

SECTION 3

Address
underlying causes
& support
a healthy ecology.

Section 3 overview

Address underlying causes & support a healthy ecology through nutrition management

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Since the 19th century, nature cure practitioners have been at the forefront of dietary reform. They realized that nutrition confers both *anabolic* and *catabolic* functions. Anabolic regimens may be required to improve patients' nutritional status (i.e., establish a basis for health) if there has been a breakdown in their vitality or immunity through a diet lacking in essential nutrients. Catabolic regimens are designed to stimulate metabolic change and to encourage the body to eliminate toxic encumbrances by means of:

- **Depuration** approaches to cleanse the body and to reduce toxin absorption or exposure. These may range from applying the principles of food combining and restoring acid/alkaline balance, to approaches adapted from other vitalist systems of medicine.
- **Drainage** approaches to assist removal of circulating toxins can be facilitated through increased hydration and through optimizing nutrition via healthy food choices (e.g., via a whole-food diet) or applying the latest principles of nutritional science (i.e., providing nutrient-dense components required to sustain health).
- **Detoxification** to remove stored or circulating toxins may require approaches that focus on identifying foods appropriate for each individual, and methods to identify food intolerances, such as exclusion diets, bioelectronic regulatory techniques, and use of serotyping (now known as the blood-type diet).

Of the many types of dietary management used in nature cure practice, the most radical — and arguably the most effective when undertaken with professional supervision — is fasting. It is a catabolic regimen used since ancient times as a means to physiological and spiritual cleansing. Nutrition is a significant component of each of these approaches. It contributes to establishing a healthy terrain upon which to rebuild vitality and return patients to health.

TOPIC 1

Nutrition and Food-Based Cleansing: Food as Medicine

Rachelle Herdman, MD, ND

The use of food as medicine is central to nature cure practice. Along with water, fresh air, and lifestyle changes, nature cure also uses food to restore health and to re-align patients with the natural world. Transformation (rebuilding vitality), detoxification, and cellular repair can be stimulated to a remarkable extent if patients are guided to minimize disruptive influences that promote disease, and to substitute optimal nourishment at every level of being (physical and spiritual). To return patients to health, clinicians must understand the properties of foods, and how to select and combine foods with confidence.

When patients are guided to substitute optimal nutrition for disruptive dietary influences that promote disease, then detoxification, cellular repair, and rebuilding vitality can be stimulated to a remarkable extent.

Dietary changes and medicinal foods have powerful health benefits, but it is not always clear how to tailor optimal nutrition for every patient. Evidence from traditional and world medicine healing systems, as well as from contemporary research and practice, provides a continual influx of information that can help clinicians identify the most relevant guidelines for individual patients.

Fundamental Concepts of Nutrition in Nature Cure

Crafting effective diet prescriptions for patients deploys the naturopathic principles of practice, *tolle totum* (treat the whole person), *docere* (doctor as teacher), and *vis medicatrix naturae* (the healing power of nature). Although humans are, inescapably, organisms of the living world, there is increasingly little direct contact with it. Technology in many contemporary societies provides easy access to myriad foods and consequently to highly varied diets. Yet, this also insulates humans from the environment's natural cycle, loosening our connections to local soil and seasons, and decreasing our nutritional health. Beyond science and the effective use of medicinal foods to target specific diagnoses (for example, diuretic foods to reduce blood pressure), the experience of eating in harmony with local seasons, geography, and body type are equally important to impart health and wholeness.

Diet is defined as the total amount of food consumed by an individual.¹ It entails consumption of specific foods and eating patterns, and often is associated with sociocultural and/or geographic location.²

Nutrition is a more comprehensive concept that refers to utilizing the components of food (macronutrients and micronutrients) for growth, metabolism, and tissue repair.¹ Macronutrients include proteins, fats, and carbohydrates. Micronutrients include vitamins and minerals.

Some diets may be considered 'healthy,' but do not always confer optimal nutrition. A 'healthy diet' is defined by the World Health

Organization as high in whole grains, legumes, fruit, vegetables, and nuts, but low in free sugars and fats (particularly saturated and trans fats), and salt. A healthy diet is considered more environmentally sustainable since it is associated with reduced greenhouse gas emissions, as well as decreased use of land mass and fresh water.³

Tolle totum: the 'big picture' of nutrition in naturopathy

Every living organism has an integral place in the natural universe. In many traditional and world medicine systems, food consumption illustrated the eternal cycle of life, death, and renewal. With every 'food' consumed (plant or animal), a living organism is dismantled in the digestive system and incorporated into the body. In an exchange of matter and energy, the body becomes what it consumes, biochemically and energetically. An expanded consciousness regarding food and nutrition not only helps patients make improved self-care choices that lead to improved biochemistry, it also affects many psycho-emotional factors that influence mental health.⁴ In many vitalist systems of medicine, consciousness of the Self in the context of nature is intrinsically healing. Recognizing one's place in the natural order, both physical and spiritual, helps direct the body and psyche toward health. The body responds to knowing itself. In essence, patients can become the healthy individuals they envision.

As a medical doctor and a pathologist, I have learned the fundamental assumptions of allopathic medicine: disease inevitably worsens without pharmaceutical or surgical intervention. As a naturopathic physician, my approach to physiology and pathology includes the knowledge that the disease process can improve, attenuate, or even reverse with an appropriate supportive approach to the patient's healing process. We can stimulate transformation, cellular repair, and rebuilding if patients are guided to minimize disease-promoting influences and to implement optimal nourishment. R. Herdman, MD, ND

Dietary Practices in Other Vitalist Systems of Medicine

Various traditional world medicine systems utilize nutrition as a component of treatment and categorize foods according to their specific effects on physiology and health. The multiparadigmatic approach of naturopathy encompasses theories and modalities (including diet and nutrition practices) from several traditional world medicines, including those listed here.

‘Yin/Yang Theory & Five-element Theory In traditional Oriental philosophy, Yin and Yang are universal energies that describe the innate direction, quality, or tendency of all natural phenomena: animals and plants, rocks and oceans, earth and sky, and seasons. Yin and Yang foods and preparation methods are chosen to balance or to correct individual constitution and health conditions, and are balanced with respect to season and geography.^{5,6} It is widely held that yang foods are stimulating, warming, drying, energizing, and compact, while Yin foods are calming, cooling, relaxing, and eliminating. Some foods are neutral in their effect on the body's energetic balance.⁷

Five-Element Theory is an Eastern elaboration of Yin-Yang that classifies all foods into five categories corresponding with the five elements, and correlating with a season, an organ system, and predominant flavors and colors of food.⁸ Every dish should feature only one predominant

element: thus, each dish can specifically nourish or clear a particular organ or system.

Macrobiotics The term 'macrobiotic' (from 'macros' or 'large' and 'bios' or 'life') was coined in the early 19th century by Christophe Wilhelm Hufeland (1762-1836), a professor of pathology at the University of Berlin and a close friend of Samuel Hahnemann. As a recipe for longer life, Hufeland advocated grains, seeds, and plant foods indigenous to the locality of the consumer. In the mid-20th century, George Ohsawa (1893-1966) applied the term to a diet that was an embellishment of Hufeland's principles combined with the Eastern philosophy of yin and yang.⁹ The diet features local and seasonal foods, mostly vegan, and cooked. It is based on whole grains, with sea and land vegetables, and small amounts of legumes, fish, and fruit, but no dairy. It provides ample fiber, little fat, calcium, or protein, and minimal if any iron and vitamin B-12. Macrobiotic diets are predominantly eliminatory and promote detoxification: despite ample calorie intake, patients often lose weight. In a contemporary macrobiotic diet, the staple food is grains, supplemented with locally-grown and seasonal vegetables, fruit, and fish. Although generally considered to be a healthy diet, critics suggest that the absence of dairy foods and minimal animal protein can make strict adherents prone to nutritional deficiencies.^{10, 11}

Doshas Derived from ancient East Indian medicine (Ayurveda), flavors (doshas) of foods and spices are considered to nourish or calm either vata (cool and dry), pitta (hot and moist), or kapha (cool and moist) constitutions. Ailments are counteracted or weaknesses strengthened according to an individual's constitution.

Dietary Approaches for Detoxification and Rebuilding Vitality Re-set the Body's Basic Physiology

These approaches create a fundamental shift in metabolism, changing how the body works. For example, a low-carbohydrate, low-cholesterol diet isn't recommended only to 'control' hyperlipidemia — it can enable patients to make enduring changes to their body's production and breakdown of fats, while (with appropriate supervision) deepening their self-understanding and their relationship to food and to nature. Patients can emerge with fewer symptoms, improved blood results, and an enhanced sense of wellbeing. When body chemistry changes, patients' preferences also may change: foods that tasted good in the past, might no longer appeal.

Rebuilding vitality

Physical repair and psychological evolution are possible only because the human body renews itself. For example, the intestinal epithelium is replaced every 5 - 7 days¹² and a red blood cell is replaced every 100 – 120 days.¹³ After new cells mature and die, new tissues are built using nutrients derived from food, water, and air. The generation of fresh cells and tissues is an opportunity for the body to re-create new tissues with foods matched to its individual needs and in harmony with its environment. This phase floods the body with optimal nutrients to create new tissue and, specifically, to stimulate the vital force within depleted

organs to restore circulation, respiration, and vibrant health.^{14,15}

Detoxification and depuration

Waste within the body (Lindlahr's 'morbid accumulations')¹⁶ derives from several sources: the body's own metabolic wastes, chemical residues from food additives, environmental sources and pollutants, or from medication. These accumulate in fat and other storage tissues over many years. To be eliminated, these wastes are mobilized and released into the bloodstream, then cleared through all physiological avenues of elimination: primarily urine, stool, exhalation, bile, and sweat (the emunctories). Along with other modalities, nature cure detoxification programs may include cleansing diets to enhance depuration and elimination or may use fasting to accelerate these processes.

Acid and Alkaline Balance

Re-establishing the body's acid-alkaline balance supports the healing process and the body's return to homeostasis. This concept has been well known in recorded medical literature since the 1830s,¹⁵ with increasing knowledge that many diseases originate from an excessively acid metabolic condition. Restoring the slightly alkaline blood pH (7.35-7.45) in arterial blood is essential to preventing a 'domino effect' response throughout the body: arterial pH affects both intracellular and interstitial pH on which the enzymes and membrane transport proteins of metabolic

pathways are dependent.¹⁴ Foods are classified either as acid- or alkaline-forming, based on the residue they leave in the body that may then affect body tissues (but blood pH remains very stable)¹⁷ (Sander, Ragnar Berg R, DW Kelly year). This residue may affect the tissues, but not the blood (because blood acidity generally is stable). Acid-forming foods, which are believed to decrease pH, are generally calorie-dense, 'build-up' foods (e.g., protein, fats, and carbohydrates). Alkalinizing foods include calorie-light, eliminative or 'break-down' foods (e.g., vegetables, fruits, sea vegetables, and sea salt). To promote the desired alkaline content in a meal, the approximate volume of alkalinizing foods (at a glance) should exceed or equal that of acidifying foods.

