Disorder and Conditions: Focus on environment

Tahmuras Pirimov

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David Marsh

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Introduction

According to the most recent data from the International Diabetes Federation, about 8.8% of the world lives with diabetes which is 415 million people[1]. And 11.3% of them are lethal. These tremendous numbers can impact many people, families, and generations. I got interested in this topic because of one event, a particular situation in my life. When I was younger, I was very terrified to find my uncle's body dead on the bed, not moving, just a flash. It was a mind-blowing moment for me. Later, I understood that he had diabetes. It's a medical condition that decreases the body's ability to process glucose. Also, he was feeling tired most of the time, hungry, and lost weight without trying, which are the symptoms of diabetes. He thought it was temporary and was unaware of something crucial that would change everyone's life.

As a person who experienced a loss of a family member due to diabetes, I would say that it has a huge emotional effect on people. After a long period of emotional healing, I tried to research and understand how this medical condition works. One of the reasons for this paper is to raise awareness for people who has diabetes to prevent the emotional damage that family and friends might have.

This research paper aims to explain in which environment the chances to have diabetes type 2 is higher and how to prevent it. Also, it will focus on the prevention of this medical condition in various ways that have been practiced in a wide range of populations.

Methods

Finding articles was quite excessive, mainly since I covered numerous subjects. As I mentioned before, my focus in is paper is to find practical ways to prevent diabetes. To better understand the topic, I researched and analyzed the past medical reports about diabetes, prediabetes, and the effect of physical exercises on the unhealthy body. I browsed through worldwide online search engines such as Pubmed.com - a free search engine accessing primarily the MEDLINE database[2], Medical News Today - in-depth health information and the latest news in medical research[3]. The keywords used to find the articles are "diabetes" and" prediabetes."

Furthermore, I used "the effect of physical exercises on the body" and "low glucose products" to find a specific way to understand the sugar level in the body. I used numerous vital phrases such as "Relationship between the active life and blood level" and "The effect of low-fat products on the body." After this, I proceeded to link all topics to the prevention of diabetes. This went quite fast as I only needed two keywords, "Healthy Lifestyle" and "Effect on Diabetes ." The process, overall, consists of specific details, search engines, organization, and plenty of time management.

Result

Prediabetes. Diabetes at initial state.

Prediabetes is an intermediate state of hyperglycemia in which the glycemic parameters are above normal but below the diabetic threshold. It is considered an at-risk state, with high chances of developing diabetes. While the diagnostic criteria of prediabetes are not uniform across various international professional organizations, it remains a state of increased risk for developing diabetes with a yearly conversion rate of 5%-10%[4]. Experiments suggest an association between prediabetes and complications of diabetes such as early nephropathy, small fiber neuropathy, early retinopathy, and risk of macrovascular disease.

Various organizations have defined prediabetes with criteria that are not uniform. According to The World Health Organization (WHO): "Prediabetes defined as a state of intermediate hyperglycemia using two specific parameters, impaired fasting glucose (IFG) defined as fasting plasma glucose (FPG) of 6.1-6.9 mmol/L (110 to 125 mg/dL) and impaired glucose tolerance (IGT) defined as two h plasma glucose of 7.8-11.0 mmol/L (140-200 mg/dL) after ingestion of 75 g of oral glucose load or a combination of the two based on a two h oral glucose tolerance test (OGTT)"[5]. The American Diabetes Association (ADA), on the other hand, has the same cut-off value for IGT (140-200 mg/dL) but has a lower cut-off value for IFG (100-125 mg/dL) and has additional hemoglobin A1c (HbA1c) based criteria of a level of 5.7% to 6.4% for the definition of prediabetes[6].

Benefits of physical exercises.

