



International Journal of Research in Academic World

Received: 31/January/2026

IJRAW: 2026; 5(3):213-216

Accepted: 10/March/2026

The Journey of a Diabetic Patient from a Burdened to a Healthy Life: A Case Study

*¹Dr. Leena R Chitlange*¹Principal, Savitribai Phule Mahila Mahavidyalaya, Washim, SGB Amaravati University, Amravati, Maharashtra, India.

Abstract

Present investigation is a case study of a 50 years diabetic male residing in Sambhaji Nagar. Subject is a slim trim male, whose weight was only 59 kg. He was doing regular exercise, taking 3 meals a day i.e. Breakfast, Lunch and Dinner at particular time intervals. Subject was very particular with diet, was not consuming rice, fruits and milk products at all as per his belief and guidance he received from experts to control blood sugar level. He was walking 4.5 Kms post dinner daily. But still he was suffering from high levels of blood sugar. His HbA1c levels were high and Doctors warned him to control blood sugar urgently to prevent further complications. Subject was consuming 14 pills per day to control his blood sugar levels. By introducing him to certain dietary and life style changes, his HbA1c Score was lowered significantly from 10.2 to 6.8 in just 3 months, significant decrease in random blood sugar level was also recorded with improved physical health parameters, as well as mental health, enthusiasm and even working efficiency. He was suggested to include green tea, nuts, cheese, sprouts, all vegetables, pulses in good quantity, selected fresh fruits, milk proteins specially cheese, pure ghee, golden milk as part of regular diet. Proper mastication of food, water intake as suggested, as well as regular walking, yogasanas, meditation, proper sleeping pattern and above all positive thinking and mental preparation for lifestyle change was ensured.

Keywords: Diabetes, HbA1c levels, Breakfast foods, Stress-management, instrumental music, hypoglycemic foods, quality proteins, balanced diet, yogasan and meditation.

Introduction

Diabetes has become a global health disorder. As per global statistics 1 in 9 adults (11.1%) aged 20 to 79 are living with diabetes and over 90% of cases are of Type II diabetes driven by urbanization and obesity. By 2050, global diabetic adults' figure is projected to rise to 853 million.

India ranks second in diabetic population after China (First), followed by Pakistan. In India, 77 million adults have type 2 diabetes and 25 million adults are considered prediabetic. Prevalence of Diabetes is more in Southern and western region compared to northern region of India. Diabetes is more prevalent in Urban population (30%) that is double than Rural population (15%) of India. When compared to wealthy and lower economic status, it has been observed that wealthiest population showed higher blood glucose levels. However, only 60% of diabetic population is aware about their condition [1].

Diabetes is not a Disease, it is a metabolic disorder, means if one can bring own blood sugar levels and overall life style in order with some precautions, one can control diabetes and leave a normal life. But if situation is exactly opposite of this, means no efforts are taken to control elevated blood sugar levels and change lifestyle, then diabetes may prove a broad gate for many complications which may prove fatal for the subject. The major aetiologic factors for prevalence of

Diabetes (Type 2) are Urbanization, stress, aging population, decreased activity and obesity apart from heredity (Type 1).

Diabetes means elevated blood glucose levels which can't be metabolized due to insufficient or ineffective insulin. But glucose is not the culprit rather excess is. Body uses glucose as a fuel and human brain needs continuous supply of glucose for its functioning. Carbohydrates are the main source of it. Body can break down and use fat for some of the same needs, but not all the needs and additionally, fat when used to make glucose yields keto acids too which leads to ketoacidosis of blood and it is unhealthy for body.

Carbohydrates: Carbohydrates can be divided into simple and complex carbohydrates. All sugars i.e. monosaccharides like Glucose and fructose, disaccharides like Sucrose, Maltose are considered as refined sugars and are very small molecules which are very easy to break down and use for body. So, they raise blood sugar level very fast. In this category, candies, pastries and desserts with added sugar can be included. However, there are complex carbohydrates like starch, cellulose, fibre which needs to break down into disaccharides, then into monosaccharides and finally glucose. It takes two to three steps and longer duration to convert complex carbohydrates into glucose, so blood sugar levels are raised slowly and generally not converted into fat. Starchy foods like cereal grains, pulses, and some of vegetables can be

categorized as complex carbohydrate foods [2, 3].

