FEEDING THE CHILD ON THE AUTISM SPECTRUM

Objectives
1. List at least 5 problems that children with ASD have that make feeding especially difficult for them;
2. Identify at least 2 components of the Adaptation of the SOS Approach to Feeding for children with ASD;
3. List at least 3 hierarchy strategies for children with ASD

STATEMENT OF FINANCIAL AND NON-FINANCIAL RELATIONSHIPS

Bethany Korsha, OTR
• Paid Speaker for Toomey & Associates, Inc.

Dr. Toomey
• Paid Consultant for Nestec, a division of Nestle (Gerber Child Advocate/Developmental Panel member);
• Owner, Toomey & Associates, Inc. and the SOS Approach to Feeding program
• Founding Medical Professional Council Member with Feeding Matters (unpaid)
• PFD Alliance Committee Member
Prevalence Comparisons

Fombonne (2003)
• PDD NOS estimated @ 15/10,000
• Asperger's estimated @ 2.5/10,000
• ALL PDD's estimated @ 27.5/10,000

Centers for Disease Control (2007)
• One in 150 children is diagnosed with an Autism Spectrum Disorder (~ 67 per 10,000)

Australian Advisory Board on Autism Spectrum Disorders (Wray and Williams, 2007)
• 62.5 children per 10,000 (aged 6-12 years)
• 1 child with ASD per 160 children

Taylor, Jick, Maclaughlin (2013) -UK
• Population study using the UK General Practice Research Database (GPRD)
• Annual prevalence rates for each year were steady at approximately 3.8/1000 boys and 0.8/1000 girls (38 in 10,000; 8 in 10,000)
• Annual incidence rates each year were also steady at about 1.2/1000 boys; 0.2/1000 girls
• Fivefold increase in the annual incidence rates of autism occurred during the 1990s in the UK
• Plateau’d and steady since 2000

Baio et. al. (2014) & Baio et. al. (2018)
• 14 States total participating in data collection regarding ASD in 2010
  • AL, AZ, AR, CO, FL, MD, MO, NJ, PA, SC, UT, WV, WI
• 363,749 children across 11 sites had full data available
• 11 States total participating in data collection regarding ASD in 2014
  • AZ, AR, CO, GA, MD, MO, MN, NJ, NC, TN, WI
• 325,483 children across 11 sites had full data available
Child records are assessed at 8 years of age, as this is the age by which the majority of children will have been diagnosed with ASD. Involves case review of medical records, developmental specialists visits and school/education records. Cases “flagged” based on words indicating developmental difficulties. Cases then reviewed for data/evaluations which meet the DSM IV-R criteria for an Autism Disorder diagnosis (Autism, PDD, Asperger’s).

<table>
<thead>
<tr>
<th>YEAR</th>
<th># OF SITES/STATES</th>
<th>PREVALENCE (per 1,000 children)</th>
<th>RANGE</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>6</td>
<td>6.7</td>
<td>4.5 – 9.9</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2002</td>
<td>14</td>
<td>6.6</td>
<td>3.3 – 10.6</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2004</td>
<td>8</td>
<td>8</td>
<td>4.6 – 9.8</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2006</td>
<td>11</td>
<td>9</td>
<td>4.2 – 12.1</td>
<td>1 in 110</td>
</tr>
<tr>
<td>2008</td>
<td>14</td>
<td>11.3</td>
<td>4.8 – 21.2</td>
<td>1 in 88</td>
</tr>
<tr>
<td>2010</td>
<td>DSM IV-TR</td>
<td>14.7 Boys = 23.7; Girls = 5.3</td>
<td>5.7 – 21.9</td>
<td>1 in 68 (range = 1 in 4.5 to 1 in 175)</td>
</tr>
<tr>
<td>2014</td>
<td>DSM V</td>
<td>16.8 Boys = 26.6; Girls = 6.6</td>
<td>13.1 – 29.3</td>
<td>1 in 59</td>
</tr>
</tbody>
</table>

For the children with diagnosed ASD by the age of 8 years:
- Median Age of a Comprehensive Evaluation =
  - ≤ 36 months (3 years) = 44%(2010); 42% (2014)
  - 37-48 months (3-4 years) = 20%; 19%
  - > 48 months (4 years) = 36%; 39.1%
- Mention of a developmental concern being present about this child by the age of 3 years = 89% (2010); 85% (2014)
- Median Age of FIRST evaluation = 44 months (3 years, 8 months in 2010); 52 months (4 years, 4 months in 2014)
Baio et.al. (2014 & 2018)
For the children with diagnosed ASD by the age of 8 years:
- Median Age of Diagnosis (2010) =
  - Autism (43%) = 4 years (48 months)
  - PDD (46%) = 4 years, 2 months (50 months)
  - Asperger’s (11%) = 6 years, 2 months (74 months)
  - All Subtypes (72%) = 4 years, 5 months (53 months)
- Median Age of Diagnosis (2014) =
  - Autistic Disorder (48%) = 46 months
  - ASD/PDD (46%) = 56 months
  - Asperger’s (6%) = 67 months
  - All Subtypes (72%) = 4 years, 5 months (53 months)
- North Carolina diagnose ASD = 37 months (2014); 40 months (2018);
  Missouri latest 2014 = 59 months; Arkansas in 2018 = 59 months

Baio et.al. (2014 & 2018)
- Median # of evaluations by 8 years of age
  2010 = 6 (range = 4 to 9 evals)
  2014 = 5 (range = 3 to 10 evals)
- >½ of all the children in Special education in these states have an ASD diagnosis
  (2010 range = 30% Colorado – 69% Maryland)
  (2014 range = 37% Wisconsin – 80% Tennessee)

Baio et.al. (2014 & 2018)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PREVALENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 to 2004</td>
<td>19.5% increase</td>
</tr>
<tr>
<td>2004 to 2006</td>
<td>12% increase</td>
</tr>
<tr>
<td>2006 to 2008</td>
<td>25.5% increase</td>
</tr>
<tr>
<td>2008 to 2010</td>
<td>30% increase</td>
</tr>
<tr>
<td>2010 to 2014</td>
<td>15.8% increase</td>
</tr>
<tr>
<td>2000 to 2014</td>
<td>158% increase</td>
</tr>
</tbody>
</table>
Children on the autism spectrum frequently struggle to eat

- Estimates of feeding difficulties in children on the Autism Spectrum range from 60% to 88% depending on who is asked about the feeding problems and how the challenges are measured.

