



DEVELOPMENTAL DELAY RESOURCES

The ONE Resource Network Integrating Conventional & Holistic Approaches



*Wisconsin Integrative Hyperbarics Center:
A Place of Grace*

by Kyle Van Dyke, MD

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Hyperbaric Oxygen Therapy (HBOT) is the use of increased concentrations of oxygen at greater than one atmosphere of pressure. Traditionally, treatments have used 100% oxygen at pressures greater than two atmospheres. Recently, the use of mild hyperbarics at 1.3 atmospheres with either room air or increased oxygen concentration has become an important treatment tool.

I first heard about using mild pressure HBOT for developmental delays in children two years ago. I was skeptical at first; in my residency training hyperbaric oxygen chambers were only used for the bends and as a last ditch effort to save diabetic foot wounds. Dan Rossignol, MD explained the safety and the physiological mechanisms of how HBOT works and why it could be helpful in autism.

I agreed to have my son with autism participate in a study on mild pressure hyperbarics, and was extremely impressed with the results. Treating with 1.3 atmospheres in a soft chamber, my previously nonverbal child spoke his first words, became more social, improved his muscle tone and had the first normal bowel movement of his life. Best of all, these changes have persisted in the two years since the end of the study.

Oxidative stress, a process during which damaging free radical production increases in the mitochondria, is common in autism. High pressure HBOT increases oxidative stress and researchers were concerned that mild pressure hyperbarics could worsen oxidative stress in children with autism. In the pilot study, however, detailed markers of oxidative stress showed that hyperbarics at 1.3 to 1.5 atmospheres did not worsen oxidative stress.

One of the most exciting new areas of research is HBOT's direct effect upon the mitochondria. Studies show that HBOT increases their energy production in healthy muscle tissue, perhaps by increasing the number of electron transport chains. Animal studies also demonstrate that HBOT promotes mitochondrial biogenesis (i.e. makes more mitochondria) in brain cells. These changes in mitochondria structure and number may explain the persistence of HBOT's benefits after therapy ends.

HBOT increases the perfusion and oxygenation to the brain, allows "idling" brain cells to regain function, and has a potent anti-inflammatory effect. That may be why HBOT is successful in improving function in individuals with disease

associated with poor perfusion and neuro-inflammation such as cerebral palsy, traumatic brain injury, visual impairment, chronic fatigue syndrome, multiple sclerosis, Parkinson's and fibromyalgia. Mild pressure HBOT may be effective in autism since autism is associated with perfusion deficits in the brain, neuro-inflammation, and mitochondrial dysfunction.

Today, many children with autism have benefited from mild pressure hyperbarics and more research has continued to prove its safety and efficacy. Recently a major double blind placebo controlled study of mild hyperbaric treatment of autism, which will be published next year, showed statistically significant differences between the treatment and placebo group.

Mild pressure hyperbaric oxygen chambers are available as portable chambers you can use at home. OxyHealth makes quality mild pressure hyperbaric chambers that we have used in our clinic and studies for several years. Contact OxyHealth at www.oxyhealth.com or call them at 877.789.0123 for more information.

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Executive Director's Column

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



The Way of Warriors: Jenny McCarthy and Dan Millman

I wondered if Jenny McCarthy and Dan Millman know each other when I heard them both speak at conferences this fall. Despite differing backgrounds these two unlikely authors have much in common besides their diminutive size and contrasting big voices. By sharing their personal stories they have changed the lives of countless individuals and families by giving them hope.

Jenny, the Mother Warrior: Most know her story. Formerly a successful Playboy model, comedian, actress, MTV host and author, she is mother of Evan, born in 2002, and significant other to funnyman, “autism whisperer” Jim Carey.

History: Evan develops a seizure disorder following a vaccine. Jenny fights doctors’ refusal to investigate possible causes. Evan regresses developmentally, and is diagnosed with autism. Jenny discovers a bio-medical approach through a Generation Rescue Angel, and goes public. Goals: Educate parents about vaccine ingredients; help families learn about treatment alternatives; oppose a one-size-fits-all vaccine schedule. Now: wildly popular autism activist/warrior.

In the past few months McCarthy has appeared on the covers of dozens of magazines, on television talk shows, and sold millions of copies of straight-forward, laugh-out-loud books, including her newest best seller *Mother Warriors: A Nation of Parents Healing Autism Against All Odds*.

Dan, the Peaceful Warrior: Once a world-champion gymnast, martial arts professor, and an inspirational guru speaking internationally and writing on health, psychology, sports, business and the arts. Millman began his odyssey through a chance middle-of-the night encounter at a gas station with an old guy he named Socrates, who became his wise powerful, balanced mentor and role model. Out of his mouth came lessons from his heart.

For the past 25 years Millman has imparted Socrates’ wisdom through his five “Peaceful Warrior” books (including one for children) and the “Peaceful Warrior” movie, starring Nick Nolte. Often turning to quotations that he started collecting as a young man, Millman has shown millions how to become Peaceful Warriors in difficult times.

