

**Life Style, Stress & Diabetes**

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**ABSTRACT:**

There are many factors such as social, economic, personal and environmental that influence health status is known as determinants of health. It is the interrelated among these factors that determine the health of individual & population as well. Because of this, interventions that target multiple determinants of health are most likely to be effective. Stress, whether mental stress or physical stress, has been proven to start changes in blood sugar levels.

**Keywords:** Diabetes, Environmental, Life Style, Stress.

**INTRODUCTION**

There is a complex relationship between life style, stress and diabetes. Diabetes results from an interaction between the environmental risk factors, genetic aptitude and high-risk behaviors<sup>1</sup>. Several lifestyle factors affect the incidence of diabetes among them Obesity and weight gain significantly increase the risk<sup>2,3</sup> where as physical inactivity further elevates the risk regardless of obesity.<sup>4,5</sup> A small increase is contributed by smoking<sup>6,7</sup> and moderate alcohol consumption with a decrease<sup>6,8</sup> in the risk of diabetes. A low fiber diet with a high glycemic index has been associated with an increased risk of diabetes<sup>9,10</sup> and specific dietary fatty acids may differentially affect insulin resistance and the risk of diabetes.<sup>2,11</sup> It is obvious that lifestyle, and dietary habits, playing an important role in the development of diabetes.

Today's Stress is part of everyone's life. Perception regarding stress is different things to different people, and reason of stress for one person may not cause it for another. Stress is not always harmful. For example, very positive events like weddings, the birth of a child, and starting or ending a job can cause stress. Sometimes stress can help to make life

interesting and exciting, but excess stress, or stress that continues for long time, can have a negative impact on human body and mind. If it is not managed properly, can lead to many types of illness; increase the levels of blood glucose, increase anxiety, or depression, frustration and mood swings.<sup>3,5</sup>

Diabetes is the disorder in which the body does not properly process food for use as energy. The food we eat is mostly turned into sugar or glucose, to use for energy. The pancreas, an organ that produces a hormone known as insulin to help glucose get into the cells of our bodies. But if person have diabetes, body either doesn't make enough insulin or can't use its own insulin as well as it should. This leads sugars to build up in your blood. This is the reason why many people refer to diabetes as "sugar."<sup>5</sup>

The connection between diabetes and psychological stress is not new. Thomas Willis commented on the ability of "nervous liquors" to affect diabetes in the 17th Century, and William Osler in the 19th Century. In modern times, both people with diabetes and doctors have assumed that such a relationship exists. The release of stress hormones such as adrenaline can cause a buildup of glucose in

the blood stream of people with diabetes. "These hormones, that include adrenaline and cortisol, have as one of their effects, the mobilization of stored energy including glucose and fatty acids. Direct effects of stress on the nerves controlling the pancreas can also inhibit insulin release. Energy mobilization is part of the "fight or flight" response and is useful to prepare individuals to deal with stressors. In individuals who do not have diabetes, these energy sources can be quickly utilized. However, in people with diabetes, the lack of insulin or the presence of significant insulin insensitivity causes the newly released glucose to build up in the blood stream.<sup>5,10,11</sup>

### **ROLE OF LIFE STYLE AND STRESS IN ONSET OF THE DIABETES**

Stressful experiences have been influences in the onset of diabetes. Many studies have identified stress factors such as family problems and workplace stress as factors triggering the onset of diabetes. Thernlund et al<sup>12</sup> suggested that negative stressful experiences in the first two years of life might be increase the risk of development of diabetes in children. Other factors, such as high family chaos and behavioral problems, were also considered in the onset of diabetes.

Many studies have shown an association between onset of diabetes and physical activity.<sup>13, 14</sup> Exercises play a significant role in the blood glucose regulation, proteins and fats metabolism, better insulin action, prevention of complications of diabetes, muscle flexibility improvement and strength, good effects on the cardiovascular system.

### **Obesity**

Obesity is frequently associated with diabetes. Many longitudinal studies have been shown that obesity to be a powerful predictor of its development.<sup>15, 16</sup>

### **Physical inactivity**

Numerous studies have been showed that the importance of physical inactivity in the development of diabetes. In the Nurses' Health

Study, women who reported exercising vigorously had an age-adjusted incidence rate of self-reported clinically diagnosed diabetes that was two-thirds as high as that of women who exercised less frequently.<sup>17</sup>

### **Level of stress and life style**

It is shown that the physiological impact, chronic stress may disturb with a person's capacity to adhere to lifestyle-modifications that are necessary to maintaining health.<sup>17</sup>

### **Alcohol intake**

Studies showed significant association with diabetic patients. There was a strong inverse relation between alcohol consumption and body weight, apparent protective effect of alcohol consumption.<sup>18, 19</sup>

### **MANAGEMENT OF STRESS AND LIFE STYLE**

The physiological impact that stress has on glycemia, research has shown that stress interferes with the ability to self-manage diabetes. Performing everyday self-care tasks, such as monitoring of glucose level, diet plan, and correctly taking insulin or oral medications at the right time, is difficult during times of stress. Learning to prevent or reduce and control the responses to stress is helpful, particularly if the causes are relatively permanent. Assessment of stress levels in practice is a very difficult task. One approach is to find out those life events during the previous year that typically act as stressors. Using a scale such as the Recent Life Changes Questionnaire<sup>43</sup> or the Revised Social Readjustment Rating Scale,<sup>19,20</sup> individuals identify events that have occurred in their life from a list that includes births, deaths, marriage, retirement, social issues, financial worries, work related stress, and so forth. However, these scales are rather long and take time to complete, which might not always be appropriate in a practice setting. Polonsky<sup>21</sup> describes a diabetes-specific exercise to help people with diabetes develop an understanding

of the relationship between stress and blood glucose levels.

### **PUBLIC HEALTH SIGNIFICANCE**

Decrease the burden of diabetes among older adults occurs within a public health system Options for public health action can be categorized into 4 contexts: surveillance, programs, applied research, and policy.

Public policies can increase the accessibility, availability and affordability of services for older adults with diabetes.

Health professionals counseling on healthy lifestyle & dietary habits in diabetics should include more specific recommendations on smoking cessation, exercise, and stress control.

### **SUMMARY**

Research has directed that stressful life have an impact on diabetes. Stress may play an important role in the onset of diabetes; it can have a deleterious effect on blood glucose level and can affect lifestyle. Emerging evidence suggests, however, that interventions that help individuals prevent or overcome with stress can have significant positive influence on quality of life and blood glucose level. The clinical implications of this research illustrate the need for awareness of the effects of stress, as well as acceptance of the need for psychosocial support for people in this predicament.

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