Michael J. Goldberg M.D., F.A.A.P.
Avalar Medical Group, Inc.
5620 Wilbur Avenue, Suite 318
Tarzana, Claifornia 91356
Telephone (818) 343-1010
Fax (818) 343-6585

Pediatrics & Young Adults
ADHD/ADD-Learning Disabilities,
Immune Dysfunction Autism

A New Definition of Autism

Autism as classically defined was and is a devastating disorder. It was a severely incapacitating disability that was relatively rare. It occurred in approximately 1-2 infants per 10,000 births.

In this severe form of "Classic Autism" effective speech was absent. It could include symptoms of repetitive, highly unusual, aggressive and self-injurious behavior. Those afflicted had extremely abnormal ways of relating to people, objects, or events. Parents noticed that something was "not right" generally within the first three to six months of life. These children did not coo or smile. They resisted affection and did not interact normally.
In the last decade, another type of autism has surfaced that is often referred to as "Autistic Syndrome." Children suffering from this disorder generally appear normal in the first 15-18 months of life. They do not present signs or symptoms pediatricians or neurologists would find atypical. These children create an inconsistency with previous held beliefs that 70-80% of autistic children are mentally retarded. They crawl, sit up, walk, and usually hit normal motor milestones on schedule. Up until the age of onset, they are affectionate and appear to have above average intelligence.

Children with this autistic syndrome may begin to develop some speech but then, without warning, cease to progress, or begin to regress. Suddenly, these children become withdrawn. They are quiet sometimes and hyper at other times. Often self-stimulatory behaviors (i.e. arm flapping, rocking, spinning, or head banging) develop. In time, some manifest symptoms that are both similar and atypical to children previously diagnosed as "classically autistic. "

While training as a pediatrician, I was told if I saw one autistic child in a lifetime of practice it would be one too many. What I am seeing today is not the autism I learned about in medical school twenty years ago. What was once a relatively rare disorder is now twenty times more likely to occur. Before, "autism" was 1-2 per 10,000 births. Now, current statistics suggest a frequency of 20 per 10,000 births (rates of 40 per 10,000 or

higher have been suggested).

In the past, autism was considered a "psychiatric" disorder. We now know that autism is a medical condition, not a mental disorder. Perhaps one of the reasons no one has come up with an answer for autism is the way we have thought of it (or rather did not think of it in medicine).

Most "MD" researchers did not look for the answers to autism because they felt this was a disorder that was untreatable medically. Treatment for this affliction was primarily left in the hands of psychologists and a few psychiatrists.

"Autistic syndrome," though still treated mainly by psychologists and psychiatrists, is also no longer considered a psychiatric disorder. It is a biological disorder that requires medical intervention. Physicians are now just beginning to understand the medical origins as well as the actual and potential treatments for autism.

Even though I believe children with classic autism might be helped medically as our knowledge of the brain's physiology expands, for now it might be helpful to separate children afflicted with autistic syndrome from those with classic autism. As children with autistic syndrome increasingly become categorized as a "medical" problem, separating them from the many negative connotations and hopelessness associated with "classic" autism could be advantageous to promoting research and funding to help these children. The differences between the two groups may be summarized as follows:

Classic Autism
Generally "abnormal" early (i.e. 3 - 6 months of age)
"Classic" Autistic symptoms / presentation
Presumed "static," / unchangeable
Autistic Syndrome
An increasing population of children with "Autistic/ PDD" behavioral characteristics
Current estimate 20-40 children / 10,000 (incidence may be as high as 1-5% of Does NOT have "objective" physical signs of neurologic damage / injury Majority (?? All) are immune mediated, appropriately looked upon as a medical dysfunction - open to potential medical therapyGenerally "normal" early (usually until 15 - 18 months of age)
Atypical symptoms Asperger's Landau Kleffner's ADHD / ADD variants
A potentially progressive disorder (if not treated / corrected) May explain the origin of many cases of "Landau-Kleffner" syndrome.

Autism and the Immune System

I have been in clinical practice for the last twenty years. When my wife developed an "unknown" chronic illness in 1982, I began to explore and research neuro-cognitive dysfunction and immune dysfunction / dysregulation in an effort to help my wife. Eventually she was diagnosed with Chronic Fatigue Syndrome, to what is now CFIDS (Chronic Fatigue Immune Dysfunction Syndrome).

