Autism – the vaccine connection

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Evolution of the immune system

Current research shows that there are many substantiating factors to consider vaccination as the causal factor for autism. The time line for human vaccination coincides with the first descriptions of autism, at first a rare disorder. [17] A current report by the National Autism Society UK reports teachers state 1 in 89 primary school children in England and Wales have autism. The literature identifies this condition to have been recognized by Leo Kanner in 1938 "Since 1938, there have come to our attention a number of children whose **condition differs so markedly and uniquely from anything reported so far**, that each case merits - and, I hope, will eventually receive - a detailed consideration of its fascinating peculiarities." [17] The subjects ranged in age up to 11 years at the time of the 1942 publication suggesting that autism was affecting the human population at least as early as 1930. These could have been among the first children born of parents who received several vaccines. The most significant characteristic among the children as related by Kanner were that most were born with feeding problems. Historically one of the most intriguing developments during this time period was the scientific advances being made in vaccine research and application.

By 1930 agarose gel had become a standard tool which had moved from the kitchen (gelling agent) to the science laboratory. [9] Red algae and plant species (Urtica) from which science obtains the agarose gel also contain chloroplast DNA and Porphyridium chromatin. [56, 123] Science has developed additional ways to cultivate vaccines and this includes the use of egg yolk (contains the phosphoprotein ovovitellin and xanthophyll). Xanthophyll or lutein is derived from chlorophyll b (plant foods which contain chlorophyll) and is formed in chloroplasts or plastids. Vaccine cultures grown on egg or agar often also contain animal blood. Animal blood contains the by-products from the foods the animals are eating. So the human immune system has been faced with a combination of viruses, blood products, carotenoids, chloroplasts and human immune cells when given a vaccine or vaccines.

Vaccines were developed for polio, diptheria, pertussis, measles, mumps and rubella which are routine and treated as mandatory for entrance to public school. It is my theory that these substances have been brought together by science and have entered the human body in an unnatural combination which resulted in an evolution of the immune system. This evolution can be measured in population studies which is being done by molecular biologists. [21 - 41] The findings confirm that a percentage of the human population has been genetically altered, with vaccination practice a likely cause, and this includes people with autism. [18, 19, 20] In autism the evolution of the immune system has been in the area of complement-initiated, complement-mediated immune response - the bridge between innate and learned immunity. Modulation of innate and acquired immunity is said to involve the heat shock protein (hsp or HSP) specifically HSP-72 kilodalton (kDa) beginning with the simplest organisms [43] and is consistent throughout the plant and animal kingdom also extending to humans [45, 50.

This is consistent with findings that indicate autism is an immune response involving the bridge between innate and learned immunity. [46]

The hsp which protects the chloroplast or plastid (cells containing chlorophyll or xanthophylls) is hsp-72 [47] and this protein and associated plant pigment crossing the placental barrier could have been made an immune target and as a result of subsequent vaccination which combined plant substance and pathogens this immune response or evolution would have been exacerbated. The literature additionally identifies a high incidence of immune-compromised parents of autistic offspring, parents who are themselves effected by diseases, disorders and conditions impacted by vaccination practice. [21 – 41]

'Heat shock proteins (HSP) or stress proteins are produced by prokaryotic and eukaryotic cells in response to a variety of environmental stressors. The heat shock response is one of the most universal reactions known and heat shock proteins are among the most conserved molecules in phylogeny. Recent findings concerning the immune response to heat shock proteins are discussed especially with respect to the role of HSPs postulated in septic disease and inflammation, in anti-pathogenic immunity and in the induction of autoimmune diseases. Results and speculations considering a relationship between HSPs and gamma/delta T cells or polyreactive antibodies, possibly as part of a phylogenetic old immune system, are critically reviewed.' [51] 'Among microbial antigens implicated in autoimmunity induced by molecular mimicry, hsp may play an exclusive role. Homology between hsp from the pathogen and the host confronts the immune system with the dilemma of distinguishing self from foreign. Poor expression of self-hsp peptides in the thymus could allow T cells specific for self-hsp to evade selection. In the periphery, elevated expression of conserved epitopes from pathogen-derived hsp could break tolerance and activate immune reactions against self-hsp determinants.' [52]

WARNING

'Use of either foreign or self-hsp as carrier molecules for antigenic determinants provides a basis for applying hsp in conjugate vaccines. However, due to immunogenicity and sequence similarity to self hsp, the potential of foreign hsp when used as carrier molecules to induce cross-reactive immune responses against self must be carefully evaluated.' (Max-Planck-Institute) [52]