PARENT REPORT

Whiteley et al. (2000)
- Parent survey of 100 children with ASD
  - 83% of children ate a restricted repertoire of foods as their core diet

Williams, P. G., et al. (2000)
- Parent survey of 100 children with ASD
  - 67% said their children were “picky eaters”
  - 69% of children wouldn't try new foods
  - 60% of children wouldn't eat new foods

Kerwin et al. (2005)
- Parent survey of 89 children with PDD
  - Strong food cravings (67.4%)
  - Has foods which are strongly disliked (61.8%)
  - Eliminate previously eaten foods from diet (56.2%)
  - Unusual eating habits (53.9%)
  - Gags (32.6%)
  - Becomes agitated or aggressive at meals (19.1%)
  - Needs distraction to eat (18%)
• Dominick et al. (2005)
  • 67 children with ASD and 39 children with language disorders ages 4-14 years
  • 88% had atypical eating which started prior to 3 years of age
    • vs only 16% of children with language disorders

• Seiverling et al. (2018)
  • 302 children presented to Developmental Agency sorted into those with ASD and Language Delay-not ASD (9 months to 3 years old)
  • 60.93% of the children with ASD had at least one feeding problem (59.44% of children with Language Delays)
    • Food selectivity by Texture
    • Food selectivity by Type
    • Food refusal
    • Overstuffing

Parent Report

Zickgraf & Mayes (2019)
• 1112 children with ASD aged 1-17 years old given Checklist for Autism Spectrum Disorder (C ASD)
• Atypical eating behaviors reported in 70.5%
• 4 factors associated = age (1-3 years most common), increasing severity of ASD symptoms, poor appetite, constipation
Most common mealtime behavior problems reported by parents

1. Fear of trying new foods
2. Rigid routines around mealtimes
3. Food refusal
4. Difficulties with texture management
5. Disruptive behaviors

Hubbard et. al. (2014) – compared 53 children with ASD & 58 typically developing children (3-11 years)
• Primary reason for food refusal in BOTH groups = Texture
  • ASD = 77.4% rejected foods due to texture; Typically Developing = 36.2% rejected due to texture
  • 49.1% ASD vs 5.2% TD reject due to taste/smell
  • 45.3% ASD vs 25.9% TD reject due to foods being a mixed texture
  • No differences in food refusal due to temperature, color or foods touching

3 DAY DIET HISTORIES
• Restricted dietary variety is the most frequently reported dietary problem in children on the Autism Spectrum.
• Fruits and vegetables were reported as the least frequently eaten food groups.

Emond et al. (2010)

- Avon Longitudinal Study of Parents and Children in England
- 14,062 live births born from 1991 to 1992
- Data analyzed through 11 years of age
- 79 children diagnosed with ASD by age 11 years (identified by multidisciplinary assessment and/or from a school ASD identification project started in 2003)
- Median age of referral = 2 years 4 months
- Median age of diagnosis = 3 years 9 months

Emond et al. (2010)

- By 54 months (4.5 years), 8% are on a special “allergy” diet compared to 2% of controls
- At 38 months (~3 years), diet histories indicate no differences between children with ASD and control in the reported intake of:
  - Calories or macronutrients
  - Minerals (except they consume less Iodine)

Emond et al. (2010)

- However, children with ASD did have differences in Vitamin intake because they ate fewer salads or fresh fruits
  - Less Vitamin C \( (p = .007) \) and \( D (p = .004) \)
  - Less Vitamin B6 \( (p = .012) \)
  - Less Carotene \( (p = .042) \)
- And if you look at children older than 3 years ...
Bandini et.al. (2010)

CHAMPS = Children’s Activity and Mealtime Patterns Study

- N= 111; 58 typically developing children and 53 children with ASD; 3-11 years old
- If ASD, have significantly more food refusal and more limited food repertoires
- + Inadequate intakes of: Vitamins A, C, D; Minerals Zinc and Calcium; and fiber
- only 4 of 53 children ate the same food 4-5 times a day

Children with ASD often present first with feeding difficulties

Emond et.al. (2010). - Avon Study

- Food Frequency questionnaires at 6, 15, 24, 38 and 54 months of age.
- Content of diet assessed at 38 months
- Weighed and measured at 7 years of life.

Emond et.al. (2010)

Significant differences in Feeding if later diagnosed with ASD =

- Later introduction of solids ($p = .004$)
- Described as “slow feeders” at 6 months ($p = .04$)
- From 15-54 months of age, consistently reported as “difficult to feed” ($p < .001$)
Emond et al. (2010)

• From 15-54 months, consistently reported to be “very choosy” ($p < .001$)
• From 15 months, had a significantly less varied diet, which became increasingly more different than controls ($p < .002$)
• By 24 months, are more likely to have a different diet from their family than controls

Olsson et al. (2013)

• 161 typically developing children and 190 children diagnosed with ASD by 24 months, as part of a longitudinal study
• Reviewed early records from Child Health Centers (Sweden) → seen by MD/Nurse every other month for first year, 12 months and 18 months
• 44% of children who went on to receive an ASD diagnosis had 2 or more consultations regarding problems with feeding + crying and/or feeding + sleeping before the age of 2 (vs 16% in the comparison group)

Olsson et al. (2013)

• “the presence of severe or atypical feeding problems ... should alert professionals to a possible underlying autism spectrum disorder” pg636
Why is eating so much more challenging for Children on the Autism Spectrum?

Eating is the most difficult human behavior

1. Organ Systems
   Issues/Medical

Prevalence of G.I. tract symptoms in children on the Autism Spectrum is reported to range from 9 to 70%
1. Chronic abdominal pain
2. Constipation
3. Chronic diarrhea
4. Gastroesophageal Reflux Disease

1. Organ Systems Issues/Medical

Breshnahan et al. (2015) – longitudinal study
- 195 children with ASD, 4636 children with developmental delays, 40,295 typically developing
- If have ASD, Odds Ratios for GI problems are increased as follows (compared to non-ASD):
  - Constipation = OR of 2.7
  - Food allergy/intolerance = OR of 1.7
  - Diarrhea = OR of 2.3 (between 18-36 months)
  - Any GI problem = OR of 2.6

1. Organ Systems Issues/Medical

McClaffery et al. (2015)
- Report that the results of the 2012 National Health Interview Survey reveal that 12% of children under 18 years in the USA are being treated with complementary therapies = vitamins, minerals, other supplements, massage or homeopathic treatment
  - 50% of children with a chronic illness
  - 39% of children with ASD (Akins et al. 2014)

1. Organ Systems/Medical

Hubbard et al. (2014)
- 53 children with ASD & 58 typically developing children ages 3-11 years
  - 20.75% of children with ASD on a special diet and none of the TD children were

Akins et al (2014)
- 453 children with ASD & 125 children with developmental disability
  - 24.7% of children with ASD use dietary supplements
    - 8.6% use antifungal, chelation, B12 injections or secretin
1. Organ Systems/Medical

Lange et al. (2015)
- UK survey of parents of children with ASD
- 80% of children on some type of dietary intervention (special diet, vitamins or supplements)
  - 29% were on a GF/CF diet

Sathe et al (2017) – review of nutrition interventions in ASD
- Little evidence to support Omega 3 supplementation
- Inadequate evidence re: digestive enzymes
- Unclear evidence for methyl B12 supplementation
- Data to assess effects of GF/CF diets are limited due to methodological issues and bias

GF/CF diets
- Hyman et al. (2016) double blind study on GF/CF diet in 14 children across 30 weeks – no significant difference in ASD symptoms
- Piwowarczyk et al. (2018) review of 6 randomly controlled studies (214 children) – no statistically significant differences between children with ASD on the GF/CF diets and those not except for:
  - 1 study showed significant improvement in Communication subscale of ADOS & social interaction of Gilliam Autism Rating scale
2. Muscle/Motor Challenges

