

Autism Spectrum Disorder as a Model for Thinking Differently About Patients With Complex Disease

Associate Editor Sidney MacDonald Baker, MD; Joseph Pizzorno, ND, Editor in Chief

Abstract

The rising prevalence of chronic diseases, complex diseases, unknown etiologies, and comorbidities have made efforts to practice curative medicine ever-more difficult to achieve. Autism spectrum disorder illustrates this challenge well as procedures, protocols, and algorithms that were successful in the past are no longer effective. The time has come for our health care system to fundamentally rethink how we assess and care for patients. In this editorial, we present a powerful, patient-centered, data-driven approach.

Introduction

In preparing for the next update (5th edition) of the *Textbook of Natural Medicine*, I asked Associate Editor Sidney MacDonald Baker, MD, to write a chapter on autism spectrum disorder (ASD). Happily, this master of functional medicine and important ASD leader and clinician agreed. However, the draft he sent was a real challenge for me as it did not follow our normal structure for assessment and natural therapies for diseases. I spent hours reformatting his excellent content into our standard format. And I did not like the result. I realized that while the chapter now fit our format, it totally lost his important and revolutionary insights into how to gather information and make sense of the complex story of the patient. So I decided to instead work with Sid to create a format that facilitated communication of his ideas and way of thinking. Several conversations and drafts later, he had created a story so compelling I thought *IMCJ* readers would find of significant value. The following is an excerpt from the much bigger chapter. I hope our readers will also find his way to interacting with and thinking about patients inspiring and enlightening.

Morgan, a Nonverbal 5-Year-Old

My new patient, Morgan, a nonverbal 5-year-old who had been diagnosed with autism, emerged from his car seat with a full bladder and worried face. After a trip to the toilet we met outdoors for a swing test. As Morgan watched the swing support my 160-pound frame, his face shifted from worried to puzzled. I dismounted and lifted Morgan onto the generous web of small rope that formed a sturdy wood-framed seat. His mom—who had traveled with her son from Texas to Sag Harbor, New York, to consult me—was puzzled, too, that this was how our appointment began. With all the tests that Morgan had endured in the 2 years since his autism diagnosis, none had had anything to do with swings.

And this swing was a big one: suspended by a rope through a pulley 30 feet overhead then down to an adjustable tie to an adjacent tree trunk. After drawing Morgan to the secure back of the seat, and the swing a few steps back in its range, I let it go. Morgan's response, reflected in his mom's eyes, was grateful surprise, and soon he was embraced by the full range of the swing's trajectory. I touched the swing seat to give it a half turn and saw the expression on Morgan's face blossoming to one of pure joy. As with all such children who had taken this test during the past 25 years, it was my joy to say, "Morgan, you are a terrific swinger. You are fearless. You gave your smile to those tree branches way up there. I am proud of you." Morgan

smiled and did hand stims as we walked indoors to my consultation room after he had a given me a good workout propelling him high into the leafy world over our heads.

Morgan now knew that this doctor’s visit was going to be different. We toured the adjacent rooms to help him locate himself, then we settled down in my consultation room with its couch and two comfortable chairs. He ignored a big basket of toys, choosing instead to drift between where his mom was seated and the space near my chair, where he reached out to touch me after the first hour. My conversation with his mom focused first on Morgan’s strengths. I had given her a 26-page questionnaire to complete prior to our appointment. I had received, extracted, and contemplated her answers before the visit, sorting all of Morgan’s symptom data by frequency/severity and coding all the symptoms that invited a therapeutic intervention. Page 2 focused on strengths, which is always the place to begin.

Identifying Strengths

In previous doctors’ offices, Morgan had heard conversations about all the things that were wrong with him. Here, he heard his mom’s elaboration of the details connecting his strengths to his medical history (Table 1).