The first suspicion I had that autism might be immune-related occurred in 1985. I was in the middle of exploring various alternative therapies in hopes of helping my wife and others afflicted with CFIDS. About the same time, some autistic children were referred to me for evaluation. These children had never had any blood work-ups because no one thought of their "problem" as a medical one. Much to my surprise, they had similar profiles on amino acid scr ns as the adults I
was seeing with CFIDS. I couldn't help but wonder "What did Autism have to do with the immune system?"

The Causes of Autism

With the relatively new thinking that autism has medical origins have come several theories. Some doctors believe autism is a result of a metabolic, enzyme, or genetic defect. Although a few children may suffer a built-in genetic or functional defect present since early gestation, I do not believe this is the case for most children afflicted. In addition, the old theories do not fit or began to explain the large increase in the number of children diagnosed with autism today.
I believe "Autistic Syndrome" probably is a state of dysfunction induced in the brain by a dysregulated immune system. It could be possible that this dysfunction may occur in individuals that have a genetic predisposition. This predisposition is somehow triggered by various stresses placed on their immune systems. It's severity varies with the individual and age of onset. The triggers may be different (or similar) in each child.

If it is looked at in relation to the causes of blindness, it is easier to understand. There are many people who are blind but the cause of their blindness is very different. This is consistent with the idea of an immune dysfunction / dysregulation. For whatever the reasons (genetic, environmental, a combination of viruses, etc.), I believe what is occurring is an immune mediated, abnormal "shut down" of blood flow in the brain and therefore central nervous system function. In adolescents and adults, this dysfunction manifests itself as CFIDS and various other atypical auto-immune disorders. In older children, it is seen as variants of ADD (Attention Deficit Disorder) / ADHD (Attention Deficit Hyperactive Disorder). And in younger children/infants, it appears as autism, autistic syndrome and PDD (Pervasive Development Disorder).

When these children are given a NeuroSPECT (a test to measure blood flow to various parts of the brain) and clinical blood work, this connection becomes more than reasonable, it is logical. The theory that much of autism / PDD is probably an immune-mediated auto-immune disorder is gaining rapid acceptance. It explains the progressive process of the autistic syndrome that occurs sometime between 15-24 months of age. The dysfunction / lack of blood flow eventually leads to injury of nerve cells, which explains the abnormal brain waves, and the large numbers of autistic children suddenly being labeled as "Landau-Kleffner."

The multiple metabolic, physiologic, and immune markers that are abnormal in these children, "make sense" when you think of the bigger picture and consider the primary cause of autism as immune dysfunction, creating multiple cellular / mitochondrial

dysfunctions. A distinction often misunderstood is that dysfunction starts out of the immune system, not out of casein, gluten or other metabolic sensitivities. Children with autism have a lot of metabolic abnormalities, but that is a result of the problems with their immune systems.
If a metabolic dysfunction were the cause of a disorder, correcting it would eliminate the disease. If casein or gluten caused autism, eliminating them from the child's diet would cure them, but that does not work.

If metabolic dysfunction is a secondary factor of autism, you rarely, if ever, are going to have a patient recover, by treating the "secondary" rather than "primary" problem. Similarly, if it were true that adults with chronic fatigue have a metabolic defect, how come most of them were normal and generally high functioning for years?

In medical school I was taught to, get to the reason, and to get to what's underneath it. It's important not to just treat a symptom, or what appears to be on the "surface," but rather it is necessary to treat what is causing the problem.

Medical Treatments

Most of the children I see have healthy bodies with reactive and volatile immune systems. The first step, is to check functioning of various systems in the body. Unless another "medical" problem is found, the immune system is what is creating the misbalance / dysfunction in the brain.

Unfortunately, new, potentially safe immune modulators (steroids, IVGG, are old immune modulators, neither generally safe or effective with this type of immune disorder) are not yet available. Until these immune modulating drugs are scientifically tested in controlled studies, the way to help these children must focus on an overall approach using efforts / steps and medicines available now. By the time a child is referred to my office, their immune systems have not been functioning well for a very long time. This dysfunctional process did not occur overnight and it takes time to "cool" down / help "normalize" the body and the immune system.

The closer you can bring the body towards normal, the better the chance that the body may shut off this reactive and dysfunctional immune system. It is a difficult and complicated process to make the body heal itself especially after years of dysfunction. But if you remove some of the "offenders" that cause the immune system to fire when it shouldn't, you're making it easier for the body to normalize.

