

# POOR SCHOOL PERFORMANCE: INATTENTION OR HYPERACTIVITY?

**When it comes to academic achievement, children who are inattentive may be at greater risk than those who are merely hyperactive. This was the key finding in a study that looked at hyperactivity and inattention symptoms to determine their association with educational achievement.**

**D**r. Jean-Baptiste Pingault, a researcher at the CHU Sainte-Justine and the study's lead author, explains that while many studies have linked ADHD (attention deficit hyperactivity disorder) with difficulties at school, this was the first to look at hyperactivity and inattention symptoms separately in the general population over a long period of time.

"You can easily imagine that it's hard for children who are hyperactive to concentrate, because they're moving around all the time," says Dr. Pingault. "But you can also have children who are sitting quietly but not really paying attention. Our study shows that these children are at the same risk as those who show both inattention and hyperactivity." In fact, he adds, they are probably more at risk than the few children who are hyperactive but are still able to concentrate on their work.

The study included 2,000 children in Quebec who were assessed every year between the end of kindergarten (age 6) and the end of elementary school (age 12). The study then looked at their official high school graduation records at age 22-23. Inattention was measured using indicators such as not being able to maintain attention for a long time, being easily distracted, being absent-minded (looking around, not staying focused), and giving up easily (starting a task but not necessarily completing it).

The results showed that a high inattention trajectory in children between the ages of 6 and 12 strongly predicted not earning a high school diploma by 22-23 years of age. A declin-



*"This study underlines the importance of identifying children with symptoms of inattention as early as possible."*

ing or rising trajectory of inattention also contributed to this result. Hyperactivity, however, was not a significant predictor once inattention was taken into account.

## **SIGNS OF INATTENTION IN YOUNG CHILDREN**

"This study underlines the importance of identifying children with symptoms of inattention as early as possible," says Dr. Sylvain Palardy, a child psychiatrist who has worked extensively with children from birth to age five at Hôpital Rivière-des-Prairies, and works with children and adolescents at the Clinique TDAH de Montréal (attention deficit disorder clinic).

"Children who are hyperactive often stand out, because their behaviour is disruptive. But other children who are very quiet may get labelled lazy or unmotivated, when really it's because their brain is saying, 'this is too much!'"

In young children, signs of inattentiveness may include being easily distracted by exter-

nal stimuli, taking longer to complete tasks, having difficulty organizing themselves, or forgetting things. Because it takes more effort for these children to concentrate, they may get tired more quickly or give up more easily.

Dr. Palardy says that schools need to put measures in place to support children with attention difficulties. Sometimes even simple measures can help: a hypo-sensitive child needing more stimulation to stay attentive might use a special kind of seat; a hyper-sensitive child who gets distracted by others being too close might be given a locker slightly apart from the group. Other measures might include giving a child more time to complete a task or breaking it down into parts. "Young children who are easily distracted need support to maintain their concentration during activities," he notes, adding that in more severe cases, medication may need to be prescribed. 🦋

**BY EVE KRAKOW**

# EARLY BRAIN CHANGES IN INFANTS WITH AUTISM

**Differences in brain development in people with autism may start as early as six months old.**

That was the key finding in a study of 92 at-risk infants (at risk because an older sibling had autism). Researchers conducted magnetic resonance imaging (MRI) brain scans at 6, 12 and 24 months. At 24 months, behavioural assessments showed that 28 of the infants met the criteria for autism spectrum disorders (ASD).



The scans for these children showed more rapid development of white matter fiber tracts by age six months than the scans of those who did not develop ASD. After this initial accelerated development, by age two these children had less new white matter development than the unaffected children.

"This suggests that the origins of autism in terms of brain differences are really quite early, tracking back to the first year of life," says Dr. Lonnie Zwaigenbaum, Co-Director of the Autism Research Centre at Glenrose Rehabilitation Hospital in Edmonton and one of the study's authors.

White matter refers to the myelin that covers the connections between brain cells, helping the impulses move more quickly. "It's kind of the communication system of the brain," says Dr. Zwaigenbaum, explaining that increasingly, autism is being thought of as a disorder of brain connectivity.

