



## Behavioral Aspects of Nutrition in Children with CF



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Children with CF are usually recommended to consume 120 to 150% of the recommended dietary intake (RDI) of energy for same age and gender individuals without CF, with 40% of energy coming from fats. The benefits of meeting the energy recommendations are many and are becoming more evident. A high energy intake results in weight gain and better weight for age percentile. Higher weight status is associated with better pulmonary functioning and longer survival. Families of children with CF are well aware of the importance of weight gain and achieving optimal weight and height for their child. Our studies and those of others in the area of nutrition indicate that this knowledge typically results in increased stress for families rather than the desired outcome of better nutritional status of the child with CF. Families often describe meals as a battleground and feel inadequate in this aspect of care for their child with CF.<sup>1,2</sup> Clearly parents are getting the message that nutrition is important, but not the skills training for working with their child to achieve this important component of treatment. In this article we would like to examine the components of the behavioral intervention "Be In Charge" and how these components address the barriers to dietary adherence for children with CF and their families.

One of the primary strategies parents of children with CF employ to encourage eating is to keep their child at the table longer. In our research, we have found that children with CF spend an additional 6 minutes more at the dinner meal than children without CF, and many children in this study were spending 30 to 45 minutes at the dinner meal.

When we looked at what was happening during the dinner meal we found that all children eat less in the second half of the meal compared to the first half and engaged in more behaviors incompatible with eating such as food refusal, noncompliance with parent requests to eat and even leaving the table. When we looked at parent behavior we found that during the time children lose interest in eating, the second half of the meal, parents increase their efforts to get their child to eat by offering food, giving commands to eat, prompting the child to eat, and even feeding the child.

This was true for parents of children with CF and children without CF. While children with CF and their parents showed the same behaviors, they did differ from the children without CF and their parents in the absolute number of times the children resisted eating and the number of times parents tried to get them to eat. The children with CF and their parents engaged in these behaviors almost twice as much. Thus, keeping the child at the table longer is not effective and



leads to more stressful meals. The methods parents typically use to encourage eating (coaxing, commanding, prompting, and feeding) do not work. These methods do not work for any parent, and typically backfire because these methods all give more attention to negative behaviors (those incompatible with eating) than to positive eating behaviors. Children love parent attention, even if it is negative.

#### Approach Your Child Differently:

- First, in working with children with CF, parents and the health care team should acknowledge that **meeting the CF dietary recommendations is hard work** and requires the child to go beyond their usual feelings of fullness (at least initially while they get use to eating more energy). After all, several studies have found that children with CF eat as much as their same age peers without CF, just not the extra needed according to the CF dietary recommendations.
- Second, **emphasize the benefits of more energy** to the child to make them partners in meeting their dietary treatment recommendations. The benefits include having energy children need to expend to play, run, play sports, grow tall, etc. Gaining weight is not a benefit that children typically identify and in fact many girls with CF express concern of “getting fat.” Thus weight gain should not be the focus when talking with children about getting more energy.
- Third, we recommend that **meals last no longer than 20 minutes**. This is because there is a biological response that all humans have in which the stomach tells the brain it is full after 20 minutes of eating. Therefore little eating is likely to occur after 20 minutes.
- Fourth, focus on helping children get as much energy in within the first 20 minutes by **paying attention to eating and behaviors that support eating** (such as loading food on a fork, taking bite after bite, chewing quickly, swallowing quickly, trying foods, finishing foods) **by giving compliments and praise**. Since children with CF eat as much as their peers there are lots of opportunities to give compliments for eating. Be enthusiastic and specific in your compliments, “Kate, I love how you took three big bites of your hamburger!”; “Sam, smart idea to load your fork while you are chewing that bite.”

Compliments do several things:

- They teach a child the behaviors parents like without all the nagging and instructions. Children love adult attention and will engage in any behavior (positive or negative) that gets an adult to pay attention. When parent attention follows a child behavior, that behavior will occur more often. So by praising good eating behaviors parents are paying attention to the behaviors and these behaviors will increase.
  - Compliments also build up a child’s confidence that they can achieve a desired behavior because parents are focused on what the child is doing, instead of what they are not doing.
  - Finally, compliments increase the strength of the parent child relationship because of the focus on the positive.
- Fifth, **ignore or do not pay attention to behaviors that interfere with eating**, like dawdling, chewing excessively, talking excessively, complaining about food, and complaints about not being hungry. If attention rewards a behavior and makes it occur more, then even scolding, instructing and coaxing are attention and can make the very behaviors parents want



to go away occur more. So be picky about where you give your attention and do not give it when the child is not eating. The trick is, that as soon as the child starts to eat or even picks up their fork, you need to compliment this behavior. If parents pay attention to everything or ignore everything the child will not be able to figure out which behavior the parent likes and will do everything at the same rate.

