



The Use of the Plate-by-Plate Approach for Adolescents Undergoing Family-Based Treatment

FAMILY-BASED TREATMENT (FBT) is the leading outpatient treatment for adolescents with eating disorders, and an increasing number of research studies support its efficacy.¹⁻⁸ The goal of FBT is to effectively and efficiently establish weight restoration and the health of the adolescent. It does so in the least restrictive environment, while viewing the parents or primary caregivers as the best resource for feeding their child until the child is able to resume appropriate eating independently.

Primary caregivers are asked to take over all aspects of meal planning and feeding, including grocery shopping, planning, and plating all meals without any input from their child. Typically, using FBT, primary caregivers are taught to feed their child what they

think the child needs to restore the child's health. This is consistent with one of FBT's primary goals: to empower the primary caregivers as confident agents of change. As a result, use of prescriptive meal plans detailing how parents should feed their child and obtaining expert advice from a dietitian are discouraged in FBT because both are seen as undermining parental confidence. For these reasons, using meal plans or consulting with registered dietitian nutritionists (RDNs) historically has not been recommended.

Yet there are several reasons that including an RDN alongside an FBT protocol would be helpful. For one, RDNs can be an integral part of the eating disorder treatment team by facilitating application of greater energy density and variety.⁹ RDNs can provide knowledge of how much to eat, food choices, meal timing, and how to navigate complex food systems or environments.¹⁰ Inclusion of an RDN in the treatment team can be beneficial in four ways. First, the American Psychiatric Association,¹¹ the American Academy of Pediatrics,^{11,12} and the Academy of Eating Disorders¹³ all recommend treating eating disorders using a multidisciplinary approach including medical, psychiatric, and nutritional management. Second, the more quickly primary caregivers act to facilitate the re-nourishment period, the better the prognosis, which adds pressure for primary caregivers to begin the refeeding process as soon as possible. Third, there is often a high level of stress and anguish associated with taking care of a loved one,¹⁴ and parents are likely to feel overwhelmed in the face of their child's medical and psychological health crisis. It therefore seems reasonable to conclude that addition of support during this challenging time would make sense as a helpful adjunct. Fourth, the caloric

requirements necessary to nourish a child with an eating disorder can be two to three times his or her baseline intake,¹⁵ and plating this amount of food may not be intuitive, even for the most nutritionally savvy parents. Therefore, primary caregivers may turn to RDNs for their expertise and guidance in accomplishing this daunting task.

Although no data are available to quantify the number of families undergoing FBT who are seeking the help of RDNs, the collaboration of RDNs with FBT providers is increasing, even though the role of the RDN is not formally written into the FBT protocol.⁹ This paper explores different methods used for refeeding adolescents with eating disorders and introduces a new method called *the Plate-By-Plate approach*, which can be used alongside FBT as part of a multidisciplinary treatment approach. The approach outlined here is a proposed method currently being used in practice, which requires further exploration and research.

WHAT IS FBT AND DOES IT WORK?

FBT¹ is one of the most extensively studied and vetted approaches used for treating eating disorders in adolescents. FBT refers to the manualized version of the Maudsley approach, which consists of approximately 10 to 20 sessions carried out over the course of 6 to 12 months.² The Maudsley approach is named after the Maudsley hospital in London, UK, where this particular type of treatment for eating disorders first originated in the 1980s.

FBT is divided into three phases (see [Figure 1](#)). The first phase is focused completely on weight restoration and nutritional rehabilitation of the child by means of parental oversight and management of the food and intake,

This article was written by **Wendy Sterling, MS, RD, CSSD**, owner, *Sterling Nutrition*, Menlo Park, CA; **Casey Crosbie, RD, CSSD**, program director, *Nan Shaw, LCSW*, FBT certified therapist, and **Susanne Martin, MD**, medical director, *The Healthy Teen Project*, Los Altos, CA.