It appears that **this warning comes a little too late** as this is exactly what has been happening with hsp-72 kDa from agarose gel, egg yolk (xanthophylls) and the hsp-70, hsp-72, hsp-74 derived from a variety of pathogens from which the vaccines are made [47] or to which immune cells react including smallpox, yellow fever, typhoid, diptheria, tuberculosis [49, 116,] tetanus [156], cholera [64, 155], pertussis, influenza [54] polio, measles [68], mumps, rubella, or that these pathogens directly affect the hsp-70, hsp72 and hsp74 mechanics. Additionally the susceptibility to certain pathogens e.g. rotavirus [61], to immune-related inner ear disease [62,] to cytomegalovirus [72, 74, 90] and medical conditions such as ear inflammation [79] can be associated with abnormal hsp activity. Inflammatory bowel disease has also been linked to autism, vaccine and hsp [119, 68] as well as the potential for dietary influences to affect disease outcome. [80] Heat shock protein 70-kDa has also been shown to enhance candida albicans. [87]

Autism and GOD (Generation of Diversity)

The evolution of the immune system: immunity for the human 'herd' leads us to a modern day dilemma. It is the strength of the adaptability of the organism which

results in it's capacity for survival. We are at the threshold of great changes taking place in our human development. Some of these changes are a direct result of man's creative ingenuity and the fight for survival. At the scientific level this has included vaccination. The development of the vaccine and the further development of more vaccines have contributed to evolutionary changes which can be seen in the human population and will likely be seen in the future generations in ways which we cannot yet begin to comprehend.

The evolutionary changes of modern man are seen first and are most evident in the ethno-culturally diverse populations. The areas of our chemical design are most vulnerable when two different types of people come together and this vulnerability can be additionally impacted by a dramatic change in location for which either or neither individual is biologically prepared resulting in offspring who exhibit the wide range of variation some of which is seen in modern day disease etiology. Areas of our chemical design which are most vulnerable are not exclusive to ethno-culturally diverse populations; in isolated populations where there is little change in genetic and environmental input the weakness of the population can also be seen as diseases which are prevalent in that culture. Add to this scenario the innovations of modern science which include the development of vaccines, genetic engineering of our food, the use of food additives and chemicals, crop spraying and artificial fertilizers, seasonal foods now used for year round consumption, electricity, motor transport, industry, television, computers, cell phones and then look at the available information which indicates how we, as humans, are reacting to these changes.

The molecular biologists, using some of the most advanced tools of modern man, are finding some of the patterns and changes which are taking place in our human population. Some of the most recently studied areas are the 'hypervariable regions' in our DNA and in particular the Human Leukocyte Antigens (HLA) histocompatibility antigens governed by genes of the HLA complex and the human major histocompatibility complex (MHC) – a region on the short arm of chromosome 6 with regions A, B, C and D - the region of our DNA which interacts with our immune system. Immunogenetic (IoGc) research is telling us that how we develop in the womb is not governed solely by our DNA and the environmental insults (impact) that the fetus is susceptible to, but is also due to the response of our own developing immune system. The immune system develops to protect the host and the impact of the immune system during fetal development includes changes which alter our genetic make-up. Some of the terms used to describe these processes are so far called transduction and frameshifting.

How modern day man is reacting to the environment, including everything from the womb experience to the bustling life in the city, impacts our chemical design. When we are reproducing, the chemistry of our bodies further impacts the new lives we create; even our emotional state contributes to chemical information which influences the developing fetus. At the basic level of this scenario lies the fact that, although we are different as organisms from plants and other animals, we do share much common genetic material. Genetic research is engineering ways to look at the human genome more closely as well as the genomes of more simple plants and animals. This research has led to the available techniques being used today to determine things such as paternity and is also beginning to look at the ways in which we are being altered as a result of drug use, vaccination, agricultural practice and food distribution. Food distribution is becoming more important for research because most human populations no longer have to go to the food source, nor do most of us participate in the growth and manufacture of food sources. Additionally, organizations

such as the World Health Organization make decisions that affect us globally based on what they collectively think is good for the world population, but often do not account for individual practices within that population, or variables such as food intolerance within human populations or the metabolic, genetic and environmental differences that make for differences in food and nutrition needs.

