Energy Recharge Practitioners: Detoxification

With

Dr. Ritamarie Loscalzo

Medical Disclaimer: The information in this presentation is not intended to replace a one-on-one relationship with a qualified health care professional and is not intended as medical advice. It is intended as a sharing of knowledge and information from the research and experience of Dr. Ritamarie Loscalzo, drritamarie.com, and the experts who have contributed. We encourage you to make your own health care decisions based upon your research and in partnership with a qualified health care professional.

Signs That Your Client Needs To Detox

- Headaches
- Skin rashes
- Fatigue
- Irritability
- Constipation
- Brain fog
- Inability to lose weight

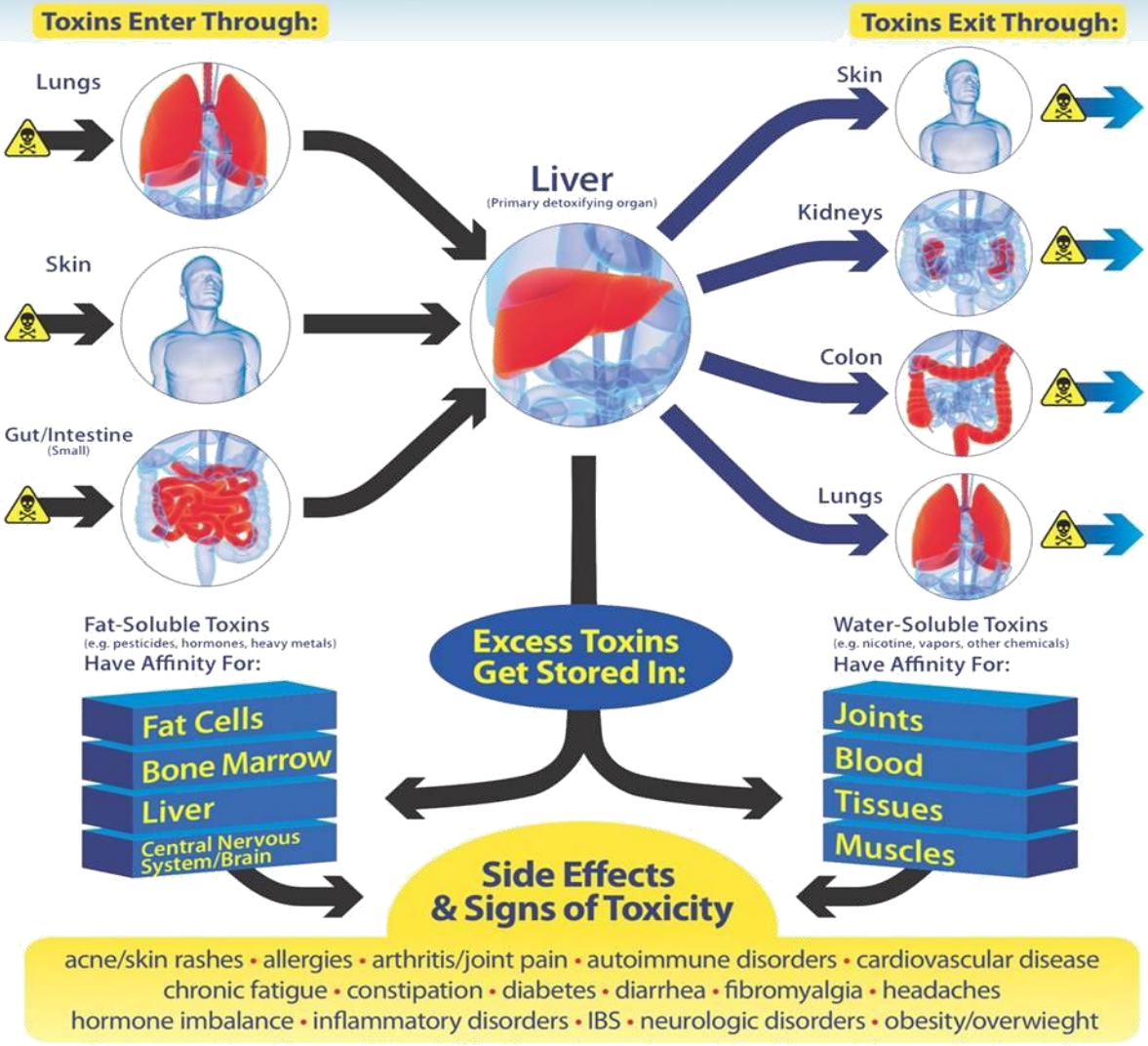
When these symptoms PERSIST in spite of improved diet and lifestyle, think DETOX

84 Toxins Common in Environment

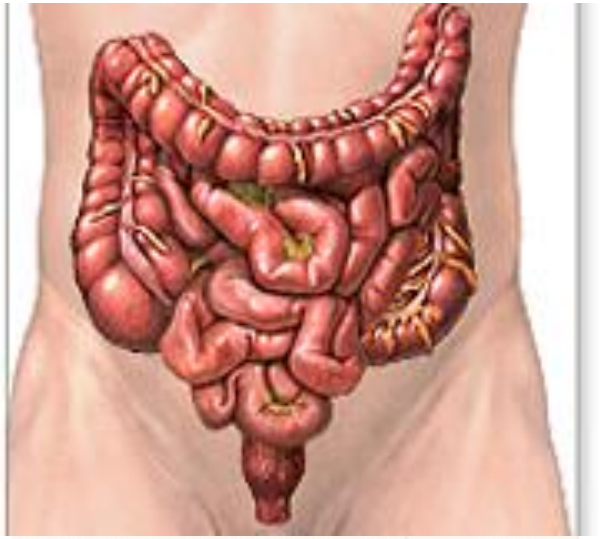
Acetone
Alcohol
Alkyl-phenol Ethoxylades
Alpha Hydroxy Acid
Aluminum
Ammonium Glycolate
Ammonium Persulfate
Aspartame
Bentonite (Clay)
Benzene
Benzoic / Benzyl / Benzene
Benzoic Acid
BHA – BHT
Bronopol
Butylparaben
Carboxymethylcellulose
Coal Tar Dyes
Cocamidopropyl Betaine
Coumarin
D&C Yellow 11
DEA: Diethanolamine
Diacetyl
Dibutyl phthalate (DBP)
Dimethicone
Disodium EDTA
Elastin
Ethylacrylate
Fluoride
Formaldehyde
Fragrances (Synthetic)
Glycolic Acid
GMO/Genetically Modified Organism
High Fructose Corn Syrup/HFCS
Hydroabietyl Alcohol
Hydrogenated/Partially Hydrogenated Oils
Hydroquinone
Hydroxymethylcellulose
IsobutylparabenIsopropyl Alcohol
Kajoic Acid
Kaolin (Clay)
Lacquer
Lanolin
Lye
Magnesium Stearate
Methylisothiazoline, or MIT
Mineral Oil
Monosodium Glutamate/MSG
NDEA
Neotame
Nitrate – Nitrite
Nitrosamines
Olestra
Paraffin
PEG
PEG Stearates
PEG-12 Distearate
PEG-80 Sorbitan Laurate
Petroleum
Phenoxyethanol
Phthalates
Polyethylene Glycol /PEG
Polypropylene
Polyquaternium-7
Potassium Bromate
Propylene Glycol
Propylparaben
Quaternium-7, 15, 31, 60 etc.
SLES (Sodium Laureth Sulfate)
SLS (Sodium Lauryl Sulphate)
Sodium Chloride
Sodium Hydroxymethylglycinate
Sodium Nitrite
Soy
Stearalkonium Chloride
Sulfites
Talc
TEA: Triethanolamine
Toluene
Triclosan
Zinc Stearate

The Power Of Cleansing

The Process of Detoxification and Elimination



Where Do Toxins Come From?