These modern-day icons offer us sound principles and practices for responding to today’s changes and challenges. Some of Millman’s favorite quotes:

- **“Pain and adversity come with hidden gifts”** – Surely Jenny would have preferred that Evan not become autistic. However, look at the doors his autism has opened by allowing her to extend her writing, speaking talents, humor and generosity of heart. While the biomedical treatment movement struggled for years to get out the message that “autism is treatable,” Jenny has been able to do it quickly and almost single-handedly.

As Millman reminds us, “our daily lives, while sometimes seeming like dreams, are our classrooms.” Those who have faced serious challenges realize how much adversity teaches you about yourself. The trick is to turn what you learn into something useful.

- **“When you learn, you benefit only yourself; when you teach, you benefit others.”** – Many experts communicate their wisdom by teaching. In *Louder than Words* Jenny teaches parents how to navigate safely through myriad autism therapies. In *Warrior Mothers*, parents relate the unique paths they took to find their own children’s “remedy of interventions.” While a college gymnast, Dan felt he was “called to teach.” He realized that only he benefited from self improvement; if he could positively influence others, then his life would be more meaningful. Over time he studied many systems of human development, and his interest shifted from developing talent for sports to developing talent for living. Millman and McCarthy now spend many days on the road bettering the world by sharing what they know.

- **“Everything is difficult until it becomes easy.”** – Watching a baby struggle to walk, a toddler to talk, a first grader to read and write, and a family to learn to follow a GF/CF diet can be painful. Results come only after days, weeks or months. Support from someone like Jenny and Dan can give you the strength to persevere.

- **“Science is the religion of the left brain. All the best discoveries come from intuition, not science.”** – Jenny has inspired mothers who know their kids best not to back down. They know what they saw, what was lost in their kids, and that they are not crazy or stupid.

Mothers’ and fathers’ intuition is what has led scientists and researchers to understanding autism as an immunological, not a psychological disability. Veteran parents, such as Bernie Rimland of the Autism Research Institute, Jon Pangborn of Defeat Autism Now! and more recent pioneers like Portia Iverson of Cure Autism Now (CAN) and the Wrights of Autism Speaks, lead important organizations that fund research to heal our children.

- **“The past and the future are nice places to visit, but you don’t have to live there.”** Dan and Jenny focus on being in the present. As Dan relates, “We can only live happily ever after one moment at a time.” A developmental approach always starts where a child is NOW. No one has a crystal ball to the future. While dreams are fine, fretting about a possible poor prognosis never helped anyone get well. Which leads to:

- **“Heroes and cowards experience identical fears... they just respond to them differently.”** Action is the core of both the peaceful and the mother warriors’ way. People rarely regret what they’ve done as much as what they haven’t done. Peaceful warriors engage life fully every day. Use these principles to join the Peaceful and Mother Warrior movements: you can make a difference.

Follow Jenny through www.generationrescue.org. Jump start your day with Dan’s four minute, powerful fitness routine, combining Hatha yoga, martial arts, dance, gymnastics. His DVD and books are available at www.danmillman.com. See Upcoming Events for a chance to hear Dan speak.

Mercola Newsletter Reviews “EnVISIONing”

A hearty “thank you” to Dr. Joe Mercola for his wonderful review of DDR Executive Director, Patricia Lemer’s new book *EnVISIONing a Bright Future* in the online Mercola Report. As this newsletter goes to press, over 3000 people have read his review! To see or hear what he had to say, go to www.mercola.com and search with the keyword “Envisioning.” If you do not already subscribe to this fantastic free resource, you must. It’s the best way to stay current on natural medicine news.

Lemer Speaks to Optometrists and Therapists

The Fall has been a busy time for conferences, and DDR Executive Director Patricia Lemer has been running around. In October she addressed over 600 developmental optometrists at the annual conference of the College of Optometrists in Vision Development in Palm Springs, CA, and occupational, speech-language and physical therapists at the Children’s Institute in Pittsburgh. November found her in New York City at the annual conference of Life’s WORC, an autism non-profit providing in-service training to educators in New York. These talks emphasize Ms. Lemer’s role as a bridge between optometry and the public by explaining the importance of visual function in autism and other developmental delays. Thank you to the many people who made these talks possible.

Convergence Insufficiency Treatable

A newly released double blind, placebo-controlled collaborative study by the National Institutes of Health (NIH) involving both optometrists and ophthalmologists, in nine sites and with over 200 children, shows that convergence insufficiency (CI), a common reading-related vision disorder, responds best to in-office vision therapy reinforced with at-home exercises. After 12 weeks of treatment, nearly 75% of those who complied with this treatment combination achieved normal vision. Home-based treatment programs alone were no more effective than a placebo. To learn more, see the *Archives of Ophthalmology*, 126:10, October, 2008.