Research is showing us that in addition to the ethnically diverse populations such as those found in the UK and the USA the ethnically stable populations react to the same modern day influences in ways that can be measured as a response which is specific or unique for that population. What molecular biology is finding is that the impact of modern life is resulting in and exacerbating the diseases of modern man: gout, arthritis, cancer, heart disease, immune deficiency, psychological illness, and diseases relating to reproduction and aging. What we want to know is how does this impact us individually, at the family level and at the community level. We need to understand these things because individually we might choose to take measures which could positively impact the outcome for ourselves and our families and communities. A healthy human can be more productive, a better parent and a better mate for life. A sick human takes a lot of resources, particularly in the more developed countries. A sick human is not there to care for the parents or the grandchildren, is not a good parent or a good spouse and cannot be productive in the community.

One of the modern day diseases which has made an impact on humanity is autism. Autism is said to be a lifelong disability with as yet no agreed treatment protocol. For more than 60 years autism has remained in the psychological paradigm with early work blaming the mother's parenting for the condition. Dispelling the poor parenting theory did little towards identifying an alternative causal factor. Nearly forty years ago biochemical evidence began to emerge indicating that autism was more than a psychological illness with the publication of Dr. Bernard Rimland's work 'Infantile Autism; The syndrome and its implications for a Neural Theory of Behavior' in 1964. As the field of immunology developed, additional insight into the metabolism of the autistic population was gained but still little scientific effort was applied to utilizing the new information. Therapies began to be offered: ABA (Applied Behavioral analysis, such as Lovaas); Vitamin therapy (particularly the work of Dr. Rimland at Autism Research Institute), AIT (Auditory Integration Therapy based on the work of Tomatis and Guy Berard), Transfer factor (Fudenberg), IVIG (Dr. Singh), Diet (Reichelt, Shattock, Lewis, Crook, Rapp, Braly), EPD and multidisciplinary approaches (Kotsanis), Irlen lenses, Prism lenses, Relaxation techniques such as Biofeedback, Sensory Integration, the 'Squeeze machine' (Grandin) and a multitude of massage therapies: Cranio-Sacral (Andrea Axt), Indian head massage, metamorphic technique, Alexander method, shiatsu as well as physiotherapy and others. In the past decade we have seen millions of dollars of research funding poured into genetics to try to find a genetic abnormality that was assumed must lie at the basis of autism. After extensive research with more still to come it has been determined by a major autism review (Medical Research Council 2001) that the genetic involvement in autism is very variable and affects 5 to 10% of the autism population.[101] Of this 5 to 10% approximately 2% have co-occurring Down syndrome, nearly 1% have Fragile X Syndrome and the additional 2 to 7% of the autism population present with a chromosomal or genetic defect which are markers for conditions such as tuberous sclerosis (TSC), phenylketonuria (PKU), Turner syndrome, Blindness, Deafness and hypopigmentary as well as hyperpigmentary diseases, disorders and conditions. Whereas these diseases, disorders and conditions may not appear at first glance to have much in common, a closer look reveals that the

type of disease and presentation in the autism population reveals a pigment factor which supports the immunological information which has been gathered for this population. Sex chromosome disorders which co-occur with autism include Fragile X and Turner syndrome, while pigmentary or pterin disorders include PKU, TSC, Retinopathy of prematurity (ROP), blindness, deafness, Hypomelanosis of Ito and vitiligo. Autism is most easily understood as an immune system adaptation to the genetics of the individual and a response to the environment. Changes have occurred rapidly as a result of the introduction of the vaccine in the form of a live attenuated virus being introduced together with chloroplast DNA at the turn of the twentieth century. At the turn of the 19th century when Jenner's smallpox vaccine was being used widely, the first descriptions of Down syndrome followed the vaccine trail as has been described by Gerhard Buchwald. [2]

Recently therapies for autism have been introduced such as the lutein-free diet (Johnson, Desorgher), Secretin (Beck), and Vitamin A from fish liver oil (Megson, Johnson, Desorgher) which address the impact of the immune system involvement on the biochemical metabolism of the autist. These therapies do not undermine or invalidate the already existing treatment options (AIT, Specialized lenses, Squeeze therapy and massage, EPD and immune therapies, restrictive diets or behavior therapy). However, the lutein-free diet (nutrient balanced and provided according to ethnocultural diversity and preference requirements), vitamin therapy which is scientifically investigated (vitamin A, fish liver oil) and enzyme therapy are beginning to treat the cause. We are well past hope that science will be able to agree on a causal factor for autism. We are well past expecting that science will acknowledge a role in creating this epidemic. At this point we can only hope that science will investigate and validate the treatment options and provide medical guidance for the members of the medical profession who are under the burden of providing care for this ever increasing population.

