

DEVELOPMENTALLY APPROPRIATE NUTRITION EDUCATION FOR YOUTH AGES 6-11

Many nutrition concepts are abstract ideas that are difficult for adults to understand. How many adults can accurately explain how the calcium in milk builds strong bones and teeth? Yet adults often include abstract ideas such as vitamins and minerals, nutrients in food, and digestion and chronic disease risk when they teach kids about nutrition and health. Child development research shows that school-age kids need to be presented with concrete ideas. Children learn best when they can be active and work together on an activity. No matter how well-designed the activity is, or how skilled the presenter, kids can't understand abstract concepts until they are developmentally ready.

COGNITIVE DEVELOPMENT

Cognitive development refers to the way children's thinking matures as they grow and gain experience in learning. Piaget's theory of cognitive development describes some general stages that children go through as their thinking and understanding matures. Researchers have used Piaget's stages to interpret information from focus groups with school age children to investigate kids' understanding of nutrition and health concepts. Below are some characteristics of children in Piaget's developmental stages and the implications for nutrition education.

Pre-operational stage, age 2 to 6 or 7:	Implications for nutrition education:
Have trouble focusing on wholes and parts at the same time	It's not possible to be part healthy and part not-healthy – if you have a sore throat, you're not healthy.
Difficulty with categories	All edible items are considered "food;" no distinction between "food" and "snacks." Have difficulty seeing "peas" as a type of "vegetable."
Attend to one aspect of a message at a time	You may say, "eating lots of different vegetables like peas, carrots and corn is a healthy way to eat" but they hear "eating peas makes you healthy."
Cannot "reverse" an experience	Cannot go from "if I eat too much, I'll get fat" to "if I don't eat too much, I won't get fat."
Don't consider cause and effect	"I know I'm healthy because I'm in school today."
Can repeat words and phrases without understanding them	"Vegetables are good for you" but may not be able to name a vegetable or tell <i>how</i> vegetables are good for you. Vitamins are pills, not components of food.
Difficulty understanding change	No understanding of digestion or how food affects body – "little pieces of carrot go to your arms and legs."

Concrete operational stage, age 6 or 7 to 11 or 12:	Implications for nutrition education:
Begin to consider cause and effect if it's concrete	Understand their actions are related to their health but can't explain how; understand that food is changed somehow between the stomach and the rest of the body but have no idea how it happens.
Can reverse thinking to consider the original and changed state	"I was healthy and then I got a sore throat and then I got better and now I'm healthy again."
Can think through a chain of events	Food grows on a farm, is harvested, is sold and shipped, is processed, and ends up at the store.
Can classify objects and concrete ideas	Beef, pork and chicken are foods from the meat group because they all come from animals; "food" is different from "snacks;" "good food/bad food."
Oriented in the present	Future effects of nutrition on health are not important.

Formal operations stage, age 11 or 12 and older:	Implications for nutrition education:
Beginning to understand abstract ideas	Dietary fat can contribute to heart disease.
Beginning to form hypotheses	"If I stop eating chips and drinking pop, I'll lose weight."
Beginning to see things from another's point of view	"It must be hard for her to be overweight and have kids tease her."
Beginning to consider multiple consequences of an action	"If I eat really healthy food maybe I'll be better at sports, or maybe it won't make any difference."
Can make good decisions based on their own value system	Food and behavior choices are related to appearance, peers, independence.

Abstract nutrition concepts:

- ◆ Vitamins & minerals
- ◆ Nutrients that can't be seen or touched (ex: protein)
- ◆ Chronic disease risk
- ◆ Classifying foods by nutrients
- ◆ Process by which food affects health

Concrete nutrition concepts:

- ◆ Whole food items
- ◆ Eat lots of different foods each day
- ◆ Every day foods vs. sometimes foods
- ◆ Classifying foods by source (ex: meat, milk, plant foods)

Source: Contento, I. Children's thinking about food and eating – A Piagetian-based study. *J Nutr Educ.* 1981;13(1):S86-S90. Natapoff, JN. A developmental analysis of children's ideas of health. *Health Educ Quarterly.* 1982;9:130-141.

WHAT DO KIDS UNDERSTAND ABOUT THE DIETARY GUIDELINES?

The Dietary Guidelines for Americans are written for adults but are the basis for many nutrition education programs for children. Buying, planning and preparing meals that meet the recommendations of the Dietary Guidelines and MyPyramid are WNEP outcomes.

A University of Minnesota study conducted focus groups with elementary school children to describe how children interpret the Dietary Guidelines and what they understand about nutrition.

Kindergarten – second grade

- ◆ Could not define the word “variety;” didn’t understand the word when used in a sentence.
- ◆ The word “diet” meant a weight loss diet.
- ◆ They did not understand “maintain a healthy weight” though some children thought it meant “to not be fat.”
- ◆ “Choose a diet low in fat” wasn’t meaningful because they didn’t understand the word “diet” or the idea of “low in fat.”
- ◆ High fat foods were junk foods; sugar and fat were the same thing.
- ◆ Had trouble naming foods from the food groups or foods that were high or low in fat or sugar.

