



Decoding diabetes...

For a layman, the most prevalent forms of diabetes are Type 1, Type 2 and gestational diabetes, but there is a fourth one too that is rare and is called monogenic diabetes. While a majority of patients have type 2 diabetes due to defective insulin action or type 1 diabetes due to lack of insulin and some women have gestational diabetes during pregnancy which occurs due to high blood sugar, and it usually disappears after giving birth, the monogenic form is caused by a single gene mutation.

Explaining the monogenic form of diabetes, Dr Srinivasan Vedantham, Disease Program Lead – Diabetes, MedGenome, says, “Both, Neonatal diabetes mellitus (NDM) and Maturity-Onset Diabetes of the Young (MODY) are a monogenic form of diabetes. While NDM occurs in newborns and infants, MODY occurs in children and adolescents. Both are caused by genetic mutation and are often misdiagnosed with Type 1 or Type 2 diabetes. Genetic testing can diagnose these conditions appropriately, and treatment is often based on the genetic testing.”

Types of MODY
MODY is rare and different from the most common types of diabetes (Type 1 and 2). “It is caused by a mutation in any one of the several genes involved in regulating insulin secretion. Till date mutations in 14 genes have been identified which cause MODY (MODY 1, MODY 2... MODY 14). Out of these, first six are most common. Due to these mutations pancreatic β -cell (insulin-producing cells) are defective, and hence insulin secretion is impaired,” says Dr Manoj Chadha, Consultant Endocrinologist, Hinduja Healthcare Surgical, Khar.

There are 14 different forms of MODY, each

Maturity Onset Diabetes of the Young (MODY) is the commonest form of monogenic diabetes, and a breakthrough study leads to the discovery of a novel MODY gene, the NKX6-1. SHILLPI A SINGH finds more about this new entrant

with its own unique clinical characteristics. The onset of this disease is usually before the age of 25 years, and if a parent has this gene mutation, then the child has a 50% chance of inheriting it. “Unlike type 1 diabetes, antibodies against pancreatic β -cell (insulin-producing cells) are absent. Most patients have other family members in at least three generations affected with diabetes. Depending upon the gene, patients with MODY may have associated abnormalities such as subtle liver abnormalities in MODY1, kidney problems in MODY 5 etc.,” adds Dr Chadha.

Points to be noted
Earlier this year, a breakthrough study on MODY was published in ‘BMC Medical Genetics’ journal by Dr V Mohan and Dr Radha

The study that was carried out was based on a comprehensive genomic analysis of 289 individuals from India which included 152 clinically diagnosed MODY cases and 137 normal glucose tolerance subjects (NGT). None of the NGT subjects showed any genetic variants associated with MODY. Among the 152 clinically diagnosed MODY subjects, MODY 3 was found to be the commonest MODY which is in keeping with studies in Europe and UK. However, surprisingly, the second commonest MODY detected in India was MODY 12, (ABCC8 MODY). Moreover, 13 of the 14 known forms of MODY were detected in Indians. The study has for the first time reported a mutation in the NKX6-1 gene and has been described as a novel form of MODY through this study.

Dr Venkatesan, Head of Genomics at MDRF, says, “This is the first time in the world, the NKX6-1 gene mutation has been described as a novel form of MODY. Further studies have to be done to see whether this MODY form is unique to Indians or it is present in other ethnic groups as well.”

Uncommon malaise
The prevalence of a monogenic form of diabetes in India is about 2-5% of type 2 diabetes patients, who are less than 35 years of age while in the European population, its prevalence is 100 per million, and it affects 1-5% of diabetes patients in the US and other industrialised countries.

While Type 2 Diabetes normally affects adults and does not require insulin for control of hyperglycemia except in the more advanced stages, Type 1 diabetes, usually af-

should opt for genetic testing to detect MODY. A genetic test can help confirm diagnosis, guide treatment and determines prognosis. A correct diagnosis will identify the risk factor for family members and guide in treatment.

Depending upon the gene, patients with MODY may have associated abnormalities such as subtle liver abnormalities in MODY 1, kidney problems in MODY 5, etc. “Genetic confirmation of the type of MODY mutation results in optimised treatment, guides in screening for associated complications and helps in determining prognosis. However genetic testing is recommended only after adequate genetic counselling, preferably by a clinical geneticist or genetic counselor,” says Dr Chadha.

