



TOGETHER AGAINST DIABETES

in support of



world diabetes day
14 November

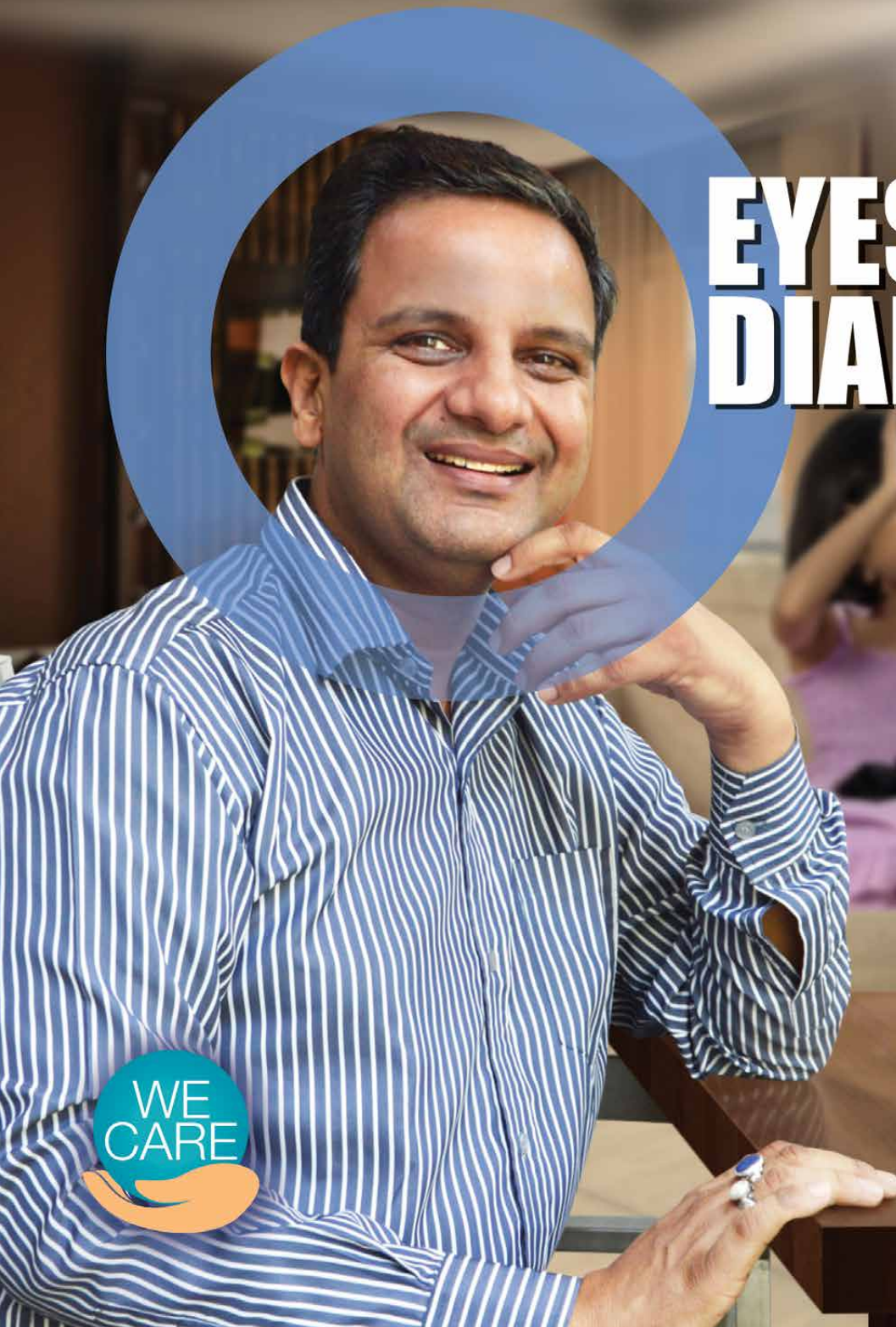
EYES ON DIABETES

Lifestyle Management

DIABETES & You

360° DIABETES CARE

WE CARE





THE TIMES OF INDIA

SAYS IT, AGAIN!

WE ARE **NO.1**

**IN DIABETES CARE,
FOR THE 2ND YEAR IN A ROW**

IN BANGALORE, HYDERABAD &
NORTH REGION

MESSAGE



Dear Doctor

Namaste! On behalf of Apollo, I salute you for being a key part of the crusade against Diabetes. The hard work with which you serve patients in the community is admirable. Apollo Sugar and the Together Against Diabetes Foundation are Apollo Hospital's commitment to build a high quality network of centres of excellence to treat diabetes, its complications, and related co-morbidities, and to help improve training and capacitation across the country. Our mission is to help every diabetic lead a disease free life and touch the lives of one million diabetic patients by 2020. With evidence based clinical protocols, robust lifestyle management, and patient friendly technology, we are delivering excellent clinical outcomes that help patients achieve and sustain control. We are also developing collaborative models like Partners of Sugar to bring our capabilities to your neighbourhood clinic to jointly serve and benefit maximal lives. We all know the numbers – too many diabetic lives growing at alarming rates, and not enough doctors, dieticians, nurses to help them. On this World Diabetes Day, let's renew our commitment to collaborate, to serve more lives and achieve a disease free lifestyle for all Diabetic patients and their families.

Warm Regards,

Ms. Sangita Reddy, Jt. MD, Apollo Hospitals Group



Dear Colleagues

Namaste! On behalf of Apollo on this occasion of WDD, I salute all the doctors, dieticians, nurses and broad medical fraternity that are working tirelessly in the crusade against diabetes. With your support, Apollo Sugar is growing from strength to strength. We now serve about 200,000 patients annually at 50 centres of excellence with world class diabetes and endocrine care. Our community surveillance and screening programs have touched the lives of 400,000 citizens and reflect our continual commitment to detect and treat early. The evidence based, patient centric model that we have together built grows stronger everyday – our publications at international and national forums like AACE, ESICON, and RSSDI is testimony that we are in this together against diabetes. The best testimony that I see every single day is the smile of our patient and their caregiver, when with you and your care team's help they achieve and sustain BG control. While we have achieved a fair bit, in Robert Frost's famous words, we do have miles to go before we sleep! We have a lot ahead to continually improve our model, our network, and our work in the community to achieve our mission of a disease free lifestyle and serve one million diabetics by 2020. I am grateful for such a great team of clinicians and staff that demonstrate huge commitment to our cause every day. While we have our work cut out for us, I am confident that this team will do everything we can to serve patients, collaborate across the ecosystem and achieve our mission.

Warm Regards.

Mr. Gagan Bhalla, CEO, Apollo Sugar Clinics

PREFACE

08

Dr. S. Sethu K. Reddy, MD
Senior Consultant, Cleveland Clinic
Endocrinology Diabetes & Metabolism



DIABETES - THE INDIAN SCENARIO

09

Dr. Shashank R Joshi, DM
Senior Consultant, Apollo Sugar Clinic, Tardeo, Mumbai

Indians characteristically have increased insulin resistance and a higher waist circumference despite lower body mass index contributing to a greater risk of developing disease at a relatively younger age

Visiting Consultant

PREDICTORS OF CIRRHOSIS IN NON ALCOHOLIC FATTY LIVER DISEASE

Spleen size should be routinely measured during abdominal imaging studies performed as part of the diagnostic evaluation of patients with suspected NAFLD

Dr. K S Somasekhar Rao, DM
Gastroenterology, Sr. Consultant Apollo Hospitals



SUGAR EXPERTS

10 | WE CARE

12 | DIABETIC RETINOPATHY

One such app that is being tested is Eye App a smartphone-based end-to-end point-of-care DR diagnostic device that enables DR screening.

Dr. J J Mukherjee, MD
Senior Consultant in Diabetes & Endocrinology, Apollo Gleneagles Hospital, Kolkata

&

Dr. Krishna Seshadri, DM
Senior Consultant
Apollo Sugar Clinics, Chennai

Clinical Outcomes

PAN INDIA SURVEILLANCE PROGRAM 15



16 | ABSTRACT



18 | MILESTONES



21 | SAHAJA YOGA

only 20 minutes daily reduced bad effects of Stress especially on the heart and Blood sugar He was speaking at the recently held Apollo Sugar Clinic Conference

Prof. Dr. Sandeep Rai, DNB
Sr. Consultant Diabetologist
Apollo Sugar Clinic, Navi Mumbai

7 MYTHS ABOUT DIABETES

Monthly Chart

REDUCE YOUR BLOOD SUGAR LEVELS



Diabetes n You

GLUCOSE MONITORING



22 | DIETICIANS DESK

DISCIPLINED EATING

Dr. Sanjiv Shah, MD
Senior Consultant Endocrinologist
Apollo Sugar Clinics, Mumbai

24

25 | SPIRITUAL APPROACH

Dr. Kalpana Dash, DM
Chief of Diabetes & Endocrinology
Apollo Sugar Clinic, Raipur

- 28 Insulin Grid
- 30 Happenings
- 32 Research & Development
- 34 Our Holistic Approach to Diabetes Care



ADVISORY BOARD

Dr. Anish Behl	Dr. S Venkataraman
Dr. Balaji Jaganmohan	Dr. S.K.Wangnoo
Dr. Bhavik Saglani	Dr. Sambit Das
Dr. D. Shantharam	Dr. Sanjay Verma
Dr. Dwarakanath C.S	Dr. Sanjoy Paul
Dr. Jayaprakashsai	Dr. SG Moazam
Dr. Jayashree Gopal	Dr. Sunil Kumar Ch
Dr. R.N.Mehrotra	Dr. Tirthankar Chaudhury
Dr. Raja Selvarajan	Dr. TS Boochandran
Dr. Ravi Shankar E	Dr. Usha Ayyagari
Dr. Richa Chaturvedi	
Dr. S Srinivas	