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FBT ^a phases	Typical time frame	Goals	Key concepts	What the Plate-by-Plate approach adds
Phase 1	<ul style="list-style-type: none"> Approximately 10 wk (though in practice can take much longer) 	<ul style="list-style-type: none"> Weight and health restoration, with primary caregivers in charge of refeeding Primary caregivers are able to take over all aspects/supervision of food and eating for now May include activity restrictions No focus on cause of the eating disorder or on other adolescent issues that do not pertain to weight and health restoration The family meal (usually second session) to explore what's working and what's challenging Looking for early weight gain as predictor of positive outcome; 4 lb in 4 wk Looking to avoid need for hospitalization or higher levels of care 	<ul style="list-style-type: none"> Fighting <i>for</i> your teen and <i>against</i> the eating disorder, lovingly Helping your teen <i>get</i> better vs <i>feel</i> better Eating disorder is seen as external to your teen who has the illness Food as medicine Nonblame approach, as with most illnesses Primary caregivers are hands-on and united Helping primary caregivers find their confidence but no direction on specifics of meals Things can get worse before they get better 	<ul style="list-style-type: none"> Agrees with all goals and concepts—weight-gain focus, nonblame, illness as external, primary caregivers as agents of change Introduce after family meal session Offers clarity of “dosing” the food as “medicine” Increases parent confidence Offers clarity and flexibility, while the eating disorder causes for rigidity and confusion Offers quick visual accuracy Easy to learn and to apply in varied situations and encourages parent alignment
Phase 2	<ul style="list-style-type: none"> Approximately 7 wk (though, again, can take longer in practice) 	<ul style="list-style-type: none"> Weight gain and compliance with caregiver oversight has been mostly accomplished Focus still on weight and health restoration with inclusion of other family issues <i>only</i> as they relate to weight, eating, and health Weight gain continues (or stabilizes) while teen slowly begins to practice some food choice Gradual return to activity, as appropriate 	<ul style="list-style-type: none"> Same concepts apply regarding no blame, illness as external, primary caregivers primarily in charge of the food, gradual reintroduction of teen autonomy with snacks and later with meals Primary caregivers tend to feel more confident and teen tends to be compliant Food is still medicine while gradually becoming less of the focus Avoid the temptation to rush this phase 	<ul style="list-style-type: none"> Agrees with all concepts and helps with implementation of how and when to increase food autonomy Offers all the same ease of use, clarity of dosing, and flexibility of previous phase Helps in the return to “normal” relationship with food

(continued on next page)

Figure 1. Family-based treatment and the Plate-by-Plate approach.

FBT ^a phases	Typical time frame	Goals	Key concepts	What the Plate-by-Plate approach adds
Phase 3	<ul style="list-style-type: none"> Approximately 3 wk 	<ul style="list-style-type: none"> Teen can independently maintain weight above 95% of ideal weight and refrain from restriction in a variety of social settings Opportunity to explore issues that have necessarily been on hold, such as appropriate caregiver boundaries, issues of adolescence and autonomy, reestablishment of caregiver focus outside the eating disorder 	<ul style="list-style-type: none"> "I've got my kid back!" Shift to <i>supporting</i> your child vs <i>fighting</i> the eating disorder Primary caregivers and teen are more collaborative Food resumes its proper place 	<ul style="list-style-type: none"> Allows for small shifts to adjust for this big step, using all the same concepts Plates become part of eating intuitively, and not just a tool for refeeding

^aFBT = family-based treatment.

Figure 1. (continued) Family-based treatment and the Plate-by-Plate approach.

when primary caregivers are actively fighting *for* the child and *against* the eating disorder. The second phase is achieved only after the child shows compliance with parental refeeding and appropriate weight gain. This phase includes the careful process of beginning to hand back some of the child's involvement in food/eating as appropriate for age; autonomous eating is carefully considered in its impact on the child's health. If the child's attempt to feed himself or herself, whether choosing a snack or plating a meal, leads to weight loss or medical instability, caregivers are asked to step in again. The final and briefest phase is the parental shift from banishing the eating disorder to supporting the child. This is where the child and primary caregivers address obstacles, increase autonomy in food selection and consumption, and work on relapse prevention in a more collaborative approach. In this phase, discussion of other adolescent issues, which have necessarily been on hold during the time of illness and treatment, also takes place. For more information about the length of each phase and how it would relate to the proposed Plate-by-Plate approach, see [Figure 1](#).

FBT has been shown to be highly effective in that at the conclusion of treatment, 80% of the patients are weight restored with a start or resumption of menses.³ In fact, approximately two thirds of adolescents with anorexia nervosa (AN) are recovered at the end of FBT, and 75% to 90% are fully weight recovered at 5-year follow-up.⁴ When FBT is used for the treatment of bulimia nervosa (BN), the focus is on symptom reduction (binging/purging) vs weight restoration. FBT was found to be more effective in promoting abstinence from binge eating and purging in those with BN than other therapies, such as cognitive behavioral therapy, at the end of treatment and 6-month follow-up.⁵

Early weight gain has been implicated in the successful treatment of AN.⁵ Achievement of a weight gain of approximately 3% by the fourth treatment session is a strong predictor of full remission; this translates to approximately 4 lb of weight gain in the first 4 weeks. Lock and colleagues⁷ report that weight gain at sessions 2 and 9 of FBT are both predictors of remission at 12 months.