The encompassing theme of lifestyle intervention programs is to change the modifiable risk factors of prediabetes and diabetes by targeting obesity with increased physical activity and dietary changes. Finnish Diabetes Prevention Study (DPS), has shown beneficial effects of lifestyle interventions[7]. After a 3-year follow-up, intensive lifestyle interventions lead to a 58% risk reduction in the DPS study. Change in lifestyle involved changes in diet and physical activity to produce weight. The most significant determinant of risk reduction was noted to be weight loss. This study showed that for every 1 kg decrease in weight, the risk of developing diabetes in the future was reduced by 16%. In the DPS, the benefits were dependent on the participant's achievement of the number of pre-defined goals of the intervention. These goals consisted of weight reduction >5%, total fat intake <30% of energy intake, saturated-fat intake less than 10% of energy intake, fiber intake greater than or equal to 15 g per 1000 kcal, and

exercise more significant than 4 hours per week.

Low Sugar diet.

To prevent diabetes, some changes in the patients' lifestyle should be considered. Recently, a drastic fall in physical activity, obesity, and type-2 diabetes have been observed. Diet is one of the main factors linked to many diseases, including diabetes. Overall, diet is individualized depending on age, weight, gender, and health condition[8].

Here are some objectives on dietary treatment of diabetes:

- Manage optimal blood glucose concentration.

- Manage optimal blood lipid concentration.

- Improve health through balanced nutrition.

Glycemic index		
Low-GI (enjoy) or foods *choose most often*	Medium GI foods *choose occasionally*	High-GI (avoid) *less often*
Whole grain breads, oatmeal (slow cook oats), all-bran cereal, converted or parboiled rice, brown rice, pumpernickel bread, pasta, all beans, peas and lentils, apple, orange, tomato juice, sweet potato, carrots, broccoli, cauliflower, apples, peaches, pears, grapefruits, oranges, sweet corn, dark leafy vegetables, popcorn, marmalade, jams-small amount, skim or 1% milk, low fat, yogurt, soy beverage	Couscous, basmati rice, shredded wheat cereal, pita bread, rye bread, high fiber crackers baked snack foods (not fried), white bread, whole wheat pretzels, cantaloupe, pineapple	Instant mashed p[...] potatoes, red pot[...] instant rice, corn f[...] cereals, bagels, w[...] soda crackers, ric[...] digestive cookies,[...] dried dates, figs, [...] sweetened soft d[...]

The glycemic index identifies foods that increase blood sugar instantly. This handy tool allows you to favor foods that have a more negligible effect on blood sugar. In Table 1,

Table . Classification of foods on basis of Glycemic index

there are detailed descriptions of products with a glycemic index. Dietary patterns emphasize fat consumption primarily from unsaturated fat-rich foods, daily consumption of fruits, low consumption of fish, vegetables, nuts, legumes, low-fat dairy products and whole grains, poultry, and low consumption of lean meat. Vegetables and fruits are precious because of their ability to prevent vitamin C and vitamin A

deficiencies[9].

Analysis

Relationship between environment and early stage of diabetes.

As it was discussed before, there are incredibly significant factors that can prevent diabetes. These factors will change the threshold's health. Each factor will affect the blood level, nutrition and concentration of fat in body. There is general description of patience who are under the risk of having diabetes:

- Feeling tired easily

- Having non-active life

- Consumption of high fat products

- Disbalance of nutrition in the body

If you checked all criteria this means that patience in prediabetes stage or have diabetes. It is highly recommended to visit health center to have more professional diagnosis[10].

Discussion

I have feeling of responsibility for other members of my family as well other people who will have effect of it. I don't communicate with every member of my family branch constantly, but there is always unconscious connection between all of us. Most of them are above 40 years old which puts them in high risk. Because my uncle has not paid attention for his medical and physical condition it was hard for everybody to keep track on his health. This shows that being aware of your medical state and checking with a health expert will endure immune system.

On the other side, health check on hospitals cost a lot. Not everyone can effort it. Due to various reason they don't have money or insurance to cover all spending. It's sad to observe this factors in modern world. The only available option to stay be at low risk it to follow the simple conditions which were discussed above.

As we analyzed there are several factors that could keep your safe from diabetes which should be a part our daily life. Assuming situation where my uncle and other who have prediabetes symptoms were aware of it. It would be totally different reality where

people live longer and happier life.

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