

CAN-A-GEN

Canadian Autism Genetics

March 2009

Hello to everyone. We hope that everyone enjoyed the holidays and everyone is settling back to school. We welcome and appreciate your feedback. You may contact: Bev DaSilva at (905) 521-2100 ext. 74728 or dasilvb@mcmaster.ca.

What's new at Can-A-Gen?

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This has been an exciting year for Canada's contribution to the international Autism Genome Project. We are continuing to recruit families with one or more children with an Autism Spectrum Disorder and to collect detailed information not only on the children but also on siblings and parents. It is important for us to collect this detailed information on all members of the family since we believe that the genes that cause autism may have milder, more subtle, effects in other family members and that the identification of these subtle effects will be extremely important in finding genes that cause the disorder.

With our colleagues in the Autism Genome Project, we have made two important discoveries. First, we continue to find very subtle chromosomal changes that are individually quite rare but appear to implicate specific genes that have an important role in brain development. These alterations (which are called Copy Number Variants) are duplications, deletions, and translocations of small segments of DNA. If these changes occur in a key part of the gene, they may affect gene function and the proteins that contribute to brain development. We now have a list of at least five genes that have been altered by Copy Number Variants that we and others believe are now important in causing autism. The genes themselves are quite rare and they only occur in one or two families with autism. However, as a group we and others believe that these Copy Number Variants may account for upwards of 5-10% of so-called "sporadic" cases of Autism Spectrum Disorders i.e. families in which there is only one affected individual.

We have also made important advances in trying to uncover genes that might be implicated in the more common familial forms of ASD. We published an important paper this year looking at component phenotypes of the ASD condition such as IQ, speech delay, repetitive stereotyped behaviours, etc. The idea here was to try and discover whether there are different genes that might be responsible for different aspects of the disorder. For example, there might be one gene responsible for the impairments of social reciprocity, another responsible for difficulties in language, another responsible for variation cognitive ability etc. We believe we have found two regions, one on chromosome 11 and another on chromosome 15. The region on chromosome 15 may harbour a gene associated with cognitive function in ASD. Similarly, the region on chromosome 11 may harbour a gene responsible for delayed language skills. We are continuing to look for other chromosomal regions that might account for other aspects of the autism phenotype such as repetitive stereotyped behaviours.

"With our colleagues in the Autism Genome Project, we have made two important discoveries."

We continue to go back and study the DNA material over and over again as new DNA supplies are collected. It may take up to a year from the time that the DNA is collected to the point of our first analysis to see whether these Copy Number Variants or other associations may be implicated.

Currently, we are all set to go onto the next phase of our work with the Autism Genome Project. With our colleagues around the world we now have a sample of almost 2,000 individuals with ASD. In the next little while, we will be looking to see whether there are any genes that are altered by these Copy Number Variants. We also want to see if more common genetic variants are more common than one would expect in the general population. This will be the largest study of its kind ever published and we are hopeful we will be able to make major and significant strides.

Once again, I want to thank all the families who have participated in our studies. We recognize that this represents a significant time commitment on your part and that it can be difficult to collect both the DNA and the clinical information that we require. However, it is amazing to contemplate that over the last five years we have made significant strides and have identified some genes that cause the disorder. These genes all appear to have a similar effect on the brain and we are confident that what we have learned so far will speed up the pace of discovery in the near future. I promise that as we make further discoveries we will keep the families who are participating in studies informed ahead of any press release or papers that appear in published journals. This is our commitment to you to ensure that the information we are collecting gets to you first. One day, these results will have an impact on better understanding of how autism is transmitted within families. But more importantly the genes that we discover will potentially lead us to better diagnostic tests and to biomedical treatments that could have an impact on the actual mechanism that causes the disorder. I want to express the gratitude of all members of the team to the families participating and look forward to seeing many of you at our conference in November.

"We believe we have found two regions, one on chromosome 11 and another on chromosome 15."

Blood Collection

For those families who are in Dr. Szatmari's Genetic Study, if we have not yet collected your child's blood, and your child is having his/her blood tested for any other reason, please contact Christina Chrysler at (905) 521-2100 ext. 74176. We may be able to arrange to have our research blood collected at the same time.

