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# DIABETES MONITOR

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**Dr. Mohan's**<sup>®</sup>  
DIABETES SPECIALITIES CENTRE

WHO Collaborating Centre for Non-communicable Diseases Prevention & Control

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on behalf of DIRECT,  
a Charitable Trust for diabetes.

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## INAUGURATION OF 'DR. MOHAN'S DIABETES EDUCATION ACADEMY [DMDEA]



Inauguration of DMDEA by Dr. Meer Mustafa Hussain, Vice- Chancellor, Dr. MGR Medical University. Also in photo from left to right: Dr. Mayur Patel, Chairman YASH Diabetes Specialities Centre, Dr. M. Rema, Vice President, DMDEA, Dr. V. Mohan, President, DMDEA, Dr. S. K. Rajan, Chairman, Board of Studies for Higher Specialities, Dr. MGR Medical University, Dr. Ranjit Unnikrishnan, Dean, DMDEA

The burden due to diabetes is rapidly rising all over the globe, particularly in South Asia. Indeed, India already has the largest number of people with diabetes in the world (over 40 million in 2007) and this is expected to increase to 70 million by 2025. In order to provide world class diabetes care to millions of people with diabetes and to prevent its complications it is necessary to train large number of physicians, ophthalmologists and intensivists and paramedical personnel in the field of diabetes.

With this in view, **Dr. Mohan's Diabetes Specialities Centre (DMDSC)** - a world class centre for diabetes health care and the **Madras Diabetes Research Foundation (MDRF)** - a centre of excellence for Research & Education in Diabetes and its complications at Gopalapuram, Chennai formed the exclusive Institute for Education in Diabetes called '**Dr. Mohan's Diabetes Education Academy (DMDEA)**'. The mission of this Academy is "To provide world class training in the field of diabetes and its complications". The various education programs which are currently offered include **Fellowship in Diabetes-F.Diab** (programme for Doctors), **Fellowship in Diabetic Eye Diseases-FEDD** (programme for Ophthalmologists), and the **P.G. Certified Diabetes Educators [CDE] Course** (for nutritionists and dietitians).

On 15th September, 2009, Dr. Mohan's Diabetes Education Academy (DMDEA) was inaugurated by **Dr. Meer Mustafa Hussain**, Vice- Chancellor of Dr. MGR Medical University at the MDRF auditorium, at Gopalapuram, Chennai. In his inauguration address Dr. Meer Mustafa said that DMDEA is the first-of-its-kind in the country. He also said that the State and Central governments should consider developing a national-level diabetes control programme similar to those that were done for tuberculosis, malaria and leprosy and the awareness of diabetes should begin at school. He urged the Dr. Mohan's Diabetes Specialities Centre to set up separate wings to screen pregnant women between 22 and 28 weeks for gestational diabetes and for juvenile diabetics.



Dr. Meer Mustafa Hussain, Vice- Chancellor, Dr. MGR Medical University presenting Gold medal and certificates to the Best Outgoing F.Diab students [From top left-clockwise Dr. S. Chandra Mohan, Dr.Revale Jaydip, Dr.S.Subhashini and Dr.P.S.Jagadish]



During the inaugural function, the Convocation function was also organized for the fellows and students who have completed Fellowship in Diabetes (F.Diab), Fellowship in Diabetic Eye Diseases (FEDD) and P.G.Certified Diabetes Educators (PGCDE) Courses at our centre. The Vice-Chancellor, **Dr. Meer Mustafa Hussain** gave the gold medal and certificates to F.Diab students. **Dr. S. K. Rajan**, Chairman, Board of Studies for Higher Specialities at the University, commended the efforts of Dr. V. Mohan, and said that students should learn from their teachers qualities such as perseverance and team spirit. He lauded the team of our Centre for

the efforts taken to reach out to the poor in the community. He presented the certificates to PGCDE students.