- ✓Our world
- ✓Our home
- ✓Our food
- ✓Our body

External Toxins

- Environmental pollutants
- Dental amalgams
- Old paints, blinds, and canned goods
- Aluminum in antiperspirant, deodorant, antacids
- Mold
- Occupational exposure: miners, pottery artist, mechanics, farm workers
- Poor air quality and sick building syndrome
- Contaminated water, food
- Inhalant smoke
- Chemicals: personal care and household products
- Soft plastics
- Coatings, plasticizers - Phthalates
- UV radiation
- Trans fat, HFCS, processed foods, refined flours

Toxins From Our World - 1

- **Plastics:** Bottles, toys, shower curtains - Dioxins, which represent a family of 75 toxic chemicals
- **Cleaning fluids:** Phthalates, Triclosan
- **Fabric Softeners:** Chloroform, A-Terpineol, Benzyl Acetate, Ethyl Acetate
- **Chlorine:** Thyroid disruptor
- **Ammonia:** Irritant to skin, lungs, respiratory tract
- **Antibacterial soaps:** Contains triclosan and is harmful to the immune system and endocrine system dysfunction
- **Deodorants and Antiperspirants:** aluminum and other chemicals
- **Volatile chemical compounds:** Found in most bathroom and kitchen sanitizers, fly and mosquito-spays killers, air fresheners, and hair sprays -- are linked to cancer, respiratory, reproductive, neurological and developmental problems

Toxins From Our World - 2

- **Formaldehyde** off gasses (evaporates) from cushions, particleboard and the adhesives used to manufacture most inexpensive wood-based products. Carpets and carpet cushions may also off gas formaldehyde, causing eye and upper respiratory irritation. According to the EPA, formaldehyde may even cause cancer.
- **Radon** is the second-leading cause of lung cancer in the United States, warns the Surgeon General. Radon is a natural radioactive gas that can seep into homes through cracks in the basement, the surrounding foundation and in well water. It enters the body quietly through the airways.
- **Lead** is found in paint in older houses, old plumbing and soil near highways and busy roads. It causes learning disabilities and behavioral problems, neurological and kidney damage, high blood pressure, disrupted blood cell production, and reproductive problems.

Toxins From Our World - 3

- **Carbon monoxide:** unserviced furnace burning propane, butane or oil
- **Arsenic:** still lacing many household pesticides and is increasingly used as a wood preservative. Low levels of inorganic arsenic "may cause lung cancer risk," according to the CDC & Department of Health and Human Services
- **Vinyl chloride:** the source of "new car smell", water sitting in PVC pipes overnight may also be steeping into a toxic tea. Very large exposures can causes severe liver damage and ballooning of the fingertips.
- **Hydrofluoric acid:** "can cause intense pain and damage to tissues and bone if the recommended gloves happen to have holes in them." This highly corrosive substance is the active ingredient in many household rust removers.

Toxins From Our World - 4

- **VOCs:** Comprise hundreds of natural and man-made carbon-based agents. They react quickly with other carbon-based compounds and evaporate easily, making them ideal solvents. VOCs can be found in disinfectants and pesticides, paints and varnish.
- **Solvents:** Benzene and methyl ethyl ketome traverse cell walls unchecked by normal cell defense. Both are known carcinogens. Cousins toluene, xylene, 1,1,1-trichloroethane and trichloroethylene make up the lion's share of the solvent market.
- **Disinfectants:** Phenols (which include biphenyl, phenolics and the preservative pentachloraphenol) are found in disinfectants, antiseptics, perfumes, mouthwashes, glues and air fresheners.
- **Pesticides:** Chlordane, aldrin, dieldrin, though all banned for nearly two decades, continue to show up airborne in older houses.

Toxins At Home

- Cleaning supplies
- Carpets
- Paint
- Air fresheners
- Cooking utensils
- Plastics
- Toys
- Shower curtains

- Deodorant and antiperspirants
- Soaps
- Shampoo
- Skin lotions
- Hairspray
- Makeup
- Body care products

Toxins From Food - 1

- Mercury: Fish
- Lead: Fish
- Pesticides
- Sugar
- Food additives
- Acrylimides
- Sodium nitrate: Processed meats
- Polychlorinated biphenyl, dioxin: Farmed fish, meat, dairy

Toxins From Food - 2

- Bisphenol-A: Canned food, plastics
- Polybrominated diphenyl: Meat and dairy products
- Dioxins: Meat and dairy – byproducts of heat
- Recombinant bovine growth hormone: Dairy
- Aspartame: Diet soda and artificially sweetened foods

Toxins From Food - 3

- Arsenic: Non-organic chickens
- Hydrogenated oils: Crackers and cookies, etc.
- Artificial colors
- Artificial flavors
- Teflon and other coated cookware – noxious gases
- MSG

Endotoxins - Generated Inside

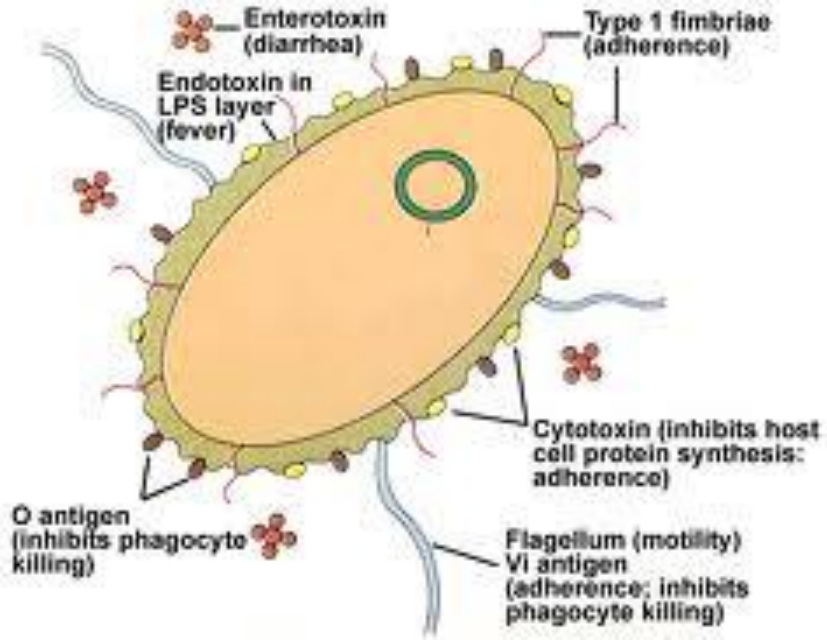
Produced By Bodily Functions

- ✓ Mitochondria
- ✓ Adrenal glands
- ✓ Muscles
- ✓ Digestive system
- ✓ Brain
- ✓ Stress, anger
- ✓ Allergies