"If you have changed address or are planning to move, please let us know so that we can keep our records updated."

Keep us up to date!

Please keep in touch with us so we have an up-to-date record of your address and phone number. This helps us to keep you informed. If you have received questionnaires from us, we would ask that you return them as soon as possible. If you have misplaced the forms or the return envelope, please contact Christina Chrysler at 905-521-2100 x74176. Messages can be left on her voice mail in the evening, if this is more convenient for you.

The Centre of Knowledge on Healthy Child Development

Many parents of children with mental health problems turn to their local library or the internet for information. Little of the material they find is based on good quality research, and much of it conflicting. Unable to figure out what is accurate and what is not, they can end up feeling confused and frustrated. Parents need information that will help them understand what is happening to their child and their family and how to find the best help. They, along with teachers and therapists, need reliable and up to date information that is available through a trustworthy source.

That's why the Centre of Knowledge on Healthy Child Development was developed. It draws on the Offord Centre's expertise as a recognized leader in child and youth mental health research. The site was launched in May 2006 with the goal of finding, evaluating, and summarizing the latest and best research on healthy child development and child and youth mental health. The Web site helps its readers learn about common problems, including anger, aggression and bullying, attention problems, anxiety, depression, and learning disabilities. It helps parents, teachers, mental health professionals and others understand what causes these problems, how common they are, how they impact the individual and the family, and what treatments are effective in dealing with them.

Go to www.knowledge.offordcentre.com to find information on child mental health problems.

Diets and Supplements: Can They Help? Can They Harm?

Written by Trish Colton

"There is no convincing evidence that children with autism have a bowel problem that is specific to them, or that they are more likely than children without ASD to have bowel problems."

A lot of children with ASD have "tummy troubles". They may have diarrhea or constipation or both. If you're the parent of a child with ASD, you've probably heard about the gluten-free, casein-free diet. Right now it's being promoted as a "cure" for ASD by a Hollywood star. Even if you don't believe in cures, the idea that something as simple as a diet will improve your child's condition offers a lot of hope. Before you decide to try it, there are some things you should know.

There is no convincing evidence that children with autism have a bowel problem that is specific to them, or that they are more likely than children without ASD to have bowel problems. There is a widespread perception that children with autism are more likely to have bowel problems compared to typically developing children. Some studies have shown that this is not the case and that the rates are similar in both children with ASD and those without ASD. A bowel condition once described as being particular to children with ASD, lymphonodular hyperplasia, is not seen only in children with ASD. It is often seen in typically developing children who have chronic constipation.

Diets and Supplements: Continued

The theory behind the diet has been disproved. The original idea was that children with ASD suffer from a bowel disorder referred to as "autistic enterocolitis." One group of researchers said that it was caused by the measles vaccine. Having this disorder was said to leave the children unable to completely digest gluten (a protein found in wheat) and casein (a protein found in dairy products). According to the theory, the bowel damage allows fragments of undigested wheat and dairy (termed peptides) to get into the blood stream through microscopic holes in the bowel. They then travel to the brain, causing symptoms of autism. The diet that removed all gluten and casein was developed to avoid these hypothesized events. Recent studies with newer, more accurate equipment have failed to find these peptides in the urine of children with ASD, whether they were on the diet or not, as would be expected if the theory was correct. If there are no abnormal peptides in the urine, then the theory is simply not correct. This is not the cause of autism. There is no convincing evidence that this disease exists.

It is possible that there are other explanations for why the diet seems to work. Authors of a systematic review on diet in ASD children could find only two published studies that had attempted to show improvement in autistic behaviour was caused by the diet. Neither of them compared children with ASD who had bowel problems to ASD kids without bowel problems or to typically developing children. Only 35 children were studied in both studies, combined. The weaknesses of these studies are such that it's not possible to determine if the diet can improve symptoms in ASD children.

