Title: There is limited evidence supporting the use of the SOS approach to feeding with mixed results on the effectiveness to improve eating.

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CLINICAL SCENARIO:

Condition/Problem:

A feeding disorder is characterized by the failure of an infant or child less than six years of age to eat enough food to gain weight and grow normally over a period of one month or more. Feeding disorders are more prevalent in infants or children who are born prematurely, had a low birth weight, or who are developmentally delayed. Some causes for feeding difficulties include: diseases of the central nervous system, metabolic diseases, sensory defects, anatomical abnormalities, muscular disorders, heart disease, and gastrointestinal diseases (Encyclopedia of Mental Health, 2015). Some residual problems that are seen with this condition are dehydration, poor nutrition, aspiration, pneumonia, repeated upper respiratory infections, and embarrassment or isolation in social situations involving eating. Due to poor nutrition that may lead to failure to meet normal weight and growth recommendations, children may be required to have gastrointestinal tube (g-tube) feedings in order to supplement nutrition (ASHA, 2015). Although a specific link has not yet been identified, children with Autism seem to be at increased risk for developing feeding disorders/problems and it is estimated to be as high as 85% (Peterson, 2013).

Incidence/Prevalence:

- "It has been reported that 25%-45% of typically developing children demonstrate feeding and swallowing problems."
- "Prevalence is estimated to be 30%-80% for children with developmental disorders."
- "Significant feeding problems resulting in severe consequences (e.g., growth failure, susceptibility to chronic illness) have been reported to occur in 3%-10% of children, with a higher prevalence found in children with physical disabilities" (26%-90%) and medical illness and prematurity (10%-49%)."
- "It is reported that the prevalence of pediatric dysphasia is increasing due to improved survival rates of children born prematurely, with low birth weight, and with complex medical conditions." (ASHA, 2015)

Impact of the Problem on Occupational Performance:

Areas of occupational performance that may be affected are swallowing/eating because the child is unable to keep food in the mouth long enough for process of swallowing to take place. Another area of occupation that is impacted is feeding, meaning that the child is not interested in eating the food presented to them, and therefore, they will not attempt to bring the

item to their mouth. The child may lose their energy and drive to participate in mealtimes due to emotional mental functions that become associated with eating including tension and anxiety. The social interactions with family at mealtimes may be problematic due to the child's unwillingness to partake in normal feeding/eating habits and the struggle for parents to get child to eat. There may also be an element of embarrassment for the parents when eating in social situations because eating problems with the child occur. (American Occupational Therapy Association, 2014).

Intervention:

The Sequential Oral Sensory (SOS) Approach to feeding is a protocol involving sensory integrative components developed by Dr. Kay Toomey, a pediatric psychologist (Toomey & Associates, 2015). The protocol for SOS intervention is available only to therapists who have completed a 5-day training conference. This approach to feeding is considered a transdisciplinary approach to feeding difficulties because it involves assessing the whole child on the basis of physical barriers to eating and proper medical treatment, nutritional issues, developmental, sensory, motor, oral-motor, and cognitive skills that are all involved and needed in the process of feeding. The SOS protocol is used as an intervention for feeding difficulties over a twelve week period that uses progression and gradual introduction of foods based on a desensitization hierarchy that includes aversive and non-aversive foods (Benson et al., 2013). Each therapy session can last an hour or a few hours.