- **Offer rewards for meeting energy goals**, whether this goal is a specific caloric value or specific amounts of food at a meal. The best way to do this is by contracting. For example, the parent and child set specific behaviors or energy goals that the child should strive for during each meal and over the course of the day and the specific rewards the child can earn for meeting these goals. Writing these goals and rewards down on a contract, coupled with identifying the benefits of more energy with the child, make the parents and the children partners aiming for the same goal.
  - Rewards are NOT bribes. Rewards are the results of a job well done.
  - Social rewards such as a child being able to earn one to one time with a parent doing an activity they usually do not get to do together on a regular basis such as playing a board game, a card game or shooting baskets with a parent. We have found all of these activities to be very popular with children.
  - Activities that the child prefers to engage in such as video or computer games are also good rewards. By using preferred activities as rewards children can learn that taking care of themselves and meeting their treatment goals leads to good things. This is in opposition to the way treatment typically works in that treatment usually takes away time from preferred activities. By saying “If you eat all your chicken and potatoes and drink your milk you can play 15 minutes of videogames tonight” we are teaching children that positive things come from getting more energy.

### Approach Diet Differently

Parents who have participated in our intervention studies have anecdotally told us that their child taking “one more bite” is always better than them not taking another bite, and that at meals they are always trying to get their child with CF to eat “more” food. An unclear stopping point in the meal sets up parents and children for a battle, because parents always feel compelled to ask the child to eat a little more. Parents have told us the only way they know if their child is truly done with a meal is when the child resists eating, even one bite more.

- One behavioral method for decreasing meal time battles is to **identify clear energy goals**. This can be done by 1) calculating calories by weighing and measuring food or 2) serving the child portion sizes of food you know he or she will eat, and setting the expectation of what the child needs to eat to earn the specified reward before the meal begins.
  - Setting a target energy goal by meal and by day gives parents a stopping point. It also gives parents immediate feedback that their child has eaten enough with both parents and children feeling a sense of accomplishment instead of uncertainty and failure at the end of the meal.
- If a child needs to eat more to meet the CF dietary recommendations, **gradually increase their energy intake** by targeting only one meal at a time. Increasing the energy goals one meal at a time allows children to adjust to the increased energy intake without being



overwhelmed. It also allows parents to make changes in their meal planning to accommodate the high energy foods that children with CF need. Work on increasing energy at one meal for 1 to 2 weeks before going on to a second meal. Increasing only 150 calories per meal can go a long way toward meeting the dietary recommendations over time.

- When increasing energy intake it is a good idea to start with an eating opportunity that is often overlooked and where parents can serve foods that take very little preparation: **Snack.** Serve 2 to 3 snacks a day and make these foods high in energy. Snack is a great opportunity to get in the extra fat that children with CF need to be healthy. Snack is the perfect time to serve a candy bar or bag of chips. Because there are several opportunities for snacks throughout the day, the total energy coming from snacks can be increased more than the energy at meals.
- Anecdotal reports from families indicate that another strategy for meeting the CF dietary recommendations is to serve large portions, or more food, in hopes their child will eat more. Instead of serving more food, **serve foods with the highest energy density in the smallest amount of food.** Add fats like butter and cream to increase the energy density of all foods. Always serve whole milk and add flavored syrup like strawberry or chocolate. Parents of children with CF often report they get conflicting advice about which foods to serve because of the national emphasis on low fat. It is important that they get support from their CF team in serving foods with a high fat content with reassurance that fat is healthy for children with CF. It is hard to get a child to eat beyond feeling full, so we do not want to fill them up on low energy foods and have to double the amount of food. It is much easier to use the behavioral strategies discussed above to encourage eating a smaller amount of energy dense foods.

In summary, a behavioral approach to achieving the CF dietary recommendations include:

1. Set energy goals that gradually increase the child's typical energy intake one meal at a time for a period of one to two weeks. Keep the energy goals for the other meals at the child's usual intake level. Of note, snack calories are the easiest to target first as children typically are not eating the highest energy foods or having 2 to 3 snacks per day.
2. Include the child in the goal setting and develop a contract that specifies agreed upon rewards for achieving energy goals. In discussing energy goals emphasize the activities the child needs energy for such as playing, sports etc.
3. Use compliments of eating behaviors and behaviors compatible with eating to teach the child the behaviors that support meeting their energy goals. Avoid nagging, coaxing or otherwise paying attention to behaviors that interfere with eating such as dawdling, talking for long periods of time or complaining about the food served.
4. Always serve the highest energy food in the lowest volume of food to ensure the child can meet their energy goals.
5. If the child achieves their energy goal for the meal, praise them and provide the agreed upon reward. If the child falls short simply say they can try to earn the reward the next time meal is served and go on with usually activities.



1. Crist, W., P. McDonnell, et al. (1994). Behavior at mealtimes and the young child with cystic fibrosis. Journal of Developmental and Behavioral Pediatrics **15**: 157-161.

2. Stark, L. J., A. M. Bowen, et al. (1990). A behavioral approach to increasing calorie consumption in children with cystic fibrosis. Journal of Pediatric Psychology **15**: 309-326.