Many children with bowel problem have been found to be lactose intolerant; that is, they lack the enzyme lactase that helps break down milk sugar. Many of these children may also lack enzymes to digest wheat and other carbohydrates. Problems digesting wheat, corn and dairy and some sugars are common in children generally. Such food intolerances can produce abdominal pain and bloating. The diarrhea causes painful spasms, and constipation causes pain in the bowel, too. One explanation for the apparent improvement in the children is that they will "stim" or cry or scream when they are in pain. These behaviours may not be interpreted by their parents or caregivers as reactions to pain or there may be a lack of understanding of the intensity of the pain. Once the offending foods are removed from the diet, the pain may be alleviated, and the behaviours cease, so it appears that the autistic behaviours have been treated.

Another explanation may be that there is no actual bowel disorder. A well designed study found that children with ASD who have diarrhea and constipation often have problems with anxiety, so this may be the cause. Anxiety is associated with bowel problems in the general population.

Supplements

A recent study found that children with ASD, even those thought by the parents to be "picky eaters," got most of their necessary nutrients out of their limited diets and did not need supplements. Parents get very concerned because their children are highly selective about the foods they will eat. They may want to eat only yellow foods or only foods with a specific texture. A study of the nutritional content of their food preferences showed their nutrient intake was adequate. If you have concerns about your child's nutrition then add in a children's multiple vitamin.

"It is possible that there are other explanations for why the GRCF diet seems to work."

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Diets and Supplements: Continued

"Vitamins are not benign because they are "natural"."

Back in the 60s and 70s, there was a lot of interest in trying to treat schizophrenia with B vitamins. A small study had found improvement in a group of people with schizophrenia when they were given high doses of B6. An independent researcher in the United States tried using B6 to treat children with ASD. He added in magnesium to reduce the likelihood of nerve damage in the hands and feet, side effects known to be caused by B6 in high doses. A systematic review of studies done of this treatment showed no evidence that it produced improvement in the participants of the studies.

Some people are using B12 to correct a genetic disorder hypothesized to occur in children with autism. Right now there is no evidence from human studies that even if the use of this vitamin would correct this biological defect, that it will improve the ASD symptoms. There is also a theoretical concern that the use of high doses of Vitamin B12 could also cause changes with unpredictable results. It is not known yet if this is safe or effective. Vitamins are not benign because they are "natural". Both Vitamins A and D can cause serious harm in overdose.

If your child has bowel problems like chronic diarrhea or constipation, make sure they are seen by a physician to make sure there is no serious underlying disease. You might also ask about testing for gluten sensitivity. Using the GFCF diet will further restrict the foods the child can or will eat. Some children with autism, especially those on the diet, have been found to have amino acid (the building blocks of protein) deficiencies, so further restricting their diet could lead to malnutrition. A recent study found that compared to typically developing children, boys with ASD who were on the GFCF diet had reduced bone density, putting them at risk for fractures.

"If your child has bowel problems like chronic diarrhea or constipation, make sure they are seen by a physician to make sure there is no serious underlying disease."

As an initial step try removing dairy and wheat from the diet to see if it reduces or eliminates the symptoms. It is certainly less expensive and will take less effort than the GFCF diet. Digestive enzyme tablets or capsules used when these foods are eaten could also help. The advantage of using the capsules is that the contents can be sprinkled on warm (not hot) foods or liquids. There is no need to buy expensive enzymes from online sources: get them from a health food store or ask your pharmacist to order some "broad spectrum" digestive enzyme capsules suitable for your child, if they're not in stock.

Sources

Angley M, Semple S, Hewon C, Paterson F, McKinnon R. Children and autism. Part 2 – management with complementary medicines and dietary interventions. Australian family Physician. 2007; 36(10): 827-30.

Cass H, Gringras P, March J, McKendrick I, O'Hare AE, Owen L, Pollin C. Absence of urinary opioid peptides in children with autism. Archives of Diseases in Children. 2008; 93: 745-750.

