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A HOLISTIC APPROACH TO IMMUNE DYSFUNCTION OF AUTISM SPECTRUM DISORDERS

BY HARRY HONG, PHD, OMD, LAC

INTRODUCTION

Autism spectrum disorders (ASDs) are a heterogeneous group of neurodevelopmental disorders. Although the etiology of ASD remains unknown, genetic, prenatal and postnatal variables are all considered possible influences.¹ Prenatally, autoimmune attacks to fetal brain tissue through maternal autoantibodies have been reported.²⁻⁵ Postnatal and environmental triggers may include mercury,⁶⁻⁸ infectious agents⁹⁻¹¹ and vaccination.¹²

Recent research has described autism as a chronic, dysfunctional and proinflammatory state in the brain tissue.¹ Considerable evidence highlights the role of increased proinflammatory cytokines in the neuroinflammatory state of ASD,¹⁴⁻¹⁸ while studies of autoantibodies in the brain tissue of children with ASD also strongly point to autoimmunity.¹⁹⁻²³ Clinically, ASD patients show not only neurological and psychological symptoms but also gastrointestinal (GI) and allergy symptoms.^{24, 25} Studies indicate that a high prevalence of non-IgE-mediated food allergy in ASD children²⁶ and immune responses such as non-IgE-induced mast cell activation may contribute to disruption of the gut-blood-brain barrier which, in turn, may trigger behavioral symptoms.²⁷⁻²⁹ ASD children also have been found to have a significantly reduced level of plasma IgG and IgM, suggesting an underlying defect in the Th2 immune response.³⁰ Taken

together, these findings suggest that ASD may, in fact, be a systemic disease characterized by an abnormal immune response.³¹ A better understanding of the involvement of the immune system is therefore urgently needed in searching for solutions to treat ASD.

Current biomedical treatments for ASD include symptom control, anti-inflammatory approaches, and gastrointestinal and detoxification therapies.^{32, 33} However, effective and reliable therapies are lacking to help correct immune dysfunctions such as allergies, sensitivities and chronic viral and bacterial infections. One difficulty in treating immune dysfunction includes the fact that there are multiple subgroups of immune dysfunction, each requiring a different treatment protocol. The lack of reliable immune biomarkers for each subgroup poses additional difficulties.^{34, 35} Moreover, because ASD involves multiple body systems, it can be challenging to coordinate the timing and use of a variety of therapies.

Nonetheless, for individuals with ASD who are not fully responding to biomedical treatment, it is likely that immune dysfunction needs to be addressed. The use of complementary and alternative therapies to treat ASD-related immune dysfunction has been well documented.^{32, 36} This article discusses individualized/informational Body-Mind Therapy (iBMT), a comprehensive holistic program that uses a variety of energetic and nutritional therapies to treat complex

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disease patterns. *i*BMT can be used in children with ASD to address elements of immune dysfunction such as allergies, sensitivities, autoimmune response, and chronic infections such as Lyme disease. This unique approach, which can be used in a complementary manner alongside biomedical treatment, emphasizes attention to the timing, integration, and synergistic effect of various noninvasive natural therapies, including homeopathy and traditional Chinese medicine (TCM). The article includes a detailed case report that illustrates how this holistic approach helped a five-year-old boy completely recover from ASD and pervasive developmental disorder (PDD).

SELF-HEALING SYSTEM AND YIN-YANG THEORY

Both homeopathy and TCM believe that our bodies have a self-healing system that is able to correct any unhealthy conditions we may encounter in our lives. When the self-healing system is disrupted, disease occurs. Thus, the major goal of homeopathy and TCM is to restore the self-healing system through a balancing approach so that the body can recover from the disease state. This perspective differs substantially from the conventional Western medicine viewpoint on health and healing.

The balancing concept of healing is derived from ancient yin-yang duality energy theory. Yin-yang forces cover every aspect of our life, including food, environment, and lifestyles. From this perspective, disease states represent an imbalance in the body's yin-yang forces, and rebalancing is the only way to restore the body's self-healing ability. The yin-yang system, in terms of physiology, refers to the processes of degeneration-inflammation or regeneration-detoxification. Degeneration (that is, low body temperature, slow circulation, and slow tissue growth) is a yin process in disease pathogenesis (corrected by the yin force of regeneration), while inflammation (high body temperature, tissue redness, and overgrowth) is a yang process (lessened by detoxification, a yang force). Because either too much or too little of a cytokine may result from the imbalance of yin and yang forces in the immune system, a major advantage of using self-healing theory and the yin-yang balancing approach to treat ASD is that it may help to balance cytokines and immune function whether or not specific biomarkers are available.

THE ROLE OF TOXINS AND STRESS

Holistic medicine views immune dysfunction as the result of two major factors, toxins and stress, which also reflect yin-yang duality philosophy (Figure 1). Toxins, a pathogenic yang force, accumulate inside the body and can cause a range of health issues, including inflammation, liver dysfunction, and hidden infections, which may lead to a vicious circle in which further toxin accumulation takes place. Toxins eventually cause immune dysfunction, which can lead to the inflammatory state that characterizes ASD. Considering that thousands of petroleum-based chemicals have been developed and released into our environment since World War II, it is interesting to note that there has been a marked increase in allergy and autoimmune disorders over the past several decades.^{31, 37} Moreover, the dramatic increase in ASD cases coincides with the rising incidence of other immune diseases. If one defines a generation as about 25 to 30 years, the present cohort of ASD children belongs to the 3rd or 4th generation since World War II, and was born to parents who themselves grew up in a toxic environment. Studies reporting a correlation between family history of autoimmune disease and ASD^{19, 20} and research on maternal anti-fetal brain autoantibodies²³ strongly suggest that prenatal factors, most probably combined with the toxic environment (epigenetics), play a role in ASD pathogenesis.