- Ming, X. et. al. (2007)
  - Retrospective review of medically reported motor symptoms for 154 children with ASD
- Hypotonia (51%)
- Motor Apraxia (34%)
  - Oral apraxia included excessive drooling, open mouth during resting state, inability to pucker lips, inability to lick lips with tongue, inability to blow a bubble
- Toe walking (19%)
- Gross Motor Delay (9%)

2. Motor/Muscle Challenges

- Lloyd et. al. (2013)
  - 162 children with ASD ages 12 to 36 months
  - Gross motor delays
    - If 12-24 months old => 3.5 months delay on average
    - If 25-30 months => 5.13 months delay
    - If 31-36 months => 9.18 months delay

- Fine Motor delays
  - If 12-24 months old => 3.9 months delay on average
  - If 25-30 months => 8.38 months delay
  - If 31-36 months => 12.77 months delay
2. Muscle/Motor Challenges: Posture

Memari et. al. (2014) – reviewed 14 studies

• Decreased static and dynamic postural stability, functional balance
• Higher postural instability in medio-lateral compared to antero-posterior direction
• Structural and functional impairments in the cerebellum and the basal ganglia seem to be responsible for postural control impairments

2. Motor/Muscle Challenges

Kilroy et. al. (2019)

• The Action Observation Network (AON) is compromised in ASD
  • AON = areas of the brain that allow for observing other’s actions, learning from those observations and executing those actions (human homologue to "mirror neurons" originally found in monkeys)
  • Inferior frontal gyrus, premotor cortex, inferior parietal lobule, posterior middle temporal gyrus and superior temporal gyrus

2. Motor/Muscle Challenges

Kilroy et. al. (2019) – summary of data suggests abnormal morphology of cortical circuits critical to motor control and learning, along with impairments in white matter tracts connecting grey matter and subcortical regions, and increased clustering and path lengths reflect unbalanced and inefficient network organization leading to:

• Difficulties with motor imagery
• Deficiencies in motor learning
• Sensory motor impairments
• Problems with apraxia; difficulties in imitation
3. SENSORY PROBLEMS

• Children on the autism spectrum struggle with movement related sensory difficulties, including postural instability.
  • Whyatt & Craig (2013) – posit underlying difficulties for children with ASD in appropriately using visual information to guide movement
  • Memari et. al. (2014) - review indicated over reliance on visual input for postural stability

3. Sensory: Vestibular & Proprioception

• Children on the autism spectrum also have sensory modulation challenges negatively impacting their postural stability and motor movements.
  • Schoen, S. et. al. (2009)
    • Sensory under responsivity in the vestibular and proprioceptive domains was more significant in the group of children with autism spectrum disorder on physiologic electro-dermal measures of arousal

3. Sensory Problems: Praxis

• Praxis issues are hypothesized to play a significant role in the restricted, repetitive patterns of behaviors, interests or activities exhibited by children with ASD (Roley et al, 2015)
  • Visuopraxis is a pattern that refers to the ability to skillfully plan actions that are heavily dependent on vision.
  • Somatopraxis refers to the ability to organize actions in relation to one’s own body
  • The vestibular–postural–bilateral integration and sequencing pattern refers to smoothly coordinated head, neck, and eye movements in concert with postural and bilateral control (page 6092)
3. Sensory Problems: Praxis

- 89 children with ASD, ages 4-11 years, given the SIPT and Sensory Processing Measure (SPM)
- Significant impairments on SIPT in: Perception and Vestibular Bilateral Integration and Sequencing functions; Praxis on Verbal Command function; Imitation Praxis (worst score)
- These were all correlated to poorer social performance in school and at home on the SPM

3. Sensory: Auditory Differences

Tan, Y. et.al. (2012)
- 156 children with autism & 141 match controls with language delay
- All children on the autism spectrum demonstrated auditory abnormalities including auditory hypo-sensitivity, auditory hyper-sensitivity and phonophobia (fear of loud noises)

Baum et. al. (2015) – review
- Decreased brain activation for perception of language and INCREASED activation during perception of songs

3. Sensory: Visual Differences

Kana et. al. (2006)
- 12 young adults with ASD and 13 matched control underwent MRIs during verbal and visual tasks.
- ASD persons activated visual pathways of the brain during all tasks, even when that task did not require visualization (normal controls did not use the visual areas of their brain)
- Also had a decrease in functional connectivity in the frontal–parietal network as compared to control subjects.
  = “thinking in pictures”
3. Sensory: Visual Differences

Baum et. al. (2015) – review
• Normal or enhanced performance in tasks reliant on analysis of stimulus detail, but struggle when the details have to be integrated to form a holistic image
• Over reliance on visual input to understand and complete tasks
• Have altered neural processing of faces, which is correlated to abilities in social communication

Smell and Taste Differences

Bennetto et. al. (2007)
• Significantly less accurate than controls in identifying sour tastes
• Marginally less accurate for bitter tastes
• Not different in identifying sweet and salty
• Taste detection thresholds via electrogustometry were equivalent.
• Olfactory identification was significantly worse

3. Sensory: Tactile Differences

Cermak et. al. (2010)
• Review of 12 research studies regarding food selectivity and nutritional adequacy in diets of children with autism spectrum disorders. Findings included:
  1. Restricted food range due to food texture, temperature, and appearance;
  2. Increased acceptance of low texture foods such as those had that been puréed;
  3. Problems with texture restriction frequently beginning in the first year of life; and
  4. Increased oral defensiveness
3. Sensory: Tactile Differences

Baum et. al. (2015) – review

• Decreased brain responses in the posterior cingulate and insula to pleasant and neutral textures on the hand
• Greater responses to stimulation with an unpleasant texture

3. Sensory Problems: General

Sanz-Cervera et. al. (2017)

• Compared 21 children with ASD, 21 with ADHD, 21 with ASD and ADHD, and 27 typically developing children (TD) ages 5-8 years old
• 53.58% of children with ASD received typical scores on the Sensory Processing Measure vs 93% of TD; 50% of ADHD
• 42.42% received Definite Dysfunction or Some Problems (Hearing subtest was worst = 61.9%) vs 7% of TD; 50% of ADHD
• Touch & Praxis were also highly impaired

3. Sensory Problems: Multi-sensory

Baum et. al. (2015) – review

• Significant difficulties in Multi-sensory processing (= taking in information across multiple sensory systems, then coordinating and integrating that information)
• Evidence for differences in connectivity between distant brain regions in children with ASD
• Fronto-striatal tracts and parieto-occipital tracts
• Audio-visual (multi-sensory) processing issues impact eye gaze and speech development
4. DEVELOPMENTAL

• Language deficits
• Psycho-Social deficits especially with joint referencing and social reciprocity
• Cognitive deficits (Baio et. al. 2014; 2018)

<table>
<thead>
<tr>
<th>IQ Scores</th>
<th>2010</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 70 = Intellectual Impairment</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>71-85 = Borderline</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td>&gt; 85 = Normal</td>
<td>46%</td>
<td>44%</td>
</tr>
</tbody>
</table>

4. Developmental: Language

Mody & Belliveau (2013) – summarize issues

• Range from being nonverbal to using highly idiosyncratic language with echolalia and unusual prosody (tone or inflection).
• Some language skills including articulation, vocabulary, and grammar = relatively intact.
• Difficulties in abstract use of language = clearly evident.
• The typically developing child uses language for social reasons to initiate conversational interactions. In contrast, the child with ASD typically uses words to regulate his or her environment (e.g., to demand, protest). Page 2

4. Developmental: Language and the Brain

Mody & Belliveau (2013)

• Neuroimaging findings suggest an increased reliance by these children on visuospatial strategies and reduced engagement of language mediation.
• This view is consistent with intact posterior occipitoparietal circuits and reduced activation in frontal language areas in high functioning autism compared to controls.
• There is an increased reliance on right hemisphere language homologues, as well as posterior ventral temporal regions of the brain during language processing.
4. Developmental: Psycho-Social
Mody & Belliveau (2013)

- Difficulties with Social Reciprocity (= give and take of a social conversation/interaction) and Joint Attention.
- Is impacted by language abilities. E.G. often do not use symbolic gestures like showing or pointing out objects of interest to compensate for lack of or delayed speech. Instead, use physical cues such as pushing or directing another's hand to an object of interest. Treat people as objects in the environment.

