



Children's Hospital Boston

Laboratories of Cognitive Neuroscience *Fall 2009 Newsletter*

Hello from Dr. Nelson

Hello from the Labs of Cognitive Neuroscience! I hope everyone is having some fall fun, whether that means trick-or-treating, pumpkin carving, or just enjoying the colorful foliage. It's a very exciting season for the LCN, as the construction on our floor is almost complete! We are looking forward to saying goodbye to the dust and noise of construction, and to welcoming some of our colleagues from the Developmental Medicine Center to the beautiful new space at 1 Autumn Street. Through it all, we are as busy as ever, with many study participation opportunities. Please feel free to explore our [website](#) or contact our research team for more information about studies that you or your child might participate in.



Whether you have already taken part in our studies or have recently joined our growing participant registry, I greatly appreciate your interest in our research. Your support of our work and participation in our studies is invaluable to us in answering many important questions related to infant and child cognitive development.

Warm Wishes,

Charles A. Nelson, Ph.D.

Director of Research, Division of Developmental Medicine
Richard David Scott Chair in Pediatric Developmental Medicine Research
Professor of Pediatrics and Neuroscience, Harvard Medical School

In the News

"Hub Lab Writing the Book on Face-Reading"

Boston Globe, November 10, 2009.

Click [here](#) to read this article on how the lab is working to learn more about the development of face processing in infants and children. For more information on how you and your child can participate in our face processing studies, visit our [Ongoing Research](#) section!

Refer a Friend!

One of the biggest challenges for a lab as busy as ours is connecting with families in the area who might be interested in studies. Some have simply never considered it, and others aren't sure what participation entails. We do our best to make families in the community aware of our research efforts, but no one can do a better job of explaining what it's like to participate than those of you who have already been into the lab!

If you have a friend who you think might be interested in or eligible for one of our studies, please feel free to forward this newsletter along or to tell them about your experience. If they have questions or would like to sign up for our [Participant Registry](#), they can contact Rebecca Hansen at 857-218-3011 or rebecca.hansen@childrens.harvard.edu.

Thank you as always for your interest in our work! Your support and participation is essential to our progress in answering many important questions about infant and child development.

Featured Study: The Effects of Immune Functions and Steroids on Memory and Brain Development

Are you interested in learning more about your child's memory? Memory and executive functions--the skills we use to plan and regulate our behavior--are fundamental building blocks of a child's learning and adaptive functioning, both at school and at home. These functions may be influenced by hormones and immune cells we release when feeling sick. Usually, our immune system is programmed to quickly fight infection and then return to "rest" again. However, in certain conditions such as autoimmune illnesses, the immune system overreacts and can't return to "rest." These overreacting immune cells, as well as the steroids used to treat them, can affect brain regions critical for learning and memory. Children with autoimmune illnesses, therefore, may be at particular risk for cognitive and behavioral problems based on both their underlying illness and the therapies used to treat them.

In the current study we are looking at the brain effects of the immune response and steroids on learning in both ill and healthy children. Understanding more about these effects will help doctors who are treating sick children to learn more about how the immune system acts on the brain and to find safer therapies for children dealing with these types of illnesses. We also hope to help families find ways to manage their child's learning and school functioning when their child is sick, in pain, and/or taking steroids.

For this study, we are looking for children with Crohn's disease (an inflammatory autoimmune disease of the digestive tract) and **healthy typically developing children ages 8-16 years**. Participants will come for a neuropsychological assessment (routinely used in clinical care) and complete tests of memory and general cognitive ability. We will then record each child's brain activity (or **EEG**) while he or she tries to learn and remember

photographs shown on a computer screen. In a separate session, children will also be asked to play similar learning games during functional magnetic resonance imaging ([fMRI](#)), a non-invasive tool to measure brain activity which will allow us to study brain differences between sick and healthy children.

If you are interested in participating with your child, please e-mail Sarah Ballou (sarah.ballou@childrens.harvard.edu) or call 617-355-7908.

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