The Hay Diet: Ahead of its time?

Using the principle of acid-forming and alkaline-forming foods, William Howard Hay, MD, (1866-1940) developed a dietary system in which foods requiring different chemical conditions for digestion are not eaten in the same meal. The Hay Diet, as it is known, advocates separating predominantly protein foods (which require an acid medium for digestion), from predominantly carbohydrate foods (which require an alkaline medium for digestion). In the Hay diet, a mixture of protein and starch in the same meal is contraindicated because Hay maintained that the alkaline enzymes required for starch digestion weaken the acid-based protein-digesting enzymes. Starch and fruit also are considered unsuitable combinations in this diet. Hay recommended a four-hour interval between meals that are predominantly starchy and those that are predominantly protein.

Strict separation of carbohydrate and protein is nearly impossible, because almost all foods contain combinations of both. Nevertheless, there is anecdotal evidence of improved digestion and wellbeing in patients who routinely avoid strong proteins (such as meat or fish) in the same meal as starchy foods (such as bread, rice, or potatoes).

Hay also advocated a diet of 80% alkaline-forming foods (fresh fruits and vegetables) and 20% acid-forming foods (meat, eggs, and grains), so the benefits from his dietary system may be due to general improvement of nutritional intake, as much as to avoidance of incompatible foods.¹⁸, p. 140

Roger Neman Turner

Food As a Primary Healthcare Tool

Therapeutic diet prescriptions are based on the principles of nutritional science, including biochemical analysis of protein, fat, carbohydrates, calories, and micronutrients. Because human survival and health requires ingesting substances the body cannot manufacture (e.g., the eight essential amino acids, vitamins, and omega-three and omega-6 fats), certain high-dose nutrients also can be therapeutic (e.g., phytonutrients, such as anthocyanidins, for eye and joint protection or magnesium and vitamin B-12 as anti-asthmatics.^{19,20} The challenge is knowing how to integrate nutritional medicine concepts to prescribe palatable and easy dishes with specific therapeutic properties. In-depth programs, rather than gradual diet changes, can most rapidly and dramatically change patients' health. Home-based or residential programs immerse patients in a natural lifestyle tailored for their

individual needs, so they learn by experience how foods can heal.

“...if we study dietetics from a strictly scientific point of view we cannot help finding that certain foods – among these especially the highly valued fleshfoods [sic], eggs, pulses and cereals – create in the system large quantities of morbid, poisonous substances; while fruits and vegetables which are rich in the organic salts, tend to neutralize and to eliminate from the system the waste materials and poisons created in the processes of protein and starch digestion.” Henry Lindlahr, *Philosophy of Natural Therapeutics*, p. 320

Every food has unique characteristics resulting from its geography, growth season, nutritional composition, biochemistry, and physiologic effects. Therapeutic diets employ food that best fits the patient’s current physiologic, economic, and lifestyle requirements. Whole, natural foods provide the best physiologic match for the contemporary human body. Humanoid teeth and the digestive system have changed with evolution and geographical developments. Hunter-gatherers, such as Australopithecus, (4 million years ago) had heavy, skull-bearing, immense molars for foraged plants and scavenged game. Early farming cultivating grain began 11,000 years ago.^{21, 22} *Homo sapiens sapiens* of today have an omnivore physiology: the gut length is between that of carnivores and herbivores, and dentition includes both canine teeth for tearing, and molars for grinding. As a species, humans still are poorly equipped for breaking down synthetic colorants, preservatives, or flavorings that may accumulate,

impede biochemistry, and consequently contribute to disease. The human body is best suited to unrefined, chemical-free food, in its natural form.^{23, 24}

Therapeutic diets include foods that are:

Whole and organic: ‘whole’ refers to foods that are close to their original living form and without chemical additives the body cannot efficiently metabolize.^{25, 26} ‘Whole’ foods provide the highest nutrient levels in proportion for physiologic needs, whereas ‘organic’ stipulates food grown without chemical additives or pesticides.²⁷

Maximillian Bircher-Benner (1867-1939), a Swiss naturopathic physician (and creator of muesli), supported the idea of raw food potentials developed what he called the ‘sunlight theory of nutrition.’ Bircher-Benner based this concept on the 2nd Law of Thermodynamics that states that in a closed system not in thermal equilibrium, the entropy (a measure of disorder or randomness) will tend to increase. Raw foods are understood to have a greater entropy and energy potential than cooked foods. Bircher-Benner stated, “in vegetable raw foods we find the highest potentials and these potentials are degraded by heat.”²⁸ Raw foods have a freshness and vibrancy of flavor and are nutritionally dense, because cooking denatures proteins and significantly reduces important plant constituents (including isothiocyanates). This principle was the basis for Bircher-Benner’s advocacy of a diet containing high proportions of fresh raw fruit and vegetables and, for many years, was the foundation of treatment programs at the Vital Force sanatorium that he founded (later known as the Bircher-Benner Clinic) in Zurich, Switzerland. Today, this same rationale supports the use of raw foods in detoxification programs.^{24, 29,}

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Local and seasonal: plants or animals that live in the local area and season have the attributes needed to thrive in their environment and bring these qualities to the eater. For example, kale that survives in snow is believed to impart a hardy and warming effect, boosting stamina and endurance.^{30, 31} Both local and seasonal foods have been shown to increase dietary variety (and thus increase micronutrients derived from food), as well as to enhance food sustainability.³

Varied: every food has a unique profile of nutrients and energetic effects. The main proteins, starches, and vegetables included in the diet ideally are changed from day to day or week to week, to provide a full spectrum of nutrients. According to the Five Element theory of traditional Chinese medicine, rotating the main ingredients nourishes each organ system, in turn.^{8, 30, 31, 6, 5}

Fresh, recently harvested, and freshly prepared: damaged, aged, frozen or canned foods lose vital nutrients.²⁴ Processed foods may contribute to degenerative disease.^{23, 29} In the landmark experiments of F.M. Pottenger, kittens fed pasteurized mother's milk suffered greatly increased physical malformations [of teeth and skeleton] over two or three generations.³²

Simple — to reduce digestive effort: For patients with weaker digestion who cannot produce adequate proteases, amylase, and bile simultaneously, the concept of 'food combining' stipulates that protein should be

consumed with vegetables and oils, while carbohydrates and fruit should be consumed separately. This is less applicable for patients with robust digestive functions who have no digestive symptoms after eating. Although the food combining approach has been used in clinical practice for many decades,^{33, 34} it remains debatable in the medical profession.³⁵

Individualized for each patient’s medical condition and constitutional type: this maximizes nourishment for the least metabolic effort and physiological cost. Diets also should be tailored to address the patient’s recent diet history, and current socioeconomic and lifestyle circumstances.

Handled with natural cookware and utensils (i.e., stainless steel, wood, glass, ceramic, or cast iron) to avoid pollutants.^{36, 37}

Food is a powerful tool for health. Naturopathic physicians can utilize a multiparadigmatic clinical approach, employing the Naturopathic Medicine Therapeutic Order™, nature cure, and knowledge from traditional world medicines to craft healing food programs that transform patients’ health. Patients often are eager to learn this information and physicians can facilitate significant changes in patients’ consciousness, self-care choices, and understanding of their bodies and health.

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TOPIC 2

The Relationship between Food-based Cleansing and Blood Type

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Diet and nutrition have long been a mainstay of naturopathic medicine. Among its primary principles, is the recognition that good quality produce, grown in organically rich soils, provides the nutrient-rich foods needed to maintain health and vitality.¹ Along with clean air, sunshine, physical exercise, and clean water, diet and nutrition are two of the cornerstones upon which naturopathic philosophy and medicine are built. From 1908-1945, the *Journal of the American Naturopathic Association* published a regular column advocating organic farming, and decrying the use of pesticides and chemical fertilizers as the forebears of depleted soils and increasing chronic, degenerative diseases in future generations.

Diet and nutrition, for the most part, is an inherently personal aspect of health for most people, because what may help one person may not necessarily help another. Thus, the plethora of diets, diet books, and dietary fads that now frequent the 'healthy living' landscape are a testament to the individual nature and diversity of thought on the subject. Naturopathic medicine has long recognized that, 'one man's food is another's poison.'² Naturopathic physicians have attempted to individualize not only types of foods for patients, but also the proportions of proteins,

carbohydrates, fruits, vegetables, fats, and specific nutrients required to maintain health.

Diet based upon one's blood type was first proposed in the early 1960s by James D'Adamo, ND, DNB. Dr. D'Adamo noticed that some patients improved when consuming vegetarian diets, while others improved when consuming high amounts of meat protein. To test his hypothesis, he developed diets based upon the person's blood type. These have been clinically successful in treating disease in many naturopathic practices. Subsequently, Peter D'Adamo, ND, discovered both a biochemical and a genetic basis for the diet's success and has researched this, extensively.³ The blood-type diet is uniquely naturopathic, because it treats the whole person and follows the precept of individualizing treatment to fit the patient's presentation, not the disease. Throughout its evolution, the Blood Type Diet has been supported by empirical observation implemented, tested and its hypothesis subsequently clinically validated by other practitioners.⁴

The blood-type diet is uniquely naturopathic, because it treats the whole person and follows the precept of individualizing treatment to fit the patient's presentation, not the disease.

The Blood Type Diet

This dietary regimen is based on the premise that humans are genetically predetermined to thrive on certain foods. The lectin content of certain foods selectively disrupts

normal cellular and immune system function in some individuals, but has the opposite or no effect in others. The effects of lectins (a diverse range of carbohydrate-binding proteins found in foods and that have agglutinating properties in the blood) have been studied extensively since their discovery in 1888.^{5,6,4,7,8,9,10} Because they possess the ability to disrupt cellular components^[i] they have been implicated in diseases such as macular degeneration, cystitis, interstitial cystitis, urethritis, prostatitis, infertility, breast tumors, diabetes, and psoriasis.¹¹ Paradoxically, lectins are being used clinically by an increasing number of physicians to treat specific conditions, including infectious diseases and cancer, because of their propensity to select and alter the pathogenicity of certain microorganisms and to target cancer cells with variable selectivity as drug carriers.^[ii]

^{12,13,14, 15,16,17,18, 19}

Knowing a patient's ABO blood type, Rh(D) factor, MN group, and secretor status^[iii] can help clinicians make clinical decisions that better fit the patient's individual needs for conditions, such as peptic ulcers,²⁰ urinary tract

ⁱ For example, cell surface markers, such as chicken lectin, have a propensity for the B locus on cells in individuals with blood type B.

ⁱⁱ For example, peanut lectin as well as snail lectin, have been shown to have a propensity for disrupting breast cancer cell surfaces, thus making them more susceptible to the immune system. Peanut lectin is used to clean breast cancer cells from the bone marrow.

