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Reading tips of this report:

Our biofeedback device is designed to show aberrations in the body`s electrical reactivity that are client specific, using their own unique biofeedback baselines of reactivity response. We first measure the client`s electrical range of response through our calibration process which establishes their "baseline" or normal range of electrical reactivity response. Next, the device presents the client with 11,000 very specific voltammetric signatures and feeds back numerical data compared and calculated against the client`s original baseline or normal range of biofeedback reactivity response.

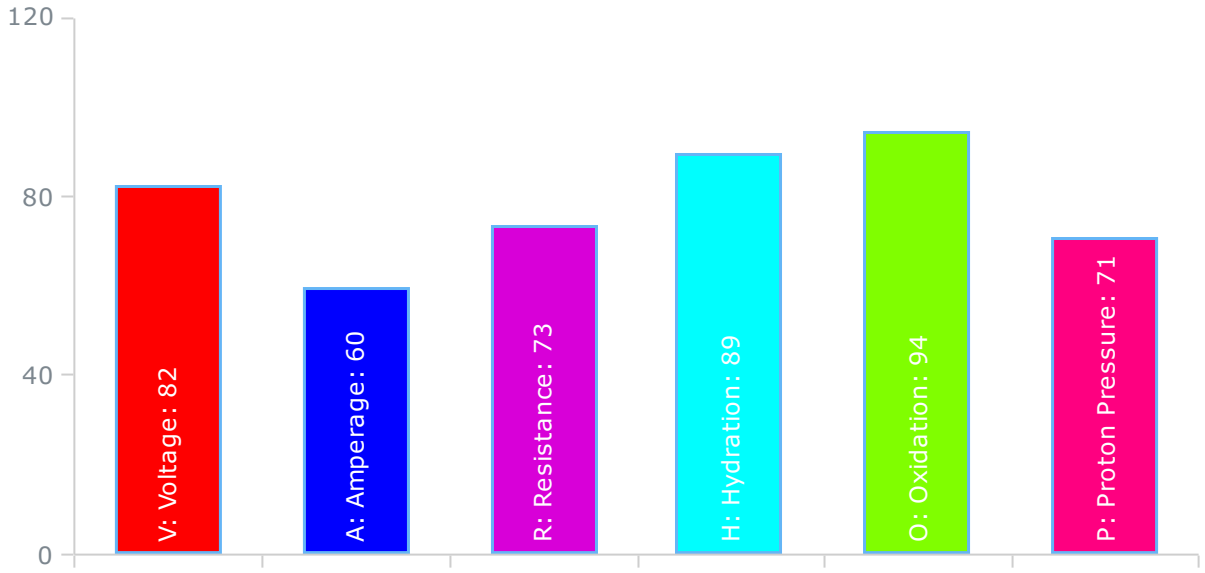
Reactivity measures which exceed a value of 100 indicated by: ■ are considered to be strong reactions (possibly indicating either an acute stress response, or even a positive response to the signature). This form of hyperreactivity feedback displayed through our device is to be considered as a possible area of interest. Values are not quantitative in measure. The device and this report are NOT able to represent an amount, level, degree, state, stage or condition of any kind. It can not discern the difference between difficiency or toxicity, allergy or sensitivity. Therefore, this report is not diagnostic and makes no claims of diagnosis. By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate, imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

Reactivity measures beneath a value of 50 indicated by: ■ are considered to be weaker reactions (possibly indicating either a more chronic stress response, or even a less significant response to the signature.). This form of hypoactivity feedback displayed through our device is to be considered as a possible area of interest. Values are not quantitative in measure. The device and this report are NOT able to represent an amount, level, degree, state, stage or condition of any kind. It can not discern the difference between difficiency or toxicity, allergy or sensitivity. Therefore, this report is not diagnostic and makes no claims of diagnosis. By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

Name	Kasey Jo Navi Phifer	Tel (C)	
Place of Birth:	Minneapolis		
Date of Birth:	1987-04-26	Tel (H)	

Gender:	Female		
E-mail:			
Testing Date:	6/10/2022, 10:08:26 AM	Report Date:	6/10/2022, 10:08:26 AM

V.A.R.H.O.P.



V.A.R.H.O.P.

Description	Value
V: Voltage	82
A: Amperage	60
R: Resistance	73
H: Hydration	89
O: Oxidation	94
P: Proton Pressure	71
Cellular vitality index	74

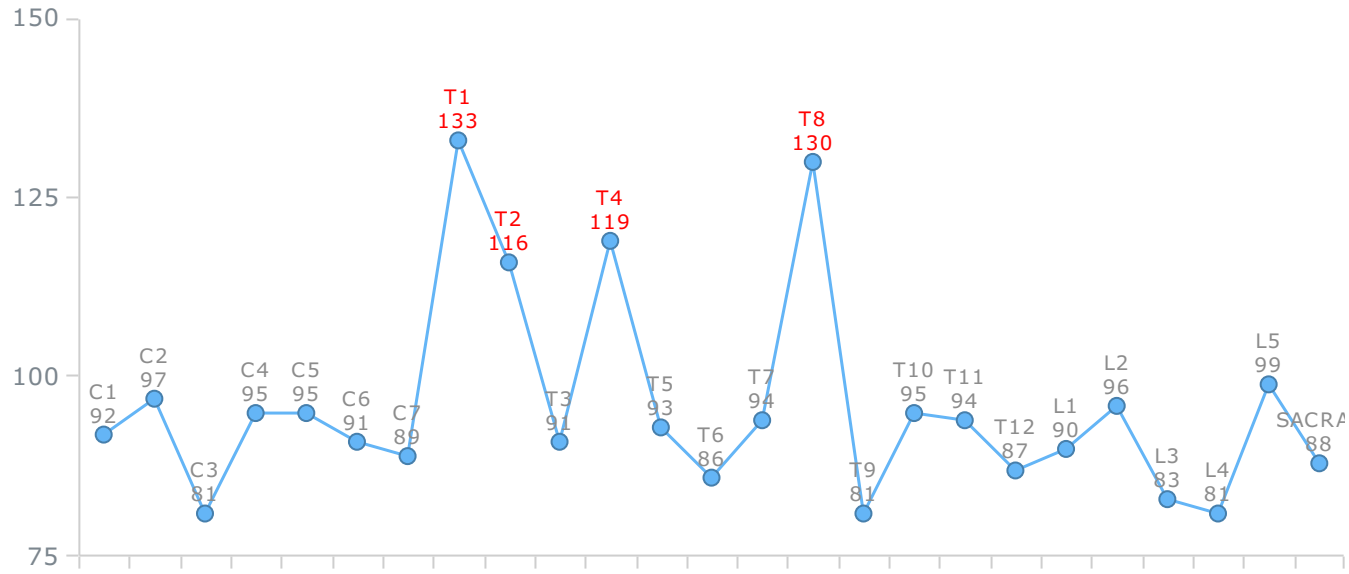
Voltammetric Spinal Signature Reactivity

The spine is one of the most important physical structures of the body. Spinal nerves are controlled by the brain and distribute information from the brain through the spine, regulating the body`s sensory and motor function through the central nervous system (CNS). Through the autonomic nervous system (ANS) the spine also supports many glands of the body, as well as cardiac, and smooth muscle (1, p 137, p156-65).

While our device does not provide a quantitative measure and is not diagnostic, by detecting voltammetric signature abreactions in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment,

dietary, or lifestyle habbits, patterns or choices without consulting with and being supervised by a licensed health care professional.

Voltammetric Spinal Signature Reactivity Graph



Voltammetric Spinal Signature Reactivity

Spinal Level	Value	General Spinal Information
C1	92	Imbalances can be associated with dysfunction of all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
C2	97	Imbalances can be associated with dysfunction of sensation to the head & neck (3, p324) as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
C3	81	Imbalances can be associated with dysfunction of the shoulder, breathing (3, p325-7), sensation to the neck (3, p324) as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
C4	95	Imbalances can be associated with dysfunction of the shoulder, breathing (3, p325-7), sensation to the chest, upper back, and shoulders (3, p324) as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
C5	95	Imbalances can be associated with dysfunction of the shoulder, elbow, wrist and hand, breathing (2, p325-7), sensation to the shoulders and arms (2, p324), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
C6	91	Imbalances can be associated with dysfunction of the shoulder, elbow, wrist, and hand (3, p325-7), sensation to the arms (3, p324) as well as all local bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
C7	89	Imbalances can be associated with dysfunction of the shoulder, elbow, wrist, and hand (3, p325-7), altered sensation to the hands (3, p324), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T1	133	Imbalances can be associated with dysfunction of the shoulder, elbow, wrist, and hand (3, p325-7,) sensation to the arms (3, p324), pupil, lungs (3, p238 CA), salivation, tears (3, p240) as well as all local bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T2	116	Imbalances can be associated with dysfunction of sensation to the chest and back (3, p324), heart rate (3, p238), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
		Imbalances can be associated with dysfunction of sensation to the chest and back (3, p324), heart rate

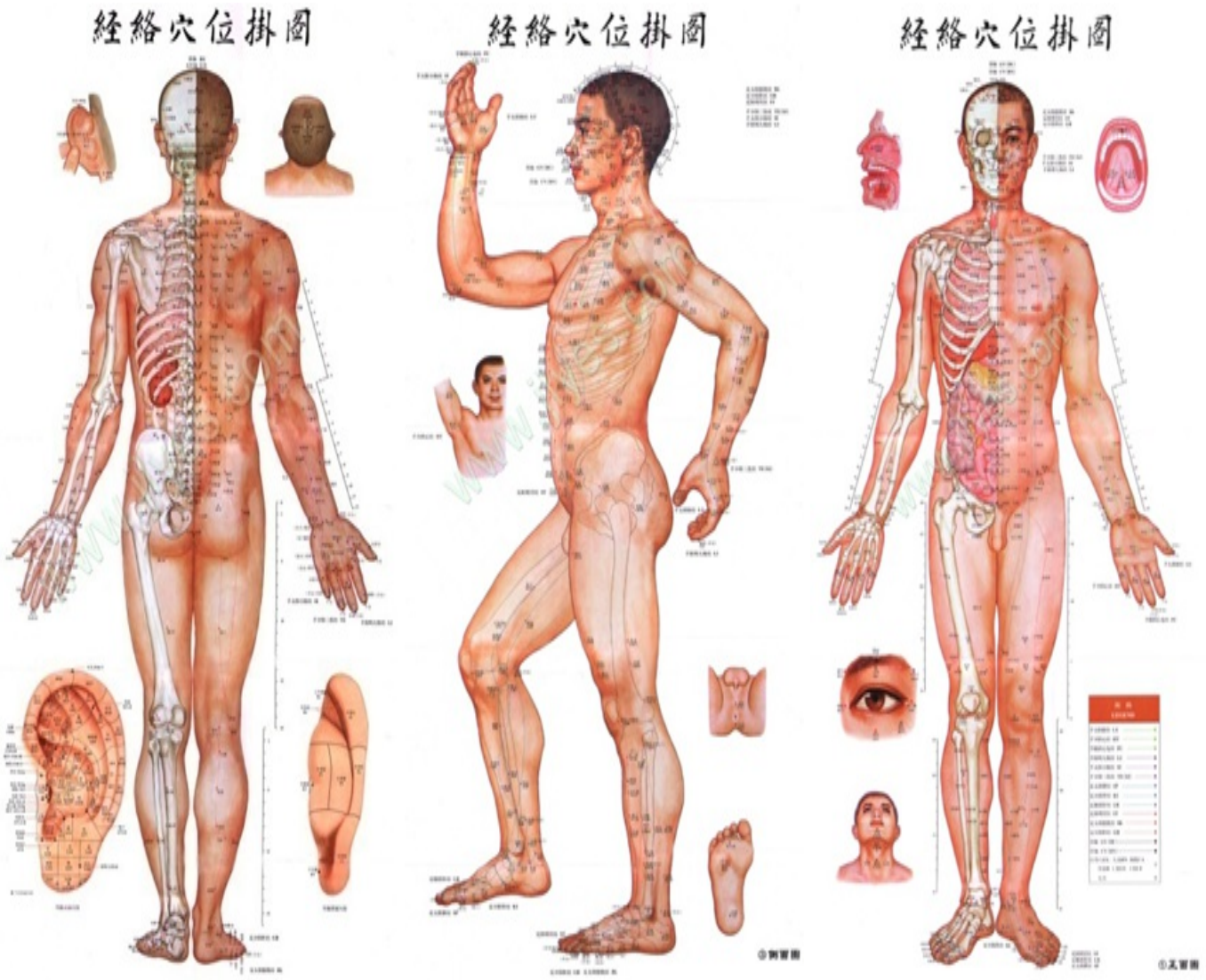
T3	91	(3, p238), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T4	119	Imbalances can be associated with dysfunction of sensation to the chest and back (2, p324), heart rate (2, p238), as well as all LOCALl bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T5	93	Imbalances can be associated with dysfunction of sensation to the chest and back (3, p324), sweating (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T6	86	Imbalances can be associated with dysfunction of sensation to the chest and back (3, p324), stomach, pancreas, liver, gallbladder, hair follicles (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).

Voltammetric Spinal Signature Reactivity

Spinal Level	Value	General Spinal Information
T7	94	Imbalances can be associated with dysfunction of sensation to the abdomen and back (3, p324), stomach, pancreas, liver, gallbladder (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T8	130	Imbalances can be associated with dysfunction of sensation to the abdomen and back (3, p324), stomach, pancreas, liver, gallbladder (3, p240), systemic blood vessels (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T9	81	Imbalances can be associated with dysfunction of sensation to the abdomen and back (3, p324), stomach, pancreas, liver, gallbladder, adrenal hormones (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T10	95	Imbalances can be associated with dysfunction of sensation to the abdomen and back (3, p324), stomach, pancreas, liver, gallbladder (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T11	94	Imbalances can be associated with dysfunction of sensation to the abdomen and back (3, p324), stomach, pancreas, liver, gallbladder (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
T12	87	Imbalances can be associated with dysfunction of sensation to the abdomen and back (3, p324), stomach, pancreas, liver, gallbladder (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
L1	90	Imbalances can be associated with dysfunction of the hip (3, p325-7), sensation to the pelvis and back (3, p324), digestion, bladder, ejaculation (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
L2	96	Imbalances can be associated with dysfunction of the hip and knee (2, p325-7), sensation to the hips and thighs (2, p324), digestion, bladder, ejaculation (2, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
L3	83	Imbalances can be associated with dysfunction of the hip and knee (3, p325-7) sensation to the thighs and knees (3, p324), digestion, bladder, ejaculation (3, p240), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
L4	81	Imbalances can be associated with dysfunction of the hip and knee (3, p325-7), sensation to the lower legs (3, p324), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
L5	99	Imbalances can be associated with dysfunction of the hip, knee, and foot (3, p325-7), sensation to the lower legs and feet (3, p324), as well as all LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).
SACRAL	88	Imbalances can be associated with dysfunction of the hip, knee, and foot (3, p325-7), sensation to the buttocks, legs and feet (3, p324), intestinal blood vessels, bladder, erection (3, p240), as well as all

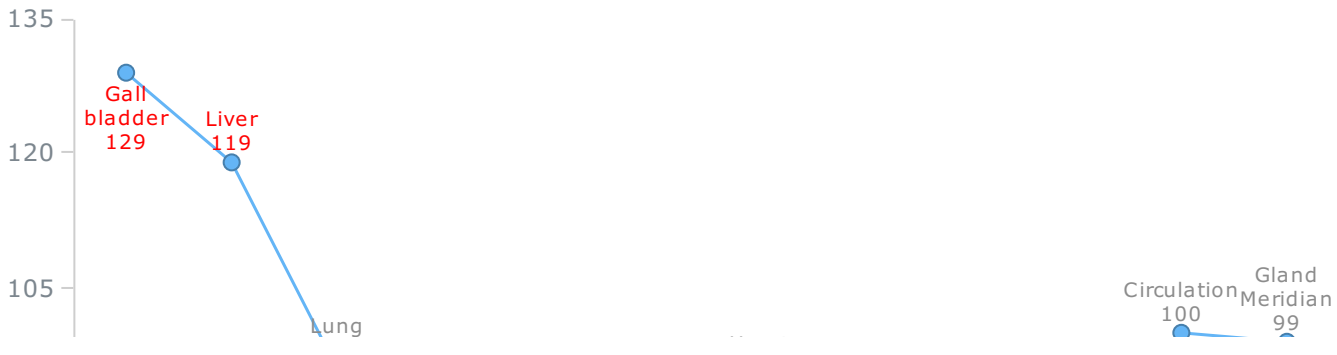
		LOCAL bony, muscular, vascular, fascial, and neurological structures (2, sections 4,5 & 7).