5. LEARNING
Children with ASD learn differently (Contextual Hyperselectivity; Sanz-Cervera et. al., 2017)

- 1. Microscopic learning = every minute detail in a situation is examined, so that any changes in any minute detail means you have encountered a whole new situation.
  - reason for packages to become part of the food and why eat differently in different environments (conditioning cue complexes)

- 2. Generalization becomes a problem = They get caught up in the details and cannot see that all foods in a category have shared features.
  - can't see that the package is NOT part of the food; the environment is not part of the food.

These children cannot tell that the food is exactly the same unless it looks EXACTLY the same, in the same set of conditioning cues.
General Treatment Recommendations

1. Make sure any medical and/or physiologic stability difficulties are not being overlooked:
   - Address any allergies/intolerances/food sensitivities
   - Eliminate or remediate other health concerns if possible (constipation, reflux, acute illnesses)
   - Make appropriate referrals to specialist to address these concerns as part of a multidisciplinary Feeding Team

General Treatment Recommendations

2. Family Meal Recommendations
   - Meet the child where they are at and sequentially work towards the behavior you would like them to have
     - Sitting with the family during mealtimes
     - Family style serving
     - Managing Food Jags
   Wean children into and out of all behaviors

2. Family Meals: Sitting at the Table

1. Start Family Meals with Sensory Preparation strategies before coming to the table
2. Help the family develop sensory coping strategies to help the child maintain the “just right” arousal space enabling them to stay at the table during mealtimes
3. Ensure the family has a clear beginning, middle, and end to their mealtime routine. May need to build this incrementally one step at a time over multiple days.
4. Use a visual schedule to communicate what is happening next and the routine
STRATEGIES: Before Family Meal Sensory Prep

• Identify strategies in therapy that are most regulating in the shortest time frame
• Help the family identify a list of regulating activities to choose from based on the child’s arousal level.
• Provide the child a transition warning => “In 5 minutes, time to get our body ready to eat” & then when time is up => “time to get our body ready to eat”
• Have the child/family engage in sensory prep activity for 3-10 minutes prior to the meal

Example activities:
• jumping on a trampoline,
• playing with weighted blocks,
• sitting in body sock,
• playing in tent,
• rearranging chairs & setting the table,
• carrying water jugs to put them away on a shelf

STRATEGIES: Sitting at the Table

• Determine the primary reasons why the child is having a hard time sitting and intervene there:
  • Difficulty sitting still = provide supportive chair and/or compensatory seating arrangements which provide regulating input
  • Visual input from others foods = create visual blockers
  • Smell of other foods = provide the child with a small fan in front of their space at the table
  • Sound of others chewing = wear headphones
**STRATEGIES: Sitting at the Table**

- Determine the primary reasons why the child is having a hard time sitting and intervene there:
  - Lack of understanding of what is happening = teach mealtime routine incrementally using visual schedule and/or timers
  - Implicit expectation of having to eat others’ food based on previous experiences = set up family mealtime rules with visuals = LEARN ABOUT vs eat

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**Family Meals: Family Style Serving**

- Goal is for the child to have some of the family’s foods on their plate and the family has some of the child’s food on their plates.
  - Determine what is causing the child to have difficulty tolerating the food on their plate and intervene there
    - Typical implicit message = they have to eat it. CHANGE this message to LEARN ABOUT
  - Establish mealtime rules
  - Display simplified visual of Steps to Eating

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**STRATEGIES: Family Style Serving**

- Fear of contamination = provide a divided plate with 1 well for ‘learning foods’ or a separate learning plate next to their plate
- Smell of food = contain the smell of the food in a clear container or bag
- Visual input = create visual order; facilitate moving down the STEPS
Family Meals: Food Jags

- Avoiding Food Jags where possible is VERY IMPORTANT for children with ASD

**STEP 1** = Create the list of consistently eaten foods EARLY in your therapy sessions (#2 or 3) = proteins, starches, fruits/vegetables

- If the child has under 5 foods TOTAL, you cannot work on Food Jags until child learns to eat other foods
  - This child cannot afford to lose a preferred food

STRATEGIES: Food Jags

- If the child has at least 3 different proteins, 5 different starches, 2 different fruits/vegetables which they consistently eat:
  
  **STEP 2** = Create a MENU for the family to consider following which will allow for best nutrition, with the least amount of food repetition

  **STEP 3** = Family will fill in the missing nutrition groups with foods the family eats that they would like the child to learn about

Food Jag Example

- Example Food List
  - Proteins = Chicken Nuggets, Crunchy Bacon, Target Pediatric Supplement (generic brand of Pediasure)
  - Starches = Goldfish crackers, pancakes, Eggo Waffles, Saltine crackers, Tater Tots, biscuits, Ramen noodles (cooked then broth drained off)
  - Fruits/Vegetables = apple juice, Welch's Fruit Snacks
### STRATEGIES: Food Jags

- If the Child has at least 5 different proteins, 5 different fruits/vegetables and >10 starches they consistently eat:

  **STEP 1** = create food list

  **STEP 2 & 3** = create Menu and fill in gaps

  **STEP 4** = Choose the least nutritious Starch to actively work on Food Jag interventions as follows on next slide

### STRATEGIES: Food Jags

**STEP 5** = Make very subtle shifts to the preferred food chosen in this order as accepted

1. Change the child’s packaging slightly
2. Work towards taking it out of original packaging
3. Changing the bowl/dish the food is presented in or the utensil used to eat the food
4. Changing the orientation of the food on the plate/bowl
5. Changing the shape of the food slightly, then in larger change increments
6. Changing the color of the food
7. Changing the temperature of the food
8. Changing the texture of the food
9. Changing the taste of the food
General Treatment Recommendations

3. Place appropriate referrals for the family and the child to gain additional services to support the child’s foundational skillsets, which may include:
   • **Occupational Therapy:** Sensory-motor, Play and Relationship Based
   • **Speech/Language/Communication Therapy**
   • **Physical Therapy**
   • Other **Support Therapies:** Music Therapy, Hippotherapy, Social Skills Groups
   • **Applied Behavioral Analysis (ABA)**
   • **DIR® and DIRFloortime®**

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**Occupational Therapy: Sensory-motor, Play and Relationship Based**