Immunology – a constantly evolving science

The immune system is more complicated and at the same time less complicated then most of us really think about. Everyone wants to know where their information fits into the bigger view of autism. Parents, doctors and researchers need to know which area of science can produce information, treatments and understanding for this immunogenetic phenomenon. Like the words for vitamins, enzymes and chemical compounds the language or terms describing the immune system sound intimidating, yet this complicated language is science at its best. Science, or a scientist, finds something and the finder may name it based on his name, how it looks or how he or she thinks it acts. Sometimes a substance ends up with two or three names and these different names might be used by different branches of science. People reading and researching have to learn all of the names used which describe what they are researching in order to get the whole or bigger picture. Complement component is named or called also a gene such as C (complement) C4 (gene) C4B (one half of the gene). Which is or reacts to C or CD (another immune complement component) with a protein coating (B) and a specific receptor pattern of amino acids (b) that are activated by a simple immune cell called a cytokine (also C or CD but also called a NK 'natural killer' cell) but designated to a specific group of cytokines and which can cause other immune cells to react or convert to a different immune cell type. Thus cells coming together during an immune reaction can be written as C4BbBbC5a. Some substances cause a specific type of immune cell to act and for aromatic chemicals the cell which acts is often CD57 - also called HNK epitope. These are the

cytokines which are found in weird patterns of increased and decreased activity in some studies of autism. These are not antibody producing cells although the activity of these cells can result in increased or decreased production of other immune cells which do make antibodies. Cytokines, or 'natural killer' cells, can also influence signaling which tell other immune cells to switch class such as from IgG to IgE. So someone with an IgE immune response to a food pathogen might have an increased sensitivity during a time when the individual was exposed to a completely different type of pathogen or even something like sunlight. An aromatic chemical and some drugs like penicillin are too small to produce an antibody immune response and these pathogens are called haptens. The activity of the NK cells activate the innate and learned immunity signals which are unique to our individual bodies. This is the immune cell that can respond to fumes or odors. We may be exposed to something chemical that has no odor and we do not even know the body is responding, no apparent reaction. Other people smelling the same air may get watery eyes and sneeze. Others may become ill and vomit.

Food, sound, light and color (pigment) at the most simple level are vibrations (energy). As humans we react to energy. In autism the reaction to energy is disturbed. The immune system has determined that certain vibrations (food, color, sound, light waves) are not self or are associated with a non-self pathogen. In certain lighting, when eating some foods, when smelling some substances, experiencing textures, heat, cold and hearing some sounds, the immune system reacts. This is called a fight or flight reaction of the immune system. You can appreciate this reaction when you think about how it feels to nearly be involved in an automobile accident. You or the driver slams on the brakes and your immune system responds to what you have seen, heard and felt. Your immune system is prepared instantly to react to any injury, real or perceived.

T-cells which determine self or not self can be re-taught. A T-cell which recognizes something as non-self is responsible for the reactions which occur during organ transplant called Graft versus Host disease (GVHD). Enzyme Potentiated Desensitization (EPD) is a therapy used in autism which can re-teach the immune system that some food substances are self rather than non-self. The T-cell is identical but denoted as T+ or T- depending on whether it accepts or rejects a substance. Unfortunately NK cells cannot as yet be re-taught. It is therefore possible to treat some IgG (IgE, IgA) food intolerances but it is still necessary to remove the hapten type food pathogen substance from the diet of the autist and also to look closely at the environment for cross-over reactions, particularly to terpenoids, aldehydes and other pathogenic substances in the environment to obtain optimal results for each individual. This type of natural killer reaction is called opsonization whereas a slightly different natural killer cell immune reaction called anaphylactic results in increased severity of symptoms with each exposure to a pathogen and can potentially result in death. Natural killer immune cell activity is vigorous.

I like to think of the immune system as an army in the body trying to protect us from an enemy. Everything that we can do to protect our army from being exposed to the perceived enemy results in a reduction of frontline troops. We can also sometimes teach the immune system that all of these things are not really the enemy, they just sound and look like the enemy. Therapies which promote healing include teaching tolerance for sound, light and color vibrations such as AIT, Prism lenses, Irlen lenses,

colored glasses, loving touch, massage, cranio-sacral therapy and squeeze therapy. Some enemies have hidden themselves in the body and these must be removed by special forces which can include diet, colon cleanse and chelation therapies. The General who is suppose to oversee the adrenal immune response during a fight or flight immune response is called serotonin. Serotonin has been misguided because the serotonin regulation is controlled by lutein activity. Lutein is perceived by some NK cells as the enemy. Not all of the systems in the body accept this determination that lutein is the enemy. The reproductive system may disagree intensely and thus a conflict arises. The reproductive system and the retinal pigment epithelial system were not available when lutein was determined to be an enemy and serotonin was misguided.

