



Center For Neuro Development

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Unlocking ADHD, Dyslexia, Autism and More!

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Unlocking Learning Potential

April 2011

We continually add new information and make changes to our website. You can now order products and pay for services online – including annual homeschool testing.

Newly updated website: www.centerforneurodevelopment.com

By the end of May, 2011 we will discontinue our website: www.specialhelps.com and the related e-mails: maggie@specialhelps.com, ronnie@specialhelps.com, orders@specialhelps.com. Be sure that you are using the following: www.centerforneurodevelopment.com, maggie@centerforneurodevelopment.com and orders@centerforneurodevelopment.com or any of the others in the heading.

In this issue: What's Happening at the Center?

What we do at the Center?

New Book Available: Rounding the Bases: Chris Learns to Read

Featured Article: Reading Instruction: The Neurodevelopmental Approach by Maggie Dail

This is the last in a series of issues that have focused on the topic of Reading. Beginning in April we will be discussing Brain Research. Remember you can read all of the past issues on our website.

What's Happening at the Center?

In our ongoing effort to find homes for many items from our lending library and other educational products, we will continue selling many used items for \$1.00 a grocery bag full. Other items go for \$ 0.50 or \$1.00. This offer is available by appointment until March 14. After that, we will continue reducing our remaining inventory with great offers. Those coming to our center for services may browse our shelves.

Our *free introductory seminar* usually occurs on the 2nd Monday of the Month at 6:00 p.m. We are changing the locations to 8323 95th St SW. (**New Location**). We are available to do these seminars at your location and to your group. Contact us for details. Future dates at the Center:

April 11 (2nd Monday)

May 9 (2nd Monday)

June 13 (2nd Monday)

Those who attend may choose a number of options including:

Neurodevelopmental Screenings – up to 30 minutes; \$40.00

- Neurodevelopmental Screening – (auditory and visual processing; dominance; gross motor)
- Attend the 2nd Monday of the month Free Introduction to the Neurodevelopmental approach.
- Follow-up Seminar for all participating families – to explain results of screening and mini-plan of action.
- Mini-Plan of Action – about 30 minutes of daily activities; for those who follow through a minimum of 80%; reporting every month and upgrade to another of the non-test assessment plus or neurodevelopmental evaluation administered by our resident neurodevelopmentalist within 6 months, they will get a \$40.00 discount on the upgraded service.

Brain Development and Learning – Beginning Soon!

Learn how to apply what we know about brain development for learning reading, math and other subjects.

Brain Development and Reading – February 28 at 6:00 p.m.

Brain Development and Math – April 25 at 6:00 p.m.

Brain Development and Other Subjects – May 23 at 6:00 p.m.

What do we do at the Center for Neuro Development?

1. FREE information regarding the neurodevelopmental approach to unlocking learning challenges in the following ways:
 - a. Website with links and articles: www.centerforneurodevelopment.com.
 - b. Free monthly e-newsletter, *Unlocking Learning Potential*.
 - c. Free monthly informational seminar – 2nd Monday of the month. See above.
 - d. Occasional workshops on *Brain Development and Learning*. See dates above for the next series.

2. Conduct evaluations / assessments – finding missing pieces in development.
3. Design individual neurodevelopmental plans (with complete evaluation), mini-plans (with non-test assessments plus) and screenings plans (with screenings).
4. Teach parents how to implement these plans to do at home; implement the plans for the parents in the Center or a combination of the two.
5. Sell materials useful for students on plans and homeschool curriculum. www.centerforneurodevelopment.com
6. Provide other services for independent homeschoolers and Academy Northwest students: www.homeschoolhelps.com; www.academynorthwest.net.

We are now enrolling for winter classes and scheduling for homeschool testing, Braining Training / Individual ANW credits - and neurodevelopmental evaluations. Contact us regarding our classes or look on our website: www.homeschoolhelps.com

In 2006, the first edition of our book came out: *Getting to First Base: Chris Struggles to Read*. This second edition has a new title and additional Bonus material for parents. The introductory price for *Rounding the Bases: Chris Learns to Read* is \$13.95. While our supplies last of the first edition, the clearance price is only \$10.00. Now that the new edition is available owners of the first edition may request the additional Bonus material by e-mail. To get your copy of *Getting to First Base: Chris Struggles to Read* or *Rounding the Bases: Chris Learns to Read* you may order online: www.centerforneurodevelopment.com

Featured Book Review:
by Maggie Dail, M.A. CND

*Aging With Grace –
What the Nun Study Teaches Us About Leading
Longer, Healthier, and More Meaningful Lives*
David Snowdon, PhD
Bantam Books, 2001

Maggie Dail
March 2011

Granted, like all of us, I am aging, but it puzzled me when I received this book as a gift. Not long after though I did realize that this would be a fascinating read considering my ongoing study of brain development. Further, I was surprised because neither my friend nor I are Catholic. Indeed, my friend knew that I would like this book because of my work. Thank you, dear friend!

