



# Impact of the 504 Plan for Diabetes in School Setting: Sports, Field Trips, and Technology

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# Who Has to Comply with 504 Plan?

- ▶ Any school or childcare program that receives federal funding
- ▶ It is illegal to discriminate against children with diabetes
- ▶ Accommodations must be reasonable

# Laws That Protect Students with Diabetes

1. Rehabilitation Act ( 1973)  
Section 504
2. Americans with Disabilities Act  
(1990) Title II and III
3. IDEA – Individuals with Disabilities  
Education Act ( 1975)

# What is 504 Plan?

- ▶ Creates a legal document includes medical orders and

Individual Health Plan:

Directed by parents/teen/child with school nurse

IHP is part of the diabetes school plan with or without formal 504 in place

# Specific legal requirements

- ▶ Diabetes is considered a disability under federal laws in regards to school setting
- ▶ Describes what services are required
- ▶ Provides equal opportunity for 3 areas in a student's daily school experience.  
( academic, non academic, extracurricular)

# Nurse Role

- Advocate, educate, normalize, and listen
- Avoid over thinking/over planning
- Train coaches/teachers/support staff
- Teach diabetes self care skills





# Barriers to Communications

- Control and Fear
- Snowplowing parent style
- Inability to trust the process
- Over enmeshed with sensor / pump information

# Some Details Addressed

Accommodations for timed testing: NO penalty if low BG, needs access to restroom and water

Access to diabetes supplies for self care

Full access to ALL school sanctioned activities



# Impact Hypoglycemia

- ✧ Both severe and “non-severe” hypoglycemia are common in patients with diabetes
- ✧ Severe hypoglycemia in patients with diabetes may increase the overall costs of care 10 fold in the year after the episode
- ✧ Even “non-severe” hypoglycemia increases costs by increasing number of hospitalizations, clinic visits, tests strips used, and hypoglycemia treatments
- ✧ Hypoglycemia occurring during or outside of hours of work reduces work productivity
- ✧ Hypoglycemia has an impact on quality of life

# Difficult Situations

- ▶ School excuses: there is no blanket excuse for type 1 diabetes
- ▶ Watch for manipulations (missing class, over connected to school nurse)
- ▶ Low BG and tardy
- ▶ Truancy
- ▶ Parent insisting no academic testing if BG > 250
- ▶ Negotiate for positive ketone testing AND hyperglycemia

# KIDS GRIEVE DEVELOPMENTALLY...

As kids reach different developmental milestones and diabetes impacts their lives in new and different ways, they will have a new grief response.



Preschool

School  
Age

Tween

Teen

# You are not Your Diabetes

## **Child first, diabetes second**

- First question is NOT “what’s your number?”
- What else is going on? Math test? Soccer game?

## **Mood swings**

- Many reasons besides BG

## **You are not your number**

- Ambitious kids often have the hardest time with “bad” numbers. Numbers aren’t bad, they are information for a decision (More insulin? More sugar? Change in plan?)

# Exercise and Active play



- ▶ Goal: To maintain BG without eating extra snacks
- ▶ Find out recess and gym days and time
- ▶ Adjust bolus before; communicate with parent

# Effect of Type of Exercise on Blood Glucose Levels

Weightlifting, Tag  
Sprinting, Diving, Swimming, Gymnastics,  
Wrestling, Dodge ball, Volleyball, Ice hockey, Track cycling

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Basketball, Football, Tennis, Lacrosse

Skating

Skiing (slalom & downhill), Field hockey, Rowing (middle  
distance), Running (middle distance)

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In-line skating, Cross country skiing, Brisk Walking,  
Jogging, Cycling