METHODS FOR REFEEDING

The task of refeeding a child who is struggling with an eating disorder can be accomplished in several ways in the outpatient setting, including counting calories, measuring food portions, and using an exchange list. To date, no studies have validated one approach over the other.

Exchanges, based on the diabetic exchange system,¹⁶ are the most common method used in treatment facilities. When an exchange approach is used, clients are given a certain number of servings of grains, proteins, fruits, vegetables, dairy products, and fat; they can “spend” those exchanges as they wish. The exchanges are connected to a certain number of calories; as the calorie goals increase, the exchanges increase. The advantage of an exchange-based meal plan is that all foods can be converted into exchanges and therefore included.

However, this method can be complicated. A slice of pizza might be two starches, one dairy, one vegetable, and one fat. A bagel, which can have 60 g of carbohydrates, may equal four exchanges of starch, which might scare an individual with an eating disorder and/or use up too many starches in the meal plan at once. One fat exchange is equivalent to 1 tablespoon of salad dressing, but most people will naturally eat more than 1 tablespoon of dressing. This approach may hold children back from eating food that does not fit into their food item checklist, and children who are following it may eat to fit into their exchanges, rather than just eating what sounds good or feels normal. Focusing on exact portion sizes and using calculations to sort foods into their respective categories can lead to more rigidity and obsessiveness, not less. Once weight is restored, children have to be taught to transition away from exchanges, a process that can be difficult.

In treatment facilities that use the exchange method, adolescents are handed a lot of the power at a time when their eating disorder is quite active. The adolescents, rather than the primary caregivers, are often taught how to calculate these exchanges and how to put their meals together. Adolescents can easily manipulate a meal plan by choosing the lowest calorie options to meet the exchange requirements in each food category. Teens

will take charge of their own meal plans, shutting primary caregivers out and allowing plenty of room for their eating disorder to manipulate how they are “spending” their exchanges. This is directly opposed to the philosophy of FBT in which primary caregivers are asked to take an active role in recovery and to take charge of the food.

Another method of refeeding tasks primary caregivers with counting their child’s calories throughout the day. Primary caregivers may do this in their heads or by using an app. It should be noted that tracking calories using apps has been associated with an increase in eating disorder symptomatology, although it is unclear whether this would have the same effect if an individual is tracking someone else’s calories rather than his or her own.^{17,18} Counting calories would seem likely to provide a quick sense of mastery for primary caregivers, since they can follow along and determine whether their child has reached the caloric goals set by the team. However, counting calories requires a lot of time and energy, especially as the caloric levels increase throughout the stages of nutritional rehabilitation. Caloric content becomes challenging to decipher for homemade recipes and meals consumed outside the home, such as those eaten in restaurants where nutrition facts may not always be available. Additionally, the child might observe the parent(s) counting calories, increasing the possibility of the child counting calories as well.

The Rule of Threes is used as a refeeding tool for those struggling with an eating disorder¹⁹ and could be used alongside FBT. This approach requires clients to eat three meals and up to three snacks a day and to allow no more than 3 hours between meals. No prescriptive meal plans are used. This approach does not provide visual tools. There is a recommendation to include the use of a “fun food” as well. This approach would seem to support the goals of reducing rigidity around food; however, parents might be looking for more information than what is provided.

