



Vol. 11 No. 2

Winter '05-'06

Published by  
**DEVELOPMENTAL DELAY RESOURCES**

**The ONE Resource Network Integrating Conventional & Holistic Approaches**



*The Davis Center:  
 The World's Premier Sound Therapy Center*

**This newsletter is made possible by a grant from The Davis Center, Rockaway, NJ**

**D**octors insisted that Susie's parents use medication for her attention and learning issues; they refused. Instead, they tried a different approach: sound-based therapy at **The Davis Center**. Now, Susie can concentrate better, and her grades have gone from D's to A's.

**The Davis Center** was founded in 1998 by Dorinne Davis, an audiologist and special educator with over 35 years experience. Initially, she tested hearing. In the nineties, she became certified in Auditory Integration Training, and her career shifted sharply. After seeing the differences sound-based therapy made in people's lives, she was insatiable. Davis is now certified in 16 sound-based therapies. Her knowledge provides the foundation for her Center's approach.

In 2000, Davis developed *The Tree of Sound Enhancement Therapy*® as a metaphoric symbol for viewing and administering the various sound-based therapies. The "Roots" of *THE TREE* represent enhancing hearing; the "Trunk" symbolizes improving general sound processing; the "Leaves" and "Branches" signify specific auditory processing skills; and the perimeter of *THE TREE* supports general body maintenance (wellness) of the entire person. The concept of *THE TREE* comes from the Voice-Ear-Brain connection, first identified by Dr. Alfred Tomatis in 1957 with *The Tomatis Effect*, and further validated by Davis in 2004 with *The Davis Addendum to The Tomatis Effect*.

Recently, Davis developed the *Diagnostic Evaluation for Therapy Protocol (DETP)*®, a test battery that determines when, if, how long, and in what order to use any sound-based therapy. This evaluation takes the guess-work out of whether sound-based therapy is appropriate, and is the starting point for using sound-based therapy as an intervention. Proper interpretation of the *DETP*® test data determines the correct order of the therapies.

Following the administration and interpretation of the *DETP*®, a client begins a sound-based therapy protocol. The Davis Center offers Berard Auditory Integration Training (AIT), the Tomatis® Method, BioAcoustics™, Fast ForWord®, Interactive Metronome®, and several other therapies. Parents of clients diagnosed within autism spectrum disorders, global developmental delays, AD/HD, and learning challenges all report positive change following therapy.

Moving upward from the "Root" of *THE TREE*, those beginning with AIT experience decreased sound sensitivity, increased eye contact, and improved language skills. At the "Trunk"

level, The Tomatis Method facilitates improvement in attention, balance/coordination, concentration, oral motor skills, reading, handwriting, muscle tone, comprehension, vocal quality and control, self- and other- awareness, and more. A decrease in visual "stims" and hypersensitivity to sound, can also result.

BioAcoustics addresses wellness. Vocal analysis pinpoints general body imbalances, such as nutritional weaknesses, toxins, or pathogens. A program called PreVac® can identify vaccination issues. BioAcoustics programs support overall health.

Davis is the author of two books. *Sound Bodies through Sound Therapy*, provides an overview of all of the various sound-based therapies and the components of *THE TREE*. *Every Day A Miracle: Success Stories with Sound Therapy* shares the heart-warming stories of 16 individuals who had success with sound-based therapies by using the *DETP*®. See enclosed Booklist or go to <[www.devdelay.org](http://www.devdelay.org)> to order.

Sound-based therapy is a powerful enhancement tool. Over 1000 individuals with diagnoses such as autism, AD/HD, learning disabilities, Tourette syndrome and dyslexia have benefited from sound-based therapy at **The Davis Center**. Davis uses *The Tree of Sound Enhancement Therapy*® to accomplish this goal by ensuring that the voice-ear-brain connection is operating at its full potential.

For more information, go to <[www.thedaviscenter.com](http://www.thedaviscenter.com)> or call 800.257.5119.

**IN THIS ISSUE**

**The Davis Center** .....Page 1

**Executive Director's Column** .....Page 2  
 5 Levels of Healing

**News and Comments** .....Page 3

**Vision**.....Page 4  
 Open your Eyes and Listen

**Diet**.....Page 5  
 School Lunch Program

**Minerals** .....Page 6  
 Magnesium: The Super Mineral

**Nutrition**.....Page 7  
 Choline and Complex Language Development

**Upcoming Events**.....Page 8



## Executive Director's Column

by Patricia S. Lemer, M.Ed., NCC, M.S. Bus.



### *The Five Levels of Healing: The Work of Dietrich Klinghardt, MD, Ph.D.*

On several occasions I have written about practitioners whose work has profoundly influenced my thinking: Dietrich Klinghardt is another. He joins Drs. Leo Galland (3:1), Abraham Maslow (6:2) and Sidney Baker (6:4) on a high pedestal, because his innovative model of healing is applicable to anyone with physical, behavioral or mental issues, regardless of diagnosis.