Diet plays very important role in controlling diabetes. There are various hypoglycemic foods which are known for their beneficial role in controlling blood sugar levels. Mainly, Fenugreek seeds, Flaxseed, Barnyard millet, Barley, Whole black Bengal gram, sprouted whole grams, Green leafy vegetables, Turmeric milk, Nuts and Oilseeds and off course quality protein.

Hypoglycemic Foods

Fenugreek Seeds: Fenugreek seeds play an important role in controlling blood sugar levels as the seeds are rich in fibre and other chemicals that slower the digestion and absorption of excess sugar. Fenugreek seeds also help improve the utilization of sugar and increases the quantity of insulin released and improved effectiveness of insulin [4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14].

A 2009 study revealed that a daily dose of 10 grams of fenugreek seeds soaked in hot water may help control type 2 diabetes. Another very small 2009 study revealed that eating goods such as bread, chapati made from flour with added fenugreek may reduce insulin resistance in people with type 2 diabetes [8, 9].

Flaxseed: Flaxseed is a functional food because of its high content of alpha-linolenic acid, lignans, and dietary fiber. In a study, systematic review and meta-analysis was conducted to determine the impact of flaxseed supplementation in patients with Type 2 diabetes. Randomized controlled trials were systematically searched in PubMed, Web of Science, Scopus, Cochrane Library, and Embase until 25 March 2022. A total of 13 studies were included, and the results showed that flaxseed supplementation significantly reduced hemoglobin A1c (HbA1c) in participants with Type 2 diabetes compared with the control group [15, 16].

Barnyard Millet: Barnyard millet (*Echinochloa frumentacea*) is one of the hardiest millets, which is called by several names viz., Japanese barnyard millet, ooda, oadalu, sawan, sanwa, and sanwank and bhagar or varai. Nutritionally, Barnyard millet is an important crop. It is a fair source of protein, which is highly digestible and is an excellent source of soluble and insoluble dietary fibre (Hadimani and Malleshi 1993; Veena *et al.* 2005). The carbohydrate content is low and slowly digestible (Veena *et al.* 2005), which makes the Barnyard millet a natural designer food. In the present days of increased diabetes mellitus, barnyard millet could become an ideal food. GI of barnyard millet is lowest among all millets; it is gluten free and packed with antioxidants that help to fight inflammation associated with diabetes. With a GI of 41, it confirms a slow and steady release of glucose, aid digestion and improve insulin sensitivity. Its high fibre content increases satiety resulting in weight control which is a key factor in controlling diabetes. Studies also show that incorporation of barnyard millet in diabetic diet help to lower fasting blood plasma glucose levels significantly [17, 18, 19, 20].

Barley: Barley is an excellent, diabetes-friendly whole grain due to its high soluble fibre content especially beta-glucan and low glycemic index. It helps to maintain blood sugar levels in limit, improves insulin sensitivity and also helps to manage appetite resulting in reducing risks associated with Type 2 diabetes [21].

Kala Chana (Black Chickpea): Black chickpea is an excellent, nutrient-dense food for diabetes management due to its low glycemic index (approx. 28) and high fiber content, which prevent rapid blood sugar spikes, aids regulation of

glucose absorption with improved insulin sensitivity [22].

Sprouted Grams: Sprouts are excellent for diabetes management due to their low carb content high fibre 7.6g serving and low glycemic index which helps to regulate blood sugar and insulin levels and promote satiety [22, 23].

Green Leafy Vegetables: Green leafy vegetables are essential for diabetes management as they are low calorie and carbohydrates (absorbable) but high in nutrient like fibre, Vitamins A, C, K, Folate, and minerals like Iron, Calcium and magnesium. These nutrients are helpful for improving insulin sensitivity and regulating blood sugar. Green Leafy vegetables are comparatively cheap and easily available at all places, even can be easily grown in kitchen garden to get organic vegetables [22].

Nuts and Oilseeds: Nuts and Oilseeds are very good source of Protein and specific fatty acids and have beneficial role in diabetic diet. Due to its high fat and protein content, it controls absorption of sugar from diet. Nuts like almonds and walnut are very good for controlling blood sugar levels and also for heart health [22].

Milk Proteins: Milk Proteins have proved very beneficial in controlling post prandial blood sugar levels. Milk proteins especially whey proteins are top ranked quality proteins and are essential for diabetics to ensure proper functioning of all organs and avoid complications due to diabetes. Milk proteins in moderate quantity can be included in diabetic diet [22, 24].

