

Diabetes Management Application

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2024 Virtual Diabetes Management Conference for School Nurses

Provided by Texas Children's Hospital

NURSING CONTINUING PROFESSIONAL DEVELOPMENT

Texas Children's Hospital is approved with distinction as a provider of nursing continuing professional development (NCPD) by the Texas Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

To receive contact hours for this nursing continuing professional development activity, the participant must:

- Register for the continuing professional development activity
- Attend at least one session of the professional development activity
- Complete the pre-conference survey
- Complete the post-conference survey online

Print your contact hour "Certificate of Successful Completion" once you have completed the post-conference survey online .

LEARNING OUTCOME

As a result of this professional development activity, 90 % of attendees will be able to name one concept learned on the post conference survey as it relates to care of the child with diabetes as well as attendees will demonstrate increased knowledge as evidenced by an increase in scores on the post conference survey when compared to the pre-conference survey.

RELEVANT FINANCIAL RELATIONSHIPS

Explanation: a relevant financial relationships occurs when an individual has an opportunity to affect or impact educational content with which he or she may have a relationship with an ineligible company or a potentially biasing relationship of a financial nature. All planners and presenters/authors/content reviewers must disclose the presence or absence of a relevant financial relationship relative to this activity. All potential relationships are mitigated prior to the planning, implementation, or evaluation of the continuing education activity. All activity planning committee members and presenters/authors/content reviewers have had their relevant financial relationships assessed, identified and mitigated by Activity Director & the nurse planner.

The activity's Nurse Planner has determined that no one who has the ability to control the content of this nursing continuing professional development activity – planning committee members and presenters/authors/content reviewers – has a relevant financial relationship.

DISCLOSURES

- I have no relevant financial relationships with any ineligible company to disclose.
- I do not intend to discuss unlabeled or unapproved use of drugs or products in this presentation.

OBJECTIVES

1. Describe the management of hypoglycemia and hyperglycemia in the school setting
2. Describe appropriate ketosis management at school
3. Be able to calculate insulin dose using insulin to carb ratio and correction factor

HYPOGLYCEMIA

Blood sugar level less than **70 mg/dl**

- Shaky
- Sweaty
- Dizzy
- Sudden behavior change
- Hungry
- Weak or tired
- Headache
- Nervous or upset

Signs and symptoms

Here's what may happen when your child's blood glucose is low:



Shaky



Sweaty



Dizzy



Sudden
behavior change



Hungry



Weak
or tired



Headache



Nervous
or upset

If low blood glucose is not treated, it can become severe and cause your child to pass out.
If low blood glucose is a problem for your child, talk to your doctor or diabetes care team.

Note: Please refer to page 18 in the Pink Panther book to learn the difference between mild, moderate and severe hypoglycemia.

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CAUSES OF HYPOGLYCEMIA

- Certain medications such as insulin or diabetic pills
- Eating too few carbohydrates
- Delayed or skipped meal
- Exercise or more active than usual

TREATMENT FOR HYPOGLYCEMIA

Check blood sugar if having symptoms of low blood sugar. If blood sugar is less than 70 mg/dl with or without symptoms and the child is able to swallow, then give 15 grams of fast acting carbohydrates.

- 4 oz (1/2 cup) regular juice (orange, apple, grape)
- 4 oz (1/2 cup) regular soda (not diet)
- 3 or 4 glucose tablets
- 5-6 easy to chew candies



TREATMENT FOR HYPOGLYCEMIA

- Wait 15 minutes and then re-check.
- If blood sugar is still below 70 mg/dl, treat again with 15 grams carbs and recheck in 15 minutes.
- If the child has received 2 treatments and their blood sugar remains below 70 mg/dl, notify parents and call their Diabetes Clinic for advice.



Recheck Blood
Sugar

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TREATMENT OF SEVERE HYPOGLYCEMIA

- Give glucagon when child is unable to swallow, unconscious or having a seizure.
- Glucagon is stored at room temperature, not in the refrigerator. (Check expiration dates frequently)
- Post glucagon administration:
 - ✓ Place child on his/her side as they may vomit
 - ✓ Call 911
 - ✓ Notify parents and their Diabetes Clinic
 - ✓ Suspend or stop insulin pump

GLUCAGON DOSES



Age	Glucagon Doses
Less than 6 years	30 units in an insulin syringe or 0.3 ml in glucagon syringe
6-15	50 units in an insulin syringe or 0.5 ml in glucagon syringe
16 and above	100 units in an insulin syringe or 1.0 ml in a glucagon syringe

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GLUCAGON DOSES

How to Mix Glucagon:



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NEWER FORMS OF GLUCAGON

Baqsimi® nasal powder	Gvoke® PFS (prefilled syringe)	Gvoke® HypoPen (autoinjector)	Gvoke® Kit (vial kit)	Zegalogue® prefilled syringe	Zegalogue® Autoinjector
					

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HYPERGLYCEMIA

- Blood sugar greater than 300 mg/dl
- Very thirsty
- Frequent urination
- Abdominal pain
- Very hungry
- Sleepy
- Blurry vision

Signs and symptoms

Here's what may happen when your blood glucose is high:



Very thirsty



Needing to pass urine more than usual



Very hungry



Sleepy



Blurry vision



Infections or injuries heal more slowly than usual

For more information, visit diabeteseducation.novocare.com.