On the other side of the yin-yang spectrum, chronic stress, a yin pathogenic force, can cause the hypothalamic-pituitary-adrenal (HPA) axis to weaken and eventually fail, which may play a role in immune dysfunction as well as tissue degeneration and slowdowns in the tissue repair process.³⁸ This can directly contribute to damage of the gut-blood-brain barrier and the brain tissue itself. Stressors can include long working hours, emotions, and physiological problems such as insufficient sleep, pain, infections, allergies, and food intolerances. ASD children are especially likely to experience physical stresses such as infections, food indigestion, and pain.

Facilitating detoxification to decrease inflammation is a crucial healing strategy, and approaches to address stress and promote tissue regeneration are equally important. Holistic treatment strategies for ASD may therefore include detoxification, anti-inflammatory measures, digestive support, antibacterial and antifungal treatments, and adrenal support. However, it can be challenging to decide when and how to use these therapies. Clinically, we often see ASD children taking 20-30 combined medications and nutritional supplements per day. Even when most of these are natural supplements, long-term excess supplementation may cause physiological as well as financial stress. More importantly, sensitivity to supplements can pose a problem in treating children with ASD. Because many ASD children show signs of allergy, food intolerance, and GI inflammation, some children do not respond well to common supplements, either reacting adversely or displaying less than optimal results.

THE THREE STAGES OF *i*BMT

*i*BMT is a three-stage multilayered program of healing. The three stages are the chaotic stage, the detoxification stage and the regeneration stage (see Table 1). The central characteristics of *i*BMT are 1) its focus on timing and sequence as guides for the three-stage healing process; 2) a particular emphasis on the chaotic stage and a specific treatment plan for this stage; 3) the synergistic use of different energetic and natural therapies, including homeopathy, TCM, immune system reprogramming (ISR), energetic emotional therapy, enzyme therapy, and nutritional supplementation; and 4) precise prescription of remedies and supplements supported by electrodermal screening (EDS) technology.

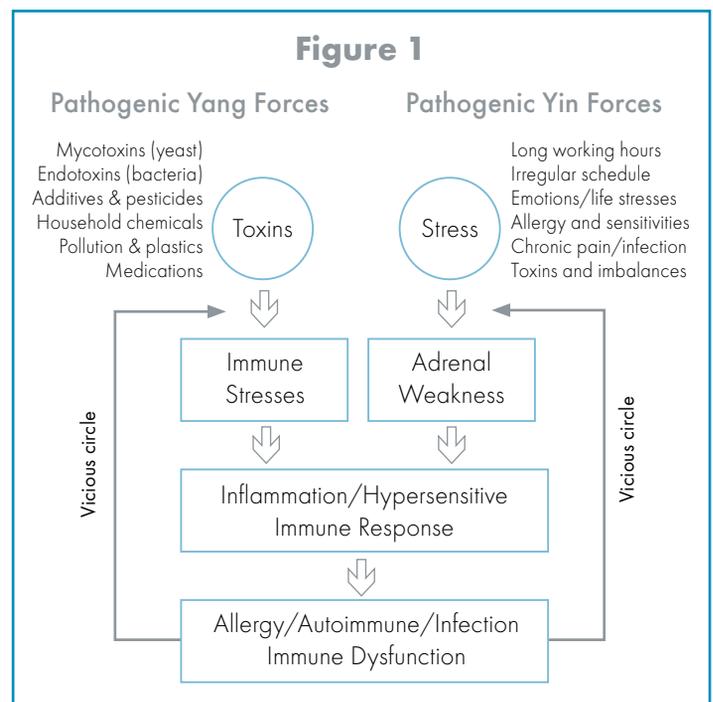


Table 1. Individualized/Informational Body-Mind Therapy (iBMT)
 A three-stage multilayer holistic program for immune dysfunction and chronic disease