• Helps to improve foundational sensory-motor skillsets and develop compensatory strategies to promote success in higher level skillsets
• Identifies the child’s individual sensory-motor profile strengths and challenges
• During Therapy:
  • **Create a tool bag** of activities/sensory inputs/strategies that help get the child into the “just right” arousal space for learning and re-regulate after a stressful event/situation

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**Occupational Therapy: Sensory-motor, Play and Relationship Based**

• During Therapy:
  • **Focus on arousal regulation** as a foundation to build other skills off of
  • Build into therapy sessions use of **visual schedules and visual tools** to help the child understand the expectations and routine.
  • Practice with these skills in OT will provide a foundation for use of these tools in Feeding Sessions.
Speech/Language/Communication Therapy

- Helps to improve foundational language and communication skillsets and develop compensatory strategies for success in higher level skillsets
- Identifies the child's underlying language and communication strength and challenges
- **During Therapy:**
  - Focus on functional communication work = **Appropriate ways to request and protest; labels that achieve a desired outcome**
  - Use **visual schedules and visual tools** to help the child understand the expectations and rules.
  - **Teach social competency:** turn taking, joint attention to a task, managing frustration by asking for help

Physical Therapy

- Helps to improve foundational motor and postural skillsets
- Identifies the child's individual motor strengths and challenges
- **During Therapy:**
  - Focus on building a solid foundation from a posture and motor standpoint for the child to work from
  - Emphasis on **core strength and stability, dynamic mobility, bilateral integration and coordination** provides a solid foundation for feeding skillsets.

Other support therapies: Music Therapy, Hippotherapy, Listening Therapy, Social Skills Groups

- Will continue to provide opportunities to build solid foundational skillsets for the child to build from in feeding therapy including:
  - Sensory-motor
  - Self-regulation
  - Posture
  - Language and Communication
  - Social Skills
### Applied Behavioral Analysis
- Helps to give consistency, structure and routine to a child’s day
- Helps to provide the caregiver concrete strategies to interact with the child
- Effective for teaching a specific behavior in a specific context and conditioning cue complex
  - Facilitates mastery of day to day tasks
- During Therapy:
  - Be mindful of what is being used as reinforcements. **Need to eliminate food reinforcers**

### DIR® and DIRFloortime®
- Helps to build healthy foundations for social, emotional, and cognitive capacities
- Identifies the child’s Foundational Developmental Capacities and tailors treatment programs to child’s unique strengths and capacities
- During Therapy:
  - **Determine what strategies best engage the child** to facilitate capacity development and learning

### DIR® and DIRFloortime®
- DIR Floortime by Stanley Greenspan
  - DIR = Developmental, Individual-differences, & Relationship based model.
  - It is a framework that helps clinicians, parents, and educators conduct comprehensive assessments and develop educational and/or intervention programs tailored to the unique challenges and strengths of each child.
  - Objectives are to build healthy foundations for social, emotional, and intellectual capacities rather than focusing on skills and isolated behaviors.

[http://www.icdl.com/DIR/fedcs](http://www.icdl.com/DIR/fedcs)
Introduction to DIR® and DIRFloortime®

• The "D" describes where the child is at in terms of Developmental Capacities/Levels.

Functional Emotional Developmental Capacities (FEDCs):
  • Level 1: Self-Regulation & Interest In the World: becoming calm, attentive, and interested in the world
  • Level 2: Engaging and Relating: follow the child's lead to facilitate engagement with you and form a relationship
    • Object, person, people
  • Level 3: Two-way Purposeful Communication: building opening/closing of circles of communication

http://www.icdl.com/dir/fedcs

Introduction to DIR® and DIRFloortime®

Functional Emotional Developmental Capacities (FEDCs):
  • Level 4: Complex Communication and Shared Problem Solving: expanding circles of communication to solve problems
  • Level 5: Using Symbols and Creating Emotional Ideas: expanding pretend play, expanding communication to include sentences to convey emotion
  • Level 6: Logical Thinking and Building Bridges between Ideas

http://www.icdl.com/dir/fedcs

Introduction to DIR® and DIRFloortime®

Higher Levels of Functional Emotional Developmental Capacities (FEDCs):
  • Level 7: Multiple Perspectives: moving through simple logical thinking to triangular logical thinking
  • Level 8: Gray Area Thinking: able to see the world in relativistic terms rather than all this or all that
  • Level 9: Internal Standard of Self: able to compare daily experiences against an internal standard

http://www.icdl.com/dir/fedcs
Introduction to DIR® and DIRFloortime®

• The "I" refers to individual differences in terms of the unique way a child takes in, regulates, responds to, and comprehends sensory information and interacts with the world.
  • This includes input from the environment, from others, and from their own body
    • Overall motor skills and motor planning capacities
    • Postural capacities
    • Sensory processing capacities
    • Overall health/physiologic stability
    • Support systems of the family, therapists, and community resources

Introduction to DIR® and DIRFloortime®

• Individual Differences: "I"
  • No two children are alike, and this includes individuals with ASD.
  • Therefore, there is no one standard protocol for treatment, even within SOS Approach To Feeding Philosophies.
  • All intervention and treatments need to be individualized to that child's unique skill capacities, their unique strengths, and their unique challenges.

Introduction to DIR® and DIRFloortime®

• The "R" describes the use of relationship in terms of tailoring your affect and the way you engage based on the child's individual differences and developmental capacities to facilitate progress.

• A core philosophy to DIR is that the D, I, and R are Interrelated.
  • The "D" and the "I" tell you how to work the R
  • A strong "R" is essential for progress in the "D" and the "I"
**Introduction to DIR® and DIRFloortime®**

The "D" and the "I" tell you how to work the "R"

- The D tells you where to start
- The I tells you what to emphasize or strategically avoid with this specific child and their unique profile

Through the use of Relationship we can:

- Support Self-regulation
- Draw the child into a shared world
- Create foundation for learning
- Motivate the child to attend and communicate

http://www.icdl.com/

Engaging Autism, Chapter 6: Fostering Attention and Engagement

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**Introduction to DIR® and DIRFloortime®**

- Other Key Concepts:
  - Co-regulation is key and promotes self-regulation
  - Follow the child's lead, motivation, and/or interests
  - Attune to the child's affect, and engage in affectively rich interactions to facilitate capacity development and learning
  - Move up and down the developmental "ladder" with the child

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**Introduction to DIR® and DIRFloortime®**

- Other Key Concepts:
  - Surface behavioral changes are not the end goal. Internal changes are
  - Intrinsic reward and motivation are key, starting with finding pleasure in relationships
  - Emphasis on seeking to understand core deficits rather than focusing on outward symptoms and behaviors
  - Play is more than just a vehicle to get to skill building. It is the important foundational work that facilitates rewiring of the brain to build developmental capacities to build generalizable, lifelong skills.