Winter Retreat

Looking for a way to beat the winter doldrums and get healthy at the same time? The gorgeous island of Tobago awaits. Join Drs. Biko and Heidi Sankofa and others for “Get Well & Stay Well When This Economy Is Making You Sick.” Leave February 25 – March 3, 2009, for a week of deep relaxation, life changing, time relevant information, and fun. The all-inclusive program includes guided yoga and meditation, a private psycho-kinesiology session, workshops, two excursions, and all organic food, designed to help you thrive physically, emotionally, spiritually, and financially in these challenging times. Visit www.sankofagroup.com or call 301.523.4265 now to reserve your place.

Have You Renewed?

DDR has eliminated and reduced membership fees this year! Families, Retirees and Students can now be members for free! Just send us your email address. Professionals and Organizational members now join for \$50 and \$100 respectively. To join online and avoid postage, go to www.devdelay.org.



DDR Has a Blog

Have you read the new DDR Blog, “After the Diagnosis, Then What?” Go to <http://ddrblog.wordpress.com> and read the latest entry. To receive a “feed” each time a new entry is posted, go to the very bottom and click on “Entries (RSS)” to subscribe and Comments (RSS) to leave a comment.

Sticker/Numbers on Fruit

Before you start swearing at those pesky stickers on fruit, read them. The numbers tell you how the fruit was grown. Conventionally grown fruit has only four digits. Five digits can be good or bad. Both organically grown and genetically engineered fruit have five numbers. The good stuff starts with a nine, while the worst stuff starts with an eight. Look carefully before buying!

Lend4Health

Are you interested in and financially unable to pay for supplements or chelation for your child? **Lend4Health** facilitates interest-free micro-loans to families pursuing biomedical therapy for autism and related disorders. By purchasing t-shirts, onesies, bumper stickers, mugs, tote bags and other items with slogans, such as “Autism Ain’t for Sissies,” “Stims Happen” and “I’m Not Misbehaving, I Have Autism,” donors allow families to borrow small sums to fund their biomedical needs. Go to www.Lend4Health.org to learn more.

Obama and Autism

Writing a newsletter following one of our country’s most historic elections is impossible without looking at what our President-Elect might mean for families with autism. Obama’s win may prove to also be a win for the autism community as well. In his campaign statement on Autism Spectrum Disorders, Obama committed to bringing autism insurance reform to our nation. He promised to “mandate insurance coverage of autism treatment and continue to work with parents, physicians, providers, researchers, and schools to create opportunities and effective solutions for people with ASD.” To learn the details go to www.autismvotes.org.

Bismuth Toxicity and Low Thyroid

According to an Australian scientist, bismuth toxicity is as big a danger to unborn children as lead, mercury and antimony. Bismuth, found in make-up, including lipstick, was above toxic levels in hair analysis for a majority of mothers of children with autism tested by Frank Parsons of Alternative Health Services. Bismuth toxicity may be the answer to why thyroid function is down-regulated in many mothers of autistic children. Treatment includes a high density diet containing minerals that help the body excrete this and other toxic elements at least a year before becoming pregnant.

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.**

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

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The Power of Silence in the Classroom

By Nancy Siegel

Imagine a classroom in which you could hear a pin drop. Impossible? No, I have witnessed it. Silence is accessible at any time. Sometimes, we just need to stop and listen to it.

What is Silence?

Silence is more than the absence of sound. It is a stillness that resides deep in the heart, and touches the cognitive, psychological, physiological and spiritual dimensions of our lives. Its proven benefits are unknown to many of us who believe that if we aren't talking, we are not being productive.

What Does it Really Mean to be Silent?

To enter into silence, one must relax, no matter how many distractions are around. When we first try to achieve stillness, our thoughts may continue to race. "Monkey chatter" takes over the brain. As a six-year-old said, "It's hard for me. First, I get one thought, then another and another, and I just don't know which one to listen to."

Silence can be deafening. If we allow ourselves to leave the outer world and enter our inner one by sitting quietly, the brain chatter eventually slows down, thoughts settle, and our minds begin to clear.

After a storm, mud in a pond settles and the water becomes clear. The same phenomenon occurs with our thoughts. If we wait long enough the chatter might even go away altogether. Longer periods of focused silence can lead to renewal, or even transformation.

Does Silence have Benefits?

If we took time out regularly to slow down and listen to the silence, our lives would far less frenetic. Quiet reflection has the potential to be very self-nurturing, because the potential for harmony of the heart and mind resides in this stillness and solitude.

Yoga and Silence

The ancient art and science of yoga offers us a system of using the breath as a vehicle to find stillness and silence in the inner world. Breath is the bridge between body and mind, the gateway to the soul. It is through the breath that we enter our inner world, and in turn have the opportunity to quiet our thoughts so we can listen to our heart.

What Benefit Does Silence in the Classroom Have?