Strength	Mild	Moderate	Severe	Occasional	Frequent	Always
Wants to be liked		x				x
Sensitive to people’s feelings		x				x
OK if parent leaves		x				x
Good with computer						x
Strong desire to do things						x
Especially attractive			x			
Cuddly		x			x	
Happy		x			x	
Sensitive/affectionate		x			x	
Likes to be held		x			x	
Accepts new clothes					x	
Pleasant/easy to care for					x	
Answers parent					x	
Follows instructions					x	
Pronounces words well					x	
Unusual memory					x	
Good with math					x	
Good climbing					x	
Responsible				x		
Good throwing and catching				x		
Swimming				x		
Bold, free of fear				x		
Likes to be swaddled				x		
Physically coordinated	x					

Beginning with a child's strengths lets the child, as well as the parents, know that the practitioner is paying attention to them, celebrating them, and listening to them. The child feels seen by me and might also better see himself through my eyes. That was to be the theme of my relationship with Morgan and his mom: beginning with his strengths and going forward with a focus on him as an individual for every aspect of his treatment for autism.

Morgan's mom had never had a doctor take an interest in the details of her son's symptoms, only those that supported the autism label. But, as I explained to her (pausing to retell Morgan what a good job he had done on the swing), with a patient with autism, as well as with a patient with any chronic disease, it is clinically important to review *all aspects* of the patient's health. It is with these specific details that the functional medical doctor and the family can make joint decisions about options for treatment.¹

Let The Data Speak

Morgan's treatment plan was built on all gathered data and enriched by his mother's narrative as recorded in her completion of the "Chronological History Form." The following six excerpts exemplify the value of such a format:

- **1-2 months:** Breastfeeding well established. Healthy growth. Colicky baby.
- Poor sleeping: Perhaps 3 hours per night total. Great eye contact. Coos. Responsive. Smiles.
- Lifting head: Tends to cry when placed on tummy.

- **7-8 months:** Razzing. First hand clap. Getting into crawling stance. Sits "mostly unsupported," using pillows.
- Immunizations: (DPT and Hib1) "got a fever and felt lousy for a week."

- **13-14 months:**
- 11/20/09 Immunizations. MMR, HepA, pneumococcal, conjugate vaccine. "Sick for days." Seems like it was about a week of sickness. Fever, crying, fatigue, no appetite.

- **December 2009:** Start to shake head "no" and say "na-na."
- Mouths word up to be picked up. Doesn't say it again. Very high activity level. Poor attention: Not gaining enough new skills; development seems to be at a standstill.

- **19-20 months:**
- Morgan says "Dive me dat!" Heard once and not again.

¹ The entire symptom checklist used by Dr Baker is too long to print here. Contact him directly for information on access.

- Extreme hyperactivity: Very intense sensory seeking. Running back and forth, throwing body against the walls. Either under stimulated or over stimulated—never at stasis.
- Toe walking: Flapping.
- **25-26 months:**
- 11/3/2010: Autism diagnosis.
- December 2010: Establishing therapies. Home program. Starts making progress.
- December 2010: The whole family is ill. Morgan is “sick for 2 weeks.” Loses weight. Refusing all foods except bacon, waffles, and noodles. Morgan is “not vocalizing, quiet, and unhappy.”
- We start ABA (applied behavioral analysis). Rapid improvement.
- **45-46 months:**
- July: Eliminate casein. Easy adjustment.
- Headaches stop completely. Constipation improves within 1 to 2 days. Two weeks later, eliminated gluten. No noticeable changes.
- Visits to developmental pediatrician and allergist/immunologist. Concerns: pale, bloated belly, constipation, inflamed ring around anus, allergic shiners, seasonal allergies that seem to last all year, repeated pink eye and upper respiratory infections. Recommendations are not helpful or have no impact.
- Start digestive enzymes.
It relieves the constipation, but his stools become poorly formed; mushy.
- Now he has intermittent diarrhea/mushy stools and constipation.