EXECUTIVE EDITORS

Dr. JJ Mukherjee
Dr. Kalpana Dash
Dr. Krishna G Seshadri
Dr. KS Somasekhara Rao
Dr. Menaka Ramprasad
Dr. Narendra BS
Dr. NK Narayanan
Dr. Sandeep Rai
Dr. Sanjiv Shah
Dr. Shashank R Joshi
Dr. Sridevi Paladugu
Dr. Vamsi Krishna Kolukula

ANNUAL ISSUE

Content Support by
Sugar Clinical Excellence Team

Creative Support by
Sugar Marketing Team

For Suggestions and
Information contact:

Sugar Clinical Excellence Team
(clinicalexcellence@apollosugar.com)

Dr. Vamsi Krishna Kolukula
Head - Clinical Excellence
95151 32411

Dr. Surekha Tippisetty
98492 13799

Ms AV Bhanu Keerthi
94921 47147

Design & Printed by
V Green Media Pvt. Ltd.
Hyderabad | Vijayawada
040-6646 4477 | info@vgreenmedia.com



SUGAR EXPERTS



Dr. S. Sethu K. Reddy, MD
Senior Consultant
Cleveland Clinic Endocrinology
Diabetes & Metabolism



Dr. Shashank R Joshi,
Apollo Sugar, Mumbai



Dr. K S Somasekhar Rao,
Apollo Hospitals, Hyderabad



Dr. J J Mukherjee,
Apollo Gleneagles Hospital,
Kolkata



Dr. Krishna Seshadri,
Apollo Sugar, Chennai



Dr. Sanjiv Shah,
Apollo Sugar, Mumbai



Prof. Dr. Sandeep Rai,
Apollo Sugar, Mumbai



Dr. Narendra BS,
Apollo Sugar, Bangalore



Dr. Sreedevi Paladugu,
Apollo Sugar, Hyderabad



Dr. Menaka Ramprasad,
Apollo Sugar, Hyderabad



Dr. Kalpana Dash,
Apollo Sugar, Raipur



Dr. N K Narayanan
Apollo Sugar, Chennai

It takes a village to raise a child. Long before this statement became familiar in the West, the concept had been practiced for centuries in India. It is no different for taking care of loved ones with diabetes.

Typically, someone with diabetes sees a physician every 3-4 months but unfortunately, diabetes is not an episodic quarterly problem. In contrast to the couple of hours a year, the doctor may spend with an individual patient, the person with diabetes has to live with diabetes 24/7, 365 days a year. Who is helping the other 360 days/year?

Our bodies are like our cars. Without vigilance and proper maintenance, breakdown is inevitable and costly. Diabetes means one has to look after one's nutrition, feet, eyes, blood pressure, cholesterol and kidneys at the least. This often means that several specialists, may be necessary to provide the best care. Equally important to the care is COMMUNICATION between the care-givers and with the individual with diabetes. Transparency of the care within the whole team will lead to improved quality of care.

In many places, it may be difficult to access all of these care providers in one location. It is then important to create a virtual team of the various care providers.

Finally, in addition to the health care professionals, family members and concerned friends are also critical members of the TEAM. Those with diabetes should be encouraged to be active within their social network. Others with diabetes who have managed their diabetes well (Patient Champions) can help coach and guide novices with diabetes as well.

The mantra for diabetes care in this century is to empower the person with diabetes to self-manage one's diabetes. However, one can not do it alone. We should all be committed to work collaboratively to deliver optimal care and **FIGHT TOGETHER AGAINST DIABETES.** ★



Dr. S. Sethu K. Reddy

MD, MBA, FRCPC, FACP, MACE

Senior Consultant
Cleveland Clinic Endocrinology
Diabetes & Metabolism

Past-Chief of Adult Diabetes
Joslin Diabetes Center
Harvard Medical School



DIABETES - THE INDIAN SCENARIO

India, a country with considerable socioeconomic progress and urbanization, carries a major share of the global diabetes burden. Diabetes is a lifestyle disorder which is growing in epidemic proportions. Blame it on hereditary, lifestyle, stress or the environment, it has been growing at a rapid rate in the Indian subcontinent. There are 415 million people in the world with diabetes and 78 million

and phenotype that predisposes them to develop diabetes mellitus and coronary artery disease. Indians characteristically have increased insulin resistance and a higher waist circumference despite lower body mass index contributing to a greater risk of developing disease at a relatively younger age. Additionally epidemiological transition, economic boom, physical inactivity, trendy



Dr. Shashank R Joshi

MD, DM, FACP (USA),
FRCP (Lon, Glas, Edin), FACE (USA)

Senior Endocrinologist



people in the South East Asian Region and of these 69.1 million people have Diabetes in India. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India. The cause for diabetes in India is multifactorial and in addition to heredity, rising urbanisation with unhealthy lifestyles are a major contributory factor.

The distribution of Diabetes in the Indian subcontinent is varied. Indians have a genetic composition

and phenotype that predisposes them to develop diabetes mellitus and coronary artery disease. Indians characteristically have increased insulin resistance and a higher waist circumference despite lower body mass index contributing to a greater risk of developing disease at a relatively younger age. Additionally epidemiological transition, economic boom, physical inactivity, trendy

dietary patterns and environmental factors also add to this risk. The current scenario of diabetes in India is likely to worsen in the years to come. The most disturbing trend is the shift in age of onset of diabetes to a younger age in the recent years. The greatest numbers of people with diabetes are between 40 and 59 years of age. High prevalence of obesity in Indian adolescents is an added contributing factor. The recent trend of rising diabetes among rural Indians and women is also alarming.

The need of the hour is probably to identify at risk individuals with chances of developing diabetes and to help people with Diabetes understand about the need for maintaining a healthy lifestyle with regular physical activity, to take medications appropriately and keep a watch on the blood sugar levels. Annual eye and kidney examinations are also necessary. Premature heart disease in people with diabetes is also common.

Education, awareness and empowering the community about the disease is the need of the hour. Given the lifelong need for treatment and the costs involved many people are unable to bear the economic, social and the financial burden of the disease. We need to evolve a comprehensive care program for people with existing Diabetes and try to educate the people at risk of the disease to prevent this epidemic from reaching phantom proportions. ★



What our PATIENTS are saying!

Mr. Dharmeswar Baing, 61yrs, Male, Chennai

Apollo Sugar has given me a wonderful treatment. I was very unhappy when the Doctor initiated insulin, but the friendly staff encouraged me to face my fears. Within a few days of insulin therapy I find a great difference. I am really happy that I came to Apollo Sugar.

Mr. M Golam Sarwar Chowdhury, 51 yrs, Male, Chennai

I heard a very good deal about Apollo Sugar from one of my friends. All the staff were very well behaved and quite caring about patients.condition efficiently.

Mrs. Vaishali A Gauhankar, 37 yrs, Female, Mumbai

My blood sugars are now under control. Thanks to Apollo Sugar I feel very active and normal. Very supportive staff members and consultant. I recommend Apollo Sugar to everyone having Diabetes completely healthy and happy with the treatment.

B Nagarjuna Reddy, Male, Hyderabad

More than anything I am thankful to the staff and the dietician who have given me motivation to be strict with my diet. I am very happy with my result.

L Rama Devi, Female, 66 years, Hyderabad

I have taking treatment here since March 2013. This shows the confidence I have in Apollo. I am very much thankful to the Doctor, paramedical staff who helped me in being fit and meeting my sugar goals.

Mrs Mohina Khatoun, 51yrs, Female, Mumbai

When I first came here, my sugar levels were very high but now they are under control. The staff and Consultant are very polite and gentle. The diet plan provided was very helpful for me to achieve this control. I will be thankful to Apollo Sugar.



Predictors of Cirrhosis in Non Alcoholic Fatty Liver Disease

NAFLD encompasses a clinical-pathologic spectrum of liver diseases ranging from simple steatosis to non-alcoholic steatohepatitis, the more aggressive form of NAFLD, which can progress to cirrhosis and its associated complications. NAFLD has a worldwide distribution, and parallels the frequency of central adiposity, obesity, insulin resistance, metabolic syndrome and type 2 diabetes. Age, steatohepatitis activity, and established fibrosis predispose to cirrhosis, which has a 7- to 10-year liver-related mortality in 12 to 25% of the patients.

Scoring systems as predictors of Cirrhosis

1. The NAFIC score, a simple clinical scoring system using ferritin, fasting insulin and type IV collagen serum levels for predicting steatohepatitis in NAFLD.
2. Modified NAFIC score including higher insulin values that has a better diagnostic performance (sensitivity 74%, specificity 75%).
3. Fibro Meter NAFLD score. It consists of a panel of serum markers and has been shown to have a high diagnostic accuracy for staging liver fibrosis.
4. Cirrhosis discriminant score (CDS), and the hepatitis C antiviral long-term treatment against cirrhosis (HALT-C) model- Fujii and colleagues who are members of JSG-NAFLD, confirmed the clinical usefulness of these two scoring systems.

These scores consist of platelet count, AAR (AST and ALT Ratio), and PT-INR.

The three variables platelet, albumin, and AAR were combined in an unweight sum (platelet $< 15.3 \times 10^4$ cells/ μ L- 1 point; serum albumin 0.9 gm/dL- 1 point) and formed an easily calculated composite score for predicting cirrhosis in NAFLD patients, called the

PLALA score. The PLALA score (2 or 3) was useful for detecting liver cirrhosis in NAFLD patients (sensitivity, 86.8%; specificity, 90.8%; NPV, 99.5%; PPV, 26.2%).

