



## Picky Eating in Children with Autism Spectrum Disorders

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“I didn’t eat tomatoes for a year after a cherry tomato had burst in my mouth... The sensory stimulation of having that small piece of fruit explode in my mouth was too much to bear.” This statement was made by a young adult with autism, Stephen Shore. It demonstrates the traumatic experience and long lasting effect resulting from the sensory aspects of food.

**What is picky eating:** Picking eating, sometimes referred to as food selectivity, can include food refusals, a limited number and variety of foods eaten, and eating-related rituals.

**How common is picky eating?** Picky eating is not specific to children with autism spectrum disorder (ASD), but is more common in this population. About 10-30% of parents of typical children report that their children are picky eaters compared to 50-70% of parents of children with ASD. In particular, children with ASD eat a fewer number of foods, eat fewer vegetables and fruits, and demonstrate specific food preferences. Moreover, whereas most picky eaters tend to outgrow their pickiness or at least develop a wider food repertoire, this is not always true in children with ASD.

**Why is my child a picky eater?** We don’t really know what causes picky eating but some causes of food selectivity have medically-related reasons and may include:

- Difficult medical history that affected interest in or ability to eat
- Certain medical or genetic conditions—for example, autism
- Chronic constipation
- Tendency toward digestive problems such as reflux
- Medications—some of which can alter the sense of taste
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In addition to medically-related reasons, other factors related to picky eating may include:

- Sensory processing problems—also referred to as sensory over-responsivity or sensory sensitivity to taste, smell, and/or texture
- Tendency toward sameness and resistance to change—such as in brands, or colors of food
- Inadvertent history of parental reinforcement of food selectivity behaviors

As with most behaviors, medical issues should be examined first.



Sensory sensitivity is extremely common in children with ASD and may contribute to children's food selectivity. Children with ASD have sensory sensitivity to certain tastes, textures, temperatures, or smells. These children may experience extreme anxiety about food. They may grimace, spit out, gag, or vomit when trying a non-preferred or novel food, and then refuse all other foods that look or smell the same. They are often reluctant to try new foods and may even refuse to eat food that has touched other food. Sensory sensitivity can lead to mealtime experiences that cause distress, anxiety, and fear for children, as well as conflict in caregiver-child interactions, and make mealtimes challenging for the family.

Sensory factors may relate to the food itself but also may relate to the mealtime environment, such as being seated in a restaurant next to the area where dishes are constantly being sorted and stacked. Noisy and crowded environments can often be overwhelming to a child.

### **Does it matter if my child eats a very limited variety of foods?**

The answer to that depends on what foods your child eats, and how much he or she eats. Too much of certain foods may contribute to gastrointestinal problems such as constipation.

Research has indicated that as a group, children with ASD show significantly lower intake of calcium, protein, vitamin B12, and vitamin D than typical children. If your child is a very picky eater, it is important to talk to your doctor and a dietician to determine if your child is receiving appropriate nutrients and micronutrients, and gaining appropriate weight. Concerns with food intake can be highly stressful for parents, in part because parents are responsible for their children's survival and health.

Highly picky eating, especially when associated with behavior problems, can also limit families' ability to engage in routines, such as having meals together, going to restaurants, and attending family gatherings.

### **Intervention**

Food selectivity and food refusals are complex problems, which can be solved with the help of an interdisciplinary team, including a pediatrician, gastroenterologist, dietician, occupational therapist, speech-language pathologist, psychologist, behaviorist, psychiatrist, and social worker. Each discipline contributes a unique perspective. Together, feeding teams are able to examine the big picture and provide an integrated approach.

Multiple factors may contribute to food refusals. *Medical management* is primary for biologic conditions such as gastrointestinal problems and should be the first avenue examined



*Behavioral approaches* are perhaps the most frequently used approach. This; may include positive reinforcement, such as praise or access to preferred food, objects (e.g. toys), or activities (e.g. swinging) after accepting bites of new or non-preferred food. Another commonly used behavioral strategy, referred to as *extinction procedures*, include purposefully ignoring a child’s inappropriate mealtime behavior (e.g. throwing tantrums, leaving the table, or throwing food), and providing positive attention when the child shows appropriate mealtime behaviors, such as eating or sitting quietly. In some cases, escape prevention, such as returning the child to his chair, has been used to reduce the child’s ability to avoid eating by leaving the table.

Another behavioral strategy may involve stimulus fading. A variation of stimulus fading involves blending the preferred and novel foods together, starting with a small percentage of novel foods (e.g. 10% novel, 90% preferred).

Examination of A-B-C antecedents (what comes before) behaviors, and consequences (what happened after) of the feeding situation provides a way to analyze the process. Dr. Rick Fleming provided the following examples:

<i>Antecedents (A)</i> <i>What was presented or what was occurring before the behavior?</i>	<i>Behavior (B)</i> <i>Eating, or avoidance &amp; escape behaviors</i>	<i>Consequences (C)</i> <i>What was your child’s response? Your or others’ response?</i>
1. Drank lots of juice 1 hr. before, then I put out lunch	Yelled and threw chair	I said: “Okay, we’ll try later, let’s go play”
2. Put sliced apples (new food...hmm) on plate next to bananas (loves them)	Pushed apples off plate, ate bananas	“Well, at least you ate your banana. We’ll try apples again tomorrow.”
3. Watching favorite video. Dad: “Let’s turn that off and have a snack.”	Tosses plate and begins to tantrum	Dad: (Turns video back on to prevent tantrum). “We’ll try again when that’s done.”