When we guide children to find their inner voices or true essence, we give them access to a powerful resource for calm, order and self-regulation. Once a teacher understands the power of silence, she can use it to create a safe and welcome break from the loud and hectic school day. A teacher's silent presence alone can bring support and confidence to her students.

Use the following exercises to move a classroom of noisy students to silence by letting them get in touch with their inner worlds.

Exercise 1: Silence at the Desk

Have students find comfortable positions at their desks, with backs straight and feet firmly planted on the ground. Gently rest hands on knees or on top of the desk, palms down. Invite the eyes to close and attention to drop inside.

Just listen. Listen to the sounds in the room and outside the room. Go inward and listen to the heartbeats.

Keeping eyes closed, bring the right palm up to the heart, then place the left palm on top of the right. Feel the heart beating. Is it saying something? Listen to the silence.

After completing this group exercise, one ten-year-old girl commented, "We relax from our hearts."

Exercise 2: Magic Rainbow Ride

Lie on the floor on a soft towel, blanket or yoga mat. Comfortably release into a journey, allowing a magic carpet of clouds to float up higher and higher into the sky. Look around. What do you see and hear? What do you smell?

Allow the carpet to take you to a special familiar or brand new place. Are you alone or do you have company? If your mind wanders, just take a deep breath to bring yourself back.

Look up at a beautiful rainbow. Take in each color as you breathe deeply through your nose. Pay attention to how each color makes you feel.

Slowly start your journey home, bringing with you the memories of the special place. As you land, bring physical awareness back into your body. Wiggle your fingers and toes. Slowly bring your knees up to your chest and give yourself a hug. Roll onto your right side, hug your knees and take a deep breath. Gently push yourself up into a comfortable seated position and sit for a few more moments with your eyes closed. Allow yourself to feel whatever sensations or feelings come up.

Integrating the Silence

Write or draw a picture about the thoughts and feelings you experienced. What changed? Pay careful attention to what came up for you. Ultimately, activities like these can lead to a much deeper experience in guided imagery.

Want to learn more? Read Richard Mahler's *Stillness: Daily Gifts of Solitude*. Enjoy the silence!

Nancy Siegel, Educational Consultant, is the Director and Founder of Caddy Camp, (which stands for Circus, Art, Dance, Drama and Yoga) an innovative creative arts camp, in Teaneck, New Jersey. Nancy believes that given a safe, nurturing environment everyone can find his/her authentic voice. She can be reached at nancy@caddycamp.com.



Twinkie Deconstructed

DIET



“Daddy, what’s polysorbate 60 and where does it come from?”

That innocent question from the six-year-old daughter of Steve Ettlinger started him on a long journey researching the origins of the ingredients of one of America’s favorite processed foods: Hostess Twinkies®. Stores sell 500 million annually.

In *Twinkie, Deconstructed* Ettlinger shares his discoveries by taking us through the complex chemical manipulations of all Twinkie’s 39 ingredients. He explains how a balance of proteins, fats, oils and sweeteners build structure, provide tenderness and prolong shelf life.

Some Twinkie ingredients such as sugar, flour, corn, eggs and soy, start as recognizable foods which undergo supreme processing. Others with chemical-sounding names, like ferrous sulfate and polysorbate 60 are by-products of inedibles such as petroleum and rocks. While flour, fat and sugar are what defines a cake, most are made from at least five different kinds of raw materials many of which come from very surprising places.

On his Twinkie journey, Ettlinger spent as much time interviewing scientists about complicated and sometimes dangerous, chemical reactions in mines and foundries as he did visiting farms. Here are some of his amazing findings:

Wheat

Wheat and flour, the staples of baked goods, are not as simple as they seem. Six different varieties of flour vary in moisture and gluten content. Twinkies are made from soft cake flour that is low-protein and high-starch, allowing it to blend well with sugar, oil and water. From the grass in the fields to the Twinkies on the shelf is a dangerous automated process because flour dust is highly explosive.

Bleach

Before shipping, the flour requires the addition of industrial bleach and vitamins. Bleach? Yes, Twinkie flour is whitened with poisonous chlorine gas. Why? To achieve that white look and lightness that consumers love in baked goods. Unbleached flour is beige and heavy. Who wants that in cake?

Ferrous Sulfate Plus B Vitamins Equals Enrichment

B vitamins such as niacin (B3) and thiamine mononitrate (B1) that enrich most flours, are derived at least partly from petroleum. “It’s pure chemistry,” says Ettlinger. Another ingredient, the mineral ferrous sulfate, available as an iron supplement in your pharmacy, is made in steel mills by running steel through a bath of sulfuric acid.

Sweeteners

Sweeteners are the second, third and fifth ingredients in Twinkies. Cane sugar, corn syrup and high fructose corn syrup together account for about half the total contents in volume: a whopping 4 ¾ teaspoons of sweet stuff in each Twinkie.

The search for sweeteners took Ettlinger down the Mississippi and Missouri Rivers, from the corn fields of Iowa to Florida, Texas and Louisiana. Most sugar for Twinkies is imported from the Dominican Republic, however.

