The Alkaline Way: Integrative Management of Autoimmune Conditions

by Russell Jaffe

This report synthesizes three decades of investigations into the determinants of healthy and unhealthy immune defenses and repair responses. The function of immune defenses and repair systems (IDRS) in good and in ill health are compared and contrasted.[1] An integrative approach to interdependent neuroimmunohormonal, digestive, and detoxification systems is included.

The Alkaline Way is a three-component approach that can be useful in addressing autoimmune and immune dysfunction conditions such as fibromyalgia and chronic fatigue syndrome, through an individualized approach that includes:

- lab testing for inflammation, detoxification, and antigens to food and chemicals;
- an alkaline diet including supplements and self-testing to monitor pH levels;
- lifestyle management – with an emphasis on exercise and mindfulness.

The program described has achieved impressive rates of remission, demonstrating how forgiving and responsive the human body can be when biochemistry is restored to balance. Better outcomes are achieved by concurrently applying three interventions that reaffirm the body's inherent healing abilities by removing obstacles to recovery.

An Epidemic of Epidemics of Autoimmune Diseases

More than half of all American adults and a rapidly growing proportion of young people experience some type of autoimmune condition. Within the body, this reflects a shift from an immune system that is resilient, self-regulating, and self-restoring into an imbalanced, aggressive, and self-attacking mode known as autoimmunity (AI).[2]

There is considerable diagnostic overlap of AI with chronic and degenerative diseases.[3] It is increasingly clear that most heart disease and chronic vascular conditions are the result of loss of repair ability due to excess cell acid (metabolic acidosis) and oxidative stress due to deficits in essential antioxidant and buffering nutrients that cause losses of tolerance in the immune defense and deferred repair (IDRS dysfunction).[4] Case examples and outcome studies in fibromyalgia muscle pain, chronic fatigue immune dysfunction syndrome (CFIDS), and other autoimmune conditions have been previously reported.[1]

Acidosis, oxidative stress, and inflammation – Metabolic acidosis, oxidative stress-makers, and repair deficit inflammation are the antecedents of autoimmune and immune dysfunction which functionally and metabolically overlap with debilitating chronic conditions that affect or are affected by the thyroid, adrenals, or reproductive glands (See Figure 1, p. 47; Table 1).[5-8]

The Alkaline Way Program

The Alkaline Way plan described here assesses an individual's metabolic balance. Sustained remission routinely emerges when these approaches are consistently applied.[9]

1. Laboratory Tests: Assess Causes More Than Pathologic Consequences

Inflammation, Detoxification, and Immune Function

In ill health, tolerance and homeostatic resilience are reduced and in some cases lost.[10] AI and immune dysfunction occur commonly, and commonly together.[11] They reflect the impairment or loss of immune defenses and repair tolerance and competences.

A Health Studies Collegium estimate is that loss of tolerance and homeostasis accounts for one-third of all chronic disease. These are the inflammatory conditions, the conditions of cumulative repair deficit that reduce life quality and increase costs of mostly palliative care. Inflammatory markers of repair deficit include elevations of:

- sedimentation rate (sed rate)
- unexplained elevation of fibrinogen, ferritin, and microalbumin, among other inducible proteins
- C-reactive protein (hsCRP)
- tumor necrosis factor (TNF)
- oxidative stress markers such as oxidized LDL/HDL and 8-oxo-guanine
- prealbumin in urine
- IL-2, IL-6, and IL-12, among other cytokines

Food and Chemical Antigen Reactions

Immune system tests of delayed allergy – Various clinical tests are currently in use for assessing an individual's adverse response to environmental antigens.[12] Antibodies capable of inciting a delayed response include IgA, IgM, or IgG. Only when antibodies are reactive do they provoke symptoms; neutralizing, protective antibodies are helpful.[13,14]

Antibody assays are often performed for immunoglobulin G (IgG).[13] This has the advantage of examining the immunologic memory of the person. Note that most IgG antibodies are helpful; only a minority of antibodies are harmful.[14] Four subclasses of IgG have been identified, which have different biologic functions and vary independently in different clinical conditions.[15,16]

Clinical interpretation of total IgG antibodies against a specific antigen can be a challenge.[17] For example, only IgG4 is cytophilic for mast cells.[18] Thus, some IgG antibodies are protective and others reflect an adverse response.[19] Measurement of IgG antibodies omits information about IgA and IgM offenders and requires multiple subclass assays to provide the most accurate clinical information.[20]

Immune complexes can also be assayed through a variety of techniques, each with its own methodology limitations.[21] Measurement of this and other aspects of cell-mediated immune response can be particularly useful in immune complex disorders (See Table 1).

