

## DIABETES CHECK

**DIABETES IS A** modern epidemic. With more than 300 million people suffering from diabetes globally, this entity cannot be considered anything less than an epidemic. With the current trend of increasing incidence, the total number of people with diabetes is going to touch more than 500 million by 2025, insists Dr Deepak Anjana Chaturvedi, MD, Physician Endocrinologist, Diabetologist, Antiaging Specialist and bariatrician at the AMAAYA™ Antiaging and Wellness Clinic.

For a matter of understanding, diabetes may be considered as body's inability to utilise blood sugar and hence facing the consequences of high blood sugar levels (glucotoxicity). Diabetes should not be considered as a single clinical entity. With the spectrum of metabolic, biochemical, endocrine and other systemic involvement, diabetes needs to be taken as a 'spectrum of diseases'.

The metabolic effect of diabetes does not restrict to only glucose regulation abnormalities. It causes adverse fat (lipids) and proteins metabolism, leading to deleterious effects of the body by lipotoxicity and protein loss. Broadly, there are two groups of Diabetes Mellitus:

- Insulin Dependent Diabetes (Type 1)
- Non-Insulin Dependent Diabetes (Type 2)

Ultimately, all diabetics lead to the state of insulin dependence. Conventionally, Type 1 diabetics are lean and Type 2 diabetics were obese. But now, a big group of lean diabetes in Type 2 group has been identified.

The causes of diabetes are multi-factorial:

- Genetic/ Hereditary
- Lifestyle
- Diet
- Autoimmunity
- Infections
- Inflammation
- Drug induced (oral contraceptive pills)

A sedentary lifestyle with/without a high sugar/fat diet increases the potential of developing diabetes multifold in both genetic vulnerable and non-vulnerable population. Traditionally, diabetes pathology is related with hyperglycaemia because of insulin deficiency/insulin resistance. But now, other hormones are also implicated in the pathogenesis of diabetes and its complications. The important extra insulin hormones implicated in diabetes, Glucagon, Cortisol, DHEA, Testosterone, Growth Hormone, Estrogen, Progesterone, Thyroid and Catecholamines are directly or indirectly associated with diabetes outcomes. High testosterone levels in women and low testosterone levels in men are associated with adverse outcomes in Diabetes Mellitus and metabolic syndrome. Similarly, low estradiol levels in women and high estradiol levels in men are associated with adverse outcomes.

The other modern day epidemic, obesity, is also associated as bidirectional with Diabetes Mellitus Type 2. Obesity increases the risk of insulin resistance/Type 2 Diabetes Mellitus and vice versa. More importantly, the obese Type 2 Diabetes Mellitus patients have more complications in terms of cardiac and endocrine health.

Diabetes Mellitus is a chronic progressive spectrum of diseases which involves almost every organ of the body. It's one of the most common causes of premature aging.

In a natural course of uncontrolled diabetes, organs like kidneys (Nephropathy/chronic kidney disease), eyes (Retinopathy/early cataract), the nervous system (Neuropathy), the cardiovascular system (coronary artery disease, ischemic heart disease—Cardiomyopathy), skin (Acanthosis/pigmentation), nails (fungal infections), gastro-intestinal system (Gastroparesis/altered bowel), sexual health (erectile dysfunction,





## LONG LIVE MEDITERRANEAN DIET

**RECENTLY, THREE** large studies added support for the long-term health benefits of a Mediterranean diet—as well as plant-based diets in general. A Mediterranean-style diet focuses on whole or minimally processed plant foods—lots of fresh fruits, vegetables, beans, nuts and whole grains—along with moderate amounts of fish, limited dairy (mostly yogurt and cheese), and a little red meat or sweets. Olive oil is a main source of fat, though according to studies, few people consumed as much olive oil as the typical Spaniard or Greek.

A moderate intake of alcohol—usually red wine—is another key feature.

### Here's what the new studies found:

**Younger brains:** Both a Mediterranean-style diet and the DASH (Dietary Approaches to Stop Hypertension) plan help preserve age-related cognitive functions, according to a study of 3,800 people (average age 74) living in Utah, published in *The American Journal of Clinical Nutrition*. Those who adhered most closely to either diet did best on cognitive testing over the 11-year period—scoring as if they were three years younger than those veered farthest from the diets. Whole grains, nuts, and legumes were independently linked to better cognition. Like the Mediterranean diet, DASH is a semi-vegetarian plan; in addition, it emphasises low-fat dairy products and low sodium intake, but not olive oil and wine.

**Healthier aging:** Women who followed a Mediterranean-style diet in middle age were more likely to stay physically and mentally healthy later in life, according to a Harvard study in *Annals of Internal Medicine*. Researchers initially reviewed data about the diet and health of 10,670 female nurses in their late 50s and early 60s and then correlated this with information about their health 15 years later. Women who adhered most closely to a Mediterranean diet were 46 per cent more likely to live past age 70 with no chronic illnesses and no major physical or cognitive impairments.

**Longer life:** People with cardiovascular disease (such as a history of heart attack, stroke, or angina) who closely followed a Mediterranean-style diet were nearly 20 per cent less likely to die during an eight-year follow-up than those who veered farthest from it. This comes from another Harvard study of health care professionals (6,100 men, 11,300 women, average age 68). No single food or food group was responsible for the benefit, suggesting there were 'synergistic effects' of the Mediterranean diet. Even for those with advanced cardiovascular disease, a Mediterranean-style diet can be very beneficial, the researchers concluded.

low libido, anorgasmia) and almost all other organs are involved.

The current trends of managing diabetes focuses on tight blood sugar control by medications, lifestyle modification, exercise, dietary modification, sleep management and stress reduction.

Now, we have started to look at the other potential hormonal and metabolic implications of diabetes and started focusing on fixing them.

Once diagnosed with diabetes, one should not leave hope. The current medical world is working very hard to give an array of hope to people living with diabetes.

Key to successful diabetes management is:

1. Be vigilant about blood sugar—fasting blood sugar, Post Prandial (PP) blood sugar, glycosylated haemoglobin.
2. Regular screening for diabetes complications—blood cholesterol, kidney function test, liver function test, nerve testing, complete eye check up, complete cardiac work up, other hormones evaluation and Sex Hormone-Binding Globulin (SHBG).
3. Control of blood cholesterol.
4. Modifying lifestyle.
5. Healthy eating.
6. Yoga, meditation.
7. Sleep/stress management.
8. Avoidance of smoking/alcohol.
9. Taking medicines on time.
10. Following up with your doctors very regularly.

Diabetes can be prevented to some extent. Its complications can be delayed or prevented if the above points can be followed.

Instituting Early Insulin Therapy in newly diagnosed diabetes patients is a proven measure to delay/prevent the complications of diabetes. The therapy needs to be closely supervised and all the measures need to be taken to prevent any episode of hypoglycaemia.