ⁱⁱⁱ Secretor status: individuals who secrete blood group antigens in body fluids (e.g., saliva, sweat, tears, semen, and serum); non-secretors do not secrete their blood group antigens in body fluids. A lack of blood group antigens in body discharge increases one's susceptibility to certain types of diseases and infection.²⁹

infections in women,^{21,22} Crohn's disease,²³ various cancers,^{24,25,26} and maintaining normal gut flora.²⁷

For example, non-secretors comprise about 15-20% of the US population.^{28,29} Non-secretors cannot produce the binding factors (lectins) to various microorganisms and cannot be typed from their saliva or gastrointestinal secretions, while secretors can be typed and do secrete. Non-secretors, therefore, are more susceptible to prolonged inflammatory reactions. In most naturopathic medical practices, clinical experience indicates a significantly higher percentage of non-secretors are seen with chronic degenerative diseases than would be expected based upon population percentages. Thus, knowing a patient's secretor status in advance enables practitioners to better develop a preventive medicine program for patients, while knowing the blood type allows the clinician to predict the patient's propensity to develop certain diseases. A higher percentage of gastric ulcer disease, for example, has been observed in blood group O individuals, compared with the other blood types.^{3,30} This information allows practitioners to: i) educate patients about their susceptibility for developing certain diseases and ii) to design prevention programs.³¹

The Blood Type Diet allows for greater individualization, but also can be used in an elimination and reintroduction program to find food allergens. Restricting the patient to the highly beneficial food category for a four- to six-week period reduces the lectin burden on the gastrointestinal

tract and allows function to normalize and inflammation to decrease. After this period of time, foods from the neutral or elimination categories can be introduced, and patient reactions recorded. As various foods are eliminated from the diet, patients and clinicians discover that if the patient is sensitive to a specific food, an alteration in the normal GI or other body functions will occur (generally seen as a diminution in symptoms), suggesting that the sensitivity is a true one. If there are no changes in symptoms, that food may be consumed, but smaller quantities generally are recommended (because a non-IgE-mediated intolerance may require gradual reintroduction of the food to allow restoration of adaptive competence).

Restricting patients to individually beneficial foods at the first sign of an illness enables the patient's immune system to address the disease, rather than elimination of harmful dietary lectins. Conversely, in an otherwise healthy individual who is free from overt disease, periodically consuming foods that are incompatible genetically or functionally, can stimulate the immune system. This is one of the benefits of eating a variety of foods and rotating the diet. This also is part of the rationale of introducing solid foods in a specific order of increasing complexity when weaning infants from breast feeding (it helps strengthen their developing immune system).

Prescribing dietary changes includes recommending percentages of proteins, vegetables, carbohydrates, fats, and fruits. Although there is some debate, even among

naturopathic physicians, keeping patients in a neutral to positive nitrogen balance while maintaining a balance of carbohydrates, vegetables, fruits, and fats, generally prevents patients from gaining excess weight or enables them to gain weight, if needed. Diets can be modified for patients with special needs (such as kidney disease, irritable bowel syndrome, or diabetes) based on guidelines for that condition.

In addition to diet, treating the whole person (*tolle totum*) dictates that we also apply other therapies. When dietary changes are made, unless some sort of colon and liver cleansing is undertaken at the same time, the response from dietary changes alone proceeds much more slowly. When coupled with liver and colon cleansing to reduce toxemia, patients may experience a benefit much sooner.^{32,33} In a small number of cases, clinical experience has shown that the introduction of changes using the Blood Type Diet will evoke a healing crisis within the first two to six weeks.³⁴ This may be seen with patients who are not receiving homeopathic medicines or constitutional hydrotherapy.^[iv] This may be due, in part, to a change in intestinal flora, as well as decreased inflammation resulting from reduced lectin burden and decreased putrefaction of incompatible proteins. Intestinal putrefaction of proteins

^{iv} Patients undergoing homeopathic or hydrotherapy treatment often will experience a healing crises at some point. Although patients making only dietary changes also may experience a healing crisis, they usually are undergoing multiple therapies at the same time.

can be measured qualitatively via the Obermeyer test (Indican test), a simple in-office urine test that shows the level of intestinal toxemia and the patient's response to dietary changes.³⁵

When coupled with liver and colon cleansing to reduce toxemia, patients undertaking dietary changes may experience a benefit much sooner.^{32, 33}

Other measures of dietary response include weight loss/gain; blood pressure and pulse; and evaluation of vegetative functions, such as sleep, bowel function, appetite, thirst, and energy level. Female patients may experience improvement in menstrual periods. Changes in the menstrual cycle usually begin within the first month and, once homeostasis is re-established, generally continue normally. Patients are taught that a disruption in one or more of these parameters may be an indication that their body is out of balance and that something needs to be changed.

Case Study

A 30-year-old female presented with lupus nephritis and end-stage kidney disease. The patient had been in intensive care for several weeks, receiving dialysis for kidney failure. She was released from the hospital, advised she would require a kidney transplant within the next six months, and placed on a donor list. In her still weakened and cachectic state, her brother, who wanted to know if our naturopathic clinic could help, carried her into our office.

We prescribed a homeopathic medicine and a series of constitutional hydrotherapies to restore homeostasis and reduce inflammation.

(Boyle & Saine, 1988) The patient was placed on a diet based on her blood type and restricted to her 'highly beneficial foods' category. Proportions of dietary protein and carbohydrate were modified, due to her high renal failure index. Within eight weeks of initiating treatment, the patient's serum creatinine and BUN returned to the reference ranges. The patient's dialysis shunt was removed and she was no longer scheduled for a transplant. She continued to improve for the next six months, gained weight, experienced increased energy, then disappeared for two years.

Two years later, the patient presented again for treatment, with kidney failure and elevated BUN and creatinine levels. She had stopped the Blood Type Diet 1.5 years previously, stating that it was just too difficult to follow. After explaining that she would have to follow the diet again, she said she would probably go ahead and have the kidney transplant. Our doctors explained that even with a transplant, the patient had a genetic susceptibility for kidney disease and would have recurring problems. She said she would consider this, and she was not seen again for five more years.

Five years later, the patient appeared at our office. This time, she was accompanied by her mother and by a three-year-old child. I asked if she had undergone the kidney transplant and she said she hadn't, but had undertaken the dietary changes as suggested at her last visit and did quite well for the next three years. She was able to have a child, had begun a successful career, and had traveled abroad with her husband. Now, she was in kidney failure again and wanted to avoid a transplant. Her mother was carrying a copy of *Eat Right 4 Your Type* by Peter D'Adamo, ND, and wanted to know if the diet could help her daughter. The patient had stopped following the Blood Type Diet one year previously. She subsequently underwent additional constitutional hydrotherapies and began following the diet changes again. She was able to avoid a kidney transplant a third time and has had no symptoms of lupus.

This case illustrates one of the cornerstones of naturopathic medicine and a key observation from clinical practice — appropriate diet and nutrition are essential to health, and adherence to a good nutritional program decreases morbidity. The human body has a tremendous capacity to heal, if given the proper stimulus. Coupled with nature cure methods, such as those used with this patient, the results can be profound and life-altering.

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TOPIC 3

Food Intolerance and Food Sensitivity Evaluation

Dickson Thom, DDS, ND

Early nature cure doctors gave significant attention to dietetics as a primary source of health, as a cause of illness, and as a therapeutic modality for restoring health. Continuing this focus, current naturopathic clinical practice codifies dietetics as an important component to establishing conditions for health — level 1 of the Naturopathic Medicine Therapeutic Order™. Clinical assessment of dietetics includes food reactivity as a common, though controversial, element. It is controversial, because there is no general agreement regarding ‘best practices’ for assessing food reactivity. This chapter proposes a definition for ‘food reactivity and intolerance,’ and summarizes some of the generally recognized assessment methods.

Defining Food Allergy and Food Sensitivity

An expert panel convened by the National Institute of Allergy and Infectious Disease (NIAID) recently defined food allergy as, “... an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food.”¹ Food sensitivities, on the other hand, may be defined as, “... a clinically abnormal response to an ingested food or food additive and may be mediated by immunologic, pharmacologic, toxic, infectious, idiosyncratic, metabolic, and neuropsychologic mechanisms.”² Terms commonly used to describe food

allergies include food hypersensitivity, food anaphylaxis, food idiosyncrasy, food intolerance, pharmacological reaction to food, metabolic reaction to food, adverse reactions to food, and food sensitivity.

Food allergy: "... an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food."¹

Food sensitivity: "... a clinically abnormal response to an ingested food or food additive and may be mediated by immunologic, pharmacologic, toxic, infectious, idiosyncratic, metabolic, and neuropsychologic mechanisms."²

Categories of Food Reactions

Adverse or toxic reactions to the ingestion of certain foods often are specific to individual patients. These can manifest through psychological, emotional, and physical disturbances and can be characterized by confusion, fatigue, irritability, headaches, mucous congestion, and other symptoms. Symptoms can be caused by different mechanisms (Fig. 1) including:

- immune-based mechanisms (allergy)³ that are either:
 - IgE-mediated: classic allergic reactions (IgE-dependent)
 - non-IgE-mediated: IgG, IgM, or IgA-mediated reactions (e.g., formation of IgA antibodies to transglutaminase), and IgG/IgM reactions to gluten breakdown products (α , β and/or ω -gliadins) in celiac disease⁴

- non-immune-based mechanisms — chemical sensitivities to toxic substances, such as food additives including benzoates, salicylates, sulphites, and dyes²
- enzyme deficiency leading to intolerance — for example, syndromes or lactase in lactose-intolerant patients
- vasoactive amines (histamine) — including histamine and tyramine
- other — some as-yet unexplained mechanism

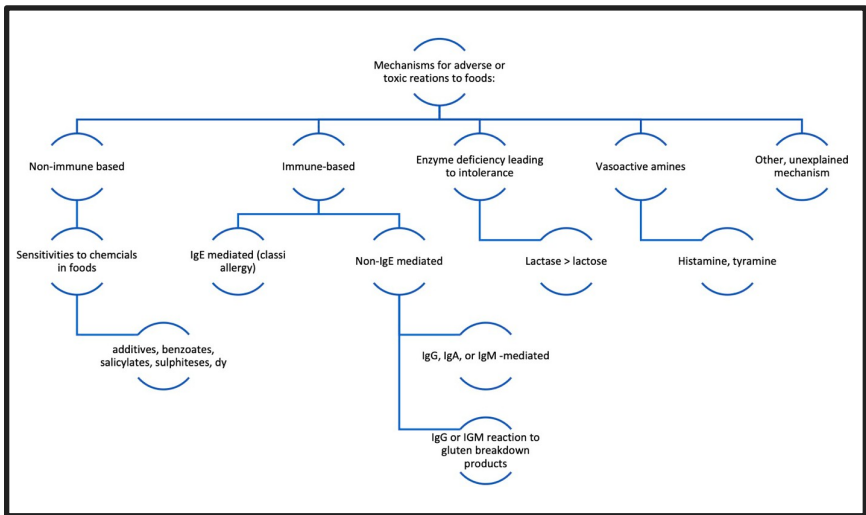


Fig. 1 Physiologic mechanisms underlying toxic or adverse reactions to foods.