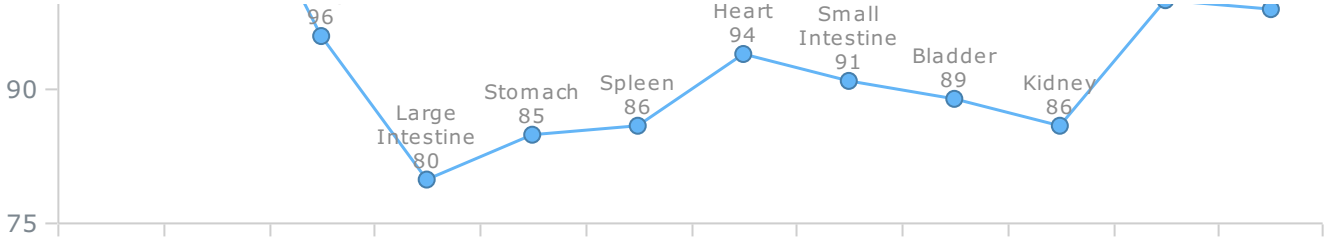
Voltammetric Meridian Signature Reactivity



For thousands of years Chinese Medicine has understood that the body is not only a physical entity but an energetic one as well (4, p42). This vital energy is distributed (4, p80) through pathways known as channels, also known as meridians, which represent the organs of the body (4, p 80). Chinese medicine philosophy believes that disruption in function of the organs or their associated channels can manifest symptoms of disease (4, p752-760). By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

Voltammetric Channel Signature Reactivity Graph





Voltammetric Channel Signature Reactivity

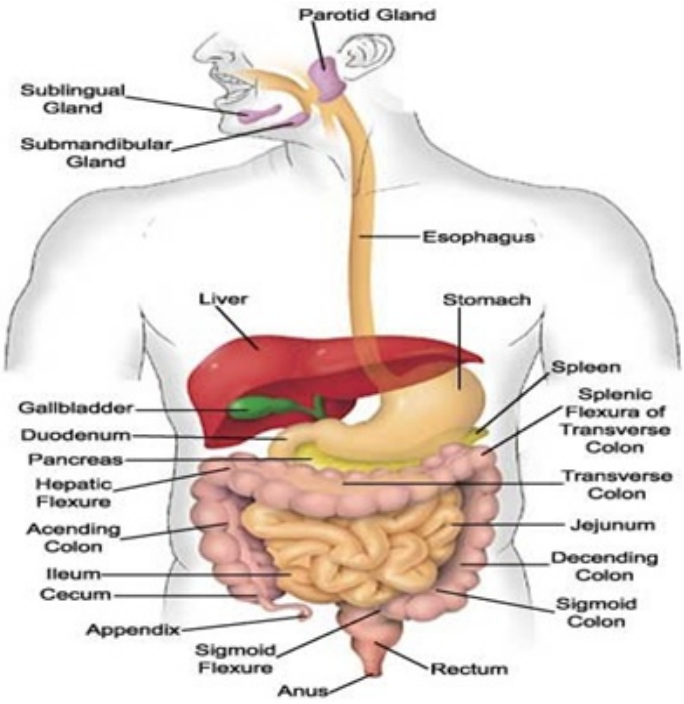
Internal Organ	Value	Function	General Organ Information
Gall bladder	129	The Gall bladder stores and excretes bile, controls decisiveness, controls sinews (with liver) (4, p199).	Gall bladder imbalances can be associated with nausea, belching, stiffness, indecisiveness, timidity, being easily discouraged, recklessness, depression or mania, waking early, and being unable to fall back asleep (4, p199-202).
Liver	119	The Liver stores blood, ensures smooth flow of Qi, controls sinews, manifests in the nails, opens to the eyes, controls tears, houses the ethereal soul and is affected by anger (4, p117).	Liver imbalances can be associated with tiring easily, gynecological and menstrual difficulties, dysfunction of the eyes, joints, muscles, and neurological system, skin diseases, mental-emotional imbalance, digesitive disorders, premenstrual difficulties, jaundice, and the nails (4, p117-124).
Lung	96	The Lung Governs Qi, body fluids, and respiration, controls channels and blood vessels, regulates all physiological activities, water passages, and skin, manifests in the body hair, opens to the nose, controls nasal mucus, houses the corporeal soul and is affected by worry, grief and sadness (4, p129).	Lung imbalances can be associated with dysfunction of voice and breath, cold limbs/hands, disorders of sweating, oedema, signs and symptoms of the common cold, urinary dysfunction, skin disorders, brittle/dry hair, disorders of smell, worry, sadness and grief, and breast lumps (4, p130-139).
Large Intestine	80	The Large Intestine controls passage and conduction of food and stools, transforms stools and reabsorbs fluids (4, p195).	Large Intestine imbalances can be associated with abdominal distension, constipation or loose stools, inability to "let go", and dwelling on the past (4, p195-196).
Stomach	85	The Stomach controls "receiving", rotting and ripening of food, transportation of food essences, descending of Qi, and is the origin of fluids (4, p 185).	Stomach imbalances can be associated with poor appetite, digestive dysfunction, belching, hiccup, nausea and vomiting, fatigue, muscle weakenss, thirst, dry/cracked tongue (4, p185-188).
Spleen	86	The Spleen governs transformation and transportation of fluids, digestion, controls the raising of Qi, controls blood, muscles and the 4 limbs, opens to the mouth and manifests in the lips, controls saliva, houses the intellect, and is affected by pensiveness (thinking too much) (4, p144).	Spleen imbalances can be associated with dysfunction of appetite and digestion, phlegm, oedema, organ prolapse, excessive bleeding, muscle weakness and atrophy, fatigue, impairment of taste, difficulty chewing, abnormal color and texture of the lips, salivary dysfunction, dysfunctions with intellect, memory, and concentration, pensiveness (4, p144-150).

Voltammetric Channel Signature Reactivity

Internal Organ	Value	Function	General Organ Information
			Heart imbalances can be associated with

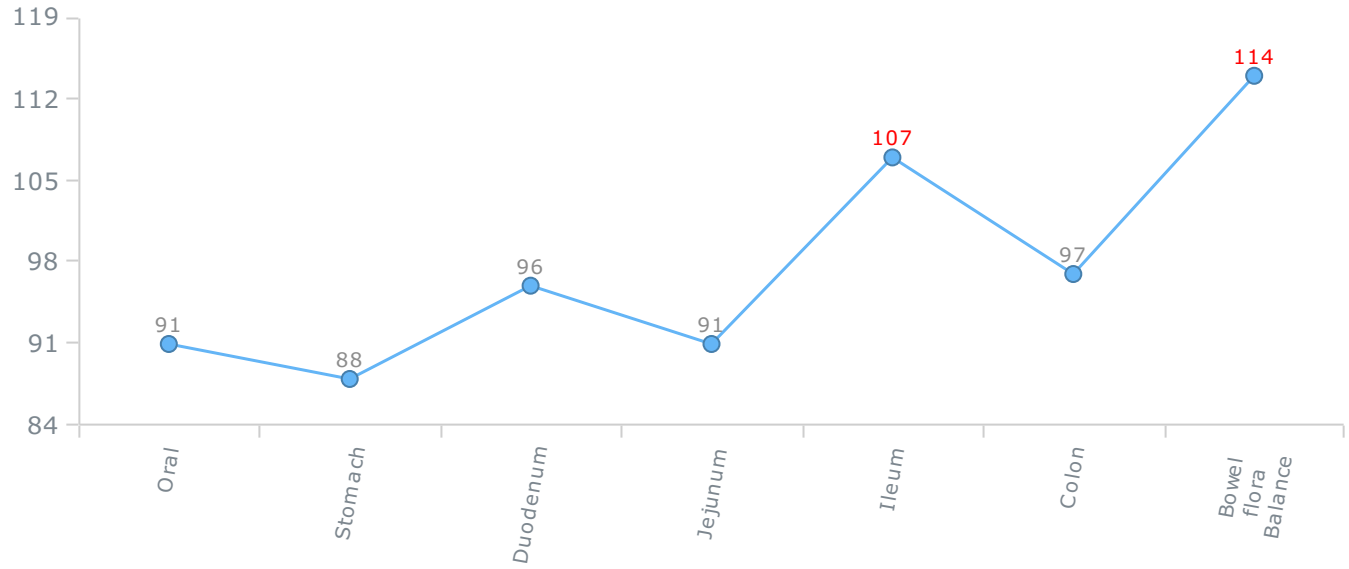
Heart	94	The Heart governs blood, blood vessels and the Mind, manifests in complexion, is related to joy, opens to the tongue and controls sweat, and circulation of blood (4, p 107).	palpitations, pale complexion, weak or irregular pulse restlessness, agitation, mental illness, manic depression, disorders of talking, speech, and tongue, disorders of sweating stuttering, aphasia (4, p110-113), or excessive talking (4, p115), mental restlessness, depression, insomnia, excessive dreaming, and anxiety (4, p110-113).
Small Intestine	91	The Small Intestine controls receiving and transforming and separates fluid (4, p191).	Small Intestine imbalances can be associated with urine dysfunction, blood in the urine, dysfunction of mental clarity and judgement, thirst, bitter taste, and tongue ulcers (4, p192-193).
Bladder	89	The bladder removes water by Qi transformation (4, p205).	Bladder imbalances can be associated with abundant clear urination, blood in the urine, urinary retention, jealousy, suspicion, and holding of long-standing grudges (4, p205-7).
Kidney	86	The Kidney stores essence, governs birth, growth, reproduction and development, produces marrow, controls bones, governs water, controls reception of Qi, opens into the ears, manifests in the hair, controls spittle (thick fluid at the back of tongue), controls the two lower orifices, houses Will-power, and controls the Gate of Life (4, p155).	Kidney imbalances can be associated with lack of vitality, infertility, or sexual weakness, dysfunctions of mental acuity, bone and teeth dysfunction, dysfunction of urination, breathlessness, asthma, impairment of hearing, tinnitus, hair dysfunction/loss, incontinence, spermatorrhea, diarrhea, lack of Will-power, motivation, depression (4, p154-162).
Circulation	100	Mobilizes the Original Qi, Controls the transportation and penetration of Qi, controls the water passges and the excretion of fluids (4, p209).	Imbalances can be associated with sneezing, abdominal distension, retention of urine, dysfunctions of sweat, joint, and synovial membrane, and repressed emotions (4, p213-220).
Gland Meridian	99	The pericardium, as an organ, protects the heart and functions with the heart. As a channel it propels the Qi of the heart and lungs (4, p 165-6).	Pericardium imbalances can be associated with chest tightness, stuffiness, distension, oppression, pain in the chest, mental-emotional problems, relationship difficulties, mental restlessness, agitation, anxiety, insomnia, scanty periods, amenorrhoea, heavy periods, painful periods, and emotional problems associated with the menstrual cycle (4, p166-8).

Voltammetric Digestive Signature Reactivity

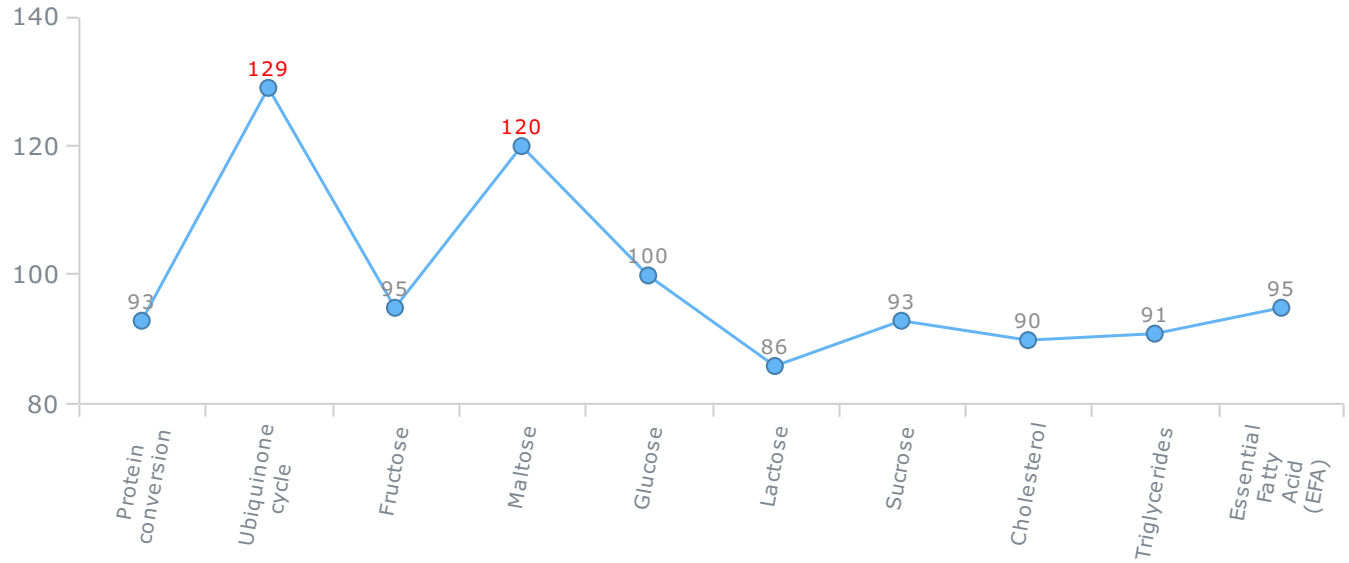


Leading experts in the field of health and wellness agree that vital health begins with good nutrition and digestion (5, p 217). Healthy digestion is essential for optimal nutritional absorption and detoxification (5, p 661, 602-603, 165). Incomplete or disordered digestion can be a major contributor in the development of many diseases (5, p217). Voltammetric Signature aberrations in electrical reactivity associated with the following digestive organs, dietary breakdowns, and digestive enzymes do not diagnosis disease or offer quantitative measures but rather indicate possible areas of stress. By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

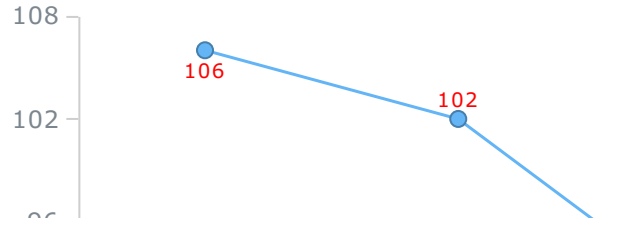
Voltammetric Digestive Organ Signature Reactivity Graph