In part, because of this surprising find, I chose this book to review as the opening in a series of articles / book reviews on Brain Development Research.

David Snowdon, PhD the author and researcher – calls himself “a medical detective, an epidemiologist looking for clues to the mysteries of aging.” (p.2) His chosen population, nuns, provided an ideal environment for the study. He shares many precious stories of his encounter with nuns that I will not try to recount. I recommend the book for a very interesting read. However, I will list key points learned from this long-term study.

Key Points:

I. Study Parameters –

A. All participants were part of one of the Schools of Notre Dame (p. 9): Baltimore, Chicago, Dallas, Mankato, Milwaukee, St. Louis, and Wilton, CT (p. 242) Ages range from 75-106 (“About the Nun Study” in back of book)

B. Nuns underwent an hour-long battery of tests annually as a part of the study – “*Mini Mental State Exam*.” (p. 6) 8 different, but overlapping tests --- (p. 144) “All the abilities being tested relate to those needed for everyday tasks and are important for maintaining independence.” (p. 145)

1. State date and identify location.

2. Spell Words Backwards (p. 145)

3. Boston Naming – examiner presents 15 line drawings on large index cards (ranging “from common to less frequently encountered.” P. 145) or an alternative for the Boston Naming for individuals who have poor eyesight names objects instead.

4. Verbal Fluency – “measures language, memory, and processing speed. Participants are asked to name as many items in a given class, such as fruits and vegetables, as they can in one minute.” (p. 145)

5. Constructional Praxis “measures visual-spatial ability” by showing 4 line drawings and asking the participant “to draw [these] shapes of increasing complexity.” (p. 145)
“The final three memory tests build on each other.”

6. Word List Memory – learning phase of the following.

7. Delayed Word Recall Test (leg, cheese, tent, motor, flower, stamp, cup, king, forest, menu). The examiner showed index cards with these words on them to the examinee who said the words. After 3 times, other tests were done for 5 minutes to distract her, then she was asked to recall as many of the 10 as possible. (p. 4)

8. Word Recognition Test – The participant is asked to read 20 words on large index cards and identify the 10 words that were learned from the Word List Memory. The other 10 words are considered distracters.

C. The **Physical Tests** – also mimicked real life tasks:

1. Put on sweater

2. Cut a clay hot dog

3. Read instructions on a pill bottle / take out the correct dosage.

4. Hand coordination – participants were timed as they opened 3 small doors with different latches.

5. Grip Strength – participants grasped a dynamometer.

6. Walking 6 feet and if possible 50 feet – timed.

7. Up and Go – stand up and walk around a sign – timed.

8. Lower body strength – putting on and tying a pair of shoes (p. 146)

In addition to the Mental and Physical tests, nursing staff members were asked to give supplemental information on the participants’ function. (p. 146) When participants are unable to perform the standard tasks, the evaluators quickly move into a “special protocol.” (p. 147)

