

Additional means of resistance to diabetes

Abstract

The manuscript addresses the topic of diabetes treatment management using lifestyle and behavioral interventions, which is relevant for many patients and their loved ones, given limited financial resources. The behavioral challenges of aging diabetics, as well as affordable, non-drug options for maintaining active longevity and a positive outlook on recovery, are discussed. This aligns with the goals of strengthening preventive medicine and patient care in remote communities in developing countries. The authors consider the exploration and discussion of additional socio-psychological and educational factors in working with diabetes as part of a discussion on ways to potentially expand and complement existing treatment protocols with newly available tools.

Keywords: physical exercise, folk experience, metabolism, non-drug treatments, psychological support, education

Volume 9 Issue 1 - 2026

Sergey Petrov,¹ Andrey Dolgan,² Elizaveta Levoshina³

¹Professor of the Department of Life Safety, Moscow State Pedagogical University, Russia

²Head of the healthy lifestyle section in the organization of war veterans, St. Petersburg, Russia

³Faculty of Biology, Lomonosov Moscow State University, laboratory assistant, tourism instructor, Moscow, Russia

Correspondence: Sergey Petrov, Professor of the Department of Life Safety, Moscow State Pedagogical University, Russia

Received: March 25, 2026 | **Published:** June 24, 2026

Introduction

Diabetes mellitus

A constantly expanding, multifactorial disease caused by the aging of the pancreas and other organs. It leads to metabolic disorders, obesity, and the weakening of several systems of our body. Diabetes (DM) shortens life by an average of 10 years. It increases mortality from cardiovascular diseases by 3-4 times, can cause strokes, nerve damage, kidney and liver diseases, etc. Smoking is especially dangerous. It increases the risk of vascular complications (heart attacks, strokes, amputation of the diabetic foot) by 2-3 times. Nicotine increases blood sugar and accelerates the destruction of blood vessels, impairs blood flow in the legs, causing non-healing ulcers and gangrene. The development of retinopathies (loss of vision), nephropathy (kidney failure) and neuropathy (nerve damage).

Over the years of medical advancement, leading physicians have developed official standards and protocols for diabetes treatment that have been well-tested and established over many decades. However, in some countries and regions, traditional herbal, home-based, and folk remedies are common, the effectiveness of which is not always confirmed by systematic clinical observations and blood sugar testing. We will examine some additional (alternative) approaches to culinary, educational, organizational, legal, and socio-psychological practices in treating patients with diabetes.

The authors understand that their proposals, associated with such alternative means as singing, treatment with onions and garlic, expansion of methods of physical and social activity are not yet supported by firm conclusions about their efficiency. We consider them as promising research ideas for clinical examination, which should always be verified by objective indicators.

The purpose of this publication is to draw the attention of interested parties to the testing of new types of accessible methods of practical local medicine that complement the concepts and protocols of official medicine in the fight against diabetes, including by students and postgraduates in the course of their educational and scientific work.

Methods of data collection and analysis

Some of the material in this article is based on a review of specialized literature, long-term personal observations, and my

own experience caring for elderly patients. This requires further verification of the findings through more systematic research. Our personal observations of the behavior of several dozen diabetics (from 2005 to 2025) certainly require more extensive measurements and documentation for scientific substantiation. At the same time, we would like to draw readers' attention to several successful interventions related to education and psychological support for elderly patients, so that young professionals working with diabetes can consider them when selecting relevant additions to their practice and preparing new dissertations.

Medical issues related to the diagnosis and treatment of diabetes have been adequately addressed in the scientific literature.¹⁻⁵ Authors are interested in the socio-psychological causes and aspects of deviant behavior in older adults and retirees that complicate diabetes management.

Professor Yu. I. Polishchuk, a long-time practitioner, left behind unique works based on his research at the intersection of gerontology, medicine, psychiatry, and sociology. He brilliantly described the connections between treatment technologies and cognitive disorders in aging individuals and the importance of integrating medical and psychosocial therapy in all areas of treatment.⁶⁻⁸

In preparing this article, we relied on the research of our teacher and on our personal experience of observing the social and everyday difficulties of resisting diabetes.