Water and Baking Soda

Even the water in Twinkies is processed. A huge treatment facility in New Jersey supplies freshly chlorinated and filtered H₂O to Hostess. The author went underground in Wyoming to observe the mining of trona, a rock containing sodium sesquicarbonate, from which baking soda is derived. Water brings a mixture of dry powders, including baking soda, to life.

Soy

Another gigantic processing miracle turns simple soybeans into partially hydrogenated vegetable shortening, soy lecithin and soy protein isolate. Most of the US soybean (and other seed crops) are controlled by the chemical giant Monsanto, which genetically modifies the seeds and then treats them with fungicide. Shortening provides the base for that crème (not cream) filling.

Eggs

Twinkie bakeries use a million eggs a year. No wonder they don’t break them. Rather they buy dried, liquid or frozen eggs from companies specializing in egg-breaking. Drying and freezing keep the eggs’ baking qualities intact, allowing them to add structure to the dough by holding together the oil and water.

Flavors and Dyes

Petroleum and one of its byproducts, benzene, a flammable colorless, carcinogenic, sweet-smelling, liquid solvent play a major role in making artificial colors and flavors. A complicated reaction between benzene and nitric acid yields nitrobenzene, which eventually leads to the all-important aniline, a colorless, oily (and highly poisonous) liquid. Aniline is the basic chemical from which food dyes (and inks, paints, and varnishes) are made.

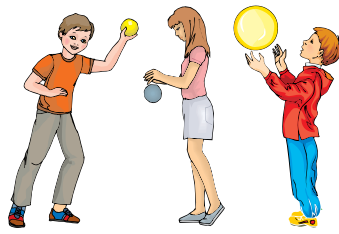
Artificial vanilla manufacturing starts a long way from the beautiful tropical orchid flower fields, the origin of real vanilla. Synthetic vanilla flavoring, called vanillin, is made in petrochemical plants in China and Baton Rouge, Louisiana. Surprise! The buttery flavoring in Twinkies, red dye no. 40 and yellow No. 5 also come from a collection of synthetic chemicals made from petroleum.

Polysorbate 60

Answering the question that started Ettlinger’s odyssey was difficult. The truth is that this mysterious chemical is an emulsifier: the magic something that makes foods creamy. Butter, cream and egg yolks are natural emulsifiers; polysorbate 60 does the same thing chemically, and is so potent that it takes less than .001 ounce of it to work its magic on one Twinkie, because it’s so good at retaining water around those luscious fat molecules.

And where does polysorbate 60 come from? Processing corn, oil palms and petroleum. The “poly” is from “polymer, the “sorb” from “sorbitol,” and the “ate” means that it contains oxygen. The number 60 distinguishes it from its cousins who are cooked up slightly differently to emulsify ice cream, soap, and shampoo.

So now you know. *Twinkie, Deconstructed* touches on nutrition, food science, consumerism, eating, baking, home cooking, and even history and geology. Once you read it, you may never eat another processed food again. To learn more about Twinkies and the author, go to www.twinkiedeconstructed.com.



Spelling, Movement and Vision

Have you ever wondered how the young students can spell such difficult words in the National Spelling Bee, while many of our children with developmental delays struggle to learn their simple weekly spelling words? The spelling geniuses will tell you that they see words in their mind's eyes.

Good visualization is the result of a sequence of learned skills that follow specific stages, according to the late GN Getman, a pioneer in visual development:

- General movement patterns *for* action
- Specific movement patterns *of* action
- Eye movement *to reduce* action
- Communication (speech/language) *to replace* action
- Visualization patterns *to substitute for* action and speech

Here are some movement patterns that can increase foundational motor skill levels and improve visualization by moving through the stages. Try them daily to enhance spelling skills in the early elementary school grades.

Combining motor activities, such as dribbling a ball, to the homework routine allows spelling to move to the subconscious brain, thus speeding up the learning process. As a child gains control over the body, more energy is available to spell.

First a child visualizes the movements necessary to reproduce the letters that combine to form a specific word. Then, he/she pictures a hand forming, then speaking, and finally, writing the letters. As a child's visualization skills develop, the movements and auditory input are no longer necessary to visualize whole words.

Grade	Type Of Ball	Bounce/Dribble 1x For Each Letter	Spelling Out Loud
K	Playground ball	Bounce and catch ball with 2 hands. (Parent writes the word on large piece of paper.)	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"
1	Tennis ball	Bounce ball with right hand, catch ball with left hand. Bounce ball with left hand, catch ball with right hand. (Parent writes the word on large piece of paper.)	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"
2	Tennis ball	Dribble ball with alternating hands. Visualize the word.	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"
3	Tennis ball	Dribble ball in pattern: 2x with right hand, 1x with left hand. Visualize the word.	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"
4	1½" diameter	Dribble ball in pattern: 3x with left hand, 2x with right hand. Visualize the word.	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"
5-6	1" super bouncer	Dribble in patterns of 3s: 1x right, 2x left, 3x right. 1x left, 2x right, 3x left. Visualize the word.	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"
7-8	1" super bouncer	Dribble in patterns of 3s, USING ONLY TWO FINGERS. Visualize the word.	Spell word forward. Spell word backward. Ask, "What letter comes before/after the letter _?"

