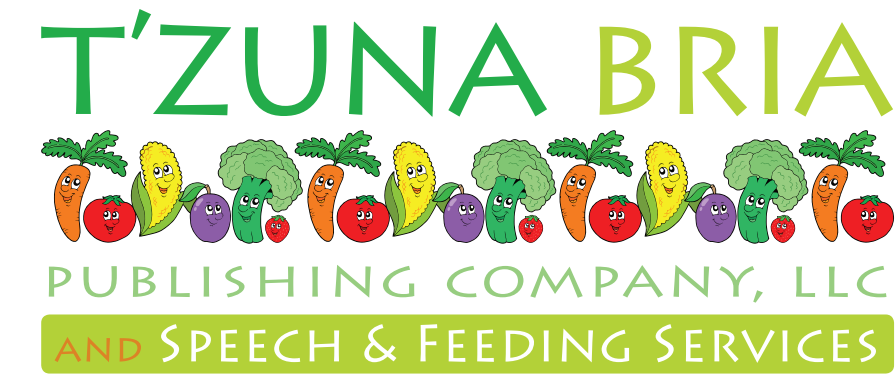


# Improve Clinical Outcomes with Nutrition Awareness

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## OBJECTIVE:

Provide relevant information why nutrition therapy should be addressed first before starting speech, language, feeding and/or swallowing therapy.

- Therapeutic interventions don't work effectively on a weak biological base
- Dietary irritants and missing nutrients affect neurological and immunological development, which in turn, can impact cognitive and learning capacity
- Therapists who recognize and address nutritional deficits before treatment will have higher success rates than those who do not because a better diet improves clinical outcomes

## METHODS USED:

- Completion of a medical history that identifies all past medical diagnoses
- Diet sample of all foods and beverages the patient eats for breakfast, lunch, dinner, snacks and list of preferred foods
- Bowel movement schedule (number/day or week) and description (formed, hard or loose)
- Consultation with SLP/swallowing & feeding therapist to evaluate chewing, swallowing and communication skills
- Nutrition consultation and recommendations for vitamins and supplements
- Nutrition, OMT/swallowing and feeding therapy
- Follow up with GI, ENT and/or Allergist if improvements not noted after 6-8 weeks

## Six Warning Signs that Nutrition Intervention Might Be Useful

- 50% or more of the diet is made up of processed grains that are high in sugar (foods that are easily meltable by saliva such as breads, crackers, chips, etc. or what is often called a "white diet" or one that is nutrient deficient (empty calories)
- Prefers drinking rather than chewing or eating healthy, whole foods like fruits, vegetables and/or meats
- Parents refer to them as picky eaters
- Has frequent colds and illnesses
- Diagnosed with reflux and/or colic
- Child has a poor appetite and/or is underweight

# BACKGROUND INFORMATION:



## Nutrition therapy works in two main ways:

- 1 **Take away what's bothering the patient.** A food irritant will cause symptoms such as stomach pain, rashes, frequent illness and mood swings. These reactions may or may not be allergic reactions. Allergic reactions involve histamine and generally happen within a few hours of consumption (such as a hive or itchy throat). Most non-allergic food reactions are harder to pinpoint. For example, a non-allergic dairy reaction may look like frequent colds or strep throat. The gut-activated lymphatic tissue (GALT) that lines the GI tract can generate mucous in response to dairy protein irritation. The mucous causes the symptom of congestion and becomes a breeding ground for germs in the environment. Consequently, the child gets sick more often. (Dorfman, 2019)

### Common clinical symptoms of dairy protein intolerance or sensitivity include:

- ear infections
- constipation
- eczema
- frequent upper respiratory infections
- chronic congestion
- bad breath
- snoring

### Common clinical symptoms of a lactose (milk sugar) sensitivity:

- stomach aches
- loose stools
- excessive gas or bloating

\*Taking away what's irritating the system can take pressure off the already overloaded sensory system and improve its functioning.