Immune-based mechanisms

Food allergy: Immune system-mediated food allergy results from interactions between ingested foods (antigens), specialized cells of the innate immune system in the digestive tract, and mucosal cells. By definition, an allergy, or type I hypersensitivity reaction, is an abnormal

reaction to a generally harmless substance, occurring in a previously sensitized individual and characterized by the formation of a specific immunoglobulin (antibody), IgE. IgE has poorly understood associations with a specific subtype of IgG (IgG₄).⁵ Once sensitized, when re-exposed to the allergen, the specific IgE becomes bound to histamine-containing mast cells (a specific type of white blood cell) and reacts with the allergen, releasing the histamine from the mast cells. It is important to note in this context that sensitization does not necessarily require previous exposure — cross-reactivity can occur. The estimated prevalence of immune system-mediated food reactions is 6-8% up to one year of age and 3-4% in the adult population; however, rates appear to be increasing in all age groups.^{6,7,8,9}

Food sensitivity or intolerance: Other immunoglobulins, including IgG, IgM, and IgA also can form in an immune response to specific food antigens, but this response is not immediate. The IgG response tends to be a delayed, rather than immediate response, and is estimated to occur at rates of up to 20% of adults. It is thought that food ‘intolerances’ are not allergic in nature, but are immune-mediated, whereas a food allergy may be immune-mediated, but also involves non-IgE antibody reactions.^{1,10,11,12}

Immune-based mechanisms involve potentially four types of food reactions:^{13,14}

Type I (immediate, less than 1 hour) — an antigen (Ag) binds to an IgE antibody (Ab) which is attached to a mast cell or a basophil (white blood cell) circulating in the bloodstream. This antibody-antigen complex formation results in the release of histamines, leukotrienes, and other cytokine mediators from the mast cell or basophil, often resulting in a typical allergic reaction: problems such as rhinitis, urticaria, bronchiolar constriction, and gastrointestinal (GI) upset. In its most severe form, this reaction can extend to anaphylaxis (anaphylactic shock).

Type II (cytotoxic reaction) — either IgG or IgM bind to cell-bound antigens. This often results in destruction of the cell by cytolysis. Autoimmune hemolytic anemia and rheumatic fever are examples of this type of reaction.

Type III (immune complexes) — immune complexes are antigens bound to antibodies and are found circulating in the bloodstream. They may become deposited in tissues, resulting in tissue injury. This type of reaction usually involves IgG immune complexes. Systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA) are immune complex-mediated disorders.

Type IV (delayed hypersensitivity) — a reaction mediated by CD4⁺ T-helper-1-lymphocytes (another type of white blood cell) and that follows contact of an allergen with sensitized T cells, resulting in delayed inflammation mediated by the sensitized T-cells. This reaction *does not involve antibodies*. Examples where this type of reaction is important in

disease pathology are contact dermatitis, allergic colitis, multiple sclerosis, celiac disease, and Crohn's disease. A relatively small fraction of these food reactions involve IgE elevation.

A food allergy may be diagnosed based on a definite, immediate allergic reaction to a specific food, based on a reaction that is suggestive of allergy, supported by a corresponding positive skin prick and a reaction upon oral re-challenge, or by a new Allerscan test.¹⁵ In the absence of such evidence, the less specific diagnosis of food intolerance or food sensitivity is preferable.¹⁶ In a 2001 study of children with both atopic eczema and food intolerances or allergies, 48% had a type I reaction, 6% had evidence of a type II reaction, 10% had evidence of immune complex formation, and 18% had type III reactions (28% of patients were noted to have one or more hypersensitivity reactions).²

Food reactivities are common and can affect the body in many ways: the digestive, immune, cardiovascular, and nervous systems are most frequently affected. The weakest link in an individual's system is often the first to show sign of dysfunction. Because symptom onset is delayed and response is individualized, it may be difficult to associate food use with symptoms of sensitivity.

A food-allergic person is one who has adverse IgE-dependent reactions to specific foods. In standard medicine, the accepted guidelines advise the diagnosis of an IgE-dependent food allergy on the basis of medical

history, symptoms, the results of recommended testing (e.g., a skin prick test (SPT)), and the results of food elimination followed by oral challenge tests. In general, food allergies:

- are immediate in onset (within 1 hour)
- recur with challenge testing

It often is difficult to directly associate food ingestion with sensitivity symptoms, because symptom onset can be delayed and because an individual's response may vary from exposure to exposure. Food allergies are far more common than many people realize. Many allergists believe only a few people have food allergies (caused by only a few foods, such as wheat, dairy, corn, soy, chocolate, nuts, peanuts, eggs, fish, and perhaps tomatoes), but clinical experience has indicated to many naturopathic physicians that these reactions are more prevalent than previously believed.

Methods for Diagnosing Food Reactivity

The purpose of testing is to determine a patient's food sensitivities in a reliable and reproducible manner, and to determine if clinical improvement results with their application. A comprehensive health history and food diary often are helpful adjunctive tools. There are several methods to identify foods to which people may adversely react. However, each method has advantages and disadvantages, and there is no simple, totally reliable clinical test available for food reactivity testing. Identifying

the reactants that cause common symptoms is not easy, because the reactions may be due to immune-mediated reactions (as discussed above), intestinal enzyme deficiencies, toxins, infections, neurological/psychological reactions, or by an unknown mechanism.

Two broad categories of applicable tests are commonly used:

- laboratory tests to measure immune complex formation and thus indirectly measure specific antibody production
- experimental clinical tests that challenge the patient with suspected allergens and then monitor any reaction(s)

Other testing methods await full validation, but clinical experience indicates they may be useful to determine food sensitivities.

Common tests naturopaths use to identify food reactivities

- Allerscan
- Cytotoxic testing
- D'Adamo Blood Type Diet®
- Enzyme-enhanced lymphocyte blastogenesis assay/advanced cell test (ELISA/ACT)
- Enzyme-linked serum assay (ELISA)
- Elimination/reintroduction (exclusion diets)
- Food immune complex assay (FICA)
- Kinesiology
- O. G. Carroll's method
- Paper radioimmunosorbent test (PRIST)
- Radioallergosorbent procedure (RASP)
- Radioallergosorbent test (RAST)
- Scratch, skin testing
- Sublingual test

Electro-acupuncture according to Voll (EAV) testing

EAV is a non-invasive, energetic patient evaluation tool using a galvanometer. It has been used in Europe for many years to determine energy imbalances in the body. The original German Electro-Acupuncture technique was started in 1953 by Reinhold Voll, MD. This complex, time-consuming procedure involves measuring hundreds of acupuncture points. Every atom in the human body or in living tissue oscillates in a specific frequency pattern, like the strings of an instrument. It is believed that the way in which these oscillations interact determines whether there is a functionally viable or a diseased tissue. The EAV test technique is founded on the theory of acupuncture meridians and the working assumption is that changes in these frequencies are detected by the technique. The course of the acupuncture channels and the relevant acupuncture points provide the basic framework.

“...the atom, which was thought to be the ultimate particle of solid matter, is found to be a little universe in itself in which corpuscles of electricity rotate or vibrate around one another This explains what we mean when we say life and matter are vibratory.” Henry Lindlahr, 1913

In diagnosis with electro-acupuncture, a slight potential change in resistance (measured as a change in voltage) is produced between a tip electrode held against an acupuncture point and a large surface electrode (hand electrode) held by the patient. In one controlled,

comparative study of allergy testing methods, EAV test results proved to be accurate and reproducible.¹⁷ This study showed a high degree of compatibility between EAV and five other tests (RAST, RASP, scratch, cytotoxic, and food challenge). The study demonstrated great sensitivity. Although EAV testing has not been critically evaluated in full, many practitioners consider it useful to evaluate food sensitivities. Experienced EAV practitioners believe that acupuncture points can have a direct relationship to a specific anatomical structure or physiological function of the body.

Bioelectronic Function Diagnosis (BFD) and Therapy

BFD reduces some of the complexity of EAV testing. A Bioenergetic Regulatory technique (BER) records a person's bioelectric potential and is believed to be capable of revealing functional or 'energetic' disorders.

The Vegetative Reflex Test (VRT) or Vegatest method is a bioenergetic measurement technique, similar to EAV. It originated in 1978 by Helmut Schimmel, MD, DDS, and is the culmination of 35 years of German electro-acupuncture development. VRT measures skin resistance and electric potential on an acupuncture point, as well as potentially revealing changes in skin resistance and electric potential that may correlate with dysfunction, without directly exposing patients to the potential allergen. It produces immediate results with a simple, painless procedure and, in general, is approximately 70% accurate.¹⁸ All German

electro-acupuncture systems depend on subjective aspects, such as the influence and experience of the doctor, due to the need to manually measure the acupuncture points. The Vegatest also is being used as an investigative tool to identify sensitivities not only to food, but also to pollens, moulds, environmental pollutants, and chemicals.

The Vegatest method requires only a few acupuncture points (vs. hundreds of points with EAV and sixty points for BFD), because the system is based on measuring against special test ampoules, rather than on organ-linked acupuncture points. The patient's response to the test ampoules results in a 'yes' or 'no' reading, for each acupuncture point tested. Although the mechanism of action still is not completely understood, it is assumed that the Vegatest method involves two processes:

- a known electrical process for measuring skin resistance
- an unknown energetic and physical process

The VEGA Grieshaber company continues to develop sensors and processing software for many applications and industries.¹⁹ In Germany, the Grieshaber Foundation, along with an affiliated Academy of Research and Continuing Education, teaches updated information about the Vegatest method. In the last several decades, significant proof of the phenomenon of skin resistance changes has been shown.^{20, 21, 22, 23, 24}

A variety of food sensitivity tests are available which encompass a broad range of accuracy, sensitivity, specificity, patient economics, risk factors, suitability, and comfort. Whichever clinical techniques are used in the diagnosis of food sensitivities, it is always necessary to demonstrate a direct cause-and-effect relationship between food ingestion and provocation of symptoms. Excluding the foods to which one is sensitive is the most effective form of management, so an appropriate avoidance regimen is essential. Eliminating the offending food(s) from the patient's diet can help improve overall health.

Blood Type Diet

In 1996, Peter D'Adamo published what became an international best-selling book titled, *Eat Right 4 Your Blood Type*.²⁵ This book is based upon his work and that of his father, Gary D'Adamo, in which they determined that lectins found in the cell membranes or cell walls of foods might trigger an immune reaction in the intestines in the same way that blood type differences could trigger an immune reaction post-transfusion, and by the same mechanisms. They detailed what is essentially a genetically based immune reaction to foods based upon lectin type. Lectins will specifically trigger an immune response when 'seen' by the immune system as foreign rather than self-type lectins. The book details which foods are associated with which lectin types, and divides dietary selection into four basic types, based on foods suitable for individual

blood types (i.e., O, A, B, and AB). It also discusses Lewis Secretor gene status and its modifying impact upon this same phenomenon. Dr. D'Adamo has developed an institute to study this phenomenon, that has published several studies based upon this work. His method is used by several naturopathic physicians.

