

CRUSADE Against Diabetes

> VOLUME 34

> ISSUE 2



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

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4, West Mada Church Road, Royapuram, Chennai 600013, INDIA • Tel. 2595 4913-15, 2595 0711, 6561 2288, 6561 2299
Fax : +91-44-2595 4919 • E-mail : appointments@mvdibabetes.com • www.mvdiabetes.com • Toll Free No. : 18004250005

₹ 20/-

Presentation of the 1st Prof. M. Viswanathan National Award for Excellence in Medical Teaching and Medical Care and the DRC Gold Medal Oration 2011



Dr. R.D. Lele, *Honorary Chief Physician and Director of Nuclear Medicine at Jaslok Hospital & Research Centre, Mumbai* receiving the 1st Prof. M. Viswanathan National Award for Excellence in Medical Teaching and Medical Care from Mr. Mike Nithavrianakis, *British Deputy High Commissioner*. Also seen are Dr. J. Nagarathnam, *Chief Executive*, Dr. Vijay Viswanathan and Dr. S.N. Narasingan, *Dean, Prof. M. Viswanathan Diabetes Research Centre*.



Dr. Anoop Misra, *Chairman, Center for Internal Medicine, Fortis Hospitals, New Delhi* receiving the DRC Oration Gold Medal and Citation from Mr. Mike Nithavrianakis, *British Deputy High Commissioner*. Also seen are Dr. Gojka Roglic, *Responsible Officer, Non-Communicable Diseases, World Health Organisation, Geneva*, Dr. Vijay Viswanathan and Dr. S.N. Narasingan, *Dean of Prof. M. Viswanathan Diabetes Research Centre*

The first Prof. M. Viswanathan National Award for Medical Teaching and Medical Care was presented to Dr. Ramchandra Dattatraya Lele, Honorary Chief Physician and Director of Nuclear Medicine, Jaslok Hospital & Research Centre, Mumbai by Mr. Mike Nithavrianakis, British Deputy High Commissioner. The function was organized by M.V. Hospital for Diabetes and Prof. M. Viswanathan Diabetes Research Centre on Saturday, 17th March, 2012 at the Russian Cultural Centre, Chennai. The DRC Gold Medal Oration 2011 was delivered by Dr. Anoop Misra, Chairman, Center for Internal Medicine, Fortis Hospitals, New Delhi. The afternoon session was a Panel Discussion on Social Determinants of Diabetes in India : Building the

Web of Partnership for Prevention & Control of Diabetes. The Panelists for the discussion were, Dr. Anoop Misra, Dr. R.D. Lele, Dr. Chander Shekhar, Indian Council for Medical Research, New Delhi; Dr. B. Sesikeran, Director, National Institute of Nutrition, Hyderabad; Dr. Brajesh C. Purohit, Professor, Madras School of Economics; Dr. Jerard M. Selvam, Deputy Director, Non-Communicable Diseases (NCD) programme at the World Bank supported Tamil Nadu Health Systems Project, Chennai; Dr. Jaya Shreedhar, Adjunct Professor, Asian School of Journalism, Chennai; and Mahen Wijesuriya, Secretary, Diabetes Association of Sri Lanka.

From the Editor's Desk



Dr. Vijay Viswanathan

Dear Reader,

Greetings from M.V. Hospital for Diabetes and Prof. M. Viswanathan Diabetes Research Centre, Royapuram.

In this issue of *Crusade* you have some interesting topics such as Maturity Onset Diabetes in Young (MODY) which is a type of diabetes that is inherited in multiple generations.

There is an article on Glycemic Index and more information on the management of diabetes and its complications. This issue has some interesting recipes for this summer.

Wishing you a healthy and sweet life...

Regards,

Dr. Vijay Viswanathan,
MD, PhD, FRCP (London) FRCP (Glasgow)

Managing Director
M.V. Hospital for Diabetes (P) Ltd

Inside...

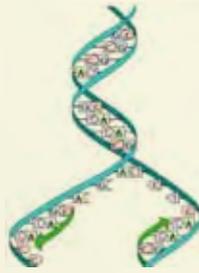
- MODY – Maturity Onset Diabetes in Young
- The Glycemic Index Diet – Part 1
- Probiotics for Diabetes Management
- Summer Food
- Diabetes Quiz – Stress & Relaxation

MODY is an acronym for Maturity Onset Diabetes of the Young

Dr. Mitalee Barman, *Consultant Diabetologist*
M.V. Hospital for Diabetes

Facts About MODY...

