APLGO Detox kit (MLS + HPR)

Q & A With Susan Johnson and Mary Esther Gilbert, MSc HN, BSc NSP

March 11, 2024

1. What is body detoxification and how does the body detoxify (what are the pathways of elimination the body uses to get rid of toxicity?)

- Detoxification is a normal process where the immune detection systems, directed by the nervous and endocrine (glandular/hormonal) systems, identify and eliminate foreign substances in the body's circulatory systems, and are stored in the body's fat deposits. Such foreign substances include:

    - Synthetic chemicals containing similar molecular structures as dietary fats, yet are known to cause DNA damage and lead to degenerating or diseased conditions:

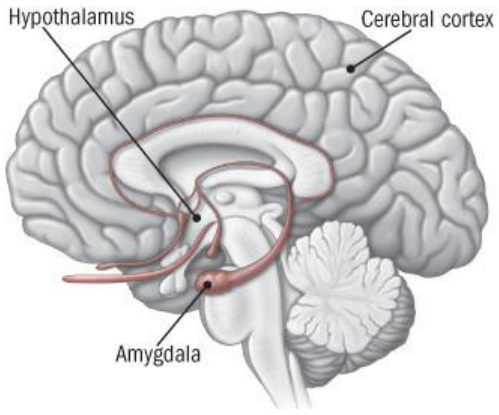
        - Chemical pesticides, herbicides.
        - Ingredients in body care products and cosmetics.
        - Ingredients in household cleaners or industrial cleaning agents.
        - Emissions, toxic chemical particulates in the atmosphere
        - Pollutants in soil and water sources, industrial runoff.
        - Tobacco, alcohol.
        - Drug residues in water sources.
        - Animal, sea food sources fed or exposed to toxic compounds (Jackson, 2018).

    Reference: Jackson E, Shoemaker R, Larian N, Cassis L. Adipose Tissue as a Site of Toxin Accumulation. Compr Physiol. 2017 Sep 12;7(4):1085-1135. doi: 10.1002/cphy.c160038. Erratum in: Compr Physiol. 2018 Jun 18;8(3):1251. PMID: 28915320; PMCID: PMC6101675. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6101675/

    - Toxic biochemicals or free radicals produced in the body under physical, psychological or emotional stress, which create a chain reaction of inflammatory responses that have long term degenerative physical and psychological health effects.

        - Toxic emotions, stress reactions as a survival response ("fight or flight") in life-threatening situations.

        - Chronic and/or internalized anger, grief, anxiety, and social, work, or family difficulties .



Harvard Health Publishing 2020

The sympathetic part of the autonomic nervous system triggers the flight or fight response, infusing the body with more energy to respond to danger. This life-saving reaction happens more quickly than one can think.

A stress response begins in the brain after signals from the eyes and ears send signals to the amygdala, which interprets images and sounds. If it perceives danger, it sends a distress signal via the autonomic nerves to the hypothalamus, which in turn sends signals to the adrenal glands.

The hypothalamus activates the adrenal glands to pump the hormone epinephrine (adrenaline) into the bloodstream, causing increased heart rate to push more blood sugar (glucose) and other nutrients quickly to the muscles, heart, and other vital organs, thereby increasing blood pressure. This increase in functions causes small airways in the lungs to open wide, facilitating rapid breathing and ability to take in larger volumes of oxygen in every breath. Increased oxygenation increases alertness through sharpened sight, hearing, and other senses, and also releases body fat stores from temporary storage sites for extra energy to all areas of the body during this stress response.

When the epinephrine or adrenaline hormone subsides, and the brain still perceives danger, the hypothalamus releases corticoptropin-releasing hormone (CRH) that triggers the pituitary gland to release adrenocorticotropic hormone (ACTH), which arrives at the adrenal glands, triggering them to release cortisol.

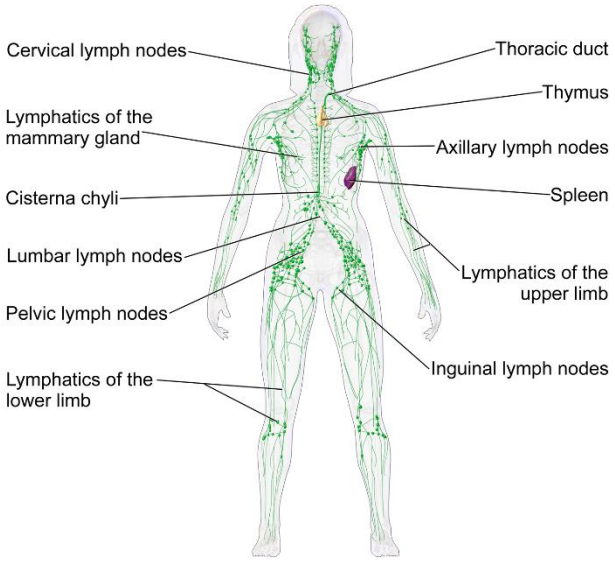
The parasympathetic part of the sympathetic nervous system calms the body down after the danger is passed. When perceived stress levels are reduced, cortisol levels fall, putting on the brakes that lessen or cease the stress response.

Low and high level, chronic stress reactions resulting in elevated cortisol levels have been found to increase blood pressure and damage blood vessels and arteries that increase heart attack and stroke risks. *Elevated cortisol levels ultimately cause the buildup of fat tissue stores, increase of appetite, conversion of unused nutrients into body fat, and therefore weight gain* (Harvard, 2020).

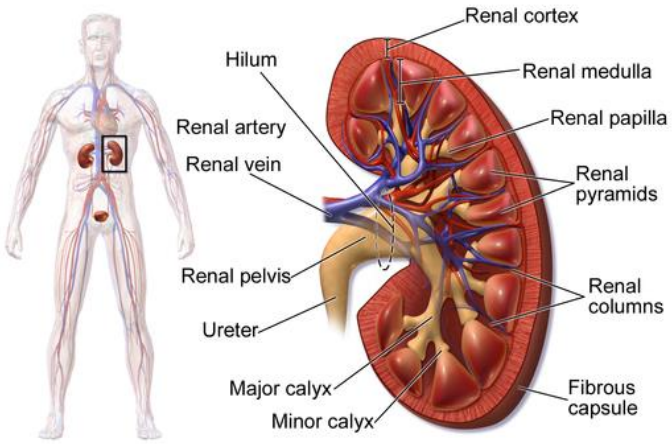
Reference: *Understanding the stress response, Chronic activation of this survival mechanism impairs health.* Harvard Health Publishing. (2020, July 6).
https://www.health.harvard.edu/staying-healthy/understanding-the-stress-response

- Toxic inflammatory responses as a result of:
  - Damaged organs and their tissues due to prolonged nutrient deficiencies, consuming distorted molecules of foodstuffs (fast food, processed foods, destructive cooking methods).
  - Physical injury.
  - Fatigue, muscle soreness.
- Byproducts of normal metabolism and digestion:
  - Cellular wastes.
  - Spent cells.
- Cell abnormalities:
  - DNA mutations.
  - Abnormal cell growths.