Microbial Toxins From Overgrowth

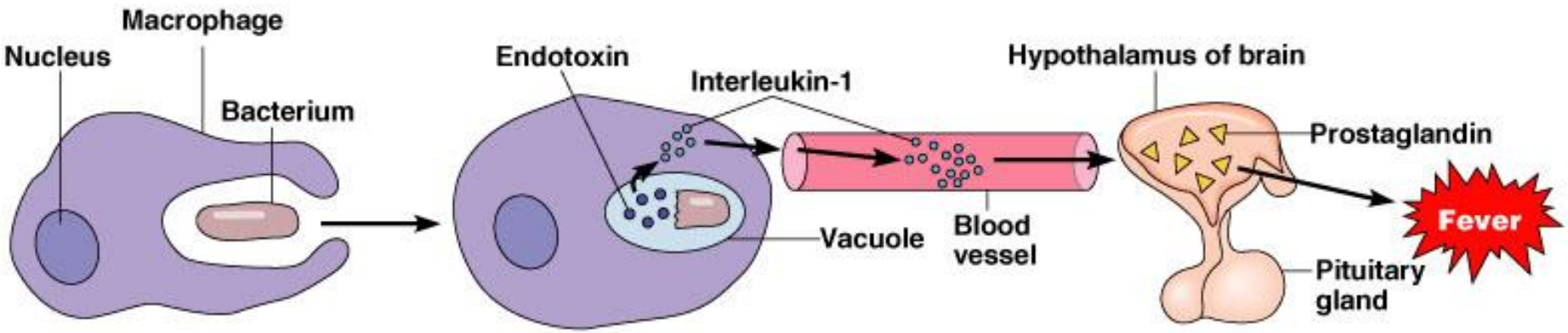
- ✓ Yeasts (mycotoxins)
- ✓ Bacteria (endotoxins and exotoxins)
- ✓ Viruses (oxidants produced by damaged cells)
- ✓ Parasites (oxidants produced by parasites as well as by cells and tissues)

Definition of Endotoxins

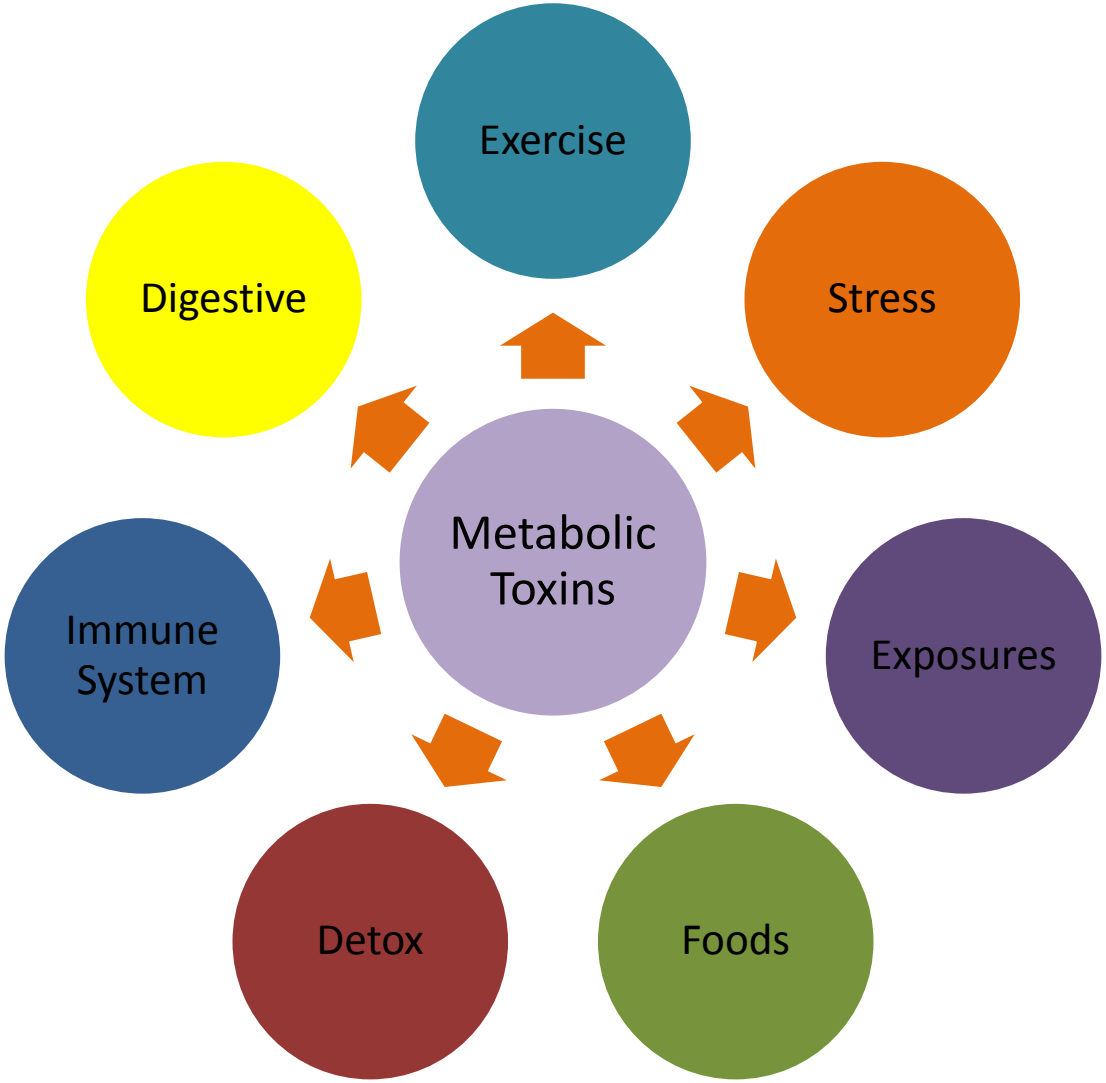


- Any toxins produced inside your body, either from normal bodily functions or produced by microbes living inside your body, such as bacteria, viruses, fungus, parasites or yeast

Microbial Endotoxins Release



Toxins Made Inside Your Body



Where Are Endotoxins Produced?

- Mitochondria - Oxidative stress
- Adrenal Glands
- Muscles
- Digestive System
- Brain
- Lungs
- Liver

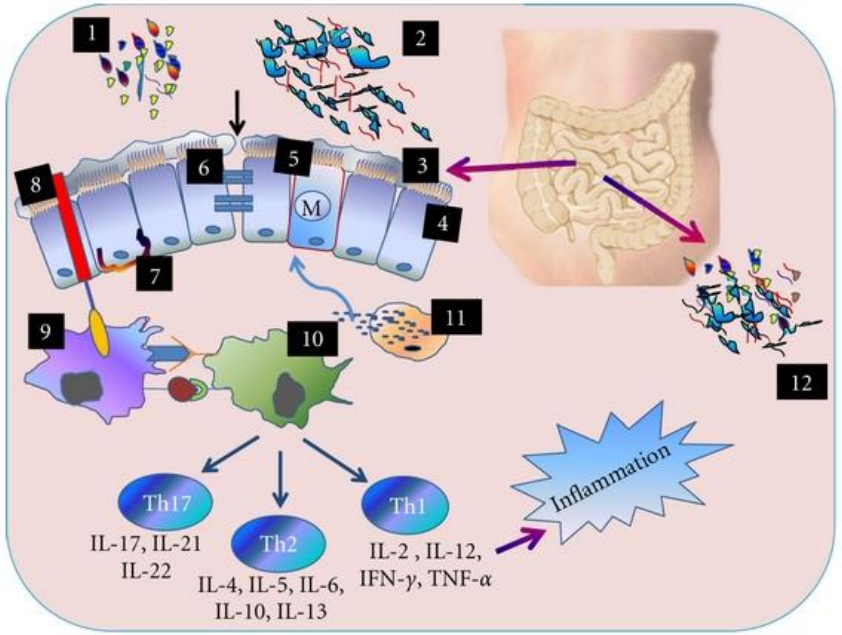
Microbial Endotoxins

From Overgrowth of:

- Yeasts (mycotoxins)
- Bacteria (endotoxins and exotoxins)
- Viruses (oxidants produced by damaged cells)
- Parasites (oxidants produced by parasites as well as by cells and tissues)

Causes of Microbial Overgrowth

- Sugar overload
- Antibiotic abuse
- Pesticides
- Pollutants



Health Challenges That Result From Toxin Overload

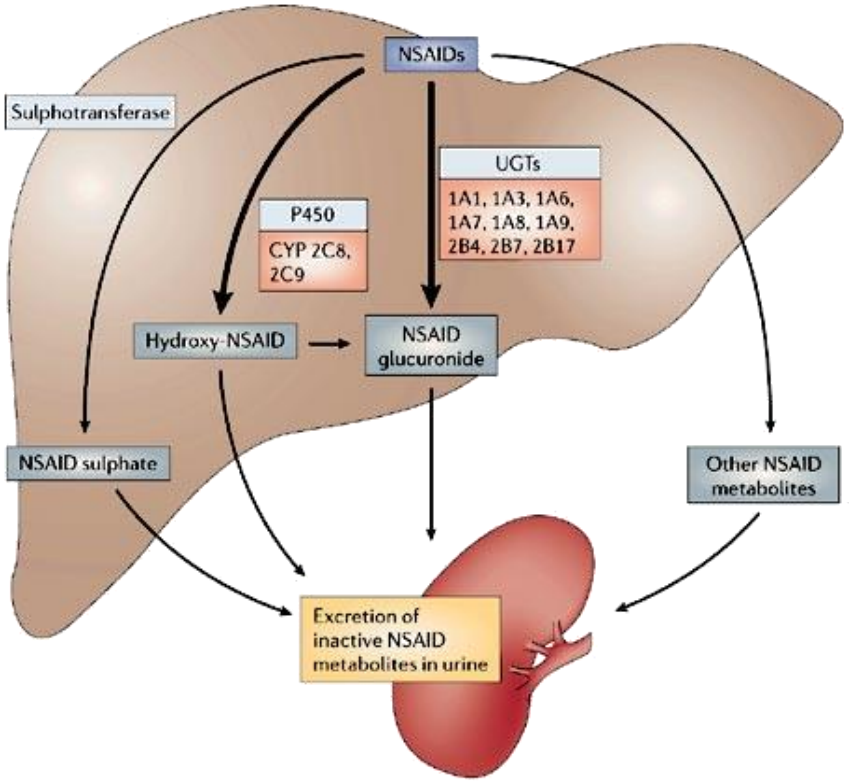
- Fibromyalgia
- Chronic fatigue syndrome
- Chemical sensitivity syndrome
- Attention and focusing problems
- Depression
- Headaches
- Irritable bowel
- Allergies
- Joint pain

The Body's Clean-Up Crew

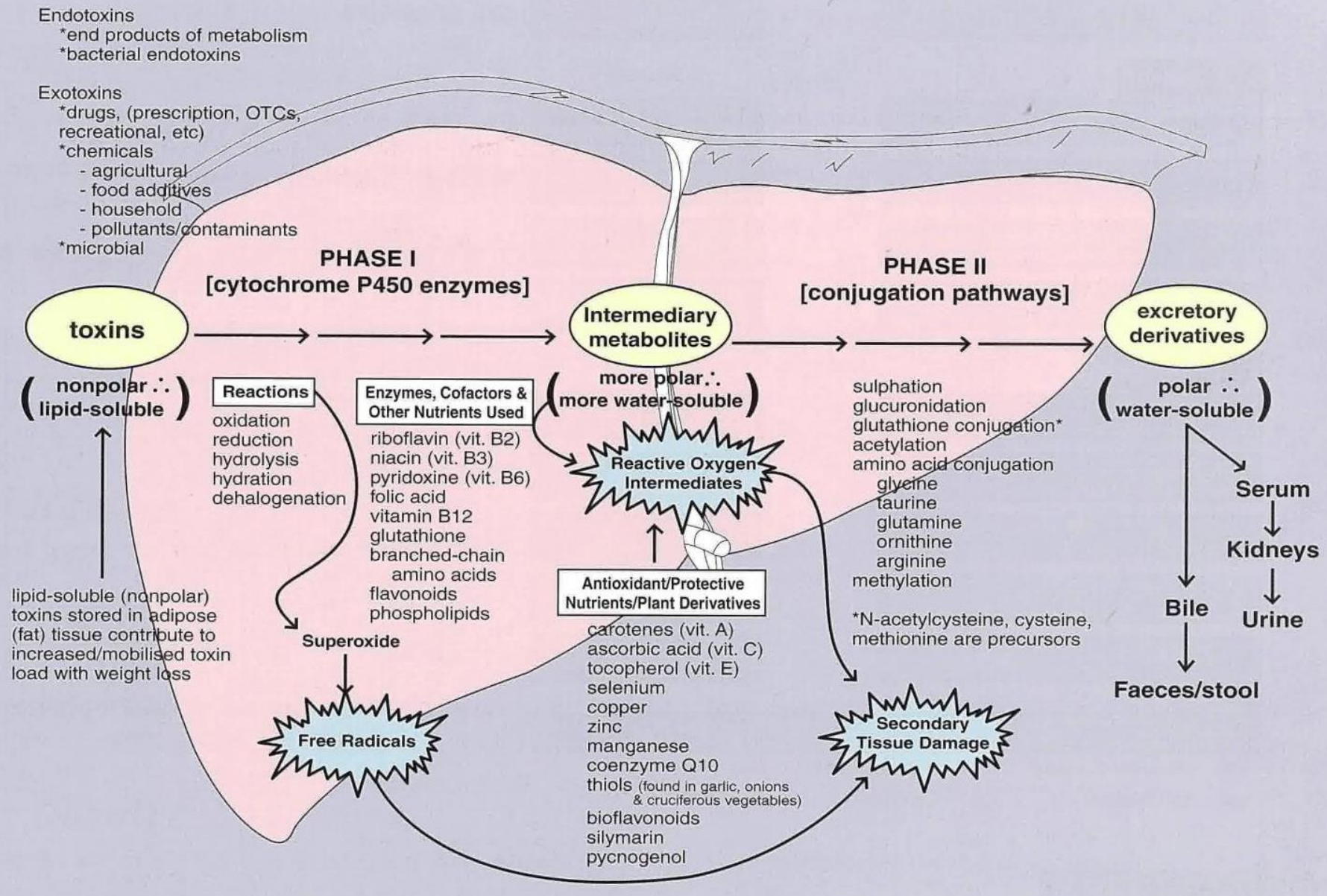
- Liver
- Kidney
- Skin
- Digestive Tract
- Sweat
- Lungs

