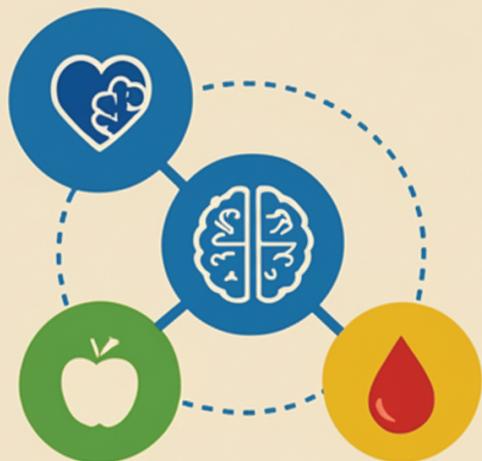


A MONTHLY PUBLICATION OF DIABETIC ASSOCIATION OF PAKISTAN

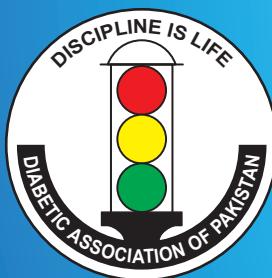
Diabetes Digest

ڈائیا بٹیس ڈائی جسٹ

MANAGING DIABETES & WELL BEING



LIVING WELL WITH
DIABETES



VOL.39 NO.12
December 2025

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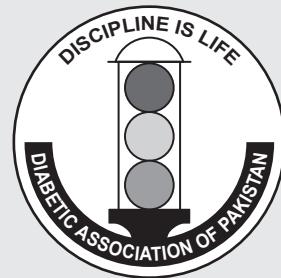
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Editor : Dr. Faiza Rauf & Ms Amna Mansoor

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To Diabetic Association of Pakistan.

Diabetes Awareness Session for School Students

The Diabetic Association of Pakistan successfully conducted a diabetes awareness session for school students in the month of December 2025, as part of the T1D Project. The session aimed to educate students about diabetes, with a special focus on Type 1 diabetes (T1D), helping them understand its causes, symptoms, and the importance of early detection and proper management.

During the session, students were provided with practical guidance and knowledge on healthy eating habits, the importance of physical activity, monitoring blood sugar levels, and ways to support peers or family members living with diabetes. The interactive session also included a questions and answers segment, allowing students to clarify their doubts and gain confidence in understanding diabetes.

Appreciation and Acknowledgement

The Diabetic Association of Pakistan extends its sincere thanks to the Council of Management for their continued support and guidance, which makes initiatives like this possible. Through such awareness programs, the Association aims to empower young minds, promote healthy lifestyles, and encourage a more informed and supportive community.

-Amna Mansoor



Diabetes Education Session for Students

Diabetes Awareness Campaign for School Teachers

The Diabetic Association of Pakistan (DAP) conducted a diabetes awareness campaign for school teachers in the month of December 2025. This initiative aimed to increase knowledge and understanding of diabetes among educators, with a special focus on Type 1 diabetes (T1D) and the unique needs of children living with the condition.

During the session, our Diabetes Educator from DAP shared important information about diabetes, including its symptoms, management, and the daily challenges faced by children with T1D. Teachers were guided on how to recognize early warning signs of high or low blood sugar and the steps they can take to support students effectively within the school environment.

The campaign also emphasized practical ways for teachers to create a safe and inclusive environment for students with diabetes. Educators learned how to monitor and manage blood sugar during school hours, encourage healthy eating and physical activity, respond appropriately to hypo- and hyperglycemia, and reduce stigma while promoting empathy among classmates.

The Diabetic Association of Pakistan extends its heartfelt thanks to all participating teachers for their commitment to learning about diabetes and supporting children with T1D. We also appreciate the continued support of our Council of Management, which makes initiatives like this possible. Through this campaign, DAP aims to empower educators with knowledge and confidence to ensure that children with diabetes can thrive in their school environment.