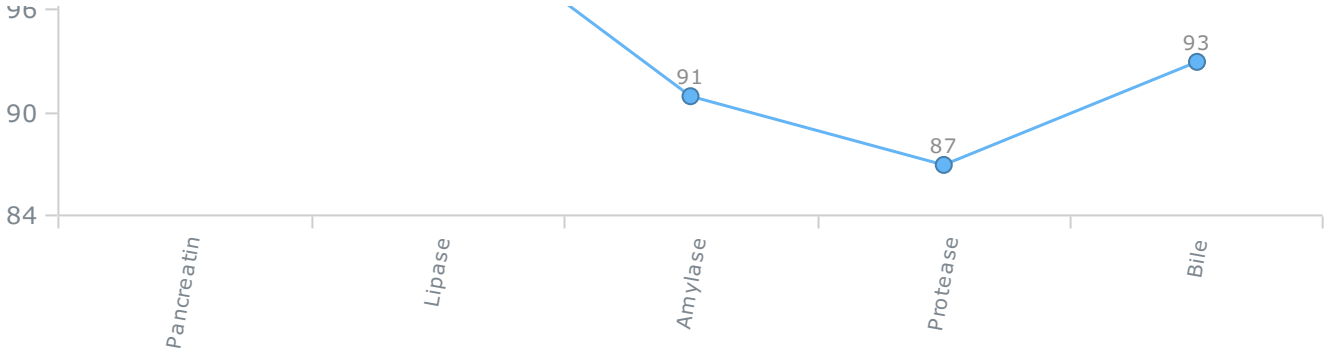


Voltammetric Dietary Digestive Breakdown Signature Reactivity Graph



Voltammetric Digestive Enzyme Signature Reactivity Graph





Voltammetric Digestive Organ Signature Reactivity

Item	Value	General Organ Information
Oral	91	The first stage of digestion takes place in the mouth. As the food is chewed it is mixed with saliva, directing food downward (contains starch-digesting enzymens). Good mastication and salivary production are essential for optimal digestion. Stress may indicate eating to quickly and imbalance effecting the production of saliva (6, p73).
Stomach	88	The second stage of digestion occurs in the stomach wher it adds acid, enzymes, and fluid; then churns, mixes, and grinds food into a liquid mass. Stress may indicate eating too quickly, lack of adequate mastication, hyper/hypo production of HCL (hydrochloric acid), and ANS system imbalance (6, p73).
Duodenum	96	The third stage of digestion occurs when mulched food passes from the stomach to the duodenum where it is then broken down by the bile delivered from the gall bladder. Bile is critical for elimination of byproducts, such as cholesterol, and xenobiotics, such as drugs and heavy metals (5, p167). Small intestine dysfunction is very common due to bacterial and fungal perversion, improper diet, and inadequate stress management. Symptoms of stress may include, bloating, IBS and loose stool, abdominal distension, and pain (5, p154). Also common are nonspecific symptoms such as bloating, flatulence, and abdominal pain resulting from bacterial fermentation of sugars and associated gas production (5, p154).
Jejunum	91	The next stage of digestion occurs in the jejunum where it absorbs carbohydrates and proteins. Amino acid, sugar, fatty acid particles, vitamins, and minerals are small enough to soak into the villi of the jejunum and drop into the blood stream. The blood takes all these nutrients to other parts of the body to provide fuel to do their jobs (5, p167). Small intestine dysfunction is very common due to bacterial and fungal perversion, improper diet and inadequate stress management. Symptoms of stress may include, bloating, IBS and loose stool, abdominal distension and pain (5, p154). Also common are nonspecific symptoms such as bloating, flatulence, and abdominal pain resulting from bacterial fermentation of sugars and associated gas production (5, p154).
Ileum	107	The next stage of digestion occurs in the ileum where it reabsorbs B12 and bile salts. The ileo-cecal valve is a structure that separates the small and large intestine that regulates chyme flow and separates colonic from small intestine bacteria (7, p456). Small intestine dysfunction is very common due to bacterial and fungal perversion, improper diet and inadequate stress management. Symptoms of stress may include, bloating, IBS and loose stool, abdominal distension and pain. Also common are nonspecific symptoms such as bloating, flatulence, and abdominal pain resulting from bacterial fermentation of sugars and associated gas production (5, p154).
Colon	97	The final stage of digestion occurs in the colon where it reabsorbs water and minerals and passes waste along with water to the recutm (6, P73). The colon provides an environment for microbial fermentation of soluble fiber, starch, and undigested carbohydrates. As the mass moves through the digestive tract undigested compounds are cleaved and modified by enzymes produced by colonic bacteria to form short-chain fatty acids (SCFAs) and various gases, such as methane, hydrogen, and carbon dioxide (5, p167). Symptoms of dysfunction can include constipation, IBS, bloating, abdominal distension, pain, etc. (5, p 374).
Bowel		Ahealthy bowel flora is known to be important for proper immune function, vitamin absorption, and the prevention of opportunistic infections such as Candida albicans (5, p 217 & 247). Acid-producing lactobacilli and bifid bacteria increase the bioavailability of calcium, copper, iron, magnesium and manganese. Colonization of the small intestine by endotoxin-producing bacteria may lead to malabsorption of fats, carbohydrates, protein, folic acid, and vitamin B12 (5, p 1455). Adequate amounts of lactobacilli and bifidobacteria are essential for the maintenance of a healthy digestive

flora Balance	114	system. These beneficial flora help protect against overpopulation of potentially pathogenic organisms, enhance nutrient production, and stimulate the immune system. Many factors are thought to affect the composition of the colonic flora, including diet, transit time, stool pH, age, microbial interactions, colonic availability of nutrients, bile acids, sulfate, and the ability of the microbes to metabolize these substrates (5, p173). However, many patients present with nonspecific symptoms such as bloating, flatulence, and abdominal pain resulting from bacterial fermentation of sugars and associated gas production (5, p154).

Voltammetric Dietary Digestive Signature Breakdown

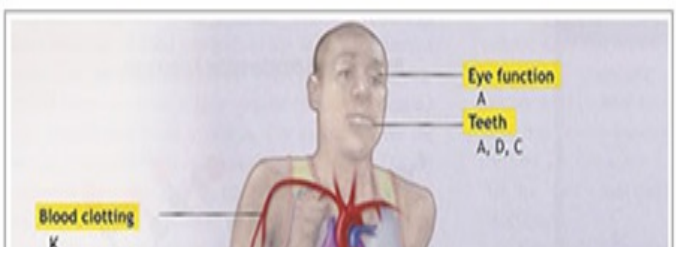
Item	Value	General Digestive Information
Protein conversion	93	Protein digestion requires hydrochloric acid, pepsin and pancreatic enzymes (8, p201). Protien conversion is often poor due to lack of these digestive factors. Incomplete protein digestion or poor intestinal absorption can result in elevations of amino acids and polypeptides in the bowel and are metabolized by bowel bacteria into several toxic compounds. The toxic metabolites of the amino acids arginine and ornithine are known as polyamines (e.g., putrescine, spermidine, and cadaverine) (5, p2080).
Ubiquinone cycle	129	CoQ10, also known as ubiquinone, is an essential component of the mitochondria, where it plays a major role in energy production. CoQ10 can be synthesized within the body, nonetheless, deficiency states exist. Deficiency can be a result of impaired synthesis due to nutritional deficiencies, a genetic or acquired defect in CoQ10 synthesis, or increased tissue needs. Cardiovascular diseases including angina, hypertension, mitral valve prolapse, and congestive heart failure are examples of diseases that require CoQ10. In addition, many of the elderly may have increased CoQ10 requirements (5, p1476-7).
Fructose	95	Fructose, also known as fruit sugar, is a simple monosaccharide found in many foods. It is one of the three important dietary monosaccharides along with glucose and galactose. Difficulty in digestion may indicate lack of adequate metabolism from the skeletal mucle and liver (8, p266 & 5, p260).
Maltose	120	Maltose, also known as malt sugar, is the least common disaccharide in nature. It is present in germinating grain, corn syrup, and starch. Difficulty in digestion may indicate lack of adequate enzyme production from the pancreas and liver (5, p261).
Glucose	100	Glucose, also known as D-glucose or dextrose, is an important carbohydrate in biology. It is a simple sugar (monosaccharide) that is used by cells as a source of energy and a metabolic intermediate. Improper glucose production can indicate hyper/hypo glycemic dysfunction and stress of the pancreas, liver, and gallbladder (5, p 1630).
Lactose	86	Lactose is a disaccharide formed from galactose and glucose sugar that is found most notably in milk and dairy products. It is estimated that 25 % of Americans are deficient in the enzyme lactase and therefore lactose intolerant. If lactose is not broken down it provides food for gas-producing gut flora. The symptoms of lactose intolerance can range from minor dyspepsia, bloating, and flatulence to severe diarrhea and abdominal cramps (5, p256). Lactose maldigestion can result from genetic nonpersistence of intestinal lactase activity at some time after weaning as well as from secondary lactase deficiencies (5, p1078).
Sucrose	93	Sucrose, also known as table sugar, is an easily assimilated macronutrient that provides a quick source of energy, provoking a rapid rise in blood glucose upon ingestion (5, p260). Overconsumption of sucrose has been linked to tooth decay, diabetes, hypoglycemia, and can hinder immune system function (5, p648).
Cholesterol	90	Cholesterol aids in the intestinal absorption of fat molecules as well as the fat-soluble vitamins, A, D, E, and K. It is converted to bile in the liver, which is then stored in the gallbladder. Cholesterol is an important precursor molecule for the synthesis of steroid hormones, including the adrenal gland hormones cortisol and aldosterone as well as the sex hormones progesterone, estrogen, testosterone, and their derivatives. High levels of serum cholesterol, WITH other risk factors, can lead to arterial blockage, heart disease and heart attack (5, p1504).
Triglycerides	91	Triglycerides are a type of fat found in blood that the body uses for energy (5, p539). Some triglycerides are required to maintain health, but high levels of triglycerides can increase the risk of heart disease, stroke and may be a sign of metabolic syndrome. Fried foods and processed foods are the most common causes of high levels of triglycerides (5, p1504).

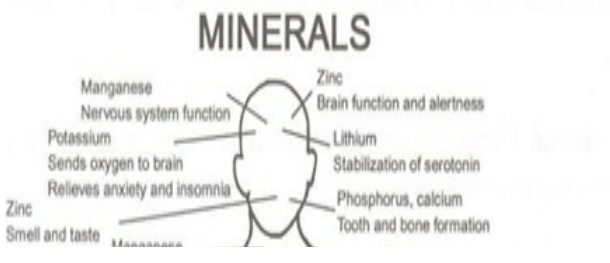
Essential Fatty Acid (EFA)	95	EFA`s are a necessary type of fat that humans cannot synthesize and therefore must be obtained through diet. EFAs are long-chain polyunsaturated fatty acids derived from linolenic and oleic acids. There are two families of EFAs: Omega-3 and Omega-6. Omega-9 is necessary yet "non-essential" because the body can manufacture a modest amount on its own, if provided essential EFA`s. Modern diets of fast foods and packaged dinners tend to be rich in saturated fats and hydrogenated oils and lacking in EFA`s (5, p191). We now know that the amount and type of dietary fat plays a major role in maintaining health. Some saturated fatty acids stimulate cholesterol formation, but most do not (5, p935).

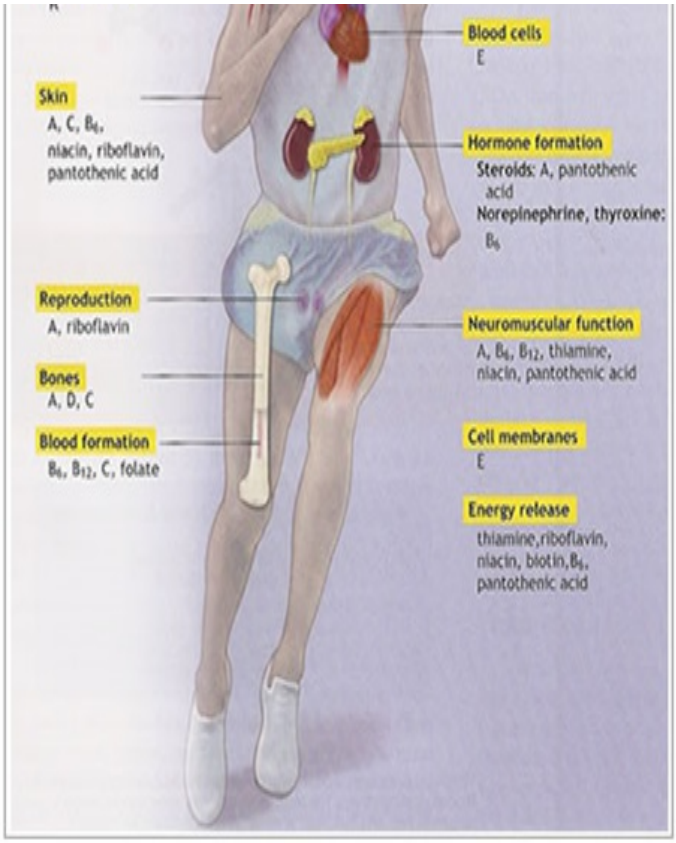
Voltammetric Digestive Enzyme Signature Reactivity

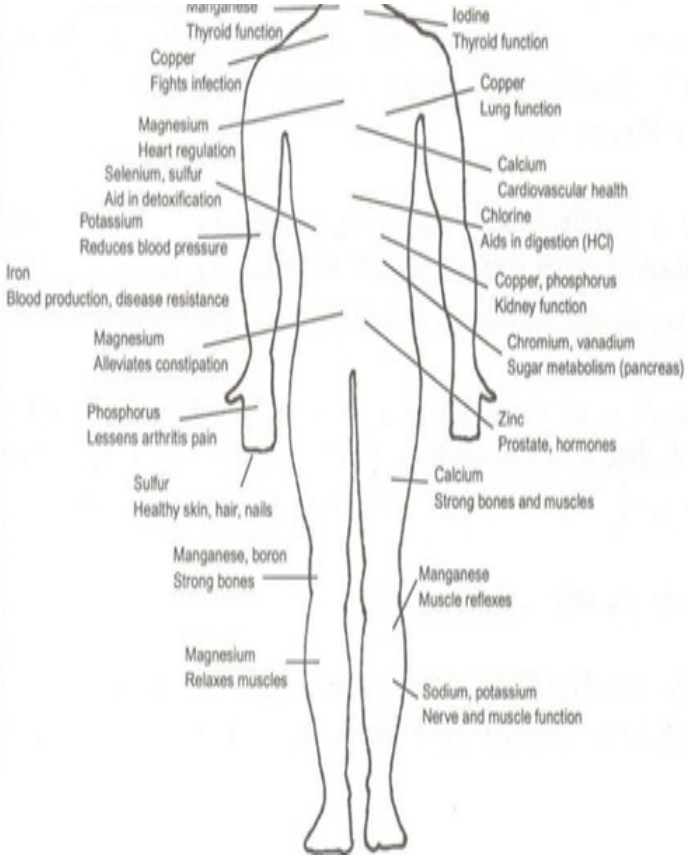
Item	Value	General Digestive Enzyme Information
Pancreatin	106	Pancreatin contains a mixture of several digestive enzymes produced by the exocrine cells of the pancreas. It is composed of amylase, lipase, and protease enzymes and is essential in the breakdown, metabolism, and absorption of food (5, p1132). In dysfunction, the net effect is poor nutrition and an unhealthy environment for the flora of the large colon. It has been argued that even small decreases in exocrine pancreatic output can contribute substantially to maldigestion and may have far-reaching effects in chronically ill patients (5, p168).
Lipase	102	Lipase is released by the pancres and used to breakdown fats. Lipase converts triglyceride substrates found in ingested oils to monoglycerides and free fatty acids. Imbalance in enzyme production often indicates an inability to properly metabolize foods and absorb their nutrients (5, p168). Symptoms can include: muscle spasms, acne, arthritis, gall bladder stress and formation of gallstones, bladder problems and cystitis, high cholesterol level, high urine sugar level, heart problems, prostate problems, hay fever, spastic colon, psoriasis, constipation, diarrhea, urinary weakness, varicose veins, and development of lipoma under skin (9).
Amylase	91	Amylase is present in saliva and released by the pancreas. It is used to breakdown carbohydrates into usable sugars. Imbalance in enzyme production often indicates an inability to properly metabolize foods and absorb their nutrients. Maldigestion of carbohydrates can also cause chronic GI symptoms. Disaccharides, oligosaccharides, and polysaccharides not hydrolyzed by alpha-amylase or intestinal surface enzymes cannot be absorbed. Bacterial fermentation of these undigested carbohydrates in the lower intestine and colon increases the osmotic retention of water. This can lead to cramping, abdominal distention, and diarrhea (5, p168).
Protease	87	Protease is released by the stomach and duodenum and used to breakdown proteins. Acid proteases secreted into the stomach (such as pepsin) and serine proteases present in duodenum (such as trypsin and chymotrypsin) enable us to breakdown protiens in the food into amino acids. Imbalance in enzyme production may indicate an inability to properly digest and absorb nutrients (5, p 167). Symptoms may include abdominal bloating and discomfort, gas, indigestion, and the passing of undigested food in the stool (5, p663).
Bile	93	Bile is produced and stored in the liver and gallbladder and plays a role in the digestion of fats. It is also critical for elimination of byproducts, such as cholesterol, and xenobiotics, such as drugs and heavy metals (5, p167). In the absence of sufficient amounts of bile acids, endotoxins can translocate into the blood stream and produce pathologic conditions that vary in severity (5, p2081). Imbalances can indicate stress in the ANS, liver, gall bladder, stomach and small intestine (5, p 1692). Symptoms may include bloating, gastritis, constipation, acid reflux, ulcers, weight gain, weight loss, cholesterol, fatty liver, brittle hair and nails, learning impairment in children, headaches etc. (5, p 154, 172, 1688-9).

