

Behavioral Strategies to Enhance
Diabetes Management in Children
and Teens:
What You can Do in 5 Minutes

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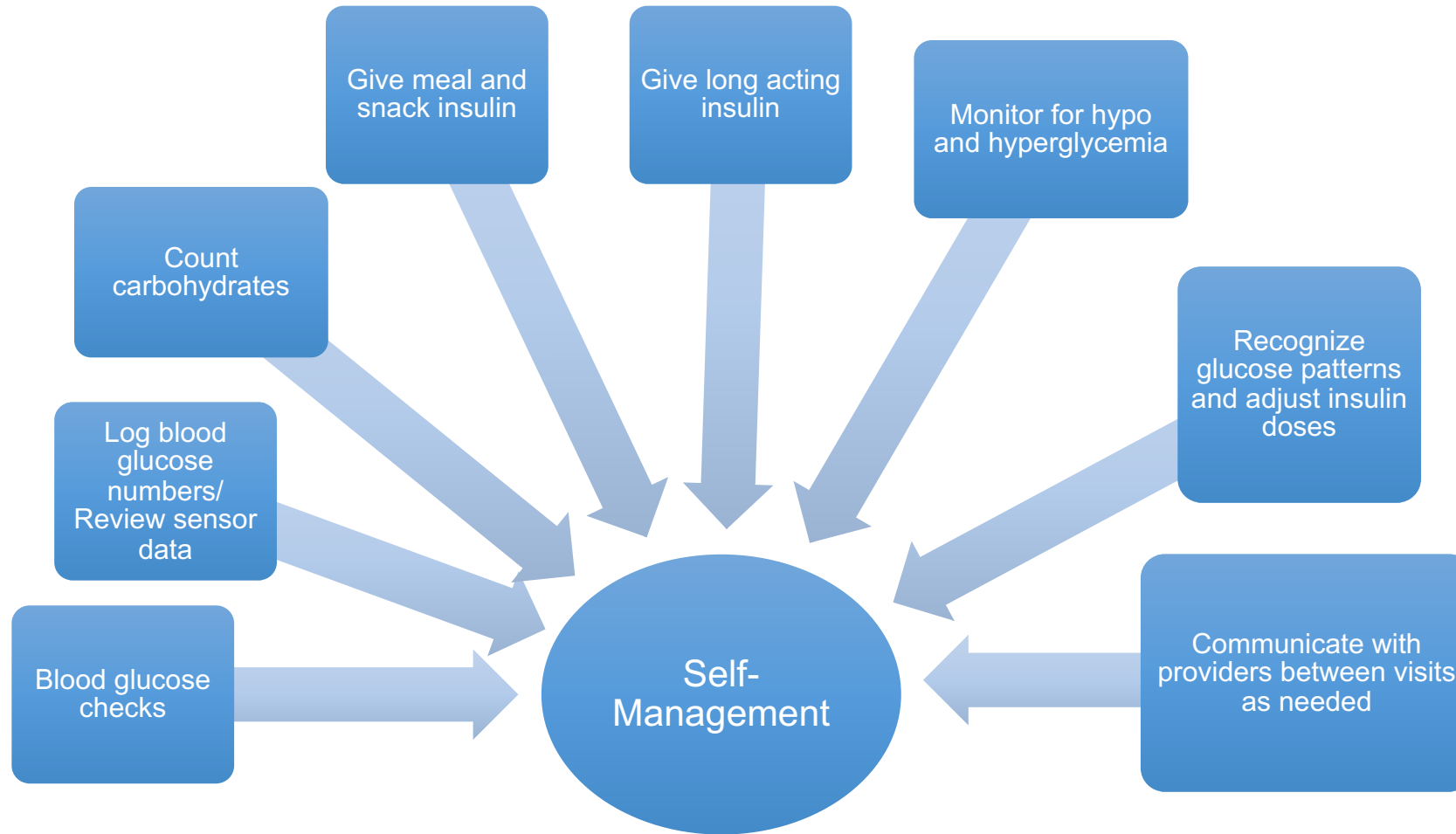
Type 1 Diabetes