Treatment Plan

Morgan’s treatment plan at the time of our first consultation was initiated at a clinic specializing in autism and included the following (Tables 2, 3, and 4):

Diets	Doing now?	VERY GOOD	GOOD	NO RESPONSE	BAD	VERY BAD	DON'T KNOW	NEGATIVE,	Comments
Gluten free	x						x		
Casein free	x	x							
Yeast free	x	x							
Specific carbohydrate diet	x	x							

Therapies	Taking now?	VERY GOOD	GOOD	NO	BAD	VERY BAD	DON'T	NEGATIVE,	Comments
Lovaas	X	X							
Occupational therapy			X						
Speech therapy	X			X					

Medication or Supplement (please mark the response with lower case x's)	Taking now?	VERY GOOD	GOOD	NO	BAD	VERY BAD	DON'T	NEGATIVE,	Comments
Digestive enzymes	X		X						
Probiotics	X						X		
B ₆ & magnesium	X						X		
Folic acid	X						X		
Melatonin		X							Sleeps well presently
Multivitamin high potency	X						X		
Vitamin B ₃ (niacin)	X						X		
Vitamin B ₆	X						X		
Magnesium	X			X					
DHA rich oils	X		X						
EPA rich oils	X		X						
Cod liver oil	X		X						
Flax oil	X						X		

Morgan was a boy with many strengths of which one was a very well organized and bright mom. His symptoms, lab work, and response to previous treatment justified optimism in his prognosis. As rich as has been my experience in predicting treatment outcome, picking the winners remains an uncertain task in which positive response to previous treatments counts higher than other variables. The fact of his long list of symptoms of neuromuscular irritability, despite supplementation with magnesium, was disconcerting though perhaps explained by bowel issue that would have limited his magnesium tolerance.¹

Restore the Gut

Actionable findings from lab tests previously ordered at an autism clinic near his home were as follows:

Stool. Dientamoeba fragilis trophozoites, the growth of a noncandida yeast, and Rhodotorula species.

Blood. Nutritional profile showed unmet needs for B vitamins, vitamins A and E, and alpha tocopherol.

Plan

1. Treat the amoebic infection with Trimethoprim-Sulfamethoxazole and Paromomycin as a red herring in his autism spectrum.

2. Cover the antimicrobials with an antifungal—he was already on *Saccharomyces boulardii*.

After a hiatus for treatment by his local physician for a question of strep versus fifth disease, Morgan responded dramatically to immune restoration treatment via probiotics (discussed later), as his mother reported: “Huge improvement in overall immune functioning! Morgan has not been ill at all this summer. He attended 4 separate summer camps (each camp had attendance of 15 to 20 4-yea-olds) and did not become ill! Previously attendance in these activities would result in bacterial and viral infections that would essentially negate his ability to attend. He has NEVER been able to tolerate that level of exposure! He has been at school for 3 weeks and has not become ill. In addition, his seasonal and mold allergies have been very mild: “The immune restoration treatment has not produced significant improvements in symptoms such as weakness in his hands, poor fine motor, balance and attention. Stimming remains.”

Restore Immune Balance

Various supplements were on Morgan’s plan but the turning point came with the addition of helminthic therapy in the form of *Hymenolepis diminuta cysticercoids* after which all of his autism symptoms cleared. He has since emerged as a brilliant and articulate. His mom recently updated me on his progress: “The school recently had a guest speaker, children’s author and Newbery Medal winner Jack Gantos. Morgan was the darling of the event when he answered all of the prized author’s questions with innocent humor and unique perspective. His teacher said he was totally engaged by the author and “on.” The school is slowly recognizing that the strange, socioeconomically disadvantaged, disheveled-looking autistic child that managed somehow to transfer into their exclusive school is actually a benefit to their campus, as he may someday pull up their standardized test scores.