Otis George Carroll, ND

Otis Carroll, ND, of Spokane, Washington, was a pioneer of naturopathic medicine in the Northwest. He was a student of Henry Lindlahr of Chicago, and Alex LeDoux of New Orleans, who had cured him of severe juvenile arthritis, using the methods of Kneipp. He found that the most difficult cases required specific dietary changes to bring about cure. An underlying cause of their ill health was the toxemia generated by poorly digested foods being degraded in the large intestine by bacterial activity, which should not be occurring. This is corrected by identification and elimination of specific foods that are not well digested, based upon peculiarities of specific digestive systems. Originally, he identified these 'constitutional food intolerances' by through trial and error with food elimination and reintroduction with his patients.

The difficult trial and error method of discerning the food intolerances that he used was replaced after a visit to his clinic by Nicola Tesla, according to Ruby Dick, the wife of Harold Dick, ND, one of Carroll's protégés. Tesla brought the electrodermal, bio-electronic method developed by

Professor Albert Abram's, MD, of Cooper Medical College (later, Stanford School of Medicine). Carroll adapted Abram's method to discerning these disturbing foods, and then taught this methodology to a number of naturopathic physicians.²⁶ In 2004, many of these methods were reviewed in a comparative analysis by Herman and Drost.²⁷

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TOPIC 4

Food Intolerance and Other Detection Methods

Letitia Dick-Kronenberg, ND

Distinguishing Food Allergy from Food Intolerance

A **food allergy** is an immune-mediated reaction in which the body perceives food constituents as antigens and mounts an immune response. Allergy often is the result of an underlying intolerance and food allergy tests determine which foods may be overwhelming the immune system (i.e., hypersensitivity or anaphylaxis).

Food intolerance occurs when a particular food is not digested or metabolized effectively. It may or may not include an immune component. It often is induced by disturbances in digestion and metabolism, and may be an enzymatic or epi-phenomenon (genetically determined), because intolerances can occur in family lineages.^{1,2,3,4} With chronic food intolerance, toxic metabolites may form in the intestine (i.e., intestinal toxemia),^{5,6} be absorbed into the bloodstream, and interfere with normal function of the body. This can become the basis for chronic illness, such as asthma, hay fever, and eczema.

The Long-term Consequences of Food Intolerance

Toxemia, (the accumulation of both normal and abnormal metabolites), increases inflammation throughout the body.^{7,8,9,6,5} Gut toxins from maldigestion are poisons to the metabolism.¹⁰ This accumulated putrefaction, in turn,

can lead to chronic, degenerative disease.¹¹ If left unattended or if the resulting condition is treated with chemotherapy or immunosuppressive drugs, inflammation and toxemia can increase, which eventually may impair several different systems.^{7,8,9,6} The resulting chronic disease may continue producing an impaired metabolism that may lead to degenerative illness, including cancer.¹² Normal detoxification pathways may become overburdened and metabolism compromised. Nature cure methods, such as constitutional and other forms of hydrotherapy, massage, fasting, dietetics, and herbal medicines have been shown to positively affect health, improve liver function, decrease inflammatory markers, and increase white blood cell (WBC) motility under several conditions.^{13, 14, 15,16, 17,18,19,20,21}

Even foods that might be considered nutritious can be unsuitable for some patients, due to idiosyncrasies of metabolism and immune response. Foods, such as wholemeal flour or some fruits, have been known to cause problems for certain patients. Identifying specific foods with which patients may have an incompatibility, acknowledges the individual presentation of each patient.

The Carroll Food Intolerance Evaluation

Otis G. Carroll, ND, is considered one of the most innovative naturopathic physicians of the 20th century and was a highly regarded teacher of many other naturopaths. At his clinic in Spokane, Washington, where he practiced from 1917–1962, he treated patients from all over the world. His work was based upon the European nature cure

approach, which favored a simple vegetarian diet, hydrotherapy, homeopathy, and herbal medicine. He was also strongly influenced by vitalist principles established by the 19th-century herbalist, Samuel Thomson. Carroll not only expanded constitutional hydrotherapy techniques, but also developed a food intolerance evaluation that remains widely used, today.

Despite success with his patients, Carroll was unable to help his chronically ill son. This stimulated his search for better methods and led him to the work of Albert Abrams, MD, a professor of physiology at the Medical College of the Pacific (now Stanford University)²² who experimented with diagnostic techniques considered controversial at the time. Carroll modified Abrams' work to devise an individualized food evaluation method to identify foods not well digested or metabolized and thereby a source of maldigestion, intestinal toxemia, dysbiosis, and chronic irritation. Through this work, Carroll discovered his son had an intolerance to fruit. Once fruit was excluded from the diet, the boy made a good recovery. As Carroll applied this evaluation method to other patients, he observed food intolerances to milk, egg, meat, sugar, fruit, and potato. He also discovered intolerances to one or more *combinations* of food, such as grain with potato, grain with milk, grain with fruit, grain with sugar, and fruit with sugar (other food intolerances can include soy, nuts, or fish).

The Carroll Food Intolerance Evaluation is *not* an allergy test. It determines a person's innate imbalance in digesting

particular foods or food groups. One study has shown that the Carroll evaluation had a high positive predictive value (PPV) and high specificity when compared with an elimination/challenge.²³

The food intolerance evaluation determines the basic food groups that must be avoided. It also identifies food combinations that must be kept separate in the diet by 4, 6, or 8 hours, depending upon a patient's vital force, digestive ability, and age. For example, a common intolerance is to dairy (a primary intolerance). With this intolerance, dairy must be avoided completely in the diet. Another common intolerance is to a fruit and sugar combination — with this intolerance, the foods may be consumed individually, but each consumption must be separated by six hours. These examples dictate a diet that eliminates cheese, milk, yogurt, ice cream, and butter, and in which fruit and sugar consumption must be separated by six hours. In this case, fruit can be consumed with breakfast, for example, but neither fruit nor sugar should be consumed until dinner time when the patient can then consume sugar. (It often is recommended that patients replace all refined sugars with honey, maple sugar, or rice syrup and to eat fruit as desired). In 1929, William Howard Hay, MD, published a similar idea in his book, *Health via Food*.²⁴

Performing the Carroll Food Intolerance Evaluation

To perform the Carroll evaluation, a small blood sample is placed on a piece of absorbent paper and placed in an instrument designed by Dr. Carroll and later upgraded to a solid-state unit (Fig. 1). The blood sample is exposed to various foods. The device registers minute fluctuations in the electromagnetic current that indicate whether or not the blood sample is compatible with the food challenge and if that food will interact appropriately with the digestive system. This methodology is similar to the bioelectronic testing of Reinhold Voll, MD,²⁵ from which many current biofeedback devices have evolved. Increasing research on biofield receptors is demonstrating the physiologic effects of electromagnetic fields on human regulatory systems²⁶ that may further clarify the mechanisms underlying this test.

The Bolen Clot Reaction

The Bolen clot reaction evaluation was established by H.L. Bolen²⁷ and approved by the FDA in the 1970s as a diagnostic screening test for cancer. It was later abandoned for more specific testing via MRI, PET scans, or other diagnostic tests. This test is similar to the erythrocyte sedimentation rate (ESR), a nonspecific test commonly used to measure levels of inflammation in the body. In contrast to the ESR test, the Bolen test measures inflammation by observing the clotting action of red blood cells (erythrocytes) at 40X magnification. When healthy red blood cells (RBCs) clot on a glass slide, they form clumps within a web-like matrix of cross-linked or polymerized fibrin protein (Fig. 1A). In several conditions, the RBCs

clump together in a Rouleaux or ‘stacked coins’ formation.²⁸ When blood cells containing impaired fibrin dry on a glass slide, the cells separate with gaps between clumps of clotted RBCs (Fig. 1B). The number of gaps present reflects the degree of inflammation (Figs. 1A-1C).

Blood carries the power to heal. If patients are unable to digest and assimilate nutrition from their diet or to reinforce their diet with supplements, then they are not enhancing their blood but are adding to the toxemia in their system. The Bolen evaluation is an indicator of how well a patient’s metabolism is assimilating nutrition and cleansing the blood via the lymph channels, liver, and detoxification pathways.

Harold Dick, ND

Performing the Bolen Clot Evaluation

To perform this, 5-6 drops of blood are placed along the center of a clear glass slide to activate the clotting mechanism. The slide is placed on a level area, and allowed to air dry without a cover slip. The slide is protected from drafts, heat, and light or sun exposure. The dried blood sample is then examined under a 40X magnification ocular to observe how the RBCs clump and clot together (not individual cell morphology). The integrity of the fibrin protein can be seen in black lines connecting the pattern with a puzzle-like appearance. A digital camera or video pick-up can be placed on a tri-ocular scope. This allows pictures to be taken of the Bolen evaluation and stored with patient records for further comparison.

Interpreting Slides from a Bolen Clot Reaction Testⁱ

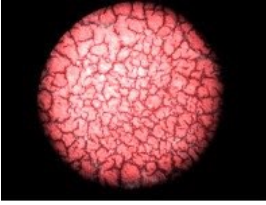


Fig. 1A No inflammation: healthy RBCs on a glass slide clot to form clumps within a web-like matrix of polymerized fibrin protein.

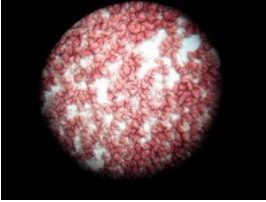


Fig. 1B Moderate inflammation: large open areas in the clotting pattern portray a weakened fibrin network and a higher degree of inflammation.

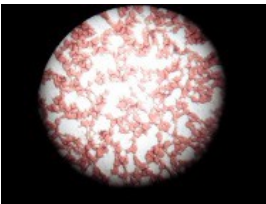


Fig. 1C Severe inflammation: absent fibrin network with small fibrin threads and small plasma 'lakes' that are clear, of variable size, with RBCs in irregular clumps, are irregular in outline and shape, and no Rouleaux formation.²⁸

Docere: using the Bolen CRT to educate patients

The Bolen Clot Reaction test can be a useful educational tool for patients to see the effects of nature cure therapies via their own blood samples. Patients can observe their blood clot reaction prior to nature cure treatments and again after following dietary changes, hydrotherapy treatments, exercise, and other lifestyle improvements. The test illustrates the *vis medicatrix naturae* at work within the patient's blood. After observing changes in their own blood cells, patients often become much more invested in personal health care. Patients' sense of self-agency increases when they realize what they eat and how they care for themselves makes a difference in their blood and how they feel. The connection becomes observable for them.