"There's evidence from older children with

autism that the short-term connections are over-developed and the longer-term connections are under-developed. This could explain why people with autism may be very good at detail-oriented processing (noticing patterns), yet miss out on the big picture (difficulty generalizing)."

Dr. Mayada Elsabbagh, Assistant Professor in Psychiatry at McGill University, says these findings show the dynamic nature of brain development in infants at risk, reinforcing the need to think about autism from a developmental perspective. "This means that it is very important for clinicians to work with families when there are concerns about the child and monitor these over time."

Dr. Zwaigenbaum says that signs to watch out for between the ages of 6 and 12 months include decreased eye contact, lack of sharing of positive or joyful emotion, not responding to name, becoming preoccupied with repetitive kinds of interests, such as fixating on minor visual details, and becoming more oriented to objects and less to people. Differences in early motor development may include lower tone, not manipulating objects as efficiently, or poorer postural control. For families who have a child with autism, the risks of a younger sibling developing the disorder are about one in five. 🦋

**BY EVE KRAKOW**

Ref.: Wolff JJ, Gu HB, Gerig G, and al. Differences in white matter fiber tract development present from 6 to 24 months in infants with autism. *American Journal of Psychiatry* 2012;169(6):589-600.2012;169(6):589-600.

# ASD: FOCUSING ON THE INDIVIDUAL'S NEEDS

**Children may be diagnosed with different types of autism spectrum disorders (ASD) depending on where they are diagnosed. These findings support a recent move to do away with ASD subtypes in North America and to focus on the individual's needs instead.**

Dr. Mandy Steiman, a psychologist with the ASD Program at the Montreal Children's Hospital, was one of the researchers who carried out the study. Until recently, she explains, clinicians were using the DSM-IV<sup>1</sup>, which included three major ASD subtypes: autistic disorder (autism), Asperger's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). "However, there's been

some controversy as to whether clinicians can reliably discriminate between these different disorders, whether they're meaningful categories," she says.

In this study, experienced clinicians at 12 sites in the U.S. and Canada were given standardized information on 2,100 children between the ages of four and 18 who met autism spectrum criteria, and asked to give their diagnosis.

"Within each site, clinicians were quite consistent in how they diagnosed the subtypes," says Dr. Steiman. "Between sites, however, there were large variations." This was especially true for children with milder symptoms.

She notes that these results support the direction taken in the DSM-5: released in

May 2013, it no longer includes the subtypes. Clinicians now qualify ASD by the level of severity of two key dimensions – social communication and interaction, and restricted/repetitive behaviours and interests – and by the level of support the person needs.

Dr. Nathalie Garcin, a clinical psychologist and Executive Director of the Gold Centre, which provides diagnostic and early intervention services to children with ASD, says this study confirms that the subtypes being used were not backed by the evidence. She also believes the new approach is much less confusing for parents.

"In the past, we were using different terms to mean the same thing – because really, it's a continuum, with different levels of severity. Now, instead of focusing on the diagnosis, we can focus on the child's needs, and on the supports that should be put in place to enhance the child's development." 🦋

**BY EVE KRAKOW**

1. Diagnostic and Statistical Manual of Mental Disorders.

Ref.: Lord C, Petkova E, Hus V, and al. A multisite study of the clinical diagnosis of different autism spectrum disorders. *Archives of General Psychiatry* 2012;69(3):306-313.

# LANGUAGE DELAYS:

## TRYING TO IDENTIFY CHILDREN AT RISK

**About 5 to 8% of preschool children have a delay in language development that puts them at major risk of poorer school and academic performance, more limited employment opportunities, and difficulties with social interactions and relationships.**

“It is absolutely crucial for children to acquire good language skills,” says Dr. Melissa Wake, a pediatrician at the Royal Children’s Hospital and researcher at the Murdoch Childrens Research Institute, both in Melbourne, Australia.

The dilemma, she explains, is how to determine whether early screening and prevention initiatives are effective. “Should you go in early, when the language system is malleable and you are more able to influence the trajectory, or should you go in late, when you can be much surer of who really has a language delay and who doesn’t?”

Dr. Wake led an Australian trial examining the effects of a language promotion program. Dr. Luigi Girolametto, a professor in the Department of Speech-Language Pathology at the University of Toronto, was one of the study’s chief investigators and provided extensive expertise on language development.