This SOS approach to feeding is similar to a common behavioral intervention of systematic desensitization in which the fear of aversive stimuli is replaced with feelings of relaxation (McLeod, 2008). In systematic desensitization, the aversive or anxiety-provoking stimuli are presented to the client through a gradual process which begins with less aversive to more aversive (McLeod, 2008). Children with feeding disorders might find certain textures, colors, sizes, and temperatures of food as aversive and anxiety-provoking. Even being near the food could cause a child to cry, engage in inappropriate mealtime behaviors, gag, choke or vomit. Therefore, the objective of the SOS protocol is increase the child's willingness and acceptance to try a variety of foods through a more calm and inviting environment. The child is led through multiple steps of the protocol starting with selective sensory input that is child-directed, stomping to the therapy room, participating in pre-meal setup, interacting with the food in a gradual sequence, and finishing with a clean up routine. This protocol includes gradually guiding the child through a hierarchy of aversive stimuli, continuous interaction with various foods, and incorporation of sensory integrative components to help the child become more comfortable and prepared for trying different foods (Peterson, 2013). See Appendix A for more details about SOS protocol intervention.

OT Theoretical Basis:

The SOS approach to feeding incorporates several theories and assumptions that can be closely related to occupational therapy frames of references and theories. These theories include behavioral approaches and sensory integration (SI).

The behavioral theories assume that behavior is learned, and therefore, behavior can be altered or reshaped when it is reinforced. If reinforced, a desired behavior will be more likely to be performed again (Cole et al, 2008). In the SOS approach, the therapist primarily demonstrates role-modeling, positive reinforcement, and encouragement of learning through behavioral approaches (Peterson, 2013). The therapist prompts the child to engage in interaction with the food by using verbal praise when the child performs a positive behavior with the food. An example of verbal positive reinforcement that the therapist can say is, "Good job taking a bite."

Additionally, the therapist also demonstrates modeling of behavior during the SOS protocol. Each step including sensory preparation, transition to the feeding therapy room, pre-meal set-up, exposure to food, and clean-up routine includes specific behaviors that the therapist would need to perform and try to encourage the child to model. For example, during the transition to the feeding therapy room, the therapist marches and sings, and the child is encouraged to model the behavior. Lastly, the therapist encourages the child at each food hierarchy step when the child performs a positive interaction or tolerance for the food. The child is praised for smelling, touching, or eating the aversive food item and can continue up the hierarchy if the step is completed (Peterson, 2013).

Sensory integration (SI) is a primary focus of the SOS feeding approach. According to SI, sensory-motor experiences help a child learn, and if those abilities are impaired, the child cannot optimally function. Therefore, a child must control the input of sensory stimuli to help the child modulate and balance the amount of input they are receiving (Case-Smith, 2005). Sensory integration in the context of the SOS approach to feeding requires that the child practice appropriate and adaptive responses to food through controlled sensory input before feeding sessions. It is proposed that the child be an active participant during the therapy process in order to process the sensory stimuli of the different types of food (Peterson, 2013).

In order to help the child prepare for sensory stimuli and to decrease a child's sensitivity, the SOS protocol has the child engage in preparatory activities. These include gross motor exercises, firm rubbing, vibration, and deep pressure. In the SOS approach, SI is used by performing gross motor activities on the jungle gym, such as pushing, jumping, running, swinging or bouncing, singing and marching to help promote vibration in the mouth, continuation of gross motor exercises, and desensitization of the mouth such as wiping a warm washcloth around the mouth, blowing bubbles, and hand washing. It is suggested that engaging in these activities will allow the child to regulate their sensory input and help desensitize the oral area to increase acceptance and tolerance of a variety of foods (Peterson, 2013).

Science behind the intervention:

The SOS protocol is intended to help address the problem behaviors associated with eating (Toomey & Associates, 2015). These problem behaviors may emerge as the result of medical/oral conditions, sensory integration sensitivities, or negative behaviors that are reinforced during mealtimes (Peterson, 2013). The SOS protocol addresses the child as a whole, incorporating the child's organ functioning, muscles, sensory development, behavior, oral-motor sensations, cognitive level, overall nutrition, and environmental factors (Toomey & Associates,

2015). The therapist prepares the child for feedings through participation in a play activity, which is intended to calm a hypersensitive child or alert and improve tone in a hyposensitive child through heavy work, deep pressure, or oral stimulation by reducing his/her anxious feelings about food and decrease sensitivity (Peterson, 2013). In addition, the therapist facilitates oral stimulation through providing pressure to the chest and symmetrical pressure to the face and mouth, which provides proprioceptive input through oral stimulation (Case-Smith, 1989).

