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## Cystic fibrosis - nutrition

Cystic fibrosis (CF) is a life-threatening disease that causes thick, sticky mucus to build up in the lungs and digestive tract. People with CF need to eat foods that are high in calories and protein throughout the day.

### Function

The pancreas is an organ in the abdomen behind the stomach. An important job of the pancreas is to make enzymes. These enzymes help the body digest and absorb protein and fats. A buildup of sticky mucus in the pancreas from CF can lead to serious problems, including:

- Stools that contain mucus, are foul smelling, or float
- Gas, bloating, or distended belly
- Problems getting enough protein, fat, and calories in the diet
- Problems absorbing enough protein, fat, and calories from the diet

Because of these problems, people with CF may have a hard time staying at a normal weight. Even when weight is normal, a person may not be getting the right nutrition. Children with CF may not grow or develop correctly.

### Recommendations

The following are ways for adding protein and calories to the diet. Be sure to follow other specific instructions from your health care provider.

Enzymes, vitamins, and salt:

- Most people with CF must take pancreatic enzymes. These enzymes help your body absorb fat and protein. Taking them all the time will decrease or get rid of foul-smelling stools, gas, and bloating.
- Take enzymes with all meals and snacks.
- Talk to your provider about increasing or decreasing your enzymes, depending on your symptoms.
- Ask your provider about taking extra vitamins A, D, E, K, and extra calcium. There are special formulas for people with CF.
- People who live in hot climates may need a small amount of extra table salt.

Eating patterns:

- Eat whenever you are hungry. This may mean eating several small meals throughout the day.

- Keep a variety of nutritious snack foods around. Try to snack on something every hour, such as cheese and crackers, muffins, or trail mix.
- Try to eat regularly, even if it is only a few bites. Or, include a nutrition supplement or milkshake.
- Be flexible. If you aren't hungry at dinner time, make breakfast, mid-morning snacks, and lunch your main meals.

Getting more calories and protein:

- Add grated cheese to soups, sauces, casseroles, vegetables, mashed potatoes, rice, noodles, or meat loaf.
- Use whole milk, half and half, cream, or enriched milk in cooking or beverages. Enriched milk has nonfat dry milk powder added to it.
- Spread peanut butter on bread products or use it as a dip for raw vegetables and fruit. Add peanut butter to sauces or use on waffles.
- Skim milk powder adds protein. Try adding 2 tablespoons (15.6 grams) of dry skim milk powder in addition to the amount of regular milk in recipes.
- Add marshmallows to fruit or hot chocolate. Add raisins, dates, or chopped nuts and brown sugar to hot or cold cereals, or have them for snacks.
- A teaspoon (5 g) of butter or margarine adds 45 calories to foods. Mix it into hot foods such as soups, vegetables, mashed potatoes, cooked cereal, and rice. Serve it on hot foods. Hot breads, pancakes, or waffles absorb more butter.
- Use sour cream or yogurt on vegetables such as potatoes, beans, carrots, or squash. It can also be used as a dressing for fruit.
- Breaded meat, chicken, and fish have more calories than broiled or plain roasted.
- Add extra cheese on top of frozen prepared pizza.
- Add coarsely chopped hard cooked egg and cheese cubes to a tossed salad.
- Serve cottage cheese with canned or fresh fruit.
- Add grated cheeses, tuna, shrimp, crabmeat, ground beef, diced ham or sliced boiled eggs to sauces, rice, casseroles, and noodles.

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Updated by: Neil K. Kaneshiro, MD, MHA, Clinical Professor of Pediatrics, University of Washington School of Medicine, Seattle, WA. Also reviewed by David C. Dugdale, MD, Medical Director, Brenda Conaway, Editorial Director, and the A.D.A.M. Editorial team.

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