| Healing Stages | Layers | Therapies |
|---|---|--|
| I. Chaotic Stage <i>Characteristics:</i> High inflammation, toxins, autoimmune response, and allergies. <i>Clinical Signs:</i> Sensitive to many substances; limited response, no response, or adverse response to many therapies. | Chaotic Cellular Communications: Correct and help the body deal with stress | Homeopathy |
| | Autoimmune Response and Allergies: Desensitize immune response, allergy and sensitivities | Immune system reprogramming (ISR) |
| | Cellular Energy Depletion: Recharge cellular energy | Homeopathy, flower essences |
| II. Detoxification Stage <i>Characteristics:</i> Inflammation and sensitivities are reduced. The root issues for the major complaint remain. <i>Clinical Signs:</i> Symptoms are lessened but still there, off and on. | Emotional Blockage: Clear emotional blockages and open associated meridians | Flower essences, Emotional Freedom Techniques® (EFT), homeopathy, ISR |
| | Structural Blockage: Address physical and energetic blockages in spine, joints, and muscles to support detox and drainage and help the body's systems function | Craniosacral, osteopathic, chiropractic techniques |
| | Candida and Intestinal Pathogens: Clean the gut by eliminating unwanted yeast, bacteria, parasites, and other pathogens | Enzyme therapy, pulsed electromagnetic field therapy (PEMF), homeopathy, herbs |
| | Infectious Factors: Systematically address infectious agents such as viruses, bacteria, yeast, mycoplasma, and the agent that causes Lyme disease | PEMF, homeopathy, herbs |
| | Detox and Metabolic Blockages: Address methylation and other liver detox functions; support ATP production and energy metabolism | Nutritional supplementation, homeopathy, herbs |
| III. Regeneration Stage <i>Characteristics:</i> Major issues are resolved. Inflammation and toxins are low. Tissue repair and regeneration become the focus. <i>Clinical Signs:</i> Symptoms are under control. Look for long-term solution. | Specific Toxins: Facilitate elimination of specific toxins such as heavy metals, petrochemicals, radiation, and pesticides | Homeopathy, nutritional supplementation |
| | Nutritional Deficiencies: Support cellular/organ metabolism with vitamins, minerals, essential fatty acids, amino acids, and antioxidants | Nutritional supplementation |
| | Leaky Gut Syndrome: Support intestinal lining regeneration | Homeopathy, PEMF, herbs |
| | Hormonal Imbalance: Correct adrenal, thyroid, and female hormone balance | Homeopathy, herbs, nutritional supplementation |
| | Organ/System Degeneration: Systematically support, repair and regenerate organs and systems | Nutrition, PEMF, homeopathy, herbs |
| Miasm and Genetic Factors: Address miasms | Homeopathy | |

Note: The sequence of layers differs for each patient within each stage and is therefore individualized. Although there is also some overlap between stages, iBMT focuses on each stage sequentially.

Chaotic stage: Many ASD children show severe depletion of cellular energy and low cellular metabolism. Although no reliable biochemical tests are available to identify these conditions, a closely related diagnosis is mitochondrial dysfunction (MD). Because the mitochondria are the “powerhouses” of cells, mitochondrial dysfunction may result in low cellular energy and metabolism. Although the etiology of MD is generally believed to be related to genetics or mutation, recent studies suggest that autoimmune factors may also play a role.^{39, 40} I, therefore, use the term “chaotic stage” to describe a condition characterized by:

1. chaotic cellular communications, including high toxicity, high sensitivity (and other abnormal immune responses), a high inflammatory immune response, low cellular energy and metabolism, and an imbalance of signal molecules such as cytokines, neurotransmitters, and hormones;
2. a limited response to many detoxifying protocols; and
3. adverse or allergic responses to many supplements.

The *Shang Han Lun*, a 2000-year-old medical classic from the ancient TCM literature, states that a systematic approach is needed to treat complicated disease that affects multiple systems, and that “outside” issues must be treated prior to working on “inside” issues. A similar description in Western culture is the model of an “onion of disease” that has to be peeled layer by layer. The chaotic stage, characterized by immune dysregulation and cellular miscommunication, is clearly the first “outside” layer of the onion that has to be addressed before other “inside” layers can be treated. Clinical experiences in treating ASD children suggest that until the problems of sensitivity and low cellular energy are solved, issues of toxicity and inflammation cannot be properly addressed.

Detoxification stage: Management of the first layer of problems calms the immune system, reduces sensitivities, restores cellular communications and allows the body to respond to other therapies more efficiently. At this point, it is time for the second stage of iBMT, the detoxification stage. The main purpose of the therapies used in this stage is to help the body detoxify from *Candida* overgrowth and other bacterial/fungal imbalances, detoxify from heavy metals, and support digestion and the liver.

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Regeneration stage: The third stage of iBMT is the regeneration stage, in which the body regenerates tissue damaged as the result of inflammation, infection, or detoxification. Regeneration focuses primarily on the nervous and digestive systems, that is, the gut-blood-brain barrier.

ADDRESSING THE CHAOTIC STAGE

Helping patients resolve the chaotic stage is crucial in treating the root causes of ASD. Three modalities—electrodermal screening (EDS), modern homeopathy, and immune system reprogramming (ISR)—are particularly useful in addressing the chaotic stage and are described in greater detail below.

Electrodermal screening: EDS is a computerized method of electrodermal testing that emerged from electroacupuncture according to Dr. Voll (EAV). EAV, developed in the 1950s by German physician and acupuncturist Reinhold Voll, combines acupuncture theory and galvanic skin response (GSR) technology, a method that measures the electrical resistance of the skin. Voll researched GSR on the skin along acupuncture meridians and developed a standard test on acupuncture points for energetic balance of each meridian.^{41,42} Original EAV is able to provide three types of information: 1) balance status of each meridian (balance testing); 2) remedies to balance imbalanced meridians (medicine testing); and 3) substances that disturb the balance of meridians (allergy testing).⁴³

Subsequently, computer technology was introduced into the field of EAV. Computerized testing can now access information about different meridians from one single acupuncture point. A database added into the test has further streamlined the medicine testing and allergy testing components. As an outcome of these changes in technology, the purpose of using computerized EDS devices has shifted from meridian assessment to information inquiry. EDS is not a substitute for a thorough medical exam, nor does it provide a medical diagnosis, but it can serve as a tool to help practitioners gather energetic information from patients and facilitate clinical decisionmaking.