Voltammetric Nutritional Signature Reactivity



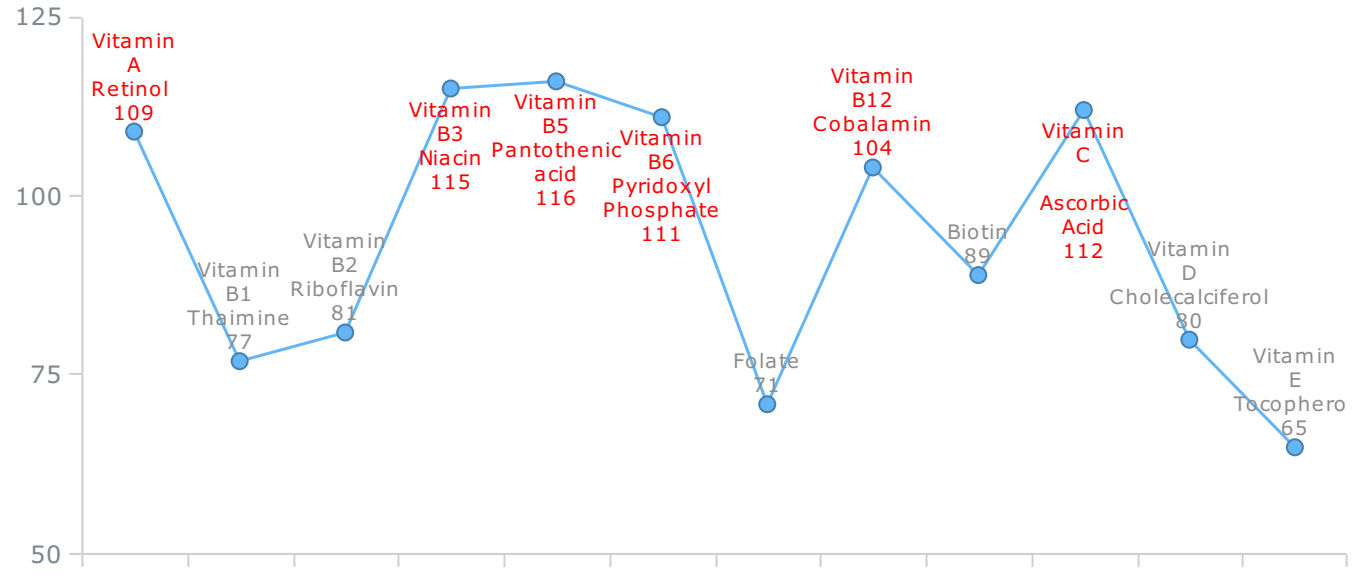




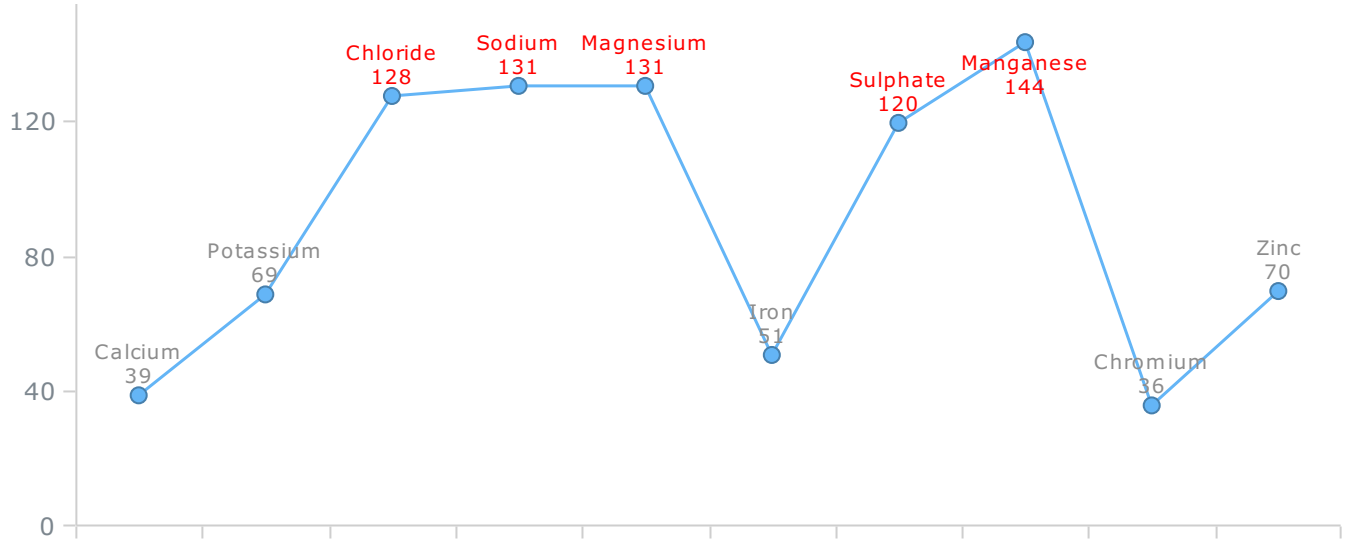


Vitamins and Minerals are essential building blocks of healthy strong bodies. Suboptimal nutritional absorption from the foods we eat, due to their own nutrient deficiencies or the corruption of optimal digestive tract absorption, may be linked to all known disease. Though nutrient toxicity is possible, it is far less common (6, p323-5). Voltammetric aberrant nutritional signature reactivity may indicate vitamin and/or mineral imbalance. The may correlate to symptoms of deficiency and even toxicity. While the measurements offered through evoked potential reactivity can show an aberrant elctrical signature reaction, the device can not differentiate between deficiency or toxicity. The device is not capable of quantitative measure thus can not be used to diagnose. By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

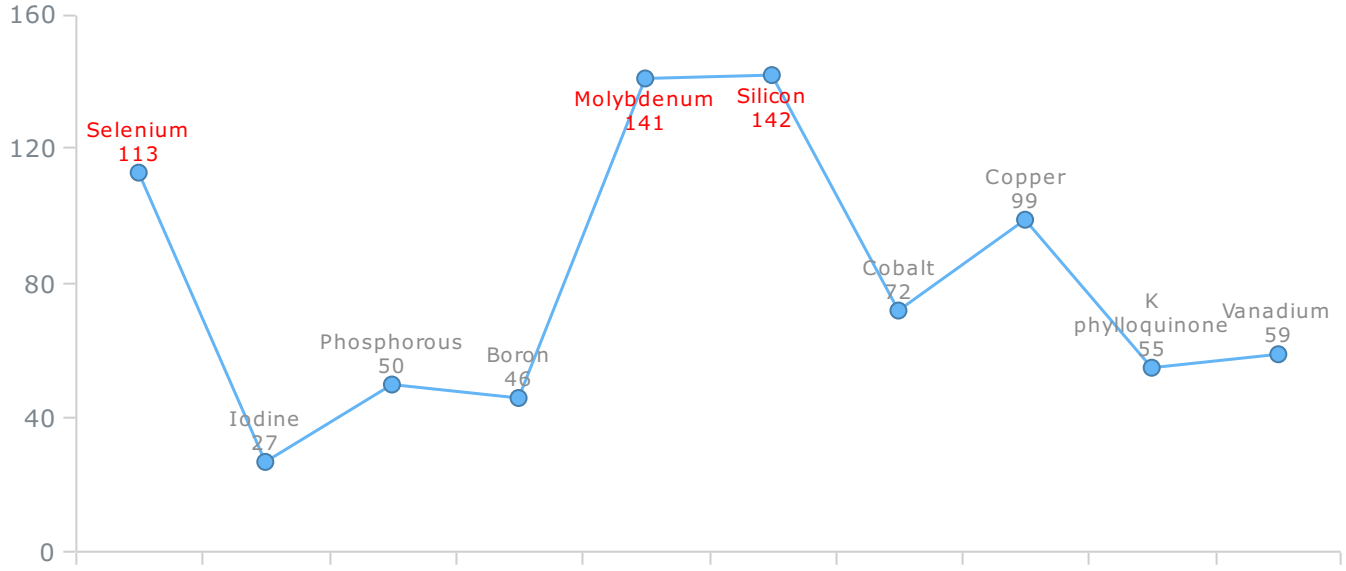
Voltammetric Nutritional Signature Reactivity Graph - Vitamins



Voltammetric Nutritional Signature Reactivity Graph - Minerals



Voltammetric Nutritional Signature Reactivity Graph - Minerals



Voltammetric Nutritional Signature Reactivity

Item	Value	Food Source	General Nutritional Information
Vitamin A Retinol	109	retinol: fortified milk, cheese, cream, butter, eggs, liver. Beta-carotene: spinach and other dark leafy greens, broccoli, deep orange fruits (apricots, cantaloupe), and vegetables (squash, carrots, sweet potatoes, pumpkin) (6,p376).	Vitamin Aimbalances can be associated with: night blindness, corneal drying, trangular gray spots on eye, softeneing of the cornea, corneal degeneration and blindness, impaired immunity; plugging of hair follicies with keratin, and formation of white lumps (6, p376).
Vitamin B1 Thaimine	77	all plant and animal tissues but only whole cereals, nuts, seeds, and pulses (certain pod bearing plants) (7, p341).	Vitamin B1 imbalances can be associated with: enlarged heart, cardiac failure, muscular weakness, apathy, poor short-term memory, confusion, irritability, anorexia, weight loss (6,p329), beriberi and Wernicke-Korsakoff syndrome (7, p341).
Vitamin B2 Riboflavin	81	milk products (yogurt, cheese), whole-grain, liver, fortified, or enriched grain products, (6,p330), and eggs (7,p344).	Vitamin B2 imbalances can be associated with: sore throat, cracks and redness at corners of mouth, painful, smooth, purplish red tongue, inflammation (characterized by skin lesions covered with greasy scales) (6, p330), raw red lips (7, p344).

Vitamin B3 Niacin	115	milk, eggs, meat, poultry, fish, whole-grains, nuts, all protein-containing foods (6, p333), offals (organ meats), and pulses (7, p345).	Vitamin B3 imbalances can be associated with: diarrhea, abdominal pain, vomiting, an inflamed, swollen, smooth, bright red tongue, depression, apathy, fatigue, loss of memory, headache, and bilateral symmetrical rash on areas exposed to sunlight (6, p333),pellagra (7,p345).
Vitamin B5 Pantothenic acid	116	widespread in foods; chicken, beef, potatoes, oats, tomatoes, liver, egg yolk, broccoli, whole grains (6, p335.)	Vitamin B5 imbalances can be associated with: vomiting, nausea, stomach cramps, insomnia, fatigue, depression, irritability, restlessness, apath, hypoglycemia, increased sensitivity to insulin, numbness, muscle cramps, and an inability to walk (6, p335).
Vitamin B6 Pyridoxyl Phosphate	111	meats, fish, poultry, potatoes and other starchy vegetables, legumes, noncitrus fruits, liver, and soy products (6, p337).	Vitamin B6 imbalances can be associated with: scaly dermatitis, anemia (small-cell type), depression, confusion, and convulsions (6, p337).
Folate	71	leafy green vegetables, legumes, seeds, liver (6, p342), nuts, whole grain cereals (7, p350).	Folate imbalances can be associated with: megaloblastic anemia, smooth, red tongue, mental confusion, weakness, fatigue, irritability, headach, shortness of breath, elevated homocysteine (6,p 342), and neural tube defects (7, p350).
Vitamin B12 Cobalamin	104	foods of animal origin (meat, fish, poultry, shellfish, milk, cheese, eggs) (6, p345), organ meat, fermented foods, foods contaminated with mould or other microorganisms, and chlorella (7, p348.)	Vitamin B12 imbalances can be associated with: megaloblastic anemia, fatigue, degeneration of peripheral nerves progressing to paralysis, sore tongue, loss of appetite, and consitpation (6, p345).
Biotin	89	widespread in foods at low concentrations, good amounts in organ meats, yeast (6, p352) liver, egg yolks, soybeans, fish, whole grains, also produced by gut bacteria (6, p335).	Biotin imbalances can be associated with: depression, lethargy, hallucinations, numb or tingling sensation in the arms and legs, red scaly rash around the eyes, nose , and mouth, hair loss (6, p335), and dermatitis (7, p352.)
Vitamin C Ascorbic Acid	112	fruit, fruit juices, salad and leafy vegetables (7, p 353).	Vitamin C imbalances can be associated with: anemia (small-cell type), atherosclerotic plaques, pinpoint hemorrhages, bone fragility, joint pain, poor wound healing, frequent infections, bleeding gums, loosened teeth, muscle degeneration and pain, hysteria, depression, rough skin, and blotchy bruises (6, p355).
Vitamin D Cholecalciferol	80	sunlight, butter, juices, cereals, veal, beef, egg yolks, liver, fatty fish (herring, salmon, sardines) and their oils (6, p381).	Vitamin D imbalances can be associated with: rickets in children, osteomalacia or osteoporosis in adults (6, p381) muscle weakness, tetany, growth failure, and increased risk of infection (7, p337).
Vitamin E Tocopherol	65	polyunsaturated plant oils, leafy green vegetables, wheat germ, whole grains, liver, egg yolks, nuts, seeds, and fatty meats (6, p383).	Vitamin E imbalances can be associated with: red blood cell breakage (6, p383) progressive degeneration of nerves, muscle atrophy and retinopathy (7, p339).

Voltammetric Nutritional Signature Reactivity

Item	Value	Food Source	General Nutritional Information
Calcium	39	milk and milk products, small fish (with bones), calcium-set tofu, greens (bok choy, broccoli, chard, kale), legumes (6, p 422) pulses, nuts, and whole grain cereals(7,	Calcium imbalances can be associated with: Vitamin D deficiency and poor absorption (7, p373), stunted growth in children, bone loss in adults (6, p422).