- One of the most common chronic childhood conditions
 - 18,000 new cases each year, and incidence is rising¹
 - Mean age of onset 10-14
 - Despite advances in treatment, estimated loss of life-expectancy of up to 13 years²
- Goal of treatment is to maintain glycemic control to prevent acute and long-term complications
 - The majority of treatment regimen is completed by child or adolescent and his/her family

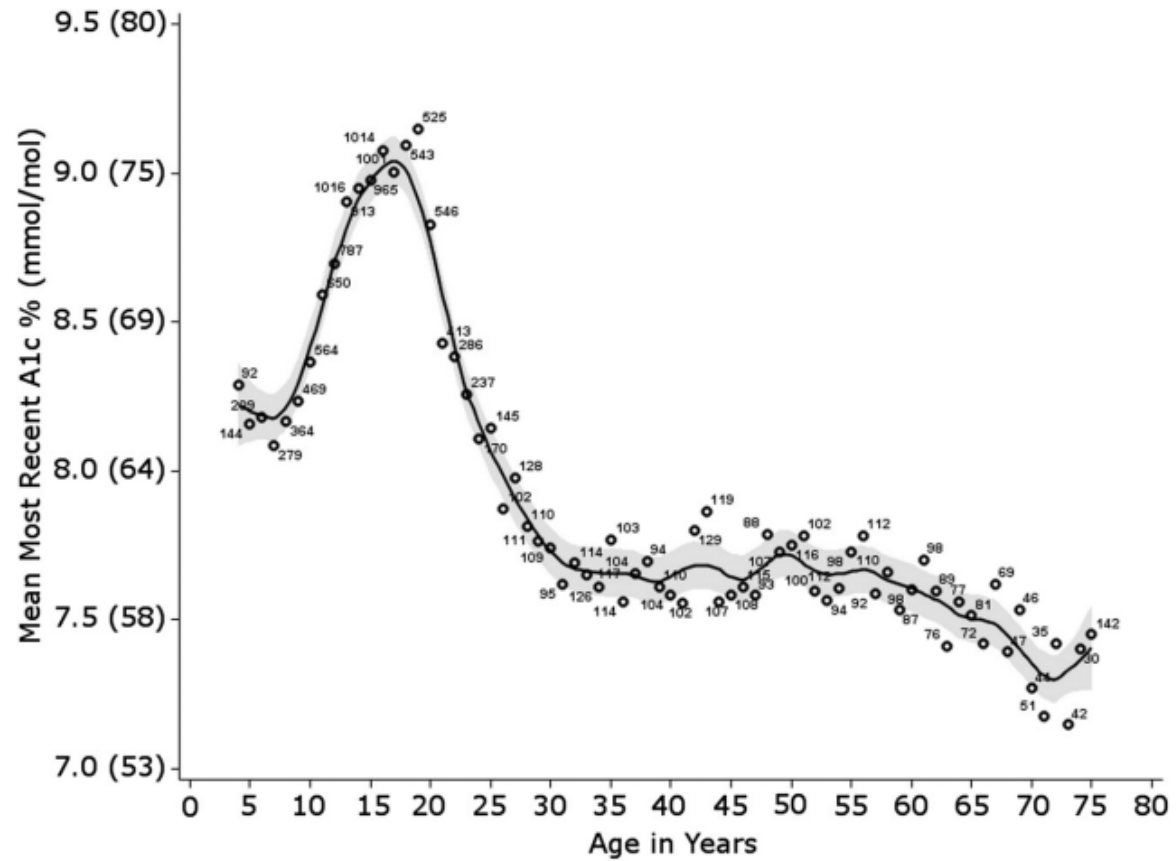
¹ Hamman et al., 2015, *Diabetes Care*

² Katz & Laffel, 2015, *JAMA*

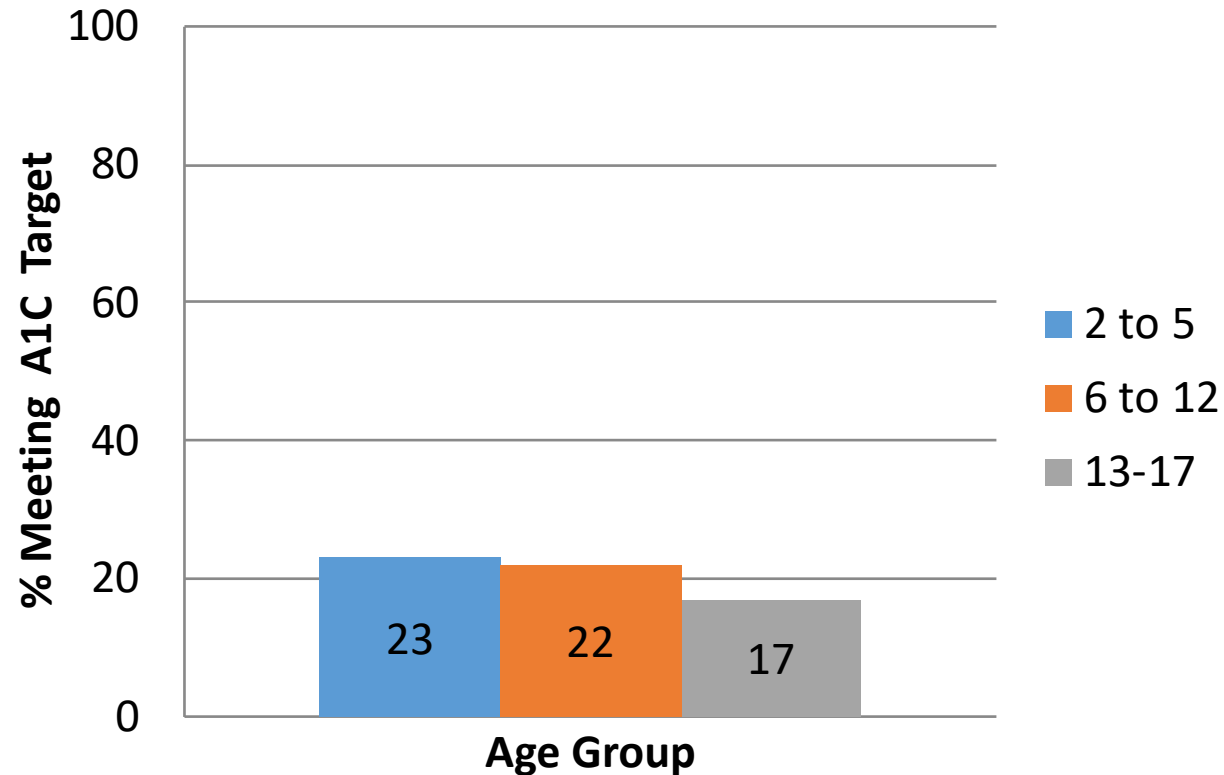
Type 1 Diabetes Tasks of Self-Management



Glycemic Control Deteriorates over Adolescence



Proportion of Pediatric Patients Meeting Treatment Goals (A1C < 7.5%)



Miller, et al., 2015, *Diabetes Care*

Barriers to Treatment Adherence

- Parent-child conflict
- Diabetes distress/burnout
- Insufficient sleep



¹ Noser et al., 2016, *Pediatr Diabetes*

² Hagger et al., 2017, *Diabetes Care*

³ Perez et al., 2018, *Curr Diabetes Rep*

What Can We Do?

Most evidence-based interventions to improve adherence and glycemic control in youth with T1D are time- and resource-intensive

