

# **The BEST PRACTICES**

Newsletter

Of

*The Interdisciplinary Council on  
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## **SPECIAL EDITION – Part 2: Summary of ICDL Fourth International Conference November 10, 11, 12, 2000**

*The Best Practices Newsletter of the Interdisciplinary Council on Developmental and Learning Disorders, sponsored by the Unicorn Children's Foundation, is written to provide regional updates and networking opportunities to professionals and parents working with young children with communication and relating challenges. We hope to provide information and support and welcome any feedback or contributions that you may have. Please address your comments to Jo Raphael, MSW, LCSW-C at: 3213 Midfield Road Baltimore, MD 21208, E-mail at [JO@ICDL.COM](mailto:JO@ICDL.COM), phone or fax at (410) 486-1251. Thank you.*

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***Editor's Note***

Jo Raphael, MSW, LCSW-C  
Molly Romer Witten, Ph. D.

It's been a very productive year as The Interdisciplinary Council on Developmental and Learning Disorders (ICDL) continues to grow. We are moving forward with the newsletter and journal, certification and training, research and fundraising. We appreciate your interest in joining us and appreciate your patience as we continue to get organized.

As promised, here is our second newsletter for the year, which contains summaries of the second part of the Fourth International Conference of the Interdisciplinary Council on Developmental and Learning Disorders. The conference covered a broad spectrum of topics pertinent to working with children with severe disorders of relating and communicating. This edition contains summaries from the following presentations: *Autism: The Causes and Increase in Cases* and *Raising the Bar: Increasing Abstract Thinking, Empathy, Peer Relating and Academic Achievement in Children with Autistic Spectrum Disorders and Other Special Needs*.

Many people have talked with us about the new and innovative things that are happening in their region. If you have started a regional group or would like help in starting one please contact Jo at: [jo@icdl.com](mailto:jo@icdl.com).

We are looking forward to the next newsletter where we will return to our regular features including updates from regional networks, the parent network, clinical insights, medical update, biomedical update and education.

Please write to us to post information, to submit an article for consideration or to share your thoughts.

You can reach us by e-mail at (Molly) [besobeso@enteract.com](mailto:besobeso@enteract.com) or (Jo) [jo@icdl.com](mailto:jo@icdl.com).

Best regards,

***Jo and Molly***



## **Autism:**

### **The Causes and Increase in Cases**

Cecilia Breinbauer, M.D.

Jo Raphael, M.S.W.

### **The Impact of Environmental Toxins on the Development of Children**

**Presenter: Philip Landrigan, M.D.**

**Chair, Department of Community Medicine,  
Mount Sinai School of Medicine**

Dr. Landrigan gave a very interesting talk discussing how children are surrounded by new chemicals that didn't exist 30 years ago and how pediatric morbidity has changed from infectious diseases to a range of chronic conditions of complex and poorly understood origin. This "new pediatric morbidity" includes:

- Asthma (doubled in the period between 1984 and 1994)
- Childhood Cancer (although mortality has decreased, incidence has increased from 1972 to 1988).
- Endocrine and Reproductive Dysfunction (increase in hypopadias)
- Neurodevelopmental Disabilities: Including ADHD, Dyslexia, MR, Autism, affects 3 – 8 % of all American children.
  - 3% of those are due to toxic chemicals (e.g. Lead)
  - 25% are due to a combination of genetic and environmental factors (National Academy of Sciences: Scientific Frontiers in Developmental Toxicology and Risk Assessment, 2000)

Dr. Landrigan focused his presentation on a few important chemicals:

- Lead and the need to identify sub clinical Lead Poisoning
- PCBs (Polychlorinated biphenyl's), which are distributed widely in the environment and are known to cross the placenta to cause in utero injury to the developing fetal brain
- Organic Mercury compounds, which can be found in contaminated fish
- Pesticides (Chlorpyrifos), used extensively in homes, schools, apartments and day care centers for control of cockroaches and other pests

He shared with the audience the exciting development of the "National Pediatric Framingham Study", a prospective longitudinal study of 100,000 infants in centers across USA. The goal of this study is to assess the impact of early environmental exposures on childhood development and origins of diseases. Dr. Landrigan finished his presentation suggesting testing all children with Developmental Disorders for levels of Lead, PCBs, Mercury and Pesticides as a routine testing procedure.