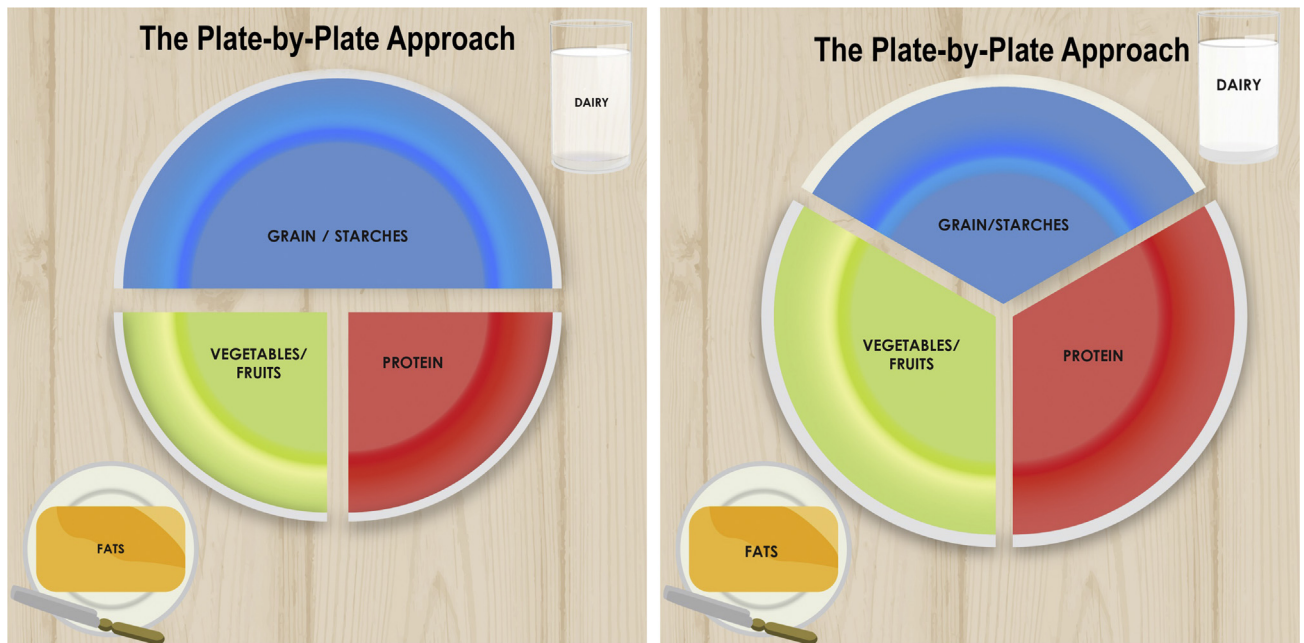
FEEDING YOUR CHILD VISUALLY WITH JUST A PLATE: THE PLATE-BY-PLATE APPROACH

In 2011 the United States Department of Agriculture began to use a

plate-model visual approach, called MyPlate, to educate the general public about nutrition.²⁰ With a focus on prevention of overweight and obesity, MyPlate recommends a plate with all food groups, with half the plate made up of fruits and vegetables. A plate that is made up of half fruits and vegetables is high in fiber and low in caloric density; it is likely to be insufficient for adolescents with eating disorders, especially those who are athletes with high energy requirements who require weight restoration. MyPlate recommends low-fat dairy products, yet fats are an important part of the diet for individuals with eating disorders and can be especially helpful in working toward normalizing hormone levels.²¹⁻²⁴ A person could consume low-fat dairy products and obtain fats from other food sources, but the overall message of MyPlate might be confusing for a child with an eating disorder.

The Plate-by-Plate approach, also a visual plate approach, is designed specifically to accompany FBT (although it can also be used without FBT) and was designed with the client with an eating disorder in mind. The Plate-by-Plate approach has three key aspects: 1) primary caregivers are put in charge of all aspects of food; 2) primary caregivers use only a plate to determine how much to feed a child; and 3) there is an emphasis on variety and exposure to all foods. Inherent in this philosophy is flexibility, with an emphasis on plating “what looks normal” rather than plating a certain number of calories. In a 2017 study, Simpson and Mazzeo¹⁷ found that use of tracking apps for counting calories triggered, maintained, or exacerbated eating disorder symptomatology. Although more research needs to be done to examine this method specifically, it seems reasonable to hypothesize that a non-numbers approach would help minimize eating disorder symptomatology, such as obsessiveness or rigidity around food. The focus of this approach is to accomplish the goals of nutritional rehabilitation while working on aspects of recovery such as variety and flexibility. Because this approach relies only on a plate, transitioning to normal eating can occur seamlessly.

By using just a plate as its backbone, this approach teaches primary caregivers how to put together balanced



50% Grains/Starches Plate

33% Grains/Starches Plate

Figure 2. The Plate-by-Plate Approach Visual Guide. On the left is the plate with 50% of the content coming from grains/starches. This plate, as mentioned in the text, is designed for someone undergoing weight restoration, such as someone with anorexia nervosa or amenorrhea. It is also used for individuals with higher caloric demands because of age, growth, and activity level. The plate on the right represents a plate with 33% of the content coming from grains/starches. This plate is appropriate for someone who does not need to gain weight but is looking for help in achieving balanced eating, such as someone with bulimia nervosa or binge eating disorder. The plate on the right, the 33% plate, can also be used to help transition someone back to weight maintenance.

meals that best support their child's nutritional requirements. No measuring or counting of calories is involved. This plate can be used with any cuisine for clients from all cultures and for clients following special diets, such as gluten-free, vegetarian, or dairy-free. It can also easily be taken on the road and used in restaurants and buffets.