-Amna Mansoor



Diabetes Education Session for School Teachers

Abstracts

Pregnancy-Related Glucose Intolerance (PRGI): Exploring Nutritional Awareness and Preventive Practices among Respondents of Reproductive Age

Sineha Kumari¹, Faiza Rajput², Aqsa Arain³, Waqar Shafiq⁴

¹3rd year Institute of Pharmacy, Shaheed Mohtarma Benazir Bhutto Medical University (SMBBMU), Larkana, Pakistan

Abstract

Background:

Pregnancy-Related Glucose Intolerance (PRGI), or gestational diabetes mellitus (GDM), is a glucose intolerance developing during pregnancy due to placental hormones interfering with insulin action. It often presents asymptotically but may cause thirst, frequent urination, and fatigue. Uncontrolled cases can lead to preeclampsia, polyhydramnios, preterm labor, and neonatal hypoglycemia. Long-term risks include maternal type 2 diabetes and metabolic disorders in offspring. Major risk factors—obesity, physical inactivity, and genetic predisposition—heighten vulnerability. Despite this, awareness of PRGI remains limited, emphasizing the need to assess preventive knowledge and practices.

Methodology:

A cross-sectional descriptive study was conducted among 307 respondents aged 18–45 years, including medical students and professionals. Data were collected using a structured online questionnaire covering demographics, awareness, risk perception, and preventive behaviors. Responses were analyzed in SPSS using descriptive statistics and Chi-square (χ^2) tests to identify associations between awareness levels and selected variables. A p-value < 0.05 was considered statistically significant.

Results:

Among respondents, 60% were aged 21–25 years and 36.9% were 18–20 years. Most were single (76.3%), and 63% were undergraduates. A family history of diabetes was reported by 71%, showing a significant association with awareness ($\chi^2 = 6.42$, $p = 0.011$). Overall, 69.9% had heard of PRGI, and 81% correctly defined it as diabetes during pregnancy, significantly related to educational status

($\chi^2 = 8.37$, $p = 0.004$). Key risk factors identified were obesity (65%), high sugar intake (45%), physical inactivity (48%), and stress (51%), with inactivity moderately linked to awareness ($\chi^2 = 5.86$, $p = 0.016$). Frequent urination was recognized by 66% as a symptom, and 69% identified insulin as the preferred therapy since it does not cross the placenta ($\chi^2 = 7.29$, $p = 0.008$). About 80–81% emphasized the need for awareness and counseling sessions, significantly associated with positive preventive attitudes ($\chi^2 = 9.15$, $p = 0.003$).

Discussion:

Findings suggest that while awareness of PRGI was satisfactory, practical preventive behaviors—especially related to nutrition and activity—were limited. Education strongly influenced awareness, indicating the need for PRGI-focused content in academic and community programs. Participants' emphasis on awareness sessions highlights the recognition of prevention as the key to lowering PRGI prevalence.

Conclusion:

Although awareness of PRGI among respondents was encouraging, preventive measures were insufficient. Strengthening nutritional education and lifestyle interventions among young adults and future healthcare professionals could reduce gestational and long-term metabolic complications. Early lifestyle modification remains essential for PRGI prevention.

Keywords: Pregnancy-related glucose intolerance, gestational diabetes, insulin resistance, nutritional awareness, physical inactivity, preventive therapy, medical students, maternal health.

Female Infertility: A Narrative Review of Emotional, Nutritional, Lifestyle, and Environmental Factors

Authors: Saba Noor Bhatti¹, Shifa Shaikh¹, Rida Zainab Bhutto¹, Laiba Shaikh¹
Institute of Pharmacy (SMBBMU)

Abstract

Background:

Infertility in women is a multifaceted issue influenced by a range of biological, psychological, nutritional, and environmental factors. This narrative review consolidates current findings to better understand how these factors individually and collectively impact female reproductive health. Emotional stress, dietary habits, lifestyle behaviors, and exposure to environmental toxins are emerging as critical determinants that may compromise fertility outcomes.

Methodology:

A comprehensive literature search was conducted across major scientific databases including PubMed, Science Direct, Google Scholar, and Springer Link. The review included articles published between 2005 and 2024, selected based on relevance to the themes of infertility, emotional well-being, diet, lifestyle, and environmental exposure. Search terms used in various combinations included: female infertility, subfertility, nutrition and fertility, PCOS, emotional impact of infertility, lifestyle and reproduction, and environmental factors affecting fertility. Only peer-reviewed journal articles, clinical studies, and high-quality reviews were included.