In the past year, I have been privileged to spend two exciting weekends learning from Klinghardt. I believe that many healing professionals will soon accept and adopt his protocol for treating autism and related disorders.

Klinghardt states unequivocally that autism has one cause: mercury poisoning. Nutritional, metabolic, immunological, behavioral, emotional and gastro-intestinal problems are all secondary to mercury toxicity. Healing takes place on five levels: **Physical, Electromagnetic, Mental, Intuitive, and Spiritual**. Developmental problems can manifest at several levels. Influences flow both up and down. Mental health, for instance, has a regulatory effect on levels beneath it, while physical strength supports work at higher levels. Klinghardt's autism protocol begins at the two lowest levels. He believes that for complete recovery, treating mercury poisoning both physically and energetically is essential.

- **Physical:** The physical level includes the body's structure and functions. This level is where mercury begins wreaking havoc. The Defeat Autism Now! (DAN!) approach to dietary modification, nutritional supplementation and detoxification focuses here. Klinghardt and others raise the question, "If mercury impacts the physical body so strongly, why don't all kids exposed to mercury become autistic?" He concurs that poor methylation and other impaired detoxification pathways in the physical body are important. He adds, however, that synergistic inter-level relationships are also in play, producing the ideal environment for autism to develop.
- **Electromagnetic:** The electromagnetic level includes the autonomic nervous system, immune system and other systems that regulate cells, tissues and structures of the physical body. Mercury corrupts the body both physically and functionally. Other environmental sources also interfere with and impede the electromagnetic body. Practitioners using energy medicine often recommend removing or moving away from potentially harmful environmental electromagnetic fields, such as wall sockets, televisions, computers, cell phones and their towers, and other invisible energy sources.

Therapies that address the electromagnetic level are acupuncture, and one of Klinghardt's major contributions: neural therapy. He injects a form of "liquid electricity" into scars, root canals and ganglia to break up electromagnetic disturbances.

- **Mental:** The mental body is the home of thoughts, beliefs, attitudes and childhood memories. Disturbances at this level come from unresolved traumatic experiences, such as a difficult birth, divorce, separation or loss. The brain replays trauma, constantly sending stress signals into the electromagnetic and physical bodies, disrupting the flow of energy, nutrients, blood and other essential components of health. While autism almost never starts here, working on mental issues can contribute to a child's complete recovery by the trickle-down effect to lower levels. While food allergies or dysbiosis are symptoms, mental body disturbances may be the cause.

Therapies that work at this level are homeopathy, psychotherapy, hypnosis, and another Klinghardt invention: applied psychoneurobiology (APN). Klinghardt's elegant protocol for healing disturbances at this level combines diagnostic muscle testing of organs and their associated emotions with therapeutic eye movement desensitization and colored lenses.

- **Intuitive:** The intuitive body is what Carl Jung called the "collective unconscious." Ever know a family who seemed "cursed?" Think of the Kennedys. Forces that acted upon them, sometimes going back several generations, came from this level, according to Klinghardt. These forces constitute an energetic, rather than a genetic legacy. Children inherit not only a family chin or gait, but also a family fate, sometimes manifesting as early death, illness or other dysfunction, such as autism.

Therapy that focuses on this level has its roots in American family systems work from the 1980's. Klinghardt strongly recommends that anyone with an autistic child have a family constellation, conceived by German psychoanalyst, Bert Hellinger. Practiced widely in Europe, constellations are becoming better known and respected by mental health professionals in the U.S. today. I have attended several family constellations, and am extremely impressed by their simplicity, beauty and power. The next issue of "New Developments" will have an article describing them.

- **Spiritual:** The fifth level is a person's relationship with the divine. Not implicated in autism, this level is very personal and not affected by any outside therapies.

Dr. Dietrich Klinghardt practices and teaches in Seattle, Washington and in his native Germany. For his schedule, go to [www.neuraltherapy.com](http://www.neuraltherapy.com). Don't miss his articles on Lyme disease, mercury detoxification and advice for parents-to-be. To learn more about Klinghardt's unique approach read *The Natural Medicine Guide to Autism* by Stephanie Marohn. (See booklist.) Better yet, take one of his courses!



## Having Healthy Babies

Know anyone who is fearful of having another child with autism, is having trouble getting or staying pregnant, or is looking for ways to enhance a baby's development? Attend a DDR sponsored all-day workshop. Patricia Lemer partners with pediatricians Dr. Lawrence Palevsky in New York on February 25th and Dr. Ioana Razi in DC on March 11th. The Washington version also includes Kelly Dorfman, Mary Rentschler, Bobbi Wade and Parviz Youssefi. To register, go to <[www.devdelay.org](http://www.devdelay.org)> or call 800.497.0944.