Although EDS has gained popularity among health practitioners worldwide, it has received limited attention from researchers. One of the few studies on EAV includes a 1985 study by the UCLA School of Medicine examining the correlation of EAV lung meridian testing with lung cancer diagnosis. In the double-blind, controlled study, lung cancer diagnosis was significantly correlated to abnormal lung meridian readings with EAV testing as compared to controls.⁴⁴ Another single-blind case-control study involving patients with diagnosed chronic inflammatory demyelinating polyneuropathy, performed by the Institute of Biologic Research in Houston, Texas, found a statistically significant correlation between diagnosed peripheral neuropathy and EAV meridian disturbance.⁴⁵ These two studies suggest that EAV meridian testing has a direct relationship to specific aspects of anatomical structure or physiological functions in the body.

EAV technology can be used to assess sensitivity to potential allergens and facilitate homeopathic remedy selection. In this regard, EDS has made important contributions to modern homeopathy and allergy desensitization techniques for the treatment of ASD and other complicated disease conditions. As of 2001, estimates indicated that more than 500 EAV devices were being used in the United Kingdom to assess allergen sensitivities, with even more widespread use of EAV for these purposes in the United States and other European countries.⁴⁶ EAV testing for sensitivities remains somewhat

controversial, however. Few rigorous scientific studies are available to validate EAV medicine/sensitivity testing and the results, thus far, have been contradictory.⁴⁶⁻⁵¹ Nonetheless, because EDS is noninvasive, easy to perform, and quick, its clinical advantages in assessing ASD children are obvious. Children need only hold metal bars in their hands for a couple of minutes to furnish a complete whole body assessment, which provides information about meridian status, remedy recommendations, and stress factors (including allergies). A specific treatment plan can then be derived from the assessment, and some EDS devices are equipped with automatic testing protocols that allow practitioners to develop more customized programs for their patients.

Modern homeopathy: Homeopathy is a form of alternative medicine developed by German physician Samuel Hahnemann in the late 1700s. Practitioners treat patients with highly diluted remedies following the basic principle known as the “law of similars” or “like cures like.” Classical homeopathy uses “constitutional” remedies chosen through a process called repertorization, which relies on careful observation of the patient’s symptoms, determination of the patient’s basic constitution, and identification of the patient’s underlying predispositions or “miasms.”⁵² However, because modern disease patterns are so complex and the healing process can be undermined by the huge effect of environmental toxins and stress, many practitioners now use the modern homeopathic approach. Modern homeopathy, which is symptom- or disease-based, furnishes more complex remedies in multiple potencies that synergistically treat disease.⁵³ A large body of clinical^{54,55} and basic science research^{56,57} has tested homeopathic medicine, and several clinical trials have demonstrated its efficacy for the treatment of various illnesses.^{58,59} Due to the overwhelming safety record of the homeopathic approach, homeopathic medicine is generally regarded as safe by the FDA.

Homotoxicology, developed by German physician Hans-Heinrich Reckeweg (1905-1985), is a special branch of modern homeopathy that addresses toxins and their effect on the pathogenesis of chronic diseases. Homotoxicology views disease as an accumulation of toxins. Disease results from a series of reactions initiated by the body’s self-healing system to either eliminate the toxins or compensate if elimination is not possible. The major goal of homotoxicology-oriented treatment, therefore, is to use homeopathy to help the body eliminate toxins and restore bodily functions.

Homeopathy is one of the major therapies available to treat the chaotic stage in ASD children. Clinically, homeopathy addresses the chaotic stage by (a) recharging cellular energy, (b) improving the drainage system, and (c) controlling allergies and sensitivities. To recharge depleted cellular energy and activate cellular metabolism, modern homeopaths usually use special remedies such as sarcodes and tissue salts. In Greek, the term “sarcode” means fleshy. A sarcode remedy is made homeopathically from a minute portion of tissue, cells or molecules taken from healthy organs. Sarcodes are quick acting, and only a minute amount may have a profound effect on metabolism and energy balance.

The next step would then be a series of detoxification treatments using homeopathic nosodes, which are used to stimulate the body’s healing system to detoxify. A nosode (from the Greek word “nosos,” meaning disease), is a homeopathic preparation made with material from diseased tissue or toxins. Homeopathic nosodes are usually made with an extremely high level of dilution, in which

barely one single molecule of the active ingredient remains present. Drainage remedies, another concept from homotoxicology, can also help organs and systems to drain toxins.⁶⁰ Some modern homeopathic formulas contain low potency ingredients that originate from herbal and mineral sources and are considered safe as nutritional supplements. Because the medically active ingredients in homeopathic remedies occur in such minute amounts, homeopathic remedies are considered nontoxic; with no known side effects, this makes them extremely safe for adults and children.