The Role of Allergens and Diet

I usually begin by testing the blood to determine allergies that could possibly trigger the immune system to react. Often autistic children come up allergic to a large number of foods, not necessarily because they are actually allergic, but rather because their immune systems are so "revved-up," they react to everything.

This reaction may or may not occur as a traditional allergic reaction of asthma, a rash or hives. But what does occur is an immune mediated, abnormal "shut down" of blood flow in the brain that affect the language and social skills area of the brain and central nervous system function.

I generally start to improve the immune system by placing the patient on a diet free from dairy products, chocolate, and whole wheat. The reason for this is to help reduce the stress on the immune system. If dairy, chocolate and whole wheat are taken away, 96 - 98% of probable "food" allergies are alleviated. However, I do not believe that you can correct this condition by diet alone. If this were possible, parents (and physicians) by now, would have heard of multiple, "unbelievable" successes over the years. Reputable "institutions" would be conducting clinical trials to investigate the "successes."

Since nutritional therapies have not resulted in cures, or even published reports of significantly improved cognitive function, it is illogical, in fact potentially detrimental, to put these children on extreme diets. However, sometimes these children put themselves on extreme diets by only eating a limited number of foods. I don't think there are a lot of normal children who would be healthy on some of the diets these kids put themselves on.

For most of the children, all that is necessary is to eliminate the "main offenders" in their diets that will cause the immune system to react. It is not necessary to eliminate all wheat. Some doctors and homeopaths recommend the elimination of all gluten and wheat. I think these children show improvement because when they are put on a gluten / wheat free diet, they no longer eat whole wheat. Usually, all that is really needed is to eliminate whole wheat and other whole grains (due to allergenic potential) from the diet.

I do not normally focus on casein beyond eliminating the primary milk products. Because even though they may, in theory, play a slight role in the background, if the allergies overall are lowered, it will decrease the immune system firing off.

It does not matter if "allowed" processed products are used, as long as they do not appear to be a "trigger." But, avoiding the "main" offenders is extremely important. Eliminating too many products from a child's diet, increases the risk of disturbing a child's metabolic balance, rather than helping to normalize it. (Note: Many supplements meant to compensate for the diet extremes, may in themselves have allergenic components, acting as negatives triggers to the immune system and the child overall. They may fail to be properly absorbed or contain dangerous impurities. Children may be at far greater risk from diet and "supplements" than any perceived risk from properly used pharmaceuticals.)

The G.I. tract is loaded with lymphocytes (white blood cells that fight infection and disease).Those lymphocytes communicate with the brain. What has always made sense and is "logical" is if the body is sensitive to milk protein and whole wheat protein, coming into the G.I. tract it could cause the immune system to fire.

As research evolved, it was found that milk and dairy can actually cause a microscopic blood loss in the intestine by a "reactive" inflammation of the bowel. It is interesting to note that most of the world's populations get violently ill when given cow's milk. Apparently, it's not a normal human trait to digest the cow's milk proteins.

Asian people have much healthier arteries than we do. One of the major assumptions for this is that they eat soy protein instead of dairy protein. Dairy is the number one source of cholesterol. The entire family can be helped indirectly if milk is eliminated from the meals. Parents often worry if their child is getting enough calcium. Soy and rice milk often have calcium and vitamins A and D added. However, if a child (girl or a boy) is eating a normal diet, they will get enough calcium.

In the teenage years, girl's diets should be supplemented, if you're not giving them a lot of dairy. But usually, this is not necessary in these first three or four months. As time goes on a calcium supplement may need to be added. Often I will suggest Tums®. Tums® are a very safe source of calcium for a child and they taste good. Inter-related is the fact that many children and adults who are sensitive to milk but still continue to drink milk products, often have iron stores that are low. Their Hgb. / Hct. are chronically on the low side of normal, even if they were not truly "anemic." This is typically because of a microscopic blood loss occurring through this "inflamed" mucosa. If dairy and milk were eliminated from the diet, and then a biopsy of the intestine was done, the mucosa(the mucous membrane that lines a structure e.g. mouth and lips) would look normal. If milk and dairy were then reintroduced, the mucosa would look raw and inflamed. (Therefore, in approaching the idea of "leaky" gut, helping the body by removing negatives, is more important than "supplements" and nutritional "fixes.")

As a pediatrician it has been fairly routine for me to see a child do well on formula (even a cow's milk based one) for 12 months, but when the child is switched to real milk, the child experiences congestion, stuffiness, upset stomach, and a whole realm of symptoms not seen before. Whole protein, unprocessed food is much more allergenic and has a higher incidence of causing the immune system to react.