Systems inside our bodies are at war. The axis or dividing line is the immune system and genetic (enzyme) interaction on one side and digestion and the molecules of emotion on the other side all responding to our environment – both internal and external. Some of our genetic information (military intelligence) came from our parents and grandparents and how their immune system and genetics developed in response to their environment. For people who have autism it is more likely than for the general population that our parents or grandparents had immune systems which produced self-antibodies and this is called autoimmunity and the immune cells to which our parents or grandparents produced antibodies are called heat shock proteins. This is often followed by the developing immune system NOT making the same choice or error (evolution) in the next generations. This is a good thing. It means just because our grandparents had arthritis or lupus doesn't mean that we will have arthritis or lupus. [166] 'Diseases pathogenesis which might be connected with the existence of Heat Shock Proteins (HSPs) include systemic lupus erythematosus, reactive arthritis, rheumatoid arthritis, insulin dependent diabetes mellitus, schizophrenia and Alzheimer's disease. There is also indicated a possible activity of HSPs in the pathogenesis of neoplasia, organ ischaemia and inflammation or degeneration.' [115] In fact in autism although the genetic markers can often be identified, the incidence or occurrence for some diseases appears to be greatly diminished. Our innate immunity (genetic information) and our own developing immune system (pre-immunocytes) can correct for errors. This is called transcription or frame-shifting. Our genes are altered to protect us from immune reactions that were unfavorable in the previous generation. Scientific investigation for autism has shown us that the cytokine activity (pre-antibody cells) are different in the autism population. Science is also looking at how this type of immunogenetic response occurs in the animal model. It is finding that using heat shock proteins as vaccine carriers results in an antibody response in the parent and an innate immune response in the offspring. There are problems with this type of vaccine which have been described and which prevent the development of heat shock protein chaperone (carrier) vaccines. However, science has been accidentally using this model for nearly a century. The agarose gel and egg yolk used to culture vaccines contain the heat shock protein structure. Live viruses alter themselves by incorporating DNA such as that of the heat shock protein into their own structure regularly. The heat shock protein crosses all living species. Normally we, as humans, do not get viruses from plant foods. Vaccines resulted in the virus (pathogen) and the heat shock protein coming into our body together. The specific heat shock proteins of the xanthophyll (egg yolk) plastid and agarose chloroplast DNA have a 72 kDa mass. The heat shock protein which protects the chloroplast in plant foods containing chlorophyll b (pre- lutein) is also the 72 kDa. It

is the protein coating on the outside of the chloroplast which tells the chloroplast about the environment and the cells react by producing more or less pigment. In the single celled organism this is the substance that tells the cell about the environment. In the human this is the structure which tells the immune cell when to react and what to react to. The vaccine inclusion of heat shock protein DNA has caused a dilemma – self or not self. The pre-immunocyte selection of a substance associated with the heat shock protein 72 kDa cannot be reversed in the individual. The plant substance associated with the 72 kDa chloroplast (agarose gel) or plastid (egg yolk) is chlorophyll or lutein (xanthophyll) pigment – a substance too small to produce an antibody response, little more than a vibration. Normally the pigment from plant foods is released from the chloroplast in the liver mitochondria, leading to a cascade of metabolic responses involving Cytochrome P450 enzymes, ATP and the production of energy. In the autist, the immune system has determined that the pigment being released from the chloroplast is a deadly pathogen. Autism has been described as a mitochondrial disorder. It is also characterized by a disruption of the Cytochrome P450 system, abnormal phosphorylation and cell energy dynamics. Lutein, and aldehyde - a derivative of lutein breakdown, have been shown to inhibit Cytochrome P450 enzyme activity.

Carotenoids such as lutein are not essential to the human diet. Gut bacteria produce pigments which can be taken up to the eyes and converted to lutein as needed. Other pigments can also be converted to lutein as needed. One of the first books written about autism was 'The Children with the Emerald Eyes'.

