

Nutrition Strategies for Children with Autism Spectrum Disorder

Introduction

- OT @ Northeastern State University, Muskogee, OK
- Integrity Pathways: Parenting Skill Development & Peer Support
- Nina Roofe, PhD, RDN, LD, FAND
- Ashley Iglesia, BS Nutrition, UCA in May of 2019



Autism Spectrum Disorder

- Neurodevelopment disorder
- Wide range of impairments in social communication
- Restricted and repetitive behaviors
- > 3 million cases in US per year
- No known cure
- Treatments to manage condition with varying degree of success
- Lifelong condition
- **Asperger's Syndrome:** affects ability to interact and communicate with other people
- **Autism:** development disorder, difficulties with social interaction, repetitive behaviors, speech and nonverbal communication
- **ADHD:** brain disorder, ongoing pattern of inattention, impulsivity, and hyperactivity

Nutrition Strategies

Gluten-Free Casein-Free Diet

- Gluten—seed storage proteins in cereal grains wheat, rye, barley, triticale (cross between wheat and rye); oats may be contaminated with gluten if grown in close contact with wheat, barley or rye
- Casein—protein in mammal's milk and cheese
- RDN scope of practice to evaluate child's nutrient needs and create individualized meal plan so nutrient needs are met while eliminating gluten and casein—*no RDN on website for Integrity Pathways*
- Label reading!
- Gluten is also in lip balm, laundry detergent, soap, shampoo, spices, sunscreen, stickers, stamps, envelopes, medicines, antibiotics, and toothpaste.

Meal Planning

DAIRY & GLUTEN FREE

MEAL PLAN

mydairyfreeglutenfreelife.com

B L D

Monday	Gluten Free Slow Cooker Pancakes*	Turkey BLT Roll-ups*	Potato Leek Soup*
Tuesday	Blueberry Muffins*	Roasted Sweet Potato Salad*	Vegan Buffalo Wings*
Wednesday	Paleo Friendly Banana Bread*	Zucchini Fritters*	Pot Roast Soup*
Thursday	Green Smoothie Breakfast Bowls*	Spinach, Shrimp & Avocado Salad*	Mac 'N Cheese & Peas*
Friday	Scrambled eggs & bacon	Grilled Gluten Free Pizzas*	Southwestern Tuna w/ Rice, Corn & Black Beans*
Saturday	Slow Cooker French Toast Casserole*	Asian Salmon Zucchini Noodle Bowl*	Gluten Free Baked Ziti*
Sunday	Maple Walnut Cheesecake Truffles*	BBQ Chipotle Turkey Meatballs*	Chicken Black Bean Enchiladas*



100 Gluten-Free Foods for Kids Grocery List

IMPORTANT: For all gluten-free products listed (ex. Gluten-Free Pasta or Gluten-Free Cereal), be sure the label reads "gluten-free" on packaging.

Breads & Grains

- Quinoa
- Rice (White or Brown)
- Rice Noodles
- Flax
- Grits
- Corn Tortillas
- Rice Crackers
- Gluten-Free Cereal
- Gluten-Free Pasta
- Gluten-Free Bread

*Check labels to be sure the corn tortillas you purchase do not contain gluten.
 *Avoid instant grits which may contain gluten.
 *Canyon Bakehouse, Uld's and Three Bakers are great brands for gluten-free breads.

Vegetables

(All fresh or frozen veggies. Feel free to add more to the list!)

- Potatoes
- Tomatoes
- Lettuce
- Green Beans
- Corn
- Broccoli
- Cauliflower
- Squash
- Eggplant (without any breading)
- Zucchini
- Carrots
- Bell Peppers
- Celery

Condiments

- Mayonnaise
- Mustard
- Honey Mustard
- Dijon Mustard
- Ketchup
- Relish
- Honey
- 100% Pure Maple Syrup
- Red Vinegar
- Balsamic Vinegar
- Lemon Juice
- Olive Oil
- Salt
- Pepper
- Gluten-Free Soy Sauce
- Gluten-Free Salad Dressing
- Gluten-Free Seasoning

*Some brands of mayonnaise, ketchup and mustard may contain gluten depending on what part of the world you live in. Be sure to check label.
 *Make sure the label on maple syrup reads 100% pure.