Although FBT offers primary caregivers a general map to follow during their child's nutritional rehabilitation, the Plate-by-Plate approach adds a compass—both pieces integral in navigating the tricky terrain of eating disorder recovery. The exact route taken, however, is still very much in the hands of primary caregivers. They are coached, with the help of their FBT-certified therapist, to set the expectation that their child *will* eat. They supervise all meals, keeping the conversation light and breezy, then every so often as needed, they remind their child to pick up a fork and take a bite. The child is expected to finish 100% of the plate, or rather, 100% of whatever the primary caregiver deems to be sufficient for that meal. Unfinished meals are supplemented with

meal replacement shakes. Mealtimes can be very challenging, and additional support may be required to facilitate use of the Plate-by-Plate approach. For more information on navigating meal times, caregivers often refer to the following sites:

NEDA parent toolkit at: www.nationaleatingdisorders.org/sites/default/files/Toolkits/ParentToolkit.pdf;

F.E.A.S.T. at www.feast-ed.org/?page=ATDTRSS;

Musby's website at: anorexiafamily.com/how-do-you-get-your-anorexic-child-to-eat;

Maudsley parents at: maudsleyparents.org/welcome.html; and

Mirror Mirror at: <https://www.mirror-mirror.org/getting-your-child-to-eat.htm/>

An integration of how the Plate-by-Plate approach works alongside FBT throughout the three phases described can be found in [Figure 1](#).

The Plate-by-Plate approach is designed for all adolescents recovering from AN, BN, avoidant/restrictive food intake disorder, other specified feeding

or eating disorder, and binge eating disorder; and it can be adapted to accommodate each person's nutritional goals. There are two versions of this plate, and the plate chosen would depend on whether a client requires active weight restoration or weight stabilization.

One plate, shown in [Figure 2](#), reflects 50% grains/starches, 25% protein, 25% vegetables/fruits, with dairy and fats at each meal. This plate is best for those who are working on weight restoration or for those with high caloric demands (eg, an athlete undergoing nutritional rehabilitation or someone with AN for whom high energy requirements are expected). The other plate—which shows 33% protein, 33% grains/starches, and 33% vegetables/fruit with dairy and fats—is best for someone who is working on improving the balance in his or her diet but does not necessarily need to gain weight (eg, someone with BN who might be of normal weight or someone with binge eating disorder). This plate might also be appropriate for someone who is transitioning to weight maintenance after a period of weight gain.

FOOD GROUP	FOOD ITEM AT MEAL
GRAINS/ STARCHES	
PROTEIN	
VEGETABLE OR FRUIT	
FAT	
DAIRY	

Figure 3. Food group checklist.

Often, children and teens with eating disorders need to work on eating fewer fruits and vegetables, which are high in fiber and contribute to gassiness and bloating without adding caloric density; reducing protein, which causes fullness, making consumption of other meals difficult²⁵; and increasing intake of starches, fats, and dairy products. Both plates support these requirements. Milk that is 2% or whole is recommended (or whichever milk is being served in the household); there is not a focus on low-fat dairy, and fats are recommended at every meal.

This approach is currently being used in treatment centers, such as the Healthy Teen Project in Los Altos, CA, which is a partial hospitalization program and intensive outpatient program for adolescents with eating disorders. In this program, primary caregivers send the food they want their child to eat to the program daily. An RDN and milieu counselor observe the food being plated and adjust the meal, if necessary. The RDN notifies caregivers if any adjustments to the meal are required, thus providing constructive feedback for future meals. The Healthy Teen Project is currently conducting outcomes studies with use of this nutritional approach. A version of this approach is also currently being used on the inpatient level at the Comprehensive Eating Disorders Program at Lucile Packard Children’s Hospital Stanford.

The following steps provide a clear roadmap for primary caregivers to use while preparing and plating meals.

Step 1: Choose a 10-Inch Plate

The actual plate used is critical to serving enough food. The plate will be the only tool a primary caregiver will

need to master this approach and should be roughly 10 inches wide. Caregivers are encouraged to avoid using salad plates or toddler plates, which are generally too small, although they may start with any plate that feels right for their child. The best plates are smooth, without ridges or inner circles that might confuse families when serving portions.

Step 2: Plate All Food Groups

Each meal should include all five food groups: 1) grains/starches, 2) protein, 3) vegetables or fruits, 4) fats, and 5) dairy. The food group checklist (Figure 3) can be given to primary caregivers so they can verify that all food groups are present at each meal.