**Dr. Mayur Patel**, Director of the diabetes centre in Ahmedabad and one of the senior and popular diabetologist of India,



Dr. Mayur Patel presenting the certificate to the Fellow in FEDD - Dr. Hemalatha, Consultant Ophthalmologist, DMDSC

inaugurated the alumni association of DMDSC. He also gave away certificates to FEDD students.



Dr. S. K. Rajan presenting certificate to Ms. Puspha Devi a PGCDE student

In addition to the courses already being conducted at our centre. DMDEA also has planned to start novel educational courses such as Diploma course for Podiatry related to diabetes, a Certificate Course for Diabetes Technologies, Diabetes Ophthalmic Assistants and Diabetes Physician Assistants”.





## Onam Ulshavam celebrated at Dr. Mohan's Diabetes Specialities Centre

Onam Ulshavam 2009 was celebrated at our centre with lots of fun and cheers on 31<sup>st</sup> August 2009. This year a Kerala food contest was conducted with enthusiasm by



Onam decoration at the centre

Dr. R. M. Anjana, Mr. N. Thanigaimani, Ms. S. Shalini, Dr. Saroja Raghavan, Dr. Radha Venkatesan, Ms. S. J. Parvathi, Ms. S. Ivy and Ms. Wendy Jacobi were the



Ms. Indra Thankappan inaugurating the food contest

our staff. There were also wonderful decorations with wonderful carpet of flowers and lamps.

Staff from various departments representing all branches of our centre participated in this contest. The participants were divided into 10 teams named after famous places of Kerala with 4 members in each team. The team members were dressed in traditional costumes of Kerala. Ms.Indira Thankappan was the chief guest and judge of the contest. Ms. Rekha Thankappan,

esteemed judges who scored the recipes on various criteria like presentation, innovation, planning and palatability. The delicious recipes prepared included Kappa Puzhungiyathu, Matthan Payyar, Malabar Biriyani, Kuzhalappam, Adai Prathamam, Unniappam, Ada, Vattaiyappam, Appam & Vegetable Stew and Pazham Niraichadu.

Adai Prathamam made by the Kozhikode team won the first place and Malabar Biriyani prepared by the Malabar team won the second place. Our Managing



## *Pulse : News & Events...*

Director, Executive Director, Directors and HODs encouraged our staff and distributed the gifts to the winners and participants. All

in all, it was a day replete with achievement, excitement, festivity and great bonding across DMDSC and MDRF family.

1st Prize Winners - Kozhikode team



2nd Prize Winners - Malabar team



## *Diabetes Management...*

### **SYMPTOMS AND DIAGNOSIS OF DIABETES**

#### **Key points:**

- ⌚ Diabetes mellitus is a chronic metabolic disorder characterized by elevated blood sugar levels.
- ⌚ 50% of patients with diabetes may not have any symptoms at all.
- ⌚ Being thirsty, weight loss, exhaustion, tingling hands and feet

and the frequent urge to urinate are some of the most common symptoms of diabetes.

Diabetes mellitus is a chronic metabolic disorder characterized by elevated blood sugar levels. This happens either due to defective insulin secretion or action or both. Insulin, a hormone produced by the body, helps in burning of glucose obtained



## Diabetes Management...✍

from food to give energy. There are two major types of diabetes, Type 1 and Type 2. Type 1 diabetes (earlier called juvenile-onset or insulin-dependent diabetes), usually develops in children or young adults. In this type, the body completely stops producing insulin.

In Type 2 diabetes (earlier called adult-onset or non insulin-dependent diabetes), the body produces some insulin, but it is not enough. Moreover there is insulin resistance. In other words, the available insulin does not work properly. In both types of diabetes, the signs and symptoms are similar.