***Autistic Enterocolitis and the Possible Relationship to Measles Virus Vaccination***

***Presenter: Andrew Wakefield, M.D.***

***Reader in Experimental Gastroenterology, Departments of Medicine & Histopathology, Royal Free and University College Medical School***

Dr. Wakefield had the wonderful ability to combine his talk with the scientific and clinical spirit that guides his work. He opened his speech with "Listen, listen minutely to every patient, and refrain from hasty judgment". He further stated that since most of these children can't describe their symptoms, listen to their mothers, "parents are the best observers". He mentioned several times "this is not my theory, it is their parents theory", "the parents were right". A group of children with autism have GI symptoms and do have GI pathology. He spent more than one-hour showing evidence and data, with strong scientific analysis and statistical significance, to support these recent findings:

- GI symptoms are common in children with Autism
  - A high percentage (46%) of significant GI symptoms (vomiting, severe constipation, diarrhea, bloating, abdominal pain) were found in an unselected series of 385 children with ASD attending an Autistic Center compared to only 10% of these symptoms in 95 typically developing children. (Study presented at the first Digestive Diseases Week for Pediatric Gastroenterology, Boston 2000, Meltmet & Schneider).
- Almost half of children with Autism, without GI symptoms, have increased intestinal permeability, which is an indication that there is an underlying pathology that needs to be investigated. (D'Eufemia et al, 1996)
- "Almost half of children have significant GI symptoms (Meltmet) and almost half of children without GI symptoms have increased permeability (D'Eufemia), so maybe subtle GI Disease is actually extremely frequent in the Autistic population per se"
- Frequent clinical features are abdominal pain, alternating bowel habit, episodic fecal impaction with overflow diarrhea, fastidious eating habits.
- Associated clinical features: most children are atopic (asthma, eczema, hay fever), have refractory upper respiratory tract and ear infection and a strong family history of atopic and autoimmune disease, particularly in the mother.
- These symptoms reflect an underlying pathology: Florid Lymphoid Nodular Hyperplasia, particularly in the end of the small intestine. The majority of Autistic children (53%) have severe Lymphoid hyperplasia. This group was compared to a typically developing control group with same GI symptoms, where the majority (83%) have no evidence of Lymphoid hyperplasia at all, although some do. This phenomenon is very frequent in Autistic children although not exclusively.

- Colonoscopic findings: loss of vascular patterns, acute and chronic inflammation.
- The pathology of 60 biopsies of these autistic children were reviewed by 3 experienced pathologists and blind reviewed by 2 others, compared to the biopsies of 22 children with the non inflammatory bowel Disease control group and 20 children with classical inflammatory bowel Disease/ Ulcerative Colitis. The level of agreement between them was extremely high and statistically significant. These autistic children have and intermediate subtle inflammatory condition, an “Autistic Enterocolitis”.
- There are similarities between children with “Autistic Enterocolitis”, Crohn Disease and Ulcerative Colitis but there are differences. The count of Gamma Delta T cells distinguishes the Autistic cohort from all other groups of classical Inflammatory Bowel Disease (to be published in the Journal of Pediatrics).
- “There appears to be an autoimmune process taking place in the small intestine and colon”, an enterocolitis with autoimmune features and absence of obvious pathogen (Shigellosis, etc).
- Lymphoid Nodular Hyperplasia has now been described in children with ADHD (Sabra A. et al, Lancet 1998). “It suggests that there maybe a continuum of Developmental Disorders, which have, perhaps in a subset of children, a problem in the bowel as part of the problem or may even be the origin of the problem”. It is a chronic form of Lymphoid Nodular hyperplasia.
- *Possible relationship to Measles Virus Vaccination:*
  - “Atypical pattern of exposure (prenatal) to common child infection (measles, mumps, rubella, chicken pox) were associated with Autism”. “In pregnant women who were exposed to more than one of these common child infections at the same time, the severity and risk of Autism was greater”. (Paper: “Autism and the early viral exposures”).
  - Children born during epidemic of measles and rubella have an increased risk of Autism (Waisman).
  - Measles virus can lead to Disintegrative Disorder (M. Rutter)
  - Acute encephalopathy followed by permanent brain injury or death associated with further attenuated measles vaccine, 83% underwent developmental regression (Paper published on The review of the vaccine compensation system, USA)
  - Measles and Mumps Infection together place children at a significantly higher risk. Additionally there is excessive risk of later developing Crohn Disease or Colitis.
  - Children receiving measles vaccine are at a greater risk of later developing Crohn Disease, with independent confirmation from the CDC (Toronto, 2000). Children exposed