The LRA by ELISA/ACT technology – This lymphocyte response assay has been developed to evaluate the hypothesis that the *causes* of autoimmunity included exposures to foods or other chemicals to which the body had become hypersensitive, marked by unhealthy antibody, immune complex, or T cell lymphocyte responses.

This concept has been successfully tested in controlled outcome studies on fibromyalgia muscle pain and chronic fatigue syndrome, as well as diabetes. Clinical data indicate that all autoimmune conditions respond ➤

Table 1: Autoimmune Syndromes and Associated Antigen Type

	Antigens Specific to Host Components[a]					
Antigen site in cell or tissue	**Intracellular**	**Receptor**	**Membrane**	**Extracellular**	**Plasma Protein**	**Hormone**
Clinical Disorder						
Lupus Erythematosus	+		+		+	
Sjögren's Syndrome	+				+	
Polymyositis	+		+			
Hepatitis, Chronic Active	+				+	
Connective Tissue Diseases	+					
Diabetes, Insulin Dependent	+	+				+
Pernicious Anemia	+					+
Biliary Cirrhosis, Primary	+					
Thyroiditis	+	+				+
Addison's Syndrome	+					
Vitiligo	+					
Enteropathy, Antigens[2]	+					
Hyperthyroidism (Graves)	+	+				
AIDS/ARC	+		+			+
Myasthenia Gravis		+				
Hemolytic Anemia			+			
Neutropenia		+				
Thrombocytopenia (ITP)			+			
Rheumatoid Arthritis			+		+	
Multiple Sclerosis			+			
Pemphigus vulgaris			+	+		
Infertility (Autoimmune)			+			
Glomerulonephritis				+		
Discoid Lupus			+			
Dense Deposit Disease					+	
Adult Diabetes	+	+	+			
Sjögren's Syndrome	+	+			+	
Pneumonitis/Bronchitis (allergic)			+	+		
Asthma		+		+	+	

a. Antigen site in cell or tissue

➤

to this approach, which involves indentifying each of the specific foreign invaders known generally as antigens that wear down the immune defense and repair system.[22]

Evaluating lymphocyte response – Through this novel ex vivo technology, it is possible to allow living white cells to react in the laboratory just as these lymphocytes do in the body.[23] This ex vivo procedure measures lymphocyte reactivity to determine true delayed allergy/hypersensitivity based on the body's long-lived memory-carrying white blood cells.

Comparative methodology – Limitations of other testing systems such as antibody measurement and particle size determination have been elsewhere reported.[24] Results of these tests usually involve simple avoidance. Simple avoidance often provides a symptom remission; however, new sensitivities and symptoms emerge within months if the underlying *causes* of maldigestion, and essential nutrient deficits and oxidative stress, are left unattended.[25]

Scope of evaluation – Functional lymphocyte response assays are unique in concurrently measuring all hypersensitivity pathways, which allows more true positive reactions to be identified.[26,27] The acute and delayed allergy pathways are depicted in the "wheel of allergy" (Figure 2).[28] This ELISA test is unique in being done on the surface of a living cell. LRA by ELISA/ACT tests are specific, sensitive, and predictive for all three types of delayed hypersensitivity pathways. They are, according to Gel and Coombs[29]:

- humoral or reactive antibody (IgA, IgG, and IgM) (type 2 reactions as described by Levin)[30]
- immune complex (IgM anti-IgG antigen complexes)
- cellular immunity from T cell direct immune responses