Portal hypertension in NAFLD

Fibrosis in NAFLD starts to develop in the pericellular space around the central vein and in the perisinusoidal region in Zone 3. This pattern of fibrosis is different from that seen in other forms of chronic liver disease in which fibrosis shows an initial portal instead of pericentral distribution. This raises the concern that portal hypertension may occur prior to the development of cirrhosis in patients with NAFLD.

Hypertriglyceridemia is negatively associated with the presence of portal hypertension. At the time of diagnosis of NAFLD 25% patients had portal hypertension. **Fibrosis stage correlated significantly with the presence of portal hypertension**

Predictors of portal hypertension

- Age
- BMI in the obese category
- History of type 2 diabetes
- Hypertension
- Thrombocytopenia
- Hypoalbuminemia
- Hyperbilirubinemia
- AST/ALT ratio
- Prothrombin time
- Presence of cirrhosis, and fibrosis stage

and 77% patients with portal hypertension had cirrhosis on liver biopsy. Among patients with portal hypertension, 88% had advanced fibrosis as either cirrhosis (stage 4,

Visiting Consultant



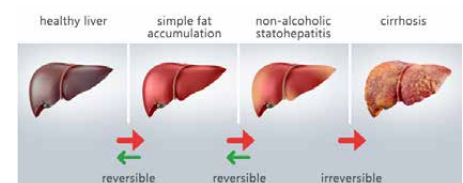
Dr. K S Somasekhar Rao, DM
Gastroenterology
Sr. Consultant Apollo Hospitals
Hyderabad

n=77) or septal fibrosis (stage 3, n=11) with only 12% patients having no (stage 0) or mild (stage 1-2) fibrosis.

Splenomegaly was the most common sign of portal hypertension in NAFLD found in 25% (88/354 patients) where the size of spleen was found to be >12 cm. **Splenomegaly per se may be an early indicator of presence of portal hypertension in NAFLD.** Thus, spleen size should be routinely measured during abdominal imaging studies performed as part of the diagnostic evaluation of patients with suspected NAFLD.

Non-invasive findings indicative of advanced liver disease including thrombocytopenia and increased bilirubin levels are also independent indicators of presence of portal hypertension in patients with NAFLD. Further, thrombocytopenia and hyperbilirubinemia were associated with a 16.9 and 5.6 folds increased risk of having portal hypertension, respectively.

With the increasing number of NAFLD cases, identifying these cases before progress to frank cirrhosis is possible by monitoring these predictors of cirrhosis in patients with diabetes, obesity and metabolic syndrome. ★



Diabetic Retinopathy an Increasing Morbidity of Diabetes Mellitus.



world diabetes day
14 November

According to Dr JJ Mukherjee, patients with known diabetes mellitus tend to ignore the need for tight blood glucose control. Unfortunately, they do so at their own risk because diabetes mellitus is a 'silent-killer'. Persistently elevated blood glucose values over a prolonged period of time, lead to long-term complications affecting various tissues of the body, in particular, blood vessels and nerves.

Dr Krishna Seshadri says that the increasing prevalence of diabetic

retinopathy (DR) is the major complication of diabetes mellitus that lead to blindness through vitreous hemorrhage and traction retinal detachment. A decade ago studies reveal a self reported incidence of 17.3% for DR in the rural population with 5.3% of them being sight threatening. Given the explosion in rural diabetes this number is set to increase dramatically. While therapies for DR evolve it is clear that the paradigm rests with effective prevention.

Thus, an early detection, adequate control of blood glucose together with maintaining a healthy body weight, avoiding smoking and effective primary care can work wonders in preventing and reducing diabetes related serious complications

- Dr J J Mukherjee.



Dr. J J Mukherjee, MD
Senior Consultant in
Diabetes & Endocrinology,
Apollo Gleneagles Hospital,
Kolkata

T
Take your medications as prescribed by your doctor.

R
Reach and maintain a healthy weight.

A
Add more physical activity to your daily routine.



Dr Krishna Seshadri- Ophthalmology is one specialty that has demonstrated to the world that provision of sophisticated care need not be divorced from cost effective care. Community ophthalmology has taken tertiary care to remote villages. By its nature and innovation ophthalmology has advanced itself to technology and innovation. Despite these advances, the primary care physician still remains pivotal in preventing diabetic eye disease. Counseling on smoking cessation, control of diabetes and control of hypertension remains the sheet anchors in the prevention of DR.

Dr Krishna Seshadri-Technology has evolved to a point that a smart

phone can screen for visual acuity, cataract, DR and glaucoma. These technology based innovations are increasingly becoming app based in which many of them use only the camera of the smart phone or a small clip on device. Some of these apps provide back end ophthalmology services including reading of images and consultations - a boon for rural and remote communities.

One such app that is being tested is Eye App a smart-phone-based end-to-end point-of-care DR diagnostic device that enables DR screening.

Thus, through a combination of hard-nosed conventional clinical care and smart technology every primary care physician can be a samurai at the frontlines in the management of diabetes and its complications. ★



Dr. Krishna G Seshadri, DM
Senior Consultant
Apollo Sugar Clinics
Vanagaram- Chennai



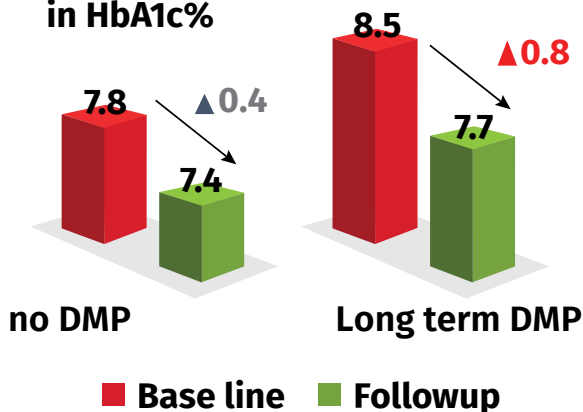
D.EYE SMARTPHONE-BASED RETINAL SCREENING SYSTEM

Apollo Sugar EMR Analysis



Having a good glycemic control is a multifactor entity. Uncontrolled Diabetes is known to predispose patients to complications related to the eye, heart, kidney and nerves. The main goal in diabetes care is to maintain metabolic control so as to minimize the complications associated with the disease and improve the quality of life of a patient.

Meaningful Reduction in HbA1c%



Sugar 360, our diabetes condition management program is serving more lives and delivering excellent clinical results

Long term Diabetes Management Programs (DMP)

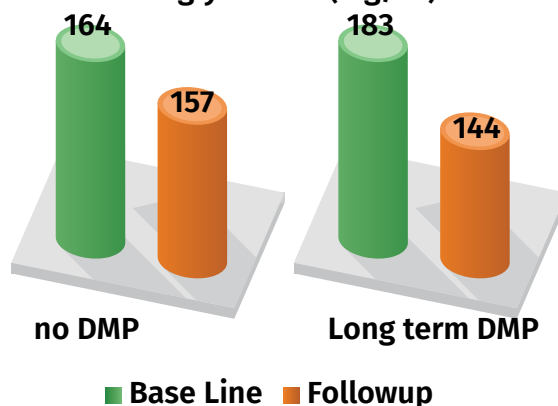
- A patient centric, structured diabetes management program (DMP) delivered via evidence based protocols by a multi-disciplinary team.
- A consistent reduction of 0.8% in HbA1c levels in DMP patients compared to non- DMP patients 0.4% was observed.
- With our disease management program, 0.8% HbA1c reduction is achieved by patients who are aged over 50 years and having long standing diabetes with uncontrolled hyperglycaemia.

Total Cholesterol (mg/dL)



All the patients enrolled in DMPs were under control and at targets for total Cholesterol, per ADA guidelines

Triglycerides (mg/dL)



Patients enrolled in our long term DMP programs also achieve co-morbidity outcomes (e.g. cholesterol, lipids).

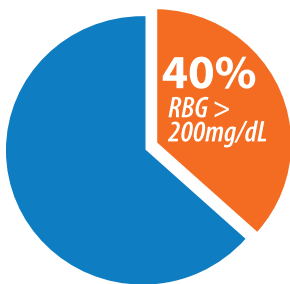
• This showcases the 360 degree approach by Sugar is providing good clinical outcomes beyond glycemic control.

*All rights reserved to Apollo Sugar Clinics. No part of this publication may be reproduced in any means electronic or otherwise. *Internal data analysis. Yet to be published. Apollo Sugar is not responsible for individual clinical outcomes.

Excerpts from Apollo Sugar PAN INDIA SURVEILLANCE PROGRAM

4 Lakh screenings across PAN India`

In our PAN India surveillance study (Usha Ayyagari et al., Prevalence and Predictors of hyperglycaemia across India: Apollo Sugar nation-wide Diabetes Surveillance Campaign- Selected as best study at ESICON 2016 conference), in 41,529 patients with established T2DM, family history` and increasing duration of diabetes were found to be factors for uncontrolled blood sugar levels (>200 mg/dL). It was found that 40% of subjects who had diabetes, were under severe uncontrolled blood sugar (RBG>200 mg/dL).



From our study, it was found that having a positive family history of diabetes increases ones chances of detecting diabetes by

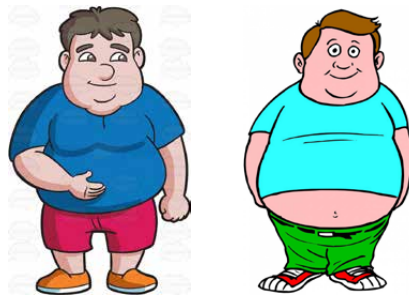
2.5 times

compared to those who do not have a family history of diabetes. Earlier studies from V. Mohan et al., reported that the above chance was

1.8 times.