In the first example, the child drank a lot of juice prior to the meal and thus was not hungry when called to lunch. This contributed to his behavioral tantrum. The consequence of telling the child that he did not have to eat and could go play inadvertently reinforced the child’s tantrum.



In the second example, a new food was placed on the plate with the child's preferred food. The child ate the preferred food and pushed away the other. An alternative approach would have been to give the child a piece of banana each time he tried a tiny bite of apple.

In the third example, the child was watching his favorite video and was asked to leave this favorite activity. Again, turning the video back on when the child had a tantrum inadvertently reinforced this behavior because it showed the child he could get what he wanted by screaming. In this case, there is more likely to be a problem if a child has to stop an activity he likes than one he doesn't enjoy.

**Sensory Approaches and Strategies.** Occupational therapists frequently use sensory integration and sensory-related strategies to address issues related to food selectivity. *Occupational therapy using a sensory integration approach* addresses the broader issues of sensory defensiveness. This approach involves providing selected sensory input integrated with motor responses to help the child process sensory input. Deep pressure activities such as "mouth games" are often incorporated into this broader sensory integration approach for children.

*Occupational therapists encourage families to consider the sensory and contextual aspects of food.* Families need to identify what their child will and will not eat. Gradually introduce new food by starting with a food that has the best "sensory fit". Offer the food for a number of days so the child gets used to it, but keep expectation of eating it low. Introduce new foods for a child to try at a good time in the day. You and your child need to be in a calm state.

Consider the texture of the food. Texture is often a problem for children with ASD. When texture is a known issue, consider introducing new foods in puree form, and avoid "mixed" foods.

Consider temperature of the food. Does your child prefer cold, room temperature, or hot foods? For some children, sucking an ice pop prior to trying new foods helps them to be able to tolerate different foods. Note that this strategy should be avoided for children who tend to stuff their mouths with food, or children who drool. Check with your child's therapist.

### **Books, Stories, and Songs**

*Sensory Stories.* Sensory stories are a set of 30 illustrated stories that present different situations (e.g. cafeteria), and provide children with strategies that they can use to help cope with sensory over-responsivity in everyday activities at home, in school, and in the community. Sensory stories are available at Therapro, <http://www.therapro.com/Sensory-Stories-HOME-C307967.aspx>. They are sold individually as PDF's or as a complete set.



*Mealtime Stories: A Guide for Feeding Therapists*, 2<sup>nd</sup> edition, designed by two occupational therapists, guides therapists and parents to create a short, personalized book to help a child feel a sense of mastery, and to support the child in problem solving and overcoming feeding challenges. The book provides templates, themes, an index of 600 photos, and instructions and story templates. Although not originally designed for children with ASD, it is highly applicable. It can be purchased at <http://www.amazon.com/Mealtime-Stories-Feeding-Therapists-Edition/dp/0981653138>

*Commercially Available Children's Books.* There are a number of existing children's books about new food. Examples of books on fussy eaters: "*I will never not ever eat a tomato*" (by Lauren Child) or *DW the Picky Eater* (by Marc Brown; available in both English and Spanish). Both can be obtained on Amazon.

*Develop Your Own Book.* Write a story yourself. Include the child's favorite character, such as Spiderman, eating the new food.

*Songs.* Some songs are helpful to help children get used to the different foods. An example of one such song is, *The great food explorer. On Songs for sensational kids, Vol. 2: I'm ok, ole!* [CD]. Portland, OR: CD Baby (Apr. 21, 2005) by Coles Whalen (2012)

### **Other Strategies to Consider**

*Make mealtimes fun.*

- Allow your child to manipulate the food by making a face with it, mashing it with a fork, or rolling pin.
- Use fun cups, containers, and spoons in which to place the food.
- Make a special Food plate. Hang a paper plate on the refrigerator. Put a picture of your child's favorite character on the plate. Place a picture of each new food your child has eaten on the plate.
- Have the child participate in preparing meals—such as stirring food.
- Create a chart in which you count and chart the mouthfuls a child has eaten, and show it on a graph your child can see. Set a target that can be reached and have a party with your child's favorite food when he reaches the target.

*Modeling.* Have a sibling model eating the new item.

*Identify nutritionally comparable foods.* Talk to your dietician for alternate foods that will provide the same nutritional value. There is no food group that can be avoided without compromising health, but there are individual foods that can be avoided without compromising health. Meats, for example, can be avoided as long as there are other good sources of protein present in the diet. A child who does not eat fruits but does eat many vegetables may still



receive adequate nutrition. A child who avoids bread but eats other cereals, grains, or starchy foods may still meet his carbohydrate needs.

### Outcomes of Intervention

Identify what is important for your child and your family. Common outcomes of intervention include both food related and quality of life outcomes. Food outcomes may include increased amount of food eaten, increased numbers of different foods eaten, and healthier food intake. Quality of life outcomes include a decrease in undesirable behavior, happier family meals, ability to go to others' homes and to restaurants, ability for a family to participate in mealtimes together and with friends, and decreased family stress.

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