Liver Detoxification

- Neutralizes
- Converts fat soluble toxins to water soluble substances that can be excreted
- Direct route of blood from intestine to liver
- Phase 1
- Phase 2



Liver Detoxification Pathways & Supportive Nutrients



Phases of Liver Detox

- Blood vessel from digestive tract straight to liver
- 98% neutralized by liver before they get into circulation (if HEALTHY!!)
- **Phase 1:** Simple process - all get the same one or two different reactions
- **Phase 2:** Complicated process to render water soluble for elimination.
  - ✓Amino acids
  - ✓Vitamins
  - Minerals
  - Antioxidants

** *Different process for hormones, heavy metals, pesticides, hydrocarbons*

- **Pathological detoxifier:** Phase 1 faster than phase 2

Inducers of Phase 1

- Alcohol
- Caffeine
- Aspirin and Tylenol
- Nicotine
- Phenobarbital, Steroids, and Sulfa

Phase 1 Nutrients

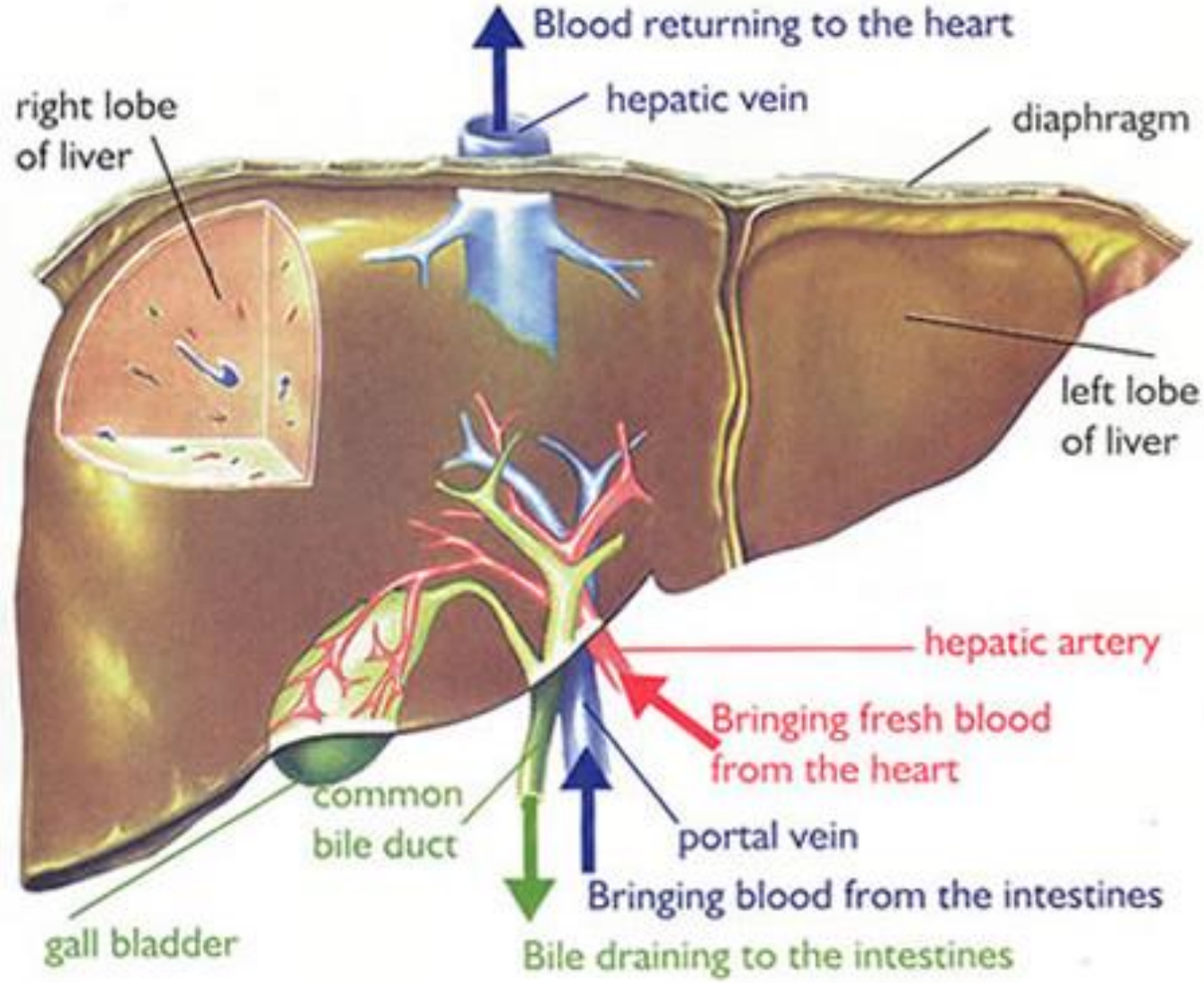
Speed Up Phase 1

- Vitamin C
- B vitamins, especially B2 and B3
- Glutathione
- Bioflavonoids
- NAC
- Magnesium
- Selenium
- Iron
- Choline, inositol
- Cysteine, methionine

Slow Down Phase 1

- Naringenin from grapefruit
- Turmeric
- Capsaicin
- Clove
- Quercetin
- Calendula

Flow In and Out of the Liver



When Phase 2 Gets Backed Up

- Build up of toxic intermediates
- Stored as fat
- Storage in brain (fat) and myelin
- Creates symptoms
  - ✓Headaches
  - ✓Sluggishness
  - ✓Brain fog
  - ✓Focus problems

Like the famous “I Love Lucy” scene

http://www.youtube.com/watch?v=8NPzLBSBzPI

Understanding Phase 2 Detoxification

Also called the *conjugation pathway* - the liver adds another substance to a toxin to make it water-soluble and less harmful so it can be easily and safely excreted.

Pathways in Phase 2 (specific set of nutrients for each)

- ✓ Glutathione conjugation
- ✓ Amino acid conjugation
- ✓ Methylation
- ✓ Sulfation
- ✓ Acetylation
- ✓ Glucuronidation
- ✓ Glycination

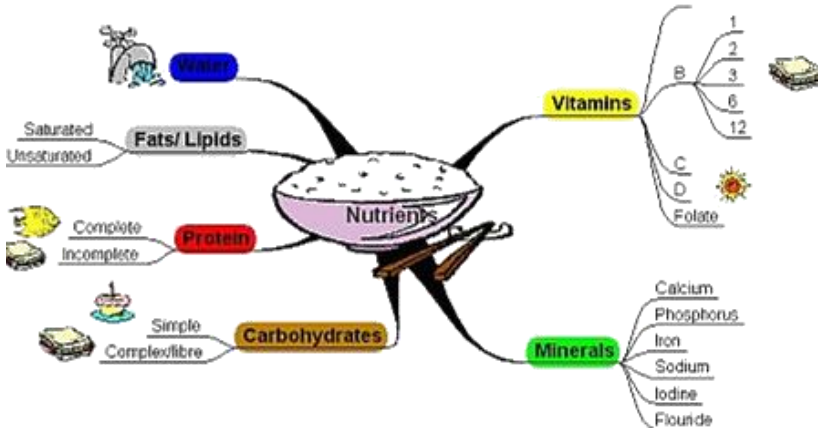
A Closer Look at Phase 2 Nutrients

1. **Glutathione conjugation**: Glutathione Precursors (Cysteine, Glycine, Glutamic Acid, and co-factors), Essential Fatty Acids (Black Currant Seed Oil, Flax Seed Oil, EPA), Parathyroid Tissue
2. **Amino acid conjugation**: Glycine
3. **Methylation:** Methionine, Co-factors (Magnesium, Folic Acid, B-12, Methyl Donors)
4. **Sulfation:** Molybdenum, Cysteine and precursor (Methionine), Co-factors (B-12, Folic Acid, Methyl Donors, Magnesium, B-6/P-5-P), MSM
5. **Acetylation:** Acetyl-CoA, Molybdenum, Iron, Niacinamide, B-2, B5
6. **Glucuronidation:** Glucuronic acid, Magnesium
7. **Glycination:** Arginase Enzyme, Glycine, Co-factors (Folic Acid, Manganese, B-2, B-6/P-5-P)