A desensitization approach helps to improve the child's level of comfort through learning and exploration of food, where the child begins the intervention through interaction with the food, in a stress-free environment (Toomey & Associates, 2015). The child progresses through the intervention from being in the same room as the food to touching/kissing food and finally tasting/eating food (Toomey & Associates, 2015). The child is presented with foods of various sizes, color, texture, taste, and temperature throughout the SOS intervention to help reduce the child's sensitivity and fear associated with feeding times (Peterson, 2013). It is important that the child plays a critical role in the feeding intervention, allowing therapy to revolve around a child's needs and improving the therapeutic relationship (Peterson, 2013). The aim for the child at the end of the SOS feeding program is to decrease the level of sensitivity towards foods and increase the amount of acceptance of new foods (Peterson, 2013).

Why is the intervention appropriate for OT:

The SOS protocol is appropriate for occupational therapy because it falls under the occupations of swallowing/eating and feeding in the framework (The American Journal of Occupational Therapy, 2014). Through preparatory methods, such as play and oral stimulation, occupational therapists are able to prepare a child for the feeding interventions by providing the child with the necessary stimulation and input that he/she may need (The American Journal of Occupational Therapy, 2014). The SOS intervention is an occupation-based intervention because it focuses on increasing a child's independence during mealtimes by reducing inappropriate behaviors through desensitization.

The areas under the international classification of function and disability that the SOS protocol applies to include the health condition, body function and structures, activity, participation, environmental factors, and personal factors (WHO, 2015). The SOS intervention applies to the health condition because it addresses a child's feeding difficulties during mealtimes. Furthermore, the SOS intervention applies to body function and structures because it incorporates the child's oral and swallowing behaviors that may be impeding his/her ability to swallow food properly. In addition, the SOS protocol is applicable to the area of activity because it is a feeding intervention that focuses on the child's occupation of swallowing/eating and feeding. Throughout the feeding intervention, the SOS protocol requires the child's participation during therapy sessions to help decrease sensitivity and increase appropriate mealtime behaviors. Lastly, the SOS protocol addresses a child's environmental and personal factors because it identifies limitations within or surrounding a child that may be affecting a child's ability to participate fully throughout mealtime.

Focused Clinical Question:

- **Patient/Client Group:** Children 8 months to 8 years with feeding difficulties
- **Intervention:** SOS approach to feeding
- **Comparison Intervention:** Applied Behavioral Approach (ABA)
- **Outcomes:** To increase the number and variety of foods that a child eats

Summary:

- **Summarize clinical question:** This CAT investigates the effectiveness of the SOS protocol for improving feeding behaviors in children with feeding difficulties.
- **Search:** We searched six databases and located nine articles related to feeding disorders in children. Of those, we selected and review three articles that were all case-studies. One article had a strength of 3B and a high rigor. The other two articles had a strength of 4. However, one article was medium rigor and the other was high rigor. We selected the three articles reviewed because each of the studies included the SOS protocol in the intervention and involved children that were under the age of eight with a feeding difficulty.
- **Summary of findings:** There is limited and inconclusive information for or against the SOS protocol.

CLINICAL BOTTOM LINE: There is limited evidence supporting the use of the SOS approach to feeding with mixed results on the effectiveness to improve eating.

Limitation of this CAT: This critically appraised paper (or topic) has been reviewed by occupational therapy graduate students and the course instructor.