An Historic Perspective for a Comprehensive Model

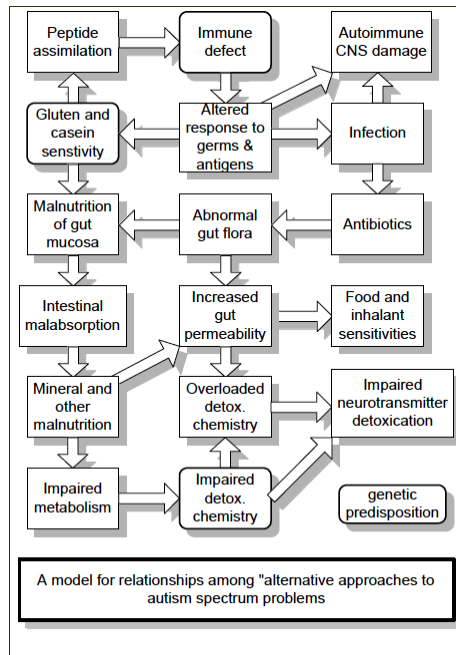
Morgan’s story is typical of the many children for whom the word *restoration* is the key to understanding a therapeutic strategy designed to evoke Nature’s strong impulse toward healing by meeting special unmet needs, and/or eliminating toxins, allergens, and

Hi John, it might not be worth it, but “Genetic” in last box should be capitalized for consistency. Also, an abbreviations list should follow: Abbreviation: CNS, central nervous system.

microorganisms. A consensus among 30 scientists, practitioners, and parents was formed in 1995 when Bernard Rimland, PhD; Jon Pangborn, PhD; and I organized a meeting in Dallas, Texas, in which the spirit among attendees from diverse backgrounds was to find common ground. This diagram summarized the landscape of biochemistry, toxicology, and immunology that could, we agreed, help organize thinking for each of us as we pursued our various efforts to seek actionable

options for individual children affected by autism. Now, more than 2 decades later, our vision has been vindicated by research findings and the kinds of clinical outcomes illustrated by Morgan's response to treatment (Figure 1).

Our meeting took place three decades after the publication of Dr Rimland's book challenging the medical view that had been current since the 1940s that autism was due to cold mothering.² That



challenge unfolded when genetic research was fed by the reality that everything is genetic as indicated by the "genetic predisposition" in the lower righthand corner of the diagram that evolved during 3 days of brainstorming. What was missed in the enthusiasm of advocates of genetic etiology of autism was the impossibility of a genetic epidemic. As the prevalence of autism rose dramatically in the 2 decades, those of us who were at that meeting and came up with the boxes in our diagram felt increasingly justified by our portrayal of the arrows. They give a clear impression that we are dealing with a system which is a different reality an entity. Read the appendix by Crookshank in Ogden and Richards's linguistic classic, *The Meaning of Meaning* (Harcourt, Brace Jovanovich, 1959). It presents a serious concern that the medical profession's failure to make distinctions among names, ideas, and things will lead to increasing problems for a medical profession as their burden shifted from acute illnesses to chronic disease.

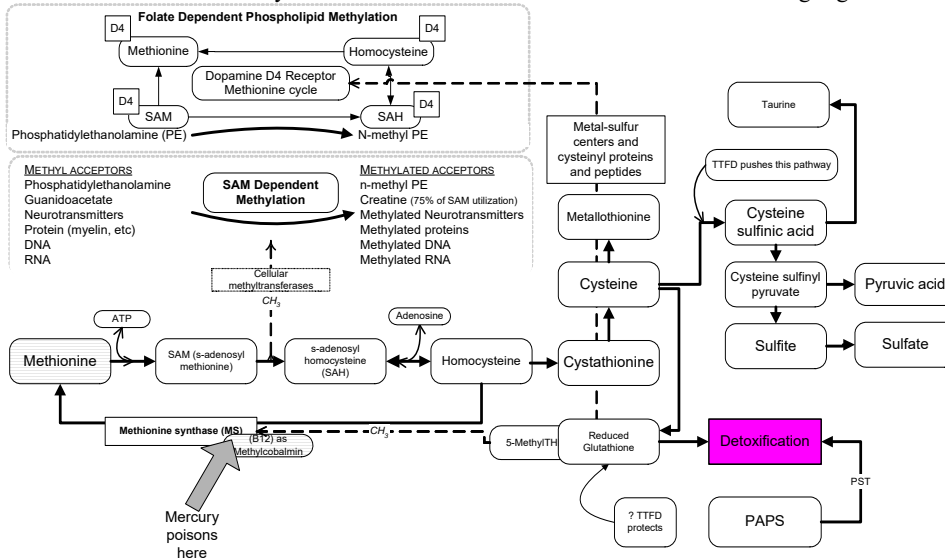
Conventional medical practitioners

seemed incapable of avoiding the language and thinking about autism as if it were an entity that causes symptom until the word *spectrum* entered our citadel like the Trojan horse into Troy.