## Opportunities for Directory Listings & Advertising

Reach thousands of families who need your products and services! Make sure that your DDR membership is current to assure inclusion in the 2006 Networking Directory. Use the enclosed form to make any changes in your listing. Interested in advertising? Ask us about opportunities from business card size ads to full page layouts. New this year: banner ads on the website. Don't miss out!

## Newsletter Archives on DDR Website and Spiral-Bound

Now, with just a click of your mouse, you can access Volumes 1-9 of "New Developments." Go to <[www.devdelay.org](http://www.devdelay.org)> and use the handy "Subject Index" to read past newsletter articles about everything from "Acupuncture" to "Yoga." This resource is also available as a spiral-bound volume for \$50. Perfect for information packets and parent resource centers.

## Wakefield in Pittsburgh

Thanks to Carnegie Mellon and the Collaborative on Health and the Environment in Pennsylvania (CHE-Penn) for bringing Dr. Andrew Wakefield to Pittsburgh on November 17, 2005. Before and after the lecture, Dr. Terry Collins, award-winning Carnegie Mellon Chemistry Professor, who invited Dr. Wakefield, came under pressure from public health officials and certain academics, none of whom had ever read the relevant science. With support from Wakefield devotees, Collins' post-lecture meeting with the University provost went well. Any skeptics should listen to Wakefield's talk, "The Origins of the Autism Epidemic," on-line at <[www.chem.cmu.edu/wakefield/](http://www.chem.cmu.edu/wakefield/)>.

## Auditory Processing Panel gets an "A"

A hearty thanks to audiologists Dorinne Davis and Jane Madell and occupational therapist, Valerie Dejean for their magnificent presentations in December in New York. For the first time, information about many sound-based therapies is available in a single program. If you missed it, you are in luck: we have the DVD. To order, see booklist, go to <[www.devdelay.org](http://www.devdelay.org)> or call 800.497.0944.

## Honoring Liz Birt

The world of autism lost a great friend, when Liz Birt died in a car crash on December 30th. Liz was a co-founder of Safe Minds, the National Autism Association and A-Champ. An attorney by training, Liz dedicated her life to finding out what caused her son with PDD to regress, and to save other children from being affected. Her story is included in *Evidence of Harm*, by David Kirby. Liz's tenacious passion for the truth, her sense of humor and her dedication to children will be missed by all those whose lives she touched. DDR extends its sincere condolences to her family and children.

## CleanStay: A Non-Toxic Vacation

Looking for a reasonably priced place to take the family where the linens are 100% cotton, the air and water are filtered, the floor is hardwood and tile, all paint is VOC-free, the kitchen is fully equipped, and the beach is a short walk away? Yes? How about Pawley's Island, NC? One of our families rents their personal residence to anyone who needs a healthy vacation environment. Renovated to accommodate their daughter with severe allergies and multiple chemical sensitivities, it is the perfect place to spend a week or more. To view photos and rates, go to <[www.cleanstay.com](http://www.cleanstay.com)>.

## New Books from Old Friends

This winter has brought several new offerings and editions that are not to be missed:

*Seeing Through New Eyes*, by Melvin Kaplan, The first book on understanding visual issues, and the use of lenses and prisms in children with autism, Asperger syndrome and other delays;

*Sensory Integration and the Child*, originally by A. Jean Ayres, revised and updated by Pediatric Therapy Network, with a great chapter on sensory processing issues in autism;

*The Out-of-Sync Child*, by Carol Stock Kranowitz, newly revised and updated using the newly accepted term "Sensory Processing Disorder" (SPD) instead of sensory integration dysfunction; and

*The Well-Balanced Child*, by Sally Goddard Blythe, also newly revised, with a chapter on autism.

See booklist or DDR website to order.

## Craving Chocolate?

Dive into healthy decadence with one ounce organic "Cocoa Joy" bears. These treats also contain cell signal enhancers and sulfation factors, homeopathic additions that simultaneously strengthen the heart, brain, muscles, bones and cartilage, while detoxifying the body. "Yum!" Go to <[www.biomedcomm.com](http://www.biomedcomm.com)> to order.

**New Developments** is a quarterly newsletter published by **Developmental Delay Resources (DDR)**, a 501c3 not-for-profit organization whose mission is connecting families, professionals and organizations and disseminating the most current information about possible causes, interventions and preventions for developmental delays. Members of DDR support the inter-relationship of physical, cognitive and social-emotional development in children whose delays include, but are not limited to, sensory-motor deficits, speech-language disorders, attention deficits, learning disabilities, pervasive developmental disorders and autism. DDR seeks to educate the public about treatments that: address sensory-motor processing, including occupational therapy, vision therapy, auditory training and perceptual-motor therapy; boost the immune system, including dietary modification, nutritional supplementation, homeopathy, and detoxification; address structural integrity, including osteopathy, CranioSacral therapy and chiropractic; and encourage positive social-emotional relationships, such as communication therapies, FloorTime and family therapy. **DDR is the only organization that integrates all these disciplines.**

**Newsletter Editors:** Mary Rentschler and Anat Sichel **DDR Executive Director:** Patricia S. Lemer **Graphic Designer:** LLouise Altes

All material in **New Developments** is for information purposes only and is not to be substituted for professional advice from your health care provider.