Dettmer K, Hanna D, Whetstone P, Hansen R, Hammock BD. Autism and urinary exogenous neuropeptides: development of an on-line SPE-HPLC-tandem mass spectrometry method to test the opioid excess theory. Analytical and Bioanalytical Chemistry. 2007; 388(8): 1643-51. epublished 2007 May 23.

Elder JH. The gluten-free, casein-free diet in autism: an overview with clinical implications. Nutrition in Clinical Practice. 2008; 23:583-588.

Hediger ML, England LJ, Molloy CA, Yu KF, Mannin-Courtney P, Mills JL. Reduced bone cortical thickness in boys with autism or autism spectrum disorder. Journal of Autism and Developmental Disorders. 2008; 38: 848-856.

Lockner DW, Crowe TK, Skipper BJ. Dietary intake and parents' perception of mealtime behaviours in preschool-age children with Autism Spectrum Disorder and in typically developing children. *Journal of the American Dietetic Association*. 2008; 108: 1360-136

MacDonald TT, Domizio P. Autistic enterocolitis: Is it a histopathological entity? *Histopathology*. 2007; 51: 552 [letter].

Millward C, Ferriter M, Calver S, Connell-Jones G. Gluten-and casein-free diets for autistic spectrum disorder. *Cochrane Database of Systematic Reviews*. 2008; 16(2): CD003498.

Nader, R. Oberlander TF, Chambers CT, Craig KD. Expression of pain in children with autism. *Clinical Journal of Pain*. 2004. 20(2): 88-97.

Nikolov RN, Bearss KE, Lettinga J, Erickson C, Rodowski M, Aman MG, et al. Gastrointestinal symptoms in a sample of children with pervasive developmental disorders. *Journal of Autism and Developmental Disorders*. 2008; September 13. E-published ahead of print.

The Canadian Autism Intervention Research Network-CAIRN

The Offord Centre (www.offordcentre.com), a research centre affiliated with McMaster University, is a world leader in autism research. Its scientists are renowned for their contributions to unmasking the genetic causes of autism, lowering the age at diagnosis, developing new, cost-effective interventions, and tracking the development of children with autism to better understand the factors that contribute to healthy outcomes.

The Offord Centre recognized that parents, teachers, clinicians, and policy makers need up-to-date information about autism that is based on the very best evidence. So, in 2001, Dr. Peter Szatmari, the Offord Centre's lead autism expert and its director, spearheaded the development of a new organization, the Canadian Autism Intervention Research Network (CAIRN). One of its initial goals was to identify and disseminate the best available information on autism.

A web site – www.cairn-site.com – was launched in December 2002 and quickly established itself as an authoritative source of good, evidence-based information on autism. Visitors to the site will find "plain language" summaries in a structured format of research on the causes of autism, its prevalence, how to deal with challenging behaviours, how to help children with autism learn, what works to improve critical child skills such as joint attention, imitation, and language.

In June of 2008, with funding from Health Canada, CAIRN further expanded its reach into the autism community by launching its French-language site. It is now available not only to Francophone Canadians -- many of the site's visitors are from France, Algeria, and Morocco.

In addition to the CAIRN Web site, we also produce the CAIRN Review, which summarizes research findings and offers practical advice to parents and others concerned with children with ASD. Multiple hard copies can be ordered free of charge or downloaded from www.cairn-site.com.



Sharing the Autism Spectrum Diagnosis With Your Child.

Written by Irene O'Connor

Sharing the diagnosis of ASD with your child poses a difficult problem. Will telling cause self esteem to suffer, or will it help your child to know that there is a reason for some of the things that he or she finds difficult? Should one discuss it at a young age so that awareness unfolds slowly, or should one wait until a child is older and therefore more able to better understand the information?

"Should parents discuss their child's diagnosis at a young age so that awareness unfolds slowly, or should one wait until a child is older and therefore more able to better understand the information?"

Discussing the diagnosis of ASD is a very individual decision and there is no one right answer, but here are a few suggestions which may help:

You may want to consider sharing information about the diagnosis when

-Your child voices questions or concerns such as "Why do I have to go to speech therapy? Why don't I have friends?"

