

Articles featuring summer care for diabetics and skin care will help you in managing diabetes during this hot season.

Scientific articles on diabetes related to stroke, thyroid dysfunction and stem cell are informative and likely to improve the knowledge of the readers.

The other news and activities of M.V. Hospital for Diabetes, are also shared.

I have started a new column “letters to the editor”, where in you can send your queries /comments or doubts regarding diabetes for information and clarification.

I hope this issue is interesting and will help you to understand diabetes better.

Please send your comments to me at

drvijay@mvdiabetes.com

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Dr. Vijay Viswanathan,
MD, Ph.D., MNAMS, FRCP (London)
Managing Director
MV Hospital for Diabetes
A person with diabetes is at a higher risk than others for developing stroke and other cardiovascular diseases. The A1c is a test that measures blood sugar levels over the previous months. The American Diabetes Association says that “people with A1c levels above 7 are nearly three times more likely to develop a stroke than people with an A1c level below 7.”

Persistently elevated blood glucose levels contribute to the buildup of plaque in blood vessels. Plaque – a pasty substance made up of cholesterol, calcium, cellular waste and protein – sticks to the walls of blood vessels and can interfere with blood flow. This impaired blood flow can lead to a stroke.

For those with diabetes, the important thing to do when it comes to reducing stroke risk is to keep blood sugars within the target range. Controlling blood glucose levels will help minimize plaque buildup.

**What is a Stroke?**

A stroke involves blood vessels and the brain. “A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot [ischemic stroke] or bursts [hemorrhagic stroke]. As a result, part of the brain cannot get the blood and oxygen it needs, so it starts to die.”

Strokes happen suddenly and require immediate medical attention. Treatment within 60 minutes of the first symptoms often leads to a good prognosis. If deprived of oxygen for more than a few minutes, brain cells begin to die. The longer the stroke lasts, the greater the damage to the brain.

Transient ischemic attacks (TIAs) are a form of mini-stroke. The symptoms are the same as for a full-blown stroke, but they don’t last long – often only a few minutes to an hour. TIAs are warning signs that a bigger stroke could follow.

**Symptoms of Stroke**

Sudden onset of any of the following warning signs of a stroke warrants an immediate call to emergency medical personnel:

- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache with no known cause

**Risk Factors for Stroke**

A family history of heart disease increases stroke risk, as does being over the age of 55. Other risk factors for stroke include:

- Elevated blood pressure causes the heart to work harder and is one of the primary risk factors for stroke. Blood pressure readings lower than 130/80mm Hg is recommended.
- Increased abdominal fat (“apple shaped”) is a risk factor for stroke. According to the Indian Standards, men’s waist measurements should be less than 90 cms and women’s should be less than 85 cms.

- The so-called “bad” (LDL) cholesterol contributes to plaque buildup. The goal is less than 100 mg/dl (milligrams per deciliter). “Good” (HDL) cholesterol helps remove plaque, and its optimum levels should be kept above 40 mg/dl. High triglycerides also lead to more plaque. Those levels should be less than 150 mg/dl.
- Smoking. In addition to numerous ill effects on health, smoking narrows blood vessels and speeds the process of plaque buildup, giving clots more chance to form.

**Ways to Reduce Stroke Risk**

The following steps will help reduce the risk for stroke:
• Good glucose control within the target range. Maintaining Regular Self Monitoring Blood Glucose (SMBG) – provides information that helps your doctor to determine the right dosage for you and make adjustments as needed over time. Goals – fasting: 100 – 120 mg/dl, Post Prandial Blood Sugar (2 hours after meals): 140 – 160 mg/dl.

**Recommendations**

• Control blood pressure with exercise or medication

• Eat a heart-healthy, low-fat diet rich in fruit, vegetables and whole grains

**Insulin Pump**

**What is an Insulin pump?**

An insulin pump is a battery powered, computerized device about the size of a pager which delivers insulin subcutaneously as programmed.

**What are its parts?**

Inside the pump is a vial of insulin with a gear-driven plunger. A thin tube 21-43 inches long is attached to the pump. At the other end of the tube is a needle or catheter.

**How should it be inserted?**

You can insert the needles or catheter under your skin, usually in your abdomen or thigh. Insulin is delivered through the tube and catheter into your body.

**How should it be programmed?**

You can program the pump as per how much insulin you want and when you want it. It can be programmed to give you tiny amounts of insulin continuously throughout the day and night (basal), just the way a normal pancreas would and extra insulin just before you eat (Bolus).