### **Symptoms of diabetes :**

#### **These include :**

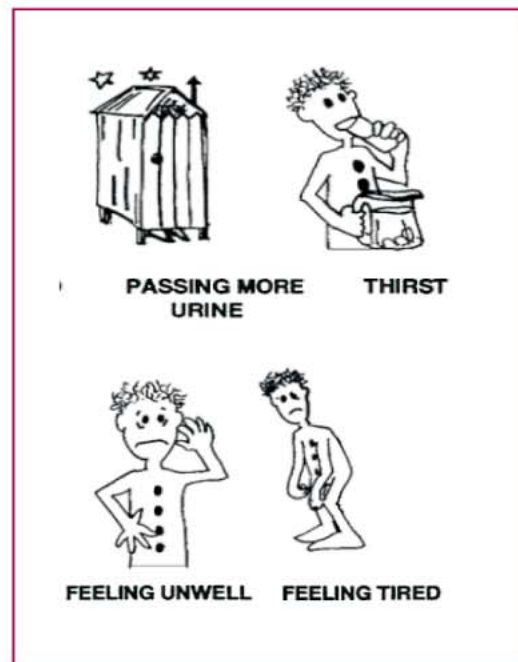
- Being very thirsty
- Frequent urge to urinate
- Weight loss
- Increased hunger
- Blurry vision
- Irritability
- Tingling hands or feet
- Skin, bladder or gum infections
- Wounds that don't heal
- Itching in the genital areas
- Extreme unexplained fatigue

It must be remembered, however that up to 50% of individuals with diabetes may not have any symptoms at all. Such cases come not only during routine investigations such

as master health checkup and pre-employment check-ups. In this case, people live for months, even years without knowing they have the disease. Often diabetes attacks so gradually that symptoms may not even be recognized.

### **Diagnosis of diabetes :**

Diabetes should be ideally diagnosed after an oral glucose tolerance test (GTT). This helps to pick up early stages of the disease. The test involves testing of fasting plasma glucose (FPG) and two-hour plasma glucose (2hr PG) after intake of 75 gms of glucose dissolved in water. The



diagnostic cut off for diabetes and the two “pre-diabetic stages” namely Impaired Fasting Glucose (IFG) or Impaired Glucose Tolerance (IGT) are given in the table below.











*Break the fast... Don't skip breakfast!  
Breakfast has health benefits!*

**Key points:**

- ✿ A daily breakfast may reduce the risk of becoming obese.
- ✿ Breakfast is known as the KING of all meals.
- ✿ Breakfast consumption compared to breakfast skipping may potentially play a role in mediating insulin sensitivity.

***Mom was right in saying that breakfast is the most important meal of the day.*** Researchers report that breakfast-eaters are far less likely to be obese or have diabetes or heart disease. A daily breakfast may reduce the risk of becoming obese or diabetic by 35% to 50% compared with skipping the morning meal, say researchers. Recent finding suggests that if you're trying to control or lose weight and lower risk factors of heart disease, not eating breakfast is not a good option. Unlike what most people may think, in trying to lose weight by cutting out foods, calories, and meals ... people who have breakfast in the morning do better. At the end of the day, they wind up eating fewer calories, and less saturated fat and cholesterol and have better overall nutritional status than people who skip the breakfast.

***What if you do not "listen to Mom" and skip breakfast?*** Well, your blood glucose will probably be just as stable as after a good meal, but the mechanism for this will be quite different. Instead of a hormone balance dominated by insulin and synthetic processes, skipping breakfast forces the body to call forward the stress hormones glucagon, adrenaline and growth hormone.

These rearrange metabolism such that lactate and amino acids are converted by the liver to glucose, so-called gluconeogenesis. We see that gluconeogenesis is quite active after about 10-12 hours after the last meal. Therefore, one's day should begin with a breakfast that includes carbohydrates. The glucose from these replaces the glycogen that is used while we sleep. When you skip breakfast, you are likely to become tired when your brain and body run slow on low fuel. By mid-morning, you tend to eat or drink something, may be unhealthy snacks. This might work for a few minutes, but by lunch time - you are hungry, crabby, and perhaps your mood might make you a little more prone to make unhealthy choices at lunch.