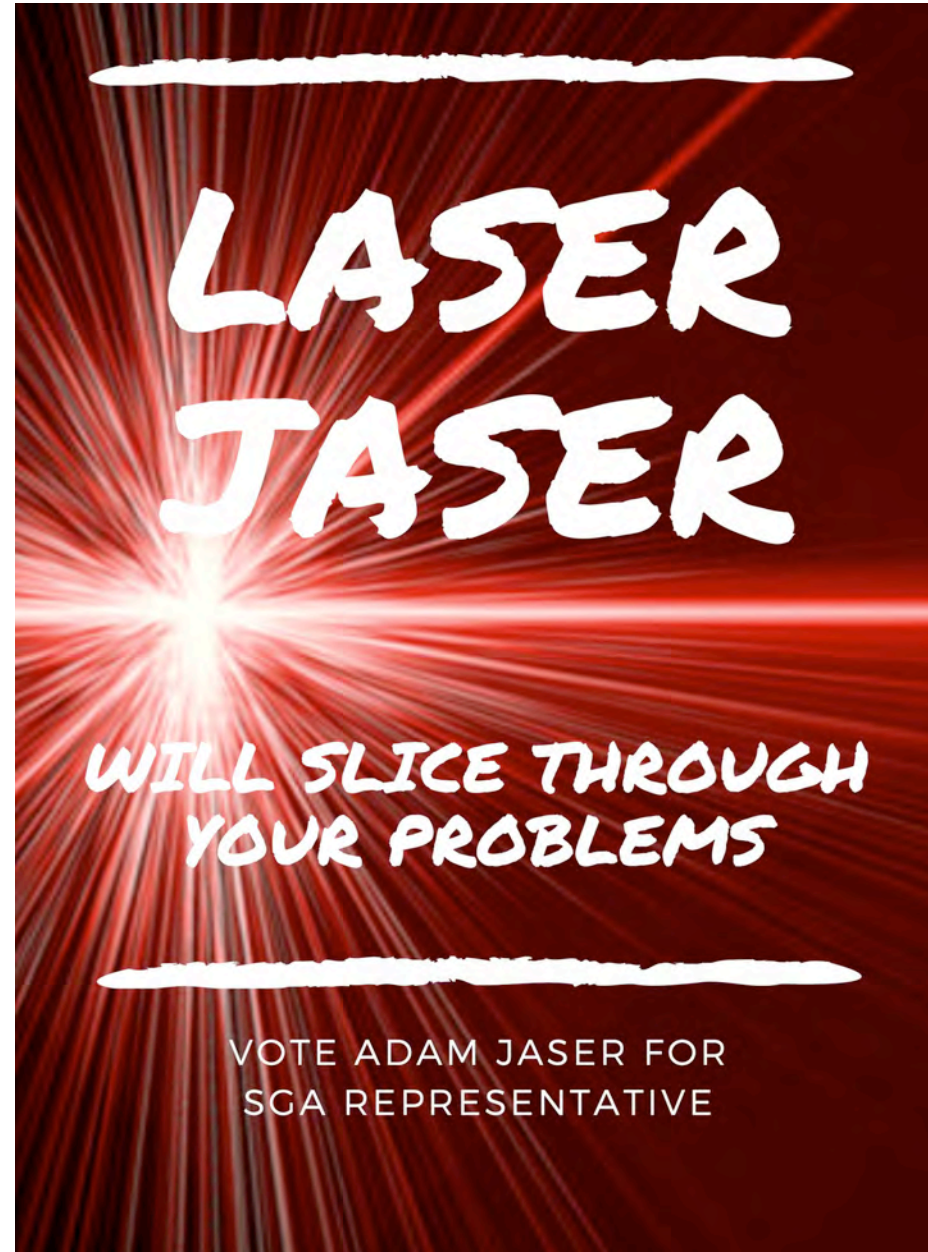
- Behavioral Family Systems Therapy for Diabetes – 12 sessions of family-based therapy over 6 months¹
- Multisystemic Therapy for Poorly Controlled T1D – intensive, family-centered, community-based treatment over 6 months²
- Novel Interventions in Children’s Healthcare – intensive, multicomponent behavioral health intervention including frequent text messaging, home visits, and resource access³

¹ Wysocki et al., 2007, *Diabetes Care*

² Ellis et al., 2012, *Ann Behav Med*

³ Barry et al., 2017, *Curr Diabetes Rep*

What Can We Do?