- D. Questions in the author's mind as he worked through this study:
1. "Did everyone with plaques and tangles develop the symptoms of Alzheimer's?"
 2. "What caused these plaques and tangle to appear?"
 3. "Was it genes, or was it something in the person's upbringing or environment?"
 4. "Was aging the primary factor or did many factors work together to bring on Alzheimer's?" (p. 47, 48")
- E. Willing participants signed agreements to have their brains autopsied after death. Dr. William Markesbury of the University of Kentucky Hospital did these autopsies. Beginning with an overall exam of the brain, he finishes by looking for microscopic evidences of Alzheimer's (plaques and tangles); Microscopic examiners count these square millimeter by square millimeter.(p. 91) He does the autopsies "blind" -- not knowing anything about the individual's function before death.
1. Plaques – tissue looks dirty – like dark, soiled spots on cloth; formed from a protein, beta-amyloid, usually soluble – when solid they are called plaques. (p. 90, 91)
 2. Tangles – dark flames or tadpolelike shapes, protein, tau. Healthy nerve cells: ropelike structures, a sturdy skeleton that communicate with other cells; Alzheimer's causes these to accumulate and tangle. (p. 91)
- F. "Early-onset Alzheimer's typically strikes before the age of sixty-five and spreads through families much more predictably than the late-onset variety. It accounts for something like 5 to 10 percent of all Alzheimer's cases. It also afflicts people with Down syndrome; nearly everyone with that condition develops extensive plaques and tangles by the age of fifty. Since people with Down syndrome have an extra copy of chromosome 21, the researchers reasoned that they would be more susceptible to any gene it carried. This had let them to focus their search on chromosome 21." (p. 129)
- G. There are two camps within researches of Alzheimer's – those who believe that the tangles are more indicative of the disorder and those who believe the plaques are the prime indicators. The nun study data seems to favor the tangles opinion. (p. 130-131)
- H. Three problems seemed to converge in the Nun Study that became the key focus: stroke, heart disease and dementia. "Strokes can bring on the sudden appearance of dementia symptoms that are caused by the rupture or blockage of a blood vessel. In contrast, the symptoms of Alzheimer's disease usually progress slowly. However, with advancing age, these two diseases may become intertwined and confused. How stroke and Alzheimer's knot together is far from an academic question. Effective prevention and treatment strategies might result from untying that knot." (p. 142)
- II. Growing Understanding of what we call, "Alzheimer's"
- A. Beginning in 1901, Dr. Alois Alzheimer of the Hospital of the Mentally Ill and Epileptics in Frankfurt, Germany observed a patient named August D., a 51 year old woman. Her behavior was unpredictable:
1. "bears the stamp of utter bewilderment" – he couldn't identify it as any known disease.
 2. Dr. Alzheimer was greeted as a guest and she would excuse herself to "finish her work."
 3. Other times --- she screamed madly to avoid being cut open.
 4. Other times --- she would indignantly send him away as she feared that he threatened her "honor as a woman." (p. 46)
 5. As Auguste D. read, she would confuse lines. As she wrote, she repeated single syllables multiple times. When she spoke, she used odd phrases (milk pourer for cup). "She clearly does not grasp some questions, and it seems that she no longer knows the use of certain objects and was totally dulled, lying in bed with legs drawn up, incontinent" by the time she died in 1906. (p. 47)

6. Dr. Alzheimer autopsied the brain of Auguste D. “The autopsy revealed ‘a consistently atrophic brain’; damage and cell death had shrunk the tissue. ...the nerve cells contained ‘a tangled bundle of fibrils.’ These he observed appeared ‘to go hand in hand with the storage of a pathological metabolic product’ around the nerve cells, which later researchers dubbed ‘plaques.’ Today, tangles and plaques are the two most important pathological features of what became known as Alzheimer’s disease.” (P. 47)
- B. The author and Jim Mortimer discussed this and successive work in the area in the late 1980s and “scientists still only had a flimsy handle on the degree to which plaques, tangles and strokes contributed to Alzheimer’s.” (p. 47)
- C. “Nearly one hundred years after Alois Alzheimer first described the disease, it still defies a simple diagnosis for clinicians and pathologists alike. Dementia simple means ‘out of one’s mind’ in Latin. The diagnosis is usually made if three types of symptoms are present: There must be impairments in short-term memory, in another area of cognition (such as language), and, finally, in social or daily functioning (such as dressing). Dementia has, to date, at least sixty known causes.” (p. 86, 87) Possible causes include: infection by a bacterium (ex. untreated syphilis), a virus (ex. AIDS), prion (ex. Creutzfeldt-Jakob or its variant – Mad-Cow disease), Vitamin B12 deficiency, hypothyroidism, drug side-effects, toxins, tumors, strokes, head trauma (ex. boxing injuries), Huntington’s or Parkinson’s or Alzheimer’s (p. 87)
- D. “Almost a century later, scientists are still debating the most basic issues first raised by Dr. Alzheimer: Which of the two Alzheimer’s lesions are more important in damaging and killing brain cells? How many plaques and tangles must be evident, and in which parts of the brain, before it is considered to be an ‘Alzheimer’s brain’?” (p. 89)
- E. In 1992, “a team of researchers at Duke University Medical Center discovered that people who had a particular type of apolipoprotein E had much higher rates of Alzheimer’s disease.” (p. 122)
- F. Alzheimer’s disease “appears to increase with age, hit a plateau, and then decline.” (p. 215)

