

Ketone Testing

A. General Guidelines

1. In the absence of adequate amounts of insulin for the body to use glucose for energy production, fat is used instead. As a result, ketones are produced.
2. A simple urine test can detect the presence of ketones.
3. Testing for ketones in the school setting requires an order from a licensed physician or other authorized prescriber.
4. The DMMP should include instructions regarding when to test for ketones and how to respond if ketones are detected.

B. Purpose

1. Ketones have a toxic effect on the body. Unless sufficient insulin becomes available ketone levels will continue to rise and cause a condition known as diabetic ketoacidosis (DKA).
2. Elevated ketone levels may cause a variety of symptoms ranging from nausea and vomiting, fatigue, and excessive thirst, to difficulty breathing, change in level of consciousness, coma, and even death.

C. When to Test for Ketones

1. In accordance with the DMMP, ketone levels are generally checked when blood glucose levels reach a certain number or when the student presents with symptoms including nausea, vomiting, fatigue, excessive thirst, fruity breath, abdominal pain, or change in level of consciousness.
2. Blood glucose levels may be elevated during episodes of acute illness and infection thus producing ketones.

D. Methods of Testing

- Although ketones can be detected with either blood or urine samples, in the school setting the urine sample is used.

E. What to do with Test Results

1. As instructed in the DMMP, the parent or guardian may be notified if ketones are detected.
2. For trace or small amounts of ketones:
 - The student should limit physical activity
 - Encourage student to drink additional water or other sugar-free drinks
 - Allow restroom privileges
 - Administer insulin in accordance with the DMMP
 - Unless a medical emergency, the student is typically sent home with the parent or guardian if moderate or large ketones are present.

F. Equipment/Supplies

1. Test strips (check expiration date)
2. Clean cup to collect urine specimen
3. Disposable gloves
4. Clock/Watch with second hand

PROCEDURE FOR KETONE TESTING

Essential Steps	Key points and precautions
1. Preparation	
a) Gather supplies	Ensures smooth procedure, saves time
a. Test strips (check expiration date)	Increases validity of test results
b. Clean cup to collect urine specimen	
c. Disposable gloves	
d. Clock/watch with second hand	
2. Steps	
a) Wash hands and don gloves (not necessary if student performs procedure independently)	Reduces the spread of germs
b) Explain the procedure to the student	Encourages cooperation and participation by student
c) Instruct student to urinate in clean cup	Protects student's work area and clothing
d) Dip the test strip into the urine and gently shake excess urine	Refer to individual manufacturer's instructions to reduce the risk of inaccurate results
e) Wait designated time as established on directions for test strips	
f) Read and document results	
g) Provide care as indicated	Follow instructions from DMMP
h) Report concerns to the school RN	

Ketone Testing Skills Checklist

[] Initial [] Review

Student's Name: _____ Date of Birth: _____

Person Trained: _____ Position: _____

	Demo Date	Return Demonstration					
		Date	Date	Date	Date	Date	Date
A. Preparation							
1. Gather supplies:							
a. Test strips (verify expiration date)							
b. Clean cup to collect urine specimen							
c. Disposable gloves							
d. Clock/Watch with second hand							
B. Steps							
1. Wash hands and don gloves (not necessary if student performs procedure independently)							
2. Explain the procedure to the student							
3. Instruct student to urinate in clean cup							
4. Dip the test strip into the urine and gently shake excess urine							
5. Wait designated time as established on directions for test strips							
6. Read and document results							
7. Provide care as indicated (follow DMMP)							

Student Specific/Comments: _____

Overall Rating: ___ **PASS** *Successful completion of a minimum of five demonstrations with 100% accuracy*
 ___ **FAIL** *Practical must be repeated. Trainer must complete Summary of Skills Form and attach to this checklist.*

 Date: School RN Signature Date: Employee Signature