Key success factors for the treatment of diabetes are well known, These are:

- I. Compliance with doctor's orders and taking necessary medications;
- II. Normalization of sleep and wakefulness patterns;
- III. Giving up bad habits;
- IV. Regular monitoring of blood parameters, keeping a self-monitoring diary,
- V. Body weight control to normalize metabolism and blood pressure;
- VI. Compliance with the rules for choosing products and diet;
- VII. Mandatory physical activity, adequate to the volume of food;

- VIII. Cultivating a positive attitude towards people, life and the environment;
- IX. Continuous training in the principles of managing one's behavior;
- X. Personal psychological attitude to overcome difficulties and negative phenomena;
- XI. Receiving psychological help from professionals and others (coaching);
- XII. Positive communication and mutual support in «Diabetes Clubs».

Yury Polischuk's research and our observations (and rough estimates) over 20 years show that more than half of people with diabetes follow less than half of the above recommendations. Many people don't even notice this and don't fully understand the impact. Approximately 70% of patients believe that minor deviations from a healthy lifestyle won't harm them. They pay for this with a growing belly, difficulties in their daily lives and personal life, divorce, and premature death.

Some of our friends and loved ones, seemingly strong and vigorous, died in their 50s and 60s, not fully realizing that this was a consequence of factors such as excess blood glucose, excess weight, high blood pressure, vascular spasms, etc. They led a familiar lifestyle of cigarettes, beer, an abundance of sweets, fast food, and a sedentary lifestyle, unaware that their bodies begin to weaken after 40, and deviations from a healthy lifestyle (HLS) become increasingly dangerous with each passing year. With this example, we draw special attention to the importance of cognitive, educational, upbringing, psychological, physical exercise, culinary, and other subtle factors in the development of many diseases in aging people. The famous actor Chuck Norris (1940–2026) was well aware of the mechanisms of aging and did everything he could to slow them down through exercise and a healthy lifestyle until his last day. But after age 85, high-intensity exercise becomes increasingly dangerous for the heart. Even if an athlete feels great, this doesn't prevent the cardiovascular system from deteriorating. By following the recommendations of doctors and educators, psychologists, nutritionists, and trainers, and personally monitoring reasonable exercise limits, you can live longer.

Results and discussion

The development and complications of diabetes are influenced by many social and everyday factors, which often remain beyond the control of the medical institution and treating physician. These include, first and foremost, the consequences of inadequate education and social and everyday violations of a healthy lifestyle, such as poor nutrition, poor work and leisure practices, difficulties in personal and family life, and mental or physical trauma.⁹

Let's list the most important reasons for the shortcomings in health care for elderly people of retirement age that we've identified over the past 20 years. In our opinion, these are:

- I. Underestimation by all parties to the treatment of the importance of all the above-mentioned available areas of combating diabetes, including social, psychological and everyday ones, which are not directly related to the area of responsibility and specialization of endocrinologists;
- II. Lack of knowledge and underestimation of the symptoms of diabetes in the early stages at 30-40-50 years of age;
- III. A lack of high-quality and effective mass patient training in all available treatment and preventive measures. General recommendations and instructions from healthcare professionals do not provide the deep understanding and appreciation of importance inherent in organizing dedicated 2-3-week classes with visual aids. Effective classes are only offered at large treatment centers;
- IV. Insufficient knowledge and poor assimilation of useful recommendations and technologies of a social and psychological nature without high-quality training;
- V. Psychological and behavioral difficulties of the transition of elderly people (pensioners) to new living conditions in retirement, lack of funds, loss of connections;
- VI. Weakening of cognitive characteristics and volitional mechanisms of aging people;
- VII. Laziness, indifference or aversion to performing physical activity recommended by protocols and standards (burnout);
- VIII. Insufficient personal mental attitude and weak psychological support from people around you who are not relatives, including doctors;
- IX. Lack of consistency in the actions of patients and other subjects in the implementation of complexes in several areas of the fight for health;
- X. The absence or negligence of self-monitoring logs by patients or their loved ones. Gaps in these logs, such as missing entries for physical activity and cultural events, diabetes clubs, dances, choral singing, attendance at classes and exhibitions, travel and vacations, gardening, housework, and other activities.

We believe these socio-psychological and educational factors are no less important than therapeutic and pharmacological factors. Even after successful drug treatment, if insufficient efforts are made to strengthen the patient's psychological state, optimize nutrition, exercise, and implement a comprehensive healthy lifestyle, the treatment's effects are short-lived, and the disease reoccurs from all sides. Let's look at some specific aspects and problematic issues in the behavior of diabetics.

