Introduction

- Missy
- Parents
- Professionals
- Who is stressed?
- Have a child with feeding difficulties?
  - Eats fewer than 20 foods?
  - Eats fewer than 5 foods?
Professionals: This workshop is insufficient to prepare you to offer feeding services.
Parents: this workshop is insufficient to prepare you to address severe issues without support.

Agenda
- Autism and feeding problems
- Necessary assessments before starting therapy
- Addressing feeding using ABA
- Funding for feeding therapy
- Additional resources
- Q & A

Autism and Eating
- Dr. Kanner's original diagnostic criteria included aberrant eating patterns (Kanner, 1943)
- 11 children with ASD
- 6 children with histories of severe feeding difficulties
  - Case 1, Case 8, and Case 11 long-standing concerns with feeding
  - Case 4 and Case 7 both vomited as infants
  - Case 5 was tube fed
What Do We See?

- Extremely limited diet:
  - chicken nuggets, gold fish, McD french fries
  - The all white diet
  - The crunchy salty diet
- Pureed only
- Grazes all day (rather than eat while sitting)
- Cannot bite off food
- Wants to be fed by an adult
- Only eats finger foods

Long Term Issues Associated with Feeding Problems

- Missed meals
- Malnourishment
- Failure to thrive or stunted growth
- Tube dependence
  - We see this less and less because of things like pediasure
- Problematic mealtime behaviors
Pediasure

- **https://pediasure.com/**
- Ingredients: Water, Sugar, Corn Maltodextrin, Milk Protein Concentrate, High Oleic Safflower Oil, Canola Oil, Whey Protein Concentrate. Less than 0.5% of the following: Soy Protein Isolate, Short Chain Fructooligosaccharides, Natural & Artificial Flavor, Cellulose Gel, Magnesium Phosphate, Potassium Chloride, Potassium Citrate, Calcium Phosphate, Calcium Carbonate, Potassium Phosphate, Tuna Oil, Salt, Cellulose Gum, Choline Chloride, Ascorbic Acid, Soy Lecithin, Monoglycerides, Potassium Hydroxide, m-Inositol, Carrageenan, Taurine, Ferric Sulfate, dl-Alfa-Tocopheryl Acetate, L-Carnitine, Zinc Sulfate, Calcium Pantothenate, Niacinamide, Magnesium Sulfate, Thiamine Chloride Hydrochloride, Pyridoxine Hydrochloride, Riboflavin, Lutein, Cupric Sulfate, Vitamin A Palmitate, Folic Acid, Chromium Chloride, Biotin, Potassium Iodide, Sodium Selenate, Sodium Molybdate, Phylloquinone, Vitamin D3, and Cyanocobalamin.

Ingredients in Our Meals

- Clean protein (not processed, hormone free)
- Vegetable (not processed, fresh or frozen)
- Fruit (not processed, not sugared, fresh, or frozen)
- Grain (whole grains, not processed, GF if needed, CF if needed)

Issues Associated with Feeding Problems

- Added family stress
Is Feeding Intervention Warranted?

- Child height and weight
- Child skin color
- Food variety
- Meal time behaviors
- Parent Stress

Is Feeding Intervention Warranted?

- Major cases require attention by experts and intensive intervention
- Major feeding disorder
  - Fewer than 30 total foods
  - Limited textures
  - Under height and/or weight
  - Severe mealtime behavior (gagging, emesis, aggression, SIB)

Types of Feeding Disorders

- Physiological (Stevenson, 1995)
- Non-Physiological (Satter, 1990)
- Combination (Ramsay, 1995)
Using ABA to Address Feeding

Assessment (Underlying Issues)
- Medical
- Allergic/Reactive
- Nutritional Deficiency
- Structural/Mechanical

GI Issues
- Children with autism have been shown to have GI issues
- GI treatment should follow standard medical protocol
- Some have said a unique GI condition exists among children with autism
- GI Diseases
  - Crohn’s, IBD, Colitis
  - Reflux
  - EE
**Constipation**
- We see too many children on Miralax (for life!)
- Miralax.com
- Polyethylene Glycol 3350
- Other natural remedies are available
  - Visit with your health care practitioner
  - Fish oil
  - Coconut oil
  - Natural Calm

**Food Allergies**
- Celiac Disease
- Phenylketonuria (PKU)
- Maple Syrup Syndrome

**Food Allergies/Food Reactions**
- Allergists can assist here
- Physicians can assist with MRT
- MRT Testing
  - MRT testing is helpful for food intolerance and sensitivity that is not caused by food allergies
  - Reveals foods that may cause inflammation
Nutritional Assessment

• Assess for deficiencies
• Zinc
• Calcium
• Magnesium

Special Diets

• Children with ASD may be on special diets
• Special diets are for food intolerances or allergies
• Special diets may help children feel better which may help them be ready to learn
• PKU, autism, cures ….