The truth is, there is not as bad an allergic reaction out of a processed product. When a food is processed, the protein structure is changed. So a child that might go berserk on milk... may not have a reaction to "processed" cheese. When the protein structure is changed, the food will not give as large an allergenic reaction.

Products from the health food stores are not necessarily the best for autistic children because they are less processed and more pure. They have a lot of whole wheat and grains. For these kids, the cheapest white bread (without milk, whole wheat, or whey) is often the best choice.
To illustrate how peculiar the immune system is, when parents seen the results of the food test come back, a routine phone call is, "How come you did not say 'no eggs'?" You'll almost always see egg white and egg yolk with very high numbers, and yet I will usually say "ignore it." The reason being, unless a child has eczema where yolk or egg

are triggering off a skin reaction, for some reason the immune pathway fired off by eggs doesn't seem to play a role in what we are talking about in the brain. I rarely have to worry about taking a child off of eggs, even though you may have this "huge reaction" on the food "screen." This illustrates how parents need to become aware of what doctors have known and "fought" about for years, there is no "perfect" food test / screen, results must always be interpreted in their clinical context. Too often, parents are being "guided" by interpretation of food and metabolic screens that do not have the capability to do what the parents wish. Many mistakes are potential being made, that may be "metabolically" and physiologically hurting these children.

Although processed food might give a lesser reaction, the importance of avoiding allergens cannot be stressed enough. In the beginning, it is especially important to avoid foods that might trigger the immune system. If the immune system is triggered, the body is affected for a minimum of a week to ten days (or longer). So it's necessary to be particularly strict at the start of the treatment, when the goal is to cool down the immune system.

If it comes down to choosing a food (cheat) with milk or sugar, choose the sugar. From the sugar the child may get hyper for a few hours, but it wears out of their body relatively quickly. From milk protein or other allergens, the immune system can be affected for up to two - three weeks. However since sugar feeds yeast, it is a good practice to minimize sugars in general.
It is also important to encourage the children to eat more protein. This will help balance out their own amino acids, which in turn will help alleviate some of their problems. All these children need protein. It is also necessary to restrict the starches. Healthy breakfasts, lunches and dinners should be served.

Sometimes this process of restoring the immune system to normal can be very deceptive. The child is doing extremely well, and appears almost well or "cured" to a parent, when everything suddenly falls apart.

A child may appear to be well, but unless the body has shut off this process, they still have a reactive, volatile immune system in the background. Even if a child is functioning at a extremely high level, a child should not be regarded as "cured", unless the immune system has truly returned to normal.

While a few rare children will actually outgrow this process, especially if you have taken steps to help normalize their bodies; realistically, it will probably take the advent and usage of new drugs that are immune modulators, to truly shut-off their dysregulated immune system.

This treatment needs to be thought of on a continuum. The closer the child gets to normal, the better the chance that the body may shut off this process. But unless you've gone that last little step, unless this process shuts off, it must be assumed that the immune system is still volatile and potentially reactive.

The only principle I have continued to find logical over the years, is the idea that I'm trying to just help a child "normalize" their body (and brain). Can I help them balance out their body? If I can change the diet, their own body can help balance itself. There continues to be no evidence in these children of any pre-existing, built-in enzyme or metabolic defect. Therefore, by focusing on the overall intake, encouraging more protein, less starch, a child's body will help balance out and replace needed amino acids (the building blocks of the body) and other nutrients.

With rare exceptions, I will never say don't do something if you truly see a child do better and it's safe, but in most cases I have found that you can get to the right point if you just think of it as cool down the body's immune system, help "safely" where medically and nutritionally possible, and extremely important, avoid offenders or triggers. If a child is doing better and their allergy test said they were not allergic to apple, but you give them a drink of apple juice and the child is bouncing off the walls, it doesn't matter what the test said, that child should not have apple juice. And this is the way parents have to work with their own child.

Until new immune modulators are tested and ready for use with patients, I regard each step of treatment as an attempt to help "cool-down" the immune system, and help the body "adjust" itself in a healthier manner. While the principles are becoming very consistent, each child (his/her body and brain) must be "individualized."

Candida or Yeast and Autism

While taking the risk of opening a medical controversy, this author certainly believes there is a logical connection between yeast and a dysfunctional immune system. However, this theory is not yet widely accepted by the medical community, but over the last few years has become easier to talk about and "discuss". Candida is a yeast-like fungus that is present in all our bodies. Presumably, yeast / Candida is in every normal G.I. tract. That is where the confusion begins.