Homeopathy has a long history of treating allergy and sensitivities. As matter of fact, conventional allergy desensitization shots derive from the homeopathic principle of treating “like with like.” Both homeopathy and modern allergy desensitization utilize minute doses of substances that might cause symptoms in larger amounts, in order to prevent or treat a hypersensitive immune function. The differences between these two therapies are that homeopathy uses much smaller doses of allergens and not only addresses the allergen itself but also treats other allergy-related symptoms. Homeopathy also views allergy not as the root problem but as one of many symptoms linked to deeper issues such as toxicity and immune stress.⁶¹ Clinical evidence and laboratory findings suggest that homeopathy achieves both biological and clinical effects in treating allergies and sensitivities.⁶¹ Because homeopathic remedies are mostly liquid or in the form of chewable pills, ASD children (even those who are unable to swallow pills) usually have no problem taking them.

Since the development of EAV, which has a close relationship with modern homeopathy, many practitioners have begun to use EAV testing to help with the selection of homeopathic remedies. EAV can greatly speed up clinical decisionmaking and improve accuracy in prescribing modern homeopathic remedies. Meanwhile, some EAV/EDS devices are equipped with a function that is able to “imprint electromagnetic frequencies” to a water solution. This process is believed to mimic the “succussion” process that is used to prepare homeopathic remedies. Although “imprinted” remedies may differ from classical homeopathic remedies in nature, they open up a new door to modern homeopathy as well as other energetic therapies such as immune system reprogramming (ISR).

Immune system reprogramming: ISR is a variant of Nambudripad’s Allergy Elimination Techniques (NAET), founded in the 1980s by Dr. Devi Nambudripad, a California-based acupuncturist. NAET is a noninvasive, drug-free, alternative therapy to address allergies and chemical sensitivities. The underlying theory of NAET suggests that allergies develop due to energy blockages and that allergies can be eliminated by addressing these energy blockages through acupressure treatment. NAET practitioners use “muscle testing” to assess the strength of a muscle while the body is in contact with a potential allergen (or a homeopathic preparation of that allergen). NAET practitioners will then aim to remove the energy blockages by employing acupressure while the patient holds a glass bottle containing a homeopathic preparation of the allergen.^{62,63} The most commonly used acupressure procedure in NAET is the “back tapping” procedure. The practitioner taps the patient’s back with one hand from the neck down to the lower back and up again. Because many acupuncture points are present along both sides of the spine, the back tapping procedure is a fast and easy way to stimulate those points. Although it has not been accepted by mainstream medicine, NAET treatment—with no documented side effects—has been used by thousands of healthcare practitioners worldwide to treat allergies and sensitivities, especially in children.



Dr. Hong helping child with ISR.

One challenge of using NAET is that it is inconvenient, often requiring a large number of office visits. Based on a recent survey of NAET patients, some reported needing 50 or more office visits to resolve one allergy symptom.⁶⁴ Another challenge of using NAET is that the allergy may return some time after the treatment is finished. To perfect NAET technique and improve clinical results, I developed ISR, which has four key differences as compared with NAET:

1. ISR addresses energetic conflict and imbalance that result not only from allergies and sensitivities but also from other abnormal immune responses, including autoimmune response and imbalance of signal molecules.
2. ISR uses an EDS device to detect energy conflict and imbalance and to imprint that information to make specific homeopathic preparations for treatment.
3. ISR provides a home kit and teaches patients to perform a back tapping procedure at home every day, which significantly speeds up the healing process and helps the body move through the chaotic stage in as few as three months.
4. ISR also teaches a “self-tapping” acupressure procedure as an alternative to back tapping, which is convenient for self-treatment at home.

It should be noted that ISR is just one of several therapies that would be used in a broader holistic healing program, and is mainly helpful in treating the chaotic stage. ISR does not treat the root causes of immune dysfunction but serves to calm down hypersensitive immune function and pave the way for other complementary healing modalities. Without

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other therapies that focus on detoxification, bacterial and fungal overgrowth, and tissue regeneration, results achieved from ISR will not hold. However, used in combination with TCM, modern homeopathy, and EDS technology, ISR represents the newer generation of energy and information medicine modalities.

On a practical level, ISR is noninvasive, flexible, fast, and easy to use. More importantly, ISR involves patients and their loved ones in the healing circle, which dramatically improves success in healing. Children, even ASD children, love to be tapped on the back. However, for children who have sensory issues and do not tolerate back tapping, the procedure can be done during the child's sleep. ISR is a convenient self-help tool for families. Parents can easily learn what to tap for when minor illness occurs (such as cold/flu, sinus congestion, sleep disturbances, stomach discomfort, behavior issues, or emotional problems).

ADDRESSING THE DETOXIFICATION AND REGENERATION STAGES

In iBMT, the second- and third-stage therapies can overlap and/or alternate to improve the effectiveness of detoxification treatment. Specific holistic therapies used in the detoxification stage may include homeopathy, Chinese herbs, nutritional supplementation, enzyme therapy, energetic emotional therapy, pulsed electromagnetic field (PEMF) therapy, and structural adjustment. Most of these modalities can be used simultaneously to achieve a synergetic effect. EDS testing is a must to help decisionmaking on when and how to use different therapies and supplements. During the third stage, therapies used primarily include homeopathy, Chinese herbs, and nutritional supplementation.

