



# Asheville Integrative Medicine



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## Healthy Notes

Summer 2009

Summer is wonderful in Asheville! So many fun events to attend along with outdoor sports and activities. We hope you are all enjoying the warm sun and getting lots of vitamin D!

Dr. Dasgupta has seen tremendous results with her patients and shares with you a bit about her experience treating autism in this issue. She also continues her interesting series on gut health (page 3) with "The Brain in The Gut".

If you know of anyone with a child who could benefit from an Integrative Approach to treatment of autism, ADD/ADHD, allergies or digestive issues, please share this newsletter with them. Wendy



### **AUTISM : A PERSPECTIVE**

*By Sudeshna Dasgupta-O'Brien*

Much has been said and written about autism in the past several years. Autism has become a household word. When I was a resident, over 20 years ago, it was a relatively rare diagnosis, and certainly not a condition that the general public had much awareness of. Now, many of us know of a child with autism either in our own family or our neighbor's or in the community. When a child is not developing like his peers, a parent's first concern today is that he might have autism while simultaneously hoping that he does not.

Human beings relate to each other by reciprocal interaction: this is natural to us. That is why autism is such a puzzling condition to understand. We are bewildered when a child does not return eye gaze, is often in their own world, does not speak like other children, or speaks oddly, and has unusual behaviors and intense temper tantrums that make no sense to us.

No two children with autism are the same. Although there are underlying similarities, there is wide variation with regard to the degree of their language development, their ability to read social cues, the quality of their interactions and their overall temperament. In addition, behaviors can change from day to day with children having "good days" and "bad days" as parents and therapists know. Some children are "high functioning", others are almost totally "non-verbal". Some have marked "sensory issues" and "self-stimming behaviors", others just a few. Some have little interest in toys and prefer to line up or manipulate parts of objects, others have well-developed imaginative play.

What is causing autism? We still don't fully know, although we have come a long way towards understanding the underlying pathology of autism better. There was a time when it was firmly believed that autism was caused by a lack of bonding: "the refrigerator mother" theory. When I first came to the Appalachian mountains I read a book about the Appalachian people written by a local pastor and counselor, in which he observed that autism was not seen among the mountain folk, and concluded that this was because families were close-knit and mothers were devoted to their children. Dr. Bernard Rimland was instrumental in helping to dispel this myth of the refrigerator mother. In 1964, after extensive research on the subject, Dr. Rimland wrote a book called "Infantile Autism: The Syndrome and its Implications for a Neural Theory of Behavior". He challenged the hypothesis that autism was an emotional disorder and argued that biological causes needed to be looked for. The flood of responses he received from parents and research scientists who read his book helped to develop the biomedical treatment approach to autism that took shape over the following years.

We know today that autism is NOT an attachment disorder caused by poor parenting. On the contrary. It has been my experience that parents who have a child with autism, once they have gone through the initial shock and grief process, are able to tap into a much deeper capacity to love their child. They usually rise to the challenge; many embark on a relentless search for answers and become strong advocates for their children.

The current understanding of what causes autism, based on the Autism Research Institute and its Defeat Autism Now Project, is as follows: Autism is the result of an interplay between genetic vulnerability and environmental triggers. The condition may show up at birth or present within the first two-and-a-half years. Some children have a genetic incapacity to detoxify environmental toxins efficiently: this leads to inflammation in the gut as well as the brain, oxidative stress and immune dysregulation. Some environmental toxins that are implicated are heavy metals, pesticides and other pollutants. There is no one single gene that causes autism. Rather there are many genes whose unusual but possible expression produces a risk or predisposition for developing autism. For example some children with autism may have abnormalities in their methionine metabolism pathway, resulting in low levels of

glutathione and inadequate detoxification. Or, a defect in the gene for the enzyme paraoxonase can result in weak organophosphate (pesticide) detoxification and this can be a risk factor for autism.

Autistic children frequently have inflamed intestines as shown by several studies. They also usually have food sensitivities and intestinal dysbiosis with yeast overgrowth and also sometimes bacterial overgrowth in the intestines. Toxins produced by yeast, and/or bacteria, as well as partially digested protein molecules can enter the blood stream and produce behavioral changes.

Autism is also associated with inflammation in the brain as shown by a landmark study by Vargas et al in 2004. The brains of 11 individuals with autism ages 5 to 44, who had died of injuries, were studied and compared with normal control brains. All the autistic brains were found to have immune activation and evidence of inflammation.

In addition to food sensitivities, children with autism frequently have inhalant allergies and asthma, and may have recurrent viral or skin infections.