The prevalence of hyperglycaemia in over weight and obese subjects with positive family history is two times greater than their counterparts (subjects with no family history).

Interestingly in highly populated cities like Hyderabad, who were unaware of their diabetes status, this risk is three times to those without family history.



Diet Excerpts from Quality of Life Questionnaire:

1. On assessing various aspects determining the quality of life in a diabetic patient through Apollo Sugar Quality of Life questionnaire,



65% of patients initiated small and frequent meals

it was found that around 65% of patients initiated small and frequent meals pattern, ideal for diabetics on counselling who were initially not following any meal plan.

2. 89% of patients who had no or

some idea on food to be avoided were instructed by our dieticians to have a clear idea in the follow- up call.

Exercise excerpts:

1. Out of the patients who did not exercise at all, around 50% initiated exercising at least for 30 minutes in a day as per recommendation from International guidelines.

2. Around 70% of patients were successfully adhering to the exercise plan as advised by the doctor.



on intervention 70% successfully following exercise plan

There is a need for reinvestigating the approach for diabetes management as initiated at Apollo Sugar. Having knowledge about the various factors affecting blood glucose level would facilitate patient centered treatment in a longer way against the generalized or conventional treatment approach.



THYROID AND DIABETES THE CO-EXISTING TWINS: APOLLO SUGAR ELECTRONIC MEDICAL RECORDS ANALYSIS



Authors: Kolukula Vamsi K, Ayyagari Usha, Behl Anish, D Shantharam, Goapl Jayashree, NK Narayanan, Dwarkanath CS, S Venkataraman, TS Boochandran, Joshi Shashank, Apollo Sugar Clinics

Objective of the study: Present study aimed to assess the prevalence and predictors of thyroid dysfunction in patients with T2DM.

Outcomes of the study:

- The study found a high prevalence of hypothyroidism in patients with T2DM.
- Female gender, higher blood glucose and total cholesterol were found to be significantly associated with hypothyroidism and Diabetes. This study raises the possibility to screen every T2DM patient for hypothyroidism.

ABNORMAL ANKLE BRACHIAL INDEX – PREVALENCE AND PREDICTORS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: APOLLO SUGAR CHENNAI STUDY.



Authors: Dr. Jayashree Gopal, Ms Bhanu Keerthi AV, Dr. Vamsi K Kolukula

Objective of the study: Present study aimed to assess the prevalence and predictors of abnormal ABI in patients with T2DM in an Indian population

Outcomes of the study: The prevalence of an abnormal ABI was high in patients with T2DM. Higher duration of diabetes, presence of neuropathy, abnormal creatinine and higher SBP were found to predict abnormal ABI. As ABI can be easily assessed, it can be used to for early identification of patients with cardiovascular risk such that intensive treatment can be started for overall better prognosis.

OBESITY SIGNIFICANTLY PREDICTS ABNORMAL BLOOD GLUCOSE: RESULTS OF APOLLO SUGAR PAN INDIA DIABETES SURVEILLANCE CAMPAIGN



Authors: Dr J Jayaprakash Sai, Dr Sridevi Paladugu, Dr Ch Sunil Kumar, Dr Menaka R Prasad, Dr Bhavik Saglani, DR Vamsi K Kolukula, Dr Shashank R Joshi

Objective of the study: Present study assessed the role of high body mass index (BMI) in predicting abnormal blood sugar in subjects screened in a mass community surveillance campaign

Outcomes of the study: The present study revealed high burden of obesity in India and also found obesity as a significant predictor of abnormal sugar levels. This study reiterates the fact that obesity and hyperglycemia as co-existing and need to be managed using multi-dimensional treatment approach

PREVALENCE AND PREDICTORS OF HYPERGLYCAEMIA ACROSS INDIA: APOLLO SUGAR NATION-WIDE DIABETES SURVEILLANCE CAMPAIGN



Authors: Dr Usha Ayyagari, Dr Sanjiv Shah, Dr J Jayaprakash Sai, Dr Raja Selvarajan, Dr Sambit Das, Dr Vamsi K Kolukula, Dr Shashank R Joshi

Objective of the study: To assess the prevalence of hyperglycaemia in patients with established diabetes mellitus (DM) across India as determined by a random capillary blood glucose test (CBG).

Outcomes of the study: The study confirms that there is a high prevalence of hyperglycaemia in patients with established DM, highlighting the challenges of delivering efficient diabetic care across India. Family history, duration of diabetes are the key predictors that physicians should consider while managing diabetes in the community.

Won Silver Medal for best poster@ ESICON 2016



DIET IN DIABETES– BENEFITS OF DIET INTERVENTION IN PATIENTS WITH DIABETES MELLITUS - A MULTI CENTRIC RETROSPECTIVE STUDY

ICOMES
International Congress on Obesity and Metabolic Syndrome

Authors: Dr Sambit Das, Dr CS Dwarakanath, Dr Jayashree Gopal, Dr D Shantharam, Dr Usha Ayyagari, Dr Vamsi K Kolukula, Dr Shashank R Joshi

Objective of the study: To assess the effectiveness of diet management program (DMP) among adults with Type 2 Diabetes mellitus (T2DM).

Outcomes of the study:

The present study found a significant improvement in the HbA1c and total cholesterol levels of patients who were adherent to the diet program for a period of 3 months or more.

BENEFITS OF ADHERENCE TO DIABETES CONDITION MANAGEMENT PROGRAM- A QUESTIONNAIRE BASED EVALUATION STUDY BY APOLLO SUGAR CLINICS

ICOMES
International Congress on Obesity and Metabolic Syndrome

Authors: Dr Vamsi Krishna Kolukula, Bhanu Keerthi AV, Dr Shashank R Joshi

Objective of the study: To assess the effectiveness and adherence of prescribed diabetes condition management program among adults with Type 2 Diabetes mellitus.

Outcomes of the study: The present study found a notable change in the behavior and awareness of patients under diet management program. It shows that periodic follow-up and counselling helps bringing positive change towards adherence to lifestyle modifications.

PREVALENCE OF UNCONTROLLED DIABETES AMONG URBAN POPULATION IN RAIPUR CITY, STATE CAPITAL OF CHHATTISGARH STATE: APOLLO SUGAR DIABETES SURVEILLANCE CAMPAIGN

ESICON
2016

Authors: Dr. Kalpana Dash, Ms Bhanu Keerthi AV, Dr. Vamsi K Kolukula

Objective of the study: To assess the prevalence of uncontrolled diabetes among patients already diagnosed as Diabetes Mellitus (DM) in Raipur city of India as determined by a random capillary blood glucose test (CBG).

Outcomes of the study: The study reveals that there is a high prevalence of severe hyperglycaemia in patients with established DM. These results highlight the challenges of delivering efficient diabetic care across Indian scenario especially in states like Chhattisgarh.

IMPACT OF COMPREHENSIVE DIABETES CARE ON DIFFERENT OUTCOMES

ESICON
2016

Authors: Dr Sambit Das, Dr Vamsi K Kolukula

Objective of the study: To assess the impact of different biochemical parameters by comprehensive and structured diabetes management.

Outcomes of the study: There was a significant improvement in all parameters included in the comprehensive diabetes management plan

PREVALENCE AND PREDICTORS FOR PROLONGED QTc IN IMPAIRED GLUCOSE TOLERANCE

ESICON
2016

Authors: Dr. Jayashree Gopal, Dr. Vamsi K Kolukula, Ms Bhanu Keerthi AV

Objective of the study: Present study aims to determine the prevalence and predictors of prolonged QTc (Corrected QT interval) in patients with impaired glucose tolerance.

Outcomes of the study: There was a higher prevalence of prolonged QTc in patients with IGT as compared to normal glucose tolerance. Higher levels of QTc was observed as age increases, in females and with uncontrolled blood pressure.

Launched Community Engagement Initiative to prevent, educate and manage diabetes



LAUNCH

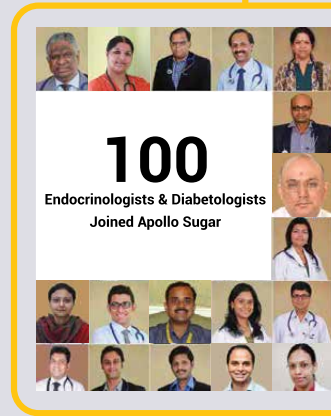
NETWORK



INITIATIVE



Launch of Apollo Sugar Clinics Ltd. on September 2014



Network of 47 diabetes c over 100 Endocrinologist & D

**AACE
2016**

Orlando, Florida

1 Abstract

**ICOMES
2016**

Seoul, South Korea

3 Abstracts

**IDACOM
2016**

Mumbai

2 Abstracts

6000 Electronic medical prescriptions issued every month



COMMUNITY SURVEILLANCE

EVERY MONTH



Clinics and Diabetologist



4 Lakhs free screenings done across 16 cities

ESICON 2016
New Delhi

8 Abstracts

RSSDI 2016
Hyderabad

5 Abstracts

AMBULATORY BLOOD GLUCOSE MONITORING

Ambulatory blood glucose monitoring or ambulatory glucose profile (AGP) is an innovative technique to measure the daily blood glucose profile. It provides a graphic and quantifiable data of all the glucose readings making it possible to adjust the treatment using real time data.

The HbA1c is a measure of the average blood glucose over the last three months. Patients with similar A1C values can have drastically different glucose profiles. The changes in blood glucose over time reflect glucose variability which is not reflected in A1C and glycaemic variability is an independent risk factor for the development of atherosclerosis.