**When should it be worn?**

You can wear an insulin pump all the time. It can be kept inside or outside the clothes. The pump can be removed during showers. If you have the pump off for more than one hour, you may need an injection of insulin.

You can carry out all your regular work with the pump. Blood sugar should be checked every day. It’s mandatory.

• Exercise daily to help lower cholesterol and control blood glucose levels

• Try to achieve an ideal body weight

• Ask your doctor about beginning an aspirin regimen if required

• Quit smoking

**What can the pump do for you?**

1. **Get your blood glucose level closer to normal:** It works better than insulin injections in controlling blood glucose.

2. **Smooth out blood glucose swings:** The wide variations in blood sugar levels can be avoided.

**Indication**

Takes care of night time lows and morning highs: Body needs less insulin at night and more at dawn. Only with insulin pump, the rate of flow of insulin can be adjusted according to the needs.

**BE AWARE**

**Ketoacidosis**

There is a rare chance that an insulin pump may get blocked and may not deliver insulin. This can cause ketoacidosis - a dangerous build up of ketones in blood. That is the reason why patients on insulin pumps are advised to check blood sugar daily.

**Infection**

The place where the needles or catheter enters your body may become infected. To lessen the chances of infection, clean the area before you insert, and change the site of injection every 48 hours.

**Skin allergy**

Some people may develop an allergic reaction around the catheter. In such cases a non-allergenic tape or Teflon catheters can be tried.

Anujiji, M.Sc.
Diabetes Counselor

Dr. M. Deepa, M.B., B.S., FIDRC
Diabetes can affect every part of your body – including the most exposed tissue – your skin. Fortunately, many skin problems can be prevented or treated easily if caught early.

Skin can be kept healthy by following these tips:

**Bathing**
- Use a moisturizing soap, but avoid bubble baths.
- Use warm (not hot) water while bathing.
- Bathe less during cold (dry months.)
- Dry your skin well and use talcum powder to minimize friction between contact areas of skin.

**Moisturizing**
- Drink at least eight glasses of water each day.
- Apply lotion to your skin after bathing, but don’t use it between the toes.

**Avoiding Injury**
- Treat cuts right away. Wash minor breaks with soap and water.
- Do not use antiseptic, iodine or alcohol, as these can be too harsh.
- Always wear soft foot wear at home.
- Check for injuries every day -- especially on your feet.

**DIABETES GUM DISEASE & DENTAL CARE**

People with diabetes are more than twice as likely to have gum disease as people without diabetes. Both gum disease and gum infection are common in people with diabetes. In fact, nearly one-third of people with diabetes have severe periodontal disease. The key is to have regular dental checkups as well as a good home-care program.

**Types of Gum Problems in Diabetes**

In addition to tooth decay and gum disease, you may experience other problems which occur more often in people with diabetes.

**Thrush** or oral candidiasis is a fungal infection in the mouth that causes white or red spots on the tongue. It may cause soreness or a burning sensation in the mouth and may be the result of an increase in the amount of sugar in the saliva. Your dentist may prescribe an antifungal medication for treatment.

**Dry mouth** (also called xerostomia) is uncomfortable, painful and leads to infection and tooth decay. Your dentist may recommend a saliva substitute, as well as fluoride treatments to help prevent tooth decay. You can help by using sugarless gum or a mint, taking frequent sips of water or using ice chips. Restrict coffee and alcohol consumption.

**Preventing Gum Disease**

Gum disease is completely preventable. For healthy teeth and gums, make sure you do the following
- Brush your teeth twice a day with fluoride toothpaste.
- Follow the correct brushing techniques.
- Floss daily.
- Have a regular dental examination.
- Tell your dentist that you have diabetes.
- Eat a well balanced diet.
- Keep your blood sugar in good control.

M. Indhumathy B.Sc., PGDND, MBA
Dept. of Education
Summer is here! And all of us probably want to chill out, eat and rest. With all those summer family reunions coming up, you have to keep your eating habits under control! Eating healthy even while on vacation is a key step to staying healthy, looking great and most importantly, keeping your diabetes under control.

**Here are some tips on how to eat healthy and still enjoy all the foods that summer has to offer.**

- At a summer buffet, start by scanning the table to see what’s available. Fill up your plate with vegetables and whole grains. If there are meat dishes, limit your portion. Choose lean meats, poultry or fish instead of high fat meats, such as barbequed ribs. Choose grilled chicken (remove the skin) instead of something fried.