ⁱ See also: "Evaluating for Food Sensitivity or Food Intolerance," by Dickson Thom, DDS, ND.

Because food intolerance can lead to toxemia without overt symptoms, testing for these can be useful to understanding a patient's individual presentation. Addressing intolerance then becomes one step to address underlying cause(s) of dysfunction and helping establish a basis for health in patients.

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TOPIC 5

The Elimination and Re-challenge Diet

Sussanna Czeranko, ND

In the United States, estimates from a skin-test survey suggest that allergies affect more than 50 million people.¹ Allergic disease is the fifth leading chronic disease among all ages in the US, and the third most common chronic disease among children under 18 years old. A recent nationwide survey found that more than half (54.6%) of all US citizens test positive to one or more allergens² and it is reported that the prevalence of food allergy is increasing worldwide, due to genome-environment interactions.³ The costs associated with allergic disease are extraordinarily high. One analysis estimated it at \$7.9 billion per year, of which \$4.5 billion was spent on direct care and \$3.4 billion on indirect costs, related primarily to lost work productivity.⁴ While not all food sensitivities are allergies (i.e., IgE-based), these studies can provide some insight into the need to address the more prevalent conditions.

Adverse reactions to food are numerous and complex. They can affect any body system. The weakest link in an individual's system often is the first to show a sign of dysfunction.

The importance of diet in maintaining optimal health is undisputed. Consumption of an inadequate diet can result in unhealthy symptoms which, if sustained, can result in chronic diseases such as diabetes, cardiovascular disease,

hypertension, and gastrointestinal problems, to name only a few. Adopting a healthy diet can have an immense impact on the course of an illness by changing it or even reversing it. To know which foods are detrimental to health, and to alter the diet accordingly, can have a positive effect on an individual's health.

Helping patients discriminate between foods that elicit symptoms and foods that do not, can be accomplished using a simple elimination diet. Symptoms that recur when the eliminated foods are reintroduced into the diet help identify the patient's food sensitivity. Such sensitivities are known as 'food intolerances' or as 'food allergies,' depending upon their specific effect on the body. Confusion in distinguishing food sensitivities from food allergies occurs, because symptoms are present in both conditions. However, food sensitivities result in physiologic reactions, such as fatigue, headaches, diarrhea, sinus congestion, and eczema, and may or may not include an immune component. Food allergies trigger an immune response that involves the release of IgE after the ingestion of antigenic foods. Although symptoms are provoked by foods in persons with food sensitivities, the changes in the immune response may be secondary. There is no release of allergy-specific immunological markers (such as IgE) as in the case of food allergies.

Approximately 12 million Americans have food allergies, with 6.9 million allergic to seafood and 3.3 million allergic to peanuts or tree nuts.^{5,6} A food allergy is a potentially

serious immune response to eating specific foods or food additives. Eight types of food account for more than 90% of allergic reactions in affected individuals: milk, eggs, peanuts, tree nuts, fish, shellfish, soy, and wheat.^{5,7,8} In 2007, approximately three million children under the age of 18 years (3.9%) were reported by the US National Center for Health Statistics to have a food or digestive allergy in the previous 12 months.⁶ One in every 17 children under the age of three has one or more food allergies⁵ and it is estimated that more than 150 people die annually from anaphylactic reactions to food.⁹ Children with food allergies are two to four times as likely to experience other allergic or allergy-associated conditions, such as asthma, than children without food allergies. This is of great importance, because children with a coexisting food allergy and asthma may be more likely to experience anaphylactic reactions to foods and may be at higher risk for death.^{10,11}

Given these alarming statistics, identifying food sensitivities in the diet is an important aspect of naturopathic practice. An effective way to determine which foods cause problems is to eliminate the most common food antigens from the diet and then reintroduce foods one at a time to see how the body reacts. If a person is sensitive to a particular food, he or she will exhibit an adverse effect(s) and should remove the food from his or her diet. This process is an 'elimination and challenge diet' — the food is eliminated from the diet for a suitable period (usually 5-10 days,

depending on the rigor of the program), and then reintroduced to challenge the body. This also is referred to as a ‘hypoallergenic diet.’

Before considering an elimination and challenge diet, it is advisable to ask patients to complete a seven-day diet diary (Box 1). Patients are encouraged to eat as they normally do, in order to accurately assess the clinical situation. They also are instructed to include any symptoms they may experience during the seven-day diet, so the clinician can assess if the problem is actually arising from the diet. Evaluating the diet diary involves paying close attention to the types, frequency, quantity, and quality of food eaten. Since foods may not provoke immediate symptoms, but rather delayed symptoms, the diet diary must be assessed carefully.

Box 1 Diet diary example

After completing a diet diary, patients are advised to eliminate all suspect foods and to focus dietary choices on fresh fruits (generally restricted to pears, because other fruits can be a source of intolerance to some patients); vegetables; protein (fish, poultry, lamb, if carnivores and tofu, legumes, if vegetarian); gluten-free grains (such as brown or basmati rice, millet, and buckwheat); and healthy oils (such as flax seed, safflower, hemp, olive and evening primrose oil). Organic foods are encouraged as much as possible. Providing helpful guidelines for patients can facilitate the new changes in their dietary regimen.

After 1-4 weeks of maintaining a strict elimination diet, patients should have some degree of symptom relief. Some patients also may lose weight. The next step is to re-introduce food groups. The patient begins with the food group that is least problematic. A specific food

group is challenged for one day, only. Several servings of that food group are eaten throughout the day. Then, for at least 48 hours, that food is not eaten while continuing to eat only the foods allowed on the elimination diet. If symptoms do not return after 48 hours, the patient then proceeds to the next suspected food group. Waiting one week between food group challenges is optimal, to increase the accuracy of the diagnosis. It is important to challenge only one food group at a time, to achieve the best outcome for the patient.

An essential component for prescribing an elimination and re-challenge diet, is addressing patients' emotional associations with food, and supporting them throughout the process. Patients' concerns might focus on how to eat within accustomed social networks and daily routines. For example, prescribing a gluten-free diet can create extraordinary demands on a palate highly accustomed to wheat products and daily wheat consumption. Educating patients and assisting them to re-orient to substitute foods and food preparation, can ease the transition from a harmful to a healthy diet. Educational support and continual affirmation for a patient's successes are necessary to achieve effective results.

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TOPIC 6

Fasting: A brief overview of its historical development and its evolution in naturopathic practice

Steven Bailey, ND

Purposes of Fasting

Fasting, the cessation of food consumption, predates both written and oral history. It is a natural, innate, intelligent response to crisis, found within the genetic makeup of virtually all animals. When animals experience severe trauma or illness, for example, they often cease food intake.^{1,2} Most people have experienced a loss of appetite or even revulsion to food when they have been sick, injured, or emotionally traumatized. The process of ceasing the intake and the associated work of digesting food has consistently served animals and humans throughout time as an initial response to the priority of needs in situations challenging health and survival. Thus, it is not surprising that this phenomenon has become a central modality of nature cure.

Throughout evolution, the natural law of ceasing food intake (and its associated work of digestion) has been an initial response to the priority of needs in challenging situations. There is a predictable order to the biochemical and physiologic adaptive changes that occur during a fast. This order further demonstrates the innate intelligence of the body.

The use of fasting to reverse illness and as a form of spiritual discipline also abounds within oral and written

history.¹ For instance, use of fasting for spiritual reasons is present in texts of nearly all religions.^{3,4} Fasting, as an intended therapy, is found in Indian, Chinese, Egyptian, and Greek writings, and is one of the oldest known natural medical procedures.

Methods of Fasting

Hippocrates is often considered to have attached much importance to the role of food in sustaining good health and his teachings provide an excellent starting point for the medical history of fasting.⁵ “It is better to be full of drink than full of food”⁶ pp 208-9 refers both to the art of fasting and to the use of juices and beverages by Hippocrates and others to treat disease. The phrase, ‘let juice be your medicine,’ conveys a dual meaning: ‘juices’ was a term used when diagnosing an individual’s particular illness, because the Hippocrates School believed that humans became living entities through the presence of four ‘juices’ or ‘humors:’ blood, phlegm, yellow bile, and black bile.⁶ These ‘Four Humors’ were first expounded by Polybos, a student of Hippocrates.⁷ In this system, an opposing quality of food or beverage was given to balance a person’s system and to promote health. For example, a person with a ‘bitter’ condition would be given a sweet beverage (diluted wine, meads, or other sweet fruit extracts) to evoke a curative response. Following Hippocrates’ statement, “fluid diets are beneficial to all who suffer from fevers,”⁶ p. 208 the Greek physician, Dioscorides, later added a materia medica approach to the

use of beverages by assigning certain herbs, fruits, or vegetables for the treatment of specific conditions. Examples include the use of the juice of pomegranates for mouth and stomach ulcers, cherry juice with wine for kidney stones, or lemon juice and macerated quince with water and honey for stones, and juniper berry with extract of honey as a diuretic.⁸ Both Hippocrates and Dioscorides used, “drinks made from barley, herbs, raisins or the second pressing of grapes, from wheat, thistle or myrtle, pomegranates and the rest.”⁶ p. 203 In the Greek system, oxymel was honey with vinegar, and hydromel was honey with water. These beverages were used to treat many illnesses.

Galen, born about 129 CE (Common Era), continued this use of fasting and juice therapies, as he led the Roman system of medicine into the Common Era. In *Properties of Foodstuffs*, he mentions easily extracted juices, such as raw grape, green grapes, apples, pears and citron; and vegetables, such as celery, beets (which he refers to as a moderate detergent), and cabbage, in which he states,⁹

⁹ p102

Predating Hippocrates, Ayurvedic medicine is probably the oldest source of juice therapies and refers to plant juices as *svarash*. These juices include potent herbs, such as *Aloe vera* and edible varieties of black nightshade (*Solanum nigrum*), which often were mixed with milk and honey to

make bitter and strong tasting extracts more palatable for use with children.¹⁰

Evolution of Fasting Therapies in Naturopathic Medicine

Fasting, both on water alone and with juices and/or broths, has been a primary form of therapeutics since the advent of naturopathic medicine. The emergence of naturopathic medicine in North America credits fasting philosophy and protocol to several practitioners (Box 1). From these early naturopaths, emerged a second generation of fasting proponents (Box 1).