to the Measles containing vaccine under the age of 12 months are effectively protected from Crohn Disease but at a greater risk of Ulcerative Colitis, and an inversion of this pattern occurs when they receive the vaccine after the age of 18 months.

With all this information, Wakefield and his team decided to search for the measles virus in these autistic children. They were able to identify measles virus in 90% of children with autism (N=9) and

10% of the controls. They sent samples to Karoshima, in Japan, Tokyo Children's Hospital. He amplified 3 virus sequences, in 3 of the first 9 children, consistent with vaccine strain. "The molecular data or the virus data consistent pattern of immune mediated GI pathology with the gene, the protein, the structure of the virus there; there appears to be a serologic response; and independently confirmed in two different centers by different technologies, are indicative but not proof yet of a cause of relationship".

***Pediatric Gastroenterology and Autistic Spectrum Disorders***

***Presenter: Tim Buie, MD***

***Pediatric Gastroenterologist. Massachusetts General Hospital***

Dr. Buie gave a wonderful, engaging overview describing what he, as a Gastroenterologist does when he sees a child with Autism Spectrum Disorder (ASD). Until the Dateline report in October 1998 described Secretin and its potential effects on autism, gastroenterologists were not uniformly seeing children with ASD.

He explained that the problem with ASD is that the incidences, causes and treatments, and who's an authority is under dispute. The dilemma for the physician is knowing who to be listening to and what their practice should be based on. GI physicians base a lot of their treatment on obtaining a good history, which can be very difficult to obtain with this group of children. Many of them are nonverbal, unable to articulate what is going on, may have altered pain sensitivities or behavioral issues and the physician cannot trust the response.

There is a real concern about the increasing incidence of ASD and GI problems that co-occur. CAN has identified a need to determine what is

going on in the GI systems of these children and they have put forward a prospective study to look at children on the spectrum who may or may not have GI symptoms. They are going to ask GI's at those sites to evaluate them for the connection of GI symptoms. This is a daunting task for a GI who is not familiar with the ASD population. He may ask all the questions on the questionnaire but miss the answer because it may not be straightforward.

There have been no prospective studies to date. We need to follow these children prospectively to follow what's going on with them over time. Although current research is going on at a fevered pitch we have to get some basic medical and developmental history regarding these children before we can begin to adequately treat them.

There have been many hypothesized conditions, such as: food sensitivities, diarrhea, constipation, and gut permeability issues (colitis, malabsorption, pain syndromes) that co-occur with the diagnosis of Autistic Spectrum Disorders (ASD). As

conditions become more common they may intersect-there may be causative relationships and associative relationships that we didn't perceive before.

Dr. Buie made a distinction between allergies or intolerance to certain foods and food groups. There are several small studies that have been done but are inconclusive regarding allergies, food intolerance and ASD. More data is needed in order to understand the incidence of allergy and autism. Part of the way to get this data is to do allergy screening. RAST testing can be done on the IGE and IGG systems. The problem with these tests is that they are hard to interpret, because there is lab to lab variation and some immunologists might say that they don't believe the IGG RAST because not enough clinical trial type research has been done and so the data isn't there yet. The classic method of allergy testing is elimination and reintroduction, but this doesn't determine if one has an allergy in the first place. Often children outgrow their allergies and foods should be reintroduced at some point to see the child's reaction. One might not have to be gluten free forever. It is important to delineate the basis for the intolerance because sometimes the basis for that intolerance can be treated and you don't necessarily have to do eliminations of those food products.