Results:

Female infertility results from a complex interaction of emotional, nutritional, lifestyle, and environmental influences. Psychological stressors, including anxiety, depression, and emotional distress related to subfertility, can adversely affect reproductive function. Nutritional imbalances, particularly deficiencies in key micronutrients like folate, vitamin D, and omega-3 fatty acids, have been consistently associated with reduced fertility. Metabolic conditions such as obesity and polycystic ovary syndrome (PCOS) are also significant contributors. Furthermore, lifestyle behaviors including smoking, alcohol and caffeine intake, and sedentary living have been identified as risk factors. Environmental pollutants and societal pressures contributing to delayed family planning, especially in women over 35, further elevate infertility risks.

Conclusion:

The literature supports a holistic approach to managing and preventing female infertility. Key strategies include preconception nutritional counseling, behavioral interventions, psychological support, and early clinical evaluation. Addressing emotional well-being alongside physical and lifestyle factors can significantly improve fertility outcomes and provide more comprehensive support for individuals and couples facing fertility challenges.

Keywords:

Unbalance Diet, Nutrition, Female Reproductive Health, Female Infertility.

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Comparison between the efficacy of Empagliflozin and Metformin versus Sitagliptin and Metformin in the treatment of Non-Alcoholic Fatty Liver Disease (NAFLD) with Diabetes Mellitus (DM).

Dr Syeda Urooj Riaz, Dr. Syed Junaid Humail, Dr. Suraksha Rani, Dr. Abdul Samad Bijuda, Dr. Suniya Jawed

Abstract

Objective:

To compare the efficacy of Empagliflozin plus Metformin versus Sitagliptin plus Metformin in treating patients with Non-Alcoholic Fatty Liver Disease (NAFLD) and Type 2 Diabetes Mellitus (DM) over a six-month period.

Methodology:

This was a randomized controlled clinical trial conducted at Medicare Cardiac and General Hospital and Jinnah Medical College Hospital. A total of 84 patients over 18 years old with a diagnosis of Type 2 DM and NAFLD were included using a non-probability convenient sampling technique. Patients were randomly assigned to two groups: Group 1 received Empagliflozin and Metformin, while Group 2 received Sitagliptin and Metformin. Efficacy was assessed by comparing changes in Body Mass Index (BMI), waist circumference, HbA1C, Alanine Aminotransferase (ALT), LDL cholesterol, FIB-4 score, and ultrasound grading of fatty liver from baseline to six months. Data was analyzed using SPSS-27.

Results:

At baseline, there were no statistically significant differences between the two groups for most socio-demographic and clinical variables, except for waist circumference ($p=0.037$), which was significantly different. After the six-month treatment period, the group receiving Empagliflozin plus Metformin showed a statistically significant greater reduction in ALT levels compared to the Sitagliptin plus Metformin group (mean difference of 7.77 ± 7.91 vs. 3.49 ± 7.27 , $p=0.012$). No statistically significant differences were observed between the two groups in the reduction of BMI, waist circumference, HbA1c, LDL, FIB-4 score, or grading of fatty liver.

Conclusion:

In this study, both treatment combinations demonstrated comparable efficacy in managing key metabolic and hepatic parameters in patients with NAFLD and DM. However, the combination of Empagliflozin and Metformin was superior in reducing ALT levels, suggesting a potentially greater benefit for liver inflammation in this patient population. Further studies with larger sample sizes are recommended to confirm these findings.

Understanding Stress in Daily Life with Diabetes

Stress does not cause diabetes, but it can raise blood sugar levels and make diabetes harder to manage. Living with diabetes is not easy. Along with daily life problems, it can make people feel tired, worried, or upset—especially when others do not understand their condition.

Stress cannot always be avoided, but learning how to handle it can help protect both your body and your mind.

What Does Stress Mean?

Stress is how the body reacts when something feels difficult or worrying. It can happen before a meeting, a test, or a social event. Stress can also come from illness, injury, or pain.

Some stress stays for a long time, like money problems, family issues, or losing someone close.