Normally, a healthy immune system keeps the yeast in check. If the immune system is not working properly, the yeast have a chance to overgrow and become a problem. Yeast is one of the likely pathogens contributing to a metabolic imbalance that is a secondary result of a dysfunctional / dysregulated immune system. It is NOT the primary reason or cause for autism.

There is logic in saying that if an immune system is dysregulated, a secondary problem potentially due to Candida needs to be treated. Some doctors hypothesize that autism is caused by a "leaky gut." With this theory comes the assumptions that withdrawing allergens and treating a yeast overgrowth, will help the GI tract to return toward normal. The problem with this thinking is that if yeast is not the cause of autism or PDD, then treating Candida is not going to end the autistic or PDD state. I believe it is only one of the many steps needed to help normalize the body.

Many children afflicted with autism have had frequent ear infections as young children

and have taken excessive amounts of antibiotics. This has exasperated the yeast problem in these children. Other possible contributors to Candida overgrowth are hormonal treatments (i.e. steroids, BCP pills, ?? secondary exposure), immunosuppresant drug therapy, exposure to herpes, chicken pox, or other "chronic" viruses, or exposure to chemicals that might upset the immune system. There is an increased probability, that a "general" environmental factor affecting our immune systems (i.e. ozone layer depletion, "toxic" chemicals, etc.) may be operative, affecting many children and adults.

Because it is impossible and not practical to expect anyone to stay on a totally yeast-free diet, ongoing medication, anti-fungal supplements, and avoidance of dietary negatives are necessary to control Candida. Even with the use of anti-fungal drugs, it is still important to limit sugar when there is a yeast problem, because yeast grows 200 times faster in the presence of sugar.
If a potent anti-fungal such as Diflucan or Nizoral is used, it can be assumed that within 1 - 2 months most all of the yeast will die off. I do not use Nilstat or Nystatin. For most children Nystatin is ineffective. And yeast, like bacteria with antibiotics, have become resistant to Nilstat (and other antifungals).

Usually, I will use Nizoral or Diflucan for about four to six months while trying to alleviate other stresses on the immune system and "maximize" a child's function. In 7- 12 days some patients experience "die off." This is the only time, a "negative" reaction to a medication can be a good sign.
When the yeast is being killed one experiences either a "sensitization" reaction to "products" of the yeast being killed, or there is release of "formaldehyde" like products or other potentially toxic derivatives, that can contribute to negative symptoms in a patient, including bouncing off the walls, miserable, and irritated. I know it is ironic, because it actually is a good sign that the child has a yeast problem that can be corrected with medication.

It is important that the parents check in during "die-off" so I can be sure what is occurring is indeed die-off and not a reaction to the medication. Die-off usually lasts about 7-14 days and after that time the change in the child can be rather dramatic. If the die-off does not end in 14 - 17 days, it is generally a reason to change choice of anti-fungal.

If the treatment is successful, usually eye-contact improves. The children seem more tuned in and less "foggy." Parents report that after the yeast is under control the frequency of inappropriate noises, teeth grinding, biting, hitting, hyperness, and aggressive behavior decrease. The children no longer act almost drunk by being silly and laughing inappropriately.

While on Nizoral or Diflucan, I have the patient take monthly blood tests to monitor liver function before any damage might occur. I tend to be on the cautious side, "officially" testing is recommended every 2 - 3 months.

I change medication at six months, though in theory one could go longer. The reason I stop at six months is because Nizoral has a very mild effect on the adrenocortical axis. It's part of the internal steroid mechanism. While this may even be part of how "Nizoral" helps the body, it also limits how long one should be on Nizoral. Generally, I will try to switch to Amphotericin B, which has recently been licensed as an oral liquid in this country, can now be legally compounded by certain pharmacies in the U.S.

If the antifungal therapy is stopped completely, and the body's immune system has not returned to normal, the yeast will return. Ultimately, the key is the body's own ability to keep in check an organism that it doesn't want to have there to start with.
Some doctors mistakenly give medication to control the yeast for only a few weeks or even a month. Then the treatment is stopped because the child is doing better. The problem with this kind of therapy is that if a child is helped for a short time and then the treatment is withdrawn, the yeast is going to come back, perhaps even as a stronger, more resistant strain. Whereas if the treatment took that child to normal, and their immune system became normal, it would be possible to withdraw all treatment and the child would remain healthy.