Preliminary studies done in 1996 show that there is some correlation in this population with gut permeability. Malabsorption is another common issue for these children. Dr. Horvath worked with children with chronic diarrhea and ASD. He did an endoscopy and a pancreatic function study called a Secretin Test. While he noted no pancreatic malabsorption problem he did see neurological improvement in some of the children he treated with Secretin. However, his exhaustive

prospective study did not find any clinically significant improvement as a result of secretin infusion.

Opioid Theory has emerged suggesting that milk and casein products react in the system as if you have introduced opium or morphine. The theory is that these products metabolize incompletely and the incomplete metabolites have the same chemical composition as opiates. These opiate-like incomplete metabolites affect the brain, which strongly affects children with ASD. People have noted positive differences once these products are eliminated from their diet. It is important to note that these same symptoms may occur because of other factors and we need to fully explore the many theories that are being discussed, researched and practiced.

Many of the children with ASD seen in GI clinics seem to suffer from chronic diarrhea. People need to confirm that their treatment is working and effective. Some children have diarrhea and constipation caused by an allergy to foods. Dr. Buie suggested that food intolerance and allergy issues may need to be treated before toilet training occurs. Research needs to be done to ascertain the GI connections to autism, whether it is simply a physiological linkage or causation. Research also needs to identify the problems within kids who have autism.

Dr. Buie then discussed some of the work that he and his colleagues are doing at Massachusetts General Hospital. 59 patients ranging in age from 2 – 20, have undergone endoscopy. The mean age was 6 and they were mostly males. These are children who presented with reflux symptoms, abdominal pain, sleeplessness or diarrhea. They found that about half of the patients were normal, by all criteria. They found that

acid reflux was present in about 22% of the children. Over half the children had some abnormality that needed to be evaluated. They did pancreatic function studies on every child and all but four were WNL. Those 4 children responded well to pancreatic enzyme supplementation. Biopsy data from 47 patients having colonoscopy showed that 20 of them were WNL, 8 had

Lymphoid Nodular Hyperplasia, but these are considered normal. Of all of the children 7 of the 47 showed signs of enterocolitis. He closed by again stressing how much we still need to learn about the relationship between ASD and gastrointestinal conditions, and the importance of research to this very complex system.

### ***Endocrine Disruptors: Pre-Natal Impacts***

***Presenter: Theo Colborn, Ph.D.***

The endocrine system uses hormones to control organization, development and function of the unborn. Embryos and fetuses develop under extremely low concentrations of natural hormones – as low as 1/10<sup>th</sup> of trillionth of a gram of free estrogen hormone, for example. When a synthetic chemical interferes with the chemical messengers (hormones) of the endocrine system they can change the course of development of the individual. If a chemical interferes with hormones, which can occur through many different mechanisms, the chemical is called an endocrine disruptor. There are no validated or standardized tests yet to determine if a chemical is a possible endocrine disruptor.

Dr. Colborn provided numerous examples of changes in normal development that were induced by endocrine disruptors. She pointed out that traditional toxicological protocols were not designed to detect very low-dose impacts on development. There is now a growing list of high-volume, widely used chemicals that are known as endocrine disruptors. Endocrine disruptors can affect various tissues, organs, and functions and with different outcomes depending on the stage of development during exposure and the dose. Low dose effects in a developing embryo are entirely different than high

dose effects in an adult, demonstrating the fallacy of determining the safety of chemicals using high doses in adult animals for testing. There is still a great deal to learn about low-dose impacts.