Green Tea: Green tea is not just a refreshing beverage; it can also be a supportive for diabetic patients. Green tea develops type of catechin called epigallocatechin gallate (EGCG) that could boost insulin sensitivity. By improving the capacity of cells to absorb glucose, blood glucose levels can be controlled. Green tea consumption can reduce the risk of developing Type 2 diabetes by 19% [25, 26].

Turmeric Milk: Curcumin Longa is beneficial for controlling blood sugar level spikes as well as for improving insulin sensitivity. For improving availability and permeability of curcumin some a little i.e. 1g of fat and 1/2g of black pepper can be used respectively [27].

Instrumental Music: Instrumental music, particularly slow-tempo (60-80 BPM) and meditative track helps to manage diabetes by reducing stress, lowering heart rate and balancing blood sugar levels. Specially listening albums like "Music Therapy for Diabetes" feature Calming, lyric free sounds like sitar and flute to induce relaxation and reduce cortisol levels. Instrumental music by reducing stress help to improve sleep quality. Many studies reveal that at least 6 hours sleep is essential for maintaining good health and reducing stress [28, 29].

Present investigation is an empirical study of a blood sugar control journey of a 50 years diabetic male residing in Sambhaji Nagar, who approached me as a nutritionist for diabetic diet. He was suffering of high blood sugar levels (HbA1c about 10) and loss of enthusiasm. He was also suffering from stress. Subject is a slim trim male, whose weight was only 59 kg and height is 165cms. He is an industrialist by profession. He was suffering from high blood sugar levels from 22 years. He tried many diet programs for blood sugar control. He was taking 14 tablets per day for the relief.

He was doing regular exercise, taking 3 meals a day i.e. Breakfast, Lunch and Dinner at particular time intervals. Subject was very particular with diet, was not consuming rice, fruits and milk products at all as per his belief and guided by many experts to control blood sugar level. He was walking 4.5 Kms post dinner daily. But still he was suffering from

high levels of blood sugar. His HbA1c levels were high and Doctors warned him to control blood sugar urgently to prevent further complications. Subject was consuming 14 pills per day to control his blood sugar levels.

He was a perfect example of A-type personality. He used to check blood sugar before and after all three meals of the day and was very particular about his routine.

By introducing him to certain dietary and life style changes, his HbA1c Score was lowered significantly from 10.2 to 6.8 in just 3 months, significant decrease in random blood sugar level was also recorded with improved physical health parameters, as well as mental health, enthusiasm and even working efficiency. He was suggested to include green tea, nuts, cheese (limited quantity), sprouts, all vegetables, pulses in good quantity, selected fresh fruits, pure ghee, golden milk as part of regular diet. Proper mastication of food, water intake as suggested, as well as regular walking, Yogasan, meditation, proper sleeping pattern, use of instrumental music and above all positive thinking and mental preparation for lifestyle change was confirmed.

Materials and Methods

The client had regular blood sugar check-up data with him when he approached me in Feb 2023. It was suggested to him that he should test his blood lipid profile too before starting the diet suggested by me.

Dietary and Lifestyle Changes

It was advised him to make changes in diet and lifestyle in following way.

I kept him on fruit fast for 3 days, allowed him to consume only fruits for three days, however, no limitation of quantity was kept. On 4th day sprouts were added to fruit diet. From 5th day regular diet was started.

In regular diet,

- Lemon water, two garlic cloves paste as starter of the day.
- Unsweetened Green Tea.
- Complex carbohydrates in moderate quantity.
- Quality protein – Daily 1 cheese cube and sometimes other milk proteins too.
- Dry fruits specially Almonds, Walnuts, Pumpkin Seeds, Sunflower seeds.
- Pure ghee, mustard oil and sunflower oil sparingly.
- All types of grams along with fenugreek seeds in sprouted form daily in Breakfast.
- All vegetables including green leafy once daily in dinner.
- Chapati of special diabetic aata designed by me, containing Black Bengal Gram, processed Soybean, Flaxseed, Barnyard millet, Barley and Fenugreek seeds.
- Selected fruits like Banana, Citrus Fruits, Pineapple, Apple, Guava, Amla, Tomato were suggested to incorporate in daily diet.
- Golden milk as supper.
- Chewing a food bite 20 times at least was advised.
- Regular pranayama and meditation.
- Yogasanas like Bhujangasan, Trikonasan, Mandukasan, Shalabhasan.
- Daily 3 Km walking.
- Hearing instrumental music whenever possible in office hours and before sleeping.
- At least 6 hours sleep.

