

Risk factors

- Hx of severe hypoglycemia
- # of symptoms with mild hypoglycemia
- High trait anxiety
- Hypo unawareness
- High Glucose Variability
- Parent of a child with T1D

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Clinical Implications

- Poor glycemic control due to hypo avoidant behaviors
 - Under dosing insulin
 - Over treating lows
 - Treating lows before low
- Worsening health and well-being
 - FOH is primary barrier for lack of exercise in adults with T1D
 - Increasing stress levels and sleep impairment
 - Association with anxiety, depression and reduced quality of life

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Education is necessary but not sufficient

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ADA 2017 MEDICAL STANDARDS OF CARE ANXIETY

Recommendations

- Consider screening for anxiety in people exhibiting anxiety or worries regarding diabetes complications, insulin injections or infusion, taking medications, and/or hypoglycemia that interfere with self-management behaviors and in those who express fear, dread, or irrational thoughts and/or show anxiety symptoms such as avoidance behaviors, excessive repetitive behaviors, or social withdrawal. Refer for treatment if anxiety is present. **B**
- People with hypoglycemic unawareness, which can co-occur with fear of hypoglycemia, should be treated using Blood Glucose Awareness Training (or other evidence-based similar intervention) to help re-establish awareness of hypoglycemia and reduce fear of hyperglycemia. **A**

Assessment Tools

- Hypoglycemia Fear Survey (HFS)
 - Behavior and Worry subscale
 - Behavior scale
 - Maintaining High BG*, Avoiding Hypo
 - Worry scale
 - Helplessness, Social consequences
 - Various adaptations to the HFS
 - Parents (HFS-P & HFS-PYC)
 - Children and Adolescents (HFS-C)

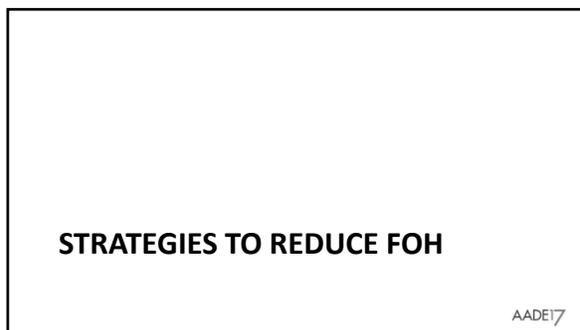
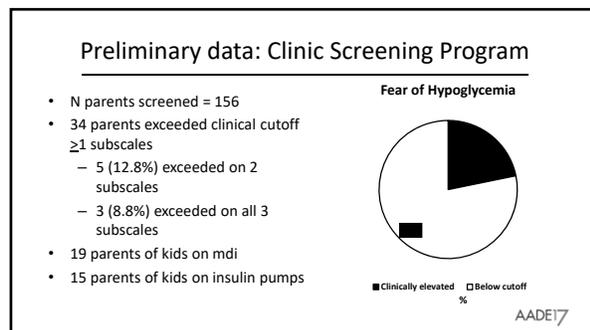
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FoH survey: Clinical cutoffs

Maintaining High Blood Glucoses	≥ 7
Helplessness/Worry About Low Blood Glucoses	≥ 24
Worry About Social Consequences	≥ 9

PI: Kimberly Driscoll, PhD. Study not published R03DK110459

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Blood Glucose awareness training (BGAT)

- 8 week, Psychoeducation training program to improve ability to:
 - Anticipate, detect, treat and prevent extreme blood glucose levels (hypo or hyperglycemia)
- Effective in reducing hypo unawareness and reducing fear of hypo in adults
- Web-based module also effective (BGAThome)

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Clinical Strategies to Reduce FOH

- Assess hypo history and FOH
- Integrate fear management strategies with hypo management education
 - Graduated exposure
 - Cognitive Behavior Therapy (CBT) strategies

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Assess for FOH

- How worried are you about the risk of having a low blood sugar?
 - Scaling from 1-10
- During what situations are you most worried about having a low blood sugar?
- How does your worry about hypoglycemia impact your sleep at night?