If all food groups are accounted for, the next step is to plate those food groups according to the criteria of the plate that is right for that child. For example, if the child has AN and requires weight restoration, the primary caregivers would plate 50% grains/starches, 25% protein, 25% fruits or vegetables, plus added fat and dairy. Food should be prepared with fats. (The plate should not look dry, and each meal should include dairy.)

Step 3: Fill Up the Plate!

Primary caregivers are taught to fill the entire plate up, leaving no empty space. Many years ago, primary caregivers were taught to increase the volume of their child’s plate cautiously to prevent refeeding syndrome (a dangerous constellation of medical complications, including hypophosphatemia, often resulting from aggressive re-nourishment). Newer research shows that it is safe to jump to more calorically dense meals and an overall higher caloric meal plan right away, as long as the child is followed up closely by a health care provider who can monitor for any electrolyte abnormalities or medical concerns that arise.²⁶ We suggest that primary caregivers start with the full plate, rather than starting with less and working their way up. A more rapid recovery is associated with a more favorable prognosis.²⁷

Step 4: Primary Caregivers Decide How Many Meals; How Many Snacks

The baseline recommendation is three meals plus two or three snacks per day.

A snack is considered to be at least two food groups to start (any food groups of the primary caregiver’s choice, but serving a fruit and a vegetable for the two food groups is considered calorically insufficient) and will increase as the meal plan increases. Whether the child should start with two snacks or three depends on how many snacks the child is currently having. If the child is having two snacks, but the snacks are small, primary caregivers can begin by increasing the size of the snacks. If the child is already having two snacks that each include at least two or three items, then primary caregivers can either make those snacks larger or add a third snack. RDNs can help guide primary caregivers here, not only regarding the volume and frequency of the snacks but also with suggestions for what those snacks might be.

Step 5: Include Variety

Children and teens with eating disorders might only be comfortable with a small selection of foods—typically, foods they perceive as “safe,” “good,” or “easy.” For a child struggling with an eating disorder to achieve true freedom from the grasp of the eating disorder, paying attention to the variety of foods he or she will/will not eat is important. Encouraging variety helps to excavate remnants of eating disorder thinking, all while shaping a child into a confident and fearless eater.

Primary caregivers are taught about “exposure therapy.” Exposure therapy works by confronting something that creates an escalation in anxiety and allowing a person, through repeated exposures to that trigger, combined with support and skills to manage, to become acclimated or habituated to it.^{28,29} Repeated exposure to a scary or avoided food helps the child to become desensitized to it over time. Typically, distress tolerance skills are not recommended to be utilized during exposures, because they have been shown to minimize the effectiveness of the exposures.³⁰ If those struggling with eating disorders can face their food fears, over time, they will become used to them, while building positive experiences that reduce fear.

Exposures will likely feel uncomfortable for the child, yet they continue to be an important part of recovery. The frequency and degree to which

- STEP 1: CHOOSE A 10-INCH PLATE
 STEP 2: PLATE ALL FOOD GROUPS
 STEP 3: FILL THE PLATE UP
 STEP 4: DECIDE HOW MANY MEALS AND SNACKS
 STEP 5: INCLUDE VARIETY
 STEP 6: DOES THE MEAL MAKE SENSE?
 STEP 7: THE FINAL REVIEW: HOW DOES THE PLATE LOOK?
- Are all food groups present? Grains/Starches? Protein? Fruit/Vegetable? Dairy? Fat?
 - Is the plate 50% grains/starches, 25% protein, 25% fruit/vegetable? (or 33% grains/starches, 33% protein, 33% fruit/vegetable, depending on which plate is recommended?)
 - Is the whole plate full?
 - Have you challenged your child?

Figure 4. Seven essential steps and strategies for implementing the Plate-by-Plate approach.

food exposures are conducted can be determined by both the primary caregivers and the treatment team. This can vary based on individual comorbidities (such as obsessive compulsive disorder, depression, and anxiety) and health status. In the beginning phases, weight restoration, medical stability, and symptom management are more important than exposures to certain foods, but as the treatment progresses, addition of more feared foods is expected and necessary for recovery. Some children might be ready to experience one food challenge each day, but others might need challenges to be conducted more slowly. The goal is to help the child to increasingly experience the feared food as simply “food” and not something dangerous or threatening. This is accomplished through continued practice of eating that particular food and experiencing it as neutral or even positive in a supportive context.