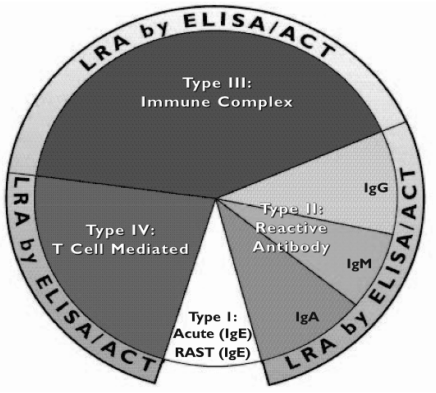
In contrast, IgG assays measure only one antibody within one of three reactive classes.[31] Limitation of the IgG assays includes being unable to distinguish helpful from harmful antibodies.[21] An additional limitation is not measuring any other immune reaction pathway.[32] Similarly, automated cytotoxic cell size particle counters measure an in vitro size change subject to many artifacts, false positives, and false negatives.

Accuracy of Functional Immunology Tests

The LRA by ELISA/ACT functional tests have an accuracy rate 97% higher than nonfunctional IgG testing and other automated cytotoxic, particle-size procedures.[33,34]

Figure 2: Wheel of Immune Response Mechanisms

Functional lymphocyte response assays (LRA) are able to measure all delayed allergy responses.



LRA by ELISA/ACT® is a true cell culture. Comprehensive, ex vivo, functional procedures have been proven in clinical outcome studies to provide superior, sustained improvements and long-term remissions in autoimmune and immune dysfunction conditions.

2. Restoring Alkaline Balance

The Alkaline Diet

The Alkaline Way includes a health-promoting, nutrient- and fiber-rich diet that consists primarily of whole foods, along with targeted supplementation based on individual need.[35] Priority is given to locally vine-ripened, organic, or biodynamic sources of foods. Mineral-rich water is the primary beverage.

A metabolically alkaline diet means that the food has a buffering effect on cellular chemistry.[36] This can be different from the food's primary chemistry.[37] For example, citrus fruits are alkalinizing because the metabolism of citrate, malate, succinate, and fumarate generates more than twice as much bicarbonate buffer as there is acid itself in the food.[38] This means that citrus fruit and similar foods are acid in the food yet alkaline-forming in the body (see Figure 1).

Reducing the risks associated with acidity – The goal of this approach is to reverse intracellular acidosis, which impairs electron transport, reduces energy production, and impedes detoxification. Immune responses directly and indirectly generate substantial amounts of acidic products.[39] In the vulnerable patient with impaired buffering capacity, it is especially important to avoid as many sources of antigen-induced or other causes of acid formation as possible because of their adverse effects on cell metabolism.[40]

Enhancing immune defenses – The substantial reduction in immunologic load plus alkalinizing foods can improve immune defense performance.[41] This means reduced or eliminated host hospitality to chronic infection of any kind. This also means enhanced repair, reduced inflammation, and better anticancer surveillance. Substitution for reactive items is coupled with health-promoting diet substitutions, targeted supplementation.

Alkaline Nutrients

When dietary consumption patterns provide insufficient minerals to buffer metabolic acids, cell alkaline reserves can be depleted and the *intra*cellular environment become acidic.[42] Buffering mineral deficits result in intracellular metabolic acidosis linked to reduced energy production and impaired ability to safely remove toxins, especially relevant to the patient with chronic fatigue.[43]

Buffering minerals and fats – Key supplements for those people with net acid excess include sufficient buffering minerals to neutralize excess metabolic cell acids. Short- and medium-chain fatty acids with fewer than 16 carbons are also alkalinizing because acetate molecules can be added to them, thus reducing acetic acid (acetate). First morning urine pH is the predictive clinical tool to assess

risk of net acid excess, also known as metabolic acidosis.

Antioxidant supplementation – These supplements are provided to protect from oxidative damage, restore cell energy production, rehabilitate mitochondria, and reset homeostatic mechanisms.[44] Another goal of repletion is to reverse cumulative antioxidant deficits, often observed clinically as inflammation.