Using the words *spectrum* combined with *autism* brought a simplicity to thinking about children with the defining symptoms in behavior, speech, and movement that opened our minds to the full picture of symptoms that drew attention to immune and digestive disruptions. For parents this shift gave rise to a dispiriting feeling as the diagnostic label lost the implication that "we know what it is" to one of being lost in a poorly defined *space*.

Definition of that space came as our original meeting in Dallas in 1995 gave rise to an organization to which Dr Rimland gave the name Defeat Autism Now! (DAN!) (Figure 2). Keen to meet again, we were able to afford future meetings by inviting an audience of parents, professionals, and scientist to come, listen and participate. Richard Deth, PhD, of Tufts University pointed us to Jill James, PhD, of the University of Arkansas to add deep insights into problems of oxidative stress and the particular burdens of certain toxins (lead, mercury) on the chemistry in which glutathione was the threatened moiety in a biochemical vicious cycle breakable only by large doses of such nutrients as methylcobalamin and methyl folate. Here is

the chart that Drs Deth and James helped me draw. More biochemists and immunologists have since come on board and stayed as the Autism Research Institute's role as a meeting organizer



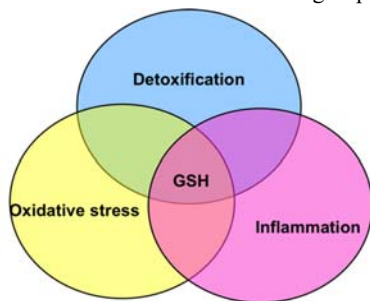
shifted back to support of research and a new entity, the Medical Academy for Pediatric Special Needs, inherited the role of training physicians in the biochemistry, toxicology, and immunology that provide the basis for medical management of individual children in the autism spectrum.

Dan Rossignol, MD, has maintained his leadership role in the teaching program and in collaboration with Richard Frye, MD/PhD, published a stream of papers offering validation of the common sense of the approaches outlined in this chapter as well as peer-reviewed research supporting their scientific basis.

Readers who have a strong affiliation with the Institute for Functional Medicine (IFM) will recognize in this chapter a strong influence shared by IFM, DAN!, and MAPS. IFM did not sponsor a meeting focused on children's health until 2017 and as of this writing the future of such a focus is uncertain.

DAN! and MAPS path to discovery of effective treatment options has yielded dramatic clinical response in the children under the care of physicians who have been trained in the commonsense application of dietary and medical interventions aimed at finding in each individual child those elements in diet, supplementation, natural, and pharmaceutical medicine that evoke Nature's buoyant impulse toward healing. Going back to in 1967 a registry kept by Autism Research Institute (ARI) under the leadership of Dr Rimland and Steven Edelson, PhD, recorded ratings of pharmaceuticals, nutritional supplements and dietary measures has yielded a treasure trove that should be examined by readers of this chapter.³ It offers the clinician a detailed picture of the failure of conventional pill-for-an ill practice and strong support for natural remedies plus antifungal medicines.