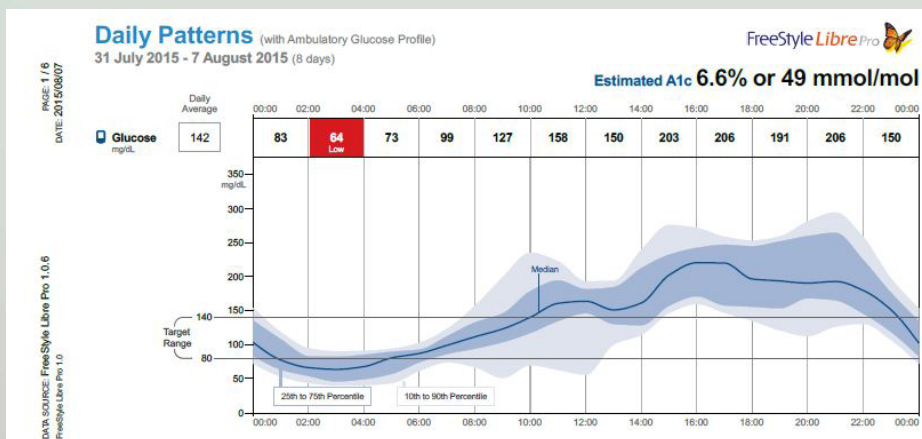
The AGP probably helps us interpret the day to day fluctuations in a much easier manner. To produce the data,

the AGP combines the Continuous Glucose Monitoring (CGM) data to a 24-hour window period and also individually depicts the data over two-week period. The programme then utilises these data to depict them in graphical patterns which are easy to comprehend. The AGP uses five distributive curves to depict the data and is drawn from the aggregated glucose. A monitoring period of 14 days was selected based on evidence that a minimum of 14 days of CGM is sufficient for identification of glucose patterns.

The AGP data when shared with the patient is an effective basis for education, helping achieve better understanding of glycaemic variability and increasing involvement in diabetes self-management.



Dr Menaka Ramprasad, DNB
Consultant Diabetologist
Apollo Sugar Clinics, Hyderabad

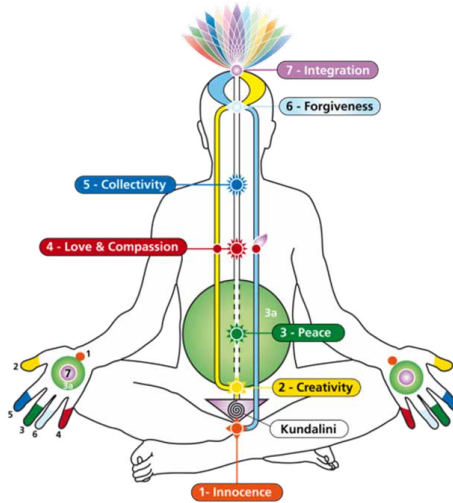




SAHAJA YOGA FOR HEART DISEASE & DIABETES

Diseases like Heart attack and Diabetes which only struck in elderly age groups are now claiming as their victims as young as 30 yrs old. The increase of these diseases is largely due to faulty Life Style and greater Stress in day to day life.

Dr Sandeep Rai, Senior Consultant Diabetologist at Apollo Sugar clinic, Navi Mumbai showed exemplary Researches on Sahaja Yoga which proved that Sahaja Yoga Meditation for only 20 minutes daily reduced bad effects of Stress especially on the heart and Blood sugar He was speaking at the recently held Apollo Sugar Clinic Conference held in Bangalore in Sept 2016.



A recently concluded study conducted by Prof Rai showed that those people practicing Sahaja Yoga recorded a significant increase in their Heart Rate Variability. Diabetics generally have low Heart Rate Variability and thus they are

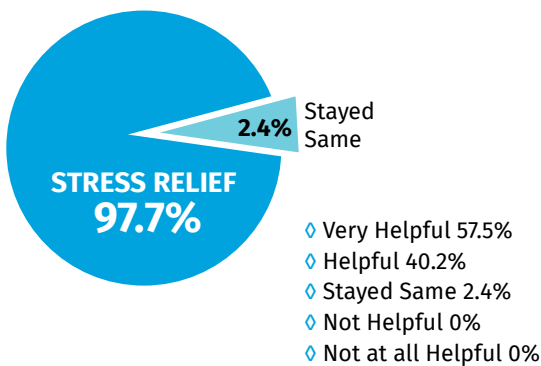


Prof Dr Sandeep Rai, DNB
Sr. Consultant Diabetologist
Apollo Sugar Clinic, Navi Mumbai

at a greater risk of developing heart diseases. They can greatly benefit from practicing Sahaja Yoga.

He said that Sahaja Yoga is extensively researched and its usefulness in tackling Stress and Stress related diseases is firmly established in Medical Science. Sahaja Yoga is now practiced in more than 150 countries of the World. It is easy to learn and does not interfere with any religion and can be learnt free of cost from Internet also. (www.freemeditation.com). ★

Stress relief



Survey Conducted by: Korea Association of Statistics & Information, sampling error ±2.5%

Benefits of Meditation

Provides a sense of peace and balance	reduces feelings of anxiety and anger	reduces pain	increases blood flow
increases energy	helps reverse heart disease	helps control thoughts	reduces stress

HEALTHY RECIPES FOR DIABETES



Prep Time: 26-30 minutes | Cook time: 31-40 minutes
Serve: 4

Ingredients for Butter Chicken Recipe

- Boneless chicken cut into 1½ inch pieces 400 grams
- Lemon juice 1 tablespoon
- Kashmiri red chilli powder 1 teaspoon
- Salt to taste
- Butter 2 tablespoons
- For marinade
- Yogurt 1/2 cup
- Ginger paste 2 teaspoons
- Garlic paste 2 teaspoons
- Kashmiri red chilli powder 1/2 teaspoon
- Garam masala powder 1/2 teaspoon
- Salt to taste
- Mustard oil 2 teaspoons
- FOR MAKHNI GRAVY
- Butter 2 tablespoons
- Green cardamom 2
- Clove 2
- Black peppercorns 2-3
- Cinnamon 1 inch piece
- Ginger paste 1 teaspoon
- Garlic paste 1 teaspoon
- Tomato puree 1/2 cup
- Red chilli powder 1/2 teaspoon
- Salt to taste
- Sugar 2 tablespoons
- Kasoori methi 1/2 teaspoon
- Fresh cream 1/2 cup

Nutrition Info

Calories : 1511 Kcal / 4 servings

Carbohydrates : 36 gms

Protein : 120 gms

Fat : 100 gms

BUTTER CHICKEN

Preparation

- Apply a mixture of red chilli powder, lemon juice and salt to the chicken pieces and set aside for half an hour in the refrigerator.
- Hang the yogurt in a muslin cloth for fifteen to twenty minutes to remove extra water. Add the ginger and garlic pastes, red chilli and garam masala powders, salt and mustard oil.
- Apply this marinade to the chicken pieces and place them in the refrigerator for three to four hours.
- Preheat the oven to 200°C/400°F/Gas Mark 6. String the chicken pieces onto skewers and cook in the preheated oven or a moderately hot tandoor for ten to twelve minutes or until almost done.
- Baste with the butter and cook for another two minutes. Remove and set aside.
- To make the makhni gravy, heat the butter in a non-stick pan. Add the green cardamoms, cloves, peppercorns and cinnamon.
- Sauté for two minutes, add the ginger and garlic pastes and sauté for two minutes. Add the tomato puree, red chilli powder, salt and half cup of water.
- Bring the mixture to a boil. Reduce the heat and simmer for ten minutes. Add the sugar or honey and powdered kasoori methi.
- Add the cooked tandoori chicken pieces. Simmer for five minutes and add the fresh cream. Serve hot with naan or parantha.



Ms. Madhavi, Dietician
Apollo Sugar Clinics, Mumbai

MUSHROOM METHI BROWN RICE

Ms Radhika Ragi Dietician, Apollo Sugar Clinics, Banjara Hills, Hyderabad



Ingredients

1 cup brown rice
1 cup button mushrooms, sliced thin
1 cup fenugreek leaves, chopped
2 onions, finely chopped
2 tomatoes, finely chopped
3 green chilies, slit
5 garlic cloves, chopped
1 teaspoon red chilli powder
2 teaspoon coriander powder
1/2 teaspoon turmeric powder
Salt to taste
2 tablespoons olive oil

Nutrition Info

Calories : 342 Kcal
Carbohydrates : 48 gms
Protein : 21 gms

Prep Time: 30 minutes
Cook time: 20 minutes

Preparation:

- Rinse brown rice twice. Soak in water for about 30 minutes.
- Drain the rice from water and add 2-1/2 cup clean water to soaked rice in a pressure cooker. Pressure cook for 2 whistles.
- In a heavy bottomed pan, heat oil. Add garlic and sauté till raw smell of garlic is gone.
- Add finely chopped onions and green chilies, sauté until onions turn translucent.
- Add finely chopped tomatoes and cool till tomatoes turn mushy.
- Add red chilli powder, turmeric powder, coriander powder and salt. Mix well. Cook for 2 minutes on low flame.
- Add button mushroom and cook for about 2 to 3 minutes. Mushrooms will release moisture, cook it in its own moisture. Add finely chopped fresh fenugreek leaves and cook for another 3 minutes.
- When mushrooms and fenugreek leaves are fully cooked, add cooked brown rice and gently mix it.
- Serve Mushroom Methi Brown Rice along with Tomato Onion Cucumber Raita, or any other Raita of your choice.