The body adapts to the changes which were forced by this immune selection by using alternative enzymes with unusual by-products and less effective utilization of the nutrients from foods. Protecting the brain from the immune response would likely result in an increased response of other heat shock family proteins resulting in elevated glial cell activity in the CSF. This also has been found in autism. It could also result in rate limiting signals for other metabolic activity and in particular lowering levels of phosphotransferases. This also has been reported in autism. Abnormal levels of plant pigment by-products and waste would be observed and this also has been found in autism. Immunogenetic activity could result in changes which are seen as inborn errors of metabolism and these do co-occur with an autism diagnosis. Autism could be viewed as a disorder of pigment metabolism, pterin or pyrimidine autism, a disorder of the mitochondria and all of these suggestions have been made.

Tryptophan amino acid is used to bind pigment and is responsible for some color and odor associated with stool. Immune competition for pigments and inability of Cytochrome P450 enzymes to obtain plant by-products needed for metabolism could contribute to abnormal findings related to tryptophan, serotonin and by-products of these substances. These findings have been reported in the literature. Mevalonate activity, cholesterol metabolism and endocrine function would also be affected by the immune system selection of a pigment pathogen such as lutein.

Treating the cause of autism

Is it possible to begin to understand and treat a cause of autism? Not until the research is funded to validate the theory. Is it possible to fund research which could validate this theory? Not if we expect the funding to come from the sources which would be

revealed as those who enforce the vaccination regimen and who are responsible for the autism epidemic.

Can the Medical Research Council of the UK continue to state that autism is untreatable even after the 2001 review when they were presented with statements that 167 individuals diagnosed with autism had reached symptom free or recovery with a single treatment approach? Can the National Institute of Health, USA deny knowledge of the lutein theory when they were provided with grant application which was reviewed and which revealed case histories of autists who had reached recovery or declassification using a single treatment approach? Can those people who have researched and promoted the opioid excess theory deny that this theory alone is inadequate but relevant to the lutein pathogen theory and that the union of these theories could result in a much better rate of improvement as well as a greater sharing of information within the autism community?

We were wrong, autism was not caused by poor parenting. We were wrong autism is not a psychological illness. We were wrong, autism is not genetic. Maybe we were wrong and autism does not have multiple causes. It may have one cause – mass vaccination and evolution of the immune system responding to vaccine.

Now, what are we going to do - treat the cause or just some of the symptoms? For those of us who find that fighting for vaccine legislation and better monitoring of vaccine manufacturers is our cause then fight for your beliefs in earnest. For some who have seen results with a single supplement or medication stand your ground. But, for me – I have seen recovery and I want to see more recoveries and so I will stand my ground also and fight for understanding of the cause and treatments that together are effective for treating autism. And I will fight to help people understand this condition with all of the scientific words needed to do so.

As we fight to have our voices heard could we stand together as players on the same team for just a moment and in that moment could we acknowledge the work of R. Waring and J. Ngong who a decade ago shared with us that sulfation metabolism is impaired in the autist and acetaminophen is NOT an effective fever reducing drug for many people, especially susceptible infants who are later diagnosed with autism. Whether or not the use of an ineffective fever-reducer has contributed to febrile injury during vaccination or illness for those later identified to have autism has not been evaluated. Pediatricians and family physicians need to be made aware of this finding so alternative fever reducing therapies or drug recommendations can be included in information for parents who choose to vaccinate.

It is because our immune system is trying to protect us that some errors have been made. For some people these errors or choices may be a good thing, protecting us from more serious diseases. For some it is possible that these choices made a fetus viable where the alternative choices would have resulted in a non-viable fetus. In the process of immunogenetic modulation, some enzymes have been inactivated or have become less active. Some nutrients which normally have many ways in which they are used in the body are reduced to serving only the essential activities which sustain life. The survival of the species has taken precedence over social and psychological functioning. To reach our potential, nutrients which are not being utilized must be provided in more readily available forms. It is easy to say that we humans can make vitamin A from beta-carotene but not all humans can do this and not all humans have the right bacteria, enzymes and digestion to produce the chemical compounds needed to meet their optimal potential. Some people with autism are starving for nutrients. They avoid foods which cause an immune response that makes them feel unwell but

in doing so deny their bodies the nutrients needed for metabolic activity. They choose foods which do not make them feel unwell and some foods even make them feel good but ingesting the same foods over and over with little variety can deplete the body's capacity for removing the by-products or waste products from these foods. It is our job as parents, doctors and researchers to find and develop foods and food substances which support the fragile metabolism and unique nutritional needs of this population. It is our duty to support parents in this endeavor.

The development of new therapies in the treatment of autism is expanding exponentially. Some of these therapies work well together. Some therapies when combined are counterproductive. It is the right combination of therapies which must be developed and understood in order for the many to be able to achieve the optimal outcomes which have thus far been available to only the few.

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