DDR 5801 Beacon Street, Pittsburgh, PA 15217 • Phones: 412.422.3373 800.497.0944 • Fax: 412.422.1374 • e-mail: [devdelay@mindspring.com](mailto:devdelay@mindspring.com) • Website: <[www.devdelay.org](http://www.devdelay.org)>

## VISION



# Open Your Eyes and Listen

by Deborah Zelinsky, O.D., F.C.O.V.D.

No, not a mistake! Your eyes help you listen. Let me explain.

### A Short Course in Brain Function

The environment constantly and simultaneously bombards the brain with information through the senses. Pressure signals travel through receptors in the joints via the spine, light via the eyes, sound via the ears, and balance signals via the inner ear. Ideally, the midbrain synchronizes those visual, auditory, proprioceptive and vestibular signals. Even newborn babies turn their necks and point their eyes toward sudden unexpected sounds, indicating that reflex synchronization among ears, eyes and neck is present at birth. While eyes and ears synchronize, the intact baby gains the ability to maintain balance, and to look and listen effortlessly.

Some signals from the eyes travel along fibers activating parts of the brain that appear unrelated to eyesight. These signals affect such important functions as emotions, balance, posture and sleep. While non-visual fibers outnumber those used for peripheral eyesight by four to one, they are rarely checked during routine eye exams.

### Central versus Peripheral Awareness

Vision and audition each have central and peripheral components. Central visual awareness enables focusing on details, while peripheral awareness gives us concepts. A child more adept at central auditory processing prefers songs with lyrics, while one who favors peripheral auditory processing may choose instrumentals. Consider a student focusing, listening and looking during a lecture. Suddenly, peripheral vision catches something moving, sending the brain messages about speed, location, size and shape of this object. An efficient learner can maintain central attention on the lecturer, while a child whose peripheral vision takes precedence over central vision, may be labeled ADD.

### Reflexes Connect Vision and Audition

Starting at birth, babies move unconsciously, at the mercy of reflexes, without coordinated control over their muscles. Their necks are floppy and weak. At first, reflexes join all the parts, from eyes to head to neck to lower back and hips.

By moving, babies slowly learn to isolate muscles, so that by three to four months, they gain neck control. Then as the nervous system matures, one by one, early primitive reflexes integrate and postural reflexes emerge allowing for automatic body control to occur. Once the body is under subconscious control, the mind is available for learning.

In many children with developmental delays, early primitive reflexes integrate early, late or not at all. (See 6:4). With the neck and hips neurologically connected, movement of either one alters the position of head and eyes. A moving teacher complicates visual and auditory processing, especially for a child whose control of the neck and body are not isolated.

### Screening for Connections

- Stand on one foot, and wiggle your eyes from side to side. Are your ankles also moving? Your eyes are connected not only to your ankles, but to hips, shoulders and neck, as well.
- By 5 1/2, a child should be able to converse AND isolate his eyes to follow a moving target without head or body movement. One gauge for reading readiness is to ask a standing child to follow your finger moving across his midline. Expect only slight head movement, not visible hip or ankle rotation in the child who is reading ready.

### Vision and Audition Must Become a Team

Both eyes and ears must coordinate with each other, AND combine central and peripheral components of auditory and visual input. Simultaneously, the brain integrates information from the right and left eyes and ears, in addition to signals from non-visually related, inner ear, and neck fibers.

If these signals are mismatched, the nervous system makes the body fidget searching for a posture where eyes and ears can work together. Constant fidgeting, often diagnosed as ADD, is often the child's search for body/eye/ear integration. To learn more about how dysfunction of the eye/ear linkage may be misdiagnosed as ADD, attend "Insights into ADD." in Chicago, March 4th. (See Upcoming Events.)

High level academics, social skills and athletics require effortless head control, as well as vision and audition combining as a team. Spelling is a great example. The person who can integrate both hearing and seeing, and effortlessly switch back and forth between central and peripheral awareness, will be able to maximize his/her potential.

### Remediating Problems

Several interventions address visual-auditory integration problems. Specialized developmental optometrists use lenses, prisms and other visual learning tools. The sponsor of this newsletter, The Davis Center, offers auditory therapies. Founder, Dorinne Davis can test a child to determine which treatment is appropriate. A Brain Gym practitioner can diagnose and address visual-auditory integration in the Laterality Dimension and peripheral/central vision/audition in the Focus Dimension. Finally, a primitive reflex integration program by an optometrist, occupational therapist or other trained professional can enhance nervous system development, automate body control, and thus produce more sensory/motor efficiency. Contact DDR for referrals near you.