-Your child begins making comments about other children who are different

-Your child is going to be in a situation where other children are aware of the diagnosis and there is a risk that they may learn of it from a peer.

A nice compromise would be to share information in a step-wise fashion starting with broad and general description such as brain differences, or strengths and weaknesses, and then if more information is requested it could be discussed in terms of a learning disability and finally ASD.

The National Autistic Society (www.autism.org.uk) suggests that parents start the conversation by talking about differences and extend this by writing a list of family members' strengths and weaknesses. This can then lead into a discussion of what your child is good at and what they find difficult. Finally, one can point out that there is a name to this particular pattern of strengths and weaknesses that your child has, and there are others who share this way of being.

Use an achievement book to help remind your child of all the things that ASD helps them be good at.

You may need to emphasize that autism is not a disease and no-one can die from it. There is not a medicine that cures it, but there are things a person can do to work around some of the difficulties that it brings.

Your child may meet or already know some other people with autism and it will be helpful to explain that while people with ASD share some characteristics, they are individuals first and very different from one another. Autism is just a small part of who they are.

Disclosing the diagnosis to your child is just the first step while the next challenge is to find the words to answer your child's questions and help them understand. The diagnosis of autism is based on a triad of impairments and as a parent one may read quite a bit about the impairments in reciprocal social interaction, repetitive behaviours and a need for sameness. The problem is translating what one knows about ASD into kid-friendly terms that are positive, concrete and sensitive to your child's developmental and language level. I have listed a few of my favourite resources below:

a. Pictures of Me: Introducing Students with Asperger's Syndrome to Their Talents, Personality, and Diagnosis by Carol Gray. This is a social story written to introduce a student to their diagnosis as well as their personality and talents.

"Discussing the diagnosis of ASD is a very individual decision and there is no one right answer."

Sharing the ASD diagnosis with Your Child (continued)

b. Asperger's: What does it mean to me? A workbook Explaining Self-Awareness and life lessons to the child or youth with High-functioning Autism or Asperger's by Catherine Faherty. This book is designed as a work-book which your child can customize to capture how ASD affects them personally. Each chapter describes an aspect of ASD and provides a list of specific ways it can present. For example, there is a chapter on special interests, and then there is a list of interests that are more common amongst individuals. There are also blank spaces for your child to write in their own interests. Your child is meant to high-light any interests on the list that apply to him/her and also circle the numbers of the pages that are important to them. After each chapter there is a section called "Tips for parents and teachers" and this section contains much practical helpful advice.

Dear Charlie: A guide for living your life with Autism—A Grandfather's Love Letter by Earle P. Martin Jr. The author wrote this book as a message to answer all the questions his grandson might ask, just in case he would not be around the questions arise. The answers given are complex and thoughtful, while still being clear and concrete. This book could be read a little at a time and would be suitable for all ages. It includes chapters such as "Time alone and time with others: Why I need both" and "Seeing Autism as a challenge: I can accept the challenge and win." This is a fine and moving book. Have a box of Kleenex handy and perhaps try to read it on your own before reading with your child since it is quite emotional.

Different like me: My book of autism heroes by Jennifer Elder. This book is about famous people who may have had an Autism Spectrum Disorder such as Thomas Edison, Kadinsky, Leonardo da Vinci and Albert Einstein. This a powerful book for driving home the message about positive traits associated with the constellation of symptoms of ASD

Little Rainman: Autism—through the eyes of a child by Karen L. Simmons. This book was written by a mother in order to help her son understand himself and his condition of autism.

Can I tell you about Asperger's Syndrome: A guide for family and friends. By J. Welton. This book gives an excellent first person description about AS and is short and easy to read.

Asperger's Huh? A child's perspective by Rosina G. Schurr. This book describes what it is like to have AS and would be help a child to feel that they are not alone.

In our own words: First Hand Accounts by Adults on the Autism spectrum. This book is helpful because it shares the experience of being autistic from the perspective of those who live with the condition. Inspiring stories of courage.

