

# Dietotherapy

## NUTRITION AND THE PRESCHOOL CHILD

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MODERN NUTRITIONAL concepts emphasize that professional workers outlining feeding programs for young children must consider two objectives: (1) to provide food which will supply the nutrients required for growth and well-being; and (2) to suggest methods which will guide children toward the proper selection of food throughout life. This approach has resulted from the experiences of physicians and others in trying to correct feeding problems in young children. Studies of established cases of such problems suggest that the following may be of particular significance in their etiology:

1. Failure to recognize that rate of physical growth may affect appetite.
2. Failure to recognize that personality and emotional development may affect appetite.
3. Insisting that specific amounts of food be eaten without regard for day-to-day variation or individual preferences.
4. Failure to respect individual differences in body size as influencing dietary needs.
5. The emotional interplay between the adults in the family (particularly the mother) and the child.
6. Lack of consistency in methods of feeding the child.
7. Failure to recognize loss of appetite associated with illness and convalescence.
8. Overanxiety and misunderstanding of the baby's first reaction to solid food, his interest in self feeding, and his need to learn about adult food.
9. Misunderstanding of how a child's food preferences, the type of eating utensils pro-

vided, the content of the day's meal, between-meal feeding, and food aversions of other members of the family affect his appetite.

The late Dr. C. A. Aldrich<sup>1</sup> was particularly interested in this problem and is often credited with doing much of the pioneer work toward helping parents and professional people understand the child's mechanism for getting food. He pointed out that "if we are to have any success in solving feeding difficulties, we cannot think only in terms of diets; we must also know something about a child's response to food, his ability to 'come and get it.' We must accept the fact that he has a feeding mechanism of his own, which is designed to make him a satisfactory and capable eater, and must understand how this feeding ability works."

This twofold approach is stressed because it has so frequently been minimized. Certainly the question of "what" to feed children is of the utmost importance and it is our chief concern here. However, we must always be cognizant that general guides are helpful when applied to groups of children, but they may need adaptation when applied to individuals.

TABLE I  
Recommended Dietary Allowances for  
Children 1 through 6 years

	1-3 years	4-6 years
Calories	1200	1600
Protein (Gm.)	40	50
Calcium (Gm.)	1.0	1.0
Iron (mg.)	7	8
Vitamin A (I.U.)	2000	2500
Thiamine (mg.)	0.6	0.8
Riboflavin (mg.)	1.0	1.2
Niacin (mg.)	6	8
Ascorbic Acid (mg.)	35	50
Vitamin D (I.U.)	400	400

\* National Dairy Council, 111 North Canal Street, Chicago 6, Ill.

TABLE II  
A Daily Guide for Feeding Children From 1 to 6 Years of Age\*

Food group	Amount recommended	Average size serving		
		1 year	2-3 years	4-6 years
Milk	3-4 measuring cups	1 cup at each meal may be supplemented by milk between meals		
Meat, Poultry, or Fish	1 to 2 ounces	1 ounce (2 tablespoons)	1½ ounces (3 tablespoons)	2 ounces (4 tablespoons)
Egg	1 egg	1 egg		
Fruit		Whole day's amount in 1-2 servings		
Citrus or tomato	1 medium orange, ½-½ cup of orange or grapefruit juice, or ¾ to 1 cup tomato juice			
Other	1-2 servings	¼ cup	⅓ cup	½ cup
Vegetables				
Cooked	1-2 servings	2 tablespoons	3 tablespoons	4-5 tablespoons
Raw (carrots, celery, lettuce)	....	1 or 2 small pieces		
Bread and Cereal (Wholegrain or enriched)				
Bread	1½-3 slices	½-1 slice	1-1½ slices	1½-3 slices
Cereal	¼-½ cup	¼ cup	⅓ cup	½ cup
Butter	1 to 2 tablespoons	1 teaspoon	1-3 teaspoons	3-6 teaspoons
Source of Vitamin D	400 I.U.	Vitamin D milk or a preparation prescribed by the physician		

\* Adapted from chart, Foods Included in a Good Daily Diet for Children from 1 to 6, in *Your Child from One to Six*, Rev. Ed., U. S. Children's Bureau Pub. No. 30, 1915.

The Recommended Daily Dietary Allowances<sup>2</sup> for preschool children proposed by the Food and Nutrition Board of the National Research Council are given in Table I.

These "allowances are designed for the maintenance of good nutrition of healthy persons in the United States under present conditions. . . . The nutritive intakes recommended are, in general, higher than average requirements and lower than the amounts which may be needed in pathologic states or in rehabilitation following depletion." In planning dietaries for children, it is suggested that the food needs of healthy children be considered first, and then that modifications be made for special circumstances such as illness or hospitalization.