Meats (Not breaded, processed or found!)

- Chicken
- Beef
- Pork
- Turkey
- Veal
- Lamb
- Shellfish
- Fish
- Gluten-Free Deli Meat

*Boar's Head is a great brand for gluten-free deli meat.
 *Make sure there are no known allergies to shellfish before consuming.

Fruit

(All fresh, frozen or dried fruits. Add as many as you'd like to this list!)

- Apples
- Banana
- Oranges
- Grapes
- Watermelon
- Peaches
- Prunes
- Raisins

Spreads

- Almond Butter
- Peanut Butter
- Cashew Butter
- Apple Butter
- Nutella
- Fruit Preserves
- Jam
- Jelly

*Nuts used in spread should be plain without added seasonings for safety.

Snacks

- Popcorn
- Corn chips
- Dried Fruit
- Organic Applesauce
- Gluten-Free Animal Crackers
- Gluten-Free Pop Chips

*Check label for popcorn, dried fruit and corn chips to ensure the product is gluten-free.

Desserts

- Jello
- Tapioca
- Gluten-Free Pudding
- Gluten-Free Cookies

Beans

- Pinto
- Navy
- Kidney
- Black
- Lima
- Garbanzo
- Black Eye Peas
- Split Peas

*Preferably dried beans, however canned beans can also be used. Be sure to check labels for any traces of wheat.

Dairy

- Milk
- Yogurt
- Eggs
- Sour Cream
- Butter/Margarine
- Whipped Cream

*Check label when purchasing yogurt as some varieties may contain gluten listed as fiber.

Beverages

- Tea
- Cocoa
- Milk
- 100% Fruit Juice

Nuts & Seeds

- Almonds
- Peanuts
- Cashews
- Pecans
- Walnuts
- Pistachios
- Sunflower Seeds

*As previously mentioned, nuts should be plain without added seasonings to be safe. Also avoid any labels that read "may contain wheat" from cross contamination.

Notes

Probiotics

- Balanced gut flora is key to digestion and immune function
- Imbalance of gut flora due to lack of breast-feeding, antibiotic use
- Probiotics replenish beneficial gut bacteria, *Lactobacillus Acidophilus* and *Bifidobacter*—help break down food, make nutrients more available for absorption, relieve strain on digestive system
- Amino acid glutamine aids in gut healing, but may be contraindicated in autism due to protein deamination problems → ammonia
- Casein free probiotics? Probiotics grown on non-dairy medium with no cross-contamination

Dairy-Free Probiotics for Kids

- Klaire Labs Ther-Biotic Children's Chewable
- MegaFlora Kids Probiotic
- Renew Life Ultimate Flora Kids Probiotic
- Pure Encapsulations Probiotic 123 Powder

• Always consult the child's pediatrician or dietitian before beginning a probiotic regimen.



Sensory Diet

- Navigate our world through signals we interpret from our external and internal environments through our senses
- Gather this information, interpret the information, and respond to it
- Sight, smell, taste, hearing, touch, vestibular (balance), proprioception (body awareness), interoception (state of internal organs—pain, heat, illness, hunger, toileting)
- Individualized specific sensory needs

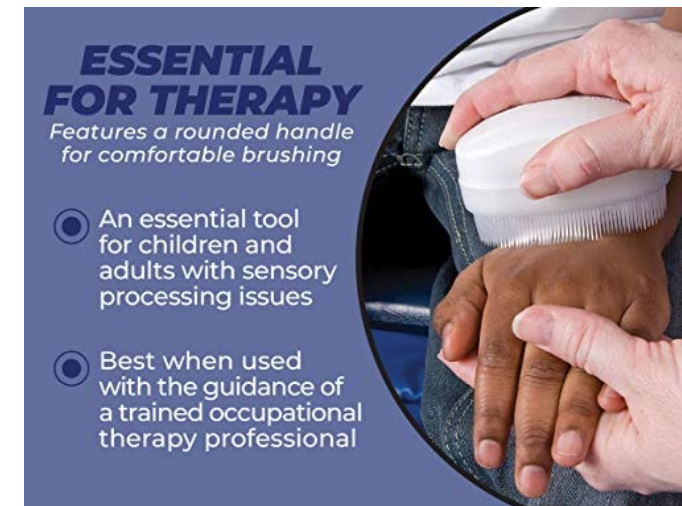
Sensory Seeking or Avoiding?

