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Cornell Cooperative Extension of Suffolk County
Department of Family Medicine at Stony Brook Medical Center

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NUTRITION UNIT

6TH GRADE

LESSON EIGHT - 3 MEALS PLUS

OBJECTIVES

- Students will understand how food affects their blood sugar levels. and therefore their energy levels and athletic performance.
- Students will be able to plan three meals and one or more snacks using the Food Guide Pyramid.

MATERIALS NEEDED

Provided in the curriculum:

Julie's Blood Sugar Changes Throughout the Day
Three Meals Plus: Planning Meals and Snacks for Peak Performance

Other:

REVIEW

Ask students what they had for lunch yesterday. Did they have a complete lunch, i.e. buy school lunch or bring a lunch from home? If so, were they full afterwards? When did they feel hungry again? Did any students just buy snacks for lunch? If so, how did they feel afterwards? When did they get hungry again? Did anybody who used to just buy snacks, have a complete lunch yesterday instead?

INTRODUCTION

In our nutrition lesson so far, we have discussed the different types of carbohydrates in food: complex carbohydrates (such as bread, pasta, and rice), simple carbohydrates (such as the natural sugar in milk and fruit, and the sugar added to cereals, cakes and cookies), and fiber. Complex carbohydrates and simple sugars provide energy. Before these can be used for energy, your body turns these food substances into a chemical called glucose. Glucose is carried in your blood. The blood carries it to your muscles, and the muscles turns the glucose into energy for moving parts of your body and objects. The blood also takes the glucose to your brain. Your brain then turns the glucose into energy, and uses it as fuel for its work - thinking. Scientists have shown that if your blood sugar is low, both your muscles and your brain cannot perform well. Therefore, you will feel sluggish or lazy, your sports performance will be off, and your test scores will be down.

Your body tries very hard to keep the amount of sugar in your blood within a certain range. For most people, the lowest amount of sugar in your blood that your body will tolerate is 60 to 110. This number refers to the amount of sugar (measured in grams)

in a deciliter of blood. (It is not important if students understand the units. they just need to understand the concept of higher and lower amounts of sugar in the blood.)

When your blood sugar is at this lower range you do not perform as well, because there is not that much energy available. After you eat, the amount of sugar in your blood increases. How much it increases depends on the amount of carbohydrate you eat, and your body's unique chemistry. It may go up from the low number between 60 and 110 to a higher number in the range of 140 to 160 milligrams per deciliter of blood. When your blood sugar is in these higher numbers, you muscles and brain perform better. By eating about every 4 hours, you can prevent your blood sugar from going on the low side. It is especially important to eat about an hour or two before a test or athletic event.

JULIE'S BLOOD SUGAR CHANGES THROUGHOUT THE DAY

Review the handout Julie's Blood Sugar Changes Throughout the Day by reading each scenario aloud. During the scenario, ask students to read the chart and determine what Julie's blood sugars were throughout the day. Ask students how her blood sugars would affect how she felt, how she did on her tests, and how she performed during volleyball practice. Ask students if they can relate to either of the 2 scenarios.

ACTIVITY

THREE MEAL PLUS: PLANNING MEALS AND SNACKS FOR PEAK PERFORMANCE

Pass out the worksheet, and have students read the directions. Remind students to consider their activities and class schedule, before planning their meals. This is important, because the time of the meals should allow for a rise in blood sugar before physical activity and important classes or tests.

CONCLUSIONS

- Blood sugar levels need to be within the high part of the normal range for peak physical and academic performance.
- Eating 3 meals and 2 snacks a day allows students to maintain appropriate blood sugar levels throughout the day, so they can perform well in school, during after school activities. and when doing homework at night.

The Blue Waves Heart Links Project

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