Table II summarizes the major food groups that should be included in meal plans for the preschool child, amounts recommended, and the average size serving that children from one to six years may be expected to eat. When this guide is followed, it is reasonable to as-

sume that the Recommended Daily Dietary Allowances for specific nutrients will also be met.

These foods can be arranged into meals by following a meal pattern something like this:

MEAL PATTERN	SAMPLE MENU
<i>Breakfast</i>	
Citrus fruit	Orange Juice
Wholegrain or enriched cereal	Oatmeal
Wholegrain or enriched bread	Toast and butter
Butter	Milk
Milk	
<i>Lunch or Supper</i>	
Egg or Cheese	Cheese Sandwich
Vegetable	Carrot Sticks
Wholegrain or enriched bread	Vanilla Pudding
Butter	Milk
Dessert	
Milk	

MEAL PATTERN	SAMPLE MENU
<i>Dinner</i>	
Meat, Poultry, or Fish	Beef Patty
Potato	Mashed Potato
Vegetable	Buttered Green Beans
Wholegrain or enriched bread	Bread and Butter
Butter	Sliced peaches
Fruit	Milk
Milk	

It is extremely important to recognize that a pattern such as the one given is adaptable. We have become accustomed to thinking of "orange juice for breakfast," "a sandwich for lunch," "green vegetables for children," and yet such concepts may actually limit food selection. There is no reason why orange juice cannot be given at a time other than breakfast or why an extra slice of toast cannot be substituted for cereal. Thinking in terms of food groups and interchangeability of foods within the group can contribute to flexibility in menu planning.

It may be advantageous to consider the recommended food groups in somewhat greater detail.

#### *Milk and Milk Products*

Three to four cups of milk or the equivalent will help to supply the quantities of calcium, protein, vitamin A, riboflavin, and thiamine recommended by the Food and Nutrition Board. In localities where Vitamin D milk is available, the milk will contribute to the suggested allowance of 400 I.U. vitamin D per day.

It is difficult to plan diets that meet the Recommended Daily Dietary Allowances without including milk. However, young children sometimes do go through periods when they cannot, or will not, take as much as 3 or 4 cups of milk a day. Temporarily reducing the quantity of milk offered is wiser than creating an issue. Cheese made from whole milk, such as cheddar cheese, is a satisfactory substitute for the milk and is usually well accepted. Cottage cheese is a good source of protein but is not as high in calcium and some vitamins.

#### *Meat, Poultry, or Fish*

The main contribution of this food group to the diet is the protein, iron, thiamine, riboflavin, and niacin it supplies.

Tender, soft meats are popular with young children. Cooking temperatures are important because protein foods such as meat, poultry, and fish toughen when they are cooked at high temperatures. Less tender cuts of meat can be ground before cooking and made into patties or loaves. Manipulation of a spoon or fork requires a high degree of muscle coordination which develops as the child grows. During his early years, however, it is easier for him to eat with his hands than it is to use an eating utensil. Bite-size pieces of meat are easy to manage and help the child learn to feed himself, and also let him learn about food through feeling it.

#### *Eggs*

One egg a day along with the recommended amounts of milk, meat, poultry, or fish will supply sufficient protein for the preschool child. Eggs are also an important source of iron, niacin, riboflavin, and thiamine.

For variety, eggs can be cooked in different ways—baked, poached, scrambled, soft-cooked, or hard-cooked and served as a "finger food." As with meat, high temperatures will toughen eggs. Therefore, they should be cooked at a temperature below boiling.

#### *Fruits*

The Recommended Daily Dietary Allowance of 35–50 mg. ascorbic acid for children between 1 and 6 years can be satisfied by an orange,  $\frac{1}{2}$  grapefruit,  $\frac{1}{3}$ – $\frac{1}{2}$  cup orange or grapefruit juice, or  $\frac{3}{4}$  to 1 cup tomato juice. It can also be satisfied with a combination of other fruits such as berries and melon.

Other fruits—bananas, apples, pears, peaches, prunes, apricots, and so on—will help to meet the mineral and vitamin needs of the body, especially for iron, thiamine, and riboflavin. The yellow fruits will also contribute vitamin A.

Apples, peaches, bananas, and oranges can be peeled and served raw. Seeds should be



carefully removed so there is no danger of aspiration.