Antivirals

If the blood work suggests that a herpes related virus or "unidentified" retro-virus might be in the body, a therapeutic trial of the antiviral drug Zovirax is given. The only thing (in theory) treated with Zovirax is a herpes related virus. If a virus is present and it is gotten under control, it's one of many major steps necessary to help the body and the immune system.

On a few of the older children I am now starting to use Valtrex, which is an improved version of Zovirax. I never recommend something for a child unless I can say, "It is safe."
When herpes virus is discussed, we all think of cold sores, vaginal sores, but may not consider chickenpox, CMV (cytomegalovirus), or Epstein Barr. These are also herpes viruses. Being in the herpes family, they have the unique ability to sometimes stay around even after the overt symptoms are long gone. They hang around the body and live in the nerves. Perhaps a "new" Herpes related virus or retro-virus may be playing a role in some of this epiphenomena. However, at this time we do not have the technology to explore and understand how all of this works.

Selective Serotonin Reuptake Inhibitors (SSRI's)

The only medical agent out there that's routinely available and directly seems to help the temporal lobe are called the SSRIs, Selective Serotonin Reuptake Inhibitors. The drugs that come under this category are Prozac, Paxil and Zoloft. What these drugs do is, for the first time, work on a specific pathway in the brain. They block the reuptake of the serotonin released.

If the serotonin released "stays around longer / more effectively," part of the brain works

better. Prozac may also alter part of the "neuro-immune" axis, working to increase blood flow and function in the temporal lobe. This increased blood flow and improved function of the temporal lobes, helps many behavioral and processing problems in these "autistic" children. By helping restore and preserve temporal lobe function, one may be helping maintain a healthier brain.

Importantly, this is not an effort to control the children with medicine. A very small dose, usually 2-4 mg, is used with a four or five year old. If controlling a child's behavior was the goal, a dose of 10 - 20 mg would be used. Instead all that is needed to help function in the brain is a very small (but consistent) dose.

The purpose of using these drugs is an effort to get a child's brain to work better. In the past, if you talked about an antidepressant you were thinking Valium, Librium, Phenobarbital, that's how you "calmed" someone down. That's not what you're doing with Prozac, Paxil or Zoloft.
Pharmaceutical companies are trying to design drugs that will help the brain more physiologically than the agents out there did before. SSRI's represent the first of new "designer" drugs, with the capability of acting physiologically within the brain.

These drugs can help a child medically to function better. They help transmitter effect and likely increase blood flow to the area of the brain that was not functioning properly before. And if the brain starts working, the results with these children can be phenomenal. These children are usually extremely bright. (Note: While capable of helping medically, this author believes strongly that one cannot judge their positive effects, avoiding negatives at low dosages, without controlling / combining diet and other steps at the same time.)

Immune Modulating Agents

There are agents that have already been tested and developed, and are now undergoing new usage's testing in adults that will let us adjust the immune system. Hopefully, they will have the ability to fine tune the body and put the immune system back on track. These drugs are already in existence, but are available only through appropriate research protocols. They could potentially correct all of the processing problems associated with autism (and possibly other childhood learning disorders) where "immune-mediated."

The trouble is, children are the last in line. Even though trials are now starting for adults, no agency wants to test children. The liability is too much. It is only after you've proven things extensively in adults that treatment for a child is even considered. If medicine follows its usual course of action, trials for children would be at least another four or five years away.

That is too long to wait. We must find a way to make this happen sooner. Even if the agents are identified that will "normalize" function or stop abnormalities from occurring in autistic children, these agents must be used before children pass important functional

and developmental steps that might not be regained if these agents are administered later in life. Funding for this research is of the utmost importance. We can not lose children to autism, who have the potential to lead a
normal life.

Even in older children, it appears parts of the brain can be helped significantly. If cognitive function improves, the "equation" for the future changes. But, educators, therapists must start thinking "rehabilitation" rather than just "training." Often it is extremely slow and difficult to sort out compounding behavioral issues (perhaps after so many years of being bright but frustrated and dysfunctional secondary to the non-working parts of the brain).

Vitamins - Nutritional Supplements - Natural Therapies

I do believe the B Vitamin mechanism is off in children with autism (again, secondary to mitochondrial / immune dysfunction, not the primary reason or cause). Perhaps this is the reason that large amounts of Super Nu Thera have not seemed to cause any measurable damage.
Perhaps a lot of the Super Nu Thera is not being absorbed, and the small amount being absorbed may be helping some children. Some neurologists are worried that if some of these children are absorbing too much it is not healthy. There needs to be controlled trials to determine the correct dosage and real safety or dangers of this agent.