*Deborah Zelinsky, O.D., F.C.O.V.D. is a neuro-developmental optometrist in Northfield, IL. Her book, **Open Your Eyes and Listen** is available from DDR. (See Booklist.) Contact her at 888.975.2020 or go to <[www.mindeyeconnection.com](http://www.mindeyeconnection.com)>.*

## DIET



# School Lunch Programs: Feeding Mind, Body & Soul

by Alyce Ortuzar

*Alyce Ortuzar, a medical researcher, is on the Board of the Maryland Organic Food and Farming Association. She runs the Well Mind Association of Greater Washington, a holistic medicine information clearinghouse 301.774.6617.*

**I**t's lunchtime at school. What are your kids eating? Here are some possibilities:

- Beef and dairy products with government-approved pesticides and endocrine-disrupting hormones;
- U.S. Department of Agriculture-subsidized irradiated beef or chicken from sick and stressed animals raised under unsanitary and inhumane conditions;
- Products too loaded with chemicals and devoid of nutrients to qualify as food, such as artificial strawberry-flavored milkshakes containing such mystery ingredients as amyl acetate, anethol, anisyl formate, benzyl isobutyrate, dipropyl ketone, ethyl butyrate, phenethyl alcohol, rum ether, and solvent.

### What's Wrong with Additives?

Research shows that pesticides and hormone-disruptors are neurotoxic to growing brains. Who knows how consuming meat from stressed animals effects already stressed-out students? In the 1970s, Pediatrician Benjamin Feingold linked food additives, dyes and other additives to hyperactive behavior and learning problems. Removing these poisons and putting children on diets of salicylate-free fresh fruits and vegetables, and other minimally processed foods, produced dramatic improvements in behavior and learning.

### How Did We Get Here?

Many administrators sign exclusive contracts with money-hungry corporations for food, beverages, and school supplies, all with corporate logos. Without parental approval, community discussions, or analyses of benefit versus harm, these administrators offer the highest bidder unrestricted access to their students. Shame on them for communicating such materialistic values while undermining their students' health!

According to Marion Nestle, author of *Food Politics*, removing commercialism from schools teaches kids important values. Healthy food is also the first line of defense against the epidemic of childhood obesity.

### Won't Students Starve?

Many think children will starve if offered only nutritious alternatives. Nestle believes that when food tastes good, kids gobble it up and ask their parents to stop buying junk. They like learning where food comes from, how it is produced, and how to prepare it themselves.

When children eat food they have planted, nurtured, harvested and prepared, they re-connect with nature, the true source of life. One middle school in Berkeley, California found this to be true. They replaced an abandoned asphalt lot with soil sheltered by an arbor made from kiwi vines intertwined with willow and recycled wood. The result: a bountiful garden next to a compost play area. Kids happily learn from both.

Geoffrey Canada, president of the Harlem Children's Zone, also sees results. His non-profit sponsors the lunch program at Promise Academy, a charter school in one of New York's poorest sections. While children resisted at first, they now happily down turkey chili, brown rice and cabbage, with apples, not cake, for dessert. Whenever possible, Promise Academy's lunches use locally grown food, prepared on-site. Farm to Cafeteria Projects allow schools to purchase local foods from small ecological farmers.

### Integrate Nutrition & Cooking Into the Curriculum

In *The Edible Schoolyard*, Alice Waters, food advocate and owner/chef of the San Francisco organic restaurant Chez Panisse, presents the lunchroom as an extension of the classroom. A time-tested traditional set of values is inherent in growing, cooking and serving healthy food. Curriculum and school lunch programs that reinforce these values teach children healthy eating habits.

The Center for Ecoliteracy <[www.ecoliteracy.org](http://www.ecoliteracy.org)> works with The Edible Schoolyard <[www.edibleschoolyard.org](http://www.edibleschoolyard.org)> and other school programs through its Food Systems Project. Go to both websites to learn reasons for and how to start a garden at your school. Besides growing food for lunch, a garden provides opportunities for integrating the science, math, and art curricula. Kids love insect identification, measuring the plot and recreating the beautiful flowers and vegetables with paints and pastels.

"Cooking with Kids" in Santa Fe, New Mexico, adds a multicultural component to their food education program. Their hands-on learning program includes information about culturally diverse foods, including geography, social studies, story-telling and music in meals the children prepare themselves.

*Hands-on Farm to School Education Programs* <[www.farmtoschool.org](http://www.farmtoschool.org)> recommends farm field trips with lessons that link the land to the school cafeteria. Go to their website and click on the map to find a local participant.

