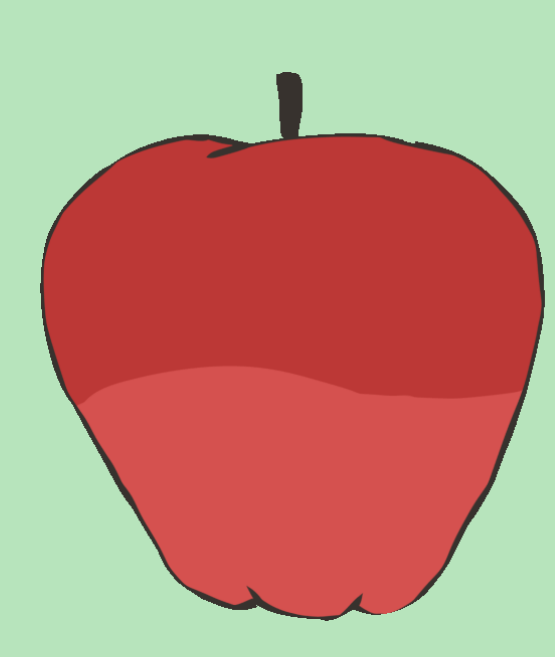


BEYOND SNACK-CESS:



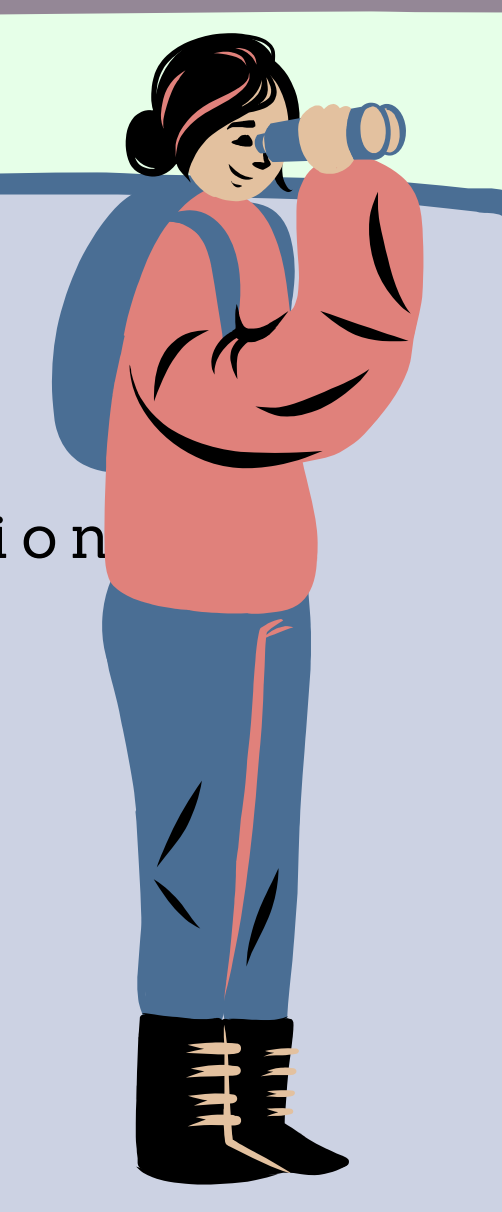
SUPPORTING PHYSICAL, SOCIAL-EMOTIONAL, AND ACADEMIC NEEDS IN CHILDREN WITH TYPE 1 DIABETES

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THE BIG IDEA

- 500,000 children affected worldwide (Patterson et al).
- Of kids with diabetes, 98% under age 10 and 87% ages 10 to 19 have Type 1 (Imperatore et al.).
- Diagnoses increase 3% per year (Patterson et al.).
- Inadequate care increases risks of hypo- and hyperglycemia, ketoacidosis, and consequential impaired cognitive function (Perantie et al.).

LOOK OUT FOR...