B-complex nutrients to support methylation – Impaired methylation is also commonly reflected in elevations in homocysteine above the healthy value of <6 μmol/L. Problems with cell communication, detoxification, and transport result from such impaired methylation. This reframes these common states in physiologic rather than pathologic terms, and offers integrative approaches to care as evidence-based options to be included as first line comprehensive care.[45] This is particularly valuable for the chronic illnesses such as fibromyalgia that have become endemic in our time.

Self-Testing for Alkaline Status

This test, a pH assessment of the first morning urine, provides a surprisingly good measure of metabolic acidosis risk. The urine pH is a good indicator of the body's mineral reserve and its acid/alkaline state.[46] The body routinely uses overnight rest time to excrete excess acids.[47] This capacity varies based on toxin load and individual ability to make energy, to inactivate toxins, and to excrete those toxins.[48]

Using specialized pH Hydrion test strips (Figure 3) can effectively give one a reliable assessment of the body's acid or alkaline balance.[49] A value of 7.0 indicates the neutral state, neither acid nor alkaline.[50] Ideally, the first morning urine pH should be in a pH range of 6.5 to 7.5.[51] A neutral or slightly acidic pH indicates that the overall cellular pH is appropriately alkaline and that the small amounts of acids built up from normal metabolism have been easily concentrated for excretion. Cell cytoplasm, or "cell juice," functions best in a narrow, slightly alkaline range.[52,53] ➤

Figure 1: Food and Chemical Effects on Acid/Alkaline Body Chemical Balance

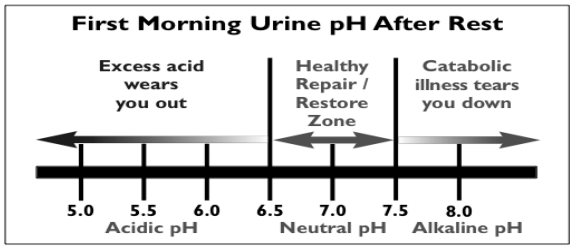
Food & Chemical Effects on Acid/Alkaline Body Chemical Balance