Most Common Food Allergens

(mayoclinic.com)

• Milk
• Eggs
• Peanuts
• Tree nuts (such as almonds, cashews, walnuts)
• Fish (such as bass, cod, flounder)
• Shellfish (such as crab, lobster, shrimp)
• Soy
• Wheat
GFCF
- Gluten free and casein free
- Proteins believed to be intolerable
- Not limited to children with ASD
- Variations
  - Soy free
  - Corn free
  - Rice free
  - Nut free

SCD (wikipedia.com)
- Specific Carbohydrate Diet
- Restricts the use of complex carbohydrates (disaccharides and polysaccharides) and eliminates refined sugar, gluten, and starch from the diet
- Diet is promoted as a way of reducing the symptoms of irritable bowel syndrome, Crohn's disease, Ulcerative Colitis and autism

GAPS Diet
- The premise of the GAPS diet is that there is a correlation between the state of your intestinal flora and your brain chemistry
- Avoid foods on the do not eat list and repopulate the gut with good bacteria
- Bone broth
- Good quality fat
- Easily digested vegetables
- Boiled meats
- Fermented vegetable juice
Structural or Mechanical Assessment
- Speech Therapists and Occupational Therapists
- Swallow study
- Oral motor assessment
- Chewing ability
- Sensory processing

Behavior Assessment
- Determine the function of the feeding behaviors by completing FBA
- Most often:
  1. Escape non-preferred
  2. Obtain preferred
  3. Obtain attention
- Complete at least one Preference Assessment

Behavior Intervention Plan (BIP)
- Modify the antecedents
- Teach a new behavior
  - Most often communication
  - Most often replaces problem behavior
  - May be a new skill (independence)
- Modify consequences
  - Change how you respond to junk behavior
  - Reinforce the new behavior
  - Reinforce appropriate behavior
BIP for Feeding

- Change antecedents
- Environment needs to be appropriate
- Child needs to be hungry
- Child needs to have a regular eating schedule—no questions asked
- Teach a new behavior
- Reinforce
- And now for a scene from my feeding clinic

Antecedent Modifications

1. Prepare for Difficult Times
2. Positive Feeding Environment
3. Clear Meal Time Rules
4. Novel foods are presented in small portions using Discrete Trial Training (DTT)
5. Establishing Operations
1. Prepare for Difficult Times
   - Family Stress
     - Identify reinforcers for family
     - Prepare families for what is to come
   - Child Stress
     - Depending on age of child, prepare child
   - Therapist Training
     - CPR
     - Challenging Behavior
   - Prepare for stress

2. Positive Feeding Environment
   - Appropriate Seating
3. Clear Meal Time Rules

- Sitting for all meals
- Appropriate table manners
- Use utensils
- Use napkin
- No eating off table
- No licking dishes
- Done is done
4. Novel Food Presentation
• Discrete Trial Training
• Antecedent, Behavior, Consequence
• Take a bite, child eats bite, child receives reinforcement
• How do you try new foods?

5. Establishing Operations
• Hunger Inducement
• Consistent meal time
• No food 2 hours before or after intervention
• Limit liquid consumption
• Reinforcer Deprivation
• Limit access to planned reinforcer for at least 1 week before intensive intervention

Why is this step important?
Why doesn’t it work on its own?
Why can’t parents allow their child to get hungry?
Withdrawal symptoms
Target Behaviors

- Accepting novel foods
- Eating with a ______
- Drinking from a ______
- Sitting during meal time
- Coming to table when called

Instructional Techniques

- Shaping
- Modeling
- Prompting and prompt fading
- Size fading

Shape Acceptance of New Food

- This intervention is a well-established intervention in the feeding literature (Kerwin, 1999)
- Introduce new food one bite at a time
- Variations of “acceptance”
Model