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DIR® and DIRFloortime® Research
• Dionne M, Martini R. Floor Time play with a child with autism: A single-subject study. Revue canadienne d'ergothérapie, juin 2011, 78(3)

Additional References on DIR Floortime:
• Books:
  • Engaging Autism by Drs. Greenspan and Wieder
  • The Child with Special Needs by Drs. Greenspan and Wieder
  • Behavioral Challenges in Children with Autism and other Special Needs: A Developmental Approach by Diane Cullineane, MD, Expert DIRFloortime® Training Leader
  • The Challenging Child: Understanding, Raising, and Enjoying the Five “Difficult” Types of Children by Stanley Greenspan with Jacqui Salmon
• www.icdl.com
Relationship between DIRFloortime® and the SOS Approach to Feeding

• Most people go to language as their primary way to engage children.
  • Asking them questions
  • Narrating what children are doing or what the adults are doing
  • Explaining everything
  • Talking to fill up quiet space
• Clinician’s often use a TOP-DOWN approach - starting with the hardest skill, they talk about it, model it and then immediately expect the child to imitate

Relationship between DIRFloortime® & SOS

• Children who struggle with engagement, sensory processing and motor planning (I.E. children with ASD) struggle with a top-down approach
• Instead a BOTTOM-UP approach is more successful
  • Systematic desensitization is a bottom-up approach (SOS)
  • Use of DIRFloortime® philosophies provides a foundation for a bottom-up approach

Relationship between DIRFloortime® & SOS

• During SOS Feeding Therapy with a child on the Autism Spectrum, it is recommended to think about BOTH DIR and SOS philosophies
  • DIR: What level of Functional Emotional Development is this child at now and how do I engage them at that level?
  • SOS: Where are their Feeding Skills at on the STEPS to Eating Hierarchy at this moment?
Relationship between DIRFloortime® & SOS

• USE THE DIR FRAMEWORK TO FACILITATE YOUR SOS WORK
  • For the purposes of SOS, the DIR work serves as the support to achieve SOS skill development*
    *Ideally, the child is also receiving additional DIRFloortime® work away from the table to build foundational capacities which improve their developmental skillsets

STEP 1: Focus on DIR primarily to achieve functional emotional developmental level 1 = Self-Regulation & Interest In the World
  A. Regulate the child

STEP 2: Focus on DIR work to achieve functional emotional developmental levels 2 and 3 (= Engaging & Relating and 2-way Communication)
  B. Imitate what the child is doing
  C. Capture child’s attention and join them in a shared world, ideally with an object (food)

STEP 3: SHIFT focus to primary SOS
  D. Expand slightly what the child is doing to shift play into something new/more therapeutic to build skills from a Feeding Therapy standpoint

STEP 4: Focus on SOS Skill Development
  E. Progress up the Steps To Eating utilizing Play and Systematic Desensitization
Relationship between DIRFloortime® & SOS

- **STEP 4:** Focus on SOS skill development
  - Children with ASD fundamentally play differently than their peers due to their own unique “D” and “I” which requires you to continuously alter and adjust your play schemes and relationship/engagement
  - As the child’s sensory-motor systems are challenged, there will be signs of distress/dysregulation
  - F. back down the skill demands with the food (STEPS to Eating) to keep child in the “Just Right” Arousal Space for learning

Relationship between DIRFloortime® & SOS

- **STEP 5:** Assess if/when need to switch focus back to DIR
  - If child is challenged too far out of their “Just Right” Arousal Space for learning, they will become very dysregulated and drop their engagement with you and/or the food
  - **G. Return to STEP 1** by decreasing all of sensory and play demands, and focus instead on self-regulation

Relationship between DIRFloortime® and the SOS Approach Approach to Feeding

In Summary:
- **STEP 1:** Regulate the Child
- **STEP 2:** Engage the Child in a shared world
- **STEP 3:** Shift play therapeutically to food
- **STEP 4:** SOS Skill Development
- **STEP 5:** Re-regulate and re-engage
Adapting the SOS Approach: Increase Session Structure

1. Emphasize creation of a familiar and predictable routine for the session and be predictable in your communication with the child

2. Learning the session structure, routine and expectations will typically take longer to achieve

STRATEGIES: Increase Session Structure

• Create a consistent concrete beginning, middle, end to your routine

• Have clear transition routines every session – to gym, to kitchen, from kitchen to leaving clinic

• Don’t violate “finished concepts”
  • NO “all done” until session is over

STRATEGIES: Increase Session Structure

• Utilize visual schedules and clear transition warnings
  • May need to begin with objects, then actual pictures, then line drawings/symbolic pictures of the routine’s activities
  • Do NOT use pictures of foods in your Food Hierarchy, instead use numbers or letters
  • Consider the use of a timer or set # of times to do “X” activity
  • Follow #’s on the floor to transition spaces
Transition strategy = give a concrete task as moving from one space to the next

Adapting the SOS Approach: Environmental Set-up

1. Based on the child’s unique Sensory Motor Profile, identify possible stressful environmental inputs that can be minimized to facilitate learning
   • Room set-up: decrease as much sensory demand as possible
     • Dim/lamp lighting
     • Use room dividers to make a smaller space*
     • Decrease visual clutter

2. Include regulating inputs into seating arrangements based on child’s sensory-motor profile:
   • Add deep pressure: weighted lap pads, weighted blankets, side supports to squeeze them in*, pressure vests
   • Add proprioceptive input: provide them a place to kick their feet (i.e. Ther-a-band or lycra around chair legs, a therapy ball to kick under the table)
   • Provide opportunities for motion: rocking chair, ball chair, wiggle cushion, have the child to stand/roam in designated space vs. sit
Adapting the SOS Approach: Environmental Set-up

3. Minimize transitions as much as possible
   • Consider whether or not the child can tolerate going to a separate Sensory Preparation location or if Sensory Prep should be done in the Feeding Treatment space
   • Utilize strategies to prepare for transitions including visual schedules and visual timers
   • Count the # of times “x” is done before transitions take place

Adapting the SOS Approach: Food Hierarchies

1. Decrease the sensory and motor demands from the food in general
   • Often times first several sessions you are working on simply getting the child to the table to engage in the beginning routine or with a couple foods so KEEP THE SENSORY DEMANDS OF THE FOODS MINIMAL
     • May chose to keep foods the same for >4 sessions

2. Food Hierarchies will typically contain a fewer number of foods because overall the amount of time at the table is typically shorter

3. Increased focus on adapting the foods during prep to decrease sensory demands of a specific food (e.g. wrapping foods in napkins to dry them off; presenting foods in bag to control the smell; present purees in a container to control visual, tactile, smell)

4. Increased focus on building in Systematic Desensitization (Challenge/Relief) into your food selection and order of presentation in the Hierarchy
Adapting the SOS Approach: Food Hierarchies

5. Select foods that have LOW overall sensory-motor demands for the child
   • Load the Food Hierarchy with Hard Munchables
   • Large, intact/whole foods (e.g. whole bell pepper; whole tomato) are the best foods to target early on
   • Start by increasing the RANGE of these types of foods the child can move up the Steps To Eating with prior to introducing more challenging food textures

6. Minimize the number of, and time spent with, more challenging food textures
   • Often only 1 puree, which should be as familiar and preferred as possible

7. Create a more sensorily, closely linked food hierarchy = match as many sensory properties as you possibly can from one food to the next

Food Hierarchies Example 1: Progression will have smaller/more concrete changes

Food Hierarchy 1
1. Orange Veggie Straw
2. Orange Cheese stick
3. Easy Cheese
4. Cheeto Puff
5. Orange Licorice
6. Orange drink