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Assess for hypo avoidant behaviors

- What kinds of things do you do to avoid lows?
 - Increase blood glucose monitoring (>8 times/day)?
 - Constant checking of CGM?
 - Keep blood glucose high intentionally (i.e. >150, >200)?
 - Under dose insulin/give less insulin than bolus calculator recommends?
 - Frequently check at night?

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Graduated Exposure: FOH

Beginning Safe Margin (focus on fear reduction)

Step 1. Reduce safe margin by a small amount so that the parent and/or child feel in control.

Step 2. Reduce safe margin determined in Step 1 by a small amount so that the parent and/or child feel in control.

Step 3. Reduce safe margin determined in Step 2 by a small amount so that the parent and/or child feel in control.

Step 4. Reduce safe margin determined in Step 3 by a small amount so that the parent and/or child feel in control.

Step 5. Reduce safe margin determined in Step 4 by a small amount so that the parent and/or child feel in control.

Continue reductions as needed.

Adapted from Vallis et al., 2014.

Example: Graduated Exposure

- Safe range= 230; Hypo avoidant behavior= Child eats snack without insulin if BG <230 at bedtime.
- Parent agrees to lower that range to 200 and either give insulin with a bedtime snack or no snack if BG is 200 or greater. Then, as anxiety decreases, drop to 170 and then eventually 150.

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Cognitive Behavioral Therapy

- Thoughts, feeling and behaviors are interconnected
 - Re-frame catastrophic thinking
 - Self-talk for coping with anxious thoughts and feelings

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Example: Challenge catastrophic thinking

Let's Bring Low BG Worry Down!!

A.	Number of Days X has had T1D.....	1149
B.	Number of Lows X has had.....	300
C.	Number of Lows X has had when X needed assistance	3
D.	Number of Lows X has had when X needed assistance	3/4596 = 0.00065
	÷	
	Number of Total BG Checks X has done	X 100 = 0.07%
	= % of Lows when she needed assistance	

What does this mean?
 These data show us that X **VERY RARELY** has a low when she needs assistance. We also know X has **NEVER** had a severe low where she needed glucagon. The chances that X will have a severe low are...**VERY LOW**.

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Example: Countering catastrophic thoughts

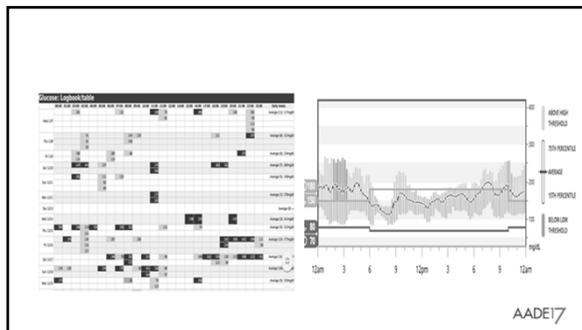
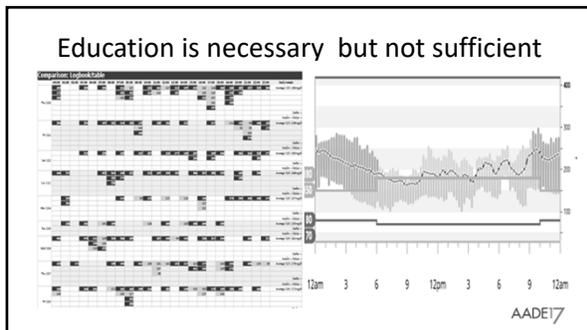
- “I’ve always been able to handle lows in the past and keep my child safe”
- “The worst case scenario isn’t likely to happen”
- “My child really hasn’t had frequent episodes of low BG”

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Case Study

- 21 yo male; T1D duration= ~10 years
- Co-existing depression and general anxiety
- Started on CGM
- Intentionally kept BG high
 - Graduated exposure to increase comfort with BG in target range & reduce BG testing

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Summary

- FOH is common and may result in reduction in QOL and poor glycemic control
- Assess for impact of FOH
 - Clinical cutoffs may help in pediatric/parent population
- Graduated exposure principles may help patients improve glycemic control and reduce hypo worries
- Collaboration is key: Integrate mental health treatment with diabetes education
 - Refer to mental health professional

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Questions?

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Thank you!

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