- Look for high-fiber food, such as dried beans and peas, lentils and dark green vegetables such as broccoli, cabbage, spinach and kale. Dishes with green beans, black beans and black-eyed peas, are always good choices, as are whole grain foods such as brown rice, whole wheat bread and pasta.

- Watch out for those fatty foods! Avoid dishes with a lot of mayonnaise, sour cream and butter. Choose veggies that are light on dressing and cheese. For fun, try making your own dressing with a little olive oil and vinegar. If you make a sandwich, use whole wheat bread.

- Don’t forget dessert! Dessert is a great opportunity to get in some of your daily fruit intake. Everyone – including people with diabetes – need three to four servings of fruit a day. Fruit is an excellent source of fiber, vitamins and minerals, and has zero fat. Those pies and cookies taste good, but have a lot of fat and cholesterol and not much nutrition. So, try to stick to the good stuff! If you can’t resist, have a small serving. Take your medication regularly and do not alter the dose. Recommendations for fruits: refer “portion control” under article “managing your weight” in page number 7.

Summer is a time to enjoy life with family and friends. It’s also a great time to refocus on feeling better, eating healthy, and controlling your diabetes, for life!

Hemalatha, M.Sc.
Clinical Trial Department

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**Thyroid Dysfunction in Diabetes**

Thyroid dysfunction is common in the general population and the prevalence increases with age. The assessment of thyroid function is both reliable and inexpensive. Screening for thyroid dysfunction is indicated in certain high risk groups. Hypothyroidism is the most common thyroid disorder in adult population.

Diabetic patients have a higher risk of thyroid disorders compared with the normal population. The presence of thyroid dysfunction may affect diabetes. Hyperthyroidism is typically associated with worsening glycemic control and increased insulin requirements. In practice, there are several implications for patients with both diabetes and hyperthyroidism.

Symptoms of hypothyroidism in people with type 2 diabetes are:

- Fatigue
- Weight gain
- Feeling cold and dry skin
- Heavy menstrual cycles
- Constipation and a slow down in the thought process.

Sub clinical hypothyroidism is defined as characterised by a normal serum-free thyroxin level and elevated serum thyrotropin. Hypothyroidism is accompanied by a variety of abnormalities in plasma lipid metabolism, like elevated triglycerides and low density lipoprotein, metabolic dysfunction and obesity, hypertension and insulin resistance. This in turn further increases the risk of coronary artery disease.
Sub clinical hyperthyroidism is associated with an increased risk of atrial fibrillation and increased cardiovascular mortality. Tri iodo thyronine increases cardiac output by affecting tissue oxygen consumption, vascular resistance, cardiac contractility and heart rate. Thyroid hormone increases blood volume, as a result of the decrease in systemic vascular resistance and a fall in effective arterial filling volume. Tachycardia is common at rest.

The hemodynamic changes typical of hypothyroidism are opposite to those of hyperthyroidism. The most common signs are bradycardia, hypertension narrowed pulse pressure.

Pericardial effusions and myxedema can occur in patients with severe longstanding hypothyroidism and result in accelerated atherosclerosis and coronary artery disease.

In conclusion thyroid hormones have a both direct and indirect action on the cardio vascular system. Thyroid function should therefore be assessed. Thyroid dysfunction is common in diabetic patients and can produce significant metabolic disturbances; therefore regular screening for thyroid abnormalities in all diabetic patients will allow early treatment of sub clinical thyroid dysfunction.

Meerza Rafi
Dept. of Biochemistry

Managing Your Weight
Portion Control

One of the most difficult tasks many of us have in managing our weight is controlling the amount of food we eat. Here are some practical food measurements you can use everyday without a measuring cup or a scale.

Too often we sit at the table and enjoy a delicious meal only to end up pushing away from the table over-stuffed and miserable.

When I was a child, my grandfather used to joke about building his biceps by pushing himself away from the table on a regular basis. While this specific exercise may not have contributed to his sculpted arms, it definitely played a role in shaping his fit physique. The downside to this practice is that it made for fast meals that lacked in conversation and relaxation.

Many of us use mealtime, especially dinner, as a time to relax, visit and catch-up with family and friends. Eating and quickly excusing yourself from the table in a matter of minutes just wouldn’t be appropriate, or polite. Instead, we need to practice control... more specifically portion control.

I realize from first-hand experience that controlling the amount of food you eat is not always an easy task. Here’s a practical way to keep tabs on the amount of food you’re eating, since most of us don’t measure or weigh our food on a daily basis.