- Do you like to be barefoot? Does the surface matter?
 - Sand
 - Grass
 - Pavement
 - Rocks



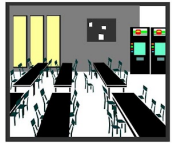
Sensory Diet

- OT Scope of Practice
- Evaluate child and determine status for each area
 - Sight, Smell, Taste, Hearing, Touch, Vestibular, Proprioception, Interoception
- Can be “seeking” for one sense and “avoiding” for another
- Design Intervention to develop age-appropriate coping skills and ways for child / family to navigate his/her world
- Uses play therapy to develop coping skills
- Brushing therapy



Example Sensory Diet Activities

When I have to:



go to the lunch room

I can do these activities:

before



heavy work activities

during



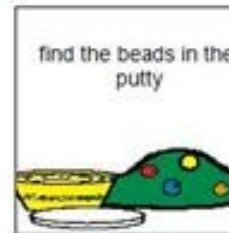
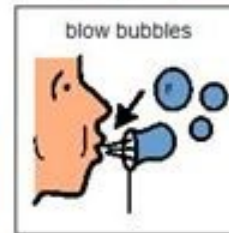
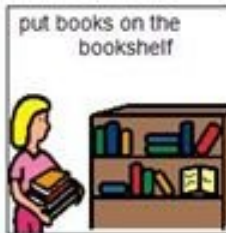
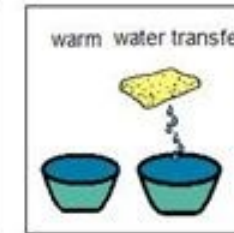
listen to quiet music

after



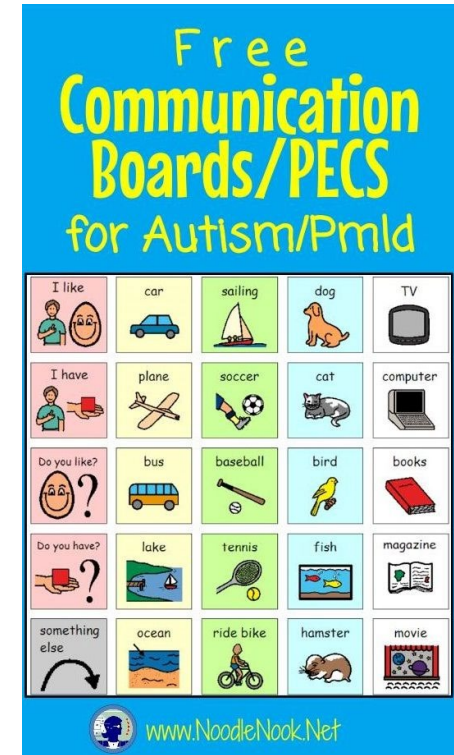
deep breaths

When I feel wiggly, I can...



Tips for Non-Verbal Children

- Keep talking to build language
- Sign language
- Communication board
- Pay attention to cues
- Use simple language
- Sit at the child's eye level
- Play, read books, sing, dance



Food Avoidance Issues

Picky Eaters

- Eat fewer than 30 foods
- Eat at least 1 food from almost every type of food texture
- Eat their favorite food every day and burn-out then stop eating the food → take a ~2 week break and start eating it again
- Tolerate new foods on their plate and willing to touch or taste it
- Eat a new food after ~10 exposures

Problem Feeders

- Eat fewer than 20 foods
- Eat fewer foods over time until they only accept 5-10 foods
- Refuse to eat foods from entire categories of textures
- Will eat the same food every day, but burn out and stop eating the food and will not resume after a 2 week break
- Won't tolerate a new food on their plate and not willing to touch or taste the food
- Cry or throw tantrum when offered a new food
- Need sameness and rituals around mealtimes
- Very inflexible about particular foods
- Unwilling to eat a new food after 10 exposures
- Will need long-term, extensive feeding therapy from multidisciplinary feeding team to resolve feeding issues