Chart courtesy of Donna Wendelburg, Achievers Wisconsin www.achieverswisconsin.org

Many poor spellers often lack good visualization. Fortunately, visualization can be learned. Developmental optometrists and their therapists have helped thousands of students become good spellers by developing their visualization skills.

To learn more about this often overlooked skill deficit, read two classics: Getman's *How to Develop Your Child's Intelligence* and Ilg and Gesell's *Vision, Its Development in Infant and Child*. Go to www.devdelay.org to order.

The Mighty Mitochondria Revisited

By Kelly Dorfman, M.S., Nutritionist, Cofounder DDR

Mitochondrial disorders are a “hot topic” following the groundbreaking decision in the Hannah Poling case. (See *New Developments* Spring 2008.) Hannah regressed developmentally, and eventually was diagnosed with autism after reacting to nine vaccines at 18-months-old. Hannah’s parents filed a claim in Federal “Vaccine Court,” where officials conceded that Hannah had a rare, genetically based underlying mitochondrial disorder predisposing her to responding negatively to the shots, leading to fever and an “immune stimulation that exceeded metabolic reserves.”

Five years ago (*New Developments*: 8:3;7), I wrote about the “mighty mitochondria,” at a time when mitochondrial disorders were not well-known. Last October, however, a Portuguese study reported that these disorders are not “rare,” with over 7% of children with autism testing positive. Some believe that at least 20% of children with regressive autism have mitochondrial dysfunction.

What are Mitochondria? Each cell contains tiny powerhouses called mitochondria, whose job it is to convert food into chemical energy. The mitochondria convert fats and carbohydrates into adenosine triphosphate (ATP), the cell’s main source of energy. Well-functioning mitochondria create readily available and sustained energy resulting in toned and well-formed muscles. Exercising muscles strengthens them.

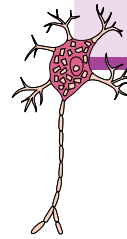
What is a Mitochondrial Disorder? Viruses, environmental and vaccine-containing toxins, including heavy metals, pesticides and even antibiotics, are capable of damaging mitochondria, causing an acquired disorder that compromises cells’ future ability to produce energy. Both genetically inborn and acquired disorders are present in children with autism and other developmental delays.

According to David Kirby, reporting in the online *Huffington Post*, what happened to Hannah and others like her was a “triple domino effect” that goes like this:

1. Child is born with an unknown underlying DNA genetic susceptibility and appears healthy. First trigger: An environmental insult occurs pre-natally, or during the neonatal period or in early infancy.
2. Child develops mild, usually asymptomatic mitochondrial dysfunction. Second trigger: Child’s immune system capacity is over-stimulated and stressed beyond its metabolic reserves from a febrile infection, or from multiple vaccinations, as in the Poling case, resulting in
3. Acute illness, seizures, encephalopathy, developmental regression, autism and loss of muscle tone and stamina.

Individual environmental and genetic influences make some mitochondria more efficient than others. A vast majority of individuals suffer from mitochondrial inefficiency, not disease, and demonstrate symptoms such as restlessness, distractibility and limited attention, resulting from attempts to find comfortable positions which stabilize them.

Mitochondrial Disorders Are Treatable - Whether a child has a known mitochondrial disorder or inefficiency, nutritional treatment is mandatory, because many nutrients are critical for mitochondrial function. Here is a combination that includes the most important components.



The Mitochondria Cocktail

Vitamin B-1 (thiamine) and/or B-2 (riboflavin) are required co-factors for energy making, the last step of which involves converting adenosine diphosphate (ADP) to adenosine triphosphate (ATP). This step takes place in a chain of five protein complexes named Complex I, II, III, IV and V, respectively. Complex I requires vitamin B-1 to stimulate its enzymes. Both Complex I and II require vitamin B-2. This chain of events allows cells to use partially broken down fats and carbohydrates and convert them to energy.

Some children do well with just thiamine; some become irritable with riboflavin, and vice versa. Both B-vitamins plus B-3 (as niacinamide) are necessary for others. Without a specific diagnosis, we must guess which B-vitamins to support. Add them one at a time, observing a child’s response to each supplement.

A typical mitochondria formula contains 50-100 mg each of vitamins B-1, B-2 and/or B-3. Keep in close contact with the supervising medical professional and adjust the B-vitamins if the child becomes agitated.