Most Alkaline	**More Alkaline**	**Low Alkaline**	**Lowest Alkaline**	**Food Category**	**Lowest Acid**	**Low Acid**	**More Acid**	**Most Acid**
Baking Soda	Spices/Cinnamon Valerian Licorice •Black Cohosh Agave	•Herbs (most): Arnica, Bergamot, Echinacea, Chrysanthemum, Ephedra, Feverfew, Goldenseal, Lemongrass Aloe Vera Nettle Angelica	White Willow Bark Slippery Elm Artemesia Annua	**Spice/Herb**	Curry	Vanilla Stevia	Nutmeg	Pudding/Jam/Jelly
Sea Salt Mineral Water	•Kambucha Molasses Soy Sauce	•Green or Mu Tea Rice Syrup Apple Cider Vinegar	*Sulfite* Ginger Tea •Sucanat •Umeboshi Vinegar	**Preservative** **Beverage** **Sweetener** **Vinegar**	*MSG* *Kona Coffee* Honey/Maple Syrup Rice Vinegar	*Benzoate* *Alcohol* Black Tea Balsamic Vinegar	*Aspartame* *Coffee* *Saccharin* Red Wine Vinegar	*Table Salt (NaCl)* Beer; *'Soda'* Yeast/Hops/Malt Sugar/Cocoa White/Acetic Vinegar
•Umeboshi Plum		•Sake	•Algae, Blue-Green	**Therapeutic**		*Antihistamines*	*Psychotropics*	*Antibiotics*
			•Ghee (clarified butter) Human Breast Milk	**Processed Dairy** **Cow/Human** **Soy** **Goat/Sheep**	Cream/Butter Yogurt Goat/Sheep Cheese	Cow Milk Aged Cheese Soy Cheese Goat Milk	•Casein, Milk Protein, Cottage Cheese New Cheese Soy Milk	*Processed Cheese* Ice Cream
		•Quail Egg	•Duck Egg	**Egg**	Chicken Egg			
				Meat **Game** **Fish/Shellfish**	Gelatin/Organs •Venison Fish	Lamb/Mutton Boar/Elk/•Game Meat Mollusks Shellfish (whole)	Pork/Veal Bear •Mussel/Squid	Beef Shellfish (processed) •Lobster
				Fowl	Wild Duck	Goose/Turkey	Chicken	Pheasant
			Oat 'Grain Coffee' •Quinoa Wild Rice •Amaranth Japonica Rice	**Grain** **Cereal** **Grass**	•Triticale Millet Kasha Brown Rice	Buckwheat Wheat •Spelt/Teff/Kamut Farina/Semolina White Rice	Maize Barley Groat Corn Rye Oat Bran	Barley Processed Flour
Pumpkin Seed	Poppy Seed Cashew Chestnut Pepper	Primrose Oil Sesame Seed Cod Liver Oil Almond •Sprout	Avocado Oil Seeds (most) Coconut Oil Olive/Macadamia Oil Linseed/Flax Oil	**Nut** **Seed/Sprout** **Oil**	Pumpkin Seed Oil Grape Seed Oil Sunflower Oil Pine Nut Canola Oil	Almond Oil Sesame Oil Safflower Oil Tapioca •Seitan or Tofu	Pistachio Seed Chestnut Oil *Lard* Pecan Palm Kernel Oil	*Cottonseed Oil/Meal* Hazelnut Walnut Brazil Nut *Fried Food*
Lentil Brocoflower •Seaweed (Nori/Kombu/Wakame/Hijiki) Onion/Miso •Daikon/Taro Root •Sea Vegetables (other) Dandelion Greens •Burdock/•Lotus Root Sweet Potato/Yam	Kohlrabi Parsnip/Taro Garlic Asparagus Kale/Parsley Endive/Arugula Mustard Greens Jerusalem Artichoke Ginger Root Broccoli	Potato/Bell Pepper Mushroom/Fungi Cauliflower Cabbage Rutabaga •Salsify/Ginseng Eggplant Pumpkin Collard Greens	Brussel Sprout Beet Chive/Cilantro Celery/Scallion Okra/Cucumber Turnip Greens Squash Artichoke Lettuce Jicama	**Bean** **Vegetable** **Legume** **Pulse** **Root**	Spinach Fava Bean Kidney Bean Black-eyed Pea String/Wax Bean Zucchini Chutney Rhubarb	Split Pea Pinto Bean White Bean Navy/Red Bean Aduki Bean Lima or Mung Bean Chard	Green Pea Peanut Snow Pea Legumes (other) Carrot Chick Pea/Garbanzo	Soybean Carob
Lime Nectarine Persimmon Raspberry Watermelon Tangerine Pineapple	Grapefruit Canteloupe Honeydew Citrus Olive •Dewberry Loganberry Mango	Lemon Pear Avocado Apple Blackberry Cherry Peach Papaya	Orange Apricot Banana Blueberry Pineapple Juice Raisin, Currant Grape Strawberry	**Citrus Fruit** **Fruit**	Coconut Guava •Pickled Fruit Dry Fruit Fig Persimmon Juice •Cherimoya Date	 Plum Prune Tomato	 Cranberry Pomegranate	

• Therapeutic, gourmet, or exotic items *Italicized items are NOT recommended*

Prepared by Dr. Russell Jaffe, Fellow, Health Studies Collegium. Reprints available from Health Studies Collegium, 44621 Guilford Drive, #150, Ashburn, VA 20147, 800-328-7372. Sources include USDA food database (Rev 9 & 10), *Food & Nutrition Encyclopedia; Nutrition Applied Personally* by M. Walczak; *Acid & Alkaline* by H. Alhara. Food growth, transport, storage, processing, preparation, combination & assimilation influence effect intensity. Thanks to Hank Liers for his original work. [Rev 4/09]

Figure 3: Picture of the pH Strips and Meaning of First Morning Urine Measurements



3. Self-Care

Physical Fitness and Immune Competence

Physical motion is necessary for physical health. The basic truth of physical activity is that we retain and restore what we use and lose what we do not use. This means that learning to move fluidly, to stretch easily and smoothly, to learn the links between breath and movement, and to move rather than be static are essential to physical well-being, and immune defense and repair competence.[54]