Food Hierarchy 2
1. Orange Veggie Straw
2. Orange Cheese stick
3. Easy Cheese
4. Cheeto Puff
5. Whole Carrot
6. Orange Licorice
7. Orange drink

Food Hierarchy 3
1. Orange Veggie Straw
2. Orange Cheese stick
3. Easy Cheese
4. Cheeto Puff
5. Whole Carrot
6. Orange Licorice
7. Orange drink
### Food Hierarchies Example 1: Progression will have smaller/more concrete changes

<table>
<thead>
<tr>
<th>Food Hierarchy 4</th>
<th>Food Hierarchy 5</th>
<th>Food Hierarchy 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Orange Veggie Straw</strong></td>
<td><strong>2. Orange nacho cheese</strong></td>
<td><strong>1. Orange Veggie Straw</strong></td>
</tr>
<tr>
<td><strong>3. Cheeto Puff</strong></td>
<td><strong>4. Whole Carrot</strong></td>
<td><strong>2. Cheeto Puff</strong></td>
</tr>
<tr>
<td><strong>6. Orange Lolly</strong></td>
<td><strong>7. Orange drink</strong></td>
<td><strong>3. Cheeto balls</strong></td>
</tr>
<tr>
<td><strong>1. Orange Veggie Straw</strong></td>
<td><strong>2. Orange Cheese stick</strong></td>
<td><strong>4. Whole Orange</strong></td>
</tr>
<tr>
<td><strong>3. Cheeto Puff</strong></td>
<td><strong>4. Cheeto balls</strong></td>
<td><strong>5. Orange Fruit Snacks</strong></td>
</tr>
<tr>
<td><strong>6. Orange Lolly</strong></td>
<td><strong>7. Orange drink</strong></td>
<td><strong>6. Orange Yogurt</strong></td>
</tr>
<tr>
<td><strong>2. Orange Puff</strong></td>
<td><strong>3. Orange Lolly</strong></td>
<td><strong>7. Orange Lolly</strong></td>
</tr>
<tr>
<td><strong>5. Orange Licorice</strong></td>
<td><strong>6. Orange Lolly</strong></td>
<td><strong>8. Orange drink</strong></td>
</tr>
</tbody>
</table>

### Food Hierarchies Example 2

<table>
<thead>
<tr>
<th>Food Hierarchy 1</th>
<th>Food Hierarchy 2</th>
<th>Food Hierarchy 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Popcorn*</td>
<td>1. Popcorn*</td>
<td>1. Popcorn*</td>
</tr>
<tr>
<td>2. Vanilla Go-Gurt*</td>
<td>2. Puff Corn*</td>
<td>2. Puff Corn*</td>
</tr>
<tr>
<td>5. Whole Green Apple</td>
<td>5. Trix Cereal*</td>
<td>5. Trix Cereal*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Hierarchy 4</th>
<th>Food Hierarchy 5</th>
<th>Food Hierarchy 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Puff Corn*</td>
<td>1. Puff Corn*</td>
<td>1. Puff Corn*</td>
</tr>
<tr>
<td>3. Whole Green Apple</td>
<td>3. Whole Green Apple</td>
<td>3. Whole Green Apple</td>
</tr>
<tr>
<td>5. Freeze Dried Green Peas</td>
<td>5. Freeze Dried Green Peas</td>
<td>5. Freeze Dried Green Peas</td>
</tr>
</tbody>
</table>

Adapting the SOS Approach: Sensory Preparation

- GOAL = Getting the child into a regulated space before food work
- Sensory Preparation is KEY to a successful Feeding Session with this population
- A successful Sensory Prep begins with a solid understanding of the Child’s unique sensory-motor profile and their engagement capacities (DIR)

Adapting the SOS Approach: Sensory Preparation

- STEP 1: Review the child’s Sensory Motor strengths and challenges
- STEP 2: Select activities that will draw on the child’s strengths and help calm/organize them
- STEP 3: Become attuned with the child by assessing the child’s arousal level
- STEP 4: Use clinical reasoning to determine the best way to use your interactions and the equipment, space, and play themes available to you to shift the child into the “Just Right” Arousal Space for learning.

Adapting the SOS Approach: Sensory Preparation

- During Sensory Preparation:
  - Minimize visual and auditory distractions
  - Use caution with multisensory input and demands
  - Give clear visual/physical boundaries to a task
  - Pay attention to common dysregulating factors:
    - Motor planning demands of the task
    - Social demands of the task
    - Unpredictable sensory input
Adapting the SOS Approach:
Sensory Preparation

• During Sensory Preparation:
  • Provide opportunities for repetition in learning
  • Keep conditioning cues and environmental cues consistent
  • Incorporate play schemes, motor actions, and songs you want the child to learn to later be utilized during work with the foods at the table

Adapting the SOS Approach:
Therapy Meal Routine

1. Additional regulating input is often required throughout the session to maintain the “Just Right” Arousal Space for learning (during prep and kitchen)
  • May require a second therapist; 1 to present foods and 1 to help maintain “Just Right” arousal
  • This can usually be achieved through:
    1. Food Hierarchy presentation
    2. Incorporating regulating activities
    3. Use of Sensory Based Problem Solving
    4. Session Routine Changes & Sensory Breaks

STRATEGIES: During the Session

• Food Hierarchy Presentation
  • Even if you have built Challenge/Relief into your food hierarchy, there will be a time where you need to alter your hierarchy in the moment based on the child’s skillsets at that moment in time
  • If the child is dysregulated and disengaged (not “Just Right” arousal) and the next food in the hierarchy is a challenging food (i.e. puree) skip over it and either move on to or repeat a preferred/regulating food. If you skip a food be sure to honor visual schedules and pre-set routines. Do NOT change the number of foods you present
STRATEGIES: During the Session

- Incorporating Regulation into the play
  - Engage in food play that has proprioceptive input = chopping foods; tug of war; pulling apart
  - Build in approach and withdraw activities into the play = slides, cars, balls, hockey, in-and-out, peek-a-boo
  - Use songs with known movements = “wheels on the bus”, “the ants go marching”, drum song

- Incorporating Regulation into the play
  - Use consistent/familiar kitchen tools with low motor planning demands to help child with praxis issues (e.g. mini-chopper, egg slicer, apple corer/peeler)
  - Play consistent games with specific shaped foods
    - Circle foods (Ritz, dried bananas) => wheel games
    - Stick shaped foods (Veggie Straws, pretzels, carrots) => use to make letters
    - Cube shaped foods (cheddar cheese, meat) => line up and count

- Incorporate regulating activities between presenting foods:
  - Wipe up the table, pushing really hard
  - Chair push-ups
  - Tug of war with wash cloth
  - Shoulder bumps or join compressions
  - Handwashing break/play in water break
  - If you are using these strategies consistently, build them into your visual schedule and therapy routine
STRATEGIES: During the Session

- Sensory Based Problem Solving
  - Step 1: Acknowledge/Reassure
  - Step 2: Label the Issue/Problem
  - Step 3: Provide a more adaptive solution to resolve the issue
  - Decrease language as much as possible. Use more vocalizations for steps 1 & 2 instead.