Feeding Therapy Programs

- **Multidisciplinary Team**

- Physician—medical exam to ID and treat any medical conditions
- Occupational Therapist
- Registered Dietitian Nutritionist
- Speech-Language Pathologist
- Behavioral Therapist

- **Intervention Plan**

- Factors contributing to feeding problem
- Strategies to address contributing factors
- Specific feeding treatment approaches
- Frequency of feeding therapy sessions
- Outcome goals for treatment and how to measure progress
- Therapist to provide therapy—who connects with child?
- Mode of communication between team members

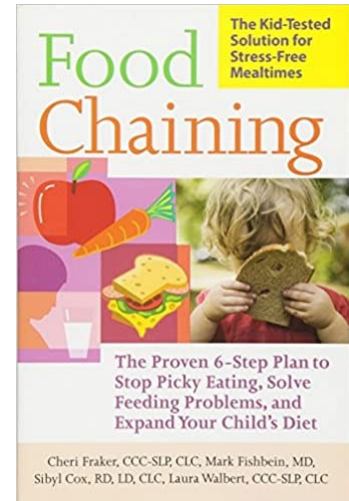
Step-by-Step Feeding Therapy Programs

• Food Chaining

- Specific reasons why children will eat only certain foods
- Color, texture, flavor, visual appearance
- Determines why child accepts foods and expands # foods accepted by introducing new foods similar to those he/she already accepts
- Gradually introduces foods slightly different, then a little more different, and so on
- Cheri Fraker, CCC-SLP; Mark Fishbein, MD; Sibyl Cox, RD, LD, CLC; & Laura Walbert, CCC-SLP, CLC

• Sequential Oral Sensory Approach to Feeding (SOS)

- Multidisciplinary
- 32 steps to eating a new food
- Tolerate, interact, smell, touch, taste, eat
- Dr. Kay Toomey, Pediatric Psychologist in Denver, CO



"The SOS Sequential Oral Sensory Approach to Feeding"
Presented by Dr. Toomey & Associates



Kay A. Toomey, PhD, pediatric psychologist and Clinical Director of SOS Feeding Solutions at STAR (Sensory Therapies and Research) Centre developed the SOS Approach to Feeding as a family-centered program for assessing and treating children with feeding problems.

Associate Presenters:
Bethany Kortsha, MA OTR



Who Should Attend: Speech Language Pathologists, Special Education Teachers, Occupational Therapists, Psychologists, Physical Therapists, Early Intervention Specialists, Nurses, Physicians, Dietitians and Mental Health Professionals.

Basic 3-day Course: SOS Approach to Feeding is a transdisciplinary program for assessing and treating children with feeding difficulties and weight/growth problems of all ages, with a special focus on children from 12 months to 5 years old. It integrates posture, sensory, motor, behavioral/learning, medical and nutritional factors to comprehensively evaluate and manage children with feeding/growth problems.

Advanced Workshops: Designed to further the skills of professionals who have attended the 3-day Basic SOS Approach to Feeding Course. The workshops will delineate special concepts and treatment variations for specific feeding problems. **If you attended the 3 day SOS Basic course previously, you will need to provide a copy of your certificate of completion to attend this advanced workshop.

Full Conference Package and Online Registration
<http://SOS2013.eventbrite.com>

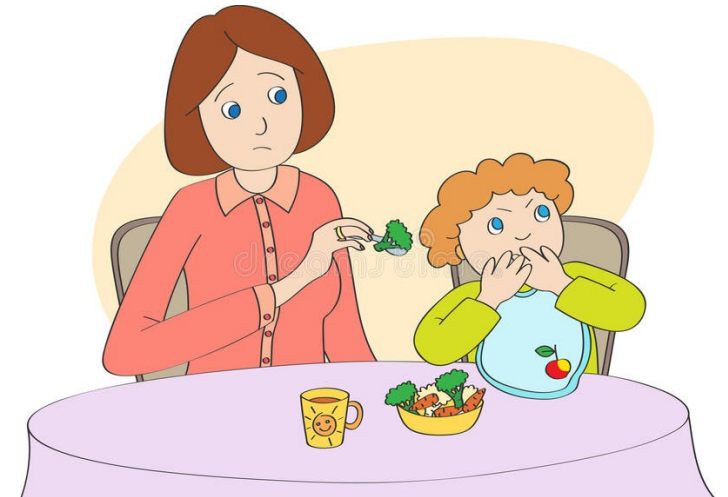


Fraser Valley Child Development Centre

Abbotsford: 604.822.2686 Chilliwack: 604.824.8760 Mission: 604.820.9536 www.fvcdc.org