Prepared by Holly Freeman, Alisa Reedy and Ashley Schalow (12/10/2015). Available at www.UWLAX.EDU/OT

SEARCH STRATEGY:

Table 1: Search Strategy

Databases Searched	Search Terms	Limits used	Inclusion and Exclusion Criteria
● Cochrane ● Health Professions Data Base via EBSCO Host ● OT Search ● OT Seeker ● AOTA ● OVID Data Base	● feeding ● desensitization ● sequential oral sensory approach ● oral aversion ● feeding therapy ● feeding difficulties ● problematic feeding ● premature birth ● sensation disorders ● pediatric ● eating ● eating behavior ● oral sensory ● intervention ● children ● oral sensory therapy ● sensory ● Kay Toomey ● Peterson	"+" "and" "author"	<u>Inclusion:</u> ● English ● Within the last 10 years ● Includes SOS protocol or SI or ABA interventions related to feeding difficulties ● Population consisting of children with feeding difficulties <u>Exclusion:</u> ● Other language that was not English ● Article older than 2005 ● Not related to SOS or ABA treatment for feeding difficulties ● Population that did not include children with feeding difficulties

RESULTS OF SEARCH:

Table 2: Summary of Study Designs of Articles Retrieved

Level	Study Design/ Methodology of Articles Retrieved	Total Number Located	Data Base Source	Citation (Name, Year)
Level 1a	Systematic Reviews or Meta-analysis of Randomized Control Trials			
Level 1b	Individualized Randomized Control Trials			
Level 2a	Systematic reviews of cohort studies			
Level 2b	Individualized cohort studies and low quality RCT's (PEDro < 6)			
Level 3a	Systematic review of case-control studies			
Level 3b	Case-control studies and non-randomized controlled trials	I	ProQuest Dissertations & Theses (PQDT)	(Boyd, 2007)
Level 4	Case-series and poor quality cohort and case-control studies	III	PUBMED EBSCOhost ProQuest Dissertations & Theses (PQDT)	(Addison, 2012) (Benson, 2013) (Peterson, 2013)
Level 5	Expert Opinion, qualitative research,	V	EBSCOhost	(Dobbelsteyn, 2005)

	program descriptions		EBSCOhost	Geggie, 1999)
			EBSCOhost	(Gisel, 1994)
			EBSCOhost	(Ghanizadeh, 2013)
			EBSCOhost	(Toomey, 2011)

STUDIES INCLUDED:

Table 3: Summary of Included Studies

	Study 1 Benson, 2013	**Study 2** Peterson, K., 2013	**Study 3** Boyd, K.L., 2007
Design	Case-series retrospective repeated-measures within subject design	Random control trial	Quasi-experimental design
Level of Evidence	Strength: 4	Strength: 4	Strength: 3B
Rigor Score	SCED: 5/11	SCED: 8/11	SNS:6/8
Population	-34 children (56% M, 44% F) ages 30-92 months -Mean age= 57.2 months -Autism (38%), CP (12%), neurological impairments (38%), and no specific diagnosis (12%)	-6 male, school-aged children ages 4-6 -Mean age = not provided -Issues consuming a variety of foods and a diagnosis of ASD	-37 children ages 8-61 months (21 M, 16 F) -Mean age= 37.23 months -7 children had GI feeding tubes -Other diagnoses included gastroesophageal reflux, oral motor delays, low tone, sensory difficulties, anxiety or trauma related to food, heart issues, autism, and developmental delays.

			-All children were given therapy in a group setting at Toomey and Associates Inc.
Intervention Investigated	Effectiveness of the SOS protocol intervention leading to positive trend in feeding scores in children with feeding difficulties.	To determine whether the SOS protocol or ABA behavioral approach is more effective for the treatment of sensory-based feeding disorders	To examine the effectiveness of the SOS protocol with feeding disorders, as developed by Dr. Kay Toomey
Comparison Intervention	N/A	ABA behavioral intervention	N/A
Dependent Variables	-Level of interaction with the food (25-step scale) -Food type	-Food acceptance -Clean mouth -Food (gram) intake	-Number of foods consumed
Outcome Measures	-25 step scale developed by Toomey (feeding score from 1-25) -Food (characterized by hard munchable, meltable, solid, puree, or drink)	-Acceptance was defined as the child picking up an eating utensil or using his fingers to pick up the bite of food and placing the entire bite of food into mouth within 8 seconds after food presentation. -Mouth clean was defined as the child having a bite of food no larger than a grain of rice in his mouth 30 seconds after placing the	-3 day diet histories done by parents (prior to and after treatment) -Initiation of tasting new food 80-90% of time -30 different foods in food preferences (10 protein, 10 starches, 10 fruits/vegetables) -Height/weight must consistently increase over a 6-12 week period and following growth curves appropriate for age and condition -Able to handle age