III. Conclusions / Other Comments

- A. Before this study, it was believed that a patient had to be at Stage III or IV on the Braak scale to show symptoms of Alzheimer’s. Baffling results lead researchers to speculate that depression can contribute to an earlier onset of symptoms at Stage II. (p. 95)
- B. “The Nun Study’s real eye-opening findings, however, are the ones that add to the evidence that Alzheimer’s is not a yes/no disease. Rather, it is a process – one that evolves over decades and interacts with many other factors. We have shown dramatically how pathology alone often can mislead.” With one of these genes from one parent the risk factor is 3 times higher. With genes from both parents the risk factor is 8 times higher. (p. 100)
- C. When Snowdon and Susan Kemper presented the results to Markesbery, he asked ‘What does this mean for our children?’ Susan responded: ‘Read to them, It’s that simple. It the most important thing a parent can do with their children.’ “Susan explained that idea density depends on at least two important learned skills; vocabulary and reading comprehension. And the best way to increase vocabulary and reading comprehension. ‘And the best way to increase vocabulary and reading comprehension is by starting early in life, by reading to your children,’ Susan declared.” (p. 117)
- D. To help a loved one who is showing signs of Alzheimer’s the best thing to do is: visit and discuss: current events, childhood memories, read aloud, sing songs

together, play cards, puzzles or other activities the individual enjoys – anything that person can do will “help them maintain enjoyment, pride, and dignity in their lives.” (p. 123)

- E. When talking to someone with Alzheimer’s, give him or her time to respond. Don’t quiz and ask questions like: “Do you remember me?” (p. 124)
- F. “Nothing loves oxygen more than the brain, which accounts for only about 2 percent of the body’s weight but demands 15 to 25 percent of the available oxygen. The hippocampus, which is so critical to memory, is particularly sensitive to ischemic damage. So the brain literally chokes when a compromised heart or a clogged artery cannot deliver enough oxygen-loaded blood. Hypertension again comes into play here, as extra pressure on the walls of arteries stiffens them, making it easier for fatty plaques to form.” (p. 148)
- G. “Whichever culprit starves the brain of oxygen, the result is often the same: stroke. First nerve cells die. Then, in a second wave of insult and injury, the brain tissue becomes inflamed. This initiates the so-called inflammatory cascade, in which the cells release toxic chemicals, killing more brain cells and further damaging the blood vessels. Depending on the location of the damage, the results may include partial paralysis, impaired vision, loss of speech – and what is called vascular dementia.” (p. 149)
- H. “As we reported in a 1997 paper published in the *Journal of the American Medical Association*, our autopsies showed that the small (lacunar) brain infarcts had a stunning link to dementia in the sisters – *but only if their brains also had enough plaques and tangles to meet the criteria for Alzheimer’s disease*. ...Our data also suggested that sisters with evidence of a stroke required fewer tangles in the neocortex to show signs of dementia than if they had been stroke-free. We concluded than many sisters – in spite of having brain damage from Alzheimer’s disease – avoided dementia because they had not suffered small strokes.” (p. 155)
- I. “It also strongly suggests that stroke-free brains can compensate for Alzheimer’s lesions to some extent and mute the symptoms of the disease.” (p. 156)
- J. Snowden does not believe that aluminum and mercury toxicity is problem. (p. 163, 165) I would recommend looking at other sources for this issue.
- K. “Markesbery and other scientists have proposed that oxidation plays a major role in Alzheimer’s disease. Compared to healthy controls, brain tissue from Alzheimer’s patients shows higher levels of oxidation. Amyloid, the ingredient of the plaques, also appears to generate free radicals that add to the damage done to neurons. And tissue damage in turn creates more free radicals – setting off a destructive cascade of events that can lead to the atrophy and death of brain tissue.” (p. 171) “The real question, however, is subtly---but critically --- different: Does a positive outlook early in life contribute to longevity? Our data suggest that the answer is yes.” (p. 194)
- L. Two factors that this study does not address but the researcher believes are extremely important: the deep spirituality and the strong community of the nuns in the Schools of the Notre Dame. (p. 201-202)
- M. “The real question, however, is subtly---but critically --- different: Does a positive outlook early in life contribute to longevity? Our data suggest that the answer is yes.” (p. 194)
- N. Other nutritional areas have been proposed as applicable – Lycopene – red pigment found in tomatoes, guaves, watermelon, pink grapefruit (p. 173); Vitamin E (p. 174); poor nutrition due to crop failure in the 18th century (p. 176); folic acid deficiency in a 1977 study (p. 177, 179).

- O. “Neurologist Bill Markesbery recommends that his patients in the early stages of Alzheimer’s disease take considerably higher doses of vitamin E, vitamin C and folic acid. He also recommends a trial of a prescription anti-inflammatory drug, such a celcoxib (brand name Celebrex), which is less likely to cause stomach ulcers and bleeding than aspirin or other common anti-inflammatory drugs. These drugs may help to reduce the brain-damaging effects of the inflammatory effects of the inflammatory process in Alzheimer’s disease.” (p. 181)

Book Reviewer’s Comment:

As an alternative to anti-inflammatory drugs, explore a product called *Protandim* of Lifevantage – repairing free radicals
<http://www.mylifevantage.com/connie/default.aspx>