APPLE CINNAMON SOYA MILK SHAKE



Ms Sudha Rani, Dietician
Apollo Sugar Clinics,
Jubilee Hills, Hyderabad

Ingredients

1 cups apple cubes (unpeeled)
1/2 tsp cinnamon (dalchini) powder
50ml cup chilled soya milk (unflavoured)
50 ml chilled low-fat milk

Preparation:

Mix all the ingredients in a blender and blend it well till smooth and frothy



HUNGER IN THE WAY OF DISCIPLINED EATING



Dr Sanjiv Shah, MD
Senior Consultant
Endocrinologist
Apollo Sugar Clinics,
Mumbai

What to eat and How much to eat remains the most important questions for all. To answer precisely, the amount of food which your body requires but, this is difficult to predict. So then, do I listen to my hunger and eat? No, then you may end up eating more, most of the times. Hunger is a big cheater and is heavily influenced by many factors. People are only hungry when their stomachs are empty, and become satiated when it is full: false. The cues associated with an empty stomach that demands to eat are referred to as internal cues (physiological). However, external cues can induce hunger as well, when the stomach is full. Frequently external cues come in the way of disciplined eating.

External cues have an important role in the control of human food

intake. “External cues” may be divided into 2 categories:

normative cues, such as portion size, that indicate appropriate levels of consumption, and sensory cues, such as taste, smell or look (palatability), that refer to the hedonic appeal (value) of food.

Hedonic hunger (hyperphagia) is “the drive to eat, to obtain pleasure in the absence of an energy deficit.” Some of the foods have a high “hedonic rating” and some individuals may have increased susceptibility to environmental food cues. Normative cues affect everyone, whereas sensory cues, while affecting everyone, have a more powerful effect on some types of individuals (e.g. the obese) than on others. Obese individuals are more responsive to external cues and less respon-

sive to internal cues than others, and therefore are more likely to eat even when their bodies are not sending them the physiological signals to do so. Weight loss program is supposed to control (overcome) or to compensate for hedonic hunger.★

Susceptibility to food cues can lead to overeating in a society of readily available calorie dense, inexpensive foods. Such hedonistic eating overrides the body’s ability to regulate consumption with satiety. Appetite-Satiety regulation is an ever growing science of various chemicals and centers involved in crosstalk.

Dr Sanjiv Shah from Apollo Sugar is also an expert in the management of Diabetes

SPIRITUAL APPROACH TO MANAGEMENT OF DIABETES MELLITUS

“For the part can never be well unless the whole is well”- Socrates. An old Indian saying is that the “body is like a house with four rooms: physical, mental, emotional, and spiritual room”. If you want to be a whole person, you must spend at least some time in each room every day. Food and rest satisfy our physical needs; learning about the world enriches our mind; and coping with our feelings meets our emotional needs. Our spiritual needs must also be addressed. Research at Duke University’s Center for the Study of Religion/Spirituality and Health has looked at “intrinsic religiosity” had better survival rates after severe illness, less depression in older age, less disability and mortality when faced with chronic diseases, and possibly stronger immune systems. This raised questions about the effect of prayer on both medical outcomes and general wellness.

Diabetes care is coming to address the four areas of needs in one’s life. Insulin and diabetes medicines help the body. Diabetes education teaches people about blood glucose monitoring, meal plans, and exercise. Health-care teams also teach people to manage stress or to recognize warning signs of depression to maintain emotional health. Recently, medical management has begun to address the spiritual aspect of self-care management. Addressing each

of these areas of our lives helps us to move closer to a holistic form of diabetes self-management.

Holistic health care enhances the body’s natural healing ability. Practicing prayer was developed by Dr. John F. Rossiter-Thornton, a psychiatrist in Toronto. He used prayer wheel in his psychotherapy patients. Components of prayer (40 mins) were, giving thanks, singing of love, requesting protection and guidance, asking forgiveness for oneself and others, asking for needs, asking for inspiration, and surrendering to divine will.

This demonstrated decreased anxiety, improved outlook, and improved family relationships.

A small, unpublished study has looked at the possibility of enhancing diabetes self-management with the use of the prayer wheel. Nine study participants with Type 2 diabetes used the prayer wheel for three months in addition to their usual self-care. Glycosylated hemoglobin values were measured both before and after this three-month period and compared with the HbA1c values of a similar group of nine people with Type 2 diabetes who were



Dr Kalpana Dash, DM

Chief of Diabetes & Endocrinology
Apollo Sugar Clinic, Raipur

not involved in the study. Seven experienced a drop in HbA1c levels during the study period; this drop in HbA1c averaged 0.9%. The other two participants experienced an average increase of 0.4%. In the control group, five people experienced an average drop of 0.5% in HbA1c, and four people experienced an average increase in HbA1c of 0.8%. Study was very small, suggested that the use of prayer combined with other holistic approaches to diabetes self-management, may have beneficial effects on HbA1c.

More research in the field of spirituality is necessary, of course. However, for those comfortable with incorporating prayer into their daily lives may be another resource to enhance diabetes self-management. ★



TOGETHER LET'S COMMIT TO REDUCE YOUR BLOOD SUGAR LEVELS

Day-1 Fill half your every meal with fruits and vegetables	Day-2 Stay active, stay healthy 	Day-3 Maintain regular meal timings and don't skip your meals	Day-4 Replace coffee with green tea 	Day-5 Bananas, Mango, Chiku, Watermelon, pineapple should be avoided	Day-6 Invest in proper footwear and socks. Get regular foot check-ups
Day-7 Don't miss your medicines even on sick days 	Day-8 Walk briskly for 30-45 minutes a day 	Day-9 Start an exercise program or join a sports team 	Day-10 Best tip to control post prandial peaks is to consume a good serving of vegetables before cereal intake	Day-11 Avoid taking carbonated drinks, as they spike sugar levels	Day-12 Avoid consuming bakery food and products 
Day-13 Fruits contain antioxidants which reduce the risk of complications like neuropathy and retinopathy	Day-14 Do not eat fast; masticate and munch your food well before you swallow	Day-15 Make time to practice meditation, yoga & prayer, they provide us with daily fuel for your busy life	Day-16 Include good and complex carbs like whole grain breads, cereals, vegetables and fresh fruits	Day-17 Don't consume processed foods especially sugar and white flour	Day-18 Exercise and diet can either reduce or delay the incidence of diabetes by over 50%.
Day-19 Avoid taking fruits with high glycaemic index 	Day-20 Diet is the key in controlling your blood Sugars 	Day-21 Check your blood sugar level often 	Day-22 Educate yourself and educate the people around you that will be with you daily	Day-23 Consult your doctor to determine the frequency in tracking your blood sugar levels	Day-24 Diabetes is the major cause for foot ailments and leads to foot amputation
Day-25 Get updated with technology, gives you additional support	Day-26 Do not go barefoot. This might lead to unwanted injuries 	Day-27 Be stubborn about your goals and flexible about your methods	Day-28 Avoid consuming alcohol 	Day-29 Studies show that 7% weight loss gives 58% reduced risk of diabetes	Day-30 Smoking makes diabetes much worse. Avoid smoking 

We are as concerned as you are, regarding prolonged unmanaged diabetes and its hazards. Keeping this in mind and backed by 30 years of Apollo's legacy of excellence in healthcare, Apollo Sugar has come up with a solution for you. A personalised holistic 30 day plan that will guide you with detailed investigation, Doctor consultation, medication and counselling. Your contribution along with this plan will result in noticeable reduction in blood sugar level, which in turn will not only help you lead a normal life but will also prevent complications that may affect your heart, kidneys, feet and eyes.



7 MYTHS ABOUT DIABETES



Dr Narendra BS, DM
Consultant Endocrinologist,
Apollo Sugar Clinics, Bangalore

Myth – 1: I have to be overweight to get diabetes.

Truth: - Actually about 20 percent of people who get type 2 diabetes are not overweight, nor are most people who get type 1 diabetes.

Myth – 2: Type 2 diabetes is not as serious as type 1.

Truth: Actually, type 1 and type 2 diabetes are equally serious, because they both can lead to the same devastating complications.

Myth – 3: So many of my family members have diabetes, I'm certain to get it!

Truth: Actually, you may be predisposed to getting type 2 diabetes, but you can do a lot to possibly prevent it.

Myth – 4: Insulin shots are very painful.

Truth:- Actually, today's insulin injections typically don't hurt, and most patients report that they hardly feel them at all.

Myth – 5: If my diabetes is under control, there's no need to see my doctor.

Truth: Actually, because you may not notice any symptoms at the beginning of many diabetic complications, seeing your doctor regularly is important both to prevent complications and to detect them early.

Myth – 6: Women with diabetes shouldn't get pregnant.

Truth:- Actually, this mantra, still told to thousands of women today, is no longer true.

Myth – 7: Healthful foods won't raise my blood sugar.

Truth: Actually, foods that are healthful can also contain a lot of carbohydrates, which raise blood sugar. ★

FACTS AND FADS ON DIABETES



Dr Sridevi Paladugu, DM
Senior Consultant Endocrinologist,
Apollo Sugar Clinics, Hyderabad

1. Diabetes is one of the leading causes of death in the world

The risk of cardiovascular diseases increases as blood glucose levels rise.

2. Type 2 Diabetes can be prevented

Thirty minutes of moderate intensity physical activity and a healthy diet can drastically reduce the risk of developing type 2 diabetes.

3. Diabetes is an important cause of blindness, amputation and kidney failure

Diabetes of all types can lead to complications in many parts of the body and increase the overall risk of dying prematurely. Possible complications include heart attack, stroke, kidney failure, leg amputation, vision loss and nerve damage.

4. Early diagnosis is the starting point for living well with diabetes

The longer a person lives with undiagnosed and untreated diabetes, the worse their health outcomes are likely to be. Basic technologies such as blood glucose measurement should be readily available in primary health care settings. ★





Insulin injecting sites

Insulin is not absorbed the same in all the sites of injection. The site of injection plays a major role in the insulin showing its effectiveness.