Nutrients Needed for Detox

- Amino Acids
- Vitamin C
- Glutathione
- Sulfur containing substances like MSM

- ✓ Vitamin B1
- ✓ Vitamin B2
- ✓ Vitamin B3
- ✓ Vitamin B5
- ✓ Vitamin B6
- ✓ Vitamin B 12



- Folic Acid
- EFAs: black current oil, flax oil, EPA
- Magnesium
- Molybdenum
- Manganese
- Iron
- Selenium
- Zinc

Methylation

Gets rid of

- ✓ Dopamine
- ✓ Histamine
- ✓ Heavy metals
- ✓ Estrogen

Nutrients Required

- ✓ Choline: avocado, soy, sunflower
- ✓ B vitamins
- ✓ Betaine: beets
- ✓ SAMe: 500 mg x3
- ✓ Methionine
- ✓ Magnesium
- ✓ Methyl folate
- ✓ Methyl B-12
- ✓ Methyl Donors: TMG, DMG, MSM

Sulfation

Gets Rid of

- ✓ Phenols
- ✓ Bile acids
- ✓ Thyroid
- ✓ Acetaminophen
- ✓ Aspartame
- ✓ Bacteria endotoxins
- ✓ Neurotransmitters
- ✓ Xenoestrogens
- ✓ Steroid hormones
  - ➢ Cortisol
  - ➢ Androgens
  - ➢ Female Hormones

Inhibitors

- ✓ NSAIDs
- ✓ Excessive molybdenum
- ✓ Vitamin B6 over 100 mg

Support

- ✓ Amino acids: methionine, cysteine, taurine
- ✓ High sulfur foods: brassicas, MSM
- ✓ Glutathione
- ✓ NAC

Glucuronidation

Gets Rid of

- ✓ Bilirubin, Bile Acids
- ✓ Salicylates, Aspirin And OTCSs
- ✓ Morphine
- ✓ Pollutants,
- ✓ Fatty Acid Derivatives,
- ✓ Retinoids
- ✓ Aspirin And
- ✓ Food Additives and Preservatives (Benzoates)
- ✓ Aspartame
- ✓ Menthol, Vanillin

Inhibitors

- ✓ Aspirin
- ✓ Fluoride

Support

- ✓ Omega 3
  - ➢ DHA
  - ➢ EPA
- ✓ Limonene : Citrus essential oil
- ✓ SAMe

Glutathione Conjugation

Gets Rid of

- ✓ Heavy metals
  - ➢ mercury
  - ➢ cadmium
  - ➢ lead
- ✓ Solvents
- ✓ Herbicides, fungicides
- ✓ Polycyclic aromatic hydrocarbons
- ✓ Lipid peroxides

Inhibitors

- ✓ Aspirin
- ✓ Fluoride

Support

- ✓ Brassicas
- ✓ Limonene
- ✓ Vitamin C
- ✓ Essential Fatty Acids
- ✓ NAC, Cysteine, Glycine, Glutamic Acid
- ✓ Zinc, Selenium
- ✓ B vitamins
- ✓ Alpha lipoic acid

Acetylation

Gets Rid of

- ✓ Sulfa drugs
- ✓ Histamine
- ✓ Serotonin
- ✓ PABA
- ✓ Procaine
- ✓ Hydrazines
- ✓ Sulfur amides
- ✓ Tobacco
- ✓ Other environmental toxins

Inhibitors

- ✓ Cigarette smoke
- ✓ Refined food

Support

- ✓ Thiamine (B1)
- ✓ Pantothenic acid (B5)
- ✓ Vitamin C
- ✓ Cruciferous vegetables
- ✓ Garlic and onions
- ✓ Soy
- ✓ Grapes
- ✓ Berries

Amino Acid Conjugation

Gets Rid of

- ✓ Xenobiotics
- ✓ Pollutants
- ✓ Salicylates
- ✓ Benzoate
- ✓ Toluene

Inhibitors

- ✓ Low protein diet
- ✓ High toxic exposure

Support

- ✓ Glycine***
- ✓ Taurine
- ✓ Glutamine
- ✓ Arginine
- ✓ Ornithine
- ✓ Sodium
- ✓ Potassium
- ✓ Alkaline diet
- ✓ Curcumin

Nutrients Needed for Phase 2 Detoxification

- **Methylation:** Methionine, Co-factors (Magnesium, Folic Acid, B-12, Methyl Donors)
- **Sulfation:** Molybdenum, Cysteine and precursor (Methionine), Co-factors (B-12, Folic Acid, Methyl Donors, Magnesium, B-6/P-5-P), MSM
- **Glucuronidation:** Glucuronic acid, Magnesium
- **Glutathione conjugation**: Glutathione Precursors (Cysteine, Glycine, Glutamic Acid, and co-factors), Essential Fatty Acids (Black Currant Seed Oil, Flax Seed Oil, EPA), Parathyroid Tissue
- **Acetylation:** Acetyl-CoA, Molybdenum, Iron, Niacinamide, B-2, B-5
- **Amino acid conjugation**: Glycine, Glycine, Co-factors (Folic Acid, Manganese, B-2, B-6/P-5-P)

Substances That Inhibit Phase 2 Detoxification

- **Glutathione conjugation:** Selenium deficiency, vitamin B_2 deficiency, glutathione deficiency, zinc deficiency
- **Amino acid conjugation:** Low protein diet
- **Methylation:** Folic acid or vitamin B_{12} deficiency
- **Sulfation:** Non-steroidal anti-inflammatory drugs (e.g. aspirin), tartrazine (yellow food dye), molybdenum deficiency
- **Acetylation:** Vitamin B_2, B_5, or C deficiency
- **Glucuronidation:** Aspirin, probenecid

Foods That Support Phase 2 Detoxification

- **Glutathione conjugation:** Brassica family foods (cabbage, broccoli, Brussels sprouts); limonene-containing foods (citrus peel, dill weed oil, caraway oil)
- **Glucuronidation:** Fish oils, limonene-containing foods
- **Methylation:** Beets, brassicas
- **Sulfation:** Brassicas
- **Amino Acid Conjugation:** Protein
- **Acetylation:** Garlic, onions, soy, berries, grapes