Read "Feeding Young Minds: Hands-on Farm to School Education Programs," published by the Community Food Security Coalition <[www.foodsecurity.org](http://www.foodsecurity.org)>. This booklet highlights unique farm to school experiential food education programs, ranging from cooking classes to fundraisers. Learn innovative ways to link farm-fresh products in the cafeteria with experiential education activities.

### Nourish the Mind, Body and Soul

Innovative lunch programs nourish the minds, bodies and the souls of our students. Kids also learn the importance of environmental sustainability and small-scale agriculture. Learning to value responsible farming, appreciate the beauty of traditional farmland and understand the relationships among community, nutrition, and learning can start young. Then, our students will demand what Pennsylvania farmer Kim Seeley calls "food fit for children" both at home and at school.

## MINERALS



# Magnesium: The Super-Mineral

**W**hat can stop an asthma attack, pull toxins out of the body, increase circulation, remove age spots, decrease joint pain and cure constipation? Magnesium! The eighth most plentiful element on the planet and the fourth most abundant mineral in the body is essential for a very wide gamut of critical body functions, affecting virtually every organ system.

### Why is Magnesium Important in Developmental Delays?

Magnesium (Mg) is directly responsible for over 300 biochemical bodily reactions, many of which have gone awry in individuals with autism, attention issues and other developmental delays. It is extremely important in the metabolism of fellow elements: cadmium, calcium, copper, iron, phosphorus, potassium, lead, sulfur and zinc. Mg is the single most important mineral for maintaining proper electrical balance and facilitating smooth metabolism in the cells. One of the major properties of magnesium is that of stabilizing cell membranes. The health status of the digestive system and the kidneys significantly influence Mg status. Mg is absorbed in the intestines and then transported through the blood to cells and tissues.

### Magnesium Deficiency

The table below lists common signs of Mg deficiency.

#### Signs of Magnesium Deficiency

- Constipation
- Hypersensitivity to loud & high-pitched sounds
- Irritability
- Muscle cramps and twitches
- Cold hands and feet
- Insomnia
- Carbohydrate cravings
- Numbness and tingling
- Inability to inhale deeply

Because magnesium in certain forms is not easily absorbed and because no classical symptoms exist that point to its causal role in disease, the problem of deficiency is very readily masked. Ask your doctor to confirm your suspicions with blood and/or urine testing.

Mg deficiency is most likely in those who eat many processed foods, over-cook foods and drink soft water. Deficiencies can develop when Mg elimination is increased by taking many medications, like diuretics, birth control pills, corticosteroids and anti-psychotics, because these products, as well as alcohol, caffeine and sugar, leach Mg. Colicky babies may also be magnesium deficient because their stressed hormones trigger the excretion of greater than normal levels of Mg in their urine.

### Corrective Steps

- **Eat your Mg:** Foods high in Mg are avocados, beans, molasses, almonds, Brazil nuts, cashews, pumpkin and sunflower seeds, whole grains, fish, kiwis, and leafy greens, especially spinach. Buy organic.

- **Supplement your Mg orally** as Mg citrate and Mg glycinate, two of the best absorbed forms. Read labels carefully, always looking for the number of milligrams of *elemental* Mg in the tablet or capsule.

In the late 1960s, Dr. Bernard Rimland showed the beneficial effects of supplemental magnesium given along with vitamin B6 to improve its absorption in individuals with autism. Recommended daily allowance (RDA) is four mg of Mg daily per pound of body weight (e.g., 160 mg for a 40-pound child).

Mg metabolism has a quirk: if Mg levels are low enough to cause symptoms, the deficiency can cause the body to lose its ability to use what it takes in orally. Only a third to a half of dietary Mg is absorbed into the body. Furthermore, the gut has a low tolerance for Mg; diarrhea is often the outcome before sufficient amounts can be ingested. Bypassing the digestive tract can solve this problem.

- **Supplement your Mg transdermally** using bath salts or creams.

- Susan Owens has shown the benefits of Epsom Salts, which are magnesium sulfate. They can help both with magnesium supplementation *and* with sulphation. Their tendency to dry out and become “powdery” on the skin may limit absorption. Pour one cup of Epsom salts into a tub of warm water, soaking for approximately 30 minutes per day. Mg chloride bath flakes are hygroscopic, meaning they attract water, thus staying wet on the skin, where they are more likely to be absorbed.
- Magnesium Oil delivers high levels of Mg directly through the skin to the cellular level, bypassing common intestinal and kidney symptoms sometimes associated with oral use. Magnesium Oil feels “oily” on the skin. The biggest benefit of topical Mg chloride administration is that the intestines are not adversely impacted.
- Magnesium Gel is magnesium chloride in an all natural, polysaccharide gelling agent that can retain its qualities in hot or cold conditions, and it has almost unlimited shelf-life stability. It has a rich, luxurious feel, slides like silk and is great for holding the magnesium on the skin while the body drinks up the magnesium.