I believe in the product, but I don't believe in blindly giving it to a child. Any agent (nutritional, natural, medical) must be judged on effect (good or bad) and long term safety. It dangerous to push a child's body to any extreme with mega-dosages of supplements. Common sense does not mean "mega" dosages of anything. More is not necessarily better.
Since nutritional factors do not account for the cause of autism, as noted above, it is illogical, and in fact potentially detrimental, to push a child's body, to any extreme with mega-dosages of supplements.

Gamma Globulin

You don't in general cure someone afflicted with autism or CFIDS with IM gamma globulin, but it may play a helpful "supportive" role. Gamma globulin does have its place for various other acute autoimmune processes. Unfortunately, IV gamma globulin, is not the same as IM. With IV gamma globulin, a human product of blood goes directly into the veins, and must be prepared / processed differently than IM (Intramuscular). There is a danger of passing hepatitis and / or any number of unidentified retro-viruses with this type of therapy. Presently we have no reliable screens for hepatitis C (some screening becoming possible), D, E, F, G. etc. If there is an allergic reaction in a child with low IgA, the possibility of either getting very sick or even dying is very real.

This type of therapy has the potential to be very dangerous. Recently, in the Midwest (I believed Minnesota and/or Michigan), there were 12 cases of hepatitis C contracted

from a bad batch of IV gamma globulin. This and other risks are not justifiable with such a low probability of "success" with this agent.

There are some people who will get a little better from IV gamma globulin, because once again a dysfunctional immune system is the culprit for these children's problems, and this product can help the immune system. But the trouble is that it is not a sustained gain. Until newer immune-modulators are available for these children, a combined plan of improving the immune system, the body, and the brain, has a much higher probability of success. If you help the immune system, the body will work to repair itself.

Therapy Focus - Goals - Issues

Even if we had that instantaneous answer to normalize the body, a child still needs to be caught up on what they missed and "re-educated." In the past, the focus for autistic children has been on trainability, cooperation, behavior, NOT on improving the cognitive processing. Hopefully, a shift to the idea of "rehabilitation" is already in motion, a full review of techniques and goals is urgently needed.

Sadly, medications or efforts to "calm" the brain and child down, may further shut down the areas we want to improve. What is necessary to ask about every medical treatment or medication is whether it results in a child who is brighter eyed, processes better, functions quicker? Are there negatives associated with what has been prescribed?

The hard part is often discriminating between what is behavioral and what is medical. If you get a change where a child is more tuned in, processing better and literally gives the parents, or the teacher / therapist a "bad" time, that needs to be dealt with behaviorally, not medically.
What I am continually seeing in these children is the better their brain works, the more they act out like a two or three year old kid that never had the "reins" put on them. If that's in the context of the brain working better, it's not a negative.

Clinically, my experience has been to literally watch a young child (below 4 or 5) "pick-up" where their brain development ceased to function normally. They need to go through the same developmental steps all children do, but they are doing it at an older age. They developmentally act like a 2 year old child, but have the body and skill of a 4 or 5 year old.

An older child, can be helped significantly if cognitive function improves, but as noted above, it is a longer rehabilitation process and catch up effort. Often it is extremely slow and difficult to sort out the compounding behavioral issues (perhaps this is due so many years of being bright but frustrated with their inability to communicate).

It has now become common practice to hear a parent of a four or five year old tell me that their kid literally is doing things that they stopped doing at two. In these cases this is not regression. It as though you literally turn the brain back on where it stopped at 18

months or two years of age. This is what is expected and is fine as long as you get them through those stages and you help them catch up.
As a child is functioning better and even when they are dysfunctional, they like any normal child need praise, limits and consistency. The problem is that parents are dealing with a child with the physical ability to get into the trouble a five year old child would, but without the lines and limits parents would have set previously for a 2 or 3 year old child. (Note: All children go through normal testing phases, where they need to learn what is okay, what is not okay, etc.)
There is a critical time limit for helping these autistic children. If a child does not develop or use certain tracts in the brain, he may never do so. If the child has not used these tracts in the temporal lobe you may never get them to develop "fully." Usually, the younger the children are when you start to "normalize" the body and the immune system, the better the prognosis will be. These kids are young brains, the longer they don't get help, the worse off they're going to be. However, the discussion of "deadlines" must be taken in context by our past (and generally present) inability to adequately measure and evaluate areas of brain function objectively.