In *Philosophy of Natural Therapeutics*, Henry Lindlahr, MD, suggested three causes of illness in humans: violation of natural law (habits, work, poisons and drugs, wrong thinking); nutritional inadequacies; and accumulation of wastes.¹¹ Based on this early naturopathic definition of disease, it was hypothesized that fasting acts as a curative and non-suppressive form of therapy: juices diluted with water help re-establish mineral and nutritional balance, and fasting helps eliminate waste^{12,13,14} and to re-establish homeodynamic balance. Arnold Ehret, a noted proponent of the Hygienic movement of his time, wrote that individuals with highly toxic conditions needed to be placed on a pre-fasting diet of lemon and honey to initiate elimination, before attempting the more dramatic water-only fasts advocated by hygienists and naturopaths, alike.¹⁵

Box 1

Early 20th-century naturopathic practitioners who used fasting protocols

Early proponents of fasting and juice therapy

- Arnold Ehret — *Rational Fasting*, 1910
- Adolf Just — *Kehrt zur Natur zurück!*, [*Back to Nature!*], Benedict Lust, trans., 1903
- Henry Lindlahr — *Philosophy of Natural Therapeutics*, 1926
- Bernarr MacFadden — *Encyclopedia of Health and Physical Culture*, 1926

Fasting proponents, second generation

- Herbert Shelton
 - Fasting and Sun Bathing (The Hygienic System), 1934
 - Fasting Can Save Your Life, 1964
 - The History of Natural Hygiene and Principles of Natural Hygiene, 1954
- Harry Benjamin
 - Everybody's Guide to Nature Cure, 1936
- Paavo Airola
 - How to Keep Slim Healthy & Young with Juice Fasting, 1971
 - How to Get Well. Dr Airola's Handbook of Natural Healing, 1976
- Norman Walker
 - Fresh Vegetable and Fruit Juices, 1978
 - Colon Health: The Key to a Vibrant Life, 1995
- R.D. Pope
 - Raw Vegetable Juices: What's missing in your body?
- Paul Bragg, Patricia Bragg
 - The Miracle of Fasting: Proven Throughout History for Physical, Mental, & Spiritual Rejuvenation, 1985
 - Apple Cider Vinegar: Miracle Health System, 1990

Today, fasting programs vary — from inpatient facilities that supervise water fasts, to juice programs that can be easily supervised as outpatient programs or in groups. Although education about the fasting processes (knowing what to expect and appropriate precautions) is essential to ensure a successful program, informed patients can undertake most juice fasts independently and successfully.

Most fasting programs involve a pre-fast diet, which emphasizes high fiber and is rich in fruits, vegetables, and fluids. From this initial return to a natural diet, many types of fasts can be initiated with improved results.^{16,17} All fasting programs emphasize the importance of a gradual re-introduction of healthy foods. For extended water fasts, a general rule is one day of juices or broths for every four days of water. After juices and broths, people are encouraged to consume one day of non-starchy vegetables, as well as stewed or fresh fruits, for every two days of water, until the passing of the first bowel movement.

Clinical Benefits of a Fasting Program

Many disease conditions can improve through the physiologic changes precipitated by fasting. The digestive system is rested, intake of toxins is minimized, elimination is enhanced, and the immune system is focused and free to do its work. Several clinical conditions may benefit from fasting. The fastest response in acute and chronic conditions includes digestive concerns, respiratory

conditions, skin conditions, and allergies. From the clinically observed reduction of arthritis and respiratory distress, to normalization of cardiovascular function and blood pressure, to more significant changes of long-standing chronic complaints, fasting is one of the naturopathic doctor's most dependable therapeutic approaches for multiple conditions^{18, 19, 19, 20, 21, 22, 23, 24} Patients facing surgeries or other major medical problems have been seen, in the clinical experience of many naturopathic physicians, to experience meaningful improvement of longstanding problems through fasting (see citations above).

Physiologic Benefits of Fasting

- rests the digestive system (ref to be added post-preprint)
- minimizes intake of toxins (ref to be added post-preprint)
- enhances elimination (ref to be added post-preprint)
- strengthens the immune system (ref to be added post-preprint)

Preparing for Fasting and the Healing Crisis

While the predictable physiologic changes due to fasting are sources of profound healing in a majority of cases, it is essential that patients are sufficiently prepared to undergo such regimens. Support by practitioners experienced in the management of fasting may be indicated if patients are not physically active and in the habit of consuming predominantly organically grown whole foods. There also

can be times when the physiologic pathways are impaired by environmental, social, and other circumstances beyond the patient's control (e.g., by famine, wars, natural disasters). Although the digestive functions are rested during a fast (which is beneficial in the short term) it is a physiologic shock as toxic compounds are liberated from fatty tissue and generated by phase-1 liver detoxification leading to an over-reactive immune system and toxic metabolites may reach levels beyond the capacity of phase two liver detoxification pathways and the functions of other excretory organs. It is, therefore, important that fasting regimens should be conducted under the guidance of naturopathic physicians and medical professionals experienced in the management of what Henry Lindlahr described as 'healing crises.'²⁵ The contemporary prevalence of an unhealthy lifestyle, poor nutrition, toxic environments, and psycho-emotional stressors may precipitate a heightened adrenal response (HPA axis), which is counterproductive to the resting state of the digestive system and detrimental to detoxification pathways. In such cases, physicians may need to help patients prepare for water fasting with initial dietary changes along with juice fasting to guarantee the safety of undertaking water fasting.

For some individuals, fasting is a spiritual discipline, as well as a natural therapeutic procedure. It is important to ensure a peaceful and nurturing environment for fasts. Therefore, many inpatient facilities for therapeutic fasting prohibit

televisions, newspapers and magazines, and other media, and replace these with meditation, yoga, prayer, quiet walks, and other healthy alternatives. It may well be that the quieted mind, spiritual focus, and positive environment are as critical to the physical benefits of fasting as are the physiologic and nutritional aspects of fasting programs.^{21, 26, 27, 23, 24}

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TOPIC 7

Fasting as a Therapeutic Tool in Nature Cure Practice

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What Is Fasting?

Fasting is arguably one of the oldest, most fundamental, and simplest of all therapies. There are numerous references to fasting in the medical and non-medical literature, some of which appear as early as in pre-Greek writings. The topic appears throughout ancient literature; for example, 13th century Sufi poet, Rumi, succinctly described fasting as "... the first principle of health."¹ Fasting is specifically compatible with the philosophy of naturopathic medicine, and the roots of the profession are steeped in the rich history of fasting. Practitioners who utilize fasting as a therapeutic modality refer to its potential to heal a variety of dysfunctions.^{2,3,4,5,5,7,8,9,10,11,12,13,14,15,16,17,18} Although a large volume of international research about fasting exists,^{19,20} some of it remains to be repeated or to be verified by contemporary research standards.²¹

Definitions of 'fasting'

For the purpose of this chapter, fasting is defined as a voluntary and intentional caloric restriction during a period of physiologic rest. Additional definitions of fasting exist along a continuum, from the most stringent to more loosely defined (*see also* de Toledo, et al.²² and Rege²³):

- Dry fasting or complete fasting: Abstinence from ingesting all substances, including water⁵
- Water fasting: The consumption of only pure water throughout the day and night; considered to be the only true form of fasting.
- Intermittent fasting: Avoidance of any food or juice during specified periods of time (e.g., 12 hours overnight). Also used to describe calorie reduction for two or more days per week (e.g., the 5:2 diet).
- Cleanses: Consumption of substances that contain calories, often in sufficiently high quantities to prevent individuals from fully or partially entering ketosis²⁴ thus, not equivalent to fasting in the technical sense. These include programs involving consumption of prepared medical or functional powdered foods.
- Abstinence: Abstaining from a certain food (e.g., meat) one day per week.²⁵

In nature cure, fasting is employed clinically to re-establish the basis for health (i.e., the Naturopathic Medicine Therapeutic Order™ level 1 by i) identifying and addressing underlying cause(s) of dysfunction and ii) stimulating function of the emunctories.²⁶ Because dysfunction originates with toxemia (according to Lindlahr),²⁷ fasting is used as an effective clinical tool to stimulate detoxification via the emunctories.

Fasting is not a uniquely human experience — numerous examples occur in nature.^{28,27} For example, an early indication of disease in mammals may be the avoidance of food.^{27,17} Certain animal species spend the majority of their lives fasting, rather than eating. Species-dependent situations during which animals fast instinctively, include: estivation (a form of hibernation), hibernation, mating season, and following injury or illness.^{17,22}

The Physiologic Effects of Fasting

Fasting works directly and only with an individual's self-healing mechanisms, and does not require additional interventions or outside influences. Since fasting simply involves drinking pure water while resting, physical dysfunctions often improve as a direct result of body systems having a period of time to rest.^{16,29}

One of the axioms of nature cure is that health is the normal state of the body, given that the elements for healthy existence are present. Fasting facilitates the body's return to its homeodynamic state of health.

The ability to fast also may be an adaptation that offers an advantage for survival³⁰ and this concept may be evidence for the widespread expression of the *vis medicatrix naturae* in humans and other living organisms. The fasting process stimulates the body's self-healing functions (VMN) through the following processes:

Adaptation: when the body does not receive calories for an extended period of time, major changes in the metabolic pathways involved in energy metabolism (such as ketosis) are induced. Ketosis and other metabolic changes that occur during fasting are compensatory and protective, to ensure survival of the organism.³¹ There is a predictable order to these adaptive biochemical and physiological changes,^{32,33,34,35,24,36} and most are specific to the fasting state and do not seem to occur under other circumstances.³⁷ The ability of the body to meet the majority of its nutritional requirements while on a prolonged fast may be attributed to an adaptation that evolved over time in response to periods of famine and food scarcity.³⁸

Autophagy: a normal physiologic process that plays a central role in metabolic homeostasis, defined by Longo, et al., as, “the digestion of cellular components by enzymes of the same cell to allow for their degradation and recycling”³⁹ Fasting induces autophagy^{40,41} and has been shown to alter the gut microbiota^{42,43} and to attenuate consequent inflammatory pathways. Studies have shown successful treatment of dyslipidemia and atherosclerosis,⁴⁴ hypertension,⁴⁵ cancer,^{46,47} neurological diseases,⁴⁸ and intestinal inflammation,⁴⁹ and chronic pain in a variety of conditions.⁵⁰

“At the very heart of traditional nature cure practice is the objective to remove obstacles to healthy function... the nature cure model is based on restoring health, rather than on treating disease.” Jared Zeff, ND, 2024

In essence, fasting is an internal form of hydrotherapy. It is likely that some of the beneficial effects of fasting are directly related to the beneficial properties of drinking water. Two primary components of water-only fasting are i) incorporation of physiologic rest and ii) ingestion of pure water while abstaining from ingesting all other substances. The act of drinking water bathes the mucous membranes of the digestive tract, which — directly and indirectly — cleanses, flushes, and irrigates other tissues and organs in the body. In 1912, Abbott noted, “the beneficial results of free water-drinking are largely due to the dissolving and washing out of excreta and poisons from the system.”⁵¹, p. 17 Substances other than water (such as coffee) can irritate local tissues when ingested.⁵² Therefore, the positive effects of drinking water are even more pronounced during fasting, because there are no negative effects to hinder the process. Buchman⁵³ used the term ‘drinking water therapy’ to describe the following therapeutic benefits of ingesting water:

- bathes internal organs
- dilutes fluids of the body, such as bile secretion
- eliminates waste materials and uric acid, especially in arthritic conditions
- flushes out pathogens at the onset of illness
- increases the movement of blood through the lungs

- decreases fever
- overcomes constipation
- purifies cells
- removes unoxidized glucose in diabetes
- stimulates the functions of the kidneys, liver, and skin

Water-only fasting is well-recognized as a protein-sparing process,^{32,36} because the body favors adipose tissue as a source of fuel in order to conserve muscle tissue.^{54,55,56} Although fasting spares a significant amount of the body's protein reserves, protein still remains a 'required' energy source during a fast.³⁴ If activity levels are kept to a bare minimum, the body will require only the catabolism of a relatively small amount of protein. By contrast, protein is not spared in chronic wasting diseases, such as the cachexia that often is found in cancer patients and in those with other chronic disorders.

