



T1D Exchange Fear of Hypoglycemia Screener

For Patient Use

Please rate how much you agree or disagree with the following items based on **your feelings and experiences in the last 3 months**

<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
1	2	3	4	5

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

Instructions for Clinicians

Background

This fear of hypoglycemia (FOH) screener was developed in collaboration between Eli Lilly and T1D Exchange, under the consultation of Drs. Lawrence Fisher, Frank Snoek, and Korey Hood. A pool of draft items was developed based on FOH literature, interviews with diabetes care providers, and interviews with adults living with type 1 diabetes (T1D). Subsequent quantitative research was conducted to finalize the nine items in this screener and established reliability and validity of the new screener [1,2,3].

Administering the screener

Administer this screener to adult (18 years or older) patients with T1D prior to their visits with the diabetes care team. The screener can be administered in either paper or electronic form. Clinicians are encouraged to discuss patients' screener responses during their visits.

To monitor patients' FOH over time, the screener is recommended to be administered at least once a year. The screener may be administered more frequently with clinician discretion, if patients score above threshold scores (see sections below) and are undergoing interventions to address FOH.

Understanding the screener scores

This screener is NOT a diagnostic tool for FOH, instead, it identifies adults with T1D who are at high risk for FOH and its related self-management behaviors that may lead to suboptimal diabetes outcomes, such as higher A1c and more comorbidities.

This 9-item scale generates three scores to assess a patient's level of FOH:

- A worry domain score: sum up the scores of items 1-6. Worry subscale scores range from 6 to 30, a score above 23 (24-30) indicates higher risk of excessive worrying around hypoglycemia. Scores above 23 are associated with higher levels of depression, anxiety, and diabetes distress, as well as experiences with more severe hypoglycemia in the past year.
- A behavior domain score: sum up the scores of items 7-9. Behavior subscale scores range from 3 to 15, a score above 9 (10-15) indicates more behavior to avoid hypoglycemia. Scores above 9 are associated with higher A1c and less frequent exercise; patients scoring above 9 also reported keeping their blood glucose at higher levels.
- A total FOH score: sum up the scores of all items. Total scores range from 9 to 45, a score above 30 (31-45) indicates higher risk for fear of hypoglycemia. Scores above 30 are associated with higher A1c, higher BG levels, more comorbid conditions, higher depression, anxiety, and diabetes distress, as well as experience with severe hypoglycemia in the past year.

For patients scoring above threshold

Follow-up conversations with patients who score above either the sub-domain threshold or the total score threshold are advisable. Important topics to discuss include but are not limited to:

- What specific aspects and potential causes of hypoglycemia are they most concerned about?
 - o Where did these concerns come from?
 - o How applicable are they now?
- Is the patient at higher risk for severe hypoglycemia?
- Does the patient have impaired awareness of hypoglycemia?
- Has the patient received adequate diabetes education on managing hypoglycemia?
- Will technology, in particular CGM use, help the patient cope with FOH?
- Does the patient have any other co-occurring psychosocial conditions, such as depression, generalized anxiety, or diabetes distress, that need to be addressed?

For patients scoring below threshold

Clinicians are still encouraged to review patients' responses to individual items and invite patients to discuss any specific concerns they may have regarding FOH, sleep, exercise, or other specific circumstances.

References

1. Mitchell, B., Bispham, J., Hughes, A.S., Liu, J., Perez-Nieves, M., Poon, J., Fan, L., McAuliffe-Fogarty, A. (2020). 392-P: Development of a fear of hypoglycemia screener: type 1 diabetes health care provider insight. *Diabetes*. 2020;69(Supplement 1):392-P. doi:10.2337/db20-392-P
2. Bispham, J., Mitchell, B., Hughes, A.S., Perez-Nieves, M., Poon, J., Fan, L., McAuliffe-Fogarty, A., Liu, J. Development of a Fear of Hypoglycemia Screener: Type 1 Diabetes Patient Insight. Poster presented at the ADCES 2020 Annual Meeting.
3. Liu J, Poon JL, Bispham J, Perez-Nieves M, Hughes A, Chapman K, Mitchell B, Hood K, Snoek F, Fisher L. Development and validation of fear of hypoglycemia screener: results from the T1D exchange registry. *J Patient Rep Outcomes*. 2023 May 9;7(1):43. doi: 10.1186/s41687-023-00585-9. PMID: 37160500; PMCID: PMC10169988. Development and validation of fear of hypoglycemia screener: results from the T1D exchange registry - PMC

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