Dr. Colborn described how a commercial mixture of PCBs interferes with the development of the cochlea and that this effect is through perturbation of thyroid hormones. She pointed out that rats exposed to the PCB mixture lose their ability to hear low and intermediate frequency sounds and lose motor control. She also pointed out that children of mothers with 1 part per million or more of PCBs in their body fat exhibit neuromuscular and neurodevelopmental delays at birth. (The average person is carrying about 1 ppm of PCBs). This exposure at background levels leads to short term memory problems, difficulty with reading, and the more highly affected are often two years behind their peers in school. These children are hyper reactive and do not socially integrate well. Dr. Colborn pointed out that thyroid hormones are critical for normal brain development and unfortunately, the list of synthetic chemicals that can interfere with the thyroid “economy” is well over 100 chemicals already. She pointed out that 60% of the herbicides (weed killers) in use today are endocrine disruptors. She also pointed out that

there probably is no baby born anywhere in the world free of synthetic

endocrine disruptors.

***Autism: A Unique Type of Mercury Poisoning***  
***Presenter: Sally Bernard***

Sally Bernard began her talk by telling us that throughout history there have been many diseases caused by mercury poisoning. They all had similar characteristics enabling researchers to link these diseases to their manifestation of mercury poisoning. The current hypothesis is that autism is another in a long line of mercury toxicity related disorders.

Last year the FDA determined and announced with American Academy of Pediatrics that the amount of mercury that a typical child receives through vaccines exceeds EPA guidelines. Consequently they rescheduled the Hepatitis B vaccine. Thimersol, the mercury containing transport agent of vaccines, has now been determined "unsafe". There are no long-term studies on the long-term effects of vaccines.

Ms. Bernard then went on to describe the hypothesis that autism may be an idiosyncratic response to low doses of mercury in genetically predisposed individuals who are especially sensitive to mercury's effects. The hypothesis is that the primary source of the mercury is Thimersol which is a chemical found in pediatric vaccines, dental amalgam, and fish. This hypothesis is supported by several scientific studies that Ms. Bernard then cited and described.

The symptoms of mercury poisoning match the symptomatic traits of autism and these symptoms arise from the mercury exposure itself. Clinicians routinely diagnose mercury poisoning on the basis of four factors: 1) match of

presenting symptoms with a past descriptions of mercury poisoning; 2) confirmation of exposure to the mercury at levels which have shown to cause impairments in past cases; 3) symptom onset at the time of exposure and 4) elevated levels of mercury based on samples of hair, blood and urine. All four of these diagnostic criteria have been met in autism. Studies have shown that autistic symptoms appear to be worse the earlier the exposure to mercury.

Ms. Bernard read descriptions from the mercury research literature citing exposure to mercury poisoning and the symptoms that appear are very similar to that of autism. Social withdrawal, language and hearing deficits, repetitive behaviors and sensory issues-both undersensitivity and oversensitivity, in psychological issues: depression, mood swings, aggression, eating disorders, difficulty sitting, crawling, standing, walking and a tendency for the problems to occur on one side, poor imitation, handwriting, abnormal gait and posturing. Also found was that most individuals with autism and those suffering from mercury poisoning have uneven cognitive abilities (the most prevalent are in language, attention, short term memory and complex abstract thinking), behavioral, neurochemistry, biochemical and biological, Central Nervous System and immune system problems. In mercury poisoning a compromised immune system can allow infections to take hold-which might explain the elevated rate of infections in ASD. EEG's show abnormal activity in the brain in both

groups that range from subtle problems to full seizures. Autonomic Nervous System and GI disturbance, muscle function and higher rate of males to female are found in people with autism and mercury poisoning.

Ms. Bernard talked about elevated mercury levels that have been found in hair and blood samples and explained that if the hair/mercury concentrations exceed one part/million you are over the National Academy of Sciences and EPA's safety guidelines. At five parts per million it signals toxicity and in ten parts per million or more you have a level that is shown to result in neurological deficits, specifically attention deficits, speech deficits and learning difficulties in average children.