Instead of targeting older children identified as having language delays, the study focused on very young children deemed at risk of developing a delay because they were saying no or very few words at 18 months old. Parents attended sessions at which they learned and practiced strategies to support their child’s language development. Researchers then looked at the children’s outcomes at ages two and three.

They found that although the parents loved the program, it did not appear to have any substantial effect on improving the children’s outcomes compared to the control group.

The main reason may be that children in both groups improved so rapidly. In other words, being slow to talk is not a good marker of subsequent language delay. “Although these children were much slower to start

talking than their peers, by age two, just six months later, their average language scores were into the normal range and by age three were close to the population average,” says Dr. Wake. This high rate of natural resolution had not been expected, as it had not been well documented before.

She notes that the study’s findings suggest that a one-time screening for expressive language skills alone in toddlers is unlikely to be a helpful strategy at a population level. “We’d like to try a more sophisticated model of identification that draws on the children’s skills and risk factors over a number of time points, to really identify the children who are likely to have lasting, damaging language delay.”

Dr. Sarah Shea, a developmental pediatrician at the IWK Health Centre in Halifax, supports the idea of having some kind of tool to help identify at-risk children when they come for their regular check-ups. “Eighteen months is a predictable immunization contact point and a good age to pick up major motor, social and language delays,” she points out. “Receptive language is especially key, along with social development.”

In terms of prevention, she underlines the importance of looking at the big picture. “As a nation, we seem to be catching on to the power of the social determinants of health and understanding how they influence developmental outcome,” she says. “We’re also starting to hear the message that developmental outcome equals health outcome in many respects. Efforts to eliminate child poverty and to improve child care will likely have the biggest impact in this area.” 🐾

BY EVE KRAKOW



*“Being slow to talk is not a good marker of subsequent language delay.”*

Ref.: Wake M, Tobin S, Girolametto L, Koukumunne OC, Gold L, Levickis P, Sheehan J, Goldfeld S, Reilly S. Outcomes of population based language promotion for slow to talk toddlers at ages 2 and 3 years: Let’s Learn Language cluster randomised controlled trial. *British Medical Journal* 2011;343:d4741.

# ARE POLICIES HELPING TO REDUCE CHILD ABUSE AND NEGLECT?

**Over the past 30 years, many countries have implemented policies and programs designed to reduce child abuse and neglect. The question is, are they working?**

To find out, researchers studied six countries and states: Sweden, the United States, England, New Zealand, Western Australia and the Canadian province of Manitoba (chosen for the availability of quality data). They looked at rates of hospital admissions for maltreatment-related injuries, violent deaths, and child protection agency contacts, including investigations, substantiations and out-of-home care.

Overall, they found no clear decrease or increase in child maltreatment. This could mean that interventions are not working – or it could

mean that increased awareness and action have resulted in more cases being reported, balancing out the numbers.

By choosing countries with different levels of inequality and social supports and different child maltreatment policies, researchers also hoped to assess the effects of different types of policies.

“The biggest contrast was between Sweden and the U.S.,” says Dr. Marni Brownell from the Manitoba Centre for Health Policy, one of the study’s authors. “We associated this difference not so much with specific policies around child maltreatment, but with broader policies.” For example, Sweden has much lower rates of child poverty and parental risk factors, such as addictions and intimate partner violence. At the policy level, Sweden offers much more support for parents, such as the length of paid

leave, and spends more on early childhood programs.

Across all countries, the study found tenfold differences in rates of children being placed in out-of-home care, with Manitoba having the highest rates of all. Dr. Brownell says this is disturbing, especially considering that there are no controlled trials comparing the effectiveness of out-of-home care with intensive home support.

She concludes by stressing the importance of preventive initiatives. “Surveys show there are lots of kids who experience maltreatment who never come to the attention of authorities. A universal public-health approach would be more likely to reach them, and potentially reduce the numbers of kids needing protection services.”

**BY EVE KRAKOW**

Ref.: Gilbert R, Fluke J, O'Donnell M, Gonzalez-Izquierdo A, Brownell M, Gulliver P, Janson S, Sidebotham P. Child maltreatment: Variation in trends and policies in six developed countries. *Lancet* 2012;379(9817):758-772.



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