- 2 **Close the gap of nutritional deficiency.** Supplements may be needed to close the gap between what a child can or will eat and what they need for optimum development during critical developmental milestone periods. For example:

- Eating highly processed foods can result in low levels of zinc, magnesium, vitamins A, E, C as well as other trace minerals
- Low zinc intake is associated with poor taste and smell acuity which further contributes to a preference for sweet and salty foods
- Reflux medicine, which is commonly prescribed to young children, interferes with the absorption of calcium, zinc, protein, iron, vitamin B12, and D. This and other medicines may increase the need for adding some nutrients into the diet

\*"Children may not look malnourished because they are gaining weight. If weight gain is the only criteria we use for nutritional sufficiency, that means the heaviest kids are the healthiest kids and we know that is not true. In the United States, our challenge is high empty-calorie malnutrition. Diets are calorie rich and nutrient poor. The result is more inflammation and insufficient nutrients during critical development periods so that neurological, immunological and cognitive development can be permanently affected." (Dorfman, 2019)

## Nutrition-related treatment strategies for closing the gap of nutrient deficiency:

With the supervision of a clinical nutritionist and/or knowledgeable physician, patients can take a combination of supportive nutrients that often include probiotics, fish oils and therapeutic doses of multivitamins/minerals as the first step.

- Therapeutic multiple vitamins and minerals can help improve appetite/taste acuity and immune function
- Long-chain fatty acids from fish which are structural nutrients for the nervous system
  - Since sensory processing difficulties stem from immaturity in neurological development, giving the patient the right kind of fat found in fish oils is critical in improving the neurological system and for improving brain development
- Replacement nutrients for food removed due to restricted eating or food reactions, such as calcium and vitamin D if dairy foods are not consumed
- Digestive system support such as probiotics, prebiotics and digestive enzymes

\*Once the child has the nutritional support in place and GI and/or respiratory issues have resolved, a specific therapeutic program is designed to improve variety, texture and volume of healthy solid foods into the patient's diet. Then, therapy can commence.

## Understanding there is a biochemistry to learning:

For learning to be successful, the neurons in the brain change in a number of ways to accommodate the new information. The myelin thickens. New receptor sites accept new connections from other neurons. The electrical potential shifts so the neuron can fire more easily with less stimulation the next time the information is needed, etc. **However, if the needed nutrients are not available, this chemical process may not work effectively; the person may have the experience but he is not able to convert the information into learning.** For example, the child could hear a new word over and over but not increase his vocabulary or he may require many more repetitions than is usually necessary in order to create the chemical changes required in the brain for learning to take place.

## Nutrition related treatment strategies that help improve the biochemistry of learning

Additional nutrients that may be included by the clinical nutritionist or physician to help improve the biochemistry of learning such as the following examples:

- Magnesium (ADD/ADHD kids tend to be low in magnesium; helps to calm the sensory system and helps with constipation issues as well)
- Phosphatidylserine (a structural nutrient to improve memory and brain functions)
- DMAE (Dimethylaminoethanol; a version of choline to help with motor planning issues)
- 5HTP (promotes serotonin, a neurotransmitter involved in sending messages in the brain; works with the fish oil in taking the edge off and giving the feeling that things are easier and less anxious about every day things)
- Phosphatidyl choline (another structural nutrient that helps improve function in the brain)
- Piracetam (Helps left and right brain communicate better. Also helps motor coordination and cognition. Helps to process information faster too)

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## CASE STUDY:

Patient 8.2 years old Caucasian male

### AT START OF THERAPY

- History of feeding difficulties since 14-18 months old. Parents reported he has grass, pollen and mold allergies related to seasonal changes and takes Singular daily. They further reported he has mild asthma diagnosis occurring during seasonal changes and takes Flovent during these times. They also reported he takes Prevacid medication for reflux issues.
- Diagnosed with /s, z/ distortions at syllable, word and sentence level.
- Diagnosed with reduced oral motor skill development, reduced chewing effectiveness on solid foods, immature swallowing pattern and restricted diet by SLP/feeding therapist.
- Demonstrated an anterior munch chewing pattern, reduced cohesive bolus formation and transfer skills on all solid food textures.
- Demonstrated an immature swallow pattern (tongue thrust) on all solids, liquids and saliva swallows.
- Demonstrated reduced lip protrusion on cup and straw drinking; bites on straw and cup indicative of reduced jaw grading and stability issues and immature oral motor skill development.
  - Found to be only drinking sip by sip; no continuous drinking noted.
  - Voice clear after all solid and liquid swallows indicating good pharyngeal/laryngeal coordination during and after the swallow.
- Bowel Movements: loose stools and frequent burping
- Diet Sample Before Therapy (See attached)
- Nutrition therapy recommendations over three consultations during a 12 week period:
  - Dairy Free diet
  - Kirkman chewable wafer with xylitol as his multivitamin x2/day
  - Omega Cure fish oil x1 tsp/day
  - Phoscal by Nutasal x1/2 tsp/day.