Grades 3-4

- ◆ Most could define the word “variety.”
- ◆ Understood the concept of “sometimes foods.”
- ◆ Distinct “good food/bad food” orientation.
- ◆ Good foods were “high in stuff they should be high in and low in stuff they should be low in.”
- ◆ Bad foods had too much sugar, fat, salt, dye, caffeine or calories.
- ◆ Could recite effects of certain foods on the body but could not make correct associations among terms such as fat, salt, sugar, clogged arteries, etc.
- ◆ Eating calories made one gain weight.
- ◆ Could read labels but could not interpret the information correctly; they thought 100 calories was “too many.”
- ◆ Had a better understanding of a healthy weight than younger students.
- ◆ Variable success in giving examples of foods from food groups and with nutrients such as sugar or fat.
- ◆ Had no idea of serving size.

Grades 5-6

- ◆ Could define “variety” but didn’t always use the concept correctly.
- ◆ “Good food” is healthy, low in fat, low in sugar, and tastes good.
- ◆ “Bad food” has fat or sugar.
- ◆ Understood it was ok to eat bad foods sometimes.
- ◆ Associated word “diet” with losing weight, eating healthier foods to lose weight, or special diets such as for diabetes.
- ◆ Understood a “healthy weight” was not too thin or too fat.

Source: Lytle, Leslie et al. Children’s Responses to Dietary Recommendations: A Qualitative Study. Minnesota Department of Education, 1993.

WHAT IS IMPORTANT TO KIDS?

Research with Wisconsin fifth and eighth grade students and 4H members investigated their understanding of the relationships between dietary fat and chronic disease. Participants clearly thought negatively about dietary fat, but were more concerned with obesity, a familiar and immediate consequence, than heart disease or cancer, which could occur later in life. Obesity was a concern because of teasing by peers and limits on activity – “you can’t run fast.” When they did mention the connection between dietary fat and heart disease, they were unable to explain how the two concepts were linked.

These students did not consider adults and children to be different except in their “habits;” one fifth grader said “kids go outside and play, adults just to go work.” Another commented, “kids eat what they like, adults eat what they should.” Students considered lifestyle factors, such as activity and eating habits, to have more influence on a person’s disease risk than physiological factors such as age or gender. However, when discussing low-fat food choices, these students were only willing to eat low-fat school lunch if the food tasted as good as the high-fat version or if they weren’t told it was low-fat. The possibility of acquiring a chronic disease, which they don’t yet fully understand, is hardly a match for a good-tasting food.

Given what we know about development, it makes sense that fifth and eighth graders would care more about things that would happen to them *now*, and things that would have a direct influence on their daily life. It also makes sense that they would choose the more concrete explanation (“habits” determine chronic disease development) over the more abstract possibility (a combination of factors including age, gender, genetics, dietary and exercise habits contributes to chronic disease).

Source: Kelley, Elizabeth B. *Dietary Fat and Chronic Disease: Early Adolescents’ Knowledge, Attitudes and Behaviors*. Unpublished M.S. thesis, University of Wisconsin-Madison, 1998.

APPLYING THE RESEARCH: CHOOSING AND DESIGNING ACTIVITIES

Recommendations for age appropriate nutrition education:

1. Keep messages simple, positive, and behavior-based.
2. Talk about “every day foods” and “sometimes foods” to counter kids’ “good food/bad food” orientation.
3. Give concrete examples of foods. Use color photographs if hands-on isn’t possible.
4. Kids need opportunities to practice making healthy choices and to apply the information we teach. Provide hands-on activities with food.
5. Remember that kids may be able to recite facts without truly understanding them.
6. Don’t use the word “diet.” Kids associate it with weight loss!
7. Kids are very aware of adults’ concern and unspoken messages about weight. Be positive if you must discuss weight and choose your message carefully.
8. Remember that most nutrition concepts are abstract (vitamins, minerals, protein, food’s effect on health and growth) and not understood by kids age 6-12. Stick to concrete ideas (eat lots of different foods each day) and hands-on, participatory activities.
9. Messages will be remembered better if presented in a context that’s important to kids.
10. Kids live in the present. Being strong, growing well, and having energy are important to kids. Kids care about being overweight because it affects their daily life (can’t run as fast, teasing by peers), not because of future health issues.

In organizing activities for youth, consider the following questions:

- Who is your group? Age, setting, size?
- What behavior do they need to change for a healthier lifestyle?
- What do they need to know to make this behavior change? What skills do they need to have in order to make this behavior change?
- What do they already know? How can you determine?
- What is your message?
- How will you make it relevant to their lives today?
- What kinds of activities/learning experiences will this group enjoy?
- How much time do you have with them?
- How much time do you have to prepare?
- Where can you find tried and tested activities?
- How can you determine if they understand what you are teaching?

Checklist:

- Which ideas are concrete?
- Are any ideas abstract? Do you mention nutrients, body processes, food's effect on the body or health?
- Is it active?
- Is it meaningful to this group? How do you know it is meaningful?
- If it uses reading, writing or math skills, then are they appropriate for this group?
- Does it acknowledge diversity and different abilities in the group?

What about kids who aren't at age-appropriate developmental levels?

Use the same strategy you'd use for a mixed-age group. Include more than one activity and include several methods of learning in the activities to address the range of abilities in your group. When planning which concepts you will teach, plan how you'd explain them to a group at an earlier developmental level, and a group at a later developmental level. If you include pencil and paper activities, allow kids to work in pairs or groups.

Do kids develop faster today than they did a generation ago?

Kids may "grow up" faster but research hasn't shown that they become cognitively mature sooner. They may, however, become more sophisticated at a younger age and may not enjoy the same kinds of activities we enjoyed as kids. You may need to modify the activity rather than the concepts you want to teach.