Candidiasis and leaky gut syndrome: As noted earlier, a central focus of the second stage is detoxification from overgrowth of *Candida albicans*, a fungus that can cause yeast infection or candidiasis. Almost everyone has intestinal *Candida* colonies and, under normal circumstances, the yeast lives in harmony with us through a delicate balance of bacterial and fungal types. However, *Candida* overgrowth is very common in modern society, especially in individuals with compromised immune systems such as ASD children. Some common causes of *Candida* overgrowth in ASD children are overconsumption of refined sugar, carbohydrates, and dairy products and exposure to antibiotics and food preservatives that suppress healthy bacteria. Other factors that weaken the immune system and contribute to *Candida* overgrowth include poor digestion, lack of sleep, chronic stress (including emotional stress), allergies, and environmental pollution.

Similar to baker's yeast, *Candida* is an oval-shaped microorganism that can reproduce rapidly by budding. *Candida* releases powerful poisons as it multiplies; these circulate in the bloodstream and cause many symptoms and disorders. *Candida* can produce a type of false estrogen and thyroid hormone, which can lead to hormone imbalances and receptor malfunction. *Candida* also produces an

alcohol called ethanol, which grows rapidly when blood sugar is high and food sources are abundant. Overproduction of ethanol can cause liver detoxification overloading. Acetaldehyde, another byproduct of *Candida*, is related to formaldehyde and causes a variety of malfunctions in the body. *Candida* can also invade a variety of body tissues and cause local inflammation, typically attacking the mouth (thrush), vagina, gastrointestinal tract, urinary tract, skin, and finger or toenails.⁶⁵

Chronic *Candida* overgrowth can be a major source of toxicity and inflammation in ASD children. Although *Candida* overgrowth can occur in anyone, it causes numerous digestive and behavioral symptoms in ASD children and often results in unnecessary confusion regarding ASD treatment. In these children, signs of *Candida* overgrowth may include digestive issues (including bloating, cramps, gas, diarrhea or constipation, abdominal pain, food intolerance, and feeling spaced-out); skin issues (such as eczema, hives, excessive perspiration, acne, psoriasis, and nail infections); thyroid and adrenal hormone issues (such as fatigue and sleep disturbance); and behavioral issues (including frequent meltdowns, inability to follow instructions, hyperactivity, stimming, and obsessive behavior).

Candida overgrowth in the digestive tract is believed to be one of the causes of leaky gut syndrome (LGS), a condition involving increased permeability of the intestinal lining (also called disruption of the gut-blood-brain barrier). LGS may be caused by factors including damage to the intestinal lining by infectious agents such as yeast and bacteria; overuse of antibiotics; heavy metal damage; inflammatory autoimmune attacks; and a weakened self-healing ability, such as a decrease in tissue repair function. The consequences of LGS include 1) recycling of toxins, an increase in the overall toxin load, and overwhelming of the detoxification system; 2) food intolerance (as the leakage of partially digested food molecules into the bloodstream triggers an immune response); 3) malabsorption of nutrients; and 4) a weakened defense system in the gut. LGS can be diagnosed using the Organic Acids Test (OAT), which shows the presence of organic acids (metabolic products of intestinal yeast or bacteria) in the urine. Positive OAT results suggest an overgrowth of intestinal pathogens and a leakage of intestinal toxins into the bloodstream.³⁵

Successfully managing *Candida* outbreaks and addressing LGS are necessary steps before other root issues such as heavy metal toxicity can be addressed. Strategies to manage *Candida* overgrowth and heal LGS rely heavily on dietary control. Although most ASD children follow a gluten-free/casein-free diet, GF/CF is not enough to make headway in treating *Candida*. The most important factor in controlling *Candida* overgrowth is to reduce the intake of both refined sugar and the sugar from sweet fruits such as oranges, grapes, bananas and melons. Although a reduction in sugar intake may initially result in a withdrawal response, it can significantly help with *Candida* control.

Interventions that form part of iBMT's treatment options for *Candida* include ISR, modern homeopathy, antifungal herbal remedies, enzyme therapy and, sometimes, antifungal medications. In addition, liver

support and support of detoxification pathways are necessary to prevent detoxification or “die-off” reactions, a common response to *Candida* treatment and other forms of intestinal cleansing, which may include behavioral changes, sleep disturbances and digestive issues. These detoxification reactions, sometimes misidentified as a regression of ASD, can be prevented by using iBMT’s three-stage treatment plan with its focus on strong cellular energy and liver support. The iBMT treatment for LGS emphasizes regeneration support and tissue repairing, using modern homeopathy, Chinese herbs and nutritional supplements.

Chronic infectious diseases: Infectious agents such as *Borrelia burgdorferi* (Lyme disease), *Mycoplasma spp.*, *Chlamydia pneumoniae* (a common cause of respiratory disease), and members of the herpes virus family including *Cytomegalovirus* (CMV) and Epstein-Barr virus (EBV) are closely associated with ASD pathogenesis. Chronic infections with these agents represent a large subgroup of immune dysfunctions among the ASD population^{9,11} and are among the most difficult clinical cases. ASD children with possible Lyme disease and coinfections often regress neurologically every time they get a cold, flu or sinus infection, not because of so-called “superbugs” but because the immune system is so dysfunctional that the body cannot defend itself successfully.