- ▶ **MODY is caused by a single abnormal gene. Gene mutations reduce the ability of the pancreas to produce insulin.** *This process leads to the high blood glucose levels characteristic of diabetes and, in time, may damage body tissues, particularly the eyes, kidneys, nerves, and blood vessels.*



- ▶ **MODY is a form of diabetes which is more likely to be**



inherited than other types of diabetes. *People with MODY typically have a family history of diabetes in multiple successive generations, i.e. it is present in a grandparent, a parent, and a child.*

- ▶ **MODY is not linked to obesity, and people with MODY are usually young and are generally not overweight.**
- ▶ **MODY shares some Type 2 diabetes symptoms.** *MODY is often not recognised and people may be treated as Type 1 or Type 2 diabetes. But people with MODY do not have other risk factors for type 2 diabetes, such as high blood pressure or abnormal blood fat levels.*
- ▶ **MODY sometimes remains undiagnosed until later in life.** *People with MODY may have only mild or no symptoms of diabetes and their hyperglycemia may only be discovered during routine blood tests.*

MODY has four main characteristics:

- ▶ Diabetes present *during adolescence or early adulthood*
- ▶ MODY occurs in families for several generations. A parent with MODY has a 50% chance of passing on

MODY to their child. This is called autosomal dominant inheritance. 50% of first degree relatives will inherit the same mutation giving them a >95% lifetime risk of developing MODY themselves. For this reason correct diagnosis of this condition is important.

- ▶ People with MODY do not always need insulin treatment and can often be treated with diabetes pills or meal planning alone.
- ▶ People with MODY do not produce enough insulin; this differs from Type 2 diabetes where people frequently produce lots of insulin but don't respond to their insulin.

You might have MODY if you have a strong history of diabetes in your family, and you developed diabetes before middle age, you are not overweight, and you are treated on meal planning alone, diabetes pills or on low doses of insulin (less than 0.5 units of insulin per Kg of body weight) more than 18 months after you were diagnosed with diabetes.

History

MODY was first described by Tattersall (U.K.) and Fajan (U.S.A.) in 1974, after they noticed a group of young people with diabetes who were being treated without insulin 2 years or more after diagnosis.

The first MODY gene was found in 1992 and there are now six known genes in which defects will cause MODY. These genes are for the body's **glucose sensor (glucokinase)**, and **five transcription factors that control the way insulin is produced from the beta cells of the pancreas (HNF-1 alpha, HNF-1 beta, HNF-4 alpha, IPF-1, and NEURO-D1)**. These six genes each produce slightly different forms of diabetes. 15% of MODY patients will not have a known MODY mutation; these people are said to have MODY X, and work is continuing to find the gene disorders responsible for it .

What are the different types of MODY?

The type of MODY is named after the gene of transcription factor affected.

MODY 1 – HNF-4 alpha – Familial, early onset diabetes, responds well to oral medication.

MODY 2 – Glucokinase gene – second most common type, maybe most common type in children, elevated blood sugars found during routine examinations or while evaluating for other reasons

MODY 3 – HNF-1 alpha – Most common type, Familial, early onset diabetes, responds well to oral medication.

MODY 4 – IPF1 Very rare, the digestive functions of the pancreas are impaired.

MODY 5 – HNF1beta Rare, can cause cysts in the kidneys.

MODY 6 – NeuroD Very rare.

Each type occurs due to a mutation in a different gene, and collectively MODY accounts for an estimated 1 to 5 percent of all diabetes. The estimate is rough because MODY is often misdiagnosed as Type 1 or Type 2.



What are the advantages of genetic testing?

To test for monogenic diabetes, DNA is isolated from a blood sample. The DNA is analyzed for changes in the genes that cause monogenic diabetes. Abnormal results can find out the gene responsible for diabetes in a particular individual.

Genetic testing can also be helpful in selecting the **most suitable treatment**.

Prenatal testing can diagnose these conditions in unborn children.