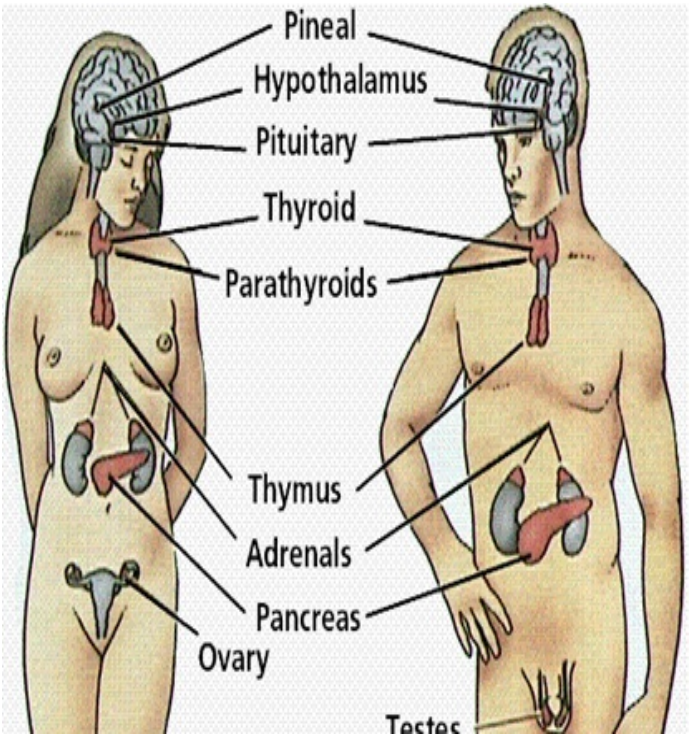
		p373).	
Potassium	69	fruits and vegetables are the best sources (although there is some in milk and flesh foods) (7, p36) some in all whole foods, grains, and legumes (6, p 415).	Potassium imbalances can be associated with: muscle weakness, changes in cardiac function, reduced gut motility, alkalosis, depression and confusion (7, p362), and glucose intolerance (6, p 414).
Chloride	128	table salt, soy sauce, moderate amounts in meats, milks, eggs, large amounts in processed foods (6, p 414).	Chloride imbalinces do not occur under normal circumstances (6, p414).
Sodium	131	table salt, soy sauce, moderate amounts in meats, mild amounts in breads, and vegetables, and large amounts in processed foods (6, p 413).	Sodium imbalances can be associated with: muscle cramps, mental apathy, and loss of appetite. Toxicity symptoms; edema, and acute hypertension (6, p 413).
Magnesium	131	nuts, legumes, whole grains, dark green vegetables, seafood, chocolate, and cocoa (6, p 425).	Magnesium imbalances can be associated with: muscle weakness, spasms, personality changes, loss of appetite, nausea and vomiting (7, p360) confusion (if extreme), convulsions, bizarre muscle movements, hallucinations, and difficulty in swallowing. In children, growth failure (6, p 425).
Iron	51	meat (particularly organ meat), fish, cereals, green vegetables (7, p368), poultry, shellfish, eggs, legumes, and dried fruits (6, p 451).	Vitamin Aimbalances can be associated with: iron deficiency anemia (7, p368), impaired immunity, pale skin, nailbeds, mucous membranes and palm creases, concave nails, inability to regulate body temperature, and pica (6, p 452).
Sulphate	120	All protien-containing foods (meats, fish, poultry, eggs, milk, legumes, and nuts) (6, p426).	No frank sulphate deficiences are known; protien deficiency would occur first (6, p 426).
Manganese	144	most plant foods especially wholegrain cereals, nuts, dried fruits, leafy vegetables and tea (7, p361).	Manganese deficiencies are rare (6, p460), not commonly seen in humans (7, p361).
Chromium	36	meats (especially liver), whole grains, brewer`s yeast (6, p462), and pulses (7, p358).	Chromium imbalances can be associated with: impaired glucose uptake, other signs of reduced insulin action (7, p358) and diabetes-like condition (6, p 462).
Zinc	70	protein-containing foods: red meats, shellfish, whole grains (6, p455), pulses (7, p364).	Zinc imbalances can be associated with: growth retardation, delayed sexual maturation, impaired immune function, hair loss, eye and skin lesions, loss of appetite (6, p 455), slow healing, and hypogonadism (7, p3640).

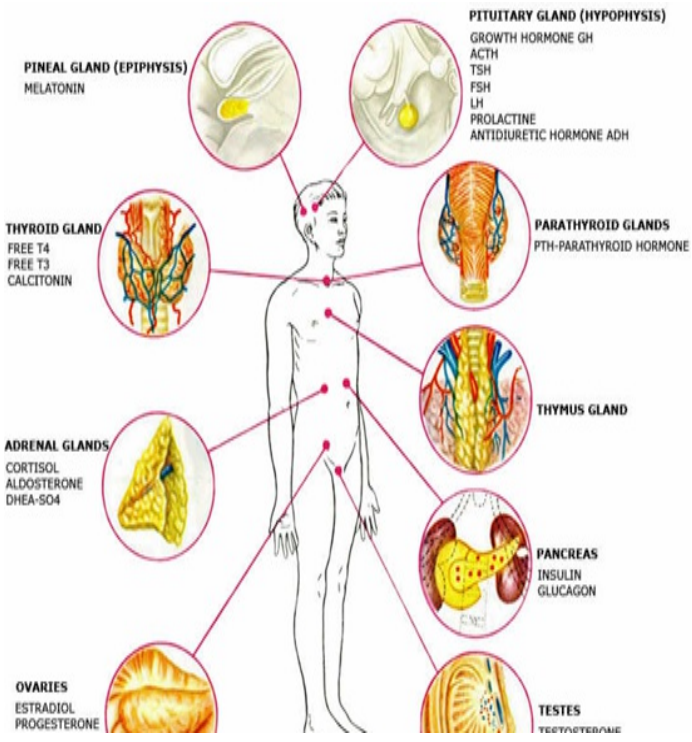
Voltammetric Nutritional Signature Reactivity

Item	Value	Food Source	General Nutritional Information
Selenium	113	meat(particularly organ meat), eggs,cereals (7, p363)seafood, whole grains, fruits, and vegetables(depending on the soil content) (6, p458).	Selenium imbalances can be associated with: keshan`s disease (progressive cardiomyopathy) (7, p363),growth impairment, high cholesterol levels, increased incidence of cancer, pancreatic insufficiency (inability to secrete adequate amounts of digestive enzymes), immune impairment, liver impairment, male sterility (6,p548).
Iodine	27	seafood,iodized salt (7, p365) plants grown in iodine-rich soil and animals fed those plants (7, p 457).	Iodine imbalances can be associated with: underactive thyroid gland, goiter, mental and physical retardation in infants (7, p457) cretinism and myxoedema (6, p365).

Phosphorous	50	all animal tissues (meat, fish, poultry, eggs, and milk) (6, p 423).	Phosporous imbalances can be associated with: muscular weakness, and bone pain (6, p423).
Boron	46	fresh fruits, apples, carrots, grapes, pears, leafy vegetables, nuts and grains (6, p462).	Boron imbalances can be associated with: dysfunction in brain activities and bones(6, p462).
Molybdenum	141	widespread in most plant foods(amount depends on the soil content) (7, p361), legumes, cereals, nuts (6,p 463).	Molybdenum imbalances can be associated with: reduced function of molybdenum requiring enzymes (xanthine oxidase, aldehyde oxidase and sulphite oxidase) (7, p361).
Silicon	142	alfalfa, kelp, dark green leafy vegetables, horsetail, nettle, flaxseed, nuts, seeds, onions, berries (6, p462).	Silicon imbalances can be associated with: the formation of bones and collagen (6, p462).
Cobalt	72	all green leafy vegetables, also various fruits, vegetables and herbs (6, p462).	Cobalt imbalances can be associated with: key mineral in the large vitamin B12 molecule, but is not an essential nutrient (6,p 462).
Copper	99	seafood, nuts, whole grains, seeds, legumes (6, p459).	Copper imbalances can be associated with: anemia, bone abnormalities (6, p459).
K phylloquinone	55	bacterial synthesis in the digestive tract, liver,leafy green vegetables, cabbbage-type vegetables, milk (6, p385).	Vitamin K imbalances can be associated with: excessive bleeding, especially brain hemorrhage in newborn (7, p340).
Vanadium	59	dill, fish, olives, meat, radishes, snap beans, vegetable oils, whole grains (6, 462).	Vanadium imbalances can be associated with: necessary for growth and bone development and normal reproduction (6, p 462).

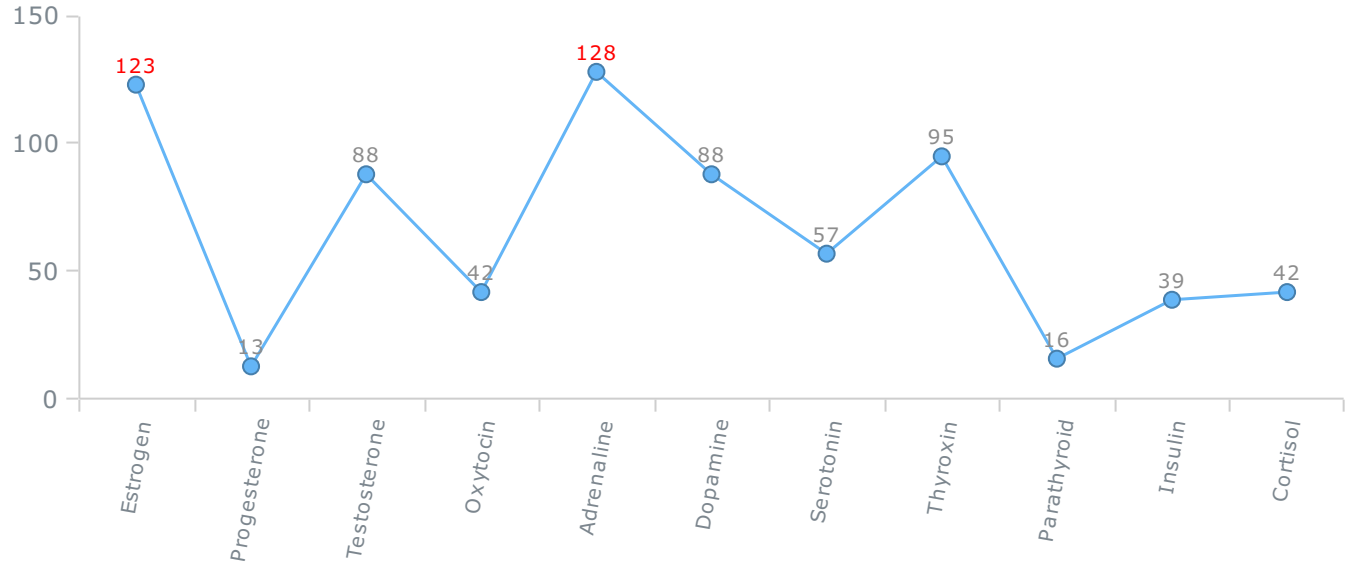
Voltammetric Hormonal Signature Reactivity





Hormones are organic chemicals produced by the body which assist in regulating metabolism, growth and development, reproduction and many other important bodily functions. (1, p 252). Hormonal imbalance has become common in our culture. Some contributors to hormonal imbalaces are nutritional deficiency and toxicity from exposure to many different types of industrial, environmental, and chemical toxins which have infiltrated our soil, food, air, and water (10). Voltammetric aberrant hormonal signature electrical reactivity responses are not quantitative or diagnostic but rather indicate possible areas of stress. By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

Voltametric Hormonal Signature Reactivity Graph



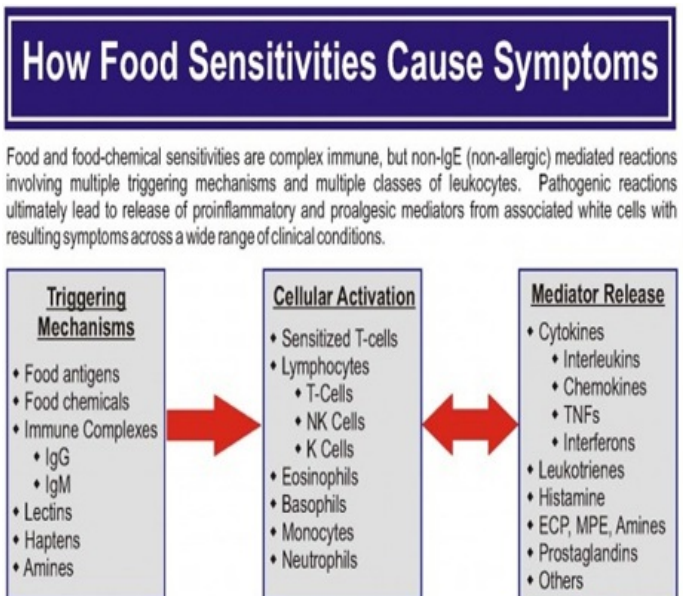
Voltammetric Hormonal Signature Reactivity

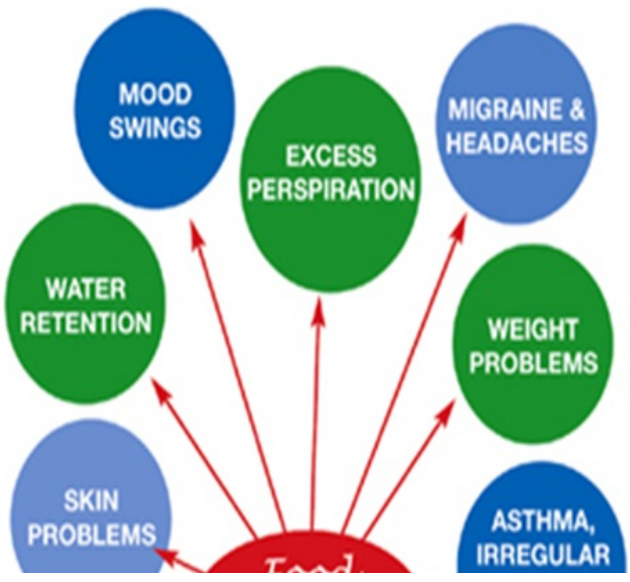
Item	Value	General Hormonal Information
Estrogen	123	Estrogen imbalances can be associated with: weight gain, abdominal bloating, water retention, breast tenderness, headaches, acne, constipation or diarrhea, backache, muscle pain, joint stiffness, mood swings, depression, food cravings, irritability, clumsiness, poor coordination, insomnia, poor concentration (11, p 390), hot flushes, night sweats, fatigue, loss of libido (11, p390).
Progesterone	13	Progesterone imbalances can be associated with: weight gain, abdominal bloating, water retention, breast tenderness, headaches, acne, constipation or diarrhea backache, muscle pain, joint stiffness, mood swings, depression, food cravings, irritability, clumsiness, poor coordination, insomnia, poor concentration (11, p 390).
Testosterone	88	Testosterone imbalances can be associated with: decreased sexual function, loss of bone density, loss of muscle strength and mass, memory loss, abdominal fat, decreased red blood cell production and sperm production (12).
Oxytocin	42	Oxytocin imbalances can be associated with: feelings of bonding and empathy, it is also involved in mood and learning. Deficiency has been found in fibromyalgia and lower levels correlated with increased anxiety and depression (13, p228). Oxytocin has also been suggested as a treatment for autism.
Adrenaline	128	Adrenaline imbalances can be associated with: insomnia, depression, fatigue, headache, upset stomach, digestive disturbances, and irritability (5, p702).
		Dopamine imbalances can be associated with: aberrant substance seeking behavior (e.g.