There are some physicians who will argue that the body is still "fixable" at eight or nine, but realistically there is a line. It has been this physicians experience to note children up to 5 or 6 will often "turn-on" and pick-up where they stopped, generally about 18 - 24 months old. On the other hand, as children approximately 6 - 10 or 11 improve, it is a slower process, often requiring more "help" to "learn" the basics, grow-up developmentally, and then move ahead successfully. All of these observations reinforce the fact that we can not wait the normal cycle of 10 to 20 years for medicine to find the answers for these children. If we're going to maximize the probability of success, we still must mobilize efforts to focus on "realistic"/ probable medical solutions available within 1 or 2 years, versus "genetic" therapies, perhaps available in 10 - 15 years.

We must never underestimate the unknown, and the power of the body when dealing with these children. An illustrative case is a physician's child who is now 10 years old. The child came to me literally wild, I mean the parents were that close to realizing they were going to have to institutionalize him. Currently, the boy is now up to a couple of sentences. He is in school and is starting to learn. Although I can't say to these parents that I have the same top hope for a patient who is 9 or 10 that I may have for a 4 or 5 year old, that doesn't mean there can't be a lot of improvement. This child NOW has a good opportunity to develop skills. He certainly is showing he's bright and can learn.

The Image of Autism and Its Implications

Unfortunately since doctors believed autism should be treated by psychologists and psychiatrists there has been an absence of pediatricians in this field. It was and still is believed by noted neurologists that nothing can be done medically to treat these children. Fortunately, as these children are changing with therapy, respected neurologists and other pediatric researchers, are beginning to feel it is time to "take a second look."

Psychologists and behavioralists, sometimes give parents advice based on the assumption that a child with autism is a retarded child who "doesn't know any better". While the advice given is meant to help, these are often bright children that are not being expected to conform to or understand rules and limits. Because of these well-meaning professionals, these children often become a bigger problem behaviorally. Without proper discipline and expectations by teachers and parents, any child will be a problem, these children will be a disaster.
A overwhelming obstacle to changing the image for these children is the failure of tools available to date to "objectively" evaluate CNS (Central Nervous System) functioning, in turn perpetuating the subjective screening tests and procedures currently used. To this day, good researchers often take a position, if they can't measure it, it must not be real. Perhaps, it is far more appropriate to acknowledge there are areas of physiologic and metabolic function that we have not yet developed the tools or techniques to measure, but that does not mean they should be discounted clinically / medically.

As time goes on it becomes more evident by clinical confirmation and research that autism is an auto-immune disorder (see previous review article "Autism and the Immune Connection"). With this knowledge I have become extremely concerned that some of the previously used drug, metabolic, and psychological therapies that have had little or no history successfully treating this type of disorder in adults, are not likely to be successful in children. In fact, many may be potentially harmful.

It is one thing to try a potentially dangerous therapy or one with many unknown or undesirable side effects on a brain-damaged or retarded child. It is quite different to experiment or operate on children with dysfunctional, but potentially healthy, normal brains.
There is work being done by doctors with medicines and homeopathic therapies, that I am not sure is safe for children. They are prescribing extreme diets and mega-doses of supplements. In part these doctors are correct that metabolic processes in these children are not working properly. But I believe the evidence is mounting daily that they are a secondary result of a stressed / dysfunctional immune system, NOT the cause of autism.

While some dietary restrictions and nutritional supplements may help to "cool down" the immune system, more is not necessarily better. Often these remedies are given because they will "do no harm." But harm is occurring by the failure to recognize and expedite potential new therapies with immune modulators that could possibly help normalize the immune systems of these kids. And harm is occurring when parents and physicians are using potentially dangerous therapies and even operating on these children's brains with little probability of success.

In contrast, the good news is that children afflicted with autism whose immune systems have been helped are showing they are bright thinking individuals that are not what the world expected. Children with the "label" of Autism / PDD are not retarded. They have normal or above normal intelligence. They are not throw away kids that cannot be helped. They are children who are suffering from auto immune dysfunction that can

possibly recover.

But the label of autism still continues to carry old "negative ideas, negative implications," and in turn lowers the urgency and priority to help these children. It is time to change that label, that image, and the future for these children.

It is this physician's hope that 1997 is the year of that change. Through focusing and combining efforts, this can happen; for the children's sake . . . . it must happen.