Brief Interventions for Health Behavior Change

- Smoking Cessation – even brief “advice” from physicians increases quit rates¹
- Evidence-based “Kernels” or “active ingredients”²
- Use metaphors, stories, humor

¹ Stead et al., 2013, *Cochrane Database of Systematic Reviews*

² Embry & Biglan, 2008, *Clin Child Family Psychol Rev*



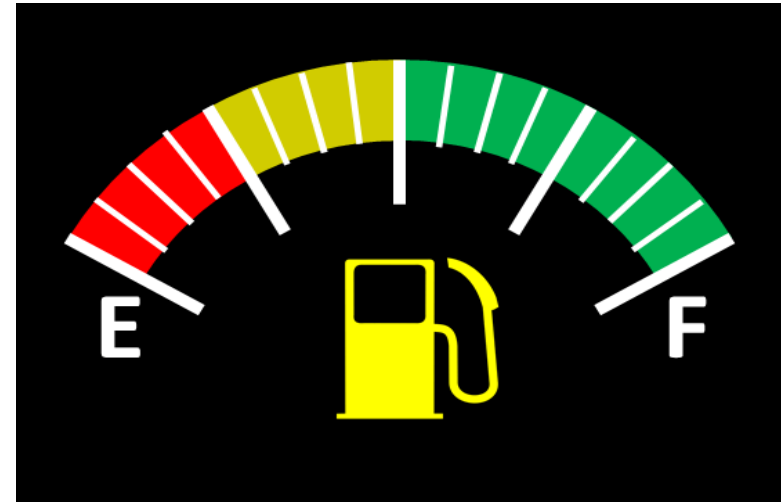
Scenario #1

Ava is a 13 year old girl who has a hard time maintaining motivation for diabetes care. She does a great job checking her blood sugar and giving insulin for the first week or two after clinic appointments, but then she starts forgetting or missing checks and doses. Ava feels bad about these lapses, and her parents calling her “lazy.”

Brief Intervention – Use Metaphors



Vs.



Immediate vs. Delayed Consequences

- With diabetes management, there are few immediate consequences for skipping self-care, like bg checks (oil change), but there are consequences for completely skipping insulin (running out of gas).
- Reframing – look at diabetes care as an *accomplishment*, not a *failure*
- Relate to other behaviors – healthy eating, exercise, check-ups



Scenario #2

Jack is a 15 year old boy who hates diabetes and avoids talking about it, doing diabetes management in front of his peers, or bringing his supplies with him. He has missed a lot of school due to DKA and high blood glucose levels.

Avoidance and Suppression

The White Bear Problem



Sticky Note Approach

- Attention and effort is on the thing you don't like.
- By spending some time and effort on diabetes, you have more time and energy for the things you want to do.

It hurts
when I
prick my
finger.

It's
annoyin
g when
people tell
me what I
can and
can't eat.

I hate
answerin
g
question
about
diabetes.

People
look at me
weird
when I get
out my
supplies.

I don't
want to be
"the boy
with
diabetes."

I hate
having to
think
about it
every
time I eat.

Scenario #3

Jade is an 8 year old girl who frequently has angry outbursts when she has to do diabetes tasks (or homework, or clean up, or get ready for bed). Her parents try to reason with her, soothe her, and then often get frustrated and yell.

Power of Strategic Attention



Scenario #4

Caleb is a high school student taking several AP classes, playing in the marching band, and working on the weekends. He feels like he can't get a handle on his blood sugar, as he has frequent highs and lows. He tries to stay on top of diabetes management, but he is only getting 4-5 hours of sleep per night.

Sleep and Diabetes

- Insufficient sleep can have physiological effects:¹
 - Elevated blood glucose
 - Decreased insulin sensitivity
 - Poor glycemic control
- Poor sleep quality can have behavioral effects:
 - Poor food choices²
 - Less physical activity, more sedentary time³
 - Behavior problems⁴