Foods Helpful for Detoxification

- Brassicas – Indole 3 carbinol
  - ✓ **Especially broccoli sprouts and seeds**
- Citrus Peels: Limonene
- Dill
- Caraway: Limonene
- Turmeric
- Avocado
- Basil
- Beets
- Leafy Bitter Greens
- Cardamom
- Cayenne
- Chlorella
- Cilantro
- Cinnamon
- Dandelion
- Dill
- Fennel
- Garlic
- Ginger
- Grapefruit
- Green Juices
- Jerusalem Artichoke
- Onion
- Peppermint
- Rosemary
- Sea Vegetables
- Thyme
- Wheat Grass

Herbs That Support Detox

- Milk Thistle
- Dandelion
- Burdock
- Echinacea
- Artichoke Leaf
- Turmeric

Foods That Disrupt Detox

- Alcohol
- Artificial Colorings and Flavorings
- Caffeine
- Processed Meats and Non-Organic Meats
- Trans Fats
- Refined Foods
- Allergy Producing Foods (The Top 6 plus all known)
  - ✓Gluten
  - ✓Dairy Products
  - ✓Corn
  - ✓Soy
  - ✓Eggs
  - ✓Peanuts

Steps to Optimizing Detox

1. Avoid Exposures to Toxins
2. High Nutrient Content Diet
3. High Fiber Diet
4. Optimize Digestion
5. Exercise
6. Pure Water
7. Pure Air
8. Reduce Stress

Detox Daily Activities

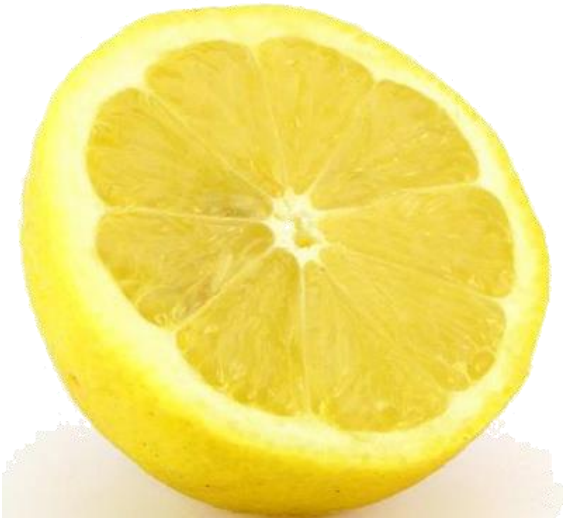
1. Skin Brushing
2. Tongue Cleaning
3. Saunas and Steam Baths
4. Yoga and Cleansing Breath
5. Detox Baths
6. Colonics and Enemas

Limonene for Detox

- Increases liver enzymes involved in detoxifying carcinogens
- Promotes the glutathione, a potent antioxidant
- Enhances both Phase 1 and Phase 2 liver detox
- Floats on the surface of stomach lining protecting it from the gastric juices
- Found in oil of citrus peel and caraway seed

[Source: Willette RC, et al. Purified d-limonene: An effective agent for the relief of occasional symptoms of heartburn. Data unpublished. 2003.]

Daily AM Gut Rejuvenator



- 32 ounces pure water
- 1 lemon, juice of
- 2 drops peppermint oil
- 2 drops lemon oil

Every Day Detox Daily Schedule

- AM - Water with lemon, lemon oil and peppermint, optionally cayenne
- Green breakfast with chia seeds
- HeartMath™ before each meal
- Chew, chew, chew (or blend)
- 4 Cups brassicas
- 2 Teaspoons ground broccoli seeds
- Broccoli sprouts
- 1 Tablespoon ground milk thistle seeds
- Greens at each meal
- Exercise

The Biggest Mistakes People Make When Detoxing

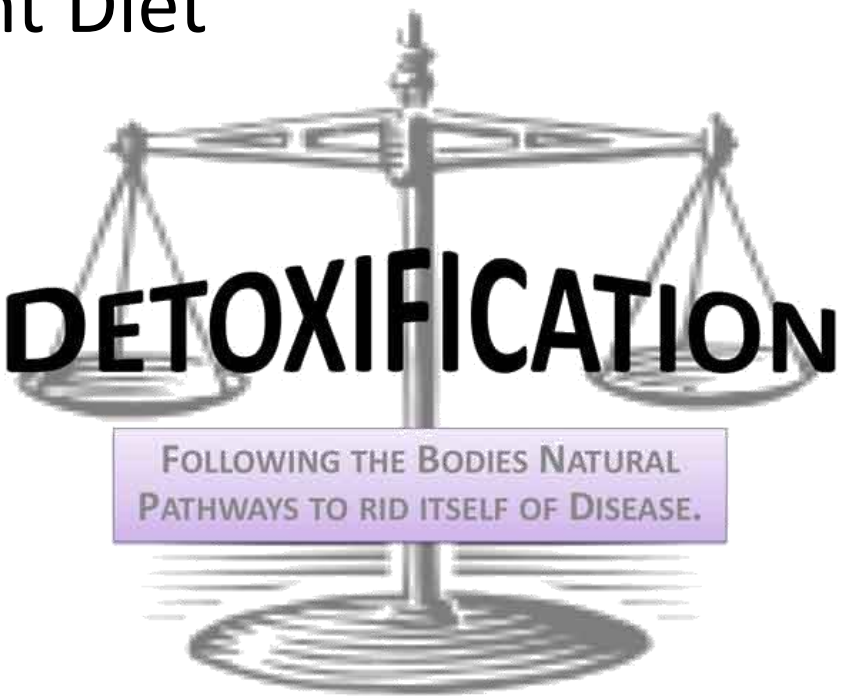
- Going too fast
- Not addressing stress
- Working too hard
- Not exercising
- Not keeping colon clean
- Not giving liver extra help

How to Tell the Difference Between "Detox" and "Crisis"

- Healing crisis vs. crisis
- Intense but shorter
- Comes on and leaves quickly
- Leaves you feeling better afterwards

Steps to Optimizing Detoxification

1. Avoid Exposures to Toxins
2. High Nutrient Content Diet
3. High Fiber Diet
4. Optimize Digestion
5. Exercise
6. Pure Water
7. Pure Air
8. Reduce Stress



Detoxification Program Options

- Water Fasting
- Juice “Feasting”
- Green Smoothie Cleansing
- Simple Foods with Herbs and special supplements
- Wheat Grass and Sprouts
- Powdered Detox Formulas

Food Cravings: The Toxicity Connection

- Tissue Irritation
- Fats Release Chemicals
- Chemicals
- Nutrient Imbalances

How to Enhance, Slow Down or Stop Detox as Needed!

