

# LIVE WELL WITH DIABETES

# Sweet Life

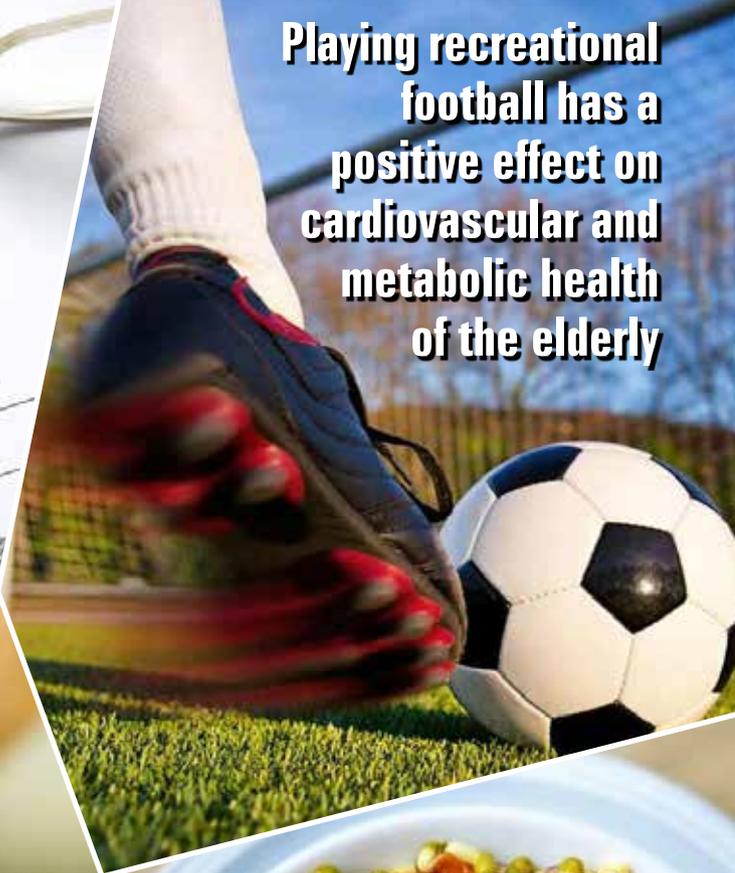


(AN INITIATIVE OF MV HOSPITAL FOR DIABETES (PVT) LTD., ROYAPURAM, CHENNAI, INDIA)

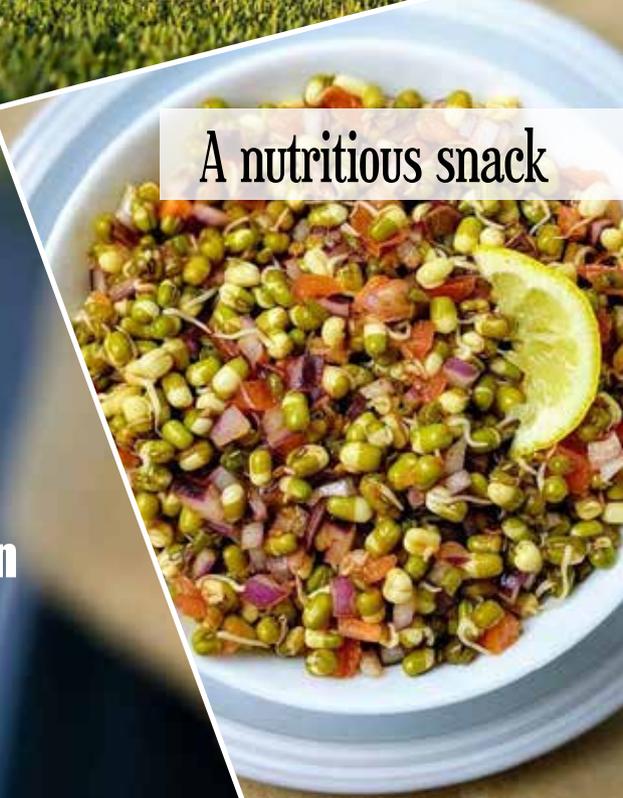
Many people do not realize that the root cause of a lot of health problems could be due to a sleep disorder