¹ Yeshayahu et al., 2010, *Diabetes Care*

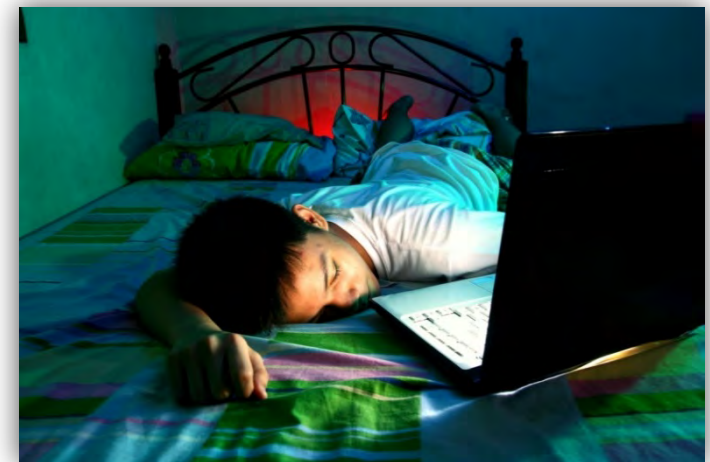
² Westerlund et al., 2009, *Br J Nutr*

³ Garaulet et al., 2011, *Int J Obesity*

⁴ Perfect et al., 2012, *Sleep*

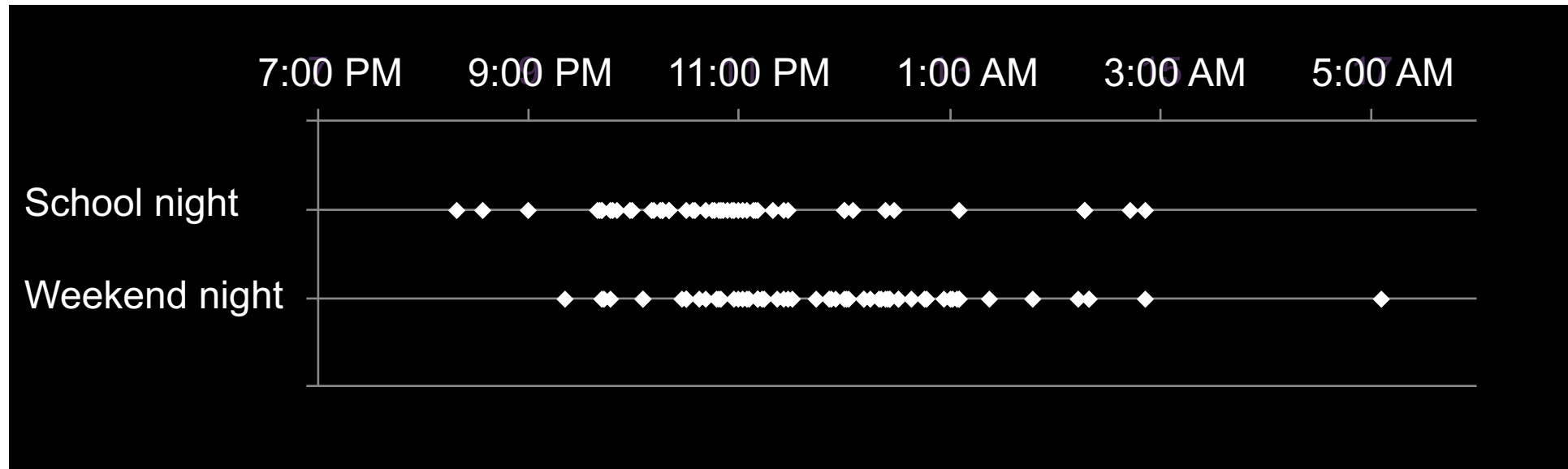
Sleep Inconsistency or “Social Jetlag”

- Large sleep debt on weekdays related to early school start times, extracurricular demands
- Delayed bedtime and sleep extension on weekends creates “social jetlag” on weekdays



Inconsistent Sleep

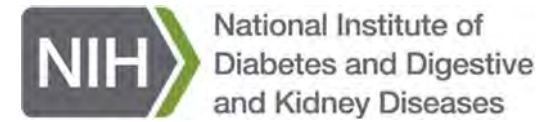
- Variability in individual sleep time was related to poorer glycemic control and fewer BG checks



- Encouraging kids to maintain a regular sleep schedule may help improve glycemic control and diabetes management

Acknowledgements

- Riley A. *Five-Minute ABS (Adherence, Bite-Sized)*. Presentation at the American Diabetes Association Scientific Sessions, June, 2018, Orlando, FL.
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Questions?