The charts showing low, medium and high weight babies revealed significant parts/million in each group with the low birth weight babies having the highest concentrations post inoculations. Toxicologists look at the both the levels of elevation and duration of the highest peak. The smallest babies reveal that they show 1 part/million at birth and stay there until 365 days later. The peak elevation occurs with the 6-month dose and reaches the 10-parts/million threshold, which was indicative of neurological deficits in other studies. That's every American child who received the vaccines according to schedule. The CDC studies from the Vaccine Data Link Study corroborated the above and the summary of their study concluded with the recommendation that further investigations should be pursued with a degree of urgency.

Ms. Bernard then talked about the autism being a "sensitive group" towards mercury poisoning and cited Acrodynia. This is a disease that was widespread in the early 1900's caused by low exposure to mercury. Mercury has one

of the highest variabilities and sensitivities in the developing organism. Studies have shown that there are elevated mercury levels in hair or urine in autistic children. In case studies the levels are similar to that recorded in the past of Acrodynia.

Onset of autistic symptoms occur shortly after vaccine administration. The onset is sometimes immediate but oftentimes occurs gradually over several months following the same pattern of emergence that found in mercury poisoning. Autism was first reported in 1943 among children born in the 1930's. Thimersol was first introduced into the vaccine and other medical products in the 1930's. There has been a rapid rise in cases of autism in the past decade. In 1989 and 1991 two new Thimersol vaccines were introduced: Hepatitis B and HIB. With all of these findings Ms. Bernard believes that the diagnostic criteria for autism has been met in mercury poisoning-and vice versa.

Additionally, aluminum, also contained in vaccines, competes with mercury in the body for its detoxification processes. It interferes with the body's protective mechanisms so that the mercury can become that much more toxic. Thimersol inhibits a wide range of proteins. Another study showed that in looking at 500 people with ASD they all had disordered metal metabolism. This affects the key proteins in the body that protect against metals. Presently there is another being conducted that is studying what happens when you take cells from an autistic individual and introduce low levels of Thimersol. They are finding that it inhibits the growth of the cell and that in the control group this doesn't happen.

Standard treatment for heavy metal concentration is chelation therapy. Other treatments found to be helpful have been reeducation and

rehabilitation, speech therapy, occupational therapy, play therapy and all the things that we all are doing.

Ms. Bernard closed her speech by stressing that at the present time we need more research. CAN, the Mind

Institute and National Institute of Environmental Health Sciences are all in the process of obtaining funding and starting projects. She urged all of us to get involved and to visit the pertinent websites.

***Neonatal Biochemical Indicators of Autism and Other Developmental Disorders  
Presenter: Judith Grether, Ph. D.***

Dr. Grether talked about research on autism that used the newborn blood spots originally collected as part of routine newborn screening for PKU and other inborn errors of metabolism. As part of the newborn screening program in California, five drops of blood are taken from a newborn baby's heel and put on special filter paper. Typically only 1-2 drops of blood are needed for the routine screening; in most states, the remaining spots are discarded. However, the State of California has retained all unused specimens since the beginning of the newborn screening program in 1980. These specimens are available for research with approval.

The research conducted by Dr. Grether and her colleagues looked at specific proteins in the blood that are known to play an important role in early brain development. Genes code for proteins and proteins are what do the work in our bodies. In an earlier study, Dr. Grether and Dr. Karin Nelson, child neurologist at the NIH, had looked at 60 different proteins in a group of children with cerebral palsy and compared them to a group of control children. This work has been published with exciting results and the team then decided to try to tackle some of the issues concerning autism.

The research team focused on certain "messenger proteins" that form part of the communication system in the brain. Dr. Grether described messenger

proteins as being like "letters in an alphabet. What is important is how the letters work together in words. At this point, we aren't sure how many letters there are, nor do we fully understand what the grammar of the language is. In this research, we attempted to look at a small portion of the proteins that are important in early growth and development of the brain."

The group decided to target proteins that they thought might be informative in regard to autism...conferred with scientists and decided to study eight proteins--4 neuropeptides (VIP, PACAP, Substance P, and CGRP) and 4 neurotrophins (BDNF, NT4/5, NT3, NGF).