### RESULTS AFTER THERAPY

(A multi-system approach was taken that included a combination of 12 orofunctional swallowing sessions and 13 feeding therapy sessions for a total of 25 sessions; 3 nutrition consultation sessions with supplement recommendations and 3 behavior management sessions during feeding therapy).

- Reduced overall congestion and elimination of the need to take all allergy and reflux medications by end of therapy session.
- Bowel movements formed and no burping reported.
- Able to produce /s, z/ correctly at syllable, word, sentence level x90% with minimal visual and verbal cues. Working on spontaneous speech x2 exchanges when talking about informal topics (weather, sports, food and movies).
- Improvement with oral motor skill development through a 12 week orofunctional therapy program that worked on tongue retraction, tongue lateralization, tongue tip elevation and mid tongue elevation skills, dissociation of the lips, jaw, and tongue, chewing more effectively on back molars, cohesive bolus and transfer skills, and sequencing a correct swallow pattern on solids, liquids and saliva swallows.
- Improved diet of 4-5 healthy meal rotations for breakfast, lunch, dinner and snacks that included vegetables and meats and whole grain breads, rice and pastas.

### FINDINGS:

Implementing a nutrition therapy program along with speech, feeding and swallowing therapy to ensure the patient maintains a healthy diet appeared to help improve the patient's illnesses, which in turn, helped improve his medical condition without the need of further medical management and/or prescription medications.

### CONCLUSION:

- It is the belief of this clinician that nutrition therapy should be the first line of defense when treating communication, learning and other rehab related disorders.
- This approach advocates being proactive in the patient's care and keeping the underlying neurological and GI system healthy and strong so that the brain functions at its best level as opposed to being reactive to treating the symptoms with medication that often have a number of negative side effects further degrading the overall system and corresponding brain development and making it weaker and more difficult to rehabilitate.

### DIET AT START OF THERAPY:

Breakfast	Lunch	Dinner
Croissant French toast Cereal with milk (Fruit Loops, Coco Krispies)	PB Sandwich on White Bread, Chocolate Granola (sometimes), Veggie Straw Potato Chips, Pretzels Water <i>*Does not eat fruits, vegetables or cheese</i>	Chicken Nuggets Loves Breaded Flounder and Potatoes Smiley Baked Potatoes or French Fries Baked Likes Vanilla Ice Cream Water or Passion Fruit Drink diluted in Water <i>*Does not eat rice, pasta or pizza</i>

### DIET AT END OF THERAPY:

Breakfast	Lunch	Dinner
Scrambled Eggs with Spinach French Toast Omelet with Veggies Sprouted Bread with PB Protein Shake	Chicken or Beef Taquitos Chicken on Sprouted Bread or Whole Grain Bread Turkey Sandwich with Lettuce Sprouted Bread with PB	Meatballs with Tomato Sauce and Veggies Hamburgers with Lettuce and Potatoes Fish and Vegetables (flounder) Roast Chicken with Vegetables Roast Beef with Vegetables (sweet potato fries, fresh carrots, roasted cauliflower and broccoli, spaghetti squash, corn)



Dianne Lazer and Kelly Dorfman are not receiving any financial support or payment for this presentation. They each have written books that they use in their speech, feeding, swallowing and nutrition therapy practices that can be found on their websites and may be highlighted in this poster presentation. Ms. Lazer and Dorfman have no financial agreements regarding the sale of their books and both professionals maintain separate private practices with no financial connections.