The Mg oil and gel, as well as the bath flakes and other magnesium products are available from Global Light Network at [www.globallight.biz](http://www.globallight.biz). They also carry *The Miracle of Magnesium* by Carolyn Dean.

Before seeking out a medical diagnosis, think “magnesium deficiency.” Instead of reaching for asthma medication, arthritis drugs or a laxative, try some magnesium: the super mineral!



## Choline and Complex Language Development

by Kelly Dorfman, M.S., Nutritionist and DDR Co-founder

**R**ecently when I began recommending choline to improve motor planning, many parents reported spontaneous improvement in the complexity of expressive language in their children. I want to share my thoughts about this very exciting and unexpected outcome with our readers.

### What is Choline?

Choline is essential for brain development. In 1998 the National Academy of Science recognized it and established a daily requirement of 425–550mg. Research shows that lack of choline in a mother’s diet during pregnancy and lactation can permanently limit brain capacity later in life. Individuals must ingest choline. Since primary dietary sources are liver, eggs, wheat germ, lecithin and soy, it is unlikely that many kids, especially those on elimination diets, get enough of this critical nutrient.

### What is Complex Language?

Developmentally, children progress from labeling items, to asking for what they want, a form of “demand” language. The next step, the most difficult for many children on the autism spectrum, is conversing and answering “why” “where” or “what” questions, all components of “complex” language. Clinically, many children get stuck at the level of “demand” language, transitioning to the next level slowly or not at all. Making conversation requires a specific type of motor planning in the language area of the brain that allows finding, prioritizing and sequencing words, rather than simply memorizing or scripting. The part of the brain that labels objects is different from the section that generates conversation or answers questions such as “What happened at school today?”

### What are the Functions of Choline?

Choline has several important purposes. It is needed to:

- assure structural integrity and signaling ability of the cell membrane, the “gate-keeper” that surrounds and protects every cell. Material can enter a cell and neurotransmitters can signal a cell only as the membrane allows. A healthy cell membrane contains phosphatidylcholine (PC) to regulate its permeability. Insufficient PC compromises this regulatory function.
- contribute small chemical structures called methyl groups that enable methylation, a key phase of detoxification. Methylation is also important for gene expression, nutrient activation (especially for vitamin B-12), and cell membrane stabilization. Research by Dr. Jill James and others suggests that autism can result from a faulty methylation system.
- build acetylcholine, a neurotransmitter that regulates memory, motor planning, and executive functions such as sorting and prioritizing.

### How Does Choline Enhance Complex Language?

Nobody knows for sure, but I have a theory, based on my professional training, review of the research and clinical observations. I believe that the part of the brain where motor planning for language takes place is under the influence of acetylcholine. The combination of copious amounts of acetylcholine along with permeable membranes composed of sufficient PC appears to be the magic formula for improving complex language in many children.

### Case Studies

- Adam, age three, had multiple developmental delays, for which he was receiving speech, occupational and FloorTime therapies. Despite this aggressive intervention, progress was slow. Adam used many single words, but few phrases or sentences. Within a month of starting choline as PC, he was conversing.
- A six-year-old boy shocked his parents by using a whole sentence for the first time just a few weeks into taking PC.

### Choline Supplementation

Research supports choline supplementation. Rat pups who took choline showed enhanced memory and attention lasting throughout their lifetimes. Researchers could even identify those animals that took choline supplements in infancy from their behavior as aging rats.

Because foods alone cannot provide sufficient amounts, extra choline must be added to obtain therapeutic benefit. Choline as a dietary supplement comes in several different versions. Choline bitartrate is found in most multiple vitamins, but rarely used as a separate supplement. Alpha glyceryl phosphatidylcholine (GPC) and DMAE (see 7:2) are two other forms available. GPC is thought to slow brain aging by increasing motoric response time. DMAE may improve symptoms of attention deficit disorder, with irritability as a side effect. For complex language development, I prefer phosphatidylcholine (PC).

For children who cannot swallow capsules, try liquid PC, Xymogen Phosphaline, available from The Village Green (800.869.9159). Dosage is ½ to 1 tsp. per day. Xymogen Phosphaline is strong-tasting and thick; mix it with apple or pear sauce, spread it on a pancake, or camouflage it with maple syrup.

The only side effect of PC may be loose stools because it is fatty. PC is derived from soy, but because it contains no soy protein, it is safe for most children on gluten-, casein- and soy-free diets. Children with serious soy reactions should avoid this product, however.

**Bottom line:** choline is safe and effective as a brain membrane builder. It may be the secret weapon for taking language to the next level.

# Upcoming Events

**Saturday, February 25, 2006 – New York, NY**

***Birthin' Babies After Autism, A DDR sponsored day-long workshop***

Speakers: Patricia S. Lemer, M.Ed and Lawrence Palevsky, MD.  
Contact DDR at 800.497.0944 to register.