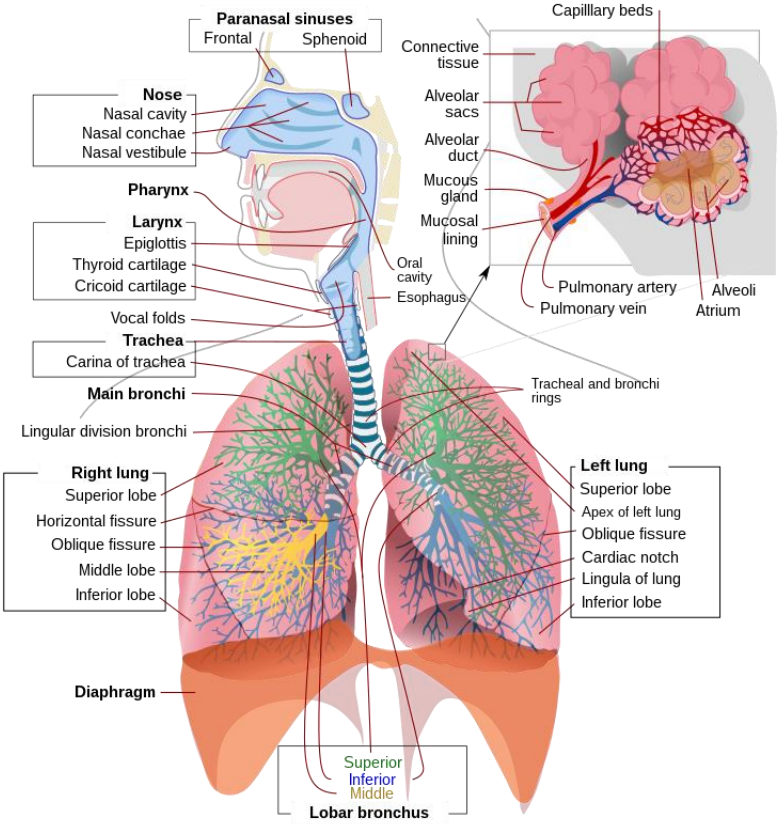
- **Pathways of Elimination:** The body eliminates toxic substances through its main eliminative organ systems: Lymph, Urinary, Respiratory, Digestive (Intestines), Integumentary.



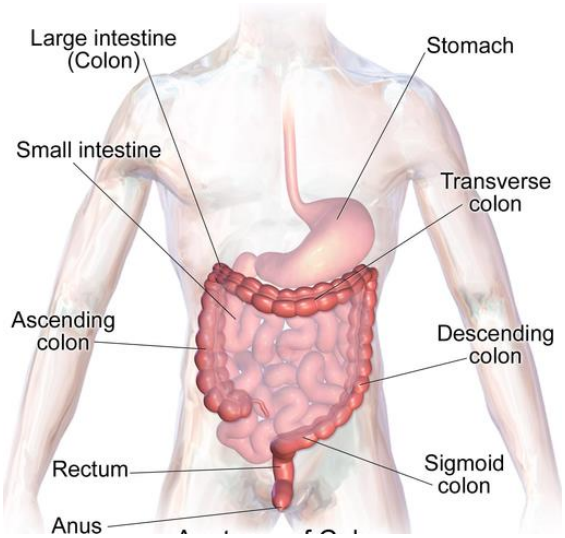
Blausen – Wiki



Bruce Blausen - Wiki



Lady of Hats - Wiki 2022



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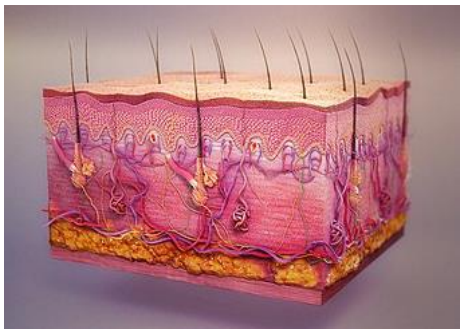
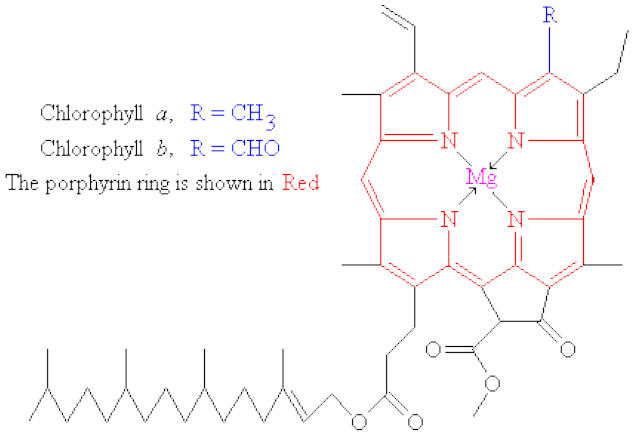


ScientificAnimations.com - Wiki

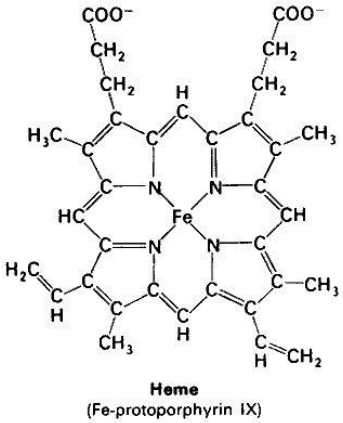
- Molecular binding by phytochemicals in plants. (See questions 3 and 4 for the phytonutrient properties of the botanicals in HPR and MLS.)

  - Chlorophyll and Human Blood:

    - A green plant pigment used by plants to trap light needed for the growth, development, and as a component of immune system protections of a plant.
    - Chlorophyll is very similar to heme, the iron compounds in blood known molecularly as a porphyrin ring.
    - Chlorophyll's porphyrin ring and that of human blood differ although chlorophyll contains magnesium in the center of its molecule, and human blood contains iron.
    - Hemoglobin is the oxygen carrying pigment in mammalian red blood cells.