Most forms of monogenic diabetes are caused by **dominant mutations**, – the condition can be passed on to children even if only one parent is affected. On the contrary, in a **recessive mutation**, a disease gene must be inherited from both parents for diabetes to occur.

Testing for recessive forms of monogenic diabetes, is useful to find out if parents or siblings without disease are **carriers** for recessive genetic conditions that could be **inherited by their children**.

Genetic testing can confirm the diagnosis of MODY. By isolating the mutated gene, a doctor may be able to **modify treatment**. For example, some MODY subtypes don't require treatment with insulin and can be controlled with oral medications.

Screening is useful since MODY is **hereditary**; if one person in a family has it, there are likely to be others.

There are two general types of clinical presentation.

Some forms of MODY result in considerable hyperglycemia and also have the distinctive signs and symptoms of diabetes which are increased thirst and urination (polydipsia and polyuria).

But many people with MODY have no signs or symptoms and are diagnosed either by accident while testing for other reasons, or while screening relatives of a person discovered to have diabetes. Discovery of mild hyperglycemia during a routine glucose tolerance test for pregnancy is typical.

Advantages of Diagnosis

The goals of diabetes management are the same whatever the type may be but there are two important advantages of confirming a diagnosis of MODY.

Firstly, insulin may not be necessary for glycemic control.

Secondly, it may help identify other cases in family members.

As it occurs rarely, many cases of MODY are initially assumed to be more common forms of diabetes: Type 1 if the patient is young and not overweight, Type 2 if the patient is overweight, or gestational diabetes if the patient is pregnant.

Treatment

Immediate treatment and lifestyle changes may help prevent hyperglycemia and the connected complications. Treatment plans should be tailored according to the type of the disease. So it is important to distinguish between the types of MODY.

In certain types of MODY, diabetes complications can occur so the treatment is different.

MODY 1, 3, and 4

Here, the pancreas slowly decreases the amounts of insulin production, so patients usually respond very well to oral sulfonylurea drugs, which encourage beta cells to secrete more insulin. Being a progressive disease with increasing beta-cell failure, it may eventually require more severe action in the form of insulin therapy, especially in types 1 & 3.

MODY 2

Here the gene responsible for the body's recognition of high blood glucose levels is faulty. However, as it is a very mild form of the disease and is not progressive it is usually possible to treat it with diet and exercise alone.

MODY 5

It affects different organs so it may need a range of different treatment.

Is it MODY or Type2 diabetes?

The following characteristics in hyperglycemic and diabetic

patients suggest the possibility of a diagnosis of MODY:

- ▶ Mild to moderate hyperglycemia discovered before 30 years of age. However, anyone under 50 can develop MODY.
- ▶ A very close relative with a similar level of diabetes.
- ▶ Absence of positive antibodies or other autoimmunity (e.g., thyroiditis) in patient and family.
- ▶ A low insulin requirement even after the usual "honeymoon" period.
- ▶ Absence of obesity (although overweight or obese people can get MODY), or other problems associated with type 2 diabetes or metabolic syndrome (e.g. hypertension, hyperlipidemia, polycystic ovary syndrome).
- ▶ Insulin resistance very rarely happens.
- ▶ Cystic kidney disease in patient or close relatives.
- ▶ Liver adenoma or hepatocellular carcinoma in MODY type 3

Why is this information important?

Knowing more about this can provide the necessary treatment, follow the progress of the disease, understand the complications that can occur and most important of all, other family members can be told about the risks of inheriting the disease.

Reference :

http://www.diabetes.co.uk/diabetes_mody.html

<http://www.diabetes.co.uk/type3-diabetes.html>

<http://diabetes.niddk.nih.gov/dm/pubs/mody/#3>

<http://www.childrenwithdiabetes.com/clinic/mody.htm>

http://en.wikipedia.org/wiki/Maturity_onset_diabetes_of_the_young

Forecast.diabetes.org/magazine/features/another-kind-diabetes-mody/

the **gi** Diet

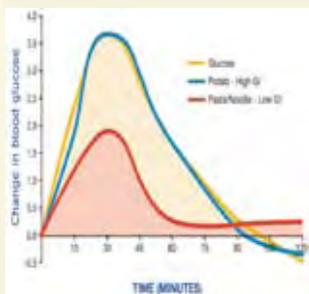
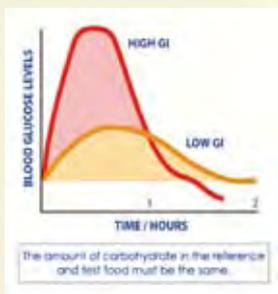
PART 1

'Glycemic Index is about the quality of carbohydrates, not the quantity'

*Shruti Kumari, Research Dietitian
Diabetes Research Centre,
M.V Hospital for Diabetes, Royapuram*

What is Glycemic Index?