Stress can affect the body, feelings, and thoughts.

How Stress Changes Blood Sugar

When a person is stressed, the body releases stress hormones. These hormones give energy but also stop insulin from working properly. Because of this, sugar stays in the blood instead of going into the body's cells.

This causes blood sugar to rise. Very high blood sugar is called "high sugar." If stress continues for a long time, blood sugar can stay high and cause health problems.

Stress can also make people feel sad, angry, or tired, and they may stop taking good care of themselves.

When Diabetes Causes Stress

Many people feel stressed after they find out they have diabetes. They have to learn new things, change their eating habits, check blood sugar often, or take injections.

Some people worry about low blood sugar. They feel afraid about when it may happen and how to manage it. This worry can increase stress.

Sometimes people feel tired of managing diabetes every day. They may feel guilty or upset if their sugar levels are not controlled. This feeling is called diabetes distress. It is common and normal.

If these feelings are ignored, they can become worse. Talking to a doctor or healthcare worker can help.

Can Stress Lead to Diabetes?

Stress alone does not cause diabetes. However, long-term stress may increase the risk of type 2 diabetes.

Stress hormones can reduce insulin production in the body. Stress can also cause overeating or unhealthy food choices, which may lead to weight gain and increase the risk of diabetes.

Simple Ways to Handle Stress

Everyone handles stress differently. Finding small ways to relax can help. Deep breathing, walking, praying, talking to someone, or taking short breaks can reduce stress.

Learning simple stress-control skills can make daily life easier.

Taking Care of Yourself

During stress, people may forget to eat on time or take medicines. Try to be kind to yourself. You do not need to be perfect.

Good sleep, light exercise, and rest help the body handle stress better. Eating too much junk food or drinking alcohol can raise blood sugar and make stress worse.

Learning more about diabetes and meeting others with the same condition can help people feel less alone.

Talk and Get Support

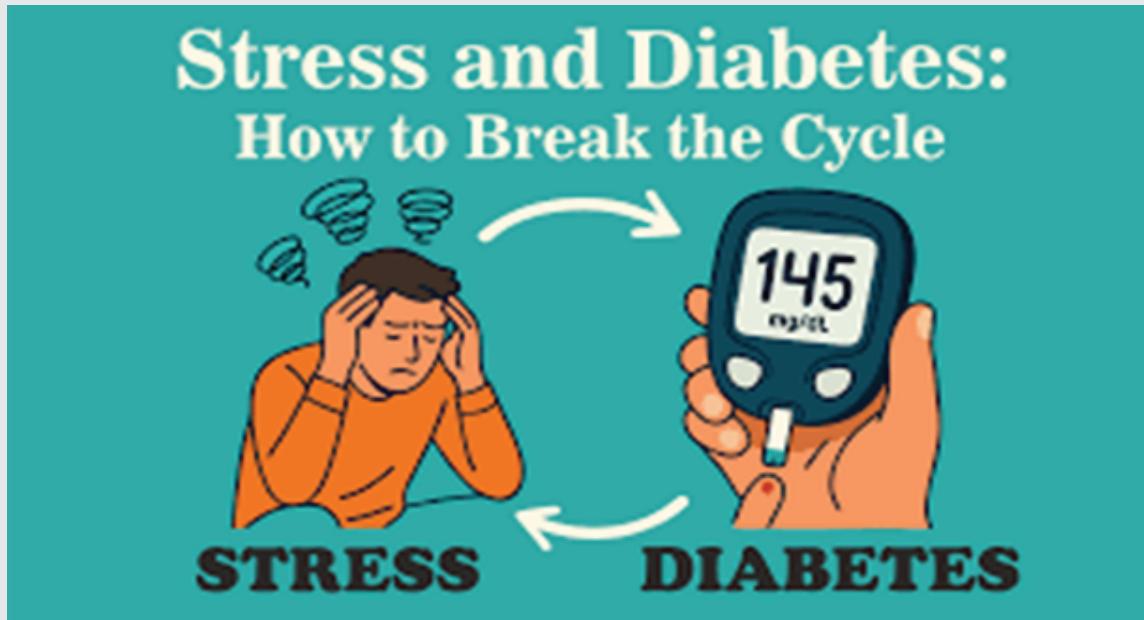
Talking about stress helps reduce its burden. Sharing your worries with family, friends, or healthcare workers can make you feel lighter.