Research studies of picky eaters have demonstrated that it can take 15 to 20 exposures before someone can convert a food from a “dislike” to a “like.”³¹ Primary caregivers are asked to come up with lists of foods to target during this process. They are asked to recall what their child’s favorite foods were before the eating disorder took hold. These foods can be arranged into a hierarchy from least to most scary. From there, successful exposure treatment requires repetition. As the caregivers work on repetition, they are encouraged to shift the circumstances slightly. If they served their child a burger from their grill at home, can

they try a burger from a restaurant next time? How many different ways can a person serve brownies? They might first try baking brownies at home, then buy one from a bakery, and lastly, have their child eat one at a friend’s house. Each exposure is meant to be done several times, in different forms, and fully experienced (swallowed).

Research suggests that a limited diet, specifically in the five food groups, is associated with relapse in patients with AN.³² A varied diet has been associated with a higher caloric intake,³³⁻³⁸ whereas a more restrictive style of eating has been associated with a lower caloric intake and even weight loss.^{36,39,40} A child with an eating disorder will often get stuck in the same pattern because he or she is scared to try something different. This fear may be the result of deeming another choice unhealthy or too processed or fearing that “those types of foods” will make him or her fat. It is important to break that way of thinking as early as possible and to show the child that having pasta instead of brown rice will not make him or her fat. Most primary caregivers know this intuitively, but they may be scared to engage their child’s fierce eating disorder. The eating disorder conditions primary caregivers to live in fear: it flares up when challenged and only quiets when its food rules are accommodated.

Step 6: Does the Meal Make Sense?

Primary caregivers are asked to consider whether the plate makes

sense. Sure, it has all the food groups present, but do these foods go together? For example, serving chicken with sides of cereal and milk and broccoli, even if all food groups are present, should be avoided. The meal should be cohesive and feel “normal.”

Step 7: Do a Final Review: How Does the Plate Look?

- Are all food groups present? Grains/starches? Protein? Fruit or vegetable? Dairy? Fat?
- Is the plate 50% grains/starches, 25% protein, 25% percent fruit or vegetables? (or 33% grains/starches, 33% protein, 33% fruit or vegetables depending on which plate is recommended?)
- Is the whole plate full?
- Have you challenged your child’s eating disorder?

Figure 4 provides a summary of the Plate-by-Plate approach.

INCREASING THE PLATE: HIGH CALORIC NEEDS ASSOCIATED WITH REFEEDING

As refeeding continues, the caloric requirements increase for those requiring continued weight gain. This is due to the increasing metabolic rate that is seen during nutritional rehabilitation.^{41,42} There is also an increase in the thermogenic effect of food (the caloric cost of digestion) during malnutrition, which can exceed 30% by week 4 of treatment in clients with AN vs 10% in a healthy population.⁴¹

Typically, the RDN working in an FBT setting will recommend strategies for increasing the meal plan to facilitate continued weight gain and ultimately let the family decide which strategies, and how many, they will implement. These strategies include recommendations to:

- **Add juices or an extra glass of milk.** Drinks, such as an added glass of milk or juice, can be added to all meals and snacks.
- **Add more items to your child’s snacks.** Primary caregivers can increase a two-item snack to a three-item snack or a three-item snack to a four-item snack.
- **Aim for a “heaping half.”** Primary caregivers can serve a

- Consistently maintains medical stability, staying within a healthy weight range (REQUIRED)
- The eating disorder has receded enough that the child can successfully complete one unsupervised meal per day (REQUIRED)
- If female, having regular periods
- Enjoying food again
- Making requests for food the child used to love
- Able to eat spontaneously (eg, asking for a few pieces of chocolate after dinner)
- Increased flexibility with food, eating what is served without complaint
- Able to eat out at a restaurant without heightened anxiety or stress

Figure 5. Characteristics to look for when considering an intuitive eating approach in a child recovering from an eating disorder.

heaping half plate of grains/starches. This *heaping* half plate can increase in height on the plate (eg, a mound of rice instead of a flat serving.)

- **Add an extra item to each meal.** Primary caregivers can plate all the food groups plus one bonus food group—any group—of their choosing.
- **Add dessert to all meals.** Primary caregivers can plate a full plate and add a dessert on the side.
- **Add a meal supplement or shake.** Primary caregivers can decide to add a commercially available nutrition shake or a homemade smoothie or shake, one or more times a day.
- **Provide chocolate milk instead of plain.**
- **Add more caloric density by:**
 - Replacing pretzels with cookies
 - Serving chicken thighs, instead of chicken breast or beef instead of chicken
- **Add additional fats.**
 - Add cream-based sauces to pasta, potatoes, and cooked veggies.
 - Serve mashed potatoes (made with cream and butter) instead of baked potatoes.
 - Serve a twice-baked potato or a loaded potato (with sour cream, butter, and cheese).
 - Add butter to rice.
 - Use olive oil when cooking and add more right before serving.
- Add avocado, mayo, and cheese to deli sandwiches.
- Double up on peanut butter in a peanut butter and jelly sandwich.
- Add melted cheese to veggies.
- Use whole-milk products instead of reduced-fat products.
- **Add more calorically dense snacks.**
 - Serve ice cream as an evening snack.
 - Dense oatmeal bars or cookies can make a great snack.