Treatment mode
The treatment is on a case to case basis and subject to the judgement of the clinician on what he thinks is best suited for the patient. Most patients with MODY can be managed by lifestyle measures such as diet control and exercise and oral medicines. “However, depending on the type of MODY, treatment required may vary. Patients with MODY 3 (HNF1-alpha gene mutation) can be treated with small doses of an anti-diabetic drug called sulphonylureas; patients with MODY 2 (Glucokinase gene mutation) have mildly elevated fasting blood sugar and do not require any treatment,” says Dr Chadha.

Explaining it further, Dr Mohan, Director, MDRF, says, “The significance of diagnosing monogenic forms of diabetes like MODY is that unless a correct diagnosis is made, patients can be wrongly diagnosed to have type 1 diabetes and advised to have unnecessary lifelong insulin injections. Once the diagnosis of MODY is confirmed, in most forms of MODY, insulin injections can be completely stopped, and these patients can be treated with a very inexpensive sulphonylurea tablet which has been used for decades, for treating diabetes. This is a dramatic change as far as the treatment, and the life of these patients and their families are concerned.”

But in the same breath, he adds that “as of now, patients with MODY have to live with the disorder, and there is no immediate possibility of the cure of the disease.”

WHAT IS MATURITY ONSET DIABETES OF THE YOUNG

- There is a genetic form of diabetes due to a single gene defect, and hence these are called as ‘Monogenic Diabetes’.
- The commonest form of monogenic diabetes is Maturity Onset Diabetes of the Young (MODY), which like type 1 Diabetes also affects young people or children.
- Patients with MODY are usually lean, and because of their young age, they are often wrongly labelled as having type 1 diabetes and advised to have lifelong insulin injections.
- MODY can only be diagnosed by doing ‘genetic testing’.
- Further, it is now known that there are 14 different forms of MODY, each with its own unique clinical characteristics.



Most patients with MODY can be managed by lifestyle measures such as diet control, exercise and oral medicines

Venkatesan from Madras Diabetes Research Foundation (MDRF), Chennai, in collaboration with Dr Andrew S Peterson, Dr So-masekar Seshagiri and Dr Thong T Nguyen from Genentech, California, and Dr Ram-prasad and Sam Santhosh at MedGenome, India. It was the most comprehensive and largest study of all forms of MODY done in India till date.

Sam Santhosh, Chairman of MedGenome, a genomics-driven research and diagnostics company, based in Bengaluru, says, “The study will help in further diagnostics research in this domain. The role of genomics in the healthcare industry is poised to grow at an exponential rate, and we endeavour to build a legacy of enabling Precision Medicine in India.”

fects children and in this type of diabetes there is complete insulin deficiency, and hence they require lifelong insulin injections, several times a day. Many clinicians wrongly diagnose MODY as Type 1 or Type 2 diabetes. “The signs and symptoms of MODY are similar to those of Type 1 or 2 diabetes like high blood sugar levels, feeling thirsty, frequent urination, weight loss etc. This leads to ineffective treatment and thereby increasing the financial and emotional burden on the patient and family,” says Dr Vedantham.

Test it right
Dr Vedantham advises that people with family history of diabetes, and children or young people with diabetes or hyperglycaemia

Home, sweet home!

Buying a home is not an easy task. While factors like neighbourhood, locality are essential, taking into consideration the property's Vastu and Feng shui are important too, says DR HARSHIT RAVINDRA KAPADIA

Each one of us has a wish that a home needs to be ‘a sweet home’. Feeling of bliss and ecstasy is essential in home for it to be ‘home, sweet home’. Buying a new house is a task and a great learning process. For very few, buying a new home is simple: They wish for it, dream it and they can manage to buy it. However, for many it’s a big challenge.

When a person starts looking for new home, many aspects like locality, area, neighbourhood, building complex, etc., are considered and surveyed. The way legal due diligence is done before finalising the property, similarly, Vastu and Feng Shui due diligence is essential before purchasing the new home. It is always better to adapt Vastu and Feng Shui principles while purchasing the property so you make the right choice that suits you.

Vastu and Feng Shui needs to be customised as per the date of birth of occupants, however, there are few general guidelines which you can follow.

Process before you start
The famous proverb says ‘We become what we think’; Vastu and Feng Shui are connected with your conscious and sub-conscious mind, hence, before you even start viewing properties for yourself, think positive. Make a wish list. Start with your budget, area, locality, floor, etc., put as much information as you can in the wish

list. Daily start meditating on it and make mind positive and receptive to accept this for you and your family. Also add word like ‘strong vastu / good energies’ in the list. Start with positive visualisation.