Dr Rossignol's literature review cited later are an invaluable resource but ARI's presentation of good, neutral, and bad responses to various treatments given to children in the autism spectrum offers on a single page a clear message that will shorten the learning curve of any practitioner who may feel intimidated when crossing the bridge to the seemingly unfamiliar landscape of the autism spectrum. Once there, it will become clear to the explorer that the territory is not some exotic colony beyond the margins of mainstream medicine. On the contrary, autism is simply the core of pathology found in the most vulnerable members of our culture who exposed to the stressors relating to micro- and commensal organisms, detoxification, and oxidative stress. After our DAN! group had welcomed new participants the above diagram began



to coalesce around a theme that was to match that of the evolving understanding about all chronic illness and support a view of treatment options that is more of a guide than a shopping list. The aforementioned diagram (Figure 3) could be replaced in our current way of thinking by a single sentence:

“While some would say that “everything is autoimmune until proven otherwise” reading the chapters in this book written by world leaders in autoimmunity brings one to the conclusion that everything after all is infectious until proven otherwise

(including autoimmune diseases).”⁴ I believe that to be the most important sentence written in the field of chronic illness in my five decades as a doctor. Its author, Dr Yehuda Shoenfeld, embraces the decisions we clinicians make every day and the way we speak with our patients and colleagues about options for prevention and treatment of chronic illness. The language spoken by those who care and are cared for in contemporary culture is full of particularities. These items are embodied in words such as *disease entities* that preserve an ancient mythology that is kept alive in the classification of disease. Our system for naming illnesses wrongly guides our thinking about concepts by modeling them on the Linnaean categorization of live or once living entities. How can we escape the muddle embodied in the confusion of concepts with entities that is so deeply engrained in the way we name and blame diseases as if they are things that cause symptoms?

Causes of Complex Disease

Loss of Immune Tolerance

Dr Yehuda Shoenfeld statement guides us to grasp that, whatever name we give it, the cause of chronic illness is the loss of immune tolerance. If everything we see in the realm of chronic illness is a manifestation of the loss of immune tolerance, then restoration of immune tolerance is the goal we strive to achieve. Nowhere more so than in the autism spectrum do we find so rich a set of symptoms presenting the ways sensitivity can be expressed in the human. Nowhere more so than in the autism spectrum do we discover resources for the recovery of immune tolerance that comes with the answer to a conceptually simple question: Does this individual have a special unmet need to get, avoid or be rid of something, which, if taken care of would favor nature's buoyant impulse toward healing?

The word *spectrum* came into contemporary medical parlance as did the Greeks' horse into Troy giving medical professionals a secure metaphor while parents were deprived of the (false) security of knowing the precise name of the “thing” that is causing their affected child's

problems. Autism's history is full of cruelty starting with a consensus formed in mid-20th century that children who could not learn speech and were devastated by odd postures and behaviors and troubled by hypersensitivity to noise, touch, smell, taste, and bright lights were this way because of care given by "refrigerator mothers."

As second year medical students at Yale in 1962 we were rarely shown movies, perhaps considering the risk of sleep. We witnessed two films at the Child Study Center. In one the dignified doctor explained to the parents of a child with autism that it was his mother's fault. In another a developmentally impaired child's parents were cautioned to "not look for answers." We students were told that it would be unlikely that we'd ever see an autistic child, rare as was that disease. I had seen but not grasped institutionalized individuals during my internship's rotation in the Southbury Training School. My first contact with an autistic child was when the first of a speechless 14-year-old resident of another institution shattered the bridge of my glasses with a stroke to my nose. The precision and force of that hit produced in me the afterthought that he was saying to me "You are looking into me with your ophthalmoscope, but you are not seeing **me**." I was struck and resolved to learn from other children I would meet.

One was referred to me by a former patient in a prepaid health care plan where I practiced for 7 years leading up to my directorship of the Gesell Institute of Child Development. This child of my patient's neighbor had developed a roaring case of eczema following a course of antibiotics. Could I see the child for the minute needed to cover a prescription for nystatin? I agreed, saw the child's skin in a quick visit, called in the script, and 6 weeks later, my former patient reported that the eczema was cured and so was the child's autism. It was the dawn of my understanding that, within Dr Yehuda Shoenfeld's model, proliferation of yeasts gave a stimulus in which skin inflammation resulted in a case of mistaken identity in which immune defenses against yeasts targeted the child's skin as they had also been doing all along to her senses.