In recent years, the reported incidence of Lyme disease (*Borrelia burgdorferi*), a tick-borne bacterial infection, in the general population has increased markedly in many countries.⁶⁶ Approximately 20,000 cases of Lyme disease are reported annually in the United States alone.⁶⁷ Not surprisingly, then, Lyme disease represents one of the most common infectious complications among ASD children.¹¹ The increase in Lyme disease is occurring in tandem with the rise in conditions of immune dysfunction such as allergies, autoimmune diseases and ASD. Although evidence shows that the oral antibiotic doxycycline helps *Borrelia* infection,⁶⁷ many Lyme patients have been reported to be antibiotic resistant.⁶⁸ More and more of these patients have been diagnosed with chronic Lyme disease (CLD), with CLD defined either as Lyme symptoms without an initial acute stage of infection with *Borrelia burgdorferi* or as continuing or relapsing nonspecific symptoms following prior treatment for Lyme disease. The latter group is also classified as post-Lyme disease syndrome (PLS);⁶⁹ antibiotics have been reported to have no impact on this group of patients.⁷⁰⁻⁷³

Due to their immune dysfunction, ASD children are particularly susceptible to chronic bacterial and viral infections. Not surprisingly, therefore, a subgroup of ASD patients may share a similar etiopathogenesis with multiple sclerosis (MS), CLD and PLS. Typical CLD and PLS are characterized by persistent fatigue, musculoskeletal pain, and neurocognitive impairment, which also occur with MS and other commonly diagnosed chronic diseases such as fibromyalgia and chronic fatigue syndrome. Studies suggest that viral infections, especially with Epstein-Barr virus^{74, 75} (a common coinfection of Lyme disease), and *Borrelia burgdorferi* or other bacterial infections^{76,77} may play a role in the etiology of MS which, like ASD, is a neurological autoimmune disease. An autoimmune response has also been suggested for PLS, with laboratory studies demonstrating that PLS serum antibody binds to cells in the central and peripheral nervous systems.⁷⁸

Because chronic infections are a root cause of immune dysfunction, addressing infectious complications is one of the major goals of the iBMT program. Complementary and alternative therapies such as herbal medicine, nutritional supplements, and pulsed electromagnetic field therapy (PEMF) have been widely used to treat CLD and PLS, due to these conditions’ lack of response to conventional treatment.^{79,80} With the synergistic support of ISR, homeopathy and TCM, iBMT is able to reduce immune hypersensitivity and autoimmunity, and improve the body’s immune function. At the same time, PEMF, enzyme therapy, and antibacterial and antiviral herbs can inactivate pathogens and fight infections.

Energy emotional therapy: Similar to yin-yang theory, the five-elements theory (wood, fire, earth, metal and water) is another ancient philosophical concept used to explain the composition and phenomena of the physical universe. In TCM, the five-elements theory is used to interpret the relationship between the physiology and pathology of the human body and the environment. It was also the first theory to suggest a connection between emotions and the physical body. According to the 2000-year-old theory, emotions are processed through energy pathways called meridians. The five central emotions and energy pathways include anger (liver meridian), excitement and joy (heart meridian), pensiveness and worry (spleen meridian), grief and sadness (lung meridian), and fear (kidney meridian) (Table 2). If there is blockage in the meridian, the corresponding emotion will be blocked as well, which may result in a delayed emotional detoxifying process, or a specific emotional holding. A long-term emotional blockage may cause related physical conditions, such as slowed detoxification, blocked metabolism and psychological disorders.

Although addressing meridian blockages (through liver and kidney detoxification, for example) are important in resolving emotional issues, this is not enough to eliminate emotional blockages completely. Once an emotion is blocked in a meridian, even if the meridian is later opened up through physiological treatments such as detoxification or manipulation, fresh emotions are still likely to block the same meridian unless the earlier blockage is removed energetically. Emotion, an energetic phenomenon, only fully responds to energetic therapies.

Although TCM can deal with emotional blockages through acupuncture and Chinese herbs, both can be impractical when treating ASD children. Two newer techniques, Emotional Freedom Techniques® (EFT) and Bach® Flower Remedies, provide additional emotional therapy options that may be better suited to children with ASD. In the 1990s, Gary Craig developed an accessible approach to energy psychology called Emotional Freedom Techniques® (EFT). EFT was based on a meridian tapping technique called Thought Field Therapy® (TFT) developed in the 1980s by Roger Callahan, a US-trained psychologist, to eliminate negative emotions such as anxieties, phobias, and painful memories. Callahan believed that negative emotions disrupt normal energy flow in the meridians. By tapping specific acupuncture points that associate with those meridians, he found that he was able to strengthen energy and help the meridian get rid of negative emotions.⁸¹ Studies of EFT have subsequently shown that it is effective in addressing emotional issues such as

Table 2. Correlation of emotions with meridian systems

| Five Elements | Wood | Fire | Earth | Metal | Water |
|---------------|-------|------------|--------|---------------|--------|
| Meridians | Liver | Heart | Spleen | Lung | Kidney |
| Emotions | Anger | Excitement | Worry | Sadness/grief | Fear |

anxiety, post-traumatic stress disorder (PTSD), and other psychological conditions.^{82,83} Because ASD children often have emotional issues that lead to behavior problems, EFT can be a good self-help tool at home. EFT is relatively easy to learn and can help parents respond to their own and their children's emotional issues. Surrogate EFT tapping also comes in handy to calm a child down during a meltdown with aggressive behavior.