Glycemic Index or GI is a measure of the effects of carbohydrates on blood sugar levels. It is a scientifically proven way of ranking carbohydrates in foods. It tells you how fast a particular food raises blood sugar. Foods that contain carbohydrates that break down quickly (simple carbohydrates) have a high GI and will result in a rapid rise in blood glucose. Foods containing carbohydrates that break down slowly, (complex carbohydrates) have a low GI and will raise blood glucose much slower.



People with diabetes should consume small meals and snack regularly on low GI foods (foods that contain complex carbohydrates, protein and extra dietary fibre). Three large meals a day can cause the release of too much sugar at a time and this may lead to wide fluctuations in blood glucose levels.



GI values are commonly interpreted as follows:

Low GI - 55 or less:



Low Glycemic Index foods are those that bring out a low postprandial glucose response and include legumes (ex. chickpeas, lentils, etc.), whole grains, nuts, most of the fresh fruits (apple, orange, blueberries...) and vegetables.



Medium GI - 56-69:

Whole wheat products, basmati rice, sweet potato, sucrose, baked potatoes....



High GI - 70 and above:



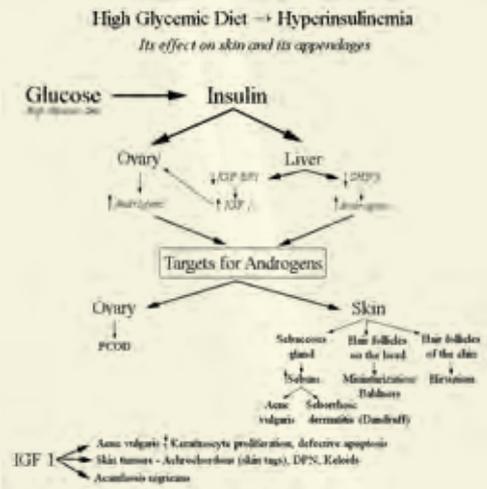
Foods that break down quickly and flood your body with a lot of glucose require a lot of insulin to process them. These foods are called high glycemic foods. These include fried foods, white breads and cereals, bananas, dried fruits, fruit juices, starchy root vegetables, processed meats, full-fat dairy products, most alcoholic drinks and candy.



Choose low, stay fit...!



- ▶ Recent scientific evidence has shown that individuals who followed a low-GI diet over many years were at a significantly lower risk for developing both Type 2 diabetes, coronary heart disease, and age-related macular degeneration than others.
- ▶ Recent studies suggest that a high carbohydrate diet (High GI food) may promote acne through changes in the hormonal concentration, particularly, increased levels of insulin which in turn causes an increase in androgen levels.



GI of some common foods

LOW GLYCEMIC FOODS		
<p>FRUITS:</p> <ul style="list-style-type: none"> • All berries • Cherries • Apples • Oranges • Peaches • Apricots • Plums • Grapefruit • Pears 	<p>NUTS AND SEEDS:</p> <ul style="list-style-type: none"> • Almonds, Walnuts • Peanuts • Flaxseeds • Pumpkin seeds • Sunflower seeds 	<p>GRAINS:</p> <ul style="list-style-type: none"> • All bran cereals • Oatmeal/Oat bran • Whole grain pastas • Barley
<p>BEVERAGES:</p> <ul style="list-style-type: none"> • Fresh vegetable juice • Tomato juice • Green tea • Water 	<p>DAIRY:</p> <ul style="list-style-type: none"> • Organic milk • Organic plain yogurt (no added sugar) • Low-fat cottage cheese 	<p>SWEETENERS:</p> <ul style="list-style-type: none"> • Stevia • FOS (frycto-oligo-saccharides)