People injecting insulin for more than three times a day should rotate their injection sites. Injecting in the same place much of the time can cause hard lumps or extra fat deposits to develop. These lumps are not only unsightly; they can also change the way insulin is absorbed, making it more difficult to keep your blood glucose on target.

Rotation is injecting in the similar site of the body, keeping the injection site about an inch apart.

Injection sites include:

Abdomen

It is the most effective area for absorption. Select a site between the navel and public are, pinch up the skin and inject.

Thigh

Inject into the top and outer areas of your thigh, about 4 inches down from the top of your leg and 4 inches up from your knee.

Arm

Use the fatty area on the back of your arm, between your shoulder and elbow

- Insulin is absorbed at different speeds depending on where you inject, so it's best to consistently use the same part of the body for each of your daily injections. For example, do not inject your lunch bolus dose in the abdomen on Monday and in the thigh on Tuesday. If you have picked the thigh for your evening injection, then continue to use the thigh for all of your evening injections.

- On the other hand, your supper or bedtime dose of long-acting insulin could be injected into the thigh, but-



tocks, or upper arm. That's because you want the long-acting insulin to take effect gradually and cover your needs throughout the night.

- If you mix two types of insulin in one shot, you can inject into the abdomen, arm, thigh, or buttocks.

For most effective results, Work with your doctor and track your blood glucose levels carefully when you begin practicing site rotation. ★



DIABETES TREATMENT HAS COME A LONG WAY

Insulin was discovered in 1921 and over the ensuing years revolutionised the treatment of diabetes and today every diabetes patient is familiar with it. The journey from insulin's discovery to its full commercial availability was filled with intense research by multiple organizations to make it available for human use and in enough quantity.

The thrust of medical research in finding viable diabetes drugs has been in three directions: **reducing insulin resistance in the body, stimulating the production of insulin and finally replacing the insulin that the body stops producing altogether.**

The newest category of drugs to join the diabetes therapeutic portfolio is **incretin hormone GLP -1 (Glucagon-like peptide 1)**. Secreted in the gut in response to food, it stimulates the body to produce insulin. Administration of GLP -1 to diabetes patients has been shown to significantly reduce the risk of hypoglycaemia (low blood glucose level), which can occur when a combination of diabetes drugs are being used. Moreover, this hormone causes a feeling of satiety and reduces a patient's food intake. Since weight management is a well-known issue for most diabetics, GLP-1 drugs offer great promise in this regard. It is especially beneficial if for those with mild diabetes and for patients who have not been put on insulin treatment.

In the words of **Dr. Sanjiv Shah from Mumbai**, "GLP 1 agonist drugs are unique due to multiple beneficial actions of natural insulin secretion,

Sponsored by:

Lilly | DIABETES

for more information kindly visit
www.lillyindia.co.in

appetite-food intake control, weight loss, no hypoglycemia, sustained glucose control and cardio-protection. GLP1 agonist can achieve target glucose control at any stage (early or late) of diabetes with any oral drugs or insulin in combination."

Dr. Arpandev Bhattacharya from Bangalore says, "This class also has newer agents which bring efficacy and with convenience of infrequent dosing regimen which patients would be ready to accept and adhere with."

Today, people with pre-diabetes begin management and control of blood sugar levels through lifestyle changes such as diet and exercise. If this fails and the individual develops diabetes, physicians resort to pharmacotherapy as a means of treatment. Insulin therapy is used when oral medications can no longer

control diabetes or if the pancreas becomes unable to produce enough insulin. Grouped by how fast they start to work and how long their effects last, rapid-acting, short-acting, intermediate-acting, long-acting and pre-mixed forms of insulin are available today. For diabetes management, doctors choose a type of insulin depending on the patient's age, blood sugar levels, the body's response to insulin and the patient's lifestyle choices.

The need is for patients with diabetes to realise that lifestyle variables such as diet and exercise are integral to treatment and when we put these together with the right drug combination we make certain that tertiary complications are delayed or prevented allowing diabetics to enjoy a high quality of life at every stage.★

Make injectable therapy **Click** for your patients

1st Once-Weekly GLP-1 therapy

trulicity™
dulaglutide once-weekly injection



Proven HbA1c reduction



Once weekly dosing



Ready-to-use pen



Apollo Sugar Clinics
Proven Diabetes Care

ANNUAL ISSUE

ICONS of HEALTH Award by Times of India



Dr. Kalpana Dash of Apollo Sugar Clinics, Raipur has been awarded with ICONS Of HEALTH Award by Times of India. Dr. Kalpana Dash got this award for his excellent services rendered to patients of Chhattisgarh in the field of Endocrinology.

Dr. Kalpana Dash- MD, DM (Endo), has been working for the last 23 years as Senior Consultant Endocrinologist.



Managing type 2 diabetes is not only about taking medication but also in making healthy, better food choices and lifestyle. Eating well, exercising regularly, and making other life-style changes can help manage blood sugar, prevent diabetes-related complications, and improve your overall health.

At Apollo Sugar, we make sure our patients move out with utmost satisfaction and overall health. These are the champions who have inspired us.

46th Annual Conference of Endocrine Society of India

(ESICON 2016)

21st - 23rd October, 2016



Organized by
Dept. of Endocrinology & Metabolism
All India Institute of Medical Sciences, New Delhi

Our poster titled Prevalence and Predictors of hyperglycaemia: a nation-wide diabetes surveillance study by Usha Ayyagari et al., won best poster award in the Type 2 Diabetes category at ESICON 2016 conference.

NUTRITION WEEK

SEPTEMBER 1st to 7th 2016



With the theme of “Life cycle approach for better Nutrition”, the main objective of this campaign all over Sugar Clinics was to create awareness on the importance of nutrition for health which has far reaching implications on better diabetes control.



Dr. J. Jayaprakashsai

Give Feedback

Post Graduate Diploma in Diabetology (PGDD), Fellowship in Diabetology, Fellowship in Diabetology, Fellowship in Diabetology, Fellowship in Diabetology, MD(Physician) Diabetologist, 10 Years Experience

100% (365 votes) Medical Registration Verified

Dr. Jayaprakashsai was associated with Diabetes Speciality Clinics, Elbit Medical Diagnostics Ltd. Banjara Hills, Hyderabad, India for the past 8 years. Current more...

SHARE [Facebook] [Twitter] [Google+] [Email]

Info Feedback (174) Consult Q&A

With 174 patients giving a satisfactory feedback and 365 patients voting for him, Dr J Jayaprakashsai, Consultant, Apollo Sugar Clinics stands first as the highest rated diabetologist in Hyderabad according to practo.



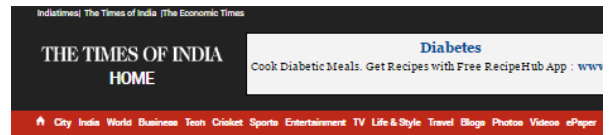
Dr Sridevi Paladugu, Senior Consultant Endocrinologist speaks on the dos and don'ts for a healthy diabetic heart.



Dr Menaka Ramprasad, Consultant, Apollo Sugar Clinics Hyderabad speaks on having homemade sweets and natural food to keep sugar levels in check during festivals



Dr Ravi Sankar Erukulapati, Senior Consultant Endocrinologist, Apollo Sugar Clinics, Hyderabad speaks on being aware of cardiac risks in diabetes



Diabetics at risk of thyroid dysfunction, says study

TNN | May 10, 2016, 07:38 AM IST

Diabetes
Get Fast Recipes, Diabetic & More! Free RecipeHub App
www.recipehub.com

Diabetes kidney treatment
Reduces Creatinine, Urea & Increase Hemoglobin. Effective & Proven
clinic.healthmailer.info/Treatment

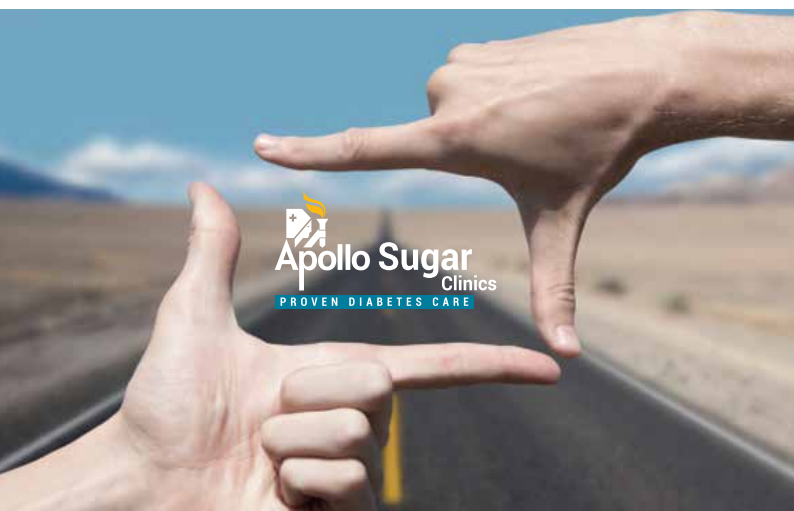
Hyderabad: If you have been battling diabetes, it is possible that you may also be diagnosed with thyroid dysfunction, especially if you are a woman. This revelation was made by a team of researchers from Apollo Sugar who analysed the electronic medical records of 4,547 diabetic patients with Type 2 diabetes mellitus (T2DM) at 45 Sugar clinics across the country including nine in Hyderabad.

The study said that thyroid dysfunction was found in 1,207 persons (26.54 per cent) of the 4,547 diabetics surveyed. It added that thyroid dysfunction was more common among diabetic women with 76.3 per cent of those surveyed affected by hypothyroidism.