The very best resources that I have found were pointed out to me by the impressive, committed and resourceful group—the parents of children with ASD. If you would care to share your suggestions for resources that you have found helpful in sharing the diagnosis with your child, please e-mail me at oconnoim@mcmaster.ca and we can publish a new and improved list of resources in our next newsletter.

" Disclosing the diagnosis to your child is just the first step while the next challenge is to find the words to answer your child's questions and help them understand."

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Parent Conference Summaries

On November 8, 2008, an expert research team assembled in Toronto to host its annual conference for parents of autistic children. The presentations explored social, scientific and clinical aspects of autism spectrum disorders (ASD).

An Update on Genetics Research Findings

Dr. Steven Scherer and Dr. Peter Szatmari began with a primer on the genetics of autism and an update on developments in this field. Dr. Scherer is a researcher at Toronto's Hospital for Sick Children and U of T, while Dr. Szatmari is a researcher at the Offord Centre for Children's Studies at McMaster University and McMaster Children's Hospital. The two have been at the forefront of a large-scale, ongoing project that seeks to improve understanding of genetic links to autism.

Genes are information sequences contained in every cell of the body that produce proteins to build and maintain those cells. Every gene is represented by one copy from each parent. These copies may differ in that they code for variations of a feature (e.g. one copy of a gene may encode blue eyes, while another copy may code for brown). Variations between the two copies of a gene can be even greater when unequal sequences of information, called copy number variants (CNVs), are present.

Researchers from around the world have identified at least six genes in which CNVs occur in autism. The significance of this finding is that CNVs in these genes are found in 8% of ASD cases. In addition, classic single gene disorders have been identified as a cause in 3% of ASD cases. A third class of chromosomal anomalies accounts for ASD in 7% of patients. In total, 18% of ASD cases can be explained by the existence of at least one of these three abnormalities.

An important point to keep in mind is that there is no specific gene responsible for the development of ASD. Rather, components of ASD behaviour may arise from complications in any member of a set of identified problem genes.

Dysmorphology Assessments

Dr. Bridget Fernandez, a clinical geneticist and medical director affiliated with Memorial University, discussed dysmorphology and physical assessment of autistic children.

Dysmorphology is the study of differences in anatomy or form. 18% of all newborns have at least one minor dysmorphological feature, such as smaller than normal head size, low set ears or a small chin. A cause for concern develops when multiple dysmorphologies present in combination with each other. The presentation of multiple dysmorphologies, often in conjunction with delayed motor function and cognitive impairment, could indicate the existence of a genetic or chromosomal syndrome.

By now, it has become clear to researchers that autism is not a single disease with one specific cause. As far as dysmorphology is concerned, ASD can be broken down into three categories: cases that present with identifiable syndromes (such as Down's syndrome), cases that present with non-identifiable syndromes, and cases that present without any dysmorphologies, indicating a syndrome is not present.

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"By now, it has become clear to researchers that autism is not a single disease with one specific cause."

Parent Conference Summaries (Continued)

To better understand how dysmorphologies are linked to ASD, physical exams are performed. The three most important measures are height, weight and head circumference. In addition to these, six basic facial measurements are taken: eye width and spacing, philtrum length, mouth width, ear length and position relative to eye, overall facial appearance, and the length of hands and feet.

Future studies aim to use 3D imaging to pick up on even more subtle differences in facial structures. Performing these assessments allows researchers to determine how the existence of dysmorphologies and syndromes correlates with the diagnosis of ASD.

Epidemiology and Media Update

Dr. Eric Fombonne, an internationally acclaimed researcher affiliated with McGill University, discussed the controversial link between vaccination and the onset of autism.

It was previously believed that increased rates of vaccination around the world were leading to an autism 'epidemic'. Dr. Fombonne provided an alternate explanation for this surge in diagnosis: with the help of research, the definition of autism has broadened to encompass a wider range of clinical features and behaviours. It appears as if the evolution of the definition autism has resulted in more people being diagnosed.

The link between immunization and autism can be investigated in many studies published to date. Dr. Fombonne referred to several rigorously conducted studies as he set out on this task. He began with the measles, mumps and rubella (MMR) hypothesis, which suggested that children developed normally until receiving the MMR vaccine. Within days of the shot, parents often report a regression in behaviour, and come to believe the vaccine was inducing autism in previously "neurotypical" children.