- One serving (one-half cup) of fruit, vegetables, pasta or rice is about the size of a small fist.
- One serving (one ounce) of cheese is about the size of your thumb.
- One serving (one cup) of milk, yogurt, or chopped fresh greens is about the size of a small hand holding a tennis ball.
- One serving (three ounces) of meat, poultry or fish is about the size of a deck of playing cards or the palm of a woman’s hand.

The Power of the Pyramid

The Food Guide Pyramid is an easy way to design a healthy eating plan that will ensure your body gets the daily nutritional requirements it needs. Just to refresh your memory, here’s what you need to eat each day:

- Cereal, Rice, Chapati, Bread and Pasta: 6-11 servings a day
  1 serving = 1 slice of bread; 1 oz. dry cereal; 1/2 cup cooked cereal, rice or pasta. (oz = ounce)
- Vegetables: 3-5 servings a day
  1 serving = 1 cup raw leafy greens, 1/2 cup any chopped vegetable, 3/4 cup veggie juice.
- Fruits: 2-4 servings a day
  1 serving = 1 medium apple, banana, or orange; 1/2 c chopped fruit or berries; 3/4 cup fruit juice.
Introduction

For decades, diabetes researchers have been searching for ways to replace the insulin-producing cells of the pancreas that are destroyed by a patient’s own immune system. Now it appears that this may be possible. Each year, diabetes affects more people and causes more deaths than breast cancer and AIDS combined.

Research on stem cells is advancing knowledge about how an organism develops from a single cell and how healthy cells replace damaged cells in adult organisms. This promising area of science is also leading scientists to investigate the possibility of cell-based therapies to treat disease, which is often referred to as regenerative or reparative medicine.

Stem cells are one of the most fascinating areas of biology today. But like many expanding fields of scientific inquiry, research on stem cells raises scientific questions as rapidly as it generates new discoveries.

**Diabetes type 1**

The autoimmune reaction of the body to the pancreatic beta cells in the Islets of Langerhans and the resulting destruction of these beta cells, cause an immediate insulin deficiency, resulting in type 1 diabetes.

Diabetes mellitus type 1 is a degenerative disease, which is traditionally treated using insulin injections. These injections replace the missing hormone, but the complications can be far-reaching. Hyperglycemia is a common contributor to a number of complications like:

- Heart and vascular diseases
- Eye and kidney complaints
- Poor vascularisation
- Damage to nerve cells (neuropathy)
- Diabetic feet
- High susceptibility for infections
- Erectile penile dysfunction

**Diabetes type 2**

Type 2 diabetes used to be known as maturity onset, or non-insulin dependent diabetes. Although type 2 diabetes typically affects individuals over the age of 40, today it occurs at an increasingly younger age, especially in people who have a family history of diabetes.

Diabetes mellitus type 2 is the most common form, affecting 85 - 90% of all people with diabetes. Experts estimate that nearly one-third of people who have type 2 diabetes don’t even know it. If the condition is left uncontrolled, the consequences (like with diabetes type 1) can be life threatening.

**A. What are stem cells and why are they important?**

Stem cells have two important characteristics that distinguish them from other types of cells.

- They are unspecialised cells that renew themselves for long periods through cell division.
- Under certain physiologic or experimental conditions, they can be induced to become cells with special functions such as the beating cells of the heart muscle or the insulin-producing cells of the pancreas.
What are adult stem cells?

Adult (Somantic) stem cells are unspecialized cells that are found in different parts of the body and, depending on the source tissue, have different properties.

- **Adult stem cells** are capable of self-renewal and give rise to daughter cells that are specialized to form the cell types found in the original body part.

- **Adult stem cells** are multi-potent, meaning that they appear to be limited in the cell types that they can produce based on current evidence. However, recent scientific studies suggest that adult stem cells may have more plasticity than originally thought. Stem cell plasticity is the ability of a stem cell from one tissue to generate the specialized cell type(s) of another tissue. For example, bone marrow stromal cells are known to give rise to bone cells, cartilage cells, fat cells and other types of connective tissue (which is expected), but they may also differentiate into cardiac muscle cells and skeletal muscle cells (this was not initially thought possible).

Adult stem cell therapy with autologous stem cells (originating from your own body and being reimplanted) fights type 1 and type 2 diabetes at its roots, reducing hyperglycemia and consequently the above mentioned complications.

The stem cells are first collected from a patient’s bone marrow, extracted from the hipbone then implanted back into the body days later. Prior to re-implantation of the cells, the bone marrow is processed in the labs, where the quantity and quality of the stem cells is also checked.

These re-injected stem cells have the potential to transform into multiple types of cells and are capable of regenerating damaged cells such as pancreatic beta cells.

With continued efforts and rigorous assessments, hopefully the potential of generating enough new cells from stem cells will be realized in the not too distant future, thus providing a total cure of diabetes.

Hajira Parveen M.Sc.,
Clinical Trial Department
Since the doctor population ratio is alarmingly low in India, the diabetes burden is huge both on the patient as well as the health care providers. With a goal of enlightening the general practitioners in primary prevention of diabetes, M. V. Hospital for Diabetes and Diabetes Research Centre initiated a training programme to the doctors serving in Government sector and Corporation of Chennai, in 2008, in association with Government of Tamilnadu. So far around 500 doctors have been trained in the prevention of diabetes. The training has been completed in Chennai, Vellore and Villupuram Districts.

The Chennai slim and fit programme – a major initiative for prevention of childhood obesity and diabetes among school children was launched on 11th November 2008. This programme is being extensively covered in many CBSE schools for school children, parents and teachers. Detailed lectures on healthy living are given by dietitians. Motivation to follow healthy lifestyle and one to one psychological counseling is done by expert counselors. Yoga demonstration is given by the yoga expert for maintaining optimum weight.

**Primary Prevention of Diabetes**

School children in the class room after listening to the lectures on primary prevention of childhood obesity

Dr. Mohan (Pediatrician) is seen examining a child during the programme

Parents, Children and school teachers listen to a lecture on healthy life-style habits

Yoga demonstration as a measure to prevent obesity by the yoga specialist

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CRUSADE 10 APRIL 2009

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Chennai Slim and Fit Programme
Every year Prof. M. Viswanathan Gold Medal Oration and DRC (Diabetes Research Centre) Gold Medal Oration are awarded to great eminent doctors. This year the 2008 Gold Medal Oration was awarded to Dr. N.K. Shethi, Advisor of Health Planning Commissioner of India, New Delhi, and to Dr. V. Kashinath, Prof. of Medicine, University of Texas, USA. The Chief guest Dr. S. Elango (Director of Public Health and Preventive Medicine, Govt. of Tamilnadu) conferred the Lifetime Achievement Award on Dr. Munichoodappa, Physician and Diabetologist and Managing Director of Bangalore Hospital and to Dr. Vinod Kumar Sahai, Senior Consulting Physician and Diabetologist from Hyderabad.

Convocation of Fellowship Certification in Diabetology

The Tamilnadu chapter of IMA in association with the M.V. Hospital for Diabetes started the one year distance education programme in Diabetology in 2008. Around 301 general practitioners across all the districts of Tamilnadu had registered in the programme in the first batch. To facilitate the participants classes were held at four centres-Chennai, Madurai, Nagercoil and Erode.

The course was successfully completed and the convocation was held recently at Hotel Savera.

The certificates were issued by Dr. Thanikachalam, Director Cardiac Unit, SRMC.
Dr. Vijay Viswanathan, was invited as a Guest Lecturer at “Diabetic Foot Global Conference” (DFCON) held at Los Angeles (USA) between 19th March and 21st March 2009.

Dr. Vijay Viswanathan was awarded Vocational Excellence Award by Rotary Club of Adyar, Chennai on 24th March 2009.

M.V. Centre for Diabetes, Bangalore offers the following facilities.
- Diabetes care and education
- Diabetes Heart evaluation
- Preventive diabetes foot care (podiatry)
- Diabetic eye care
- Appropriate dental care for diabetic patient
- Diabetes Neuropathy clinic
- State-of-the-art Diagnostic lab
- Special Diabetes counselling
- Nutrition and diet Counselling
- Impotence clinic
- Weight Management Clinic
- Obesity and Lifestyle Counselling
- Pain Clinic for special problems in Diabetic patients like frozen shoulder
- Special yoga classes for diabetes control
- Dia-Shoppe with products and medicines for diabetes treatment.

Mr. Arun (Bangalore)
Q. Is Oral form of insulin (oral insulin) available in India?
Ans: Yes, it is available now. It will be launched soon within two months in India by a leading pharmaceutical company.

Mr. Senthil Kumar (Chennai)
Q. Are there any new drugs OHA (oral hypoglycemic agent) for type 2 diabetes management?
Ans: Yes, recently introduced drug named JANUVIA will aid in better control for type 2 diabetes management.