<p>VEGETABLES:</p> <ul style="list-style-type: none"> • Artichokes • Asparagus • Black-eyed peas • Split peas • Bulgur • Butter beans • Black beans 	<p>VEGETABLES:</p> <ul style="list-style-type: none"> • Garbanzo beans • Celery • All lettuces • Navy beans • Peppers • Soya bean • Tomatoes 	<p>VEGETABLES:</p> <ul style="list-style-type: none"> • Onions • Pumpkin • Broccoli • Bitter gourd • All green leafy
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MODERATE-GLYCEMIC FOODS: (LIMIT CONSUMPTION)

<p>FRUITS:</p> <ul style="list-style-type: none"> • Grapes • Watermelons • Pineapples • Mangos • Kiwis • Bananas (semi-hard) • Figs 	<p>VEGETABLES:</p> <ul style="list-style-type: none"> • Beets • Carrots • Corn on the cob • Lima beans • Yams • Sweet potatoes • Potatoes (red, white) • Peas 	<p>GRAINS:</p> <ul style="list-style-type: none"> • Basmati rice • Brown rice • Muesli • Most pastas • Pita bread • Popcorn • Whole wheat bread (100% stone-ground) • Whole grain
<p>BEVERAGES:</p> <ul style="list-style-type: none"> • Apple juice • Orange juice • Grapefruit juice • Black cherry juice • Blueberry juice 	<p>SWEETENERS:</p> <ul style="list-style-type: none"> • Unrefined raw honey • Organic unrefined brown sugar • Unprocessed molasses • Maple syrup 	<p>DAIRY:</p> <ul style="list-style-type: none"> • Custard

HIGH-GLYCEMIC FOODS: (EAT AT YOUR OWN RISK)

<p>FRUITS:</p> <ul style="list-style-type: none"> • Most dried fruits • Bananas (ripe) • Papayas 	<p>BEVERAGES:</p> <ul style="list-style-type: none"> • Soft drinks and sport drinks (added sugars) • Carrot juice 	<p>VEGETABLES:</p> <ul style="list-style-type: none"> • Parsnips • Potato(baked) • Cooked carrots • French fries • Yams • Sweet corn • Potato chips
<p>GRAINS:</p> <ul style="list-style-type: none"> • White bread • Whole wheat bread • French bread • Bagels • Cold Cereal • Breakfast cereals (refined with added sugar) • Corn chips • Cornflakes • Rice cakes • Crackers and crispbread • Doughnuts • Hamburger and hotdog buns • White rice • Muffins (due to the processed flour) • Pancakes • Puffed rice or wheat • Shredded wheat • Toaster waffles 	<p>DAIRY:</p> <ul style="list-style-type: none"> • Ice cream 	<p>SWEETENERS:</p> <ul style="list-style-type: none"> • Corn syrup solids • Sucrose (table sugar) • Glucose and glucose polymers (maltodextrin-based drinks) • Honey • Maltose • High-fructose corn syrup • Barley malt

Health benefits of low GI eating



Healthy low GI diets:

- ▶ Help to fill you up and keep you feeling satisfied for longer, avoiding over-eating or too much snacking.
- ▶ Lower your insulin levels which makes fat easier to burn and less likely to be stored.
- ▶ Help you lose body fat and maintain lean muscle tissue.
- ▶ Reduce your triglycerides, total and 'bad' (LDL) cholesterol.
- ▶ Increase your levels of 'good' (HDL) cholesterol.
- ▶ Reduce your risk of developing Type 2 diabetes.
- ▶ Help to manage your blood glucose levels and reduce your risk of developing diabetes complications.
- ▶ Reduce your risk of developing cardiovascular disease.
- ▶ Reduce your risk of developing certain eye diseases.
- ▶ Improve your skin
- ▶ Sustain your energy levels longer, improving both mental and physical performance.

(To be continued in the next issue)

Probiotics For Diabetes Management

Mrs. Sheela Paul, Dietitian

Ms. Vimala, Dietitian

M.V.Hospital for Diabetes, Royapuram

Diabetes is an incurable but extremely manageable lifestyle disorder. Management of this disorder requires a flexible and active approach that involves drugs, dietary changes, lifestyle changes, and complementary therapies.

