

## Failure to Thrive

# Failure to Thrive A Sensorimotor Approach

By Rhoda P. Erhardt

*This is the second of a three-part series that will examine various elements involved in the self-feeding process, and how occupational therapists can help children improve self-feeding skills.*

Feeding is one of the most important topic areas of our practice as occupational therapists. Our Uniform Terminology has classified feeding and eating in one of the performance areas as an activity of daily living.

When we evaluate a child who has been referred for failure to thrive, we need to gather information about the causes (medical, emotional, behavioral) and how they contribute to the child's functional problems. One of the most useful tools in classifying assessment data is the disablement model developed by the National Center of Medical Rehabilitation Research (NCMRR), which helps identify pathophysiology, system impairments, functional limitations, disability, and societal limitations.



Failure to thrive (FTT) has an enormous impact on the child's physical and mental growth. Frequently it is caused by oral-motor dysfunction related to sensory processing problems. If the pathophysiology is central nervous system damage, it can range from mild to moderate to severe in children with diagnoses such as cerebral palsy, autism, and fetal alcohol syndrome (FAS).

Impairments that usually arise in kids with FAS as well as those with other CNS disorders include developmental delays, hypotonia, decreased motor coordination, irritability as newborns, self-regulation problems, FTT, and visual loss and/or hearing impairment (sensory). An unresolved feeding problem can contribute to the child's functional limitations later, when it becomes a disability, interfering with participation in family and school activities.

### A case report

Andrew was born three weeks premature. He was irritable and easily overstimulated, especially by light and sound. He had diagnoses of FAS and FTT and was referred to me at age 17 months for evaluation and recommendations to solve ongoing feeding problems.

I decided that several theoretical frames of reference would be appropriate. Developmental theory is always my primary foundation for organizing clinical observations. Principles of motor learning for motor control emphasize the components of movement patterns in relation to functional tasks. Skill acquisition will then depend on the type of task and Andrew's stage of learning.

The Model of Human Occupation (Kielhofner/Burke) describes how a child like Andrew operates as an open system, influenced by environmental factors that promote adaptation and change. He is also part of a family system, in which each member has a specific occupational role. We observe his occupational behaviors, both feeding (self-care) and play, as purposeful activity, based upon his skills, interests, and experiences.

This sensorimotor approach is actually very eclectic, based on skillful interweaving and applications of several theories. Most importantly, feeding is a reciprocal process that depends on the interactions of parent and child. Effective feeding requires a relationship in which the parent provides appropriate food and feeding structure, but respects the child's capability to decide what

and how much to eat. This approach can be used with any child who has sensory and motor problems that affect feeding. My experience as coordinator of Camp Avanti, for elementary-age children with sensory integration disorders, has taught me that the sensory issues that surround the mouth and all the oral structures, unless dealt with early, affect these kids' behavior for years and years, often into adulthood.

## Evaluation

The session began with my general observation of Andrew's eating skills, and I let the foster mother determine in which order to demonstrate those skills. Then I interjected questions, comments, and treatment ideas (family concerns, positioning, types of food, oral components, and tactile sensitivity).

Andrew's feeding problems appeared to be more sensory-based than motor-based. Like other children with sensory regulation issues, he had difficulty processing information from many channels, especially simultaneously. He overloaded easily to excessive touch, sound and visual stimulation. He coped by resisting other people's attempts to control behavior and his environment (see Fig. 1). His own chair, for instance, always had to be in the same place at the table. At the same time, he liked strong food flavors and certain consistencies of food that gave clear messages to his nervous system, so he knew where they were in his mouth.

Together, his foster mother and I developed goals. Short-term goals would be for Andrew to transition from bottle to cup and to enjoy a wider variety of foods. Long-term goals would be for him to become independent in finger feeding and utensil use and to accept enough variety and quantity of solid foods to meet nutritional needs without Pediasure<sup>®</sup>.

His foster mother would implement the treatment plan, with occupational therapy consultations in the home once a month for three months, with a one-year follow-up.

## Treatment

Our treatment aimed to normalize sensory input and to encourage Andrew to be an active participant as he developed motor control and learned to master his movements and his environment. We wanted to make sure that our intervention involved fun and spontaneity, to facilitate his exploration, experimentation, imitation, and repetition behaviors. Specific treatment techniques included:

- \* Using a variety of mouthing toys that Andrew controlled, to normalize tactile sensations and develop fine-motor and oral-motor skills (lip, tongue, and jaw control). This was an age-appropriate and socially appropriate way to give him what he needed, so that mealtime would be for eating, not playing;
- \* Doing pre-feeding stimulation (rapid tapping of cheeks for alerting, with firm contact for a moment after each series of three or four taps, and slow, firm rubbing inside the mouth on upper, lower, left, and right gums);
- \* Facilitating dependent spoon-feeding by presenting the spoon a few inches from the mouth and waiting until his lips actively close on the spoon and slowly pull the food off it, instead of drawing the spoon out of his mouth against the teeth;
- \* Facilitating independent spoon-feeding by guiding a long-handled spoon, holding part of the handle, not his hand, and alternating this help with relinquishing total control to him; and
- \* Helping Andrew transition from bottle to cup by teaching him straw-drinking with his own sport bottle, available all day. Food coloring can be added to the water to provide visual feedback. If the child uses an adapted cup at this time, it should be more than half-filled with liquid (milk or juice), so that he can drink without having to manage the difficult task of coordinating the tilting of both the cup and his head. Playing with cups in the bathtub and straws at the table should be discontinued, so that these things are reserved for feeding at mealtimes only.

We also provided resources for Andrew's parents:

- \* *Sensory Defensiveness in Children Aged 2-12: An Intervention Guide for Parents and Other Caretakers* (available from PDP Products, Oak Park Heights, MN);
- \* *Out of the Mouths of Babes: Discovering the Developmental Significance of the Mouth* (available from PDP Products, Oak Park Heights, MN);
- \* *Self-Feeding in the Normal Child* (a video available from Erhardt Developmental Products, Maplewood, MN);
- \* "Finger Feeding: A Comprehensive Developmental Perspective." *Pediatric Basics*, 66, 2-6, fall, 1993 (available from Gerber Products Inc. 1-800-4-GERBER); and

\* "Utensil Feeding: A Comprehensive Developmental Perspective." *Pediatric Basics*, 70, 2-9, fall, 1994 (available from Gerber Products, Inc. 1-800-4-GERBER).

### **Short-term results**

After three months, Andrew showed decreased oral sensitivity. He was drinking from Magma<sup>®</sup> cups in the first 2 stages: a nursing cup with a nipple and a soft spouted cup. He would dip a spoon into his food and bring it to his mouth upside down, with good lip closure. He also ate a greater variety of foods, such as crackers, puddings, meat, fresh and canned fruit, toast and cereal.

### **Long-term results**

After a year, Andrew was independent in all self-feeding, with a wide variety of solid foods that included sandwiches, spaghetti, vegetables, potatoes, ice cream, and hot dogs (see Fig. 2). He was not, however, eating a great enough quantity of solid foods to meet his nutritional needs without Pediasure<sup>®</sup>, because the quantities he ate were still small.

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