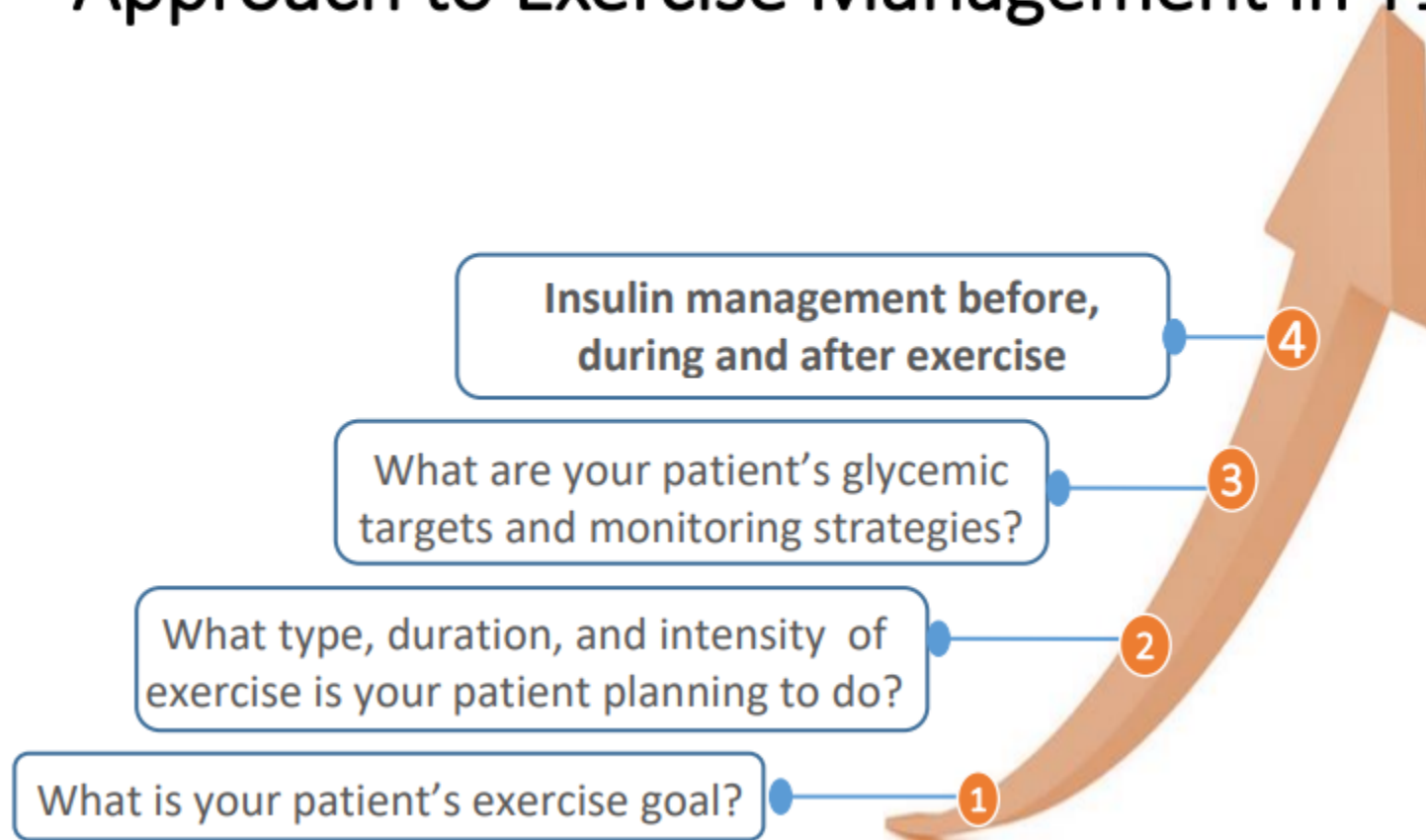
Hyperglycemia



Hypoglycemia

From PEAK Program, 2019

# Approach to Exercise Management in T1D



# Insulin Management: Basal Rates Before Exercise

## Patients on MDI

- Basal insulin dose adjustment not routinely recommended
- If on BID basal, consider reducing one or the basal doses by 20%

## Patients on Insulin Pumps

- Basal insulin dose reduction by 60-80% may be useful for exercise over 30 minutes
- Dose can be reduced up to 90 minutes before exercise

## Patients on Hybrid Closed Loop

- Temporary target set 30-60 minutes prior to exercise
- Do not disconnect pump when possible

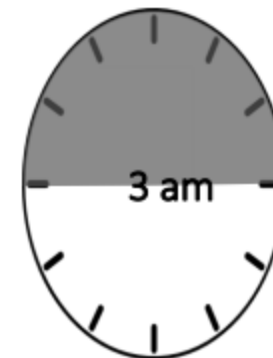


## Insulin Management: Basal Rates After Exercise



MDI

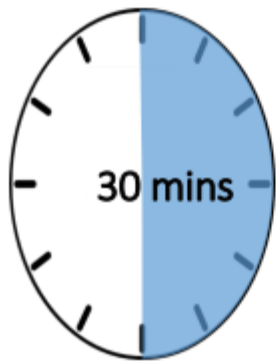
- Reduce night time dose by 20%
- Encourage increased carbohydrate consumption to prevent nocturnal hypoglycemia
- Test blood glucose during the night