Their study included 69 children with autism, 60 with mental retardation without autism, 63 with cerebral palsy and 54 unaffected controls. All children were born between 1983-85 in 4 San Francisco Bay Area counties. The diagnoses on the children were verified from review of service agency records, although sometimes the information was not complete. The research team identified the children, retrieved the blood spot cards from the California Genetic Disease Program, and then compared the level of proteins among the outcome groups. Laboratory staff were blind as to which spots came from which children. Replications were conducted on 10% of the specimens

and they came out almost identical to the original testing.

The team found that for VIP, CGRP, BDNF, and NT4/5, the children with autism and those with mental retardation without autism were very similar to each other and had strikingly higher levels of the proteins than the children with CP or the control children. For the other 4 proteins, there were no differences between the groups. These findings suggest that 1) it may be possible to identify newborns who are at high risk for later-diagnosed autism or mental retardation and 2) some aspects of underlying biology may be similar for autism and mental retardation without autism. It is possible that other proteins not yet studied will distinguish between autism and mental retardation without autism.

The research team is attempting to replicate these findings with children born more recently and for whom there are better diagnostic records. In

addition, procedures and standards need to be developed so that commercial labs can be used for these protein analyses, which at this point are not widely available. The team also plans to look at other proteins to get a better understanding of the underlying biology and to improve the ability of such analyses to predict babies at high risk. They also want to test specimens from a large population so they can develop population norms. Their ability to conduct these further analyses has been hindered by the very limited lab capability currently available.

Dr. Grether told us that this work holds the hope that it may be possible to screen newborns so that very early intervention can begin. Perhaps at some point these protein analyses will permit development of biologic or pharmacological interventions. Unfortunately there are still many steps from here to there. Research is essential to figuring these things out.

***Raising the Bar:  
Increasing Abstract Thinking, Empathy, Peer  
Relating and Academic Achievement in Children  
with Autistic Spectrum Disorders and Other  
Special Needs***

Lori Jeanne Peloquin, Ph. D.  
Jo Raphael, MSW

Dr. Wieder, panel chairperson, opened this panel by stating that we are devoted to raising the bar for every single child. We have to insure that all of our children get the most they can to help them function at their highest level with their highest capacities. How we get there is what this panel is about-all the ways to help our children to move forward.

***Enhancing Intelligence and Academic Achievement Through Working With  
Emotional Interactions  
Presenter: Stanley I. Greenspan, M.D.***

Dr. Greenspan opened the morning's program with a discussion on the importance of affect in the development of higher-level thinking and social skills. He presented the Affect-Diathesis Hypothesis as the core deficit in autistic spectrum disorders (ASD). This core deficit is believed to be a difficulty in the ability to connect affect to motor planning and symbol formation. It is affect that gives purpose to behavior and meaning to words and ideas. Often the first thing seen in children with ASD is the lack of long chains of affective reciprocity. At all stages of development it is affect that is critical to master in order to move on to the next stage. At

each stage it is the child's interest, or desire, that will lead to mastery. It is crucial to get a continuous flow of affective reciprocity in all activities. It is through this affective reciprocity that the child learns to regulate their mood, develop higher levels of abstract thinking and sustain attention and focus. It is also through this that they develop empathy, pragmatics and a Theory of Mind. In each of these cases it is through being "on the field", experiencing and living it, in meaningful reciprocal interaction, that the child will develop these capacities. In particular, it is the rapid, continuous flow of interaction that is so important.

***Increasing Abstract Thinking Through Symbolic Play***  
***Presenter: Serena Wieder, Ph. D.***

Dr. Wieder spoke about symbolic thinking and how anxiety impedes this process. She focused on children who are highly anxious and who don't have the verbal capacities to move on to abstract thinking. She explained that symbolic play is really a form of thinking, a form of showing what's in your mind, a way of showing your ideas. She showed several video vignettes of children who had difficulty with symbolic play.