Usually around 15 months to 2 years an affected child will begin to display symptoms related to toxicity and dysfunction of his nervous system and he will either slowly or rapidly enter into a state of developmental disorganization which then gives him a label on the autism spectrum. In their book "Autism: Effective Biomedical Treatments" Dr. Sidney Baker and Jon Pangborn, PhD provide a timeline of how this might happen:

1. Genetic predisposition
2. Exposure to toxins such as heavy metals (mercury, lead, cadmium, aluminum, etc), pesticides and other pollutants
3. Antibiotics received in the first months of life
4. Disturbance in the balance of gut flora and damage to the digestive tract
5. Damage to GALT (gut associated lymphoid tissue)
6. Increased intestinal permeability or "leaky gut" which allows larger molecules such as peptides from in complete protein digestion and other antigens and toxins to enter the blood stream
7. Live virus exposure from the 3-in -1 vaccine with a persistence of the measles virus in GALT and the central nervous system or CNS
9. Gastrointestinal, immunological and CNS symptoms, signs and laboratory evidence of inflammation

The Defeat Autism Now Project has shown that when we take steps to reduce toxic exposure, reduce inflammation, heal the gut, counteract oxidative stress, support the immune system and support the body's ability to detoxify, many children begin to show improvements in behavior, speech, language and learning. This is the basis of the

biomedical approach.

At AIM, we work with parents to reduce further toxin exposure and improve general nutrition, by improving the quality of foods eaten. Special diets such as the gluten-free casein free diet or the anti yeast diet are also recommended. Based on food allergy testing, additional foods may need to be removed from the diet. Removal of offending foods helps to heal the gut. We also offer oral desensitization drops to reduce or eliminate food allergies. We recommend supplements to optimize inadequate or suboptimal nutrient intake and provide digestive and antioxidant support. In addition we test for and treat intestinal dysbiosis with antifungal or antibacterial therapy and support methylation and sulfation processes to help with detoxification. We also offer oral or transdermal chelation of toxic heavy metals as determined by testing and other therapies such as hyperbaric oxygen.



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Summer is here and with it, stronger sun and, unfortunately, bugs!

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## **A Typical New Patient Appointment for Children at AIM** *by Wendy, Patient Coordinator*

Our practitioners request that you complete and return a questionnaire prior to your visit. They would also like to review your child's records before the visit, especially blood work or testing within the last 2 years, and notes from other practitioners.

We will observe your child for a portion of the visit, perform a physical exam, and often perform testing at the new patient appointment. Due to the length and complexity of the visit, it is requested that a sitter or family member be available to remove the child from the visit so that parents can be attentive without interruption.

Please arrive 10-15 minutes prior to the scheduled appointment. When you arrive, give your paperwork to the receptionist. A photograph will be taken of you with your child for the chart. Our MA will get blood pressure, height and weight, then escort you to the practitioner's waiting area. The practitioner reviews the chart and escorts you to their office.

While you become acquainted, your child can play with toys at a small table and the doctor is able to observe. A physical exam is performed and you will discuss history while going over your questionnaire and records. The doctor may apply a numbing cream or administer Benadryl if you are considering blood work. As the practitioner progresses to teaching and suggestions for care and treatment, you will be able to allow your caretaker to remove your child from the room until the end of the appointment.

Your child will return to a lab area outside of the practitioner's office for tests to be performed. We often suggest a hair analysis, stool, urine, saliva or blood testing for screening and diagnostic testing. Saliva, urine and stool tests are taken home with you after the nurse explains the process required. The blood tests and hair sample will be obtained here. When performing these tests, we are at all times calm and methodical in addressing your child. It is best if you also display no anxiety and remain matter-of-fact and calm. This is easy to accept but sometimes easy to forget.

For blood draws, you will be seated in a recliner with your child in your lap and instructed how to restrain your child (if necessary) when our nurses come into the room. Typically you will hold the child with their legs between yours. The nurse will hold the arm that will be used to draw blood while you hold the other arm against the child's chest. It is easier for the nurse to find a vein if your child is well hydrated and not hungry, so be sure to bring water and snacks for them.

Many children benefit from playacting in advance, but not too close to the date as to cause anxiety. If you explain a week or two in advance what will happen calmly and in detail they are able to be prepared and understand what is happening to them. If they have a special toy that will distract them,

you may want to bring that in anticipation of the blood draw and present it just before you sit down.

We want your visit to be as comfortable as possible and for your child to enjoy coming to our office. Please be as prepared as possible. When you are calm, you will help calm your child also.

**Dr. Dasgupta is available to speak to your group or organization on a multitude of topics. For information or to schedule a talk, please contact Jayne at 828-252-5545.**

## **THE BRAIN IN THE GUT**

*by Sudeshna Dasgupta-O'Brien*

Human beings actually have two brains, rather than one. And sometimes, one can cause problems for the other.

The term "Second Brain" was coined by Dr. Michael Gershon in 1996. It was the name he gave to the brain in the gut or the "enteric nervous system". Although this system had been described as early as 1921, it had been largely forgotten and not studied in detail. Our knowledge of the second brain, therefore, is quite new. Dr. Gershon is a neurobiologist who, along with other researchers, has been studying the workings of this amazingly complex brain and the neurotransmitters it produces, particularly serotonin. (Neurotransmitters are molecules that relay signals between nerve cells.)