Education about healthy eating is practically absent from school curricula

This is evidenced by our observations of the nutrition of students, musicians and teachers, which have been published. This isn't taught in regular schools and universities (except medical ones). However, in our opinion, this topic is more important to national security than some other academic disciplines, which are so scholastically divorced from the everyday problems of individuals and society. For most people, food is a primary source of energy, pleasure, and enjoyment. However, not all of them take into account the well-known truth that our food can be both a medicine for health and a cause of disease. Even enlightened and talented students and schoolchildren «pick their future illnesses with a fork» almost daily. Issues of proper nutrition have been extensively covered in the literature. However, in our opinion, this is somewhat one-sided, without due consideration of the economic and socio-psychological aspects that complicate the implementation of good advice and good intentions. This is especially noticeable among students and aging adults with modest budgets. A study of their questionnaires and food diaries, even over 10 days, reveals significant deviations from both a typical healthy diet and a special diabetic diet. For example, we confirm a clear lack of

vegetables, especially onions, garlic, and herbs.

There is a noticeable lack of convenient and reusable visual recommendations for students, for example:

Learn about the consequences of overindulging in carbohydrates, fats, and fast food. Regarding energy drinks and sugar substitutes, remember that they contain numerous flavor additives that aren't always healthy.

Try the first steps of self-restraint in food.

- I. Reduce excessively large portions of each dish.
- II. Start with light dishes (eg salad, soup) to fill your stomach.
- III. Focus on your hunger and your meal plan, rather than the Russian tradition of eating all the dishes.

Mental aspects

Many of our friends and family clearly lacked knowledge and optimism in overcoming the challenges of old age. Some fear that by following diets, they are condemning themselves to a dull and depressing existence. Others are overly confident that minor deviations from doctor's recommendations will be compensated for by other treatments, which in reality doesn't happen.

Conclusion

Based on our analysis of the work done, we propose a set of theses for discussion with patients, which includes some conclusions. Diabetes is a death sentence only for the lazy and irresponsible. A disciplined person has a greater chance of mitigating this «sentence.» Therefore, cultivating strict dietary discipline is an important and relevant link, requiring additional coaching and psychological support from society.

The following also contribute to accelerating the processes of normalizing weight and metabolism:

- I. Health-improving breathing exercises,
- II. Singing and prayer to accelerate lymph flow and cleanse the body of toxins and pathogens.
- III. Use: sound vibration of electrovibration massagers and aqua massagers.
- IV. The power of melted, healing water. You can find instructions for its preparation, method, and application modes online.
- V. Simple exercises for massaging internal organs for self-cleansing and restoration. (See Appendix)
- VI. Working with the subconscious: self-hypnosis and motivation. Divine attunements to your body. Combating laziness, burnout, apathy, and aimlessness.
- VII. Forming an image of a losing weight and active person in your subconscious;
- VIII. Praise be to God for the chosen path and Faith for deliverance from illnesses and healing.
- IX. Rules for the use and replacement of dangerous products (salt, sugar, mayonnaise, lemonades, desserts).
- X. Cleansing the body of parasites and pathogens to normalize weight and rejuvenate.
- XI. Physical activity training. A coach is needed here. Any activity

helps lower blood sugar and body weight, reduces insulin resistance and abdominal obesity, improves dyslipidemia, and enhances cardiovascular fitness. However, this is hindered by apathy, laziness, burnout, a lack of confidence in results, and a lack of meaningful incentives.

The sofa and diabetes

A person won't live long if they spend all their time on the couch. We don't judge anyone or impose any recommendations

If the reader is capable of analyzing information and wants to prolong their days (as a happy pensioner), then after just a month of «carefree living» on the couch, it becomes noticeable that, despite all the pleasures and pleasant laziness, something is wrong. For example: weight and waistline increase, headaches and back pain begin, fat deposits on the chin increase, arms and neck become weak, legs swell, and shortness of breath appears when walking. After a while, it becomes increasingly difficult to trim thickening toenails and scratch your back. It becomes increasingly difficult to put on your favorite pants, shirts, and suits. And in the mirror, you increasingly see a puffy face, dark circles under your eyes, wrinkles, and sagging folds of skin.

Knowing the mechanism of these changes, each person chooses their own path and one of three activity and lifestyle strategies, depending on a variety of personal capabilities, abilities, and aspirations.

- I. To live deliciously, sweetly, without effort, satisfying all food and intellectual pleasures, remaining mostly on the couch and within the confines of your neighborhood,
- II. Perform the minimum amount of movements and efforts recommended by doctors, maintain a normal human appearance, and the ability to care for oneself within the confines of one's usual home and region.
- III. Be physically active, move more, and take advantage of all the available joys of a healthy lifestyle, no matter how far you are from home.