Paul May, School of Chemistry, University of Bristol



Davidson Biology, Davidson College, 2005

- The complex formation or binding of antioxidant phytochemicals in plants to the molecular structures of chemical toxins are how they help rid the body of them, and prevent adverse modifications in its metabolic processes:

  - Chlorophyll and other compounds such as sodium copper chlorophyllin have been shown to form tight molecular bonds with certain chemicals known to cause cancer, and helps prevent absorption in the gastrointestinal tract, such as:

    - Polyaromatic hydrocarbons in tobacco smoke.

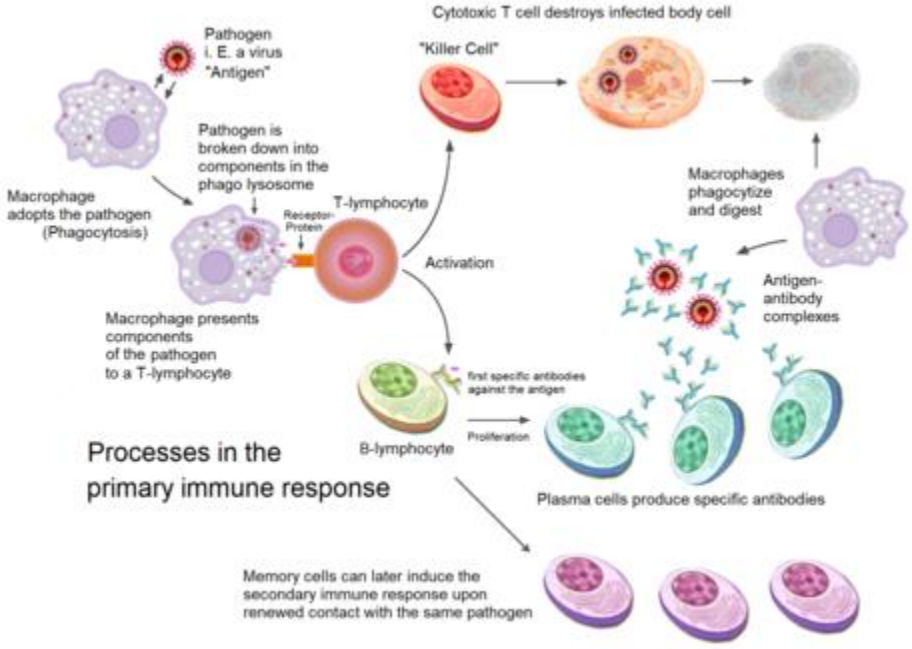
    - Heterocyclic amines and aflatoxins found in cooked meat. (Cooking foods at lower temperatures and eating organically raised animal food sources, along with a high phytonutrient-rich, antioxidant-rich diet from foods in the plant kingdom is key to countering the formation of toxins.

  - Many phytochemicals in plants have been shown to prevent the development of abnormal cells or damage to the DNA that can lead to disease by stopping their early formation process, such as halting the formation of cytochrome P450 needed to form chemically induced cancers.

  - Phytochemicals in plants are also found to prevent cell mutations caused by aflatoxin-B_1 (AFB_1), a carcinogen produced by certain fungi found in moldy grains and poorly stored legumes such as corn, peanuts, and soybeans. AFB_1 is associated with increased risk of hepatocellular carcinoma (liver cancer) (Linus, 2024).

    Reference: Linus Pauling Institute, Micronutrient Information Center. (2024). *Chlorophyll and Metallo-Chlorophyll Derivatives*. Oregon State University. https://lpi.oregonstate.edu/mic/dietary-factors/phytochemicals/chlorophyll-metallo-chlorophyll-derivatives#introduction

- Destruction of foreign substances by the immune cells:



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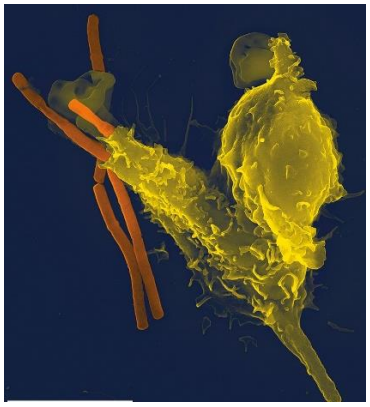
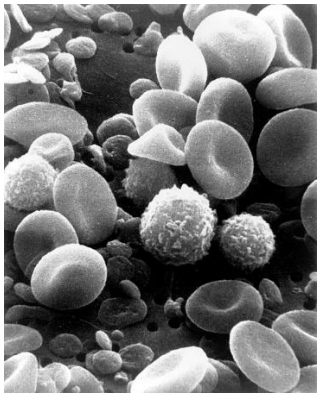
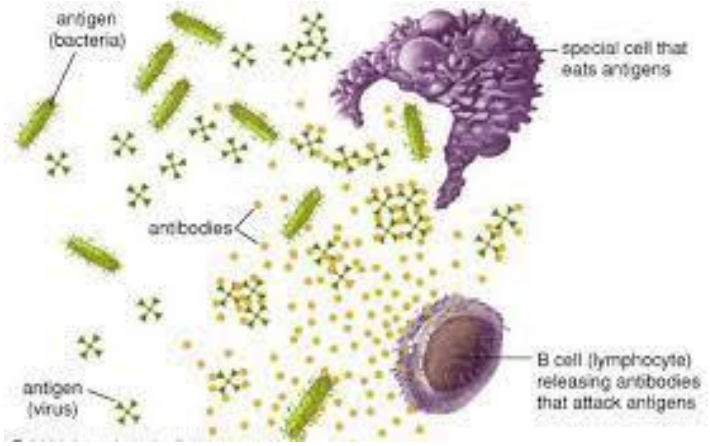