If stress feels too heavy, ask for help. You can talk to your doctor, or diabetes educator. They can guide you, answer your questions, and help you manage diabetes better.

Support is available, and you do not have to face diabetes alone.

-Amna Mansoor

(<https://www.diabetes.org.uk/living-with-diabetes/emotional-wellbeing/stress>)



Managing Stress with Diabetes

Advancing Diabetes Treatment: How Care Is Improving Today

Diabetes is a long-term condition that affects the body's ability to control blood sugar levels. In Pakistan, the growing number of people living with diabetes highlights the urgent need for improved care, education, and access to treatment.

Over the years, significant progress has been made in diabetes management, helping individuals lead healthier, more productive lives. Today, diabetes care goes beyond medication and focuses on making daily management easier while preventing serious complications.

One of the most important advancements in diabetes treatment is the use of modern technology. Innovative devices now allow blood sugar levels to be monitored throughout the day with minimal discomfort, reducing the need for frequent finger pricks. Some systems can also work alongside insulin delivery devices to help maintain stable blood sugar levels, lowering the risk of sudden highs and lows. Medical treatment options have also improved.

Newer medicines help control blood sugar more effectively and offer additional benefits such as weight management and protection of vital organs, including the heart and kidneys. These advances allow healthcare professionals to design treatment plans that are better suited to each individual's age, lifestyle, and health needs.

Digital health solutions are playing an increasing role in diabetes care. Mobile applications and telemedicine services enable patients to track their blood sugar, diet, and physical activity while staying connected with healthcare providers from their homes. This is particularly beneficial for individuals living in remote or underserved areas of the country.

Alongside medical and technological progress, education and awareness remain central to effective diabetes management. Adopting healthy eating habits, maintaining regular physical activity, and attending routine medical checkups are essential steps in preventing complications. The Diabetic Association of Pakistan continues to play a vital role in promoting awareness, providing education, and improving access to quality diabetes care nationwide.

Currently, the **Diabetic Association of Pakistan offers 24-hour services for individuals with Type 1 diabetes**, ensuring continuous support and timely care. Plans are underway to extend this round-the-clock service to all people living with diabetes in the near future, further strengthening comprehensive diabetes care across Pakistan.

With continued commitment to innovation, education, and patient-centered services, the future of diabetes care in Pakistan is moving toward safer, simpler, and more effective management for all.

-Dr Faiza Rauf

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Improving Diabetes Care

ڈیا بیٹس کے مريضوں کے لیے مکمل غذا چارٹ

ٹائپ 1 اور ٹائپ 2

دنیا بھر میں ڈیا بیٹس (شوگر) ایک تیزی سے بڑھتی ہوئی بیماری ہے، اور پاکستان میں بھی لاکھوں لوگ اس سے متاثر ہیں۔ ڈیا بیٹس دو بنیادی اقسام کی ہوتی ہے: ٹائپ 1 اور ٹائپ 2 دونوں صورتوں میں خوراک کا محتاط انتخاب بہت ضروری ہے کیونکہ غیر مناسب غذا خون میں شکر کی سطح کو خطرناک حد تک بڑھا سکتی ہے، جو دل، گردوں اور آنکھوں سمیت دیگر جسمانی نظام پر اثر ڈال سکتی ہے۔ ڈیا بیٹس کا مؤثر علاج متوازن خوراک، باقاعدہ جسمانی سرگرمی اور دوایا انسولین کے صحیح استعمال سے ممکن ہے۔

ڈیا بیٹس کی اقسام اور خوراک کی اہمیت

ٹائپ 1 ڈیا بیٹس میں جسم انسولین پیدا کرنا بند کر دیتا ہے، اس لیے مريضوں کو انسولین انجیکیشنز لینے کی ضرورت ہوتی ہے اور خوراک کا وقت اور مقدار انسولین کے مطابق رکھنا انتہائی اہم ہے۔ یہ زیادہ تر بچوں اور نوجوانوں میں پائی جاتی ہے۔