Over the last decade, there has been a significant increase in research on probiotics.

Research studies published a year ago imply that probiotics may have a role to play in managing diabetes. One study has found that the bacteria that live in the digestive tract are

significantly altered in people with diabetes.

Probiotics are live microorganisms thought to be useful to the host. According to the currently adopted definition by FAO/WHO, probiotics are: "Live microorganisms which when administered in adequate amounts confer a health benefit on the host organism". Lactic acid bacteria (LAB) and bifidobacteria are the most common types of microbes used as probiotics; but certain yeasts may also be used. Probiotics are commonly consumed as part of fermented foods with specially added active live cultures; such as in yogurt, soy yogurt, or as dietary supplements.

Why are probiotics good for health?

- ▶ Probiotics improve gut microflora, boost immunity, promote digestion, increase absorption of nutrients, increase production of biotin in the gut, improve synthesis of vitamins and essential fatty acids, and also prevent some bacterial and yeast infections.
- ▶ In recent research, probiotics have proved to be important in Type 1 and Type 2 diabetes.



Type 1 diabetes is an autoimmune disorder. Probiotic supplementation was found to modify gut micro flora favorably, decrease oxidative stress, inflammation, and reduce intestinal problems.

- ▶ Lactobacillus acidophilus was given in the form of a supplement to people suffering from Type 2 diabetes which improved their blood sugar control. It was inferred that this improvement was the result of improved insulin sensitivity due to increased probiotic intake.
- ▶ Diabetic neuropathy, a secondary complication of diabetes, affects the functioning of the digestive system, because changes in nerve control of the small intestine cause diarrhoea. Probiotics can help control this condition.
- ▶ People with diabetes also tend to suffer from gastrointestinal problems like abdominal bloating and constipation, and infections like urinary tract infections, which can be easily prevented or managed by using probiotics.
- ▶ Expectant mothers given probiotics on a regular basis throughout pregnancy had reduced chances of developing gestational diabetes.
- ▶ Probiotic foods increase the absorption of calcium and prevent allergies. They also help in treating diarrhoea. If a pregnant woman consumes probiotic food for about a month before her delivery, this will help prevent the new born infant from contracting allergies to some extent. Also, if infants who are six months and older are given probiotic food, it helps to build their immunity.

▶ Probiotics make the gut environment acidic, which is not very good for the growth of pathogenic bacteria.



▶ There is a natural balance in the micro-organisms present in the stomach and intestines, which sometimes gets destroyed due to strong antibiotics or drugs, illnesses, excessive consumption of alcohol and even stress. Though antibiotics are prescribed for treating illnesses, their frequent intake can also destroy the good

bacteria, which in turn can affect digestion and absorption of nutrients in the body. The long-term use of antibiotics can also prevent the replacement of these useful bacteria.

Probiotics play an important role in supplementing the good bacteria in the body.

The Indian diet provides probiotics in the form of a variety of fermented foods. Fermented foods such as 'idli', 'dosa', 'dhokla', 'curd' and 'kadhi' are some of the lactobacillus fermented cereals and legumes that are commonly consumed in India. They are known to possess health benefits because they enhance the nutritional quality of foodgrains. Fermented foods increase the absorption of vital minerals from the gastrointestinal tract, thus preventing mineral deficiencies. Bread, 'appam', wine and beer are some of the yeast-based fermented foods and beverages.



A normal healthy person can consume a daily dose of probiotic food containing about two million live organisms.

People suffering from long-term illnesses like cancer or diabetes must consult with their doctors before regularly incorporating probiotics in their diet.

Having too much of anything is bad. Sometimes, excessive intake of probiotics might result in indigestion and bloating. This differs from person to person. While buying specially manufactured probiotic food, check the expiry date, because in outdated products, the live organisms will remain ineffective.

Things to Remember while Using Probiotic Therapy

- ▶ Probiotics are not a cure for diabetes, they can only help in the management of the health condition.
- ▶ Always consult your doctor before introducing any new probiotic product or supplements in the daily diet.
- ▶ Monitor blood glucose levels regularly.

Summer Food

Light, refreshing, nutritious and easy-to-make recipes.