Vitamin E (mixed tocopherols) protect mitochondria against damage from destructive molecules called free radicals, which are a normal by-product of metabolism. Healthy bodies have the capacity to clean up these volatile substances. However, when too many invade mitochondria, they can damage the membranes and disrupt energy production. Vitamin E is an important anti-free radical agent for protecting and healing cell membranes. Dose at 100-400 IU. Natural vitamin E, usually derived from wheat or soy, is well tolerated and it has no known toxicity. In rare cases though, it can cause allergic problems.

L- Carnitine is a simple protein made up of the amino acids methionine and lysine. Research suggests that carnitine helps maintain the membranes of the mitochondria. In addition, **L-Carnitine** facilitates the transport and utilization of fats so the cells can use it to make energy. For mitochondrial disorders, **L-Carnitine** or the prescription version, Carnitor, is dosed at 50 to 100 mg per kg of body weight. It can sometimes cause irritability or stomach distress, and is not toxic.

Alpha Lipoic Acid (ALA) is a unique anti-oxidant that is both water and fat soluble. Since cell membranes can absorb both water and fat soluble molecules, ALA is particularly useful for stabilizing and protecting cells against free radical damage. Use a coated product such as Xymogen ALA Max, which requires the ability to swallow pills. Discuss the best form of this supplement with your health care practitioner.

Co-enzyme Q-10 (Co-Q-10), also called ubiquinone, helps to regenerate ATP. The body stores only enough ATP to provide energy for about five to eight seconds of strenuous activity, so it must constantly regenerate ATP using Co-Q-10. Dose Co Q-10 at 30-60 mg up to 100 mg. Co Q-10 is non-toxic and well tolerated.

Bottom Line? Healthy mitochondria provide the sustained energy necessary for children’s optimal growth and development. Nutritional support can increase their efficiency even when compromised by a suspected or identified mitochondrial disorder.

UPCOMING EVENTS

2008

- **Tuesday, November 18, 2008 – Tarrytown, NY**
Vision and Autism: More than Meets the Eye
Speaker: Patricia S. Lemer, M. Ed., NCC.
Sponsored by the Biomedical Learning Cooperative (BLC).
For more information contact Tricia Zarro at 914.261.2509 or tzarro@optonline.net.
- **Wednesday, November 19, 2008 – New York, NY**
Choosing and Prioritizing the RIGHT Therapies for Each Child
Speaker: Patricia S. Lemer, M. Ed., NCC.
Location: The Rebecca School.
Sponsored by the The New York Metro Chapter of the National Autism Association.
For more information go to www.naanyc.org.
- **Friday, November 21 and Saturday, November 22, 2008 – New York, NY**
Gluten Freedom: Reclaiming Our Daily Bread
Amazing Gluten-Free Pies, Tarts, and Quiche Hands-on with lectures with master baker, Rebecca Reilly at the Natural Gourmet Institute.
To register call 212.645.5170 or go to www.naturalgourmetschool.com.
- **Saturday, November 29 – Sunday, November 30, 2008 – Vancouver, BC.**
Family Constellations: Heart of Healing with Dietrich Klinghardt, MD, PhD.
For more information and to register, go to www.klinghardtneurobiology.com or call 303.499.4700.
- **Thursday, December 4, 2008 – Cleveland, OH**
Vestibular Activation: Therapeutic Movement to Optimize Development
For information and to register, contact PDP at 651.439.8865 or www.pdpapro.com.
- **Thursday, December 4, 2008 – Trumbull, CT**
Environmental Toxins: They're Everywhere
Speaker: Lynn Williamson, RN.
Sponsored by Total Learning and Therapy Center.
To reserve a space, call 203.268.8852.
- **Saturdays, December 6, 2008 and January 24, 2009 – Washington, DC**
Family Constellations Workshops
Experience how trans-generational pain can affect today's families.
For more information and other dates, go to www.theconstellationsgroup.com.
- **Saturday, December 6 – Sunday, December 7, 2008 – Phoenix, AZ**
- **Friday, January 23 – Saturday, January 24, 2009 – Ft. Lauderdale, FL**
- **Friday, January 30 – Saturday, January 31, 2009 – Charleston, SC**
Sensory Tools and the Sensory Processing Measure (SPM)
Speaker: Diana Henry, OTR/L. For more information and other dates visit www.ateachabout.com.
- **Sunday, December 7, 2008 – Washington, DC**
Whole Psychiatry & Infection: Strengthening Host Defenses
Speaker: Robert J Hedaya MD.
Sponsored by The National Capital Lyme & Tick Borne Disease Assoc. For more information and directions, see www.natcaplyme.org or call 703.821.8833.
- **Sunday, December 7, 2008 – Pittsburgh, PA**
The Vision and Learning Link
Workshop for parents, educators and professionals by Elisa Beck, OD.
Please RSVP to 412.491.0303.
- **Monday, December 8, 2008 – New York, NY**
Homeopathy at Home
Learn some natural healing alternatives to help you get through the winter.
To register call 212.645.5170 or go to www.naturalgourmetschool.com.
- **Wednesday, December 10, 2008 – New York, NY**
Illness, Love and Healing – Family Constellation Workshop
To learn more go to www.leahmatalon.com or call 212.860.7228.
- **Wednesday, December 12– Thursday, December 13, 2008 – Houston, TX**
- **Friday, February 6 – Saturday, February 7, 2009 – Maitland, FL**
Yoga for the Child with Developmental Challenges
Speaker, Anne Buckley-Reen. To learn more go to www.educationresourcesinc.com.