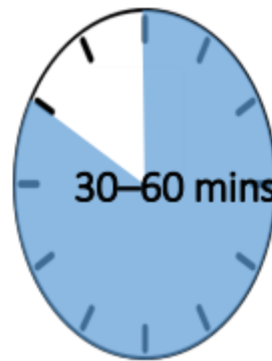
Pump

- Reduce insulin dose by 20% to 3 am
- Encourage increased carbohydrate consumption
- Test blood glucose during the night

# Carbohydrate Intake and Exercise



- Carbohydrates may not be needed, unless blood glucose is dropping



- Carbohydrates may be needed for very strenuous activity or no insulin adjustment



- Carbohydrates may be needed for fuel (30-60 g/hr)

First goal is to reduce insulin

If high insulin on board

- Consume 15-30 g of carbohydrates per 30 minutes of exercise

# Technology Advances in Self Care Diabetes

- ✧ CGM has become more effective as a single device than insulin pump alone.
- ✧ CGM is becoming the standard of care for type 1 diabetes management
- ✧ Insulin pumps offer patients increased flexibility and customization of dosing

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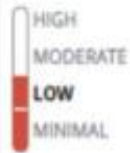
mg/dL

Average glucose  
(CGM)

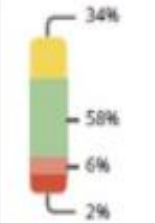
57

mg/dL

Standard  
deviation  
(CGM)



Hypoglycemia  
risk



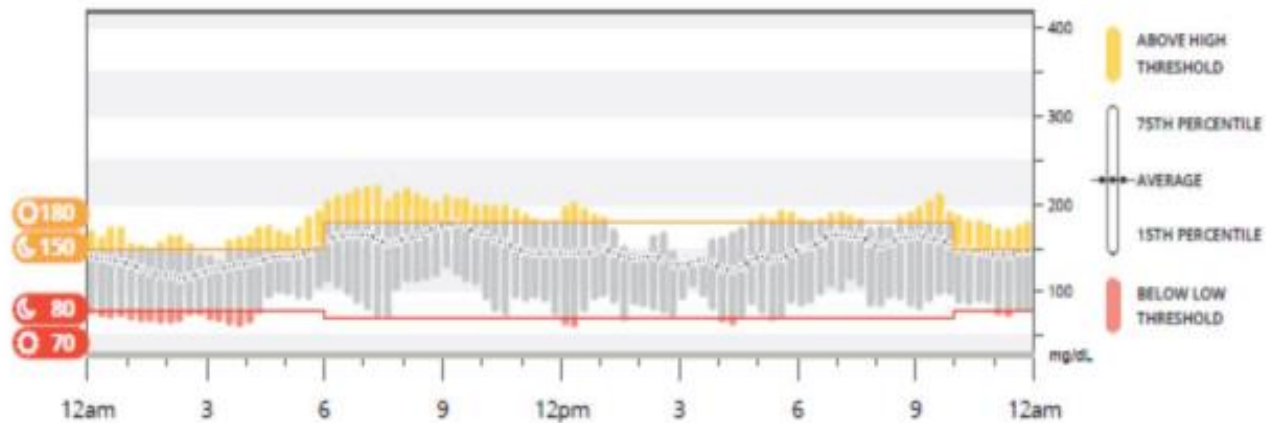
Time in range

Days with  
CGM data 93%  
13 / 14

Avg.  
calibrations  
per day 0.6

Sensor usage

This graph shows your data averaged over 14 days



**A1C =  
7.3%**

# Field trips, afterschool offerings

- ▶ Access cannot be denied
- ▶ Parent is not required to participate
- ▶ Nurse has to be present if off campus unless student is independent with self care diabetes

# Over Night Trips

- ▶ Select and educate an adult to be the “diabetes buddy”
- ▶ Remember living with diabetes is not new for the teen or child: listen to them
- ▶ Family must provide Plan A and B if pumper to have insulin pens as backup

# Travel and Teens



# The Long Term Goals for School Nurses

- ▶ Boys and girls are to become adults with self care of diabetes skills in place
- ▶ Age and maturity matter; individualize to match with skill set
- ▶ Improve daily your communication skills
- ▶ Role model self care



# Great Time to be a school Nurse!

- Amazing technology available
- Willingness to learn and make changes
- Focus on BG trends and patterns
- Resilience of children

# Ask Us!

- ▶ Vanderbilt Pediatric Endocrinology and Diabetes  
615-322-7842
- ▶ We work with approx. 3000 children and teens with diabetes
- ▶ We depend on your observations and your ability to communicate with parents, children, and teens