The function of our second brain is to control every aspect of digestion, from the esophagus (or food pipe) to the stomach, small intestine and colon. Our brain in the gut accomplishes this task with a sophisticated network of nerve circuits, neurotransmitters and proteins. Moreover it functions usually with minimal awareness on our part. This is so we do not have to devote, as Dr. Gershon puts it, "our cerebral energy to visceral matters".

Are our two brains connected? Yes, by a long cable called the vagus nerve. However, if the vagus nerve is severed, the enteric nervous system continues to function independently.

Communication between the two brains can present as distress signals. For example, mental anxiety about an event, can lead to a queasy feeling in the stomach or diarrhea. And conversely, communication from the brain in the gut to the brain in the head is also often unpleasant. It is usually achieved by way of serotonin. For example, some drugs used for cancer chemotherapy, like doxorubicin, can induce serotonin release in the gut which then results in nausea and vomiting.

## The Brain In The Gut, *continued*

The brain in the gut and the gut-brain connections are a relatively new field of study called neurogastroenterology. Many neurotransmitters released by the second brain, such as: serotonin, dopamine, glutamate, acetylcholine, nor epinephrine and nitric oxide. Dr. Gershon and his fellow researchers have studied the actions of serotonin extensively. The actions of serotonin on the gut are quite complex and not yet fully understood: there are at least seven different receptors for serotonin in the gut! Serotonin is secreted by both nerve cells and specialized non-nerve cells in the gut mucosal lining called enterochromaffin cells. Serotonin is what causes nerves to start the process of peristalsis (the forward propulsive movement of the gut). It also causes the secretion of mucous and starts digestive juices flowing. 95% of the body's serotonin is found in the gut.

In the brain, an important function of serotonin is mood regulation. Low serotonin levels are associated with depression and anxiety. SSRIs or selective serotonin reuptake inhibitors such as Prozac are used to treat depression. Because of its effects of raising serotonin levels, 25% of the time Prozac has gastrointestinal side effects, such as nausea, vomiting, diarrhea and finally constipation.

Depression, anxiety, Parkinson's disease, Alzheimer's disease, ulcers, irritable bowel syndrome and ulcerative colitis are some conditions that have manifestations at both the brain and gut level. As we increase our understanding of the two brains and how they function, there is new hope for those afflicted. Research is now focusing on serotonin-based drugs targeted at the gut: "intestinal antidepressants" that are aimed at producing visceral analgesia in conditions like irritable bowel syndrome. In addition, Robert Stern, a psychology professor at Penn State has found that biofeedback can help people to consciously increase and enhance gastrointestinal activity, thus using one brain to help another.

Some interesting facts about the brain in the gut:

1. The second brain has a 100 million neurons, more than the number of neurons in the spinal cord.
2. It makes every neurotransmitter that is found in the brain, about two dozen neuropeptides, enkephalins (a member of the endorphin family) and benzodiazepines (psychoactive chemicals with actions like Valium and Xanax)

## Economic Assessment

*By Wendy Harrell, Patient Coordinator*

So, who is sick and tired of the words "cutting back" and "bail-out"? Our recent staff meeting revolved around what we could do as a practice (consisting of forward-thinking, aware and generally positive people) to avoid "cut backs" and needing a "bail-out".

Several ideas were bounced around. We could consolidate and lay off staff, we could raise our prices, and we could each volunteer to take time off. We evaluated our time-management skills and revised our daily routines. We took a good look at policies we already have in place and where we need to revise or enforce those policies to save money and time.

We really, really do not want to "cut back" on services, or space, or employees. And, we feel that with diligence and your help we can avoid asking you for a "bail-out".

You can help by being organized when you come to your appointments; be ready with questions and refill requests you will need until your next appointment. Requests for staff time to take care of questions not covered in appointments, and refills of prescriptions between appointments have grown out of control. Insurance company requests for information and forms to be filled out are also time consumers that have become unmanageable.

If you need a form filled out, you will be billed for time and you must supply the form and fax or address to send the form to. If you need a prescription refilled, please have it done during your appointment, as refills between appointments will now incur a \$15 service fee.

Our current "Consent to Treat" form has been revised, so each patient will receive a revised copy as they come in for their next visit. You will be asked to sign a copy for your chart stating that you received notice of our updated policies.

John Paul McNeil, PA has chosen to take a position in Greensboro, NC on a full time basis beginning the second week of June. His patients are still part of AIM's family and are welcome to schedule follow-up appointments with Dr. Biddle, Dr. Dasgupta or Anne Walch. We are scheduling a 40 minute visit for the new practitioner to become acquainted with you and offer this appointment at the 25 minute rate.

**Asheville Integrative Medicine**

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