

# Child Health Notes



*Promoting early identification and partnerships between families, primary health care providers & the community.*

Distributed by Public Health-Seattle & King County-Children with Special Health Care Needs Program. This newsletter provides physicians, nurse practitioners, primary health care providers, public health centers and community partners with current information regarding identification and management of special health issues for children. Contributing agencies and programs include: Washington State Department of Health and UW – Center on Human Development & Disability

## Early Brain and Child Development

Parents want to know what they can do to enhance brain development in their children during pregnancy and after birth. This Child Health Note is designed to bring you a sampling of the latest robust findings in brain science as it relates to children from the prenatal period to age 5. Keep the following five principles of brain development in mind as you advise parents. Starting in pregnancy and progressing through infancy, toddlerhood, and childhood, these five suggestions are some of what we now know about how parents can enhance brain development.



During PREGNANCY, weight, nutrition, stress, and exercise are things to balance. **WEIGHT:** Babies experiencing a critical lack of nutrition have fewer neurons, fewer and shorter connections between existing neurons, and less insulation all around them in the second trimester. For pregnant women who are underweight or of normal weight, 28-40 pounds weight gain is expected to optimize brain development. **NUTRITION:** Omega-3 fatty acids can fortify cell membranes of neurons and enhance neuronal function. **STRESS:** Keep stress under control during pregnancy. Moderate stress in small amounts appears to be good for infants while continuous, high levels of stress are suspected to alter brain development. Excess cortisol (stress hormone) from mom can make it hard for a baby to turn off his or her own stress hormones. **EXERCISE:** The American College of Obstetricians generally recommends 30 minutes or more of moderate, daily exercise for healthy women. Aerobic exercise, keeping heart rate below 70% of maximum (220 beats per minute minus one's age) and slowing things down toward the end of pregnancy is advised. Physical fitness in late pregnancy leads to a less painful, safer, and easier labor.

During INFANCY, parents can maximize their child's brain power in many wonderful ways. Breastfeeding and ample verbal interaction are like brain fertilizers, statistically shown to boost intellect. Breastfeeding enhances neuronal development and the immune system. Talking to a child frequently enhances verbal development. Young children naturally reach out for interaction through babbling, facial expressions, and gestures. Adults respond with the same kind of vocalizing and gesturing. In the absence of such response, or if the responses are unreliable or inappropriate, the brain's architecture can be negatively affected. Subsequently, learning and behavior can be adversely affected as well.

During the TODDLER years and beyond, it is important to maintain an environment that is without chronic stress. Occasional stresses can be educational, but research has shown that frequent emotional stress has huge, detrimental impact across society on children's ability to learn in school and on employees' productivity at work. Some stress can be helpful in life because it teaches children how to deal with adversity, but children living in primarily hostile environments are at greater risk for certain psychiatric disorders, such as depression and anxiety disorders. Such disorders can adversely impact cognitive processes important to successful academic performance. Marital stress at home can negatively affect academic performance in almost every way. One of the greatest predictors of performance in school turns out to be the emotional stability of the home. Primary care providers should be on the lookout for chronic stress and refer for marital and individual counseling as needed. In-home behavioral counseling can be helpful where available in helping parents manage problematic childhood behaviors.





During CHILDHOOD and throughout school, executive function (a mixture of planning, foresight, problem-solving, goal setting, and self-control) is a better predictor of academic success than IQ. Children who are able to filter out distraction, for example, do far better in school. While genes play a role, a child’s brain can be trained to enhance self-control and other aspects of executive function. Kids in one program designed to enhance executive function performed 30-100% better than controls on just about any executive function test employed. Physical exercise can increase executive function scores from 50-100%. Advise parents to value and teach their children these essential skills by consciously teaching good social skills and seeking counseling or other help when behavior is challenging. School teachers should be queried by parents at parent-teacher conferences about how the student is doing in this particular realm of development as



For the SCHOOL-AGED child, keep in mind that, after nearly 75 years of research on what makes people happy, the only consistent finding was successful friendships. Friendships are a better predictor of happiness than any other single variable. By the time a person reaches middle age, friends are the ONLY predictor. We have evolved to live in social groups, and we don’t do as well when we are alone. A steady dose of altruistic acts, practicing gratefulness, sharing novel experiences with loved ones, deploying a ready forgiveness reflex, and cultivating an attitude of gratitude all enhance happiness. Advise parents to prioritize teaching their children how to socialize effectively, how to make friends, and how to keep them.

## References

- Harvard Center for Early Childhood Development website: <http://developingchild.harvard.edu/>
- American Academy of Pediatrics Early Brain and Child Development section including continuing medical education: <http://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/EBCD/Pages/default.aspx>
- John Medina. Brain Rules for Baby (2014) and Brain Rules (2008). Both from Pear Press.
- Dan Siegel and Tina Payne Bryson. The Whole Brain Child (2011). Bantam Books.
- Executive function training, developed through Frontiers of Innovation, Washington State’s partnership with the Harvard Center on the Developing Child: [http://deltraining.com/courses/Executive\\_Function/content-frame.htm](http://deltraining.com/courses/Executive_Function/content-frame.htm)

## Regional Information and Referral

**WithinReach:** Helps families understand and connect with or apply for a variety of food and health resources in Washington state including health insurance, food programs, developmental screening and parenting support.

- **Toll free Family Health Hotline 1-800-322-2588.** Bilingual English/Spanish staff and access to the ATT Language line for other languages. Staff available Monday-Thursday 8:00-5:30 and Friday 8:00-5:00.
- **Online at <http://www.ParentHelp123.org>** (search for resources by zip code!).

King County Special Needs Resources		
<b>For children birth to age 18:</b>	Contact: Children with Special Health Care Needs Nurse	206-296-4610
<b>For children under age 3:</b>	Contact: Lead Family Resources Coordinator	1-800-756-5437
<b>For children age 3 and older:</b>	Contact: Local school district	
<b>Family Support:</b>	Contact: Parent to Parent Coordinator	206-829-7039

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