### *Vegetables*

Vegetables in general are valuable for roughage, minerals, and vitamins. The green leafy group is particularly important for its iron and vitamins A and C. The yellow group of vegetables is valuable for its vitamin A. Dried beans and peas contribute protein and B-complex vitamins as well as energy. Potatoes make a general contribution of minerals and vitamins as well as of energy.

Raw vegetables are excellent finger foods—carrot sticks, celery sticks, wedges of lettuce or cabbage—and they are generally popular with young children. In fact, raw vegetables will often be eaten with relish, while the same vegetables cooked may be refused.

Some children go through stages when they refuse to eat vegetables altogether. As with milk, it is more desirable to reduce or eliminate the vegetables for awhile than it is to urge and push the child to eat them. Extra servings of fruit can be served, since they will supply essentially the same nutrients.

### *Bread and Cereal*

Wholegrain or enriched bread and cereals are important sources of energy, and contribute niacin, thiamine, riboflavin, and iron. They also furnish significant amounts of protein.

In cooking cereals, it may be necessary to add extra liquid so that they do not become thick and dry when cooled.

### *Butter*

Butter has two important contributions to make toward fulfilling the food needs of preschool children—its vitamin A and its energy value. It will also help to improve the flavor of cooked vegetables.

One of the reasons that it is difficult for many people to allow children some leeway in eating is the fear they will not eat “enough” or the “right” kind of food. “Is there a specific mechanism for food selection based on body need?” Controlled experiments with human subjects attempting to answer this question

are few. The one most widely quoted was planned and directed by Dr. Clara Davis<sup>3,4</sup> with newly weaned infants. Her original research included three infants, and it was later extended to include an additional fifteen. The children were fed “a large assortment of cooked and raw, uncombined, unseasoned, and unsophisticated foods according to a schedule of three meals a day, and no food given between meals. Each child had his own small table and the foods for the meal were set before him on a tray. The children ate with fingers or spoons, depending on ability or preference, and empty dishes were promptly refilled to make sure that the children got all they wanted of everything. Food and eating were never discussed by the attendants in the presence of the children.” In this setting, “anorexia, other than as a transient loss of appetite with acute parenteral infection, was unknown among them, all eating heartily with keen appetite day in, day out. It was not unusual for children to eat 3 or 4 bananas at a meal or 5–7 servings of potatoes or meat. One child a year old frequently drank a quart of milk at his noon meal besides eating other food. Yet none was fat, and all were solid well built children, healthy and vigorous, presenting no problems in behavior. A few instances of vomiting or diarrhea occurred with an acute parenteral infection, but otherwise there were no digestive disturbances and never any constipation, laxatives never being needed or given to any. The study demonstrated that under the conditions of the experiment and with such natural foodstuffs young children could choose their diets and thrive without adult direction of eating.” This was a small number of cases and Dr. Davis has emphasized that (1) this was a group of children who had not been indoctrinated with any previous “dietary information or experience by either example or instruction,” and (2) this experiment did not test the ability of the child to choose between natural foods and highly refined or processed foods. The evidence does not prove conclusively that appetite can function as an indicator of nutritional needs. However, the experiment does show that under certain conditions, children can be allowed

to exercise some freedom of choice at least.

Dr. Miriam Lowenberg<sup>5</sup> has given the following suggestions as guides to fostering good eating habits in children.

1. See that the children get enough rest and relaxation, so they will not be tired at mealtime.

2. Try to have a cheerful and happy atmosphere at mealtime.

3. See that the child is seated comfortably.

4. Provide dishes and utensils that are suitable for small hands.

5. Prepare for spilling and other messy eating by providing bibs and table protectors.

Don't expect little children to eat as skillfully as adults.

6. Prepare foods so they are attractive to children and not too difficult to manage.

7. Serve small portions, and second helpings when needed. Remember that portions that are too large discourage a child from eating.

8. Expect children to eat. Remember that they readily sense the attitude that the adults who eat with them show toward their food.

9. Remember that each child is an individual. Do not expect all children, even of the same age, to have the same tastes in food, nor to eat the same amounts.

10. Encourage interesting and pleasant table conversation among children who are old enough to eat well and to talk at the same

time. Talking about personal likes and dislikes for food should be discouraged. The foods themselves, and where they come from, are usually interesting for children to talk about.

11. Remember that courtesy at the table is not dependent on "thank you" and "please." Do not expect adult politeness of little children. If they are with adults who are innately courteous, they will pick up socially acceptable manners after they have mastered the difficult task of feeding themselves. But do not expect them to do both at once.

To summarize, pleasant eating experiences as well as proper foods are important to the successful feeding of children.

#### REFERENCES

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