- Nutrients
- Foods that slow Phase 1
- Foods that enhance Phase 2

Factors Affecting Detoxification Ability

- Genetics
- Exposures
- Nutritional Status
- Liver Strength
- Stress

Gene Defects That Influence Detoxification

- **GSTM gene:** glutathione S – transferases
- **MTHFR gene:** methy tetrahydrofolate reductase
- **SOD-2 gene:** superoxide dismutase 2 – a strong cellular antioxidant
- **APO E4 gene:** carries cholesterol and heavy metals for elimination
- **COMT gene:** catechol-O-methyltransferase – metabolizes neurotransmitters and hormones
- **CETP gene:** cholesterol ester transferase – takes oxidized cholesterol away from the arteries

GSTM Gene Impairment

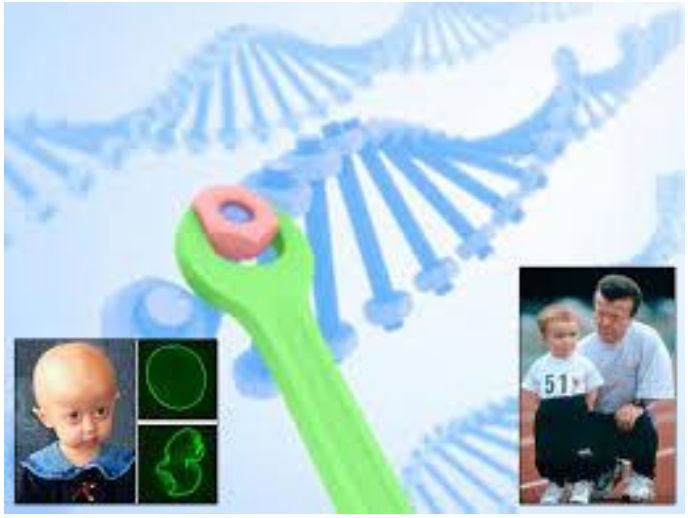
- Affects the synthesis of glutathione S-transferases enzymes
- When this gene is missing or impaired, glutathione is unable to neutralize harmful organic hydroperoxides
- This gene is missing in 50% of population

MTHFR Effects On Detoxification

- Activates folate, B12, and others important for detoxification
- Estimated to be defective in 35% of the population
- Most autistic kids have MTHFR impairment
- Impairs detoxification ability
- In autistic kids, can be why they react so strongly to mercury in vaccines

Changing Your Genes: What's Possible?

- Can change how they work
- Can change which ones are turned on or off
- Can affect how they control biochemistry
- Can control how they affect physiology



Research on Changing Your Genes

- ***Biology of Belief*** by Bruce Lipton, MD
- Research at Stanford University School of Medicine 1987 and 1992
- Discovered that the environment, operating through the cell membrane, can turn genes on and off
- This started the study of epigenetics

Research on Changing Your Genes

- http://www.brucelipton.com/article
- Identical twins born with exact genetics. As they grow up and have different experience, they end up selecting different gene combinations leading to unique gene profile from twin.
- Conclusion is our diet, thoughts, environment, exposures can all effect our genetics.
- Healthy environment on cellular level leads to improved outcome!!!
- Time Magazine Article – ***Why Your Genes Aren't Your Destiny***: http://www.time.com/time/magazine/article/0,9171,1952313,00.html

Keep on Detoxing!!!!

Diet and Lifestyle Effects on Genetic Weaknesses

- Whole foods, low glycemic diet
- 4 cups cruciferous vegetables daily (with kelp or other high iodine sea vegetables to prevent thyroid inhibition)
- Folic acid – methylated form
  (5-methyl tetrahydrofolate)
- B12 – methylated form – Methylcobalamin
- Zinc
- Manganese
- Copper
- NAC – N-acetyl Cysteine
- Glutathione

Glutathione: The Goddess of Detox

- Produced by the liver
- Depleted by lifestyle and exposure:
  - ✓ Poor diet
  - ✓ Pollution
  - ✓ Trauma
  - ✓ Infection
  - ✓ Radiation
  - ✓ Stress
  - ✓ Medication
  - ✓ Aging
- Requires Vitamins B6, methylated forms of B12 and Folic Acid to produce
- Created from amino acids glycine, glutamine and cysteine

Glutathione and Detoxification

- Recycles antioxidants: Free radicals go from Vitamin C to Vitamin E to lipoic acid and then to glutathione
- Protects against free radicals
- Helps immune system fight infection and cancer
- Can help prevent AIDS
- Required for healthy brain function: deficiencies can cause ADHD, autism, Parkinson's and dementia

How Can You Make More Glutathione?

- Broccoli sprouts
- Garlic
- Onions
- Cruciferous vegetables: collards, kale, cabbage, broccoli, cauliflower, arugula, kohlrabi, mustard greens, radish, watercress and wasabi
- Adequate vitamins B6, methylated form of B12 and Folic Acid – whole foods not processed
- Amino acids cysteine, glycine and glutamine: need efficient protein digestion: stomach acid and enzymes
- Minerals zinc and selenium: whole foods, green foods

Other Foods And Herbs To Assist Liver Detoxification

- Turmeric
- Green tea
- NAC (n-acetyl cysteine) 500 mg twice a day
- Vitamin C – 1000 mg twice a day
- Omega 3 fats
- Quality amino acids from easily digested protein (raw, greens, sprouts, sprouted nuts, seeds, grains and legumes, raw protein powders when extra needed during detox)

Acid vs. Alkaline Effects on Detox

- **Blood pH:** Typically 7.35 – 7.45 (slightly alkaline)
- **Saliva pH:** Often becomes acid from diet and lifestyle choices – promotes teeth decay
- **Urine pH:** Usually slightly acid in AM as you detox overnight (6.4 – 6.8)
- **Foods:** See chart. Typically animal products acid, refined foods acid, grains acid, most vegetables and fruits alkaline
- **Stress:** Creates acid
- **Medication:** Creates acid
- **Environmental toxins:** Can create acid wastes

Candida and Fungus

- Create endotoxins
- Thrive on processed foods and sugars
- Can create symptoms throughout the body
- Can be removed with fresh, high raw, whole foods diet and detoxification
- May need special herbs to eliminate
- Elimination can cause release of toxins in cell walls and make symptoms temporarily worse

Adjunctive Detox Activities

- **Sauna:** Be sure to drink 16 ounces or more water before and every 30 – 45 minutes. Can do daily if very toxic.
- **Steam room**
- **Dry skin brushing:** Before showering
- **Detox baths:** Epsom salts or Himalayan salt rocks, lavender, apple cider vinegar, clay
- **Castor oil packs**
- **Exercise**
- **Enemas and colonics**

Steps to Optimizing Detox

1. Avoid toxin exposure as much as possible
2. Eat a high nutrient content diet
3. Eat a high fiber diet
4. Optimize your digestion
5. Exercise daily
6. Drink pure water and drink enough (1/2 body weight in fluid ounces is a good start)
7. Breathe pure air: air filters
8. Reduce stress

Antidotes For Excessive Detox Symptoms

Symptoms

- ✓ Skin rashes
- ✓ Headaches
- ✓ Fatigue
- ✓ Nausea
- ✓ Irritable bowel
- ✓ Confusion and memory problems

Immediate relief

- ✓ Buffered vitamin C
- ✓ Enema
- ✓ Sulfur rich foods – crucifers, garlic, onion, MSM
- ✓ Detox bath
- ✓ Sweating – exercise or sauna

Preparing For Deep Toxin Release

- **Remove all processed food** from environment
- **Remove toxic cleaners,** chemicals and body care products
- **Get ready to sweat – regularly**
  - ✓ Interval training – exercise all out for 30 – 60 seconds then slow down and repeat
  - ✓ Saunas
  - ✓ Steam room
- **Create a stress management/transformation routine**
  - ✓ Yoga
  - ✓ Meditation
  - ✓ Heart Math
  - ✓ Prayer
  - ✓ Journaling
  - ✓ Your choice

Supplies Recommended

- Epsom salts
- Lavender essential oil or flowers
- An eye pillow
- Dry skin brush
- Yoga mat
- Good walking shoes
- Lots of great produce
- Supplements and herbs