Important things to be kept in mind

When you start viewing the property, first check the vibes. Whenever you enter the property, stand in the centre for a few minutes with eyes closed and see how good your body feels. This is the most important test for checking the vibes. Walk around the house slowly, if the house energies are good, your body and mind will feel relaxed and positive, such houses are very good.

Next get the floor plan, see the shape of the house / property. Each and every shape has its own uniqueness and it generates different combination of energies. Vastu and Feng Shui recommends having symmetric and proportionate shape. Among all the shapes, square is the best. Square shape helps in over all harmony, prosperity and brings favourable energies in every respect.

The next best shape is rectangular. The ratio of the width of a rectangle plot to the length must vary from 1:1.5 to 1:2 with all the corners at 90 degrees angle. This shape leads to peace, harmony and good health. In case if the ratio of the property exceeds 1:2 in terms of length and breadth of the property,



the energies get stretched and, thus, create imbalances. However, in reality, especially while looking for apartments, deformation is commonly found in most of the sites, because of many limitations. The deformation of site influences the occupant and may have a positive, negative or balanced effect.

Hence, if any deformation originates, it needs correction. In case if the shape is not too negative, simple corrections can be done with the help of practical solutions under the guidance of an expert.

Avoidable shapes

- **Triangle-shaped house:** It leads to tension disputes and aggression.
- **L-shaped house:** In ‘L’ shape, the centre generally goes out of the house, leading to instability and health issues.
- **Step-shaped house:** Such houses have too many cut corners leading to imbalances in

energy flow.

- Absolute asymmetric or irregular-shaped house.

Other parameters:

- In case you are opting for a pre-owned house, it is important to find out the history of the family who previously lived there. Check how prosperous and healthy the former owners were. Avoid buying houses where the earlier owners suffered difficult times.
- Even if basic vastu directions and other parameters match the criteria, it is a must to check for proper natural light and ventilation in the house. Avoid houses that are dull, dark and dingy. Having windows on east and west help in optimising sunlight.
- Check for water leakages and dampness. If there is severe water leakage in the property, avoid it.

- Houses having cross ventilation are considered good.
- Energies at car parking level are highly unstable, because of movement of cars; avoid houses which are directly above car parking as it generally leads to health issues among the occupants staying above the parking area.
- Avoid houses which are directly above or below swimming pools or any kind of water storage tanks, as this, too, leads to imbalanced energy flow within the house.

There are many more parameters while checking for new house. It is generally a challenge to find a perfect home. There are many practical ways to enhance the energies of home and make it ‘A Home Sweet Home’.

(Dr Harshit Ravindra Kapadia is a Vastu and Feng Shui expert)

Eat smart, stay cool

Here are some food habits that will help you battle the scorching summer heat

Eating the right fruits, vegetables and spices can ensure you remain cool during the summer season, suggest experts. Chef Sudhir Nair, Executive Chef at Courtyard by Marriott and Fairfield by Marriott, Bengaluru and Chef Kasiviswanathan, the Executive Chef for Radisson Blu Atria, Bengaluru share five easy tips that will help your body cope with the heat:

- Eat and enjoy a light breakfast every morning comprising of fresh fruits and lots of liquids. Avoid citrus juices and instead opt for tender coconut or melon juice. Cucumber juice or salad would also be a great option. Try and cut down on a heavy breakfast and avoid high starch foods with rice or wheat. Lunch should be the heaviest meal of the day in summers. Keep low on yoghurt consumption instead drink as much as buttermilk as possible. Keep your food low on spices and high on liquid.
- Do not drink chilled water or aerated beverages as it will disrupt the digestive process in the body. Keep a close watch on your sugar consumption. Ice creams though tempting in this time is rich in sugar and cream but an iced fruit lolly would be a legitimate indulgence. * Avoid using spices such as mustard, ginger, and chilli. Avoid vegetables like tomato, peppers and garlic.
- Cook with cooling herbs such as fennel, dill, mint, and coriander. Allow use of spices like cumin, cinnamon, green cardamom in your food. Use vegetables such as white pumpkin, broccoli, snake gourds, drumstick and madras cucumber. Milk, coconut, butter and ghee in small proportions is cooling for the body. Best methods of cooking these foods would be boiling, steaming and stewing. It is best to avoid fried foods as they would give undue stress to the digestive tract.
- Fruits like ice apples, varieties of melons, sugarcane, and varieties of ripe mango, cashew apples and jackfruit are found in abundance in this season and the best choice of small meals throughout the day.

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