These are the three main strategies

A pensioner's life expectancy provides us with (approximately) 10, 20, or 30 years of relatively happy life. Sometimes more or less, depending on thousands of individual risks and factors. Influenced by thousands of specific factors, more types of life strategies can be identified depending on the many variations of mental, physical, family, cultural, economic, geographic, and other influencing factors. But for us, the most important thing isn't the name, but your choice, luck, and the persistence to implement it.

Luck often favors hard workers rather than lazy people

It's been observed that life at any age becomes more interesting, fulfilling, and longer if we patiently expand our influence on shaping our own healthy lifestyle and the environment around us. This requires some knowledge, patience, and effort from each person, but the reward is a second life for the retired person, expanding their freedom, happiness, and joy. No amount of money or pills can replace your personal efforts to create YOUR OWN healthy lifestyle. Money and pills can help, but the most important thing is your desire and effort.

Our long-term observations of friends, relatives, and neighbors show that not everyone has the strength, knowledge, and willpower to transition first to the second and then to the third survival strategy. But each of us has a chance to try to change our lives for the better, even those who are tired, burned out at their previous jobs, disabled,

and lack the resources for expensive wellness programs (private pool, massage therapist, chef, cruises, etc.).

So, let's consider some everyday details and the simplest movements of our soul and body to begin the transition from the first happiness strategy to the second strategy and, God willing, to the third. Years of observation and experience from those around me have confirmed my hypothesis that, whether on the couch (or in the toilet), or with a phone or TV, you can activate any part of your body (eyes, neck, abs, buttocks, arms, and legs) without taking your eyes off the screen.

The most important thing is to psychologically prepare yourself to understand the relevance of specific movements to overcome reluctance, laziness, pain or fatigue. From our many years of experience working with retirees, we know that this is the most difficult part—starting something useful without feeling like you're forcing yourself, but with the desire to become healthier and more joyful. You need to start right now! To do this, we simply need to think about the following desires and values in the form of simple personal desires and loud statements:

- I. I want to reduce my belly and double chin,
- II. I want to become slim like ... (your favorite character).
- III. I want to strengthen my joints and internal organs.
- IV. I want to strengthen the blood vessels in the neck, head, arms and legs (from stroke).
- V. I want to go on independent walks and trips again.
- VI. And I WANT others (depending on your dreams).

Be bolder in expressing your wish.

and start acting from any convenient place.

Our research shows that diabetes can be reversed in some people. By changing lifestyle, diet, and better monitoring calorie intake and weight, it's possible to maintain normal blood sugar levels without medication. This doesn't mean diabetes is completely cured. But those who are committed and work hard significantly extend their lives.

Acknowledgments

The authors dedicate their publication in memory of his co-author and mentor, practicing physician, Doctor of Medicine, Professor Yu.I. Polishchuk (1932-2024).

Conflicts of interest

The author declares there is no conflict of interest.

References

1. Dedov I, Shestakova M, Sukhareva O, et al. *Standards of specialized diabetes care*. In: Dedov II, et al., editors. 12th edn. 2025.
2. Saprina TV, Fayzulina NM. Type 2 diabetes mellitus in the elderly - resolved and unresolved issues. *Diabetes melitus*. 2016;19(4):322–330.
3. Park M, Reynolds CF. Depression among Older Adults with Diabetes Mellitus. *Clinics in Geriatric Medicine*. 2015;31(1):117–137.
4. Inzucchi SE, Bergenstal RM, Buse JB, et al. Management of hyperglycemia in type 2 diabetes: a patient-centered approach: position statement of the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*. 2012;35(6):1364–1379.
5. Kirkman MS, Briscoe VJ, Clark N, et al. Diabetes in older adults. *Diabetes Care*. 2012;35(12):2650–2664.
6. Yu I Polishchuk, Fedotov LD. *Essays on borderline gerontopsychiatry*. Smolensk: Svitok, 2012. 104 p.
7. Yu I Polishchuk. *Spiritual Dimension in Psychiatry*. Moscow, 2010. 96 p.
8. Sergey P, Dolgan A, Polishchuk Y. Available measures counteraction of COVID-19 from the experience of traditional medicine. *J Bacteriol Mycol Open Access*. 2021;9(3):130–132.
9. Sergey Petrov, Elizaveta Levoshina. Problems of teaching musicians the rules of health preservation and first aid. *Open Access J Sci*. 2025;8(1):104–106.