In the 1940s, a German doctor named Edward Bach developed a unique emotional therapy called flower essences. He found that the smells of flowers trigger emotional reactions, and discovered 38 specific flower essences that help to balance the psychological state and emotions.⁸⁴ Flower essences can be used in special combinations to address each patient's specific psychological status. More advanced homeopathic preparations of flower essences are also available for deeper emotional issues such as fear, anger, and abuse. Flower essences, in combination with other homeopathic remedies, can be used to address the emotional component of the ASD puzzle and help with patients' recovery.

CASE ANALYSIS

Larry, born on March 29, 2000, seemed a perfect baby until 18 months of age when he received his first MMR vaccine. For the next two years, he suffered from diarrhea until his mother put him on a complete GF/CF diet. Notwithstanding the diet, his digestive system did not recover. His mom suffers from allergies, and Larry started to have eczema and became allergic to many substances, according to standard allergy testing. Larry then received allergy shots every week for two and a half years. Although the allergy shots helped a little, they couldn't completely control his symptoms. The allergy symptoms gradually got worse and Larry had an asthma attack when he was 3-4 years old. Larry began to use inhaler treatment often. Larry, who was also diagnosed with pervasive developmental disorder (PDD), didn't talk until the age of 4 and showed a delay in neurological development with behavior issues.

Although Larry received 15 sessions of NAET treatment that proved somewhat helpful, he had to stop because the process was too time consuming and required too many visits. Larry came to see me when he was 5 years old, with an Autism Treatment Evaluation Checklist (ATEC) score of 112. He spoke only words, with no sentences or any skill in conducting meaningful conversation. He preferred to play alone, paid no attention to people and had no eye contact. He couldn't follow instructions and often had temper tantrums. EDS testing was difficult because he couldn't sit down and hold the two testing bars longer than a minute. When we managed to finish the test, it showed that his body was definitely in the chaotic stage. Larry had high toxin levels and severe cellular energy depletion. He was sensitive to a long list of substances and had many emotional blockages. I put him on homeopathic remedies for allergy and cellular energy support as well as flower essences for emotions. I also eliminated supplements that he might be allergic to and started him with ISR for his long list of sensitivities. As he was already on a GF/CF diet, I instructed his mother to additionally control his sugar intake.

The first three months of therapy were tough going. Larry's condition went up and down, and behavior problems were often triggered by his allergic food intake. I had to change homeopathic remedies every 2-3 weeks. It is very common to adjust remedies

SUMMARY

ASD is a complex systemic disease that requires a holistic and systematic treatment plan. A subgroup of ASD children who have allergies and sensitivities (which often do not respond to commonly used biomedical protocols) shows a distinguishable "outside" layer of disease that I call the chaotic stage. This layer of disease is characterized by chaotic cellular communications, low cellular energy, and abnormal immune responses. Until these problems are solved, the body cannot easily respond to therapies focusing on detoxification and regeneration.

The holistic iBMT program specifically addresses the chaotic stage with a combination of homeopathy and Chinese medicine. Unique aspects of iBMT include its focus on the timing of different holistic therapies as well as the synergetic combination of multiple holistic modalities that systematically address the toxins, infections, and degeneration issues that often characterize ASD. Clinical research may be needed to perfect iBMT procedures as they are applied to the treatment of ASD and other immune-related disorders.

frequently in the beginning of therapy because sensitive bodies easily develop resistance to remedies. (Similarly, in managing food allergies the most important strategy is not to eliminate the allergic food from the diet but to rotate the foods that one is not allergic to so that one can eat those foods longer.) After three months of homeopathic balancing and ISR treatment, Larry's sensitivity finally calmed down. His mom reported that his skin and asthma conditions had improved, and he seemed to understand language better. In addition, when he had a temper tantrum, his mother was able to talk him out of it more easily. His office visits also became much easier, and he was able to sit down and quietly finish testing. Between the third and sixth months of treatment, I started Larry on a digestive protocol that included *Candida* therapy, liver support, and specific detoxification with homeopathy, herbs and nutritional supplements. His condition further stabilized, with fewer behavioral issues reported.

At the beginning of treatment, Larry was in kindergarten. When he went to first grade he was put into a special class with other autistic children. In the beginning, he was often angry, irritable, and didn't want to go. Within a year of therapy, his allergy symptoms got better, followed by improvements in understanding and speech; however, his behavioral issues and emotions, although improved, were still up and down. After a year of detoxification and regeneration treatment, he was finally able to learn academically in a normal classroom. From second grade on, Larry was able to stay in a mainstream classroom with an aide for some subjects. I saw him every 1-3 months to test him and change his treatment plan, which included detoxifying, liver support, intestinal cleansing, emotional therapy, and tissue regeneration with modern homeopathy, Chinese herbs, flower essences, and nutritional supplements. We did not focus on chelation until much later.

At present, Larry's condition continues to improve. He is in a mainstream classroom full-time and gets good academic grades. His social skills have also improved a lot, and he has a few friends in school. His most recent ATEC score is 28. He still comes to see me once in a while to get remedies. He also receives oral chelation using DMSA from time to time. Now 11 years old and in fifth grade, Larry looks just like a normal neighborhood boy, nice and happy.

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