		food into his mouth. If the child spit the food out, this was not included. -To measure amount of food intake, the therapist measured the weight of the food on a scale before and after the therapy sessions.	appropriate foods without negative behaviors during mealtimes -Able to consume appropriate amount of fluid for age group
Results	-5 patterns in feeding scores were found. - Patterns 1 & 2 showed no positive trends in feeding scores (16 children). -Pattern 3 had 1 or more food types with a positive trend in the last few sessions of the intervention (7 children). -Pattern 4 was positive trend for 1 or more food types (5 children). -Pattern 5 was positive trend for all food types (6 children).	-High levels of food acceptance, clean mouth, and food intake were observed after half of the participants received ABA treatment. -However, the other half of the participants who received the SOS treatment did not achieve any change throughout participation in the program. -After participants switched over to the ABA treatment, it was observed that high levels of acceptance began to occur across all areas.	-Children who received one 12-week SOS intervention had an increase in the number of foods consumed, which was assessed with the 3-day diet history. -Children who attended two 12-week interventions improved the number of foods consumed significantly. -Children who went on to attend three or four 12-week sessions did not have a significant increase in the number of foods consumed.

Effect Size	N/A	N/A	-Group 1: 46% (17/37) of participants improved after first 12-week session. -Group 2: Additional 22% (8/37) improved after second 12-week session. -After third 12-week session of SOS protocol, no significant improvement was observed.
Conclusion	The results of this study were inconclusive as to whether the SOS protocol was an effective intervention for improving eating in children with neurological disorders.	It was concluded that the ABA treatment was effective at increasing food acceptance and consumption in all 6 of the children, whereas the SOS intervention was not.	It was concluded that children who attended one or two 12-week SOS feeding sessions significantly improved the number of foods consumed. However, it was found that children that attended three or more 12-week feeding sessions did not continue to see significant improvements in number of foods consumed.

IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH:

PICO Question:

What is the effectiveness of the Sequential Oral Sensory (SOS) approach in occupational therapy for improving eating in children ages 8 months-8 years with feeding difficulties compared to ABA or no treatment?

Operational Definition of Terms:

SOS: Sequential Oral Sensory approach is a desensitization therapy intervention developed by Dr. Kay Toomey to address issues with feeding difficulties in children.

ABA: Applied Behavioral Analytic approaches are based on applied behavioral theories which assume that behavior is learned, and therefore, behavior can be altered or reshaped when it is reinforced.

Feeding difficulties: Behaviors or medical conditions that lead to a child's decreased ability to eat the adequate amount of food to gain weight and grow normally.

Improved eating: Improved eating includes level of interaction with and acceptance of food, amount of food taken in (gram intake), mouth clean (no packing of food), number of foods consumed (number and types of food the child eats), and decrease negative behaviors (outbursts, gagging, crying, and spitting out food).

Overall conclusions:

Results: Similar Findings

- All three studies were single case studies, measuring various aspects of feeding and eating during the intervention period.
- Each study included children with feeding issues, however, autism was the most common diagnosis between all studies.
- All studies were similar amongst the intervention (SOS protocol), which measured some aspect how of children are eating throughout the intervention.