- Sensory Breaks
  - Despite incorporating regulating strategies into your work with the foods, some children will require a Sensory and Engagement break part way through the session to re-regulate
  - Try to anticipate and build it into your visual schedule either mid-way through session or after an anticipated challenging food
  - Sensory Breaks can be implemented at the table or away from the table based on the child’s needs, session length, and facility

STRATEGIES: During the Session

Sensory Breaks – away from table

- Some children will require a break away from the table, especially early on in therapy
  - Ideally over time and as we build skills we can wean them out of this
- Decide if it is best to build a “break” space into your feeding treatment room or if a transition back to sensory prep space is required.
  - In-room break space ideas: bean bag squishes, blowing bubbles, pinwheels, tactile bins, laying under weighted blankets,
  - Appropriate time needs to be allocated for addition transitions & use visual schedule and timers
STRATEGIES: During the Session

Sensory Breaks – at the table (= ideal)

• Add a second “beginning” routine mid-way through the session (i.e. clear the table, blow bubbles, table bubbles, pass out new plates)
• Clear the table and provide bucket with fidget toys or preferred activities (i.e. light up toys) for the child to engage in either self isolative play or joint play with adult
• Utilize visual timers and verbal/visual warnings to facilitate transition back to food

Adapting the SOS Approach: Therapy Meal Routine

2. Changes to Session Routine

• Sensory prep
• Transition to Kitchen
• Bubble Blowing
  • Only if engages child (deep breathing, transition and engagement activity)
• Hand Washing
  • May need to directly wash in wash bin or use only dry wash clothes
• Pass plates, napkins
  • May choose to not use a plate
  • Parent may hold child’s napkin

Adapting the SOS Approach: Therapy Meal Routine

2. Changes to Session Routine

• Pass out and work with the foods
  • Therapist begins by telling child/using visual picture schedule how many foods they will work with, then a break (if taking one) = “we are going to learn about 3 foods then take a break”.
  • When come back to table after break, tell them how many foods and then Clean Up = “we are going to learn about 3 foods and then Clean up”
  • If no break, say “we are going to learn about 6 foods today and then Clean Up” using visuals
Adapting the SOS Approach: Therapy Meal Routine

2. Changes to Session Routine
   - Pass out and work with the foods as usual (Option 1)
     - OPTION 2: For a more severely involved child, pass and work with only ONE food at a time.
     - All of this food is then passed to the parent when it is time to move on to the next food
     - OPTION 3: May choose to start with therapist passing a food to the child, who then passes it on to the parent. Therapist passes another of this same food to child, who passes it back to therapist. Therapist passes another of this food to child, who keeps it this time.

Adapting the SOS Approach: Therapy Meal Routine

2. Changes to session routine
   - Sensory break (if needed)
   - Clean Up as usual (Option 1)
     - OPTION 2: parent has all the foods, so they pass one food to child who throws/blows/etc. into trash
     - OPTION 3: Parent has all the foods. They pass 1 food to child saying "give this to Therapist to clean up". Therapist blows. Parent passes same food to child saying "give this to me to clean up". Parent blows. Parents passes same food to child saying "you clean up".

Adapting the SOS Approach: Steps to Eating Hierarchy Strategies

- Typically present foods with low social-emotional demand and simplistic play schemes
- Sensory Motor Play emphasis
- DIR level 2 (Engagement/Relating), 3 (Two way Communication), or 4 (Complex Communication & Problem Solving) to start
- Children on the Autism Spectrum fundamentally play differently than other children due to their own unique skill strength and deficits.
Adapting the SOS Approach: Hierarchy Strategies

- Build off the child’s unique interests and how they typically engage with objects away from the table
  - Line it up
  - Flip it
  - Stack and knock down
  - Spin
  - Drum
  - Raining/Dropping
  - Fill/empty
  - Hide-n-seek; peek-a-boo

- Monitor and minimize motor planning demands involved in the task
- Build predictable scripts and set routines for how to explore the food and move up/down the STEPS
  - EG. Spins on table, rolls in between palms, taps up arm, taps to chest, taps on head, taps to nose, kisses with lips, taps on teeth, licks etc.
- Create a poster/picture schedule of each step to be engaged in with each food once you have established how small of steps child needs.

Adapting the SOS Approach: Hierarchy Strategies

- Promote body awareness through use of visual modeling in the mirror
  - Use mirror to help child who may get visually overwhelmed by looking at you directly, especially into your mouth
  - Use physical prompting only WITHOUT THE FOOD, and ONLY with the child’s permission
Modeling and Prompting

- 1st – make sure child is regulated & engaged (you have their attention to you AND the food)
- 2nd – playfully model, at least 3 times, how you want the child to engage with the food
- 3rd – Pause and give them time to process what you are modeling AND to execute a response

If they are not following you:
- 4th - back down a ½ step and playfully “show and tell” again.

THEN WAIT FOR A RESPONSE

If they are not following you:
- 5th - use a physical prompt withOUT the food (making sure they registered the prompt)

WAIT FOR A RESPONSE
Modeling and Prompting

If they are still not following you:
• 6th - provide a physical assist at the arm or elbow, as long as child does not resist this touching and is giving you active permission

WAIT FOR A RESPONSE

• 7th - provide hand-UNDER-hand guidance for them to complete the task, ONLY with their active, engaged permission

Adapting the SOS Approach: Strategies for Engagement

• Imitate what they are doing (think about what purpose that action/behavior has- what type of sensory input is it providing? What is it about the activity that they enjoy?)
  • Once they acknowledge that you are imitating them and are engaged, slowly shift into something a little bit more therapeutic by building off of what they are doing
  • Hold an object/food up at eye level or bring your face down low to the object/food

Adapting the SOS Approach: Strategies for Engagement

• Non-language sound effects
  • “Ahhhhs” and “Ohhhs”
  • Silly sound effect noises, especially bodily functions like sneezes, burps
  • Lower your voice volume to draw them in
  • Increase your affect/facial expressions
  • Engage with them through songs and scripted activities, particularly familiar ones with actions
Adapting the SOS Approach: Strategies for Engagement

• Additional considerations for older children:
  • Help empower them to feel like an expert:
    • "Wow! Show me how to do that" (imitating them to join them in a shared world) and then build off of what they are doing

Adapting the SOS Approach: Strategies for Engagement

• Come back to your Key Phrases and using your language mindfully
  • Tell them what to do vs. what not to do; state the rules (ideally upfront)
    • "We stay in our chairs until after clean-up time. You can come sit down”

Adapting the SOS Approach: Strategies for Engagement

• Avoid asking questions, especially Yes/No questions.
• Use your Key Phrases. YOU CAN
  • Show me how to do that
  • You can do X
  • Let’s figure out what is making your body worried
  • You choose the X or Y
Teach Emotion Based Discipline

Step 1 = listen for the content
Step 2 = listen for the feeling
Step 3 = label the feeling and connect the feeling to the body sensation/reaction
Step 4 = validate
Step 5 = problem solve
Step 6 = repeat

CONCEPTUALIZE

WEANING THIS CHILD INTO EVERY NEW TASK, AND OUT OF EVERY UNDESIRABLE BEHAVIOR

Children with ASD can do most anything if taught it in small enough steps.