Volker Brinkmann – Wiki 2005



Bruce Wetzel, Harry Schaefer - Wiki 2023



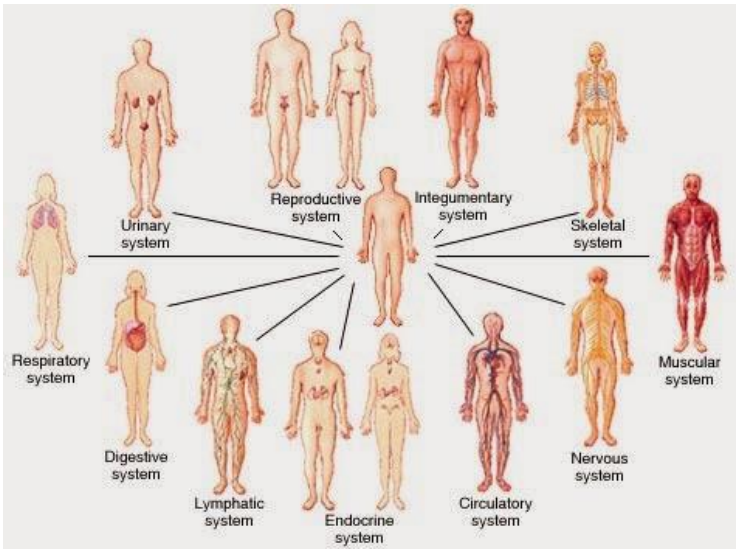
Britannica, 2023

Reference: Britannica, T. Editors of Encyclopaedia (2023, December 29). antigen. Encyclopedia Britannica. https://www.britannica.com/science/antigen

2. Explain how the liver plays a vital role in detoxification.

- Plant phytochemicals are known to help the liver and the body's detox organs remove synthetic toxins from the body's fat deposits, including body tissues that store and utilize fats, and also body fluids:

    - Nerve cells
    - Brain cells/tissues
    - Spinal cord cerebral-spinal fluids
    - Blood fluid, blood vessels
    - Lymph vessels, nodes, fluids
    - Bone marrow
    - Muscle tissues
    - Subcutaneous skin layers



- Microplastics (MPs) have infiltrated every level of the food chain and are known to damage the digestive system, including the liver, and generate an inflammatory immune response that if chronic and long-term, leads to the disease process. Such toxins and other synthetics:

    - Stimulate the mobilization of neutrophils (white blood cells) containing certain enzymes that damage cells and promote acute inflammation.

    - Trigger other white blood cells (macrophages, lymphocytes) and plasma cells that trigger inflammation resulting in tissue damage.

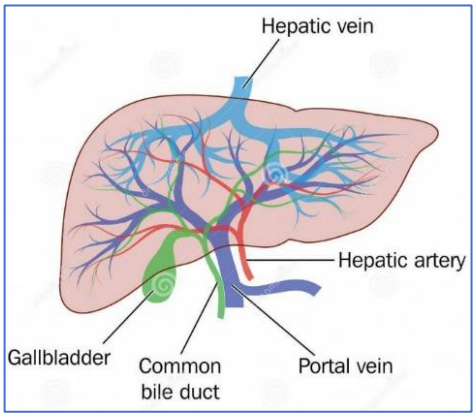
    - Increase the presence of excessive proinflammatory proteins (cytokines), also an indication of inflammation, even though they are normally essential for our immune defenses (Wu, et. al., 2024).

    Reference: Jiaen Wu, Hao Chen, Jiawei Xu, Muhammad Saif Ur Rahman, Shengmei Li, Jie Wang, Shifen Huang, Charles C. Han, Shanshan Xu, Ying Liu. The lull before microplastics pollution outbreaks: Some implications for human health and control strategies. *Nano Today*. Volume 54. 2024. https://doi.org/10.1016/j.nantod.2023.102062. (https://www.sciencedirect.com/science/article/pii/S1748013223003110)

- The liver plays a vital role in the removal of toxic substances from the body.

    - The body is exposed to thousands of pollutants and toxic chemicals every day in the form of:

        - Pharmaceuticals (drug residues in food, water).
        - Household and industrial chemicals.
        - Cosmetics, body care, skin care products.
        - Inflammatory ingredients in dietary supplements.
        - Many extremely toxic industrial wastes and environmental contaminants.



- Toxins enter the hepatocytes (liver cells) via circulated blood from the hepatic artery and portal vein.
- Within the liver's circulation, many biochemical, enzymatic actions take place to facilitate the removal of synthetic foreign toxins and toxic metals Blondel, 2018).

Reference: Niviann M. Blondet, Donald J. Messner, Kris V. Kowdley, Karen F. Murray. Chapter 43 - Mechanisms of Hepatocyte Detoxification. Editor(s): Hamid M. Said. *Physiology of the Gastrointestinal Tract (Sixth Edition), Academic Press.* 2018. Pages 981-1001. ISBN 9780128099544. https://doi.org/10.1016/B978-0-12-809954-4.00043-8. (https://www.sciencedirect.com/science/article/pii/B9780128099544000438)

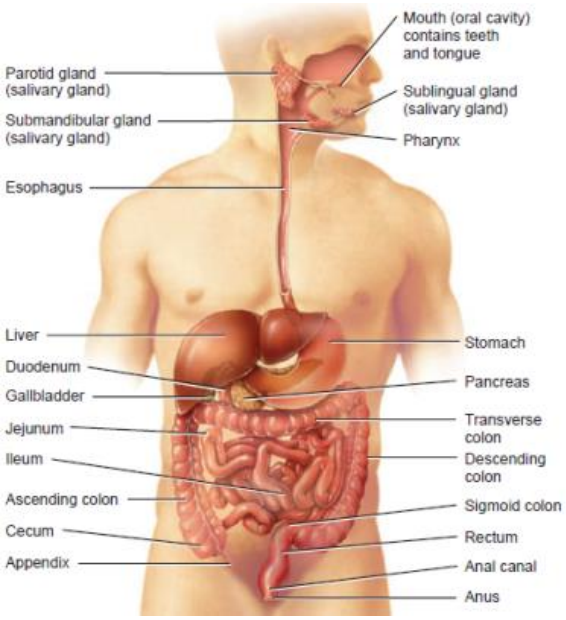
- Extensive scientific research has shown the detoxification effects of whole foods and their components.
- There is a growing understanding of the relationship between detoxification functions of the body and various states of system malfunctions.
- Findings indicate that many botanicals help molecularly alter the configuration of toxins in order to eliminate them through the body's detoxification channels, especially since the liver is the primary organ that stores toxins.
- Food-based phytonutrients have demonstrated their role in modulating the processes of converting and neutralizing toxins via the metabolic pathways involved in detoxification, and subsequent safe excretion.
- Phytonutrients help direct specific metabolic pathways in eliminating toxic metals and other toxins:

Metabolic Pathways of Detoxification

Phase I, cytochrome P450, hydroxylation, and reduction enzymes.	Located mainly in the liver, first defense by the body to bio-transform or neutralize xenobiotics (substances not naturally produced by the body), including pharmaceuticals. Also in enterocytes, kidneys, lung, and even the brain, P450 is responsible for the oxidation, peroxidation, and reduction of several endogenous and exogenous substrates or substance acted upon by an enzyme.
Phase II, conjugation, or the process of adding a water-soluble molecular group to this now reactive site as the result of Phase I.	The signaling pathway of transcription factor Nrf2 is an important enzyme that is key to regulating antioxidants and the body's detoxification system. Plant phytochemicals scavenge the damaging free radical reactive oxygen species (ROS) and therefore act as direct antioxidants, and regulate antioxidant enzyme actions. Nrf2 enzyme deficiencies lead to increased susceptibility to drug toxicity, carcinogens, allergens, and toxic effects from environmental pollutants.
Metallothionein, An amino acid derivative, a cysteine-rich protein.	An important component in heavy metal detoxification, it is able to bind to toxic metals such as mercury, cadmium, lead, and arsenic. Similar to the upregulation of phase II and antioxidant enzymes, metallothionein is capable of scavenging free radicals and reducing injury from oxidative stress or a decrease in defenses.

Reference: Hodges RE, Minich DM. Modulation of Metabolic Detoxification Pathways Using Foods and Food-Derived Components: A Scientific Review with Clinical Application. J Nutr Metab. 2015;2015:760689. doi: 10.1155/2015/760689. Epub 2015 Jun 16. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4488002/

3. What ingredients in HPR are key for liver detoxification support?



Artichoke, Globe, Leaf (*Folia Cynara cardunculus*)

- Contains the phytochemical tsinarin, increases bile flow or removes obstructions in bile flow.
- Reduces blood cholesterol.
- Improves fat utilization, overall metabolism, normalizes central nervous system actions.
- Useful for eczema and psoriasis, which contributing root cause is toxic liver.
- Helps to improve liver secretion of bile (stored in the gallbladder) for fats digestion.
- Hepatoprotective, antioxidative (protects liver cells against damage and free radical scavenging molecules).
- Improves hepatocytes (liver cells) functions, improving cholesterol metabolism and digestion, especially when a significant amount of carbohydrates and fatty foods have been ingested.

Avocado (*Persea*)

- Liver detoxifying phytonutrients: lutein, zeaxanthin, cryptoxanthin, and plant sterols.
- Cardiovascular health: beneficial fatty acids for healthy blood lipid profiles, enhances utilization of fat soluble vitamins D and E, and phylloquinone (vitamin K1)for proper blood coagulation.
- Soluble fiber for healthy cholesterol levels.
- Improves HDL cholesterol, helps lower body weight, reduce waste circumference, lowers risk of metabolic syndrome or diseases associated with obesity: high blood pressure, diabetes, high cholesterol, stroke, heart disease.
- Helps improve BMI (Basal Metabolic Index, a measure of body fat based on one's height and weight).

Dandelion Root (*Taraxacum officinale*)

- Contains phytonutrients lutein, violaxanthin, antheraxanthin, zeaxanthin, neoxanthin and chlorophyll; all have liver cleansing, detoxifying properties.
- Used in cases of atherosclerosis, liver diseases.
- Used in cases of poisonings and intoxications, liver cirrhosis (scarring of the liver), cholecystitis (inflammation of the gallbladder).
- Gastrointestinal aid or digestive stimulant, supports liver and digestive functions.

Milk Thistle Seed (*Silybum marianum*)

- Contains antioxidants: apigenin, betaine, flavonolignans, silybonol, silymarin, silybin or silybinin.
- In India, silymarin is used for: degenerative necrosis (liver cell death); alcoholic cirrhosis (scarring in the liver); and viral hepatitis (liver inflammation due to a virus).
- Improves liver enzyme and serum bilirubin levels (the yellow pigment byproduct from the breakdown of red blood cells) that are passed through the liver, then excreted out of the body.
- Restores normal liver functioning and liver tissue regeneration.
- Effective for cirrhosis or late stage of scarring of the liver, and damage caused by toxins.
- Intravenous silybinin, a phytochemical component of *Silybum*, has been effectively used against the amatoxin in poisonous death cap mushrooms.
- Effective for detoxing the liver in hangovers.
- Used for detoxifying for jaundice, toxic kidney damage, nerve disorders, clogged arteries, eczema, and gallbladder conditions.

Peach (*Prunus persica*)

- Contains organic acids: quinic, citric, malic, which help the body's acid-alkaline balance.
- Regular consumption of peach pulp improves metabolism and digestion.
- Contains pectin, known for helping to reduce low-density lipoprotein (LDL) blood cholesterol levels.
- Peach compounds are anti-inflammatory.

Raisin (*Vitis vinifera*)

- Contains liver-cleansing and anti-inflammatory polyphenols, catechins, resveratrol, daidzein and genestein.
- Rich in flavonols: glycosides, quercetin, kaempferol, and phenolic acids caftaric and coutaric acids.
- Found to help reduce the risk of cardiovascular disease, reduce low-density lipoprotein (LDL) cholesterol.
- Has been shown to reduce the risk of diabetes due to their protective effects in controlling and reducing postprandial (after eating) blood glucose and improving insulin levels in the blood.

Turmeric Root (*Curcuma longa*)

- Helps break down fats during digestion.
- Inhibits inflammatory effect of unchecked mobilization of white blood immune cells, the macrophages.
- Supports pancreas in glucose uptake into muscles and liver, preventing hazardously high levels of blood sugar in the bloodstream.
- Keeps cholesterol levels in the normal range; has a lipid-lowering effect (reduces fats in the circulatory system).
- Contains antioxidant curcuminoids: curcumin (diferuloylmethane), demethoxycurcumin, and bisdemethoxycurcumin, which neutralize synthetic chemicals from processed foods, agrichemicals, industrial chemicals, and protect against free radical damage to cell membranes and DNA while stimulating the immune system to neutralize those free radicals.
- Contains antioxidant essential oils: termerone, curlone, curumene, cineole, and *p-cymene.*
- Cholagogue (promotes bile flow from the gall bladder to the duodenum).

(Gilbert, 2021)

Reference: Gilbert, M. E. (2021). Potent Superfoods for Lifelong True Health. Tucson, AZ: Holistic Choices Publishing.

4. Why did they pair MLS with HPR to create the Detox Kit? What makes these two drops together so powerful?

Artichoke Leaf (*Cynara folia*)

- Improves insulin secretion, modulates glucose metabolism.
- Contains tsinarin, aids liver by increasing bile flow or removing obstructions of bile flow in fats digestion.
- Reduces blood cholesterol.
- Improves fat metabolism, normalizes central nervous system activity.
- Useful for eczema and psoriasis resulting from toxic liver.
- Protects liver cells against damage by free radical scavenging molecules.
- Helps improve cholesterol metabolism and digestion, especially when a significant amount of carbohydrates and fatty foods have been ingested.

Carnation Seeds (Clove) (*Syzigium aromaticum*)

- Improves digestion, liver functions, stimulates the appetite, and strengthens the stomach.
- Helps improve memory, improves blood circulation.
- High in phenolic compounds: gallic acid, salicylic acid, myricetin, quercetin, kaempherol, and apigenin, with antibacterial, antiviral, antifungal, anti-yeast and anti-inflammatory properties:
- Phenolics also are chelators that molecularly bind to toxic metals, allowing the body to eliminate hazardous elements such as aluminum and lead, and prevent free radical oxidation of lipids or fats.
- Phenolics neutralize cellular damaging effects from reactive oxygen species (ROS), which damages critical nucleic acids, lipids, proteins and sugars, causing cellular injury, including to DNA.

Chamomile, German, Flower (*Matricaria recutita*)

- Shown to improve liver, urinary bladder and kidney functions, and aid the digestive system.
- Very useful for gastric ulcers, gallstones.
- Cholagogue action (stimulates bile discharge from the liver for digesting fats).
- Helps lower cholesterol, anti-diabetes.

Cinnamon Bark (*Cinnamomum zeylanicum*)

- Contains antioxidant essential oils and derivatives: cinnamaldehyde, trans-cinnamaldehyde, (E)-cinnamaldehyde, eugenol, linalool, cinnamic acid, cinnamate, cinnamyl acetate, eugenol, L-borneol, caryophyllene oxide, b-caryophyllene, L-bornyl acetate, E-nerolidol, α-cubebene, α-terpineol, terpinolene, and α-thujene
- Contains resinous compounds that lower blood lipids and help prevent cardiovascular disease.
- Inhibits fatty acid oxidation and lipid peroxidation (helps prevent rancidity or free radical activity affecting fat metabolism) and thereby helps prevent tissue necrosis (tissue death).
- Contains “insulin-potentiating factor”, and insulin-like polyphenol type-A polymers and which help lower high blood glucose and cholesterol levels.
- Increases blood circulation; promotes tissue regeneration.

Coriander Seed (*Coriandrum sativum*)

- Improves digestion, cholagogue (stimulates normal bile flow from gall bladder and liver to duodenum in the stomach).
- Found to improve blood glucose control mechanisms, an anti-hyperglycemic agent.
- Anti-diabetic, anti-mutagenic, anti-anxiety, has analgesic and hormone balancing effects.
- Hypolipidemic—reduces fats that accumulate in the vascular system, decreases uptake of lipids and assists in the breakdown of fats.
- Contains carboxylic compounds that bind to toxic metals such as mercury to allow exit out of the body.

Cranberry (*Vaccinium macrocarpon*)

- Helps excrete radioactive substances and heavy metals such as lead, cobalt, cesium, and strontium.
- Antioxidant phenolic acids (aromatic plant compounds) help prevent the oxidation of low density lipoproteins (LDLs), lowering their levels as well as overall cholesterol levels, and therefore help reduce the potential risk of heart disease.

Currant, Black (*Ribes nigrum*)

- Helps reduce harmful effects of radiation, promotes elimination of heavy metals and other toxins such as mercury, cobalt, and lead.
- Recommended in medical systems in the world for hepatitis, anemia, infectious diseases, tuberculosis, kidney disease, and diseases of the upper respiratory tract.
- Helps eliminate radioactive isotopes of strontium, cobalt and other radioactive elements.
- Studies show decreases risk of cardiovascular disease through an increase in blood plasma or urinary antioxidant capacity and a decrease in LDL-cholesterol.
- Helps prevent elevated plasma glucose, lipid levels, and lipid peroxidation byproducts that can lead to heart disease.

Dandelion Root (*Tarxacum officinale*)

- Contains phytonutrients: lutein, violaxanthin, antheraxanthin, zeaxanthin, neoxanthin and chlorophyll, all of which have liver cleansing, detoxifying properties.
- Shown to be effective for atherosclerosis, liver diseases, gallstones, renal gravel and other inflammatory kidney disorders.
- Shown to be effective in cases of poisonings and intoxications, liver cirrhosis (scarring of the liver), cholecystitis (inflammation of the gallbladder).

Fenugreek Seed, Common (*Trigonella foenum-graecum*)

- Helps regulate blood sugar, offers protection against elevated blood lipids and high blood pressure.
- Helps regulate high blood sugar by: delaying gastric emptying, slowing absorption of carbohydrates, and inhibiting glucose transport.
- Has mucilaginous fiber that soothes and heals inflamed tissues, helps reduce cholesterol and blood glucose, and sweeps the colon of waste.
- Plant steroidal saponins help inhibit absorption and synthesis of cholesterol, in preventing or reversing atherosclerosis, help decrease LDL and total serum cholesterol, and triglycerides levels.

Ginger Root (*Zingiber officinale*)

- Prevents fatty liver.
- Contains silica (a **compound of the two most abundant elements in Earth's crust, silicon and oxygen)**, commonly found in bones, tendons, the aorta (largest artery in the body), kidneys and liver, hair, skin and nails
- Cholagogue (stimulates bile flow from the liver)
- Helps reduce cholesterol levels.
- A universal remedy for ridding the body of accumulated toxic waste.

Grapefruit (*Citrus X paradisi*)

- Contains the flavonone, naringin, found to have actions similar to insulin, and for activating insulin-signaling neuropathways important in lipid (fat) metabolism.
- Associated with improved glucose and insulin levels, and improved total serum cholesterol and triglyceride levels.
- Associated with weight loss and improved insulin resistance in metabolic syndrome, a condition that increases the risk for diabetes and cardiovascular diseases in obesity.

Licorice Root (*Glycyrrhiza glabra*)

- Contains the important compound liquiritigenin (LTG), reduces the production of an exotoxin of Staphylococcus aureus known as α-Hemolysin.
- LTG also reduces toxinoses (illness caused by toxins released by living bacterial cells even after the bacteria has been destroyed by the immune system).

Mandarin (*Citrus reticulata*)

- Also associated with improved blood lipid (fats) profiles.
- Depurative - helps remove toxins via kidneys and colon.
- Hepatic - improves the flow of bile and protects against infections.

Papaya (*Carica papaya L.*)

- Contains valuable proteolytic enzymes (protein digesting enzymes): papain and chymopapain.
- Hepatoprotective antioxidants help detoxify and protect the liver.
- Found to have a capacity for repairing the liver.
- Many antioxidants: beta-carotene and other carotenoids protect cells from damage caused by scavenging free radical molecules
- Studies report can prevent heart disease as a result of diabetes, lowers high cholesterol levels.
- Excellent digestive aid.

Pumpkin Seed (*Cucurbita pepo L.*)

- Contains several important antioxidant phytonutrients: the carotenoids alpha, beta and epsilon-carotenes; antioxidant pigments: violaxanthin, luteoxanthin, auroxanthin epimers, lutein, alpha and beta-cryptoxanthin.
- Contains the essential nutrient choline, an important precursor for the neurotransmitter acetylcholine, which helps maintain the nervous system in muscle memory and control, cell membrane signaling and lipid transport.

Purple Coneflower Root (*Echinacea purpurea*)

- A blood cleaner, actively cleans the lymphatic system, blood, kidneys and liver.
- Shown to be effective in inflammatory conditions: cystitis, nephritis, hepatitis, infectious and respiratory illnesses.
- Called "the cleanser of the blood", cleans the lymphatic system, blood, kidneys and liver.
- Echinacea found to be effective for cystitis (inflammation of the bladder), nephritis (inflammation of the kidneys), and hepatitis (inflammation of the liver).

Sweetie (*Citrus maxima x Citrus paradisi*)

- Digestive agent, restores liver function, leads to normal functioning of the digestive tract, stimulates the gallbladder.
- Shown to lower LDL (“bad”) blood cholesterol, increase antioxidant activity, preventing blocked arteries and heart attacks.
- Studies show decreases blood fibrinogens that may obstruct blood vessels.
- Improves blood albumin (produced by the liver), an abundant protein found in human blood that circulates many molecules through the bloodstream such as bilirubin, calcium, and progesterone.
- Strengthens the immune system, allowing more efficient elimination of pathogenic organisms that cause infections, including bacteria and viruses.
- Improves blood vessel structures, helps lower blood glucose levels.

Fibrinogen – a protein involved in forming blood clots in the body. It is made in the liver and forms fibrin, the main protein in a blood clot that helps stop bleeding and heal wounds.

Thyme Leaf (*Thymus vulgaris*)

- Thyme's polyphenols and flavonoid compounds prevent lipid peroxidation or the formation of free radicals that destroy manufacturing sites within the body's cells.
- its essential oils destroy a number of bacteria, including Pseudomonas bacteria
- found thyme's effectiveness for skin problems, including acne.
- for imbalances of the gastrointestinal tract (relieves spasms and increases gastric secretion)
- potent antioxidant essential oil compounds that are antibacterial, antiviral, antifungal, and antiparasitic: oxygenated monoterpene and monoterpene hydrocarbons, and the sesquoie hydrocarbons para-cymene, gamma-terpinene, and the phenolic compound thymol, and other polyphenols or phenolic compounds

Turmeric Root (*Curcuma longa*)

- Effectively breaks down fats, simplifies the process of digestion.
- Used for acne, inflammation caused by osteoarthritis.
- Helps inhibit production of cyclo-oxygenase 2 enzyme (COX-2); helps the immune system handle inflammatory responses from psychological stress.
- Supports bones and joints; reduces joint pain and swelling.
- Keeps cholesterol levels in the normal range and has a lipid-lowering effect in the circulatory system.
- Anti-inflammatory actions prevent cardiac injury; helps improve circulatory pathways in the heart while destroying free radicals such as cytokines.
- Suppresses atherosclerotic lesions in heart tissues; decreases thrombosis or abnormal clotting; lessens inflammation and blood vessel spasms.
- Found to be effective in delaying or even reversing many brain and age-related diseases: preventing the shrinking of the brain's hippocampus, the area of the brain that functions for learning and memory.

(Gilbert, 2021)

Reference: Gilbert, M. E. (2021). Potent Superfoods for Lifelong True Health. Tucson, AZ: Holistic Choices Publishing.

5. What makes APLGO's delivery system (lozenges) more beneficial than other detox methods like teas, herbs, or supplements?

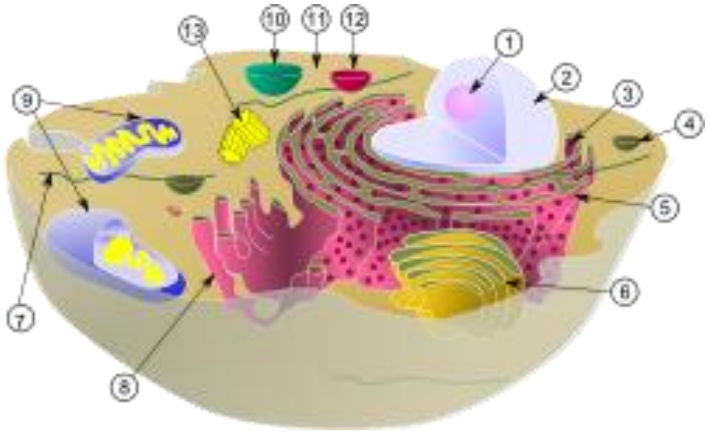
- Drying methods release much of the beneficial aromatic compounds in functional botanicals.
- Herbs in the form of teas or other supplements subjected to high heat destroys the active nutrient factors and renders them diminished in their effectiveness.
- Unless plant materials are eaten freshly harvested, raw, unprocessed and unheated, altering the properties of plants destroys much of their nutrient factors.
- The APLGO proprietary technology preserves the viable micronutrient factors in the botanicals as do raw, fresh plant foods, in that the drops offer optimal and immediate micronutrient bioavailability and detoxification capability by:
    - Preserving the critical, active enzyme catalysts for perpetuating all cellular processes otherwise destroyed by heat in other supplement production processes.
    - Simulating an atmospheric lightning storm in the formulation mixture chambers, which increases the antioxidant, nourishing, detoxifying, and health restorative capacity of the plant materials by:
        - Increasing the amount of negatively charged ions at the atomic level (light energy active), ready to neutralize damaging free radicals in the body.
        - Releasing the inner content of the plant cells, including: the DNA where the plants' genetic codes of instructions reside; protein manufacturing sites; energy production sites; detoxification sites, cell replication, growth and repair centers.
        - Providing information that facilitates communications between plant DNA and human DNA to correct malfunctions and promote optimal functioning at the cell level.
- 100% absorption: salivary enzymes dissolve the sucrose coating to allow immediate absorption of the micronutrient contents through the mucosal tissue cells in the mouth, resulting in direct delivery into the blood stream and thus are circulated to all other cells in all body systems.

6. Some people believe if they eat clean and exercise, they do not need to support the detoxification system. Why should everyone, even people who live a cleaner lifestyle use this kit?

- "Eating clean" may not include enough of the extensive health benefits from a wide enough variety of plant foods.
- Many who believe they are eating healthfully may still be missing many nutrient factors to optimally protect their health.
- If one were to gather the many botanicals in the formations in order to eat them, it would be costly and require much time and effort to locate all of them.
- The digestive system breaks down all foods to ultimately utilize the corrective power of their DNA and their invaluable proteins that compose their plant cell constituents, their organelles.

Major Organelles and Cell Structures Within the Cytoplasm

(1) nucleolus
(2) nucleus
(3) ribosome
(4) vesicle
(5) rough endoplasmic reticulum
(6) Golgi apparatus
(7) cytoskeleton
(8) smooth endoplasmic reticulum
(9) mitochondria
(10) vacuole
(11) cytosol
(12) lysosome
(13) centriole



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- The drops contain high concentrations of phytochemical compounds that are already completely, immediately available for our cells.
- Although eating whole foods would provide water, fiber, and more vitamins and minerals, it is very convenient and nutritionally efficient to have immediate access to those critical nourishing components from within plant cells.
- The drops provide the fundamental components that increase all cellular processes:
    - Contain natural and effective detoxification phytochemicals for eliminating toxins properly on a regular, daily basis, thereby helping to prevent a buildup of toxins in the body.
    - Provide certain protections in maintaining the integrity of the genetic codes in the DNA, helping to prevent mutations.
    - Promote increased energy production and metabolic efficiency in all bodily processes.
    - Provides enhanced ability in endurance and strength endurance in exercise activities, along with a balanced, nutrient-dense diet, proper hydration, and plenty of sleep, rest, stress management, and enjoyment in other life activities.

Resources:

Download This and Other APLGO Free Q & A Product Zoom Call PDF Documents and View the Product Call Videos:
https://www.holisticchoices.com/apl

Books, Book Descriptions and Summaries by Mary Esther Gilbert, MSc HN, BSc NSP

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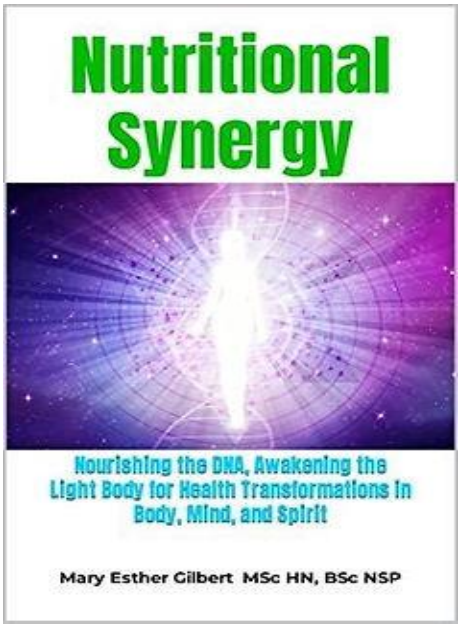

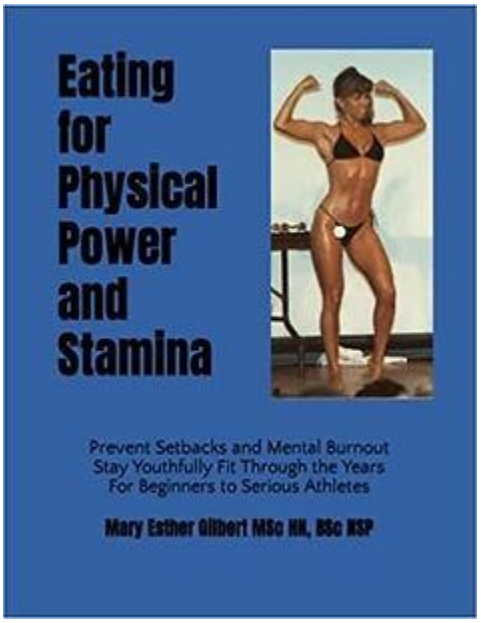

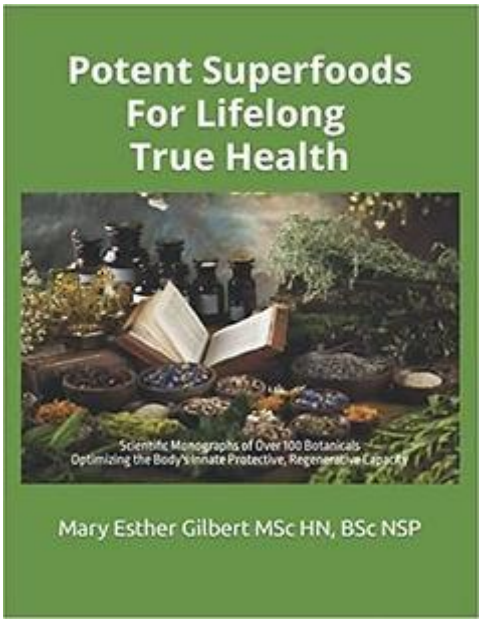

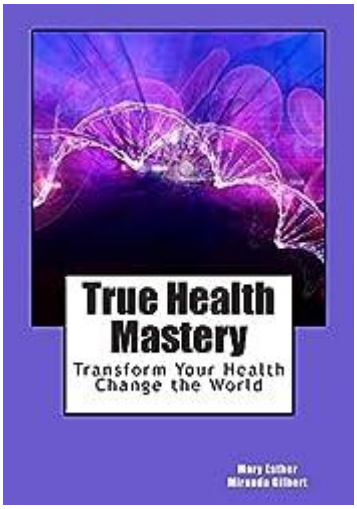

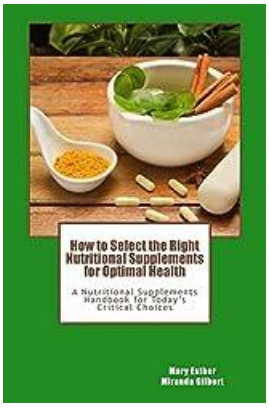

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