Results: Differences

- The SOS protocol resulted in 46% of participants improving after 12 weeks in the Boyd study. After 24 weeks, an additional 22% improved from the SOS protocol, but after the third session (36 weeks) no further improvement was found.
- No other studies saw improvement with SOS even with a variety of measures including mouth clean, level of acceptance, gram intake, and number of foods consumed.
- In the study conducted by Peterson, it was found that the ABA treatment had more positive results on feeding difficulties for all of the children involved in the study.

Overall, the findings of these studies reveal inconclusive and limited results as to whether the SOS protocol is effective for improving eating with children who have eating difficulties.

Boundaries:

There was a total of 77 participants ages 8 months to 8 years in all 3 articles together with a mean of 4.3 years. Diagnoses differed between studies and included autism, cerebral palsy, neurological impairments, GI feeding tubes, gastroesophageal reflux, oral motor delays, low tone, sensory difficulties, anxiety or trauma related to food, heart issues, developmental delays, and no specific diagnoses. All children displayed some form of feeding difficulty during

mealtimes. Exclusion criteria varied across studies, when you combine studies, the exclusion criteria included severe medical issues, failure to thrive, insufficient caloric intake, and any child who did not fit the diet history criteria.

Implications for practice:

All three articles showed limited evidence of the use of SOS in practice. The SOS protocol developer, Kay Toomey, has shown minimal support for this intervention. In the study done by Boyd, the only article that supported the use of SOS, participants were gathered from Toomey and Associates, Inc. This company was developed by Kay Toomey. Therefore, the Boyd study may have been influenced by experimenter effects which could be the reason that it was the only study to show positive results of the SOS protocol. Toomey suggests that there be a minimum of 12 weeks of SOS therapy before successful results were shown to be effective, and in the study done by Boyd, the results showed similar findings. Based on the literature reviewed, ABA has been shown to be more effective for feeding difficulties in children, and one study that was found provided ABA treatment to every child in the study after effectiveness was demonstrated. Overall, there is limited research and evidence to determine effectiveness or ineffectiveness of the SOS protocol. In summary, without a randomized control trial, the evidence is inconclusive as to whether this treatment approach is a practical use of clinician's money and time.

Clinical Bottom Line:

There is limited evidence supporting the use of the SOS approach to feeding with mixed results on the effectiveness to improve eating.

APPENDIX A.

The SOS protocol involves a series of steps to help the child become more comfortable and prepared for trying different foods. Because one of the assumptions to development of eating difficulties is based on hypersensitivity, the first step in the SOS protocol is to prepare the child with sensory integrative approaches. According to the protocol, this initial preparation is to promote organization of the senses and to increase body awareness. The sensory preparation routine involves playing on jungle gym equipment or an obstacle course to engage the child in gross motor activities such as running, lifting, pushing, and jumping. The therapist models these behaviors for the child and praises the child when he or she engages in the modeled behaviors. However, the therapist allows the child to perform other activities on the jungle gym to enable the child to create his or her own sensory preparation routine and promote child-directed therapy (Peterson, 2013).

After about 10 minutes, the sensory preparation period is complete, and the therapist guides the child into the therapy room or area of intervention. The child is prompted to sing and march while on the way to the room where eating will take place. The therapist uses modeling to do so, but if the child does not choose to sing or march, the child may choose to do as they wish. As the child enters the feeding therapy room, the therapist guides or helps the child sit in his or her seat in order to engage the child in the pre-meal setup step (Peterson, 2013).

During this stage and throughout the rest of the SOS approach, the therapist sequentially encourages the child by giving the child positive, non-directive statements, using behavior modeling, using light physical prompts, and using full physical guidance. An example of a non-directive statement that the therapist could say is, “Cleaning up is fun!” If the child did not do what was asked in 10 seconds, the therapist would give the next sequential prompt. Meal time setup included washing face, washing hands, blowing bubbles with the remainder of the soap, washing the table, and setting the table. The therapist again modeled the behavior even if the child did not do meal time setup (Peterson, 2013).