Exercise should be a pleasure, with a goal of adequate activity that is achievable rather than excessive activity that becomes a burden. When immune defense and repair systems are operating well, repair is efficient, effective, and prompt. This means feeling better rather than having to recover after being physically active.[55]

Mindfulness Practice and Immunity

In this program, a comprehensive, patient-centered, motivational approach is offered to promote long-term, sustainable practices that restore health and resilience.[57,58] The mind and body are always connected and interactive. This means that every physical act has a mental component and vice versa. Only in the mechanistic, reductionist view of the world are mind and body disconnected.

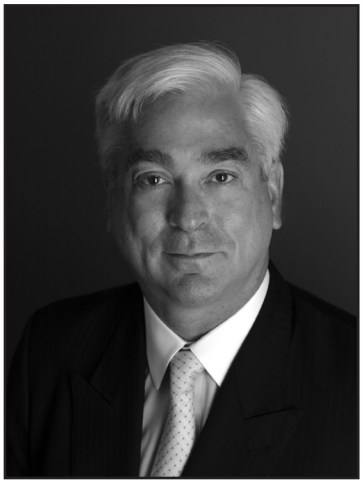
The Alkaline Way recognizes the intimate link between mind and body. This means that doing what we know and knowing why we do what we do are both important. This also means that if our thoughts or attitudes are unhealthy, they can be relearned in ways that promote rather than impair health. Distress is more about internal perception than external stress. Being at peace rather than anxious can be learned observationally through well-validated practices.[56] Learning optimism is both possible and effective.[57]

Conclusions

One of the paradoxes of our time is that younger people are more and more often showing signs and symptoms of ill health that in previous decades were only observed in older people. These changes are occurring too quickly to be due to genetics. They are due to the losses in self-regulation/homeostasis and effective self-repair.

The immune system is not only our defensive system, it is also responsible for repair and systemic communication system.[58,59] Restoration of immune competence depends on identification of elements in both biochemistry and lifestyle that need strengthening and substitution for reactive elements until tolerance is restored.[60] The Alkaline Way programs restore tolerance, homeostasis, energetic balance, and resilience.

Dr. Russell Jaffe received his AB, MD (with Senior Thesis Honors), and PhD (in biochemistry and physiology) from Boston University, all in May 1972. Dr. Jaffe served his medical internship at University Hospital and was awarded the US Public Health Service Officer Commission, assigned to the Clinical Center of the National Institutes of Health, in June 1973. While at the Clinical Center, Dr. Jaffe served his residency in clinical pathology. He is board certified in clinical and subspecialty certified in chemical pathology. Dr. Jaffe remained on the permanent senior staff of the NIH Clinical Pathology Department, where he continued method innovation and was active in collaborative research with the Laboratory of Experimental Atherosclerosis (of the Heart, Lung, and Blood Institute).



Concurrently, Dr. Jaffe's interests in the mechanisms of health and the evoking of human healing responses led him to apprentice in such healing arts as acupuncture, mindfulness, massage, music, art and color therapy, and a variety of eclectic therapeutic approaches.

In addition, Dr. Jaffe performed innovative studies of platelet function and blood clotting in relation to the origins of coronary artery and cardiovascular diseases. Among the tests he developed are the early colon cancer-screening test using occult blood detection not interfered with by vitamin C consumption, as well as a variety of tests related to the blood clotting and immune defense and repair systems. Dr. Jaffe developed the first method of measuring cell-mediated immunity using a modified ELISA system in a lymphocyte mitogenesis/blastogenesis brief cell culture known as lymphocyte response assays (LRA). This LRA by ELISA/ACT provides an "immunologic fingerprint" of items to which the body is reactive or tolerant.

Dr. Jaffe has contributed over 100 symposium-invited talks, scientific articles, or book chapters. He received the J. D. Lane award for original research from the US Public Health Service, the Merck Sharp and Dohme Excellence in Research Award, and in 2002 the International Research Scientist of the Year, among other recognitions for his investigations.

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