

The Best Dyspraxia Program Ever

By Kelly Dorfman, M.S., L.D.N.

Children with developmental delays demonstrate varying degrees of difficulty with motor planning. This disorder is called dyspraxia, a technical term derived from the Latin roots “dys” meaning “poor” and “praxis” meaning “coordination”. Apraxia is a more serious version of this disability, with severely limited motor planning.

Dyspraxia can affect gross, fine, and oral motor skills. Activities such as riding a bicycle, running, and eating with utensils require skilled motor planning. When dyspraxia affects the ability to coordinate sounds, the result is impaired speech and language.

Dyspraxia, Speech and Language

How does an individual find the right words, sequence them into sentences, and converse? Since conversations can take many directions, mental flexibility and the ability to prioritize ideas are essential. If grandma asks Christopher what he likes about school, he could choose to say recess, but if he has dyspraxia, he may comment on his new truck. Children with language motor planning issues often answer questions tangentially, with scripts, or by echoing. Fluid social interactions require a combination of competent motor planning and sufficient processing speed.

Motor Planning Depends Upon Good Fat

The biological foundation of good motor planning is balanced fat. Picture the brain as a house of fat. The house’s foundation and beams are made of structural fats, the walls (cell membranes) are bi-layers of fat and it is all stabilized by antioxidant fats that protect the entire operation from damage. Together these fats comprise 60-70% of the brain.

Phospholipids – Structural Fats

What lays the foundation for our house of fat are phospholipids. Unlike the more familiar fats, triglycerides, which have three fatty acid chains linked to a base, phospholipids have a fat soluble molecule on one end, and a water soluble molecule on the other. Phospholipids are the perfect building material because of their unique ability to link to both fat and water soluble molecules.

However, their quality changes, depending upon whether they incorporate good fats, like omega-3 fat from fish and algae, or poor fats, like trans-fats from processed foods. The former optimize the strength, function, and

quality of brain membranes, making the foundation strong. When combined with the latter, the foundation is weak.

Phosphatidyl choline (PC) makes up 50-65% of the phospholipids in membranes. Research suggests choline supplementation can improve cognitive function. Choline is the raw material for the neurotransmitter, acetylcholine; the major neurotransmitter that regulates memory, motor planning, and executive function.

An excellent and effective form of phosphatidyl choline is Xymogen Phosphaline, a thick liquid, available from The Village Green Apothecary. 800.869.9159. Although this supplement is expensive, children with dyspraxia who take it are showing exciting leaps in language complexity. Mix with apple or pear sauce, spread it on a pancake, mix it with Nutella or camouflage it with maple syrup.

The Walls – Omega 3 Fats

Up to 25% of the brain is DHA (docosahexonoic acid), an omega 3 fat found in fish and seaweed. Many studies show DHA's ability to improve motor planning, attention, academics, and behavior. Essential fats like DHA are incorporated into the windows and walls of our house of fat. They are built into the cell membranes.

Better function follows improved structure. With sufficient DHA, the cells take in and carry information more efficiently and accurately.

The fat you eat becomes the fat of your brain. Most people consume many omega 6 fats, found in meat, cheese, and nuts, and few fish based omega 3 fats. Flax seeds and oil are good sources of both omega 3 and 6 fats though they do not contain DHA. To avoid mercury contamination in fish, good supplement manufacturers distill the DHA to remove mercury. As a result, ironically, supplements are safer than the real food.

Take DHA with another omega 3 fat, eicosapentaenoic acid (EPA). Dose at between 500-2000 mg for children. Too much fat of any type can cause loose or yellow stools. As in all dietary supplements or changes, watch for irritability.

Paint and Caulk – Vitamin E

Using our house of fat analogy, vitamin E protects the fat soluble tissue from inflammation and damage, just as paint and caulk protect a house from the weather and other environmental assaults. Vitamin E is a fat based antioxidant, so it is important for the fat based brain. Antioxidants donate electrons to molecules injured by chemical toxins.

Claudia Morris, MD, a California pediatrician, discovered that many children with dyspraxia show symptoms of vitamin E deficiency, such as poor articulation, low tone, abnormal proprioception, and high pain threshold. To address dyspraxia, she recommends higher than normal levels of vitamin E. Dr. Morris cured her own three year old of dyspraxia with 2,000 I.U.'s per day.

Most children do well with 800-1200 I.U.'s of the mixed tocopherol form of vitamin E. with the upper limit of safety at 66 I.U.'s per pound of weight. Although research offers little safety data on children, no reported cases of toxicity are known. However, it has a mild blood thinning effect. If using over 1200 I.U.'s, have your child's clotting factors checked and work with a physician familiar with using vitamin E.

I recommend using all eight types of vitamin E, including four tocotrienols. Megafood Complete E-8 and Perfect E are products containing the entire E complex. For a child that cannot swallow, puncture the capsule and squeeze out the contents. A parent can swallow the shell of the capsule and reap benefits also.

Build a Strong House of Fat

Efficient brains need the proper fats for strong motor planning. Fight dyspraxia by building a strong house of fat. Combine good quality phospholipids for a strong foundation with DHA for durable walls and Vitamin E to protect the house. Only then can the brain function maximally.

To learn more, read [The LCP Solution for ADHD, Dyslexia, and Dyspraxia](#) by Jacqueline Stordy, and go to www.foodforthebrain.org.