Introducing New Foods

- Offer choices
 - Let your child feel control as much as possible
 - Offer choices and variety to pick from, e.g. chicken, beef, or turkey for protein; apple, orange, or banana for fruit
- Play with food
 - Use cookie cutters to cut sandwiches into fun shapes
 - Make faces on pizza with veggies
 - Finger paint with pasta sauce
- Texture matters
 - May like taste but not texture
 - Try blending or chopping tomatoes instead of sliced tomato
 - Try diced and chilled avocado instead of guacamole
- Take it one step at a time
 - Smell, touch, lick, kiss, mix new food with a favorite food
- Stay calm
 - Don't let meal time become a battle
 - Be patient
 - If after 12 introductions, your child may just not like that food
 - Make sure your child sees you enjoy your food



Pumpkin Muffins Recipe

- ½ cup brown rice flour
- ½ cup sorghum flour
- 1/3 cup canola oil
- ½ cup pumpkin (canned)
- ½ cup honey
- 1 teaspoon apple cider vinegar
- ½ teaspoon vanilla
- 2 eggs (omega-3 enriched Eggland's Best)
- 1 tablespoon Rumford baking powder
- ½ teaspoon baking soda
- ½ teaspoon xanthan gum
- ½ teaspoon cinnamon
- ½ teaspoon salt
- Preheat oven to 350°F. Place muffin liners in muffin tins.
- In a mixing bowl, combine flours and oil. Mix well. Add the remaining ingredients and mix well. Batter will thicken as it is beaten.
- Divide batter among 12 muffin liners. Bake for approximately 15 to 18 minutes, until a toothpick inserted in the middle tests clean. Enjoy!
- ***Light, moist and mildly spiced, these muffins are great for breakfast or as a snack. The ingredients canola oil and Eggland's Best eggs are a source of omega-3 fatty acids; and pumpkin is an excellent source of Vitamin A and antioxidants. This recipe is Gluten and Casein Free.***



Nutrient-Rich Smoothie Recipe

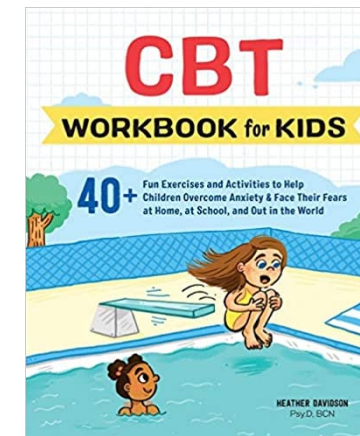
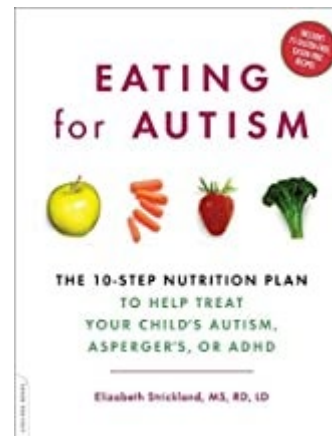
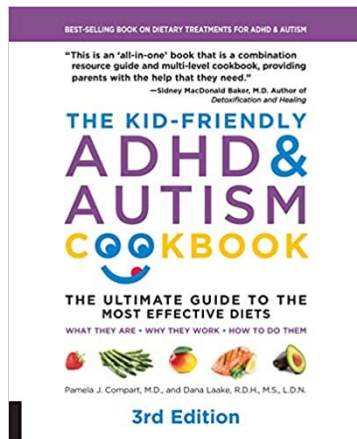
[Nutrient – Rich Smoothie – Elizabeth Strickland-Sauls, MS, RDN \(elizabethsauls.com\)](#)