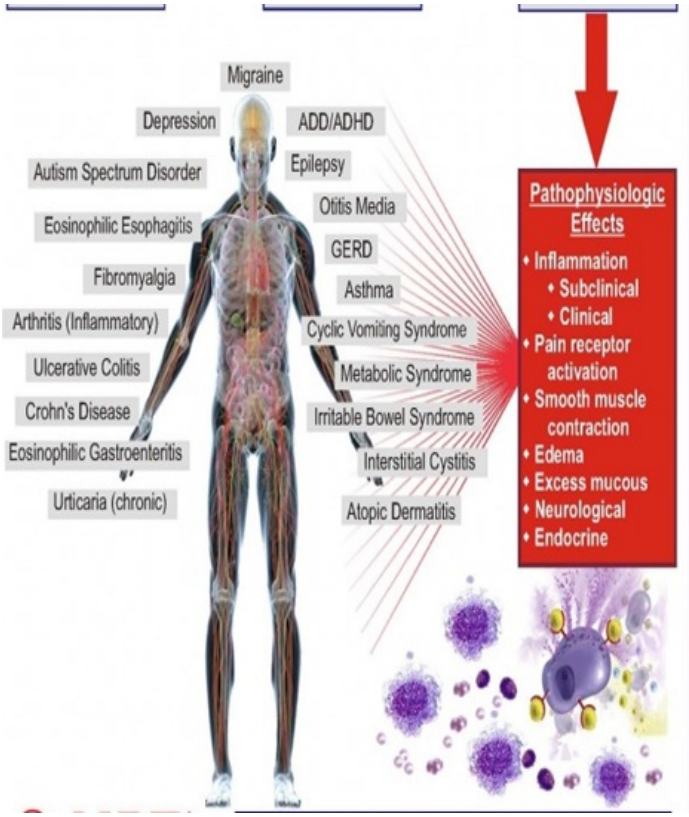
Dopamine	88	Dopamine imbalances can be associated with: aberrant substance-seeking behavior (e.g., alcohol, drug, tobacco, food) and other related behaviors (e.g., sexual addiction, pathologic gambling). It is more common for people with ADHD to participate in high-risk sports, criminal activities, or other euphoria-generating behaviors and have a low tolerance to boredom (5, p1534). They aslo have increased percieved pain (5, p1673), parkinsonian symptoms, dystonia, akathisia, and tardive dyskinesia (14, p300).
Serotonin	57	Seratonin imbalances can be associated with: panic disorder, obsessvie complusive disorder, social phobia, and major depression (14, p305).
Thyroxin	95	Thyroxin imbalances can be associated with: weakness, voice change, weight gain, swelling, muscle pain, cold intolerance, constipation, dry skin, hair loss, heavy periods, depression, impaired memory, lethargy, swelling around the eyes, slow heart rate (11, p144-5), hyperactivity irritability, altered mood, insomnia, heat intolerance, increased sweating, palpitation, fatigue, weakness, weight loss with increased appetite, diarrhea, increased fecal fat, increased urination, loss of libido, infrequent, light or absent periods, heart rate fluctuaions, fine tremor, redness of the palms, diffuse pigmentation, hair loss, gynecomastia, eyelid retraction, nail abnormalities, itchiness, and hives (11, p170).
Parathyroid	16	Parathormone imbalances can be associated with: parasthesias around the mouth and in the fingers, muscle cramps and seizures, cataracts (11, p5080) recurrent renal stones, frequent/excessive urination, bone disease, muscular weakness, loss of appetite, nausea, vomitting, and constipation (11, p506).
Insulin	39	Insulin imbalances can be associated with: frequent/excessive urination, excessive thirst, severe dehydration (11, p 241), ketoacidosis (11, p267), sweating, palpitations, weakness, neurologic symptoms, confusion or coma, and neurologic dysfunction (11, p261).
Cortisol	42	Cortisol imbalances can be associated with: fatigue, lack of appetite, nausea, diarrhea, weight loss, epigastric or abdominal pains, muscle aches, postural hypotension, excessive pigmentation, loss of underarm hair (11, p203), weight gain, muscular disability, malaise, depression, skin disorders (acne, bruising), decreased fertility, and libido (11, p194).

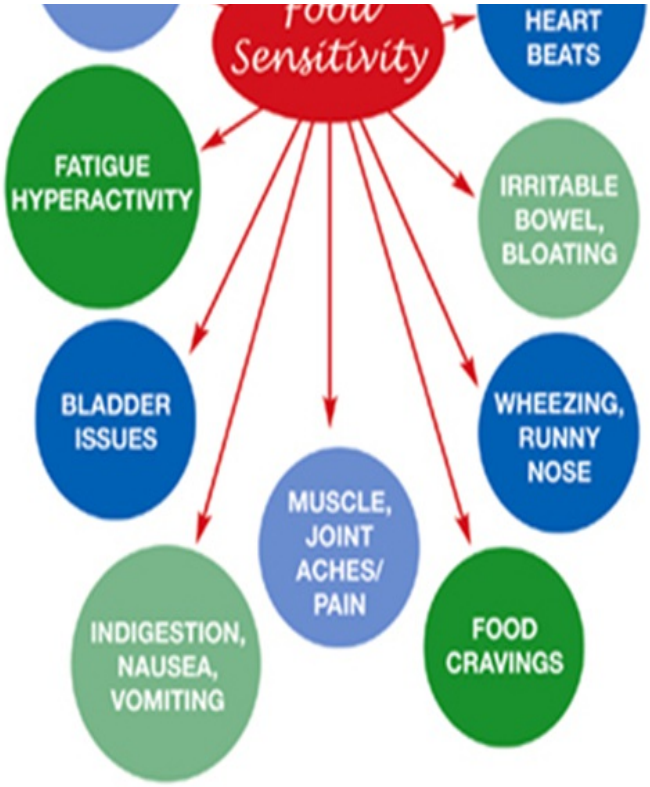
Voltammetric Food and Environmental Signature Reactivity

Although they are often unknown and unidentified by most people, food and environmental sensitivities are a very common root of symptoms we experience. Everyday we eat, drink, smell, and breath items to which we may have an allergy, sensitivity, or intolerance (5, p583-584). A voltammetric aberrant electrical food or environmental signature reaction response does not differentiate between what is a allergy, sensitivity, or an intolerance. However it does offer us an area of interest when examined. One common way of examining food sensitivity is through dietary elimination and reintroduction or specific blood testing (5,p583) which can guide us to a better understanding of our body and it`s needs. By detecting voltammetric signature aberrations in reactivity and understanding the general information which may associate to the voltammetric signatures measured, we are presented with an opportunity to better understand our own unique reactivity profiles through education and subjective interpretation. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.









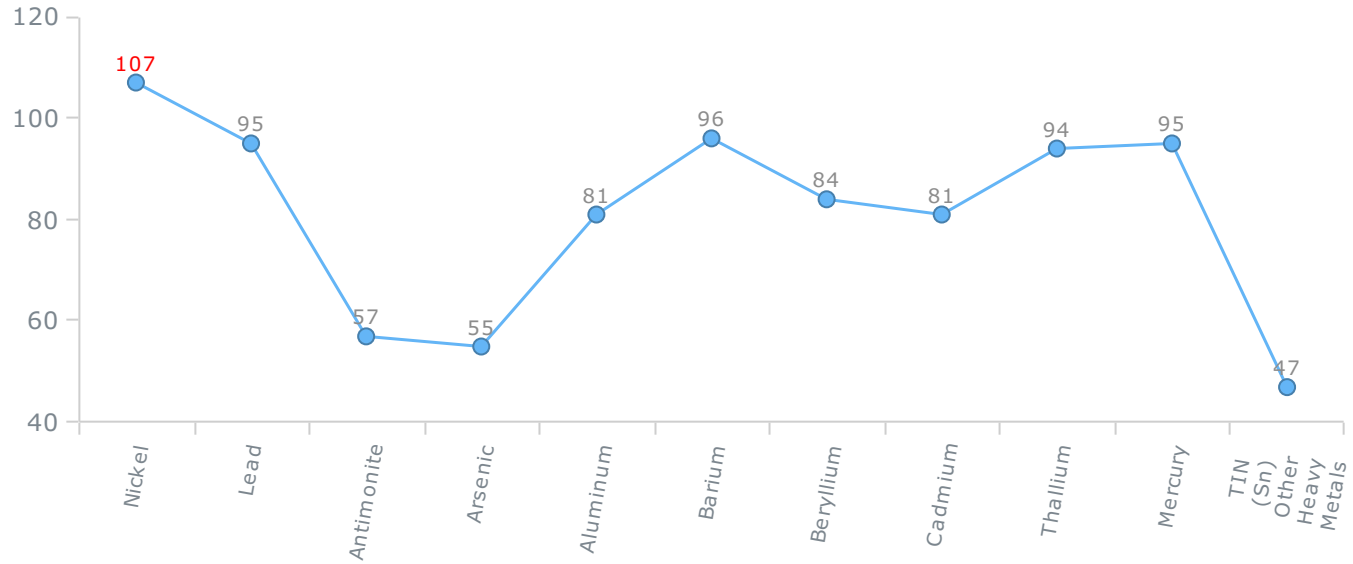
Voltammetric Food and Environmental Signature Reactivity

Item	Value	Item	Value	Item	Value
Milk	100	Yolk	111	Feathers	116
Goat`s Milk	124	Egg White	99	Animal Hair	135
Cheese	120	Fried Food	96	Cat Hair	130
Aspartame	84	Tea	85	Dog Hair	100
Trans Fat	96	Coffee	97	Mosquito Venom	127
Lactose	91	Beer	94	Sheep Wool	95
Whey	88	Red wine	119	Cosmetic Chemicals	81
Sea Food	129	White Wine	85	Soap	46
Sugar	86	Food Additives	87	Ant Venom	89
Spice	114	Food Preservatives	114	Mold	96
Mustard	84	Gluten	83	Fungus	99
Pepper	80	Food Coloring	80	Candida	118
Paprika	124	Pollen	108	Penicillium	117
Curry	47	Perfume	89	News Print	94
Allspice	87	Dust	46	Trees	96
Vinegar	97	Mite	85	Grass	96
MSG	41	Formaldehyde	104	Fine point pen	99

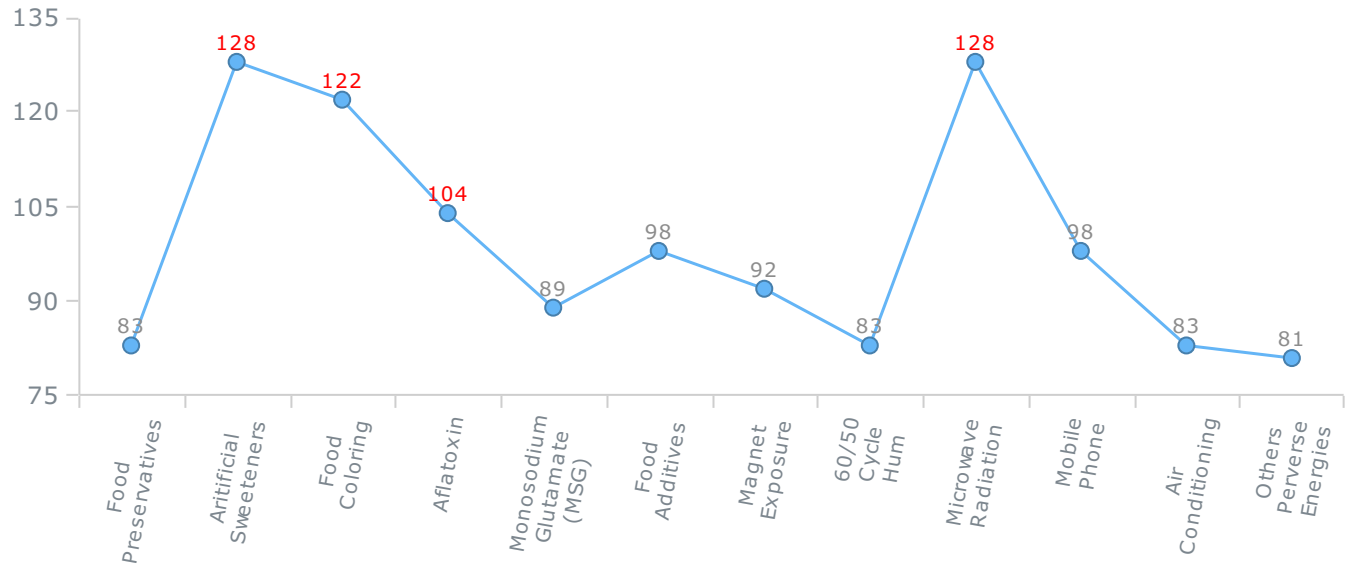
Mint	93	Natural Gas	88	Wasp Venom	92
Borax	107	Motor Oil	103	Clay	84
Brewers Yeast	121	Asphalt	81	Latex	90
Pectin	83	Petrol Fumes	80	Polyurethane	82
Caffeinated Drink	90	Tobacco	83	Scale	85
Fast Food	80	Paints	98	Rapeseed Oil	103
G.M. Foods	100	Solvents	95	Superheated Fat	85

Voltammetric Homeotoxicology Signature Reactivity

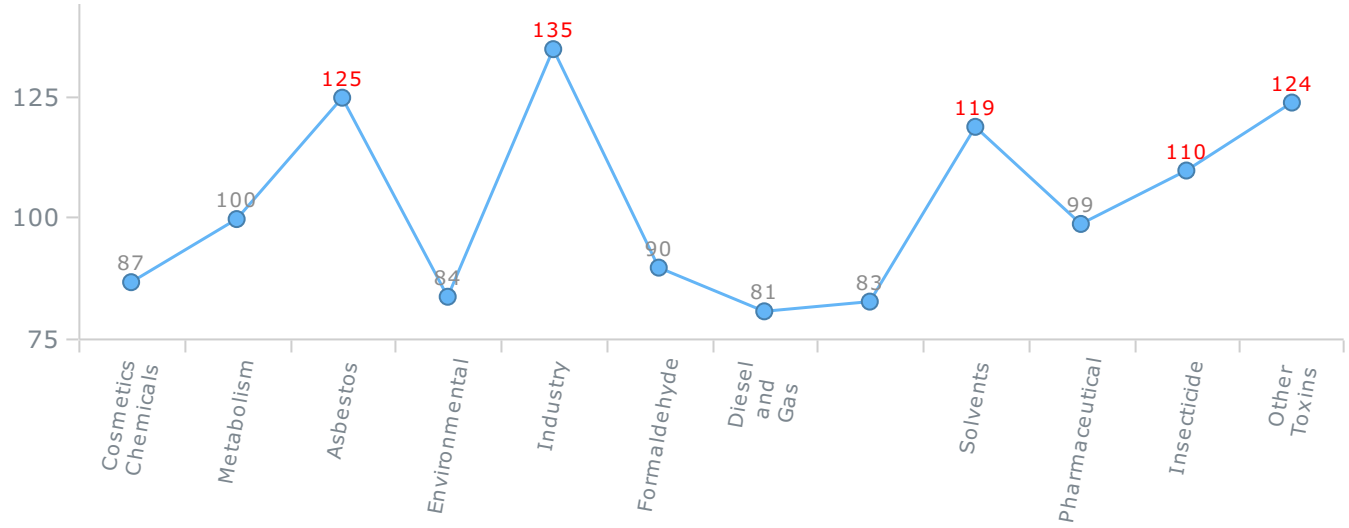
Voltammetric Heavy Metal Signature Reactivity Graph



Voltammetric Foods and Radiation Signature Reactivity Graph



Voltammetric Misc. Homeotoxicology Signature Reactivity Graph



Every day we are exposed to and burdened by toxic elements which the body has to process and manage. Because toxins are ubiquitous in the food we eat, medications we take (or have taken), air we breath, and water we drink it makes it difficult if not impossible to avoid. These toxins can hinder healthy optimal organ functioning and cause stress to the entire body (15, P57 & 5, p340). Aberrant reactivity responses to the following toxins are not quantitative in their measures and do not diagnosis toxicity, but rather, may indicate an area of stress. By better understanding the factors which effect our wellness and correlating possible associated symptoms, we are better able to understand the needs of our bodies. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.