Is autism a matter of autoimmunity where yeasts are the exclusive trigger to an inflammatory response that affects the brain? No, but such a consideration deserves priority among all diagnostic and treatment considerations. Is autism the exclusive manifestation of the loss of immune tolerance evidenced by the increase of chronic illness in our population? No, but the increase in attention-deficit disorder, arthritis, asthma, autism spectrum disorder, autoimmune disorders, developmental/learning disorders, cancer, cardiovascular problems, cerebral palsy, cystic fibrosis, diabetes, epilepsy, food allergies, obesity, respiratory allergies, sickle cell anemia, and spina bifida is more likely to have 1 cause than different causes for different diseases.

Unity of Disease Causes

The perception of unity in diseases with diverse presentations is easy if we notice that all living things share the same fundamental challenges to their health: bugs, toxins, and fire. In more technical language these threats have to do with the following:

- Our interaction with internal and external predatory and commensal organisms.
- Detoxification and ridding of our own metabolic end-products and environmental toxins.
- Oxidative stress as expressed in the protection from being burned by our own metabolic fire.

The appealing odor of the essential oils of plants supports the belief that the ancient substances offer themselves to us for our use as they have for plants in the aforementioned 3 domains since the dawn of life. This textbook does not have an independent chapter discussing essential oils which are known to many readers who value their role in healing. I will only add here that the market places as I have found it suffers from the same enthusiasm as contaminates thinking in

both conventional and natural medicine: an enchantment with complexity. Purveyors of essential oils tend to multiply the options beyond the capacity of beginners and fail to promote the fact that a dozen or so such oils will do to cover the bases for which these oils were evolved in plants long before so-called higher organisms evolved. These oils addressed the same problems that have existed for living organisms since our planet became oxygenated and referred to previously as bugs, toxins and fire. A selection of a dozen or so oils may be used therapeutically by patients willing to read and seek advice on how to select the ones that together cover the aforementioned bases. The fact that essential oils, being low molecular weight lipids, pass through the skin and may travel from the bottom of a person's feet to their brain in 20 minutes is especially important in the context of knowing that any contaminants of such oils may join them in that passage. Thus shopping for oils must be guided by a need to assure documentation of purity.

The simplicity of the challenges to health of bugs, toxins and fire argues for a corresponding simplicity in considering the options for all individuals with chronic illness. The word *special* inserts itself in the thinking—as stated previously—needed to solve the mystery of a person's illness. The term *special needs* has been around for a long time in the delivery of social and educational services for children and adults. Natural medicine's focus is treating not the disease but the individual where "special needs" applies to therapeutic options. We begin in our consideration of each child's options with the 1 question—about unmet special needs to get, avoid or be rid of items—that will favor healing. The answers to such a question come from the patient's narrative, the implication of certain symptoms, laboratory testing, and thumbs testing defined as the introduction of a therapeutic trial in which a positive result generates thumbs up, and negative response, thumbs down, a mixed response, 1 thumb up and 1 down, and no response: thumbs sideways. Of all the tests in my toolbox, the thumbs test is the most easily explained and interpreted by patients and parents.

Shifting Thinking

The attachment of the word *spectrum* to autism reveals a new way of thinking in medicine and compatible with that of naturopathic medicine. The word *spectrum* joins affected children more loosely than a designation of a disease name. It was introduced in medical writing in 1985⁵ but did not enter common lay and medical parlance until late in the 1990s. The word may be applied to all diseases but its use belongs exclusively to autism in the sense that referring to someone as being on or "in the spectrum" is universally understood as "autistic."⁶ A spectrum is a continuum: both wide and deep. It is a metaphor embracing various features of different individuals. The traditional medical way of speaking and thinking about a disease used the word *entity* and carried the thought of something "well defined" by a limited number of symptoms or lab tests.