- Live model of each shaping step
- Yes, model how to appropriately spit food out
- Use trash can as an S^D for spitting

Prompt

- Physically prompt child to pick up utensil
- Physically prompt to move bite towards mouth

Prompt Fading

- Fade physical prompts
  - Touch wrist
  - Tap utensil
  - Open mouth
  - Tap plate
  - Point to plate
Size Fading

- Regular child size bite
  - Touch lip
  - Touch tongue
  - In mouth and spit
- Microscopic bite (one green pea or smaller)
  - Chew and spit
  - Chew and swallow

Adult Bite Size

Child Bite Size
Texture Fading
- Puree
- Finely chopped
- Chopped
- Bite Size

Modify Consequences
- Reinforce food acceptance using shaping protocol
  1. DRA
  2. Sequential reinforcement
  3. Simultaneous reinforcement
  4. Negative reinforcement
- Escape Extinction

DRA
- Reinforce acceptance on FR:1
- Yes, reinforce 30 seconds for each trial
- Quickly modify the schedule of reinforcement
DRA: Note

- Easier to use reinforcer that:
  - May be accessed at the table
  - Has an easy stop and start
  - Is controlled by an adult (e.g., remote)
- Great success with iPhone and iPad
  - Cupcakes, pizza, toast
  - Wheels on the bus, Itsy Bitsy Spider
  - Wooden puzzles
  - YouTube
  - Other movies

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Attention as a Reinforcer

- This intervention is well established in the feeding literature (Kerwin, 1999)
  - Food intake increases, weight gain observed, and results maintain
- When child accepts food, positive attention is given
  - Yay! You took a bite!
  - Yummy bananas!
  - Big girl eating peas!

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Sequential Reinforcement

- When child engages in desired feeding behavior, provide access to highly preferred food
- Quickly modify the schedule of reinforcement
  - Require more bites of non-preferred
  - Provide smaller bites of preferred
**Simultaneous Reinforcement**
- Mix preferred food with non-preferred foods
- Do not hide food
- Examples:
  - Raw veggies (non-preferred) dipped in hummus (highly preferred)
  - Veggies (non-preferred) on pizza (highly preferred)
  - Chips (highly preferred) dipped in guacamole (non-preferred)

**Negative Reinforcement**
- Allow 30 second break from the table contingent on bite acceptance
- Usually difficult to get child back

**Escape Extinction**
- Child does not get out of trying new food
- Non-removal of the spoon/fork/utensil
- Well established intervention
On-Going Therapy

- If you treat within an on-going ABA program
- Child already responds to ABA
- Child has positive experience with team
- Can be a program just like putting on shoes

Advantages

- Much less stressful for everyone
- Baby steps are achieved
- Can work on it every day (or every therapy session)

On-Going Therapy

- Disadvantages
  - Baby steps
  - Slow progress
  - What if child has weight issue?

Intensive Therapy

- Requires
  - Planning
  - Preparation

Advantages

- Extremely effective
- Very quick results
- Parents see effectiveness
- Long-term maintenance
Intensive Therapy

- Disadvantages
  - Extremely stressful
  - Extremely difficult behaviors
  - Severe food withdrawals in a few situations
  - A parent withdrew once
  - One parent wanted to quit
  - Does not work if parents are not on board
  - Does not work if parents are not behavioral or if they don’t want to hear their child cry

Data Collection

- Total Bites Presented
- Independent Bites (accepted within 5 seconds)
- Prompted Bites
- Consumed Bites
- Expelled Bites
- Type of food
- Challenging Behavior
  - Gag, Emesis, Aggression, Disruption, SIB, Cry, Verbal, Vocal, Other delay

Funding

- Insurance
  - Autism coverage in some states
  - If no disability then only approved by SLP or OT
- IEP/IFSP
  - Functional skill
  - Affects education
- Grants
  - State DD centers
- Non-profits
Summary

- Rule out underlying issues
- Assess function of behavior
- Modify antecedents (prepare and plan)
- Reinforce acceptance combined with shaping
- Intensity matters
Resources

- Finding a good GI doc
- Finding a good SLP or OT
- Other Behavioral Feeding Resources
  - Clinic 4 Kidz
  - CARD Feeding Clinics
  - Marcus Institute
  - Kennedy Krieger
  - University of Nebraska