ٹائپ 2 ڈیا بیٹس عام طور پر بڑوں میں ہوتی ہے، جس میں جسم انسولین تو پیدا کرتا ہے مگر اس کا مؤثر استعمال نہیں ہوتا۔ زیادہ وزن، کم جسمانی سرگرمی اور غیر متوازن غذا اس کے اہم اسباب ہیں۔ ایسے افراد کے لیے صحیح منداور متوازن خوراک بہت ضروری ہے۔

ڈیا بیٹس کے مريضوں کے لیے اجازت یافتہ غذائیں

مريض سبز یاں جیسے پاک، کریلا، شملہ مرچ، بندگو بھی، لوکی، بھنڈی، بروکلی، توری، کھیر اور سلاد کے پتے استعمال کر سکتے ہیں۔ پھلکوں میں سبز، امرود، ناشپاٹی، پیپتیا، آڑ و ار انار (اعتدال میں) شامل کیے جاسکتے ہیں، جبکہ کیلا، آم، انگور، چیکو اور تربوز سے پرہیز کرنا بہتر ہے کیونکہ یہ بلڈ شوگر کو تیزی سے بڑھاتے ہیں۔ گوشت میں چکن، پچھلی، بکرے کا گوشت (چربی کے بغیر) اور انڈے شامل کیے جاسکتے ہیں۔ دالیں، نیچ اور انانج جیسے مسور، مونگ، چنے، اسی کے بیچ، چیاسیڈر، جو اور دلیہ بھی ڈیا بیٹس کے لیے مفید ہیں۔ ڈرائی فروٹ میں بادام، اخروٹ اور محدود مقدار میں پستہ استعمال کیا جاسکتا ہے، جبکہ کشمش، بھجور اور دیگر میٹھے ڈرائی فروٹس سے پرہیز ضروری ہے۔

غذائی ہدایات

چینی، میٹھے مشروبات، بیکری آئٹمز اور جنک فود سے مکمل پر ہیز کریں۔ سفید آٹے اور چاول کے بجائے براون بریڈ، جو، دلیہ یا براون چاول استعمال کریں۔ پانی زیادہ مقدار میں پینیں اور روزانہ کم از کم 30 منٹ کی ہلکی ورزش یا چہل قدمی لازمی کریں۔ کھانے میں چکنائی، نمک اور مصالحہ کم استعمال کریں اور بلڈ شوگر باقاعدگی سے چیک کرتے رہیں۔ انسولین یا دو اصراف ڈاکٹر کی ہدایت کے مطابق استعمال کریں۔

ٹائپ 1 ذیابیطس کے مريضوں کے لیے خصوصی مشورہ
کھانے کے اوقات مقرر رکھیں اور کبھی بھی کھانا چھوڑنے یا دیر سے کھانے سے گریز کریں۔ ورزش سے پہلے اور بعد میں بلڈ شوگر چیک کریں اور میٹھا ہاتھ میں رکھیں تاکہ ضرورت پڑنے پر فوری استعمال کیا جاسکے۔

ذیابیطس کے مريضوں کے لیے مفید نکات
کریلا، میٹھی دانہ اور دارچینی بلڈ شوگر کنٹرول میں مددگار سمجھے جاتے ہیں۔ سبز چائے اور قہوہ انسولین کی حساسیت بہتر بناتے ہیں۔ دلیہ اور جو آہستہ آہستہ شوگر بڑھاتے ہیں، اس لیے یہ بہتر انتخاب ہیں۔ پر اسیسڈ اور پیکٹ والے کھانے کم مل طور پر چھوڑ دیں اور زیادہ بھوک لگنے پر صحیت مندا سنیکس جیسے اپلا انڈا، بادام یا دہی استعمال کریں۔

Amna Mansoor—

Diet Chart for Diabetic Patients

Foods to Include



Whole Grains



Vegetables



Protein Sources



Healthy Fats



Fruits

Foods to Avoid



Refined Grains



Sugary Foods



High-fat Dairy



Fried Foods



Excessive Salt

Healthy Eating Plan for Diabetic Patients



سالیکا

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