Voltammetric Heavy Metal Signature Reactivity

Item	Value	General Heavy Metal Information
Nickel	107	Nickel is a trace element, required in minute quantities by the human body but in excess can be toxic. Possible sources: cigarette smoke, electronic plating, mining, and steel manufacture industries. Symptoms of toxicity: dermatitis, and pulmonary inflammation. Long term or chronic toxicity may lead to liver necrosis, nephrotoxicity, and carcinoma (16, p25).
Lead	95	Lead is a highly toxic element that is ubiquitous in our environment. Pb is transported through the placenta to the fetus and is found in human breast milk. Possible Sources: occupational exposure in the fields of mining, refineries, production of storage batteries, ammuntition, solder, building materials, cable sheeting, foils, welding, hair darkening agents/dyes, old leaded paint (chips/dust), drinking water, some fertilizers, industrial pollution, lead-glazed pottery, newsprint, and some candles. Symptoms of toxicity: hyperactivity and learning problems in children, ADD and ADHD, poor memory, cognitive function, nerve conduction, and metabolism of Vit D, anemia, immune dysregulation, headaches, gastric distress, fatigue, weight loss, cognitive dysfunction, decreased coordination, depression, anxiety, and aberrant behavior (16, p21).
Antimonite	57	Anitmony is a nonessential element that is chemically similar to arsneic, but generally less toxic than arsenic. Sources: food, smoking, gunpowder, textile industry (fire resistant fabrics), metal alloy, some antihelminthic and antiprotozoic drugs, manufacture of paints, glass, ceramics, solder, batteries, bearing, metals, semiconductors, and used as a antiphotolytic agent in plastic and rubber products. Signs and sympoms include: fatigue, muscle weakness, joint pain, altered EKG, myopathy, nausea, low back pain, headache, and metallic taste, hemolytic anemia, myoglobinuria, hematuria, ADD/ADHD and autism, renal failure. Transdermal absorption can lead to antimony spots which resemble chicken pox (16, p19).
Arsenic	55	Arsenic an accumulate in hair, nails, skin, thyroid gland, bone and gastrointestinal tract and may affect the peripheral nervous, cardiovascular and hematopoietic systems. Sources include: insecticides, well water, smog, shellfish, exterior wood preservatives, combustion of fossil fuel, copper smelting, industrial exposure,and manufacture of electronic components. Symptoms of toxicity: malaise, muscle weakness, vomiting, diarrhea, dermatitis (hyperpigmentation), skin cancer and peripheral neuropathies (16, p19).
		Aluminum is one of the most abundant metallic elements due to its light weight, tensile strength and corrosion-resistant oxide coat. It is neurotoxic at high levels, but low levels of accumulation may not elicit immediate symptoms. Sources include: packing materials, containers, kitchen utensils,

Aluminum	81	automobile and airplane components, and building materials, drinking water, skin tanning solution, mordants, coagulating agents and cosmetics, marble cement, concrete and paper and enamel industries, varnishes, textiles, cosmetics, antacids, baking powder, processed cheese and other foods, some vaccines, and colloidal mineral products. Symptoms of toxicity: fatigue, headache and symptoms of phosphate depletion, toxic levels of ammonia in tissues, disruption of protein synthesis and catabolism, pre-senile dementia, Alzheimer`s disease, behavioral/learning disorders such as ADD, ADHD and autism,and renal problems (16, p 24).

Voltammetric Heavy Metal Signature Reactivity

Item	Value	General Heavy Metal Information
Barium	96	Barium is classified as an alkaline earth metal, is a chemical element, and has not been established to be an essential element. Elevated levels may interfere with calcium metabolism and potassium retention. Possible sources: Ba salts, flour, potatoes, some types of nuts, and is consumed for diagnostic medical tests. Symptoms of toxicity: muscular and myocardial stimulation, tingling in the extremeities, and loss of tendon reflexes (16, p37).
Beryllium	84	Beryllium is a biological antagonist of magnesium whose primary route of exposure is inhalation. Possible sources: electronic components, metal alloys used in aircraft and aerospace applications, bearing sleeves, optical lens coatings, flourescent lights, tobacco, and smoking. Symptoms of toxicity: immune dysregulation, hypersensitivity reactions, chronic beryllium disease, rickets, damage to liver, kidney, lungs, and skin, syspnea, cough and pumonary distress (16, p20).
Cadmium	81	Cadmium is a toxic heavy metal that has no metabolic function in the body. Toxicity is common among welders and construction workers. Possible sources: occupational inhalation, contaminated food (e.g. fruits, oysters and anchovies), water, cigarette smoking, fungicides, rubber products, welding rods, silver solders, old metal refrigerator shelves (used as grills), and refined carbohydrates. Symptoms of toxicity: hypertension, hypotension, adverse affects on the kidneys, lungs, testes, arterial walls, bones, enzymatic reactions, glutathione depletion, microcytic hypochromic anemia, proteinuria, increased urinary calcium and phosphorus, functional zinc deficiency, fatigue, weight loss, osteomalacia, and lumbar pain (16, p 21).
Thallium	94	Thallium is a highly toxic element which, like lead and mercury, accumulates in many body tissues. Occurs naturally in some minerals, magmatic and sedimentary rock and consequently in soil, water, and air. Toxicity can have a long latency period before clinical symptoms become apparent. Possible Sources: lenses, prisms, low temperature thermometers, preparation of high density liquids, rodenticides, pesticides, foods (marine organisms), tobacco, contaminated water, electonics components, fly ash, cement dust, and some fertilizers. Symptoms of toxicity: sleep disturbances, cardiac, optical, dermatological, liver, GI, and kidney dysfunctions, albuminuria, and alopecia (16, p 23).
Mercury	95	Mercury is highly toxic, however, some people are more effective in detoxification of Hg. Individuals vary greatly in sensitivity and tolerance to Hg burden. Possible sources: dental amalgams, fish, contaminated water supplies, hemorrhoidal preparations, some vaccines, skin lightening agents, instruments (thermometers, electrodes, and batteries), combustion of fossil fuels, hospital wastes, fertilizers, paper/pulp and gold industries. Symptoms of toxicity: supression of selenium function, immune dysregulation, loss of appetite, decreased senses of touch, hearing and vision, fatigue, depression, emotional instability, peripheral numbness and tremors, poor memory and cognitive dysfunction, neuromuscular disorders, and acute myocardial infarction (16, p22).
TIN (Sn) Other Heavy Metals	47	Depending on the form of tin it is a potentially toxic element (e.g. organic tin). Sources include: food, dental amalgams, cosmetics, preservatives, food and beverage containers, pewter, and bronze and anticorrosive platings. Symptoms of toxicity: skin, eye, and GI tract irritation, muscle weakness, anemia, and neurodegenertive disease (16, p 25). Heavy metals in general become toxic when they are not metabolized by the body and accumulate in the soft tissues. Heavy metals may enter the human body through food, water, air, or absorption through the skin. Heavy metals are accumulated when they come in contact with humans in agriculture, manufacturing, pharmaceutical, industrial, or residential settings. Industrial exposure accounts for a common route of exposure in adults (16).

Voltammetric Foods and Radiation Signature Reactivity

Item	Value	General Toxicity Information
Food Preservatives	83	Preservatives are chemical compounds that have fungistatic, bacteriostatic, antimicrobicidal, or antioxidant properties used for the preservation of food. Most packaged and processed foods contain preservatives (17, p64-5). The most commonly used preservatives in food are sodium benzoate, 4-hydroxybenzoate esters, and sulfur dioxide. Various sulfites are commonly used in prepared foods as well (5, p1488). Preservative toxicity and sensitivity can cause symptoms of headaches, skin rashes, increase in blood pressure, stomach aches, abdominal distension, mood swings in children, and impaired cognition and learning. Some preservatives have been proven to have mutagenic effects on DNAand are carcinogenic. Toxicity generally affects the liver, lungs, and kidney`s (18).
Aritificial Sweeteners	128	Sugar substitutes such as aspartame are found in sugar free items like diet foods, sodas, chewing gum, and yogurt. Adverse effects of artificial sweeteners may include headache, change in mood, change in vision, convulsions, seizures, sleep problems/insomnia, change in heart rate, hallucination, abdominal cramps/pain, memory loss, rash, nausea, vomiting, fatigue, weakness, dizziness/poor equilibrium, diarrhea, hives, and joint pain (19). Aspartame is being investigated as a possible cause of strokes, alzheimers disease, ALS, Huntingtons, as well as other rare disorders of the neurological system. Although there is little evidence that aspartame causes these conditions there is growing evidence that they can aggravate and precipitate them in sensitive individuals. Scientific evidence is far too strong to ignore the possibility that excitotoxic food additives, like aspartame, may cause these conditions to appear sooner or to a more serious degree (20, pxxi).
Food Coloring	122	Artificial coloring is widely used in foods, beverages, and medications. The most common coloring agents are azo dyes; tartrazine (orange), sunset yellow, amaranth, and coccine (red), and the non-azo dye pate blue (5, p1488). Food dyes are synthetic chemicals which often contain lead and are known to have neuro-degenerative effects. Symptoms of toxicity may include hyperactivity, restlessness, and attention problems in some children - particularly those with ADHD. Toxicity may accumulate in the brain, liver, pancreas, lung and thyroid (18).
Aflatoxin	104	Aflatoxins are naturally occurring mycotoxins that are in the air, soil, and are also found on or in living or dead plant and animals throughout the world (21, p17A). These mycotoxins are common contaminants of wheat, corn, rice, peanuts, fruit and vegetables (21, vii). Aflatoxins are produced by many species of aspergillus (a fungus) (21, p 14). Aflatoxins are acutely toxic and highly carcinogenic substances (21, p55) (17, p66-7) (5, p1125). Aflatoxin toxicity includes a broad range of symptoms depending upon dosage, including vomiting, abdominal pain, hemorrhage, pulmonary edema, acute liver damage (including fatty change), loss of function of the digestive tract, convulsions, cerebral edema and death (21).
Monosodium Glutamate (MSG)	89	Monosodium Glutamate is an excitotoxin, a food preservative, and food enhancer. It is commonly used in most packaged foods. MSG is a major cause of treatable and preventable illnesses such as headaches, asthma, epilepsy, heart irregularities, depression, rage reaction, ADD and ADHD (23, pi). Symptoms include; asthma, skin rash, sneezing, flushing, tingling, chest tightness, palpitations, headaches, arthritislike symptoms, depression, mental confusion, insomnia, and restlessness (23, p 52).
Food Additives	98	Food additives, otherwise known as flavor enhancers and food preservatives, are in most packaged foods. They have infiltrated our food supply since the 1950`s and only now are we beginning to study and understand the side effects (17, p64-5). Artificial dyes and preservatives are currently widely used in foods, beverages, and drugs (5, p1488). Agreat number of synthetic food additives remain in use that are being linked to such diseases as depression, asthma or other allergy, hyperactivity or learning disabilities in children, and migraine headaches (5, p470).

Voltammetric Foods and Radiation Signature Reactivity

Item	Value	General Toxicity Information
Magnet Exposure	92	Electric and magnetic fields (EMF`s) are invisible toxins associated with the production, transmission, and use of electric power such as those associated with high-voltage transmission lines, secondary power lines, home wiring, lighting and appliances (24). The reported symptoms of Electromagnetic Hypersensitivity Syndrome include; headache, fatigue, stress, sleep disturbances, skin symptoms (like prickling, burning sensations and rashes), pain and ache in muscles, and many other health problems (25).

60/50 Cycle Hum	83	The 50/60 Hz cycle hum is the most commonly studied power frequency. Electric appliances and power lines emit 50/60 Hz EMF. While studies remain ongoing, there is much evidence to support that this frequency can cause stress to the human body. Studies have shown that DNA can be mutated and corrupted by these frequencies. Symptoms can range from sleep, mood, behavioral, and learning disorders to degenerative conditions (26).
Microwave Radiation	128	Many governments around the world have issued international warnings on the health hazards (both biological and environmental) of microwave ovens and similar frequency electronic devices (27). The side effects of exposure have yet to be proven but are believed to range from sleep disorders, fatigue, memory concentration deficits, increased irritability and reproductive disorders, to many degenerative diseases (28, p36-7).
Mobile Phone	98	Electromagnetic fields (EMF), in both ELF (extremely low frequency) and radio frequency (RF) ranges, activate the cellular stress response and increased levels of stress proteins. Induction of the stress response involves activation of DNA, and despite the large difference in energy between ELF and RF, the same cellular pathways respond in both frequency ranges (29). Mobile phone radiation emitted from cellular telephones and transmitter towers may have harmful and degenerative side effects to the human body. Increases in brain activity from phone usage may contribute to symptoms of sleep and mood disorders. Mobile phone radiation may increase the risk of brain tumors and neurological disorders (30).
Air Conditioning	83	Freon was used primarily as a chlorofluorocarbon (CFC) cleaning solvent. It also had applications as a refrigerant in commercial/industrial air conditioning and industrial process cooling, as a chemical intermediate in the manufacture of high-temperature lubricant, as a foaming or blowing agen, as an intermediate in the manufacture of fluorocarbon resins, and as a solvent or active ingredient in aerosol formulations. Freon toxicity can cause arrhythmia (irregular heartbeat) and adverse effects on psychomotor performance. Symptoms of toxicity are dizziness, respiratory and cardiac stress (31).
Others Perverse Energies	81	Subtle perverse energies such as those created by both natural magnetic fields and man made EMF can cause dissension in the biofield. While studies remain ongoing, many believe these fields to cause symptoms ranging from sleep, mood and reproductive disorders to many degenerative conditions which commonly plague society today.

Voltammetric Misc. Homeotoxicology Signature Reactivity

Item	Value	General Toxicity Information
Cosmetics Chemicals	87	People are exposed to cosmetic chemicals by breathing in sprays and powders, swallowing chemicals on the lips or hands or absorbing them through the skin. Biomonitoring studies have found cosmetics ingredients - like phthalate plasticizers, paraben preservatives, the pesticide triclosan, synthetic musks, and sunscreens - as common pollutants in men, women and children. Many of these chemicals are potential hormone disruptors. Products commonly contain penetration enhancers to drive ingredients deeper into the skin. Studies find health problems in people exposed to common fragrance and sunscreen ingredients, including elevated risk for sperm damage, feminization of the male reproductive system, and low birth weight in girls (32).
Metabolism	100	Metabolic toxicity derives from the body`s inability to breakdown and excrete different types of toxins found in food, medicine, and the environment (17, p37). Metabolic toxins often store themselves in soft tissue and can accumulate over a lifetime. The lungs (17, p317), liver (17, p263), endocrine system, nervous system and brain are the most common areas for bioaccumulation (17, p299). Symptoms of toxicity can present as any illness and are most commonly headaches, migraines, abdominal pain, digestive problems, weight gain, diabetes, and degenerative disorders (17).
Asbestos	125	Asbestos is a fibrous mineral that was commonly used as a fire retardant and in insulation. It was incorporated into some 3000 different products in our industrialized society (33, p1 &17). Asbestos has been studied and proven to have potentially fatal side effects. Symptoms mostly include respiratory distress and many different forms of degenerative lung conditions (17, p46-48) (32, pix).
Environmental	84	Environmental toxicity is the byproduct of indirect industrial toxic exposure. Toxins from the burning of coal as well as many different heavy metals and petrochemicals in the air (17, p37) and soil (17, p40-44) can accumulate in the soft tissues of the body. Symptoms of toxicity are general and may contribute to the development of many degenerative conditions. The lungs (17

		general and may contribute to the development of many degenerative conditions. The lungs (17, p317), liver (17, p263), endocrine system, and nervous system/brain are the most common areas for bioaccumulation (17, p299).
Industry	135	Industrial toxicity is the result of more direct toxicity most often from occupational exposure. Industrial toxins are generally comprised of heavy metals and petrochemicals commonly used in manufacturing (17, p44-8). Symptoms of toxicity are general and may contribute to the development of many degenerative conditions. The lungs (17, p317), liver (17, p263), endocrine system, and nervous system/brain are the most common areas for bioaccumulation (17, p299).
Formaldehyde	90	The most extensive use of formaldehyde is in the production of resins which are used as an adhesive in the manufacture of particle-board, plywood, furniture and other wood products for the production of curable moulding materials (appliances, electric controls, telephones, wiring services), surface coatings, nitrogen fertilizers, the textile, leather, rubber and cement industries, binders for foundry sand, insulating materials, abrasive paper, brake linings, lubricating oils, plasticizers, detergents, soft and rigid foams, plastics, audio and video electronic equipment, dyes, tanning agents, crop protection agents, animal feeds, perfumes, vitamins, flavourings, as a preservative and disinfectant in drugs and vaccines, cosmetics, soaps, shampoos, hair preparations, deodorants, lotions, make-up, mouthwashes and nail products (34, p45-8). Formaldehyde can cause irritation of the eyes, nose, throat and sinuses. Resulting symptoms include; burning, dryness, redness and itching of eyes, nasal dryness, soreness, runnines, sore or dry throat, and sinus congestion or post-nasal drip. Secondary effects associated with these symptoms may include; cough, chest tightness, excessive phlegm production, repeated sinus infections, eye infections and possibly bronchitis. In very sensitive individuals these respiratory symptoms may progress to asthma and for those with existing asthma exposure to formaldehyde may precipitate asthmatic attacks. Formaldehyde can also affect the central nervous system (CNS). Common CNS symptoms associated with formaldehyde exposures in buildings include frequent headaches, unusual fatigue, lassitude and disturbed sleep (34).
Diesel and Gas	81	Petrochemical toxicity, including diesel and gas, accumulates in our bodies through food, air, and soil (17, p37) and thus exposure is unavoidable (17, p317). Symptoms can include headaches, dizziness, nausea, respiratory distress, and immune system compromise (17).