Physical signs:

- weight loss
- tachycardia and palpitation
- headaches
- fatigue

Behavioral signs:

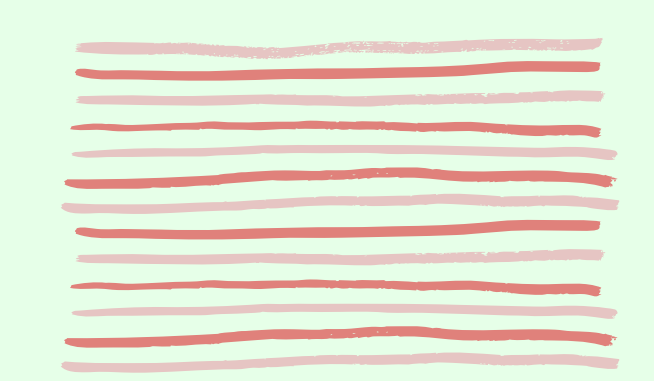
- increased thirst
- frequent urination
- increased hunger

Emotional signs:

- irritability
- aggression
- externalizing correlated with b.c.
- depression following diagnosis

Cognitive signs:

- difficulty with attention
- reduced processing speed



DEMOGRAPHIC-SPECIFIC CONCERNS:

Impaired cognitive function from poor care (Perantie et al.):

- undiagnosed kids and/or kids without healthcare coverage
- kids that have little supervision

Increased risk of self-harm (Graham):

- kids coping with depression
- queer and trans kids

Possible increased risk of eating disorders (including intentional insulin restriction) (Baechle et al.) (Jaser et al.):

- girls and AFAB kids
- kids who are considered "overweight"

More risk-taking and delinquent behaviors (Leonard et al.):

- BIPOC kids targeted by the school-to-prison pipeline

BEYOND SNACK-CESS:

GIVEN THAT T1D HAS IMPACT ON BEHAVIOR, MOOD AND POTENTIALLY COGNITIVE FUNCTIONS, SCHOOL BASED ACCOMMODATIONS SHOULD CONSIDER ADDRESSING THE SPECIFIC PROFILES UNIQUE TO EACH CHILD WITH T1D. THE FOLLOWING SECTION ADDRESSES DIFFERENT AREAS OF ACCOMMODATIONS, AND IN SOME CASES, INTERVENTIONS. IMPLEMENTATION COULD MEAN ADAPTATION OF ONE OR SEVERAL OF THESE INTERVENTIONS, DEPENDING ON THE CHILD'S NEEDS.

EDUCATIONAL NEEDS

504 Plan that addresses blood glucose monitoring-

- Trained, dedicated school personnel should keep in contact with student throughout the day to monitor blood sugar level. This role is usually fulfilled by the school nurse, however, the more staff that can be trained to have the knowledge of glucose monitoring, as well as other health needs and emergency procedures, the better. A detailed 504 plan shall include who are the designated Trained Diabetes Personnel (TDP), how often and when students should have snacks, administer insulin, as well as outlining accommodations for test and classroom activities, including field trips and physical education.
- Work in collaboration with parents and physicians to learn what the hypoglycemic symptoms look like for specific child with diabetes, including phys ed, and make sure that is communicated with all of the child's teachers and adults that they interact. An attentive adult should help spot the symptoms before the child does and encourage them to consume snacks.
- Modified class rules to accommodate the child's need for going to bathrooms, accessing water fountains, trips to the nurse for glucose monitoring or insulin injection, and snack access are all important aspects to discuss and have written in the 504 plan, as well as noting to what degree the student is capable of self-manage their diabetes routine.