- Sugars and potato were suggested to exclude and rice was allowed in limited quantity once in a week.
- Vitamin D tablet once in a week.

(Diet chart was given on 6th Mar 2023.)

After starting diet, he followed most of the instructions given to him to bring change in life style. Considerable decrease in fasting and post meal sugar was recorded within one week, gradually he could curtail his drugs, and Dr reduced dose of medicines up to 3 tablets a day and finally only 2 tablets per day were recommended by Dr. After 3 months considerable fall in HbA1c score was recorded. Same results are continued with minor difference in HbA1C score is continued until today.

Results & Discussions

After 3 months due to the sincere efforts and consistency in following all dietary guidelines and overall life style changes suggested by me, we got 90 percent expected results. Apart from dietary changes, regular yogasanas, meditation and instrumental music therapy brought drastic changes in his overall personality, stress level and mental as well as physical fatigue was also reduced and as per him, he started living a burden free, normal life. Considerable fall in random blood sugar and HbA1c score was recorded, as can be seen in Table-1.

Table 1: Blood Sugar Check-up data.

Date	HbA1c Score	Random Blood Sugar
5-03-2023	10.2	236 mg/dl
5-06-2023	6.8	146 mg/dl

No other health issues were reported, bloated stomach issue, he was facing regularly and consuming daily medicines for it, before approaching me is totally vanished. Skin is glowing now, and client feels younger than previous time. Stamina and work quality is also improved considerably. Subject is very happy with diet as he could it a specific quantity of fruits, milk and milk products daily, from which he was deprived in his previous diet program.

Consumption of pure ghee did not have any negative effect on blood lipid profile, rather it brought positive changes in it. There are several empirical studies that can provide sufficient data on nutritional importance and health benefits associated with consumption of ghee. Ghee is rich in healthy fats, short chain and medium chain fatty acids, vitamins A, E, and K, CLA (Conjugated Linoleic Acid), Butyric Acid. Despite saturated fat content of pure ghee, it supports heart Health and maintain cholesterol at optimum levels. Ghee helps in maintaining gut health, enhances mental clarity, joint mobility. Its rich vitamin content and antioxidant properties maintains immune system very well.

Use of hypoglycemic foods, specially, sprouted fenugreek seeds, flaxseeds, barnyard millet, black chickpea, turmeric milk, barley, quality proteins, sprouts, nuts, oilseeds and yoga, meditation as well as instrumental music aided in natural blood sugar control. Incorporation of Turmeric milk daily as supper helped address frequent urination issue due to diabetes. However, following whole diet and life style change instructions sincerely was of most importance.

Table 2: Lipid Profile, Vitamin B12, Data.

Test	Result Value on dated 5-03-2023	Result Value on dated 5-06-2023	Range Value	Unit
Total Cholesterol	201	146	150-250	mg/dl
Triglycerides	156	137	60-150	mg/dl
HDL Cholesterol	35	47	35-50	mg/dl
LDL Cholesterol	142.00	101	60-150	mg/dl
VLDL Cholesterol	31	19	7-35	mg/dl
Cholesterol/HDL Ratio	5.74	3.10	0.0-5.5	
LDL/HDL Ratio	4.05	2.15	0.0-3.5	
Vitamin B12	134	316	180-914	Pg/mL

Conclusion

Intake of certain hypoglycemic foods such as fenugreek seeds, flaxseed, barnyard millet, chick-peas, barley, sprouts Almonds, Walnut, with high quality protein and nutritionally very well-balanced and well processed diet with supporting life style changes resulted in significant fall in HbA1C i.e. from 10.2 to 6.8 and random blood sugar score and also brought expected positive changes in lipid profile and Vitamin B12 score with improved overall health, happiness and work quality. Due to the controlled blood sugar levels and improved health parameters, the subject could plan and attended the 4 dhaam (Badrinath, Kedarnath, Gangotri, Jamunotri) pilgrimage program successfully after completion of 3 months.

Acknowledgement

I am grateful to the patient who followed all of my instructions about dietary modifications and overall changes in life style as well as he shared me the original data from time to time.