Playing recreational football has a positive effect on cardiovascular and metabolic health of the elderly



A nutritious snack



Senior Living facilities-Some areas of concern for people with diabetes

## What's the **NEW** Research published from **Prof M Viswanathan Diabetes Research Centre, Royapuram ?**

01

**BSMI single nucleotide polymorphism in vitamin D receptor gene is associated with decreased circulatory levels of 25-hydroxyvitamin D among micro-and macro-vascular complications of Type 2 diabetes mellitus.**

*Krishnamoorthy Ezhilarasi, Umapathy Dhamodharan, Viswanathan Vijay*

Vitamin D deficiency is reported to be associated with insulin resistance and impaired  $\beta$ -cell function. The study aimed to investigate the association of Vitamin D Receptor gene SNP with complications of type 2 diabetes mellitus (T2DM) and correlate it with serum levels of (25[OH]D) along with other clinical risk factors of T2DM.

The study concluded that the VDR SNP is associated with decreased serum (25[OH]D) levels in both micro-and macro-vascular complications of T2DM among South Indian population.

*International Journal of Biological Macromolecules, 116 (2018) 346- 353*

## **Estimated Glomerular Filtration rate using Creatinine-based Chronic Kidney Disease Epidemiology collaboration equation**

*A.A Rani, V. Viswanathan*

Serum Cystatin (Scys) and Serum Creatinine (Scr) are used to assess Glomerular Function Rate (GFR). GFR is a major indicator of kidney function and helps clinicians to detect, evaluate and manage Chronic Kidney Disease (CKD). Although studies have shown that Scys identifies more patients in early CKD, it is not a cost effective test and cannot be recommended for routine clinical practice in developing countries. A comparative study by Kumpatla et al concluded that CKD-EPI equation using Scr can detect more cases of early CKD in Indian population, is cost effective and can be used in routine practice.

*Indian Journal of Nephrology, Volume 28, Issue 6, November-December 2018*

02

## **ADVANCES IN DIABETES MANAGEMENT**



People with diabetes need practical information, motivation to act on that information and a set of specific behavioural skills, in order to make changes to improve the way they manage their diabetes.

The newly launched upgraded CONTOUR@DIABETES app analyzes blood glucose results received from

the CONTOUR@NEXT ONE meter, and delivers personalized meaningful feedback to patients. This feedback is designed to help patients improve diabetes self-management and maintain positive lifestyle changes. It also allows patients to set reminders or use testing plans to help improve their blood glucose patterns, and will track their progress to see if the pattern improves over time.



*Hello!*

*Greetings for the New Year!*

2018 was a combination of challenge and success. MV Hospital for Diabetes had the rare distinction of being re-designated as a WHO Collaborating Centre reporting to Geneva for a record fifth time. We have been holding this

distinction since the past 16 years. It was also designated the IDF Centre of Excellence in Diabetes Care and the IDF Centre of Education by the International Diabetes Federation in Belgium.

The Advanced Diabetes Care Centre at Royapuram, the new facility to save legs and the second edition of designer diabetic footwear were among the many measures taken to enhance patient care.

MVH is a vibrant research institution. We presented 7 original research papers at the RSSDI in 2018 – the National Conference in Diabetology – and were awarded for the best poster presentation.

We have received an exclusive patent for developing footwear for people with diabetes. The current trend in diabetes management is to promote effective self- management education and support among persons with diabetes. Our newsletters and magazine aim to provide relevant information.

I hope that your New Year resolutions include some fresh ideas for good diabetes management.