***There are a number of good reasons to eat breakfast.*** Breakfast is the first meal of our day after we wake up, and is also known as the KING of all meals – the most important one. Not only does breakfast provide us the energy to jumpstart our day, eating breakfast also plays an extremely crucial role in fat loss. In comparison to skipping breakfast, regularly eating breakfast is associated with a lower body mass index (BMI) in adults and children. Breakfast consumption may play a role in the management of lipid problems (dyslipidemia). Breakfast consumption compared to breakfast skipping may potentially play a role in mediating insulin sensitivity. Eating breakfast has been recently shown associated with lower visceral adiposity in overweight Latino youth. This study warranted the



## Diabetes Management...✍

interventions that focus on increasing breakfast consumption. Upon waking up, the stress hormones in our body (cortisol) are sky high. One function of cortisol is to convert proteins into blood glucose. Excess glucose gets converted into fats. Prolonged periods of skipping breakfast will result in a lot of our body muscles to be broken down and converted into fats. Result? You devolve into a lump of fat! Eating breakfast, will release carbohydrates into our bloodstream. Detecting the presence of excess glucose in our bloodstream, our body releases insulin and insulin will suppress cortisol levels. Hard to believe, but it is true: Sumo wrestlers' diet regimen includes skipping breakfast, in order to gain more weight and achieve morbid obesity.

**Breakfast linked to performance:** While nutritionists agree that breakfast is the most important meal of the day, it's fast becoming the most neglected meal of the day. In US, an estimated 12 percent to 34 percent of children and adolescents skip breakfast on a regular basis, a number that increases with age. The annual report of the International Food Information Council (IFIC) notes that only 49% Americans eat breakfast everyday. Although we don't have the estimates, the same trend is picking-up in India. "No time; don't feel like eating; want to lose weight" — these are the common excuses you hear from college students for not eating breakfast regularly. Children who reported eating breakfast on a consistent basis tended to have superior nutritional profiles than their breakfast-skipping peers. Evidence suggests that breakfast consumption may improve cognitive function related to memory, test grades, and school attendance. A study by Harvard University and Massachusetts General Hospital of children in Philadelphia and Baltimore showed that children who regularly ate breakfast had

better standardized test scores, better behaviour, and were less hyperactive than children who skipped breakfast. Skipping breakfast adversely affects menstrual disorders in young college students.

**Breakfast promotion in prevention programmes.** Breakfast is one facet of a healthy lifestyle that may help contribute to the short and long-term health and well-being of children and adolescents. Health practitioners can promote healthy breakfast consumption in children and adolescents by addressing barriers to eating breakfast and focusing on individuals who may be more likely to skip breakfast on a regular basis. It is important to mention here that some of the restaurants in US celebrate May as "Remember Breakfast" month and encourage people to sit down and eat breakfast. Parents should be encouraged to provide breakfast for their children or explore the availability of a school breakfast program. Considering the health benefits, breakfast consumption should be considered as one of the measures of prevention programs of non-communicable diseases.

**So what is take-home message?** Whether work at home, on the farm, at the office, at school, or on the road, it is not a good idea to skip breakfast. Eating a good breakfast sets the tone for the rest of the day. Start eating breakfast tomorrow, stop skipping it anymore!



**Dr. M. Balasubramanyam**  
Assistant Director & Senior Scientist,  
MDRF



# Hearty Congratulations

To



## **Our Chairman Dr. V. Mohan**

*who was unanimously elected as the Chairman of RSSDI, Tamil Nadu chapter, at the first General body meeting which was held in our centre on 14th August 2009. He has also been recently awarded with Prof. Sam G. P. Moses Novo Nordisk Oration Award 2009 by Association of Physicians of India, Chennai Chapter, and API Noida 2009 Oration by API Noida Chapter.*





## RAINBOW RICE

### Ingredients

Basmati Rice	- 100 g	Cinnamon Powder	- ¼ tsp
Onion	- 25 g	Cloves	- 2
Capsicum (Red, Yellow, Green)	- 75 g	Coriander leaves	- a few
Greens Peas	- 10 g	Green Chilly	- 2
Red Cabbage	- 25	Oil	- 2 tsp
Carrot	- 25 g	Salt	- to taste
Turmeric powder	-¼ ts		