Epidemiologic studies have been conducted to determine whether the MMR vaccine increases risk of autism. A study in the UK followed up children who received the vaccine to determine whether there would be a corresponding increase in autism rates; however, this did not happen. In Finland, a study of serious health events that occurred post-vaccination concluded the same, as none of these health events included signs of autism. In Japan, MMR was introduced in 1988 and then discontinued in 1992; the discontinuation of the vaccine had no effect on rising rates of autism diagnosis.

The thimerosal hypothesis, popularized by the media, proposed that small amounts of mercury in vaccines were leading to the development of autism in children. However, consequences of mercury poisoning differ greatly from signs of autism, with respect to motor impairment, vision and speech abilities. A study examining the risk of developing autism in children who were exposed to mercury compared to children who were not exposed to mercury also ruled out this hypothesis.

Dr. Fombonne suggested that temporal coincidence may be the factor that links diagnosis of autism with immunization of a child. That is, a child's age at vaccination and the age at which symptoms of autism become recognizable are often the same. The bottom line of Dr Fombonne's talk was that it is safe and advantageous to have one's children immunized.

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Parent Conference Summaries (Continued)

Baby Siblings Intervention Study

Dr. Jessica Brian, a clinical developmental psychologist with Toronto's Hospital for Sick Children, provided an update on the baby siblings intervention project. This study follows the younger siblings of autistic children from the age of six months, and allows for interventions to be made as soon as early signs of autism are recognized.

"With respect to the baby siblings study, application of this early intervention model has resulted in positive responses so far."

The study's intervention model is naturalistic, play-based, and easy to incorporate into daily routines. Its primary objectives are to develop positive emotion sharing and vocalization directed to another person. The model also encourages following the child's lead to maximize motivation. When the child shows interest in an activity or object, it is important for the parent to acknowledge this. The child's interest presents an opportunity for shared control to be established, and the parent should not provide full access to the activity or the object until the child communicates a request for it. To encourage the development of these communication skills, it is critical that the parent provides constant and immediate reinforcement of good communication attempts.

With respect to the baby siblings study, application of this early intervention model has resulted in positive responses so far, as demonstrated by increased scores in measures of the younger siblings' communication, behaviour and play-related activities. A larger study is planned to provide confirmation of these encouraging initial results.

Autism and Epigenetics

Dr. Rosanna Weksberg of Toronto's Hospital for Sick Children continued with a presentation on "epigenetics". Epigenetics is a study that focuses on DNA modification. Although all cells of the body contain a complete set of DNA, each cell will only use select portions of that genetic information; this is what determines the fate and function of these cells. Epigenetic modifications are thus essential and normal. It is also natural for errors to occur in this modification process and some anomalies are associated with the development of behavioural and neurological conditions. Links between ASD and faulty epigenetic modification is a new hypothesis and is still being explored. In an attempt to learn more, Dr. Weksberg's lab is looking to work with families who have conceived children through assisted reproduction technologies, such as in vitro fertilization. Use of these technologies leads to increased frequency of epigenetic modification errors. This may correlate with increased risk for neurodevelopmental disorders like autism.

"Links between ASD and faulty epigenetic modification is a new hypothesis and is still being explored."

Advocacy for Autism

Margaret Spoelstra, Executive Director of Autism Ontario, concluded the session with insights into advocacy for autistic children and adults. Autism Ontario was established in 1993 and has over 30 chapters made up of parents, volunteers and adults on the spectrum. Recently, Autism Ontario released public service announcements that emphasize the continuance of autism into adulthood. The group has also produced a report entitled "Forgotten". "Forgotten" is available on the organization's website, www.autismontario.com and it details the options and support services available for adults with ASD. In addition, the website currently features a survey on PPM-140, an intervention which aims to apply ABA strategies in school programs for autistic children. The survey will assess the benefits and shortcomings of this intervention, and results will be made available on the website.