Does fasting affect gene expression? A possible effect has been postulated. Researchers have elucidated in both animal and human studies that fasting can influence specific genes. In some studies in rat models, genes were differentially regulated during periods of fasting and re-feeding.⁵⁷ In other animal models, energy- and stress-related genes, including brain-derived neurotrophic factor (BDNF) and heat-shock proteins (HSPs), could be induced or suppressed.⁵⁸ Other genes differentially expressed during fasting and re-feeding include the constitutive androstane receptor,⁵⁹ FGF21,⁶⁰ obesity-related genes,⁶¹ and others.

Fasting Addresses the Three Primary Causes of Disease

Decreased vitality

Fasting can increase vitality and a sense of well-being simply by minimizing factors that decrease vitality, such as sleep deprivation, overeating, overworking, and an unhealthy diet, (especially excess of substances such as alcohol, caffeine, and refined sugars). Within three or more weeks into a fast, patients commonly report increased energy levels, enhanced mood, and increased alertness. This may be due to the prolonged periods of rest and relaxation during the fasting period; as well as to the restorative nature of fasting itself, especially in sleep-deprived patients.

“Altogether too often many people attempt to substitute fasting ... in place of a correct way of living. They live haphazardly and unhygienically, and attempt to maintain health in spite of such faulty habits of life by taking an occasional fast. Fasting should be understood to be only a part of a *hygienic* way of life and not a substitute for it.” Herbert M. Shelton (1991, p. 13).

After fasting, individuals may report feeling renewed energy and motivation. This has been described as a form of neuro-adaptation.⁶² After successful fasts, some patients may be able to avoid medications and surgeries that potentially would suppress the causes of disease. Owing to a metabolic energy shift, reallocating resources to promote healing of longstanding imbalances, a fast may reverse the

effects of suppression.³⁴ Fasting also confers profound effects on physical, psychoemotional, and spiritual health,⁶³ including psychiatric and psychological conditions such as major depressive disorder, Alzheimer’s dementia and traumatic brain injury,⁶⁴ as well as anxiety and emotional regulation.⁶⁵ In 1906, Purinton addressed the benefits of fasting on the spiritual and emotional aspects of the whole person in the book, *Philosophy of Fasting*.⁶⁶

Despite its significant benefits, fasting should not be regarded as a ‘cure-all’ for specific conditions, but as an approach that enables the intrinsic healing mechanisms of the body to work more efficiently. In this way, the philosophy of fasting is directly aligned with the philosophy of *Hahnemann’s Organon of Medicine*, “...know the obstacles to cure and how to remove them, so that recovery is permanent.”⁶⁷, p. 10

Abnormal composition of the blood and lymph

As a therapy, fasting avoids the introduction of potential contaminants to the patient. Studies suggest that the body utilizes its reserves of electrolytes, enzymes, hormones, lipoproteins, and various constituents of the immune system.^{24, 68} Fasting may confer a separate effect that is unique to lymphatic fluid by selectively modulating the activity of lymphocytes.^{69, 70} It has been shown to be helpful in patients with symptoms of autoimmune conditions by reduction of “excessive lymphocyte activity and the mobilization and elimination of noxious stimuli from fat and

tissue stores. Retained antibody-antigen complexes may also be involved.”⁷¹, p. 111 Pizzorno similarly concluded that fasting removes immune complexes from the blood and food allergens from the intestines.²¹

Accumulation of waste, morbid matter, and poisons

Many studies show that fasting enhances the body’s ability to purge the accumulation of toxins and to remove metabolic waste products, specifically lipophilic compounds, such as organochlorine, deposited in adipose tissue.^{72,73} Fasting also removes other toxins, such as persistent organic pollutants.⁷⁴ Because inappropriate food also can lead to toxemia and thus can be a causative factor in disease, many naturopathic physicians routinely use elimination-reintroduction diets, particularly to manage food intolerances.

Environmental toxins are one type of obstacle to fertility that have been studied extensively. For more than a decade, scientists at the Columbia Center for Children’s Environmental Health (n.d.) have evaluated hundreds of pregnant women to measure the effects of multiple common pollutants on fetal development and birth outcomes.^{75,76} Elevated exposure to chemicals not only begins *in utero*, but also continues in neonatal and early infancy periods, with studies showing environmental toxins present in breast milk.^{77,78} For these reasons, it may be advisable for women to undertake a fast prior to attempting pregnancy in order to decrease the body’s burden of various toxins.

Fasting & fever

Folk medicine incorporates the use of fasting, especially to treat febrile conditions — consider, for example, the old adage, ‘feed a cold, starve a fever.’ During a fever, loss of appetite is a common physiologic adaptation.^{79,34} When one is anorexic, especially during a fever, eating is not helpful to the recovery process and may be harmful.⁸⁰ Lisle and Goldhamer elaborated on how this knowledge generally is not taught: “Few health professionals ever have considered that the lack of appetite that accompanies illness is actually a component of a complex adaptive mechanism. As a result, honoring the adaptive tendency is rarely encouraged. In fact, it is often actively discouraged.”⁶²

Several studies demonstrate the merits of fasting during febrile illnesses.^{81,82,83} Yarnell⁸⁴ concluded, “fasting during a fever due to infectious disease or a fever of unknown origin should be standard practice.” Engels identified iron sequestration as one mechanism of action to explain how fasting during a fever is beneficial: “Bacteria need iron, and the body makes many adjustments to reduce the availability of iron during an infection. If an animal keeps eating, any iron in its food also feeds the pathogens, so force-feeding a sick animal or patient can be counterproductive. Fever reduces appetite, so if a fever is artificially suppressed with drugs and appetite returns, not only do we lower temperature, but the increased iron intake can keep the infection going longer”⁸⁵ pp. 81-82

Potential Risks of Fasting

Fasting is minimally invasive and uses no force. When conducted properly, it can be a safe therapy with a low risk for harmful side effects. Most individuals experience relatively mild and innocuous symptoms,¹⁶ but some may experience severe uncomfortable symptoms while fasting,

such as headaches (due to discontinuation of ingesting over-stimulating substances such as sugar or caffeine.¹⁰ However, Mosek and Korczyn found that dehydration was not the cause of fasting headaches and concluded, “fasting is a strong headache precipitator unrelated to coffee, tea, or smoking withdrawal or to over-sleeping.”⁸⁶, p. 225

Although fasting is non-invasive, patients should be advised that a fast may potentially provoke a healing crisis (especially in patients with chronic conditions)⁸⁷ and physicians should be aware of short-term side-effects that typically resolve over the course of the fast. Although there are case reports of very long fasts, it is rare that a supervising practitioner would allow a fast to go beyond forty days. Notably, there have been rare instances of death occurring during a fast. In many cases, it was determined that the patients most likely would have died of other causes, such as advanced heart failure or end-stage renal disease. In addition to these cautions and contraindications, obstacles to fasting may include fear, frail health, unable to afford the cost of having the fast professionally supervised, unable to take off time from work, and unable to wean off medications.¹⁰ In Finnell’s analysis of 768 patient records for medically supervised, water-only fasting, a majority of reported adverse events were known reactions to fasting and most were graded as mild to moderate.⁸⁷

However, hypoglycemic conditions are contraindicated in fasting⁸⁸ and when water-only fasting is not an option,

naturopathic physicians might recommend alternatives for patients:

- coconut water
- juice cleanses
- prepared medical/functional foods
- raw fruits and/or vegetables (i.e., green smoothies)
- soups/broths
- steamed vegetables

Clinical Considerations for Fasting Patients

Fasting involves many clinical decisions for practitioners.

Physicians must first consider whether the patient is physically and psychologically able to fast. Fuhrman advised, “It is the job of a trained physician to be able to distinguish those patients who are proper candidates for fasting from those who are not. It cannot be assumed that every individual can fast safely for a prolonged period of time – or at all. Occasionally, it is necessary to end the fast many days before the patient wants to or the doctor intended to.”^{10, p.199} During the fasting process, physicians can glean new information about the patient’s health, such as:

- how quickly ketosis is fully achieved
- how quickly the patient completely goes out of ketosis during the re-feeding stage
- patient’s quantity and quality of sleep throughout the fast
- rapid decrease in serum potassium levels

- presence or absence of fetors
- presence or absence of hunger
- presence or absence of nausea and vomiting within the first few days of the fast
- presence or absence of withdrawal symptoms

Many variables affect an individual's response to a fast and the outcome may be influenced by any of the following parameters (including factors that influence individual's susceptibility to toxins):⁹

- activity patterns
- age
- attitude
- biochemical individuality
- body composition
- cultural factors
- diet, especially in weeks/ months preceding the fast
- nutritional status
- finances
- gender
- genetic predisposition
- home environment and the environment of where the fast will take place
- menstruation
- mental outlook
- objections to the fast from patient's friends and family
- occupational factors
- past suppression(s)
- present state of health
- pre-existing pathology and concomitant disease
- previous experience(s) with fasting
- scheduling challenges
- toxicant interaction
- time of year
- vitality of the patient
- weather, including ambient humidity and temperature

“The time may come when not offering this substantially more effective...approach will be considered malpractice. It is conceivable that fasting will one day be considered not only a standard of care, but even a first-line therapy.” ^{22 p. 212}

Fasting has been a cornerstone naturopathic dietary management and continues to rank among the most effective ways to treat many acute and chronic diseases. It is best applied as part of a complete naturopathic program that incorporates hydrotherapy and physical measures to support the functions of the emunctories. Fasting is a safe and economical form of treatment when conducted under the supervision of naturopathic physicians who are experienced in its management, both personally and professionally.

Key concepts about fasting

Fasting is different from other types of cleanses. Although there are similarities between fasting and therapies (such as caloric restriction) that result in weight loss, there are significant metabolic changes that occur prominently during a fast.

Fasting is an adaptation: it is the body's intelligent way of responding to going without food.

When properly conducted, fasting is a safe and effective therapy that can favorably affect the entire spectrum of the human experience.

Fasting is not a cure-all, but instead supports the intrinsic healing mechanisms of the body to work more efficiently, thereby returning the organism to a healthier state of homeostasis.

The practice of fasting is an art, science and philosophy and is an ideal tool to be included among the wide array of therapeutic modalities that are available to naturopathic physicians.

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