**Wednesday, February 22, 2006 – Houston, TX**

**Thursday, February 23, 2006 – Austin, TX**

**Friday, February 24, 2006 – San Antonio, TX**

***Nutrition Therapy for Children with Autism Spectrum Disorders***

Speaker: Elizabeth Strickland, MS, RD, LD. To register, call Cross Country Education at: 800.397.0180.

**Thursday, Feb. 23 – Sunday, Feb. 26, 2006 – Bloomington, MN**  
***26<sup>th</sup> Symposium on Intervention For Persons with Special Needs***

For more information and to register, contact PDP at 651.439.8865 or go to <[www.pdppro.com](http://www.pdppro.com)>.

**Wednesday, March 1, 2006 – New York, NY**

***Detoxification: Alternative Ways to Remove Poisons from Your Body***

DDR sponsored lecture with homeopath, Mary Coyle, pediatrician, Lawrence Palevsky, and parent, Christina Rupp, who will speak about using a sauna. To register, call 800.497.0944 or go to <[www.devdelay.org](http://www.devdelay.org)>.

**Saturday, March 4, 2006 – Park Ridge, IL**

***Insights into AD(H)D: A Collaborative Approach***

A one day DDR sponsored seminar for parents, teachers and therapists, & for adults with AD(H)D. Speakers include: Patricia Lemer, M.Ed, Anju Usman, MD, Deborah Zelinsky, OD, To register, contact DDR at: 800.497.0944.

**Saturday, March 11, 2006 – Washington, DC**

***Having Healthy Babies, A DDR-sponsored day-long workshop***

Speakers: Kelly Dorfman, LN, LD, Ioana Razi, MD, Mary Rentschler, Bobbi Wade, Parviz Youssefi. To register, contact DDR at: 800.497.0944.

**Saturday, March 25, 2006 – Hastings-on-Hudson, NY**

***Whole Child Conference***

Speakers include: Kelly Lindelien, Seth Pearl, Suzi Tortora and Susan Young. For more information, call 914.793.9100 or go to <[www.wholechildconference.org](http://www.wholechildconference.org)>.

**Tuesday, March 28 – Wednesday, March 29, 2006 – Honolulu, HI**

**Friday, April 21 – Saturday, April 22, 2006 – Grapevine, TX**

***The SI Tool Kit: Bringing Sensory Integration to Schools and Homes***

Speaker: Diana Henry, OTR/L. For more information for Honolulu, call 808.733.4990 and for Grapevine, contact Diana Britt at: 239.591.2939.

**Wednesday, April 5, 2006 – New York, NY**

***Treating ADD without Drugs***

Speaker: Patricia Lemer. DDR sponsored lecture on 10 alternatives that REALLY work. To register, go to <[www.devdelay.org](http://www.devdelay.org)> or call 800.497.0944.

**Thursday, April 6, 2006 – Monday, April 10, 2006 – Washington, DC**

***DAN! 2006 Spring Conference and The Mercury Generation March***

For more information and speakers, go to <[www.danconference.com](http://www.danconference.com)>.

**Sunday, April 23 – Monday, April 24, 2006 – Baltimore, MD**

***Sensory Motor Activities on a Shoestring Budget***

Speaker: Shoshana Shamberg, OT.

For more information or to register, contact Abilities OT Services at: 410.358.7269.

**Saturday, April 29, 2006 – Hartford, CT**

***Autism Society of Connecticut 16<sup>th</sup> Annual State Conference***

Speakers include: Dr. Temple Grandin and Dr. Brenda Smith-Myles.

For more information or to register, contact ASCONN at: 888.453.4975.

**Wednesday, May 3, 2006 – New York, NY**

***The Dancing Dialogue: The Communicative Power of Movement with Young Children to Enhance Social-Emotional Development.***

Speaker: Dr. Suzi Tortora. DDR Sponsored lecture. To register, call 800.497.0944 or go to <[www.devdelay.org](http://www.devdelay.org)>

**Friday, May 5 – Saturday, May 6, 2006 – Westchester, NY**

***How Does Your Engine Run?***

***The Alert Program for Sensory Integration***

To register, call 877.897.3478 or go to: <[www.AlertProgram.com](http://www.AlertProgram.com)>.

**Wednesday, May 24 – Monday, May 28, 2006 – Chicago, IL**

***Autism One 2006 Conference***

***The Hopes of a Mother, The Dreams of a Father are Real***

Go to <[www.autismone.org](http://www.autismone.org)> for speakers and to register.

## Developmental Delay Resources

[www.devdelay.org](http://www.devdelay.org)

5801 Beacon Street  
Pittsburgh, PA 15217

RETURN SERVICE REQUESTED

NON-PROFIT ORGANIZATION  
U.S. POSTAGE  
PAID  
WOODBRIDGE, VA  
PERMIT #70