There are typical anxieties in early childhood that we help the child to work through. Separation anxiety and stranger anxiety are treated by soothing the child and reassuring him or her and by going slowly. When children have body damage fears we soothe and comfort them and treat them magically through kisses. By age four the child has resolved these issues and can determine if they are really injured or not. As they become symbolic children figure out what is real and what is not. For children who are hypersensitive to sound, cannot organize visual field, or

have auditory processing issues these anxieties are harder to test in reality. The sensory and regulatory system, to some degree, impedes the capacity for the child to move on and we have to work harder with them to overcome this. We use affective reciprocity and by remembering that anxiety is an affect which means that it is an opportunity. We must join the child and help him/her work things out and move to symbolization to solve the problems of fear or anger or aggression.

The way that these challenges effect the children are in being able to distinguish between fantasy and reality. Some are afraid to enter the symbolic world, they stay with concrete cause and effect toys. These are children who take turns but don't know how to negotiate. These are children who become the rule keepers; they don't know how to make a deal or to trade. Their need to control gets in the way of their ability to symbolize power. With these children we need to go more slowly and we have to do a lot more work. We need to

utilize symbolic play and conversations to help the children move towards abstraction because only as they become more symbolic they will then be

able to make the deductions and inferences that are necessary for higher levels of comprehension.

***Enhancing Creative and Abstract Thinking Through Social Stories***

***Presenter: Carol Gray***

Carol Gray impressed upon us that the social impairment in ASD is shared and that people without ASD are part of the problem and part of the solution. For most people with ASD other's behavior seems random and unpredictable. We also can't predict their behavior because we don't understand what they are thinking and feeling. She provided many tools for teaching social understanding including Social Stories,

Comic Strip Conversations, and Topic boxes. She also provided many important insights about conflict resolution and bullying. In potential conflict situations instead of correcting, confronting or conceding, it is important that we teach. We must not teach children to comply with requests that don't make sense as this leaves them very vulnerable to additional bullying and abuse.

***Promoting Visual-Spatial Thinking and Executive Functions***

***Presenter: Harry Wachs, O. D.***

Dr. Harry Wachs presented his approach to visual-cognitive optometry with impressive examples from drawings and videotape of children's progress. The theory underlying this treatment is based on Piaget's principles, and is a developmental approach to integrate the visual-spatial aspects of body and sense intelligence. This includes attention to many areas, including general and

discriminative movement, visual thinking, reflexes, mental body map, and rhythm. It also focuses on important aspects of vision including tracking, focus, convergence and fixation. Many of these sensorimotor and operational schemes are critical to the development of mathematical thinking and visual motor function, such as writing and drawing.

***Imagery and the Language Processing Spectrum: Dyslexia, Hyperlexia and Autism***

***Presenter: Nanci Bell, M. A.***

Nanci Bell stressed the importance of affect and imagery in reading, processing and comprehending language. She explained that there are two types of imagery: symbol imagery and mental representations or the ability to image concepts. She further explained that all children develop differently. Children with ASD are not always labeled and what happens is that these children slip through the system and are not diagnosed. They often have a sensory impairment and then there is

a gap of where they need to be and their ability to comprehend oral and written language, critical thinking and language expression.

Symbol imagery is directly related to phonemic awareness. The FMRI supports this statement by showing that students who make gains are making them in the parietal occipital area of the brain, not just the temporal-so there is a visual component-which is symbol imagery. There are two functions of

imagery and what we see are parts to wholes, like a two-sided coin.

Reading is an integration of subsets-auditory (phonetic processing), visual (sight words) and language (use of context cues). Many students are not able to process the gestalt, the big picture, because their sensory system does not have a way to process images. In higher order thinking skills you must be able predict, evaluate and extend in

order to get the big picture. This is Dual Coding Theory introduced by Dr. Alan Paivio. To the extent that we can think (comprehend) we need to integrate these two parts of the sensory systems: abstract and concrete. If you cannot process the gestalt and are processing bits and pieces of information you will have difficulty with logical thinking, with language based humor, with cause and effect, abstract thinking.