Shifting from *entity* to *spectrum* directs thinking away from selection of a treatment for *this disease* to tailoring treatment for *this individual*. Failure to understand the implication of this shift creates misunderstandings among doctors and patients. The confusion starts with the implication that a disease is a thing. Diseases are not things, but ideas we form about people grouped by similar symptoms and lab tests. The danger in this confusion is neglect of the fundamental scientific principle in biology—and medicine—that each person is unique and that the individual, not the disease, is the proper target of treatment. Understanding that ASD happens to an individual with manifestations on a spectrum of severity allows us to better understand chronic disease and other challenges to human health in the modern age. As different as conditions such as Alzheimer's and autism may look to specialized

practitioners, they may be much more similar than we think: the manifestation of environmental, social, and epigenetic conditions that are discussed in the full chapter.

Conclusion

We are in the midst of an epidemic of inflammatory disease with environmental causes. Autism is probably the most malignant and research on its origins has been delayed by mistaken searches for genetics while it became clear that such could simply not be the case. We continue to hear that “the cause” has not been found so that a cure must await further research. We who are on the front lines of functional medicine must do our best to learn from each other as we treat each individual patient, case by case, and find ways of supporting nature’s strong impulse toward healing. We must tailor our treatments to the needs of each individual patient while heeding the experience of our peers on the familiar landscape of detoxification, microbes, and oxidative stress. Morgan’s mom’s report on the way his school now values his gifts is testimony to what a determined parent and clinician can do together to lessen symptoms and even cure autism spectrum disorders.

In This Issue

Associate editor, Jeff Bland, PhD, FACN, FACB, begins this issue with a thoughtful discussion of the causes of diseases which correlate with age. Note I did not say “Disease caused by aging.” Clearly, there are many strategies we can follow to dramatically decrease the risk of disease and dysfunction as the years add up.

George W. Cody, JD, MA, continues his series on the brave and insightful men and women who developed the foundational concepts of natural/integrative/functional/holistic medicine. This article focuses on the evolution of the ideas of vital force and the inherent healing within all of us.

John Weeks continues to document the slow, but relentless, interest and engagement of employers and insurance companies in how our medicine can solve the healthcare crisis. I find quite encouraging the growing body of evidence of the cost and clinical effectiveness of this medicine.

Jeremy Appleton, ND, provides a commentary reviewing the research supporting the old-time naturopathic adage, “Disease begins in the colon.” Critical that clinicians fully understand that the role of gut dysfunction goes way beyond nutritional deficiencies and seems involved in some way in virtually all disease.

Managing editor, Craig Gustafson, interviewed nutritional medicine expert and teacher, Alan Gaby, MD. I remember with great appreciation the monthly nutrition study club led by Alan and Jonathan Wright, MD, back in the late 1970s. Their understanding of biochemistry and the critical role of nutrients was hugely influential in my understanding of medicine. Especially important has been Alan’s unyielding commitment to objectively evaluate nutrition research.

It would be hard to overstate the huge impact of Larry Dossey, MD, who powerfully advanced our understanding of the role of spirituality and consciousness in health and medicine. Craig interviews him for our enjoyment and edification.

I like best about the case report by Emma M. Neiworth-Petshow, ND(c), Carrie Baldwin-Sayre, ND, that they address the health of their complex patient, not only disease name. More than 20 years ago, the *Textbook of Natural Medicine* included the first chapter on the clinical application of measuring urinary organic acids (Thank you, Braille and Lord). I thought it was brilliant and a signpost for the kinds of laboratory testing we need to understand the

Commented [JP1]: John, we need to see if she graduated.

uniqueness of our patients. Gail Clayton, RPh, MS, CNS; Heather A. Carrera, MS, CNS; Edward R. Martin, MBA, CFP; Demetrice Morrison, MPH, MHA, RDN, LDN; Abubakar A. Bawazir, MS, provide us an excellent Case Report on how transformational this can be for our patients. Eleni Pellazgu, PhDc, MSN, APN, FNP-C; Michael M Rothkopf, MD, FACP, provide our third case report and demonstrate how nonpharmacological (no matter how “natural”) care can produce seemingly unattainable results.

BackTalk by associate editor, Bill Benda, MD, brings to our attention a cause of disease susceptibility I suspect most of us would not usually consider.

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