2009

- **Thursday, January 8 – Sunday, January 11, 2009 – San Francisco, CA**
Food as Medicine
Sponsored by the Center for Mind Body Medicine. Questions?
Send an email to fam@cmbm.org, or call 202.966.7338.
- **Friday, January 9 – Sunday, January 11, 2009 – Santa Cruz, CA**
Peaceful Heart, Warrior Spirit: The Four Purposes of Life
Join Dan Millman for a workshop you won't forget.
Sponsored by Santa Cruz Integrative Medicine Center.
For more information and to register, go to www.santacruzintegrativemedicine.net.
- **Friday, January 16 – Saturday, January 17, 2009 – Green Bay, WI**
- **Friday, January 23 – Saturday January 24, 2009 – Seattle, WA**
Eyesight to Insight: Visual/Vestibular Assessment & Treatment
Speakers: Mary Kavar, OTR/L and Carl Hiller, OD, FCOVD.
For more information and to register, contact PDP at 651.439.8865 or go to www.pdpapro.com.
- **Saturday January 17 – Sunday, January 18, 2009 – Tampa, FL**
Get a HANDLE on Neurodevelopmental Differences- Introductory Course
For more information, contact frontdesk@handle.org or call 206.204.6000.
- **Friday, January 23, 2009 – Rockville, MD**
Beyond Protocols : Dialogues on the Life Cycle – The Adolescent
Speakers: Ioana Razi, MD, Angelo Bolea, PhD, and Priscilla Friesen, LCSW.
Questions? Contact Donna Troisi at 240.281.8319 or info@livingoptimally.com.
- **Friday, January 23 – Saturday, January 24, 2009 – San Francisco, CA**
- **Friday, January 30 – Saturday, January 31, 2009 – Albuquerque, NM**
How Does Your Engine Run? The Alert Program for Self-Regulation
To register & for other dates call 877.897.3478 or visit www.AlertProgram.com.
- **Friday, January 30, 2009 – Chicago, IL**
Essentials of Praxis Intervention for Children with Autism
Speaker: Teresa May-Benson, ScD, OTR.
For more information and to register, contact PDP at 651.439.8865 or go to www.pdpapro.com.
- **Friday, January 30 – Saturday, January 31, 2009 – Omaha, NE**
Sensory Integration in the Classroom
Speakers: Lee Pennington Neill, PhD and Nikki Rosen-Lieberman, MA, OTR.
For more information and to register, contact PDP at 651.439.8865 or go to www.pdpapro.com.
- **Friday, January 30 – Saturday, January 31, 2009 – Phoenix, AZ**
Partners with a Purpose: OT and Speech Therapy, Using an SI Approach
For more information and to register, contact PDP at 651.439.8865 or go to www.pdpapro.com.
- **Friday, February 13 – Monday, February 16, 2009 – Lenox, MA**
The Peaceful Warrior Experience with Dan Millman
Sponsored by The Kripalu Center.
To register, go to www.kripalu.org or call 800.741.7353.
- **Wednesday, February 18, 2009 – Boca Raton, FL**
Peaceful Mind/Peaceful World Series
A Public Lecture by Dan Millman at Florida Atlantic University.
To learn more call 561.297.2623.
- **Thursday, February 26 – Sunday, March 1, 2009 – Bloomington, MN**
The 29th Symposium on Intervention for Persons with Special Needs
Speakers include Georgia DeGangi, PhD, OTR, FAOTA and Mary Kavar, OTR.
For information and to register, contact PDP at 651.439.8865 or www.pdpapro.com.
- **Friday, February 27 – Sunday, March 1, 2009 – Bellevue, Washington**
Chemical and Heavy Metal Toxicity
Speaker: Dietrich Klinghardt, MD, PhD.
For more information and to register, go to www.klinghardtneurobiology.com or call 303.499.4700.

Developmental Delay Resources

5801 Beacon Street ■ Pittsburgh, PA 15217

www.devdelay.org ■ [email:devdelay@mindspring.com](mailto:devdelay@mindspring.com)

Fall 2008

Membership Renewal Form

For Office Use <input type="checkbox"/> QB <input type="checkbox"/> AC <input type="checkbox"/> CH ST____ <input type="checkbox"/> DI <input type="checkbox"/> NM <input type="checkbox"/> RE

If you are a Professional or Organization and would like to renew using PayPal, please go to www.devdelay.org, click on "Join DDR" and complete the form online.

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