"People must go for compulsory screening for thyroid problem at least once every one year just like they go for eye, feet and kidney screenings to rule out diabetic retinopathy, diabetic foot and diabetic nephropathy," said Dr Jayashree Gopal, senior consultant endocrinologist and diabetologist, Apollo Sugar, Chennai, who was one of the researchers.

While discussing the paper "Thyroid and Diabetes the co existing twins: Apollo Sugar Electronic Medical Records Analysis" presented at the International Diabetes Update 2016 (IDU 2016), a three-day conference on diabetes in the city, Dr Jayashree said, "Both thyroid dysfunction and diabetes are known to affect people when they gain weight or it happens with age. But diabetic women need to be extra careful."

In fact, irrespective of diabetes, thyroid problems are known to affect women more due to several reasons, mainly hormonal. Ironically, there is no standard protocol that advocates regular screening of diabetics for thyroid dysfunction. What are the implications if a diabetic were to ignore thyroid screening? "Unrecognised thyroid dysfunction may impair metabolic control and add to cardiovascular disease risk in diabetic patients," said Dr Vamsi K Kolukula, head, clinical excellence, Apollo Sugar, one of the authors of the study. So important is the study that Dr Shashank Joshi, president of Endocrine Society of India, said the organisation got special permission for a poster presentation from The American Association of Clinical Endocrinologists at its annual meet to be held in Florida May end.



FDA APPROVES FIRST AUTOMATED INSULIN DELIVERY DEVICE FOR TYPE 1 DIABETES

Technology, an offshoot of science, has transformed our lives in many ways. Ground-breaking scientific research in the field of diabetes has given us three new exciting technologies this year which can make a significant impact in the lives of people with diabetes.

Firstly, the American Diabetes Association has approved a “closed-loop insulin pump” (Minimed 670g®).



This type of insulin pump, in essence, acts like an “artificial pancreas”. The major difference from the previously available insulin pumps is that this new pump, equipped with computerised mathematical equations, can automatically adjust the amount of basal insulin that is delivered based on inputs from the coupled continuous glucose monitoring system and requires no input from the user. Therefore, very much like natural pancreas, it automatically increases the insulin delivery when the glucose levels are high and decreases when levels are low.

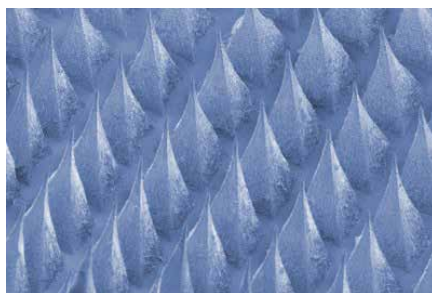
This is a first-of-its-kind technology can provide people with type 1 diabe-

tes greater freedom to live their lives without having to consistently and manually monitor baseline glucose levels and administer insulin.

According to the U. S. Centers for Disease Control and Prevention, approximately 5 percent of people with diabetes have type 1 diabetes. Also known as juvenile diabetes, type 1 diabetes is typically diagnosed in children and young adults. Because the pancreas does not make insulin in people with type 1 diabetes, patients have to consistently monitor their glucose levels throughout the day and have insulin therapy through injection with a syringe, an insulin pen or insulin pump to avoid becoming hyperglycemic (high glucose levels).

The second technology is called the “smart cell patch”. This is based on a new technology which was invented last year called “smart insulin patch”.

“Smart cell patch” is a tiny synthetic polymeric patch containing thousands of natural beta cells, the cells



that secrete insulin. The patch has multiple micro-needles which sit in the subcutaneous tissue through which it senses the glucose levels and automatically delivers the required insulin without causing hypoglycaemia. This effectively keeps the beta cells outside the reach of body’s immune system. Hence the vexed problem of rejection which is encountered with pancreas transplant

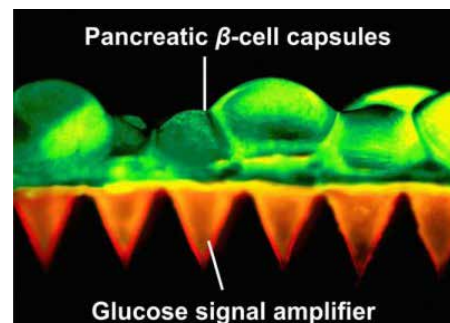


Dr N K Narayanan,
MRCP (Gen Med, UK)
Consultant Endocrinologist
Apollo Sugar Clinics, Chennai

is by-passed. More clinical studies are needed before this technology comes into routine clinical practice.

The other technological advances are in the mode of delivery of the injectable anti-diabetic medications. Inhaled insulin could soon be re-launched which can deliver the bolus insulin through a novel inhaler device (Afrezza®). Exenatide, the injectable non-insulin anti-diabetic medication, which also causes weight loss, will soon be available as an implantable depot preparation. This is implanted underneath the skin and can be replaced once in 3, 6 or 9 months based on individual requirements.

There are several other technological marvels in the pipeline like Bluetooth-enabled insulin pens, glucose sensor with pre-loaded multiple test strips and virtual-reality based diabetes education apps, all of which would make life easier for people with diabetes. ★



LAUGHTER CORNER

Laughing is the best medicine



The Red Circles are your red blood cells. The white circles are your white blood cells. The brown circles are donuts. We need to talk.



Your blood sugar is high, but your salt, pepper, Ketchup mustard and grated cheese levels are fine.



You have Type 3 Diabetes. Too much artificial sweetener in your blood!



Welcome the diabetes hotline!
If you need a new excuse for cheating on your diet, press 1. If you need a new excuse for skipping your workout, press 2



A Diabetic walks into a bakery and asks the lady behind the counter "Got that is safe for diabetics?"

The Baker says, "Everything. As long as you don't put it in your mouth."

OUR HOLISTIC APPROACH TO DIABETES CARE



In-clinic

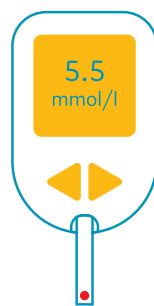
- Patients Demographics and Electronic Medical Recording
- Doctor Consultation
- Diagnostics
- Complications Screening
- Management
 - Diet and Lifestyle Management
 - Education and Awareness





Diabetes Management Centre

- Outbound calls by Expert Team
- Personalized Health Coach
- Questionnaire guided disease counselling



Technology

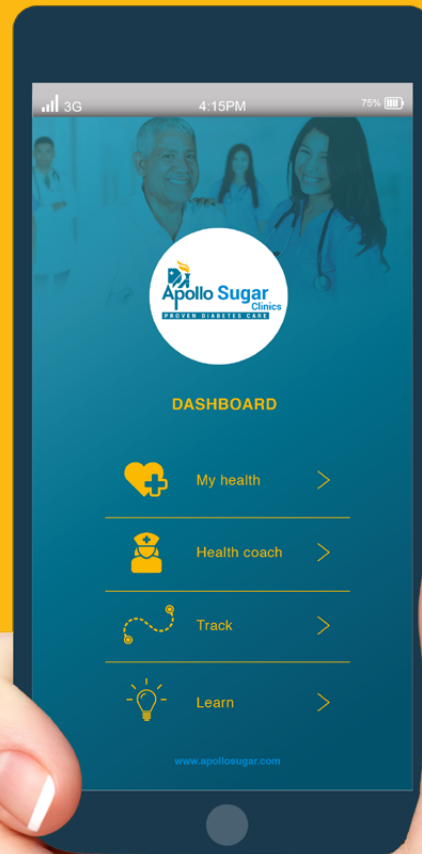
- Glucometer
- Virtual Health Coach
- Apollo Sugar App
- SMBG

PROVEN DIABETES CARE NOW IN YOUR POCKET

Introducing the Apollo Sugar Mobile App.

The new and improved **Apollo Sugar App** for Android and iOS, puts the Apollo Sugar proven, multidisciplinary care model at your fingertips. With this user friendly app, get timely reminders of your medication, diet and exercise. Also view your lab reports, monitor your diet chart, track your exercises, get useful tips and information on Sugar 360 or year around Annual Care plan on the go. Special features like **Health Coach** provides expert opinion & **Sugar Buddy** is there to hear you out with your concerns, 24/7.

Download the app now from  



Powered by
 **TOUCHKIN**

Andhra Pradesh: Visakhapatnam **Assam:** Guwahati **Chhattisgarh:** Bilaspur | Raipur **Delhi:** Janakpuri | Sarita Vihar | Rohini | Karol Bagh | Kailash Colony
Haryana: Faridabad **Karnataka:** Bangalore (Banashankari | Fraser Town | Koramangala | Seshadripuram | Bannerghatta Road | Bellandur | JP Nagar | Electronic City | Jaya Nagar) | Mysore **Mathya Pradesh:** Gwalior **Maharashtra:** Mumbai (Kandivali | Vile Parle | Tardeo | Navi Mumbai | Chembur)
Odisha: Bhubaneswar **Tamil Nadu:** Chennai (Greems Road | Annanagar | T Nagar | Kotturpuram | OMR | Vanagram | Valasarvakam), Madurai, Trichy
Telangana: Hyderabad (Jubilee Hills Hospitals | Jubilee Hills Clininc | Secunderabad | Tolichowki | Kondapur | Nizampet | Hyderguda | Banjara Hills)
West Bengal: Kolkata (Kankurgachi | Rajarhat) **Oman:** Muscat

Toll free: 1800 103 1010

Design & Print by www.vgreenmedia.com

*All rights reserved to Apollo Sugar Clinics. No part of this publication may be reproduced in any means electronic or otherwise. The views and opinions expressed in these articles are those of the authors and do not necessarily reflect Apollo Sugar Clinics official statement.