*With regards*

*Dr. Vijay Viswanathan*

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### Editorial Panel:

**Mrs. Meena Vijay**, Director, MVH

**Dr. Mitalee Barman**, Consultant Diabetologist

**Dr. Vishnupriya Reddy**,

Consultant Diabetologist

*'Sweet Life' is printed and published by Compuprint, No. 9, Aristo Flat, Flat C, Gopalapuram 2nd Street, Chennai 600 086, on behalf of the Prof. M. Viswanathan Diabetes Research Centre & M.V. Hospital for Diabetes (P) Ltd. West Mada Church Rd, Royapuram, Chennai 600013. This magazine provides general information to create awareness about diabetes mellitus, for better management of diabetes and about innovations in diabetes care. Readers are advised to consult with their physicians and dietitians before making any changes to their medications, diet or activities.*

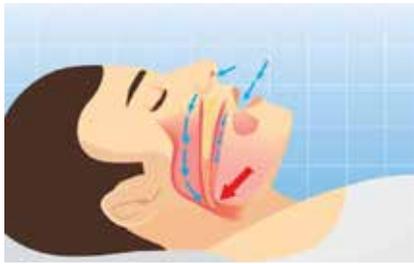
# SLEEP APNEA – Could You Have It?

People with diabetes should be aware of a sleep disorder called Obstructive Sleep Apnea.

**Dr. Mitalee Barman**  
Consultant Diabetologist

The root cause of a lot of health problems could be due to a sleep disorder. Many people might not realize that. On the other hand, some people may be aware of their sleep disorder but may not know the severe consequences of not treating it. Sleep apnea is one of the most common sleep disorders but remains undiagnosed in a large number of cases.

## So, what is Sleep Apnea?



This is a serious sleep disorder that occurs when a person's breathing breaks or pauses during sleep. The pause in breathing is called an apnea. The

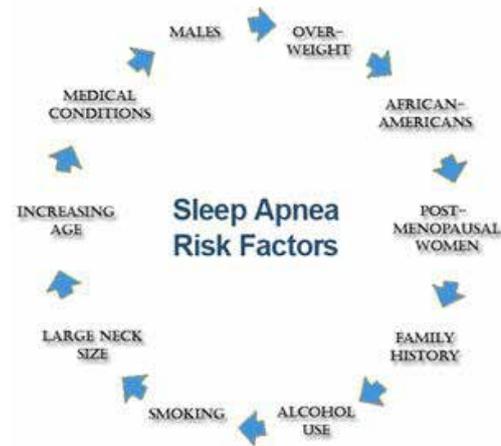
narrowest part of the airway is the back of the throat. When a person is awake, the muscles keep it open. At sleep time, the muscles relax making the opening narrower. The air passing through this narrowed opening causes the throat to vibrate causing snoring. In some people the throat closes so much that air cannot pass into the lungs. The brain sends an alarm to open the airway and the air gets through. Then the brain goes back to sleep. Many such incidents during the night do not make it a restful sleep.

There are 3 types of sleep apnea.

1. **Central Sleep Apnea (CSA):** Here the brain fails to signal the respiratory system to breathe.
2. **Obstructive Sleep Apnea:** Fatty tissues of the throat and tongue become relaxed during sleep and fall back into the air passages which restricts air flow and stops the process of breathing.
3. **Complex or mixed Sleep Apnea-** A combination of CSA and OSA

**OSA is the most common type of sleep apnea and CSA is very rare.**

People with Type 2 diabetes often have poor sleep habits due to many reasons such as pain or discomfort, restless leg syndrome, need to go to the bathroom and so on. They are also at risk



of developing OSA. OSA is associated with insulin resistance and glucose intolerance. It can decrease the quality of life and make diabetes worse or even put one at risk for diabetes. It can also lead to problems such as high blood pressure, heart disease, or even a stroke. It's actually a vicious cycle – poor sleep can affect blood glucose levels and poor blood glucose control can affect sleep.

## Signs and symptoms of OSA

1. **Snoring:** Loud chronic snoring is one of the most common symptoms of OSA. This occurs because the air we breathe in cannot move through the air passages freely. However, not all those who snore have sleep apnea and some people with sleep apnea do not snore. However, if the snoring is very loud, disturbs the sleep of others and happens every single night it could be a sign of sleep apnea.

2. **Frequent breaks or pauses in breathing:** The breaks in breathing can occur between 5 -30 times an hour lasting 10 -20 seconds. In severe apnea it can increase to hundreds of times! When there is a break or pause in breathing, the oxygen level in the blood drops. The brain sends signals to the respiratory system to work properly again and get air past the blockage with each break or pause in breathing. The person is usually asleep during this time without realizing that they are partially awake. The constant interruptions however, have a negative impact on the amount and quality of sleep and this can lead to the other symptoms.

**3. Feeling tired all the time:** The restless sleep pattern results in a condition called Excessive Daytime Sleepiness (EDS) along with a chronic feeling of fatigue. Common symptoms are difficulty waking up, excessive tiredness all day long, a general lack of energy, taking frequent naps, dozing off at odd times, and difficulty concentrating.

**4. Frequently waking up with headaches:** This is a commonly occurring symptom. When there is less oxygen, the blood vessels dilate and this can cause vascular headaches.

**5. High blood pressure:** As the brain realizes it is not getting enough oxygen, it signals a spike in blood pressure to get the system to work again. Over time, this response leads to high blood pressure even when breathing is normal.

**6. Overweight or obesity:** In many cases, a person's body weight is directly linked to obstructive sleep apnea. A neck circumference that is >17 inches for men and > 16 inches for women puts them at a higher risk for OSA.

**7. Often irritable, depressed or experience mood swings:** Lack of quality sleep can make one irritable, prone to anxiety, short-tempered, and in the long run, depressed.

People with Type 2 diabetes may be obese, insulin resistant and have a large amount of fat around their vital organs. Obesity is a significant risk factor for OSA as well as for diabetes and diabetes is itself a major risk factor and complication of OSA. Sleep apnea can also increase blood glucose levels because of the stress associated with chronic sleep deprivation. In times of stress, the body releases stress hormones that are capable of releasing stored glucose into the liver. Over time, this increase in blood glucose levels can lead to insulin resistance.

**People with type 2 diabetes who show symptoms such as snoring, daytime drowsiness and impaired sleep must inform their doctor.**

### The Next Step:

The next step is a sleep study (polysomnography) in a Sleep Lab which will determine how well you sleep. Your pattern of sleeping and moving will be observed by technicians.

Another way is to use the pulseoximeter, at home. This is less expensive than a sleep lab but the results might be less accurate. If left untreated, OSA can put one at risk for a whole lot of medical problems such as heart failure, arrhythmias, gastroesophageal reflux disease, diabetes, stroke and heart attacks.

### Treatment

The best treatment depends on factors such as the severity of OSA, the physical structure of the person's upper airway, and other medical problems they might have. It is best to consult the doctor or sleep specialist to select the most suitable treatment.

Mild cases of OSA can be treated by making lifestyle changes. Taking the necessary steps to lose weight, avoiding alcohol, not smoking and sleeping on one's side are some of the things one can do.



People with moderate to severe OSA can use Continuous Positive Airways Pressure (CPAP) devices, oral appliances that are fitted by the dentist or orthodontist and worn in the

night, or surgery. The newer CPAP devices are more user-friendly. It is a mask-like device that is placed over the nose during sleep time. The machine blows air into the throat to keep the airways open. Air pressure is adjusted to an optimum level to keep the throat from closing or getting blocked when asleep. This therapy is especially important during the 'deep sleep' phase.

Studies show that sleep apnea during the 'rapid eye movement' phase of sleep (early morning hours) has the most unfavourable effect on long term blood glucose control. Wearing a CPAP device for 8 hours can improve blood glucose levels and reduce the risk of diabetes in people with pre-diabetes.

*The diagnosis and treatment of Obstructive Sleep Apnea can improve glycaemic control, insulin resistance and help with CVD markers and weight gain in people with Type 2 diabetes mellitus.*

Ref: [www.alaskasleep.com](http://www.alaskasleep.com) [www.webmd.com](http://www.webmd.com)

### Effect of Exercise on diabetes

- Increases insulin sensitivity and preserves the  $\beta$  cells
- Can protect cells against stress and death
- Increases levels of protein related to  $\beta$  cell function
- Decreases protein related to  $\beta$  cell death.

Diabetes Update – Summer 2018

## Recreational football helps seniors with prediabetes



You don't need to be an expert football player. Untrained middle- aged and elderly people with prediabetes can participate and benefit from the increased heart and bone health. Football along with dietary guidance effectively improves bone health.

Short-term benefits include cardiovascular fitness, ability to do more work and increased body functional capacity.

If played regularly over a period of time, it can result in a lower BMI purely from the loss of fat mass and not muscle mass, an increased ability to control blood sugar and an improved capacity to handle harmful oxygen radicals.

It has a positive effect on muscle mass. Older people find that they are unable to be as physically active as they were when younger because their muscles weaken. It is important to preserve muscle mass as we grow older to help us do ordinary day-to-day things, such as walking upstairs, gardening and doing the shopping.

The effects of recreational football are similar to those seen after periods of strength training, so it can be used as an effective alternative to the training that is normally carried out to preserve muscle mass in older people. Recreational football could help to reduce the challenges many older people face on social front as it is also sociable and fun and this can be a motivation for exercising for people who are usually not physically active.

Researchers from Denmark have concluded that playing recreational football has a positive effect on cardiovascular and metabolic health. It was found to improve the health, physical fitness and muscle function of the 63-75 year old men in the study, and significantly reduced body weight.

Recreational football includes warm ups, ball drills in pairs and games on small pitches.

## DIABETES CARE in Senior Living Homes

Senior living spaces are a necessity in our country today and there are many 'homes for senior citizens' mushrooming in and around our cities. **A question to ask is whether the home is equipped to provide the necessary diabetes care.**

Here are a few points to check out when selecting a home for the elderly.

- ♦ Are all residents screened for diabetes on admission?
- ♦ Does the senior living home have a 'diabetes guideline'? Is there a personalized diabetes care plan in addition to the standard ones. Are medications reviewed at regular intervals? Is there a hypo box with fast acting glucose to tackle an emergency?
- ♦ Is there a member of staff with a good knowledge of diabetes and training in its management; and who can take on the role of resource person.
- ♦ Do all staff have a basic knowledge of diabetes care such as being aware of the need for feet to be checked every day, and regular monitoring of blood glucose especially for those at risk of hypos.
- ♦ Is there a proper nutrition care plan? A general diabetic diet can result in malnutrition.
- ♦ Do residents have annual diabetes reviews? Is the quality and extent of diabetes care in the home reviewed regularly?

These are some of the areas of concern that have to be clarified.



# Food



Misal is a very popular spicy dish from Maharashtra. Mostly eaten at breakfast or as snack or even a one-dish meal, it is easy to make and has good nutritional value.

Here is a variation as a grilled sandwich

## Ingredients:

- |   |                      |
|---|----------------------|
| 1 cup fresh sprouted pulses (Moong/Moth bean or a mix of sprouts) | Salt to taste        |
| Oil – 1 tsp   | 1 small tomato       |
| 1 chopped onion   | 1 small onion        |
| 1 tsp garlic- ginger paste  | 1 green chilli       |
| Half cup of water   | A sprig of coriander |
|   | 4 slices bread       |



## Method:

Chop the small onion, small tomato, green chilli, and fresh coriander and keep aside.

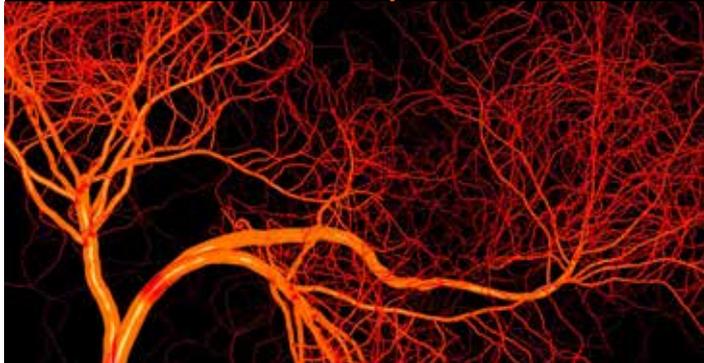
## For the sprout filling:

Heat oil. Add mustard, cumin, asafoetida and turmeric. Sauté chopped onion. Do not brown. Add the sprouts, ginger- garlic paste, salt and water. Pressure cook for one whistle.

## Putting it together:

Place a slice of bread on sandwich maker. Add the masala sprouts, then sprinkle the chopped onion, tomato, chilli. Close with another slice of bread. Toast or grill. Serve with tomato sauce.

# Small is Important



Arteries and veins are the major blood vessels that move blood in and out of the heart. They are very important because if they fail or clog, it can result in a heart attack or stroke.

However, there is also a system of smaller blood vessels, most of which are thinner than a human hair and are equally important and often overlooked. They reach through every part of the body and transport blood to and from individual cells. They are very essential for muscle cells to get all the oxygen and nutrients they need.

Hormones, including insulin, too rely on this network of tiny blood vessels to reach their final destination and do their job. Insulin is very essential for the cells to take in glucose from the blood. It also plays a role in blood flow by signalling blood vessels to expand or dilate, allowing more blood to pass through the blood vessels and reach cells. This response is either reduced or absent in the small blood vessels of many people with Type 2 diabetes. As a result, the blood vessels do not dilate, resulting in less blood flowing to the body's cells.

People with type 2 diabetes also tend to have a thinner network of small blood vessels than people without diabetes. Due to this combination of fewer small blood vessels and absence of or weak insulin response, their body cells do not receive sufficient oxygen and other nutrients. So, over a period of time, they get tired more easily, and their heart muscles are often weaker.

## DID YOU KNOW?

### Star Anise is a super food

Star anise is a rich source of anti-oxidants and vitamins which provide protection from early ageing and diabetes. Star anise tea after meals helps digestion. It can also lower fasting blood sugar levels, cholesterol and triglyceride levels.

Boil it in water and use as tea or add the powder to enhance the taste of cooked food.

**Sweet potato** has high fibre and low glycaemic index. Sautéed in oil or roasted with skin are better cooking methods than boiled or mashed sweet potatoes.



### High Vitamin D deficiency leads to obesity among Indian Women

In a joint research study by AIIMS, Diabetes Foundation of India, National Diabetes, Obesity and Cholesterol Foundation, it was found that 68.6% of Indian women are deficient in Vitamin D, 26% insufficient and only 5.5% have sufficient amount of Vitamin D. High Vitamin D deficiency was observed in North India particularly among those in the lower social strata.

**Vitamin D is believed to improve insulin sensitivity. Insulin resistance is often a precursor to Type 2 Diabetes mellitus**

# The Best of 2018



Awarded by the Ministry of Health and Family Welfare, Government of India  
**'Inspiring Diabetologist of India'**



Launch of the new Designer Diabetic Footwear



FICCI and the Govt. of Tamil Nadu honoured MV Hospital for Diabetes as the 'Best Diabetes Care Hospital' in Specialty Medicine



Dr. Vijay Viswanathan receiving the certificate from the IDF President Dr. Sadikot during the World Congress in Abu Dhabi



Students who completed Fellowship in Clinical Diabetology and M.Sc. Clinical Nutrition under The Tamil Nadu Dr. MGR Medical University

M.V.Hospital for Diabetes, Royapuram has been treating people with Diabetes mellitus and conducting research in diabetes for over 60 years. It is also a teaching institute. It has branches at

**Chennai** : Sreela Terrace, 105, First Main Road, Gandhi Nagar, Adyar, Chennai 600 020. Ph: 044-24425213/14  
Email: adyar@mvdiabetes.com

Veejay Towers, Plot No. 14, 1st Floor, Vijaya Nagar Officers Colony, 100 Feet Bypass Road, Velachery, Chennai 600 042.  
Ph: 044-22592209, 42067555, 9345184574

**Bengaluru** : 365, Sulochana Building, I Floor, 3rd Block, Sarjapura Road, Koramangala, Bengaluru 560 034,  
Ph: 080-41513333, 41468686