VISUAL FOOD RECORDS

To assess how a child is doing, the RDN can link with the child or with the primary caregivers via a food logging app (Recovery Record; © Recovery Record, Inc), allowing the client to log his or her food visually in photos along with thoughts and eating disorder urges, using embedded skills to help manage those urges. No counting or tallying is required, and nutrition “calorie goals” are not listed. The RDN can comment throughout the week on the plate, giving it a “thumbs up” for a complete plate or providing coaching on how the child/primary caregivers can improve the plate.

RETURNING TO NORMAL

As a child transitions through the phases of FBT, the goal shifts from weight restoration to becoming more independent with food, and eventually, back to “normal.”

As the child makes the transition to normal eating, the Plate-by-Plate

approach makes this new phase simple; the actual plate and meal schedule remain the same, with some minor adjustments made to support weight maintenance, if needed. For example, once the child is ready for weight maintenance, additional juices can be removed, and snacks can be reduced in size and/or frequency; or primary caregivers can switch to the plate with 33% grains/starches, 33% proteins, 33% vegetables.

The child then becomes progressively more independent with food, which might mean eating a morning snack and lunch unsupervised at school, or it can consist of complete independence as the child decides when to stop eating based on internal hunger cues (intuitive eating). The RDN’s role at this stage is to work with the treatment team, family, and child to determine how and when it is therapeutically appropriate to begin increasing food autonomy and when to start an intuitive eating approach (Figure 5).

Promising research supports the use of intuitive eating for those working toward recovery from eating disorders, although a child recovering from one will need support and guidance from the RDN to help reach that stage.⁴³

For those ready for an intuitive eating approach, a roadmap including three meals plus two or three snacks is still recommended as the child begins to check in with his or her hunger level to gauge hunger/satiety midway through a meal. Eating intuitively, the child would no longer be required to finish 100% of the meal. Hunger levels can be assessed as an added tool during the meal, and the child can rate hunger on a scale of 1 to 10 (1=not hungry and 10=extremely hungry). The child would be encouraged to finish the meal if the hunger level were a 4 to 5 or higher midway through the meal.

A child who is learning how to eat intuitively might eat less than what the primary caregivers/team feel is the “right amount” but will learn from that by feeling hungrier before the next meal and may then eat more than usual to make up for previous insufficiencies. If this happens from time to time and the child learns from it, then that is considered a success. If the child makes a habit of restricting meals and snacks, the primary caregivers/

team should consider going back to what worked most recently until the child is ready to try intuitive eating again.

There are many different ways to refeed a child struggling with an eating disorder. To date, no research has validated one approach over another, and this continues to be an area that needs further exploration. Ideally, the approach chosen would minimize the obsessiveness associated with calories, numbers, and counting in general. The Plate-by-Plate approach is a simple and effective way to aid in the nutritional rehabilitation of individuals struggling with eating disorders and is compatible with the principles of FBT, during which primary caregivers are put in charge of all aspects of a child's nutrition. RDNs can have a role in an FBT protocol, as long as the recommendations they make to the primary caregivers are both nonprescriptive and collaborative in nature. It has been our experience that the Plate-by-Plate approach successfully allows children with eating disorders to meet their medical goals—such as restoration of weight, resumption of menses, normalization of heart rate and blood pressure—while simultaneously working toward normalized eating. This approach also strikes the balance of providing guidance without assigning tasks or directing behavior.

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AUTHOR INFORMATION

Address correspondence to: Wendy Sterling, MS, RD, CSSD, 1150 University Ave, Suite 105, Menlo Park, CA 94025. E-mail: wendymrsrd@yahoo.com

STATEMENT OF POTENTIAL CONFLICT OF INTEREST

W. Sterling and C. Crosbie have co-written a book on this subject titled *How to Nourish Your Child Through an Eating Disorder: A Simple Plate-by-Plate Approach to Rebuilding a Healthy Relationship with Food*, published July 2018, from The Experiment publishers. S. Martin and N. Shaw wrote chapters in that book.

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