

Lyme Disease and Naturopathic Care

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Diseases since 1999***

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Lyme Disease and Naturopathic Care

Lyme Disease and co-infections are the fastest growing infectious diseases in the United States at 2-300,000 reported new cases/year and the number of real cases is probably 10 times that number.

- ◆ **Borrelia burgdorferi**
- ◆ **Babesia microtii and Babesia duncani**
- ◆ **Ehrlichia chaffeensis (HME) and Anaplasma phagocytophila (HGE)**
- ◆ **Bartonella henselae and Bartonella quintana and others**
- ◆ **Mycoplasma fermentans**
- ◆ **RMSF**
- ◆ **Q Fever**

These pathogens can be transmitted by:

- ◆ **Dog ticks**
- ◆ **Black legged ticks**
- ◆ **Lone Star ticks**
- ◆ **Mosquitoes**
- ◆ **Spiders (?)**
- ◆ **Flies (?)**
- ◆ **Lice (?)**
- ◆ **Gnats (?)**

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- ❖ **Suspicious symptoms should be questioned and thorough diagnostic work up should be done**

- ❖ **Consider using a diagnostic laboratory that specializes in Tick-Borne Diseases**
 - ◆ **Igenex Inc.**
 - ◆ **Medical Diagnostic Laboratories**
 - ◆ **Immunosciences**
 - ◆ **Fry Laboratories**
 - ◆ **Clongen Laboratories**
 - ◆ **Galaxy Laboratories**

- ❖ **Adjunctive specialty laboratories**
 - ◆ **Hemex Laboratories (blood coagulation)**
 - ◆ **Great Smokies (digestion)**
 - ◆ **Neuroscience Labs, Inc. (brain neurotransmitters)**

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Lyme Disease patients are also highly susceptible to fungal infections due to immunosuppression:

- ◆ **Candida albicans**
- ◆ **Candida dublinensis**
- ◆ **Candida glabra**
- ◆ **Candida kefyr**
- ◆ **Candida krusei**
- ◆ **Candida lusitaniae**
- ◆ **Candida parapsilosis**
- ◆ **Candida tropicalis**

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Naturopathic Treatment for Fungal Infections:

- ◆ **Caprylic Acid**
- ◆ **Berberine**
- ◆ **Garlic**
- ◆ **Pau D' arco**
- ◆ **Digestive Enzymes**
- ◆ **Oil of Oregano**
- ◆ **Candex**

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Lyme Disease and Coinfections in patients generally results in at least one of the following conditions:

1) Inflammation

- ◆ **Increased production of proinflammatory cytokines**
- ◆ **Increased production of histamine by mast cells**

2) Immune System Suppression

- ◆ **Tick saliva contains analgesics and anticoagulants which are both immunosuppressive**
- ◆ **Decreased production of antibodies by B cells**
- ◆ **Decreased production of T cells (CD4, CD8)**
- ◆ **Decreased production of NK cells (CD57)**

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3) Autoimmune Activation

- ◆ Increased production of autoantibodies against host tissue
- ◆ Thyroid gland and connective tissue

4) Allergies

- ◆ Increased fragility of mucosal tissues
- ◆ Nose
- ◆ Gastrointestine
- ◆ Vagina

5) Toxicity

- ◆ Release of endotoxins into the blood from lysing spirochetes and increased release of proinflammatory cytokines
- ◆ Increased production of Quinolinic acid by microglial cells

6) Oxidative Stress

- ◆ Increased free radical production (H⁺)
- ◆ Increased production of reactive oxygen species (ROS)
- ◆ Increased production of Nitric Oxide (NO)

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7) Mitochondrial Dysfunction

- ◆ Aberrations in electron transport chain function
- ◆ Decreased production of NADH
- ◆ Decreased production of ATP

8) Hormonal Dysregulation

- ◆ Hypothalamus dysfunction (TRH)
- ◆ Pituitary Dysfunction (TSH)
- ◆ End Organ Dysfunction (thyroid)

9) Hypercoagulation

- ◆ Increased production of fibrinogen and fibrin
- ◆ Increased production of cardiolipin
- ◆ Increased production of thrombin
- ◆ Increased PAI activity

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10) “Neurowasting”

- ◆ Central and peripheral nervous system demyelination
- ◆ Demyelination and inflammation of Cranial Nerves
- ◆ Demyelination and inflammation of Sensory Nerves
- ◆ Demyelination and inflammation of Motor Nerves

11) Host Nutrient Depletion

- ◆ Magnesium
- ◆ Glutathione
- ◆ Vitamin C
- ◆ Fatty Acids
- ◆ Amino Acids
- ◆ B Vitamins
- ◆ Trace Minerals

12) Focal and Systemic Pain Syndrome resulting from chronic inflammation

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- ❖ **My job is to figure out which one(s) of the previous mentioned factors are most at work in the patient, and begin to unravel the disease syndrome**
- ❖ **Generally I begin with the assumption that systemic and local inflammation are present everywhere in an infected patient**
- ❖ **Need to first decrease inflammation to allow tissues to return to a normal tensile strength**
- ❖ **This allows for proper absorption of:**
 - ◆ **Water**
 - ◆ **Micronutrients**
 - ◆ **Antibiotics**
 - ◆ **Oxygen**
- ❖ **Need to change the acidity of the blood and tissues so that they are more basic**
 - ◆ **Use alkaline foods, chlorophyll, green smoothies**

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- ❖ **Spirochetes are a bacterial species that cannot manufacture their own nutrients so they rely on “stealing” nutrients from the host.**
- ❖ **Spirochetes use sugar for energy production so they “feed” on sugars in the host (ribose is the backbone of DNA)**
- ❖ **Spirochetes also use fatty acids for energy production and mobility of their tail for movement, so they “feed” on fatty acids in the host mostly in the brain (Myelin sheath)**
- ❖ **Spirochetes likely “feed” on vitamins and minerals in the host (B vitamins)**
- ❖ **Spirochetes are Manganese dependent**
- ❖ **Particularly Magnesium**
 - ◆ **This is why Lyme patients are often magnesium deficient which results in muscle aches and constipation**

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Importance of Basic Vitamins:

- ◆ **Vitamin A – vision, immune system, mucosal integrity, viruses**
- ◆ **Vitamin B1 – metabolism and energy, brain function**
- ◆ **Vitamin B2 – brain, energy**
- ◆ **Vitamin B3 – brain, energy**
- ◆ **Vitamin B5 – adrenals, brain, energy**
- ◆ **Vitamin B6 – brain, neurotransmitters, adrenals, energy**
- ◆ **Vitamin B12 – nerves, bone marrow, blood**
- ◆ **Vitamin C – best antioxidant, forms collagen**
- ◆ **Vitamin D – regulates calcium, increases NK activity**
- ◆ **Vitamin E – antioxidant, protects cell membranes**

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Importance of Minerals:

- ◆ **Boron – stimulates bone growth**
- ◆ **Calcium – contracts muscles, bone strength, teeth strength**
- ◆ **Magnesium – muscle relaxation, metabolism**
- ◆ **Manganese – metabolism, antioxidant (SOD)**
- ◆ **Phosphorous – bone building, ATP formation for energy**
- ◆ **Potassium – nerve function, cell electrical potentials**
- ◆ **Silicon – bone building, connective tissue formation**
- ◆ **Sulfur – crosslinks proteins in skin, hair, joints, constituent of Glutathione**

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Importance of Trace Minerals:

- ◆ **Chromium – metabolism, blood sugar**
- ◆ **Copper – hemaglobin and collagen formation, SOD**
- ◆ **Iodine – metabolism, thyroid hormone**
- ◆ **Iron – binds oxygen in RBCs and muscle**
- ◆ **Lithium – neurotransmitter formation**
- ◆ **Molybdenum – liver detoxification**
- ◆ **Rubidium – stomach function**
- ◆ **Selenium – antioxidant**
- ◆ **Strontium – bone formation**
- ◆ **Rubidium – stomach function**
- ◆ **Vanadium – blood sugar control**
- ◆ **Zinc – immune function, metabolism, detox, reproduction**

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There are several reasons why Lyme patients can become so severely sick:

- ◆ **High Spirochetal load in the body**
- ◆ **Nutrient depletion in the host**
- ◆ **Number of coinfections present**
- ◆ **Number of secondary infections present poor diet**
- ◆ **Environmental toxic exposures causing build up of toxins in the body from environment and pathogens**
- ◆ **Inability to rid toxins from the body because liver detoxifying pathways have been impaired or are genetically weak**
- ◆ **Hormonal dysregulation**
- ◆ **MTHFR genetic mutations (C677T and A1298C as well as others)**
- ◆ **COMT genetic mutations and many other just recently found**
- ◆ **Glutathione Transferase mutation**
- ◆ **Other Methylation, Acetylation, Sulfuronidation mutations**

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Guidelines for Reducing Toxic Burden on the Body:

- ◆ **Wear cotton washed clothes in Arm and Hammer Detergent**
- ◆ **Use “ecofriendly” products in the house (7th Generation)**
- ◆ **Maximize natural light in the house**
- ◆ **Keep electrical appliances away from head and body**
- ◆ **Do not cook in plastic**
- ◆ **Do not cook in iron skillets (iron can accumulate in body)**
- ◆ **Do not microwave**
- ◆ **Use a quality air filter in your bedroom (IQ Air or Nikken)**
- ◆ **Clean carpets and bedding frequently with “Green” products**
- ◆ **Get plenty of sleep (at least 8 hours)**
- ◆ **Do not drink alcohol**
- ◆ **Do not drink caffeine**
- ◆ **Do not smoke**
- ◆ **Drink plenty of water ALL the time**

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- ◆ **Stop eating junk food and follow the Lyme Inflammation Diet**
- ◆ **Eat organic foods (grass fed meats and vegetables)**
- ◆ **Stop eating WHEAT and drinking milk (increases intestinal permeability)**
- ◆ **Stop using flouride toothpaste and start using xylitol or a water pik**
- ◆ **Stop eating SUGAR!!!!!!!!!!**
- ◆ **Use natural soaps, cleansers and moisturizers (topical Vitamin C lotion)**
- ◆ **Drink plenty of fresh clean water with lemon in it (helps detox)**
- ◆ **Daily light exercise, walking, stretching to keep your lymph moving**
- ◆ **Do Yoga or Tai Chi**
- ◆ **Do infrared sauna (112 to 120 degrees for half hour)**
- ◆ **Get a lymph massage**
- ◆ **Try acupuncture**
- ◆ **Get 10 minutes of natural sunlight a day**
- ◆ **Get counseling**
- ◆ **Engage in spiritual activity daily for at least 20 minutes (prayer)**
- ◆ **Rest when able**

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Naturopathic Treatment for Toxicity:

- ◆ **Activated Charcoal**
- ◆ **Apple Pectin**
- ◆ **Cholestepure (Pure encapsulations)**
- ◆ **Paleocleanse (Designs for Health)**
- ◆ **Epsom salt and baking soda baths**
- ◆ **Coffee enemas**
- ◆ **Castor oil packs**
- ◆ **Oral Liposomal Glutathione**
- ◆ **Magnesium, zinc and vitamin B6**
- ◆ **Cod Liver Oil**
- ◆ **Byron White Formulas**
- ◆ **Infrared sauna**
- ◆ **Colonics**
- ◆ **Chinese herbs**
- ◆ **Drink Cholorophyll**

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Naturopathic Treatments for Inflammation:

◆ Proteolytic Enzymes

- ✧ Bromelain
- ✧ Papain
- ✧ Wobenzyme

◆ Digestive enzymes

- ✧ Lipase
- ✧ Amylase
- ✧ Protease

◆ Quercitin

◆ Nettles

◆ Andrographis

◆ Glutathione

◆ Hydroxycobalamin

◆ Omega 3, 6, 9 fatty acids

◆ Boswellia

◆ Curcumin

◆ Turmeric

◆ White Willow Bark

◆ Flex Now (Shea Nut)

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Naturopathic Antivirals:

- ◆ **Glycyrrhizin**
- ◆ **Monolaurin**
- ◆ **Olive Leaf Extract**
- ◆ **Oregano Oil**
- ◆ **Banderol**
- ◆ **Selenium**
- ◆ **Vitamin A**
- ◆ **Lomatium**
- ◆ **Stephania Root**
- ◆ **Barberry**
- ◆ **Resveratrol**
- ◆ **IMN V**
- ◆ **Proboost Thymus Extract**
- ◆ **Lugo's Iodine**
- ◆ **Nano/Colloidal Silver**

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Naturopathic Immune System Support:

- ◆ **Coriolus versicolor**
- ◆ **Reishi mushrooms**
- ◆ **Beta Glucans**
- ◆ **Plant Sterols**
- ◆ **Eklonia cava (brown algae)**
- ◆ **Progreens**
- ◆ **Green lipped muscles (Liprinol)**
- ◆ **Zinc Picolinate**
- ◆ **Vitamin C**
- ◆ **Vitamin D (high dose)**
- ◆ **Colostrum**
- ◆ **Cordyceps**
- ◆ **Transfer Factor**
- ◆ **Astragalus (not in autoimmune)**
- ◆ **Proboost**

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Naturopathic Treatment for Mucosal Inflammation (Allergies):

- ◆ **Quercitin**
- ◆ **Nettles**
- ◆ **Andrographis**
- ◆ **Vitamin C**
- ◆ **Eucalyptus steam**
- ◆ **Zinc picolinate**
- ◆ **Lyprinol (green lipped muscles) Magnesium**
- ◆ **Selenium**
- ◆ **Vitamin B6**
- ◆ **Boswellia**
- ◆ **Hyssop**
- ◆ **Lobelia**
- ◆ **Marshmallow**
- ◆ **Mullein**
- ◆ **Pi Min Kwan**
- ◆ **QC Nasal Spray**
- ◆ **Xylitol Nettie Pot**

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Naturopathic Treatment for Oxidative Stress:

- ◆ **High dose vitamin C**
- ◆ **High dose vitamin D**
- ◆ **High dose vitamin A**
- ◆ **High dose vitamin E**
- ◆ **Glutathione**
- ◆ **Alpha lipoic acid**
- ◆ **CoQ10**
- ◆ **Green Tea (Epigallocatechins)**
- ◆ **Pycnogenol (bioflavanoid)**
- ◆ **B Carotene**
- ◆ **Selenium**
- ◆ **Resveratrol**
- ◆ **N Acetylcysteine**
- ◆ **Bioflavanoids**
- ◆ **Astaxanthin**

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Naturopathic Treatment for Mitochondrial Dysfunction:

- ◆ **CoQ10**
- ◆ **Ashwaganda**
- ◆ **Acetyl L Carnitine**
- ◆ **Thiamine HCL**
- ◆ **Molybdenum**
- ◆ **Chromium**
- ◆ **Biotin**
- ◆ **Folate**
- ◆ **Hydroxycobalamin, Adenosylcobalamin**
- ◆ **Riboflavin**

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Naturopathic Treatment for Hormonal Dysregulation:

- ◆ **Depends on the organ system(s) involved:**

Thyroid function

- ✧ **T3**
- ✧ **T4**
- ✧ **Combination of T3 and T4**
- ✧ **Kelp**
- ✧ **Iodine**

Adrenal function

- ✧ **Eleutherococcus**
- ✧ **Siberian ginseng**
- ✧ **Ashwaganda**
- ✧ **Adrenal Extract**
- ✧ **B vitamins**
- ✧ **DHEA**
- ✧ **Glycyrrhizin**
- ✧ **Rodiola**
- ✧ **Schisandra**
- ✧ **Pantothenic Acid**

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Naturopathic Treatment for Hypercoagulation:

- ◆ **Nattokinase**
- ◆ **Lumbrokinase**
- ◆ **Digestive enzymes**
- ◆ **Proteolytic Enzymes**
- ◆ **Smilax (Sarsasparilla)**
- ◆ **Oregon Grape root**
- ◆ **Burdock root**
- ◆ **Yellow Dock root**
- ◆ **Hawthorn Berry**
- ◆ **Chlorella**
- ◆ **Bee Pollen**
- ◆ **Boluoke**
- ◆ **Cayenne**
- ◆ **Wobenzyme**
- ◆ **Aspirin**

❖ **The key here is to take these things AWAY from food on an **EMPTY STOMACH****

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Naturopathic Treatments for Pain:

- ◆ **Boswellia**
- ◆ **Curcumin**
- ◆ **Bromelain**
- ◆ **White Willow Bark**
- ◆ **Citrus Bioflavanoids**
- ◆ **Ginger**
- ◆ **Papain**
- ◆ **Trypsin**
- ◆ **Rosemary**
- ◆ **Arnica (topical)**
- ◆ **Shea Nut**
- ◆ **MSM**
- ◆ **Estrogen and Progesterone in some cases**

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General Naturopathic Treatment for Lyme Disease:

- ◆ **Samento**
- ◆ **Cumanda**
- ◆ **Banderol**
- ◆ **Andrographis protects against neurodegeneration**
- ◆ **Polygonum (Japanese knotwood) increases brain circulation**
- ◆ **Stephania root for viruses**
- ◆ **Artemisin for Babesia and parasites**
- ◆ **Teasel root**
- ◆ **Sarsaparilla (Smilax)**
- ◆ **Chlorella**
- ◆ **Garlic**
- ◆ **Berberine**
- ◆ **Byron White Formulas**
- ◆ **Beyond Balance Formulas**

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Naturopathic Treatment for Herxheimer Reactions:

- ◆ **Benedryl**
- ◆ **Quercitin**
- ◆ **Nettles**
- ◆ **Andrographis**
- ◆ **Chlorella**
- ◆ **Modifilan (brown algae)**
- ◆ **Apple pectin**
- ◆ **Butyrate**
- ◆ **Bentonite**
- ◆ **Activated Charcoal**
- ◆ **Warm Lemon Water**
- ◆ **Epsom Salt Bath with Baking Soda**

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Lyme Disease coinfections and specific herbs:

- ◆ **Babesia – Artemesia and Artemisin, A-Bab, Bab1, Bab2**
- ◆ **Bartonella – Resveratrol (Japanese Knotwood), A-Bart, Bar1, Bar2**
- ◆ **Ehrlichia – Colchicum and Astragalus autumnale (must use Colchicum very carefully due to toxicity)**
- ◆ **Rocky Mountain Spotted Fever – RMSF**
- ◆ **Mycoplasma – A-Myco**

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Brain Issues

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Naturopathic Treatment for Migraine Headaches:

- ◆ **Magnesium**
- ◆ **Vitamin B2**
- ◆ **Feverfew**
- ◆ **5-HTP**
- ◆ **CoQ10**
- ◆ **Vitamin B12**
- ◆ **Cayenne**
- ◆ **Ginger**
- ◆ **Ginko biloba**
- ◆ **Vitamin D**

The idea is to vasodilate the vessels in the brain.

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Naturopathic Treatment for Attention Deficit Disorder:

- ◆ **Essential Fatty Acids**
- ◆ **L-Carnitine**
- ◆ **Magnesium**
- ◆ **Zinc**
- ◆ **B Vitamins**
- ◆ **Evening Primrose Oil**
- ◆ **Phosphoylated Vitamin B6**
- ◆ **Thiamine**

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Naturopathic Treatment for Multiple Sclerosis:

- ◆ **Calcium**
- ◆ **Evening Primrose**
- ◆ **Fish Oil**
- ◆ **Magnesium**
- ◆ **Niacin**
- ◆ **Thiamine**
- ◆ **Vitamin D**
- ◆ **Ginkgo Biloba**
- ◆ **Vitamin E**
- ◆ **Bioflavanoids**
- ◆ **Antioxidants**
- ◆ **Lipids**

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- ❖ **Lyme Disease often affects sleep. For proper immune function, the average person requires 8 hours per night of deep, restful sleep.**

- ❖ **Natural sleep aids:**
 - ❖ **GABA**
 - ❖ **5HTP**
 - ❖ **Valerian**
 - ❖ **Hops**
 - ❖ **Yams**
 - ❖ **Theanine**
 - ❖ **Magnesium**
 - ❖ **Chamomille**
 - ❖ **Lithium Orotate**
 - ❖ **Fresh lavender in a sachet and placed inside the pillow**
 - ❖ **Kava kava**
 - ❖ **Bitter Orange**
 - ❖ **Catnip**
 - ❖ **Hops**
 - ❖ **Passion Flower**

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Naturopathic Treatment for Eyes:

- ◆ **Stephania Root**
- ◆ **Vinpocetine**
- ◆ **Vitamin C**
- ◆ **Lutein**
- ◆ **Vitamin A**
- ◆ **Vitamin B2 (high doses 700-1000md/day)**
- ◆ **Ginkgo biloba**
- ◆ **Resveratrol (Japanese knotwood)**
- ◆ **Bee venom therapy**
- ◆ **Beta Carotene**
- ◆ **Quercitin**
- ◆ **Vitamin B3**
- ◆ **Vitamin E**
- ◆ **Bilberry**

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Naturopathic Treatment for Bell' s Palsy:

- ◆ **Vitamin B6**
- ◆ **Vitamin B12**
- ◆ **Essential Fatty Acids**

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Naturopathic Treatment for Mood Lability:

- ◆ **Fish Oil**
- ◆ **5-HTP**
- ◆ **Tryptophan**
- ◆ **Choline**
- ◆ **Folic Acid**
- ◆ **Inositol**
- ◆ **SAMe**
- ◆ **Vitamin B12**
- ◆ **Vitamin C**
- ◆ **Lithium Oratate**

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Naturopathic Treatment for Anxiety:

- ◆ **GABA**
- ◆ **Taurine**
- ◆ **Vitamin B6**
- ◆ **Inositol**
- ◆ **Niacin**
- ◆ **L – Theonine**
- ◆ **Passion Flower**
- ◆ **Lavela**
- ◆ **Kava kava**
- ◆ **Progesterone in some cases**
- ◆ **T3 and T4 in some cases**
- ◆ **Boost adrenal glands**

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Cardiovascular Issues

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Naturopathic Treatment for Lymph Rejuvenation:

- ◆ **Red root**
- ◆ **Red Clover blossoms**
- ◆ **Echinacea**
- ◆ **Mullein leaf**
- ◆ **Stillangia root**
- ◆ **Southern Prickly Ash bark**
- ◆ **Licorice root**
- ◆ **Poke root**

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Intestinal Issues

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Naturopathic Treatment for Intestinal Issues:

- ