Verbal apraxia is a neurologically based motor planning speech disorder of unknown etiology that prevents normal speech development.
Autism Spectrum Disorder (ASD) is on the rise at an alarming rate

An estimated 50% of children with autism have *apraxia*. In addition, there are 20,000 to 50,000 children in the US who have *apraxia*, but are not ASD.

### References

Solution

Various studies have suggested that PUFAs with eicosapentaenoic acid (EPA) and DHA provided improvements in speech production and coordination in children with verbal apraxia. (2,10,11,12). In addition, PUFA supplementation increases utilization of vitamin E in the body (13-16). These two supplements may have a synergistic effect at higher doses.

Study: A total of 187 children with verbal apraxia received vitamin E+polyunsaturated fatty acid supplementation. Supplementation consisted of 280 mg DHA and 695 mg EPA per dose in liquid or capsule form, given with meal 1 to 3 times daily. A celiac panel, fat-soluble vitamin test and carnitine level were obtained in patients having blood analyzed (9).

The case series was published in the July/August 2009 edition of Alternative Therapies in Health and Medicine and represents the most comprehensive summary of children with apraxia to date.

According to the findings in the study, “Use of high-dose PUFA and vitamin E in children with a history of VA appeared to lead to rapid clinical improvement of many symptoms of this neurological condition in a large cohort.” *

Results: A common clinical phenotype of male predominance, autism, sensory issues, low muscle tone, coordination difficulties, food allergy, and GI symptoms emerged. In all 181 families (97%) reported (9):

a) Improvements in number of areas including speech, imitation, coordination, eye contact, behaviour sensory issues, and development of pain sensation
b) Comorbidity was 65% with ASD
c) ASD symptoms are similar (hypertonia, poor imitation skill inability to integrate sensory percepts)

Conclusion: “The authors have found a new syndrome of allergy, apraxia and malabsorption (SAAM), which is likely one class of a larger apraxia phenotype often coexists with ASD and vice versa, suggesting overlap in these conditions that requires further characterization. We also have identified a disease paradigm of neurological dysfunction emulating symptoms of low vitamin E bioavailability in VA independent of genotype that responds to a safe nutritional intervention” (9)*.

Properties
Speak is a dietary supplement (1.200 mg per twist off capsule) containing Omega3 in combination with two specific types of Vitamin E e Vitamin K and Vitamin D3. Speak is a formulation from CHRCO (Children’s Hospital and Research Center Oakland - USA).

Speak
Each 1200 mg twist off capsule of Speak contains:

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Specific Name</th>
<th>Per capsule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omega-3</td>
<td>EPA-eicosapentaenoic acid</td>
<td>362,5 mg</td>
</tr>
<tr>
<td>Omega-3</td>
<td>DHA-docosahexaenoic acid</td>
<td>137,5 mg</td>
</tr>
<tr>
<td>Vitamin D3</td>
<td>Colecalciferol</td>
<td>10 μg</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>D-alpha tocopherol</td>
<td>168 mg</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Gamma tocopherol</td>
<td>100 mg</td>
</tr>
<tr>
<td>Vitamin K1</td>
<td>Phytonadione</td>
<td>500 μg</td>
</tr>
<tr>
<td>Vitamin K2</td>
<td>Menaquinone</td>
<td>75 μg</td>
</tr>
</tbody>
</table>

Capsule contents: gelatine, purified water USP, glycerin USP

Dosage Recommendations
Suggested dosage plan for those not currently taking fish oil or vitamin E supplements:

<table>
<thead>
<tr>
<th>SPEAK™</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of SPEAK™ twist off capsules/day</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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</tbody>
</table>

* Start with one twist off capsule of SPEAK™ daily. On the second week increase the dosage to 2 capsules per day and on the third week increase the dosage to 3 capsules per day, over 12 weeks

♦ Begin with one capsule daily (with meals)
♦ Twist off the capsule and squirt it directly into the mouth and follow with food. Or serve it on a spoon (with or without juice or fruit sauce).

Possible Side Effects
Moodiness, irritability, and emotional outbursts are sometimes reported in children in the first few days / weeks of Omega 3 Supplementation. Some children may experience loose stools when they begin supplementation with oil-based capsules: this usually resolves quickly.

Presentation
SPEAK™ is presented in plastic bottles of 60 twist off capsules x 1.200 mg

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