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CAUSES OF HYPERGLYCEMIA

- Skipping or missing medication such as insulin or diabetic pills
- Eating too many carbohydrates
- Decrease exercise or less active than usual
- Stress and/or illness
- Insulin pump failure

If blood glucose > 300 mg/dL, check ketones.

How to check for urine ketones



Make sure you have urine ketone strips with you at all times. Each bottle of ketone testing strips will have an expiration date. The expiration date is for unopened bottles. Opened bottles of ketone testing strips must be discarded 6 months after opening.

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TREATMENT FOR HYPERGLYCEMIA

Results of urine and blood ketones

	OK	Caution	Danger	Emergency
Blood ketone results	Less than 0.6	0.6 – 1.0	1.1 – 1.5	More than 1.5
Urine ketone results	Negative or trace (0 – 14)	Small (15 – 39)	Moderate (40 – 80)	Large (more than 80)
What to do	<p>Continue your child's usual diabetes management.</p> <p>If blood glucose levels are high for more than 3 days, the insulin dose may need to be changed. Call your diabetes clinic for a blood glucose log review.</p>	<p>Drink sugar free fluids.</p> <p>Recheck blood glucose and ketones every 3 hours until blood glucose is less than 300 and ketones are trace or negative (for urine) or less than 0.6 (for blood).</p>	<p>Rapid acting insulin is needed.</p> <p>Call student's parent and diabetes clinic.</p> <p>Drink water or sugar-free fluids. Do NOT exercise.</p> <p>Go directly to the Emergency Room if child is vomiting and not tolerating fluids, is breathing fast and/or lethargic.</p>	

TREATMENT FOR HYPERGLYCEMIA

If it has been more than 3 hours since fast acting insulin has been given, can give correction according to school orders



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CORRECTION FACTOR

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Glucose

Target glucose

Correction factor

Units of insulin / or
to be given to
correct

INSULIN TO CARBOHYDRATE RATIO

This means one unit of Novolog/Humalog will cover this many carbohydrates.

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Number of CHO
to be eaten at meal
time

Insulin to
carbohydrate
ratio (ICR)

Units of Novolog/Humalog
to be given to cover that
meal.

PRACTICE CALCULATION

- Student's carbohydrate ratio is 15
- Correction factor is 40
- Target blood sugar is 120

$$\boxed{} \div \boxed{15} = \boxed{}$$

Number of CHO
to be eaten at meal
time

Insulin to
carbohydrate
ratio (ICR)

Units of Novolog/Humalog
to be given to cover that
meal.

$$\boxed{} - \boxed{120} \div \boxed{40} = \boxed{}$$

Glucose

Target glucose

Correction factor

Units of insulin / or
to be given to
correct

PRACTICE CALCULATION CONTINUED

- Carbs eaten: 68
- Blood sugar prior to lunch: 274

$$\boxed{68} \div \boxed{15} = \boxed{4.53}$$

$$\boxed{274} - \boxed{120} \div \boxed{40} = \boxed{3.85}$$

$$\boxed{4.53} + \boxed{3.85} = \boxed{8.38}$$

**Give
8
units**

PRACTICE CALCULATION 2

- Student comes in prior to lunch
- Blood sugar is 324 and she plans to eat 57 grams

$$\boxed{324} - \boxed{120} \div \boxed{40} = \boxed{5.1}$$

Glucose Target glucose Correction factor Units of insulin / or to be given to correct

$$\boxed{57} \div \boxed{15} = \boxed{3.8}$$

Number of CHO to be eaten at meal time Insulin to carbohydrate ratio (ICR) Units of Novolog/Humalog to be given to cover that meal.

$$\boxed{5.1} + \boxed{3.8} = \boxed{8.9}$$

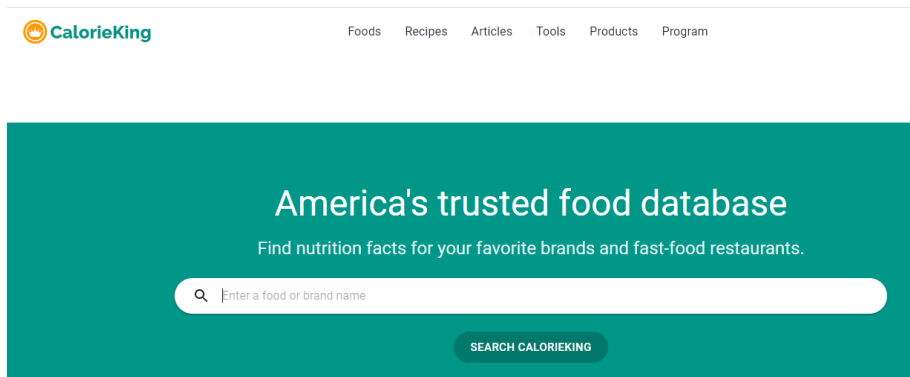
Units for meal Units for correction Units of Novolog/Humalog to be given to cover that meal.

**Give
9
units**



CARB COUNTING RESOURCES

- School district nutrition services
- Food label
- Calorieking.com
- Ask parents to include sticky note if packing lunch



Nutrition Facts	
Serving Size 1 (44g)	
Amount Per Serving	
Calories 96	
% Daily Values*	
Total Fat 1g	2%
Saturated Fat 0g 0%	
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 22g	7%
Dietary Fiber 0g 0%	
Sugars 6g	
Protein 1g	2%

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COMMENTS/QUESTIONS?