Once the pre-meal setup step is complete, the therapist then introduces the food, in a hierarchical and gradual manner. Therefore, if twelve foods are to be presented to the child in each session, the first exposure would include one aversive food, and eleven non-aversive foods. The preferences of aversive and non-aversive foods of the child would be determined by interview with the caregiver. The non-aversive foods always included pureed, meltable hard solids and hard munchable solids. The first food that was presented to the child was a non-aversive food that was available for the child to interact with for four minutes and then placed on the food plate within arm’s reach. Each food item after the first presented food contained one similar property, such as color, taste, texture or size. The therapist encouraged the child to interact with each food item based on the steps-to-eating hierarchy. For example, food in front of the child would be lower on the hierarchy than the child touching the food to his or her lips. The major steps involved in the hierarchy incorporate visual tolerance, indirect interaction, smelling, touching, tasting, and consuming the food (Peterson, 2013).

Visual tolerance gradually introduces the child to the food at varying distances in relation to the child. Indirect interaction encompasses promoting the child to help prepare the food, use utensils to serve or touch the food, and to touch the food through other objects, such as a napkin. Smelling consisted of presenting a food with a prominent stench and having the child be near the food and picking up the food and smelling it. Touching involves the child touching the food using any body parts including fingers, arms, chest, neck, or tongue. Tasting the food includes licking with tip of tongue, full tongue, biting a piece and spitting it out, biting a piece and keeping it in the mouth, and biting the food, chewing it and expelling the food. Eating the food consisted of chewing the food and swallowing part and spitting out the rest, chewing, swallowing, and drinking immediately after, and chewing, swallowing without taking a drink.

Throughout the feeding hierarchy session, the therapist used descriptive, positive, and neutral comments about the child engaging with the food, such as "Johnny can lick the carrot." Additionally, the therapist used playfulness to evoke relaxation such as singing, playing with the food, squishing the food and painting with the food. The therapist would continue with light physical prompts or full physical guidance if after 30 seconds the child did not engage with the food. The child was never forced with comply with the behaviors if the child resisted. The therapist would attempt to place the food as close as the child would allow. If the child required full physical guidance, the step was failed, and the subsequent step before that one would be given (Peterson, 2013).

The intention of the SOS protocol is to allow the child to progress through the hierarchy of steps in order for the child to bite, chew, and swallow the aversive food. To increase consumption and tolerance of an aversive food, the therapist would present it through different manners, such as changing the texture of the food. In addition, the aversive food would be discontinued and a different aversive food would be presented if the child did not interact or consume the food within six therapy sessions. The first three sessions included presentation of the same food items in the same order and the same manner, so that the child can be accustomed to a routine. However in the fourth session, the therapist changed the properties of the food by altering the shaped, temperature or texture (Peterson, 2013).

Following the feeding intervention, the therapist facilitated a clean-up routine by saying "All done, time to clean up." The therapist then asked the child to "blow or throw away" at the least one food that was used in the eating session by placing it on the lips and spitting the food into the trashcan. If the child did not comply, the therapist would encourage the child to touch the food, with or without a napkin, and throw it in the trash. The child was then asked to help wash the table, throw away the trash, and wash his or her face and hands (Peterson, 2013).

Once the intervention has been administered, the therapist then provides caregiver training to continue and facilitate the progress of the child with tolerating and accepting different types of food. Written material on the instructions of the protocol, modeling behaviors, role-playing, and feedback should be given to the caregivers to help the child maintain a consistency when interacting with food at home (Peterson, 2013). Children with a sensory processing deficit have troubles modulating their sensory input and may not be able to identify all the sensory

properties of an object. They may over-react or under-react to these sensory inputs, and this may lead to sensitivities to food because the child cannot decipher the sensory information that they are receiving (Peterson, 2013).

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