References

- National and international Diabetes Statistics report 2025.
- Get the Facts: Added Sugars. 2024.
- Frysh P. The Truth About Carbs. DerSarkissian C, reviewer. 2022 Sep 30.
- Sarker DK, Ray P, Dutta AK, Rouf R, Uddin SJ. Antidiabetic potential of fenugreek (*Trigonella foenum-graecum*): A magic herb for diabetes mellitus. *Food Sci Nutr*. 2024 Sep 5;12(10):7108–7136. doi: 10.1002/fsn3.4440
- Fenugreek. 2016. <https://nccih.nih.gov/health/fenugreek>
- Fenugreek and diabetes. 2019. <http://www.diabetes.co.uk/natural-therapies/fenugreek.html>
- Garg RC. Fenugreek: Multiple health benefits. In: *Nutraceuticals: efficacy, safety and toxicity*. Cambridge, Massachusetts: Academic Press; 2016.
- Kassaian N, et al. Effect of fenugreek seeds on blood glucose and lipid profiles in type 2 diabetic patients. 2009. doi: 10.1024/0300-9831.79.1.34
- Losso JN, et al. Fenugreek bread: A treatment for diabetes mellitus. 2009. doi: 10.1089/jmf.2008.0199
- NIH National Center for Complementary and Integrative Health. Antioxidants: In Depth.
- Van Hung P. Phenolic compounds of cereals and their antioxidant capacity. *Crit Rev Food Sci Nutr*. 2016;56(1):25-35. doi: 10.1080/10408398.2012.708909
- Yang J, Wang HP, Zhou L, Xu CF. Effect of dietary fiber on constipation: a meta-analysis. *World J Gastroenterol*. 2012;18(48):7378-7383. doi: 10.3748/wjg.v18.i48.7378
- Mayo Clinic Staff. Type 2 diabetes. 2019. <https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/symptoms-causes/syc-20351193>
- Shabbeer S, et al. Fenugreek: A naturally occurring edible spice as an anticancer agent. 2009. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3095649/>
- Coleman J. Flaxseed and Diabetes: Pros and Cons. 2021 Dec 13.
- Xi H, Zhou W, Sohaib M, Niu Y, Zhu R, Guo Y, et al. Flaxseed supplementation significantly reduces hemoglobin A1c in patients with type 2 diabetes mellitus: A systematic review and meta-analysis. 2023 Feb;110:23-32. doi: 10.1016/j.nutres.2022.12.008
- Organic Gyaan. Barnyard Millet: Nutritional Value, Benefits and Recipes. 2023 May 8.
- Ugare R, Chimmad B, Naik R, Bharati P, Itagi S. Glycemic index and significance of barnyard millet (*Echinochloa frumentacae*) in type II diabetics. *J Food Sci Technol*. 2011 Sep 2;51(2):392–395. doi: 10.1007/s13197-011-0516-8
- Hadimani NA, Malleshi NG. Studies on milling, physico-chemical properties, nutrient composition and dietary fibre content of millets. *J Food Sci Technol*. 1993;30:17–20.
- Veena B, Chimmad BV, Naik RK, Shantakumar G. Physico-chemical and nutritional studies in barnyard millet. *Karnataka J Agril Sci*. 2005;18:101–105.
- Cleveland Clinic Health Essentials. Bank on Barley for a Health Boost. 2024 May 13. Dinh TC, et al. 2019.
- What superstar foods are good for diabetes? Food Nutrition, American Diabetic Association 85.
- Binu S. Amazing Benefits of Sprouts. Netmeds.com. 2025 Feb 27.
- DR Jessica. What Are the Good Benefits of Milk for Diabetic Patients? 2025 Sep 26.
- The effects of green tea on lipid metabolism and its potential applications for obesity and related metabolic disorders - An existing update.
- Apollo 24/7. Benefits of Green Tea for Diabetic Individuals. (Diabetes Management). 2024 Sep 12.
- Turmeric and diabetes can be a healthy combination. Diabetes Care. 2025 Jan 21.
- Kinjalk N, et al. Impact of Indian Instrumental Music on Patients of Type 2 Diabetes Mellitus: Case Control Study. *Int J Sci Res*. 2023 Sep;12(9). doi: 10.36106/ijsr
- Liu S, et al. Sleep Deprivation and Central Appetite Regulation. 2022.