Diabetes Case Management via School-

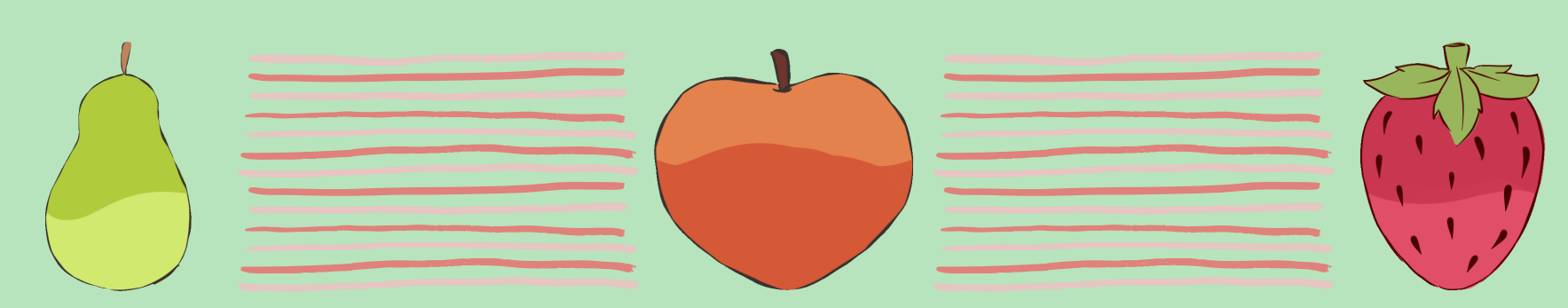
- Most school based interventions focus on increasing competency of school personnel, such as the school nurse, to be able to effectively manage JD needs. However, a few integrative interventions centering on children with JD, emerged during the past 15 years. Integrative interventions focus on care coordination, collaboration between caregivers (at home and in school), and provision of safe school environment that improves student's quality of life (Pansier & Schulz, 2015).
- Evidence based behavioral interventions have also emerged as a way of developing diabetes-specific behavior to promote optimal self and family diabetes care to achieve glycemic control. Currently, most JD behavioral interventions target middle childhood and adolescents, and often requires intensive, clinic based case management. Modalities of behavioral interventions vary, ranging from individual skill training, family communication, skills and therapy, tech-based behavioral interventions (such as text reminders), to the aforementioned integrative interventions that involve the individual, family, and community to address adherence barriers (Hillard, Powell & Anderson, 2016). While schools may not be the main case manager of such behavioral interventions, it is crucial that schools play an active role in adhering to the prescribed behavioral intervention plan to ensure consistency in student's optimal physical and mental health.

Cognition and Assessment-

- Severe hypoglycemia in young children can have neurocognitive impact. In a 2006 study, patients with T1D were shown to have lower grey and white matters in the brain compared to non-diabetic controls, using structural MRI techniques. Lower white matter volume is associated with poorer attention, processing speed, and executive functioning, while lower grey matter is associated with poor glycoemic control (Moheet et al, 2015).
- Age of onset, as well as duration, are the biggest factors contributing to white and grey matter volume loss in T1D patients. Therefore, care that focuses on maintaining stable insulin supply and glucose level reduces the threat of long term adverse effects.
- If and when suspected learning challenges are present, assessment should take extra consideration on attention, memory, and processing speed. Assessments like the NEPSY,WISC-V, KABC-II and WJ IV- with subtests focus on attention/ executive functioning and memory may be used.

Social Emotional Concerns and Assessment

- Broad band rating scale like the BASC to screen for risks
- Quality of life rating scale like Health-Related Quality of Life Questionnaire (CDC, 2000)



PSYCHOLOGICAL NEEDS

For children and adolescents, barriers to adherence include family and peer involvement, hormonal changes, and lower levels of diabetes device usage (Jaser et al., 2020)

Interventions that promote adolescents' resiliency, which includes sense of self-efficacy, optimism, and self-esteem, may help reduce distress, improve quality of life, and glycemic control for adolescents with T1D (Yi-Frazier et al., 2015)

Similarly, incorporating positive psychological factors that promote social support and self-efficacy within interventions for children with chronic illnesses may alleviate stress and depressive feelings (Sohn et al., 2015)

Studies show a strong friend support may moderate the relationship between stress and metabolic control, with strong friend support improving metabolic control (Hains et al., 2007)

Conversely, increased family conflict and less parental monitoring may serve as risk factors for poorer glycemic control; adolescents may benefit from interventions that address family conflict and parental monitoring of diabetes management (Hilliard et al., 2013)

LONG-TERM COMPLICATIONS:

nephropathy
(kidney disease)

retinopathy
(eye disease)

neuropathy
(nerve damage)

- Rarely seen in prepubertal children, but can develop post-puberty (Chiang et al. 2014).
- While we cannot diagnose these complications, we are responsible for making accommodations if necessary (loss of vision, numbness, reduced strength, etc.).

RESOURCES:

Bibliotherapy:

- Caillou: Emma's Extra Snacks by Paradis and Sévigny
- Even Superheroes Get Diabetes by Sue Ganz-Schmitt
- Needles: A Memoir Of Growing Up With Diabetes by Dominick

National resources:

- Beyond Type 1 & getinsulin.org

Local Philly & PA resources:

- CHOP Diabetes Center
- Juvenile Diabetes Research Foundation
- Healthy Minds Philly

Lived Experience

- @BeyondType1 (Twitter)_



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