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# Fear of hypoglycemia:

## implications for quality of life and glycemic control

It is difficult to manage diabetes properly without hypoglycemic episodes eventually occurring. It is an inevitable consequence when treating diabetes with insulin or hypoglycemic agents. In addition to aiming to reduce their frequency, other therapeutic

goals include learning to detect and resolve them. Despite being a common occurrence, most studies mention hypoglycemia as the second most feared situation for people with diabetes, after the risk of developing complications<sup>1</sup>.

Managing diabetes effectively inevitably involves episodes of hypoglycemia sooner or later. It is an unavoidable consequence when treating diabetes with insulin or hypoglycemic agents. Besides aiming to reduce its frequency, other therapeutic goals include learning to detect and resolve hypoglycemic episodes. Despite its commonality, most research cites it, after the risk of developing complications, as the second most feared situation for people with diabetes.

## WHAT FACTORS FUEL THE FEAR OF HYPOGLYCEMIA?

Some of the ingredients that make hypoglycemia such a feared situation include:

**1) Difficulty anticipating it:** The multitude of factors influencing glucose levels makes it challenging to anticipate hypoglycemia. Due to the sheer number or the unknown nature of these factors, they are not always easy to keep in mind.

In fact, a classic study pointed out that the “inability to anticipate the onset and treatment of a hypoglycemic event” was the most important factor in developing an excessive fear of hypoglycemia<sup>2</sup>.

**2) Disruption of everyday life:** Even mild hypoglycemia entails an urgent need to solve it, forcing the person to interrupt their current activity.

**3) Discomfort:** Hypoglycemia is often accompanied by symptoms such as tachycardia, sweating, trembling, and mental confusion, which contribute to a feeling of discomfort.

**4) Potential danger:** Hypoglycemia is potentially dangerous both in the short

(risk of losing control) and long term (risk of permanent brain damage).

**5) Increased glycemic variability:** The greater the glycemic variability, the higher the probability of experiencing hypoglycemic episodes.

**6) Undetected episodes:** The longer the course of diabetes, the lower the ability to recognize warning signs of hypoglycemia.

**7) Past severe episodes:** Previous experiences that required the intervention of another person can intensify the fear of having new episodes.

**8) Personality traits:** Individuals with tendencies to worry excessively or experience anxiety are more prone to develop an excessive fear of hypoglycemia.

## IS THE FEAR OF HYPOGLYCEMIA INAPPROPRIATE?

It is important to recognize that fear is an essential emotion for survival's sake. This includes the fear of hypoglycemia. Without it, a person would not be sufficiently motivated to avoid hypoglycemia, putting themselves at constant risk.

Therefore, being afraid is adaptive, as it serves as a defense mechanism against an anticipated danger that helps prevent it. The goal should not be to eliminate the fear of hypoglycemia but to adjust the intensity of fear consistently with the actual risk so that it remains beneficial.

Excessive fear can make a person develop certain avoidance behaviors. From a psychological perspective, the avoidance

mechanism can be detrimental. Although it reduces anxiety surrounding the feared situation, it also strengthens and perpetuates the behavior that reduced that anxiety.

Moreover, avoiding the situation causes the fear to progressively increase.

## DEVELOPMENT AND PERPETUATION OF INAPPROPRIATE FEAR

Excessive monitorization on the possibility of hypoglycemia, as explained above, may be due to objective experiences (severe, unnoticed, or frequent hypoglycemia) and, also, subjective experiences associated with personal characteristics or cognitive errors such as catastrophizing (“if it happens, I run the risk of dying”) or overestimating occurrence (“if I don't do this, I'll surely have a hypoglycemia”).

In any case, the person develops specific safety behaviors such as consuming carbohydrates, reducing insulin doses, etc., aimed at avoiding hypoglycemia at all costs.

Each person develops one, or several particular avoidance behaviors. Of note that the choice of these behaviors is not related to the objective likelihood of experiencing hypoglycemia but to those that have been most effective in calming their anxiety about such possibility.

Any action taken with this objective has a high cost in terms of metabolic control and quality of life. Most importantly, calming anxiety reinforces the irrational behaviors and beliefs that the person has, which may become a difficult obstacle to overcome. »

THE “INABILITY TO ANTICIPATE THE ONSET AND TREATMENT OF A HYPOGLYCEMIC EVENT” WAS IDENTIFIED AS THE MOST IMPORTANT FACTOR IN DEVELOPING AN EXCESSIVE FEAR OF HYPOGLYCEMIA.

