

Understanding the somogyi effect: Causes, symptoms, and management

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DESCRIPTION

The Somogyi effect, also known as rebound hyperglycemia, is a phenomenon that can complicate diabetes management. Named after Dr. Michael Somogyi, who first described it in the 1930s, the Somogyi effect involves a cycle of low blood sugar followed by high blood sugar. This article explores what the Somogyi effect is, its causes and symptoms, and strategies for managing it effectively. The Somogyi effect refers to a pattern of hyperglycemia (high blood sugar) that occurs as a result of an episode of hypoglycemia (low blood sugar). This phenomenon typically arises during the night. The cycle often begins with a drop in blood glucose levels during the night. This can occur due to factors such as excessive insulin, missed meals, or increased physical activity. In response to low blood glucose, the body's natural defense mechanisms activate. Hormones such as glucagon, adrenaline, and cortisol are released to increase blood glucose levels. While these hormones work to raise blood sugar, they can sometimes cause an overshoot, resulting in high blood glucose levels by morning. This rebound effect can be mistakenly interpreted as inadequate diabetes control, leading to unnecessary increases in insulin or medication dosages. Several factors can contribute to the development of the Somogyi effect. Using too much insulin, especially at bedtime, can lower blood glucose levels excessively. If insulin dosages are not adjusted properly, this can lead to nighttime hypoglycemia and subsequent rebound hyperglycemia. Skipping or having an inadequate dinner can result in low blood sugar levels overnight, triggering the Somogyi effect. Engaging in vigorous exercise in the late afternoon or evening can cause blood sugar to drop overnight, potentially leading to the Somogyi effect if insulin levels are not adjusted. Drinking alcohol without sufficient food can cause a drop in blood glucose levels, increasing the risk of hypoglycemia and rebound hyperglycemia. Identifying the Somogyi effect can be challenging, as its symptoms can overlap with other diabetes-related issues. One of the most common signs is consistently elevated blood glucose levels

upon waking, despite having well-controlled blood sugar levels before bedtime. Individuals may experience sweating, headaches, or a general feeling of being unwell during the night or upon waking, which can be a sign of nocturnal hypoglycemia. High blood sugar levels can lead to increased thirst and frequent urination during the night. Persistent high blood sugar levels can cause fatigue and lethargy, affecting overall well-being. Proper diagnosis of the Somogyi effect involves, Regular monitoring of blood glucose levels, including overnight and early morning readings, is essential. A Continuous Glucose Monitor (CGM) can provide a detailed picture of blood glucose fluctuations throughout the night. Assessing insulin dosages, meal patterns, physical activity, and alcohol consumption can help identify potential contributors to the Somogyi effect. Working with a healthcare provider, including a diabetes specialist or endocrinologist, can help accurately diagnose and manage the Somogyi effect. Effective management of the Somogyi effect involves several strategies. Reducing bedtime insulin doses or adjusting the timing of insulin injections may help prevent nighttime hypoglycemia. Ensuring a balanced and adequate evening meal can help maintain stable blood glucose levels overnight. Regular monitoring, including overnight checks, can help detect and address fluctuations in blood glucose levels. Adjusting the timing and intensity of exercise, and moderating alcohol consumption, can help reduce the risk of hypoglycemia and rebound hyperglycemia. A CGM system can provide real-time insights into blood glucose trends, helping to identify and address the Somogyi effect more effectively.

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CONFLICT OF INTEREST

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