RELAXATION JUICE

Ingredients

- Carrot - 1
- Cucumber - ½
- Lime juice - 1 teaspoon
- Salt and pepper powder - to taste

Method

- Wash, peel and cut carrot and cucumber. Blend in a mixer.
- Add salt and pepper to taste.
- Serve cold



CORN FRIED RICE

Ingredients

- Baby corn - 150 gms
- Cooked rice - 1 cup
- Grated ginger & garlic - 1 tablespoon
- Spring onion - 1 bunch
- Pepper powder - 1 teaspoon
- Coriander leaves - few
- Salt - to taste
- Oil - ½ teaspoon



Method

- Heat oil in a pan. Add grated ginger and garlic and fry for a few minutes.
- Add chopped spring onion and fry for 2 minutes.
- Add chopped baby corn. Fry till golden brown.
- Add cooked rice and fry.
- Remove from the flame and add pepper powder and garnish with cashew nuts and coriander leaves.
- Serve hot with raw onions.

SPROUTED PULSE SALAD

Ingredients

- Moong dhal sprouts - 1 cup
- Green chilli sliced - 5
- Onion (chopped) - 1 medium size
- Mustard seeds - 1 teaspoon
- Urad dal - 1 teaspoon
- Oil - 1 tablespoon
- Lime juice (optional) - ½ teaspoon
- Salt - to taste

Method

- Heat oil in a pan. Add mustard seeds and urad dal.
- When the mustard seeds pop, add green chilli and onion and saute.
- When the onion is translucent add the moong sprouts and salt. Saute.
- Add lime juice before serving. Serve hot.



Diabetes Quiz

Topic : Stress & Relaxation

'The time to relax is when you don't have time for it'

- Sydney J, Harris



1. The term used for how a person deals with stress is :

- a) Stress Technique
- b) Stress Avoidance
- c) Coping Style
- d) Relaxation Technique

2. Progressive Relaxation Technique is :

- a) A technique to relax using breathing exercises
- b) A technique where you tense all your muscles and then slowly relax them one by one.

c) A three-month relaxation programme

d) A progressive technique that allows you to relax by talking about your problems with others.

3. The body responds to stress by preparing itself to take action . This is called the ----- response :

- a) Stress-calm
- b) Panic- calm
- c) Win - lose
- d) Fight or flight

4. 'Stress hormones' such as adrenaline stimulate the body to release stored ----- into the blood stream

- a) Glucose
- b) Insulin
- c) Vitamins
- d) Fat

5. The technique that uses pleasant or relaxing images to calm the mind and body is called :

- a) Qigong
- b) Taichi
- c) Imagery
- d) Biofeedback



Answers to the Diabetes Quiz

5 - c)

4 - a)

3 - d)

2 - b)

1 - c)

M.V. Centre for Diabetes Opens in New Premises at Mylapore, Chennai



Mr. Aboo Bucker, *Vice President, Haj Committee of India, Ministry of External Affairs, Government of India*, inaugurates M.V. Centre for Diabetes, at R.K. Salai, (Opp. Citi Centre), Mylapore, Chennai.

The new centre is well-equipped to treat all aspects of diabetes and its complications.

List of New Life Members

L – 2261	Mr. Girdhar Gupta	Chhattisgarh	L – 2273	Dr. Sikhamani Konwar	Guwahati
L – 2262	Mr. Roshan Lal Agrawal	Chhattisgarh	L – 2274	Mr. Arun Kumar Patnaick	Bhubaneswar
L – 2263	Mr. Prahlad Kr Gupta	Kolkatta	L – 2275	Mr. Palash Sen	Dimpur, Nagaland
L – 2265	Mr. O.M. Pappan	Port Blair	L – 2277	Mr. Ashish Deb	Silchar
L – 2266	Mr. S. Velu	Chennai	L – 2278	Mr. S.J. Sreedhar	Davanagere
L – 2267	Mr. P. Sivaprakasam	Kitchipalayam	L – 2079	Dasari China Brahmayya	Viskhapatnam
L – 2269	Mr. Arun Patnaig	The Nilgiris	L – 2080	Manmadharaobaratam	Rayagada
L – 2272	Mr. Rajesh Sharma	Chhattisgarh			