## IT IS NOT NECESSARY TO AIM FOR THE COMPLETE ABSENCE OF HYPOGLYCEMIA, BUT RATHER ADJUST THE INTENSITY OF THE FEAR BASED ON THE ACTUAL RISK TO MAKE SURE THAT IT REMAINS BENEFICIAL

» For example, imagine a person who fears experiencing hypoglycemia because they believe they cannot detect it in time. An irrational thought could be catastrophizing, which includes the belief that if they suffer a hypoglycemia, they run the risk of dying.

To prevent it, they arbitrarily set blood glucose levels (e.g., 160 mg/dL) below which they will intervene to avoid hypoglycemia. If they find their glucose levels below this figure, they will consume carbohydrates to “go back to safety.”

While this may calm them by removing the risk of hypoglycemia, it will also establish the habit of consuming carbohydrates whenever their glucose is below this level.

### HOW DOES SOMEONE WITH EXCESSIVE FEAR RESPOND?

As seen, when a person has a specific and extreme fear of hypoglycemia, they tend to act in ways to eliminate the anxiety caused by the possibility of its occurrence.

There is no universal behavior. Each person will adopt the behavior they believe will rescue them from danger.

Most behaviors can be categorized into one of three groups:

- **Overcompensation behaviors:** These aim to make sure that blood glucose levels are always above the arbitrary threshold set by the person (regardless of clinical criteria).

Common behaviors include reducing insulin doses, skipping doses, and continuously consuming carbohydrates.

- **Avoidance behaviors:** These aim to minimize the likelihood of finding oneself in a risky situation, leading to a restriction of activities and a clear decrease in quality of life. For example, stopping exercise, avoiding being alone, refraining from social activities, or limiting outings outside of their safety zone, usually their home.

- **Treatment-related behaviors:** These can be excessive (e.g., excessively frequent glucose checks) or deficient (thus avoiding to implement agreed changes in treatment with their health care team).

### WHAT ARE THE CONSEQUENCES OF EXCESSIVE FEAR OF HYPOGLYCEMIA?

The consequences of excessive fear of hypoglycemia include:

- **Worse quality of life:** The fear of hypoglycemia becomes a major focus for the person, invading and conditioning all aspects of their life.
- **Deterioration of emotional well-being:** The threat of having hypoglycemic episodes keeps the person in a state of constant alertness, potentially generating significant anxiety and even developing a specific phobia towards these events.
- **Reduced involvement in treatment (suboptimal management):** Diabetes management becomes secondary to hypoglycemia prevention. Actions taken regarding diabetes are not directed at self-care but at avoiding risks.
- **Worse outcomes:** Preventive behaviors aim to keep blood »

TABLE 1

#### EVALUADOR FOH DE 9 ITEMS<sup>3</sup>.

1. I am afraid of having a low blood sugar when I am driving
2. I am afraid of having a low blood sugar when I am sleeping
3. I am afraid of having a low blood sugar when I am out in public
4. I eat a lot more than I really need to avoid having a low blood sugar
5. I am afraid of having a low blood sugar when no one is around to help me
6. I am afraid of passing out due to a low blood sugar
7. I am afraid that I won't catch and respond to a low blood sugar before it is too late
8. I limit my physical activity to avoid having a low blood sugar
9. I keep my blood sugars high to avoid having a low blood sugar



- » glucose levels within arbitrarily designated safe ranges, which are always higher than those suggested by their health care team.

## PROPOSALS

**1) Routine screening in consultations:** Use of phrases and questions in consultations.

- Here, the development of a 9-item scale for routine use at the doctor's office shows promise<sup>3</sup>. (Table 1).

- Additionally, the approach explained in Chapter 4 of the book *Diabetes and Emotional Health* and standardized ques-

tionnaires like the Hypoglycemia Fear Survey-II (HFS-II W)<sup>4</sup> can be used.

**2) Use of technology:** Technology has proven to be a promising resource in preventing fear of hypoglycemia<sup>5</sup>, particularly when accompanied by appropriate professional follow-up.

**3) Therapeutic education:** Focus on prevention, detection, and resolution of hypoglycemia.

**4) Development of cognitive-behavioral programs:** Address fear of hypoglycemia as an anxiety disorder<sup>6</sup>. **D**

## CONCLUSIONS

- The fear of hypoglycemia is a significant issue to address as it is crucial for adequate control and ranks as the second most common fear among people with diabetes.

- As highlighted, avoidance behaviors tend to increase fear of hypoglycemia, worsening the situation. Including screening questions at the doctor's office will allow for early detection.

- Developing specific individual or group programs with a cognitive-behavioral approach (proven effective) is advisable.

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