- 1 cup plain yogurt
- ¼ teaspoon vanilla
- 2 cups fresh or frozen fruit
- 1 cup orange juice (fortified with calcium)
- 2 tablespoons honey
- Combine all ingredients in a blender. Puree until smooth. Makes 3 cups.
- ***This home-made fruit smoothie is a great source of calcium, protein, vitamins and minerals. If your child is taking a liquid or powdered form of a vitamin- mineral supplement you can add directly into his or her smoothie.***



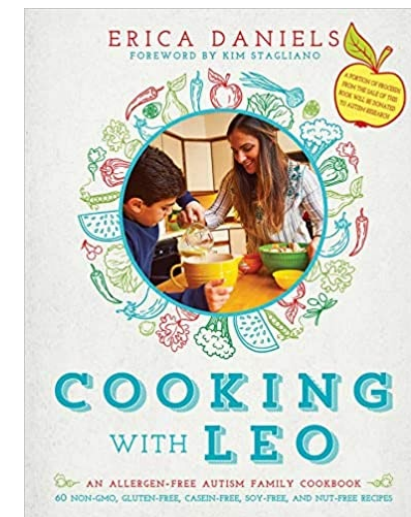
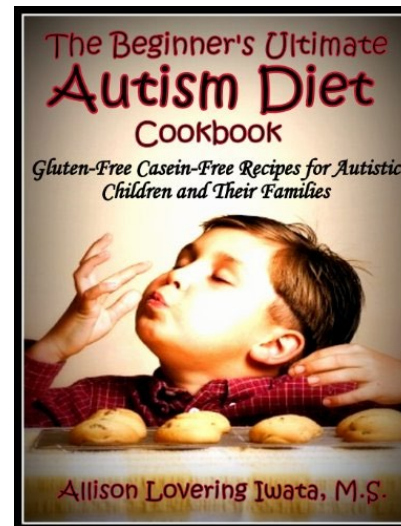
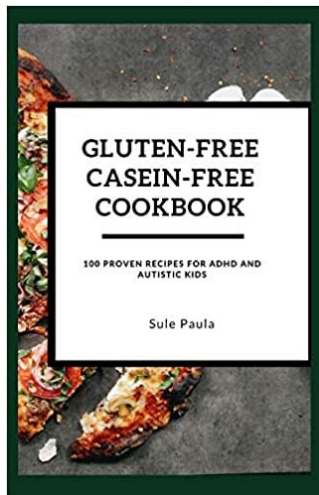
Resources

- *Eating for Autism: The 10 Step Nutrition Plan to Help Treat Your Child's Autism, Asperger's, or ADHD* by Elizabeth Strickland (75 recipes)
- *The Kid-Friendly ADHD & Autism Cookbook: The Ultimate Guide to the Most Effective Diets -- What they are - Why they work - How to do them* (3rd edition) by Pamela Compart and Dana Laake (150 recipes)
- CBT Workbook for Kids: 40+ Fun Exercises and Activities to Help Children Overcome Anxiety & Face Their Fears at Home, At School and Out in the World by Heather Davidson



Resources

- *Gluten-Free Casein-Free Cookbook: 100 Proven Recipes for ADHD and Autistic Kids* by Sule Paula
- *The Beginner's Ultimate Autism Diet Cookbook: Gluten Free Casein-Free Recipes for Autistic Children and their Families* by Allison Iwata
- *Cooking with Leo: An Allergen-Free Autism Family Cookbook* by Erica Daniels



Websites

- Autism Speaks: [Nutrition | Autism Speaks](#)
- Academy of Nutrition & Dietetics: [Autism Spectrum Disorders and Diet \(eatright.org\)](#)
- USDHHS: [Nutritional Therapy for Autism | NICHD - Eunice Kennedy Shriver National Institute of Child Health and Human Development \(nih.gov\)](#)

Meal Kits with GF Options

- Home Chef
- Sun Basket
- Green Chef
- Hello Fresh
- Freshly
- Plated
- Dinner is Served



Q & A Time



Thank-you!

- Nina Roofe, PhD, RDN, LD, FAND
- nroofe@uca.edu