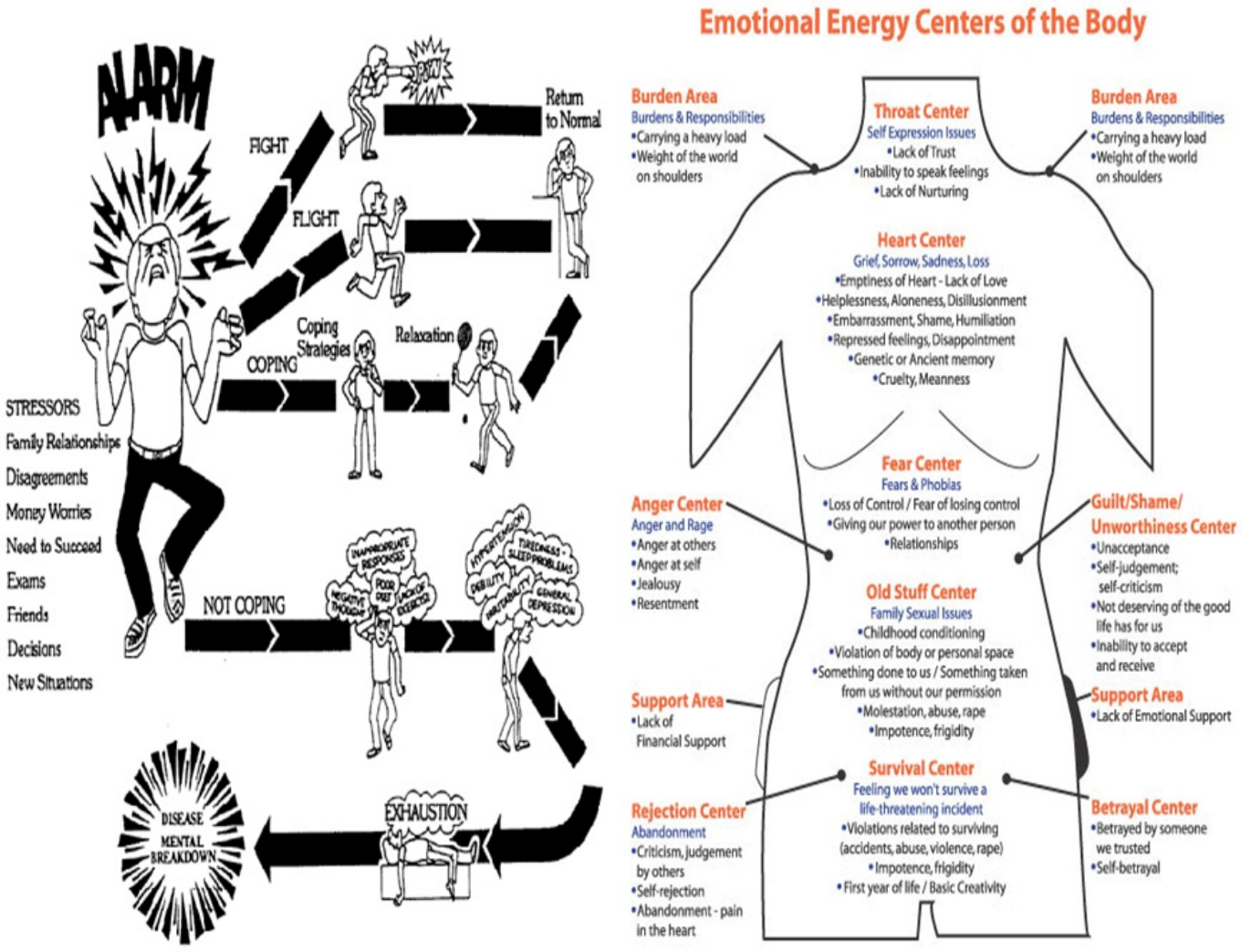
Voltammetric Misc. Homeotoxicology Signature Reactivity

Item	Value	General Toxicity Information
Polychlorinated biphenyls PCB`s	83	Polychlorinated biphenyls (PCB`s) are a group of synthetic organic chemicals that can cause a number of different harmful effects. PCB`s do not readily break down in the environment and thus may remain there for very long periods of time and continue to have harmful effects. People can be exposed to PCB`s by eating contaminated food. The main dietary sources of PCB`s are fish (especially sport fish caught in contaminated lakes or rivers), as well as meat and dairy products. Another way to become exposed to PCB`s is through contaminated well water or air near a waste site. Signs and symptoms of toxicity: skin conditions, such as acne and rashes, irritation of nose and lungs, gastrointestinal discomfort, changes in blood and liver, and depression and fatigue (35, p1-6).
Solvents	119	Mild solvent toxicity is common due to many of the chemicals used in cosmetics, construction materials, and fabrics. Most often toxicity is the result of concentrated exposure. Symptoms range from dizziness and headaches to cognitive impairment and nausea (17, p70).
Pharmaceutical	99	Many pharmaceutical drugs contain very toxic compounds which can bioaccumulate in the soft tissues of the body. Most pharmaceuticals cause mild to severe side effects due to the toxicity from the accumulation which can hinder healthy organ function (17, p70-1, p299).
Insecticide	110	Insecticides are a specific type of pesticide that are highly toxic to man (36, p13). Many studies have shown exposure can lead to estrogenification and imbalanced hormonal homeostasis. Toxicity is most often the result of environmental exposure from polluted air, water, soil, and food (17, p57-61). The lungs (17, p317), liver (17, p263), endocrine system, and nervous system/brain are the most common areas for bioaccumulation (17, p299).
Other Toxins	124	In today`s industrialized, mechanized, chemically processed world, humans are exposed to toxicities that the body has never before encountered. Toxicity is almost unavoidable as we are infiltrated through food, water, soil, and air. The most common group is organochlorines that dominate all lists of global contaminants and environmental health hazards. Organochlorines are produced when chlorine is used in the chemical, paper, water treatment, and other industries, and they include a variety of familiar and obscure plastics, pesticides, solvents

refrigerants, and accidental by-products (37, p vii).

Voltammetric Emotional Imponderable Signature Reactivity

It is believed by some, that emotional imbalances and stress may be the most important factors when trying to achieve and maintain optimal health and wellness. Many of us have experienced emotional trauma and developed negative emotional patterns throughout our lives, which contribute to our physical, mental, and spiritual stress (5, p100-101 & p646). While a voltammetric aberrant signature reactivity response does not offer a quantitative measure or diagnose any condition, by understanding the emotions which we react to, we are better able to understand ourselves. A voltammetric aberrant signature reaction may be an indication of imbalanced emotions. Emotions can be in excess or deficient, supressed or expressed. Sometimes these emotions can be so foundational to our personality, ego, and nature that we are unaware of the imbalance. As you attempt to interpret the "reason" for the reactivity response, remember to be open minded and non judgmental. This information should not be used to change, mitigate imply or alter any treatment, dietary, or lifestyle habbits, patterns or choices without consulting with and being suprivesed by a licensed health care professional.



Voltammetric Emotional Imponderable Signature Reactivity

Item	Value	Item	Value	Item	Value
Rejection	42	Agression	31	Anger	94
Anxiety	32	Awareness	23	Sadness	189
Guilt	82	Autistic	35	Denial	154

Careless	38	Delusion	92	Depression	80
Power	103	Self Doubt	53	Fear	74
Confusion	104	Hesitation	76	Jealosy	66
Joy	81	Lust	21	Greed	84
ESP	27	Psychic Pain	59	Passivity	33
Projection	78	Rationalization	89	Reckless	93
Worry	91	Abandoned	52	Embaressed	37
Betrayal	43	Misunderstood	27	Curiosity	35
Awe	28	Religous Conflict	66	Identity Conflict	62
Resistance To Change	47	Nervous	87	Laughter	130
Enthusiasm	70	Vaniety	57	Bargaining	95
Courage	62	Shame	30	Monotony	188
Need to change	42	Observant	90	Antagonism	49
Sensuality	20	Spirituality	43	Sexuality	29
Addictive	61	Judgemental	65	Apathy	47
Ecstasy	90	Inadequacy	73	Desire for things to be different	39
Perfectionistic	140	Hopeless despair	78	Dominating	68
Submissive	44	Pride	24	Resentment	84
Shock	65	Unaware	38	Obsessive	46
Compulsive	155	Manic uncontrollable	52	Impulsive	83
Steadfast Loyal	85	Easily Distracted	27	Focus mind	89

Reference list

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1 Thibodeau, G., Patton, K. (2008). Structure and Function of the body (10th ed.). Mosby Elsevier.

2 Standring, S. (2008). Gray`s anatomy : the anatomical basis of clinical practice Elsevier Inc.

3 Blumenfeld, Hal. (2010). Neuroanatomy through clinical cases. Sinauer Associates.

4 Maciocia, Giovanni. (2005). The Foundations of Chinese Medicine: A Comprehensive Text for Acupuncturists and Herbalists (2nd ed.). Elsevier Ltd.

5 Pizzorno, J., Murray, M. (2006). Textbook of Natural Medicine.(3rd ed.). Churchill Livingstone Elsevier.

6 Webb, G. (2008). Nutrition, A Health Promotion approach (3rd ed.). Hodder Arnold.

7 Escott-Stump, S. (2012). Nutrition and Diagnosis-Related Care (7th ed.). Lippincott Williams & Wilkins.

8 Stipanuk, M. (2006). Biochemical, Physiological and Molecular Aspects of Human Nutrition (2nd ed.). Elsevier Saunders.

Bera, G. (2010, July 15). Lipase Deficiency. Retrieved from http://www.buzzle.com/articles/lipase

9 Bora, C. (2010, July 15). Lipase Deficiency. Retrieved from http://www.buzzle.com/articles/lipase-deficiency.html

10 Library of congress cataloging in publication data. (1976). Human Physiology and the Environment in Health and Disease. Scientific America.

11 Besser, M., Thorner, M. (2002). Comprehensive Clinical endocrinology (3rd ed.). Elsevier Science Ltd.

12 Liverman, C. (2004). Testosterone and aging: clinical research directions, National Academies Press.

13 Zingg, H., Borque, C., Bichet, D. (1998). Vasopressin and Oxytocin Molecular, Cellular, and Clinical Advances. Advances in Experimental medicine and biology (vol. 449). New York: Plenum press.

14 Krogsgaard-Larsen, P., Stromgaard, K., Madsen, U. (2010). Textbook of Drug Design and Discovery (4th ed.). USA: Taylor and Francis Group.

15 Library of congress cataloging in publication data. (1976). Human Physiology and the Environment in Health and Disease. Scientific America.

16 Quig, D.(1998). Comprehensive Interpretations for Hair Elements from Al To Zr. Doctor`s data Inc. Chicago.

17 Hodgson, E. (2004). A Textbook of Modern Toxicology (3rd ed.). New Jersey: John Wiley and Sons, Inc.

18 Bhawsar, S. (2001, Mar 1). Toxic Effects of Food Preservatives. Retrieved from http://www.biotecharticles.com/Toxicology-Article/Toxic-Effects-of-Food-Preservatives-695.html

19 Mercola, J (n.d.). Artificial sweeteners: more sour than you ever imagined. Retrieved from http://mercola.fileburst.com/PDF/SpecialReports/Aspartame%20Special%20Report.pdf

20 Blaylock, R. (1998). Excitotoxins: The taste that kills. Retrieved from http://www.netlibrary.com.foyer.swmed.edu/urlapi.asp?action=summary&v=1&bookid=33702

21 Goldblatt, L. (Ed) (1969). Aflatoxin, Scientific Background, control, and implications. New York : Academic Press.

22 Trucksess, M., Pohland, A. (Ed`s). (2001). Mycotoxin Protocols. Methods in Molecular biology, Vol 157. New Jersey: Humana Press Inc.

23 Schwartz, G. (1999). In Bad Taste. Retrieved from http://www.netlibrary.com.foyer.swmed.edu/urlapi.asp?action=summary&v=1&bookid=33695

24 Mercola, J. (n.d.).Electromagnetic Field (EMF)- Hazardous to our health? Retrieved from http://emf.mercola.com/sites/emf/emf-dangers.aspx

25 Wikipedia. (n.d.). Electromagnetic Hypersensitivity http://en.wikipedia.org/wiki/Electromagnetic_hypersensitivity

26 WHO International Agency for Research on Cancer. (2002, March 7). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol. 80, Non-Ionizing Radiation. Retrieved from http://monographs.iarc.fr/ENG/Monographs/vol80/volume80.pdf

27 Mercola, J. (2010, May 18). Why did the Russians Ban an Appliance Found in 90% of American Homes? Retrieved from http://articles.mercola.com/sites/articles/archive/2010/05/18/microwave-hazards.aspx

28 Michaelson, S. (1977). Microwave and Radiofrequency Radiation. Distributed by the regional office for Europe. Copenhagen: WHO.

29 Blank, M., Goodman, R. (2009). Electromagnetic fields stress living cells. Pathophysiology, Volume 16 (Issue 2), Pages 71-78. Retrieved from doi:10.1016/j.pathophys.2009.01.006

30 Mercola, J. (2000, Dec 17). "If Mobile Phones Were a Type of Food, They Simply Would Not be Licensed" Retrieved from http://articles.mercola.com/sites/articles/archive/2000/12/17/mobile-phones-part-five.aspx

31 Office of Pollution, Prevention, and Toxics U.S. EPA. (1994, Aug). Chemical Summary for Freon 113. Retrieved from http://www.epa.gov/chemfact/s_freon.txt

32 Environmental Working Group (n.d.). Myths on cosmetic safety. Retrieved from http://www.ewg.org/skindeep/myths-on-cosmetics-safety/

33 Roggli, V., Oury, T., Sporn, T. (2004). Pathology of Asbestos-associated Diseases (2nd ed.). New York: Springer-Verlag.

34 Godish, T. (2010, May 18). Are you sick from formaldehyde exposure? Retrieved from http://www.healthyhouseinstitute.com/a_786-Are_You_Sick_from_Formaldehyde_Exposure

35 Syracuse Research Corporation. (2000). Toxicological profile for polychlorinated biphenyls (PCBs), US department of health and human services, public health service, agency for toxic substances and disease registry.

36 WHO, Specifications for pesticides used in public health. (1985). Insecticides-molluscicides-repellents-methods (6th ed.). WHO.

37 Thornton, J. (2000). Pandora`s Poison: Chlorine, Health, and a New Environmental Strategy. Cambridge, MA: MIT Press. Retrieved from http://www.netlibrary.com.foyer.swmed.edu/urlapi.asp?action=summary&v=1&bookid=27242