### Method

Cook rice in a pressure cooker with cloves, turmeric & cinnamon powder. Cut vegetables into small pieces. Heat oil in a non-stick pan. Add slit green chilly, onion and turmeric powder. Fry till golden brown. Add

the vegetables and cook on a slow flame. Sprinkle little water. Add salt and boiled peas and stir for a minute. Mix with rice and garnish with coriander leaves. Serve hot with onion, tomato and sprouts raita.

### Nutritive value

Energy	- 248 Kcal	Fat	- 5.3g
Carbohydrate	- 44.8g	Portion size	- 1 bowl
Protein	- 4.8g	No. of serving	- 2



## SEVEN DAY SALAD

- DAY 1** : Finely cut onion, tomato, cucumber, steamed green gram sprouts with pepper and salt.
- DAY 2** : Finely cut green cabbage, onion, capsicum, grated carrot, boiled groundnut, ginger chilly paste, lime and salt.
- DAY 3** : Capsicum rings, shredded cabbage (green and red), finely cut tomato, onion, cucumber, baby corn, lime and salt.
- DAY 4** : Lettuce / coriander leaves, chopped onion, cucumber and tomato, steamed mixed sprouts, ginger chilly paste, dhanja jeera chilly powder and salt.
- DAY 5** : Finely cut onion, tomato, cucumber, raw mango/amchur powder, grated ginger, dhanja jeera chilly powder and salt.
- DAY 6** : Boiled corn, finely cut carrot, tomato, cucumber, capsicum, raw mango / amchur powder, dhanja jeera chilly powder and salt.
- DAY 7** : Chopped / grated salad vegetables, boiled mixed sprouts, raw mango / amchur powder and salt.



**Dr. Saroja Raghavan**  
HOD, Nutrition & Dietetics  
Dr. Mohan's DSC



## Staff Appreciation



**Mr. S. Palanivel** joined this organisation in the year 1993 as catering assistant and has rose to the post of senior catering assistant. His service to the organisation is commendable. He displays great service skills in meeting the targets

given to him. His overall contributions in activities relating to catering service of our canteen are indeed noteworthy and deserve special appreciation. He is a dedicated and hardworking person and sets example to his colleagues.



**Mrs. G. Aruna**, joined our institution as a Cashier in November, 1993 and now is the Manager of Cashiers. She is associated with our centre for nearly 16 years. She is a highly capable and adapts herself to whatever work that has

been assigned to her and gives her fullest contribution to it. Handling sensitive issues, with utmost caution and care, are excellent and praiseworthy. Her loyalty, commitment and dedication to the organisation are appreciable.



### Stress Management in Dr. Mohan's Diabetes Specialities Centre



**VIDYULATHA ASHOK,**  
Psychotherapist

*Those with psychosocial problems, increased stress or highly depressed and those with high sugar level can receive counselling from our psychotherapist to cope with the stress that arise during these critical situations. Patients can avail this facility to reduce stress.*

*Consultation Hours: 8.30 a.m to 4.00 p.m*





- 1. What is the main reason for the increase in type 2 diabetes among children?**
  - a. Inadequate prenatal care
  - b. Obesity
  - c. Lack of health insurance
  - d. Environmental toxins
- 2. The most common tests used to monitor diabetes are:**
  - a. Imaging tests
  - b. Electrocardiogram [ECG]
  - c. Blood tests
  - d. Nerve tests
- 3. What is causing the increase in obesity and risk of diabetes in children?**
  - a. Overeating
  - b. Favoring fatty, sugary and starchy foods
  - c. Lack of exercise
  - d. All of the above
- 4. What has the single biggest impact on a person's glucose (blood sugar) level?**
  - a. Diet
  - b. Exercise
  - c. Insulin
  - d. Smoking
- 5. Which of the following is a benefit of exercise?**
  - a. Helps to lose or maintain weight
  - b. Builds stronger muscles
  - c. Lowers the risk of illnesses
  - d. All of the above

Key: 1-b, 2-c, 3-d, 4-c, 5-d.



Your Questions, Answered...✍

## Frequently Asked Questions

### 1. How can I cut the fat in my diet?

**Ans:** Here are few tips to cut down fat in your diet:

- ❖ Fry foods in little amounts of oil
- ❖ Choose non fat or low fat selections, such as nonfat or 1% milk or low fat cheese
- ❖ Keep portion sizes on target
- ❖ Avoid fried foods
- ❖ Bake, grill, boil, steam or roast vegetables.

### 2. What are antioxidants and its benefits?

**Ans:** Antioxidants are substances or nutrients in our foods which can prevent or slow the oxidative damage to our body. When our body cells use oxygen, they naturally produce free radicals which can cause damage. Antioxidants act as “free radicals scavengers” and hence prevent and repair damage done by these free radicals. Free radicals contribute to development of heart disease, macular degeneration, diabetes, cancer etc. Antioxidants may also enhance immune defense and therefore lower the risk of cancer and infection.



**3. My father's blood sugar level when examined was 500. He has no history of high sugar earlier. What can be the cause of sudden rise in the sugar level? He is 55 years old and under medication for hypertension and low potassium level. His triglycerides are also very high.**

**Ans:** High blood sugar is most likely due to diabetes. He might have not had his glucose /sugar checked in recent months. Sometimes, diabetes is discovered when a person seeks medical help for another problem. Low potassium may relate to medication. You will have to check this with your doctor and high triglycerides are due to high sugar, so most important is to control sugar. In summary as per limited information you have given us, your father has most likely newly diagnosed diabetes and it is better for him to see a physician as soon as possible.

**4. I have diabetes for the past six years, I have numbness in my right foot, what test or examinations should be done?**

**Ans:** Neuropathy or nerve damage is a common complication of diabetes associated with considerable morbidity and mortality. It reduces the ability to detect sensations and predisposes an individual to injuries and trauma. Early detection of diabetic neuropathy can prevent or delay adverse outcomes such as lower-extremity amputations. Generally diabetic individuals should have their **foot examined frequently**, atleast once a year to detect neuropathy at the earliest. **Foot Pressure Distribution** should be measured in regions that are prone to get calluses and corns in the foot. This helps in designing special diabetic footwear that effectively redistributes the pressures thereby preventing the formation of calluses and corns in diabetic foot. Impaired vibratory threshold can be identified using a **biothesiometry**. This new diagnostic technique is quick, simple to perform and noninvasive and helps to detect and quantify early sensory loss in individuals with diabetes.

**5. What is cataract? Can people with diabetes get it?**

**Ans:** Many are under the impression that cataract is a growth or mass within the eye. This is not true. The natural lens within the eye is a transparent structure allowing light rays to pass through it. The lens loses its transparency and becomes opaque, preventing light rays from entering the eye. This is called as cataract. There are several causes for cataract which include old age, diabetes, Injury to the eye, due to certain drugs and since birth (congenital cataract). Cataract occurs at an earlier age in people with diabetes. Some of the diabetic individuals develop cloudy or smoky vision, once cataract develops. The usual type of cataract which occurs in diabetes is senile cataract, which occurs around the age of 50 in Indians and can be aggravated due to uncontrolled diabetes. It may also occur earlier in Type 2 diabetes mellitus because of the metabolic disturbances in the lens. If blood sugar is not under control, cataract can progress rapidly to the mature stage. If surgery is not done at this stage, then the cataract will progress into the hyper mature stage leading to increased pressure and pain in the eye.



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**Dear Readers, we invite your contributions to 'Diabetes Monitor' in the form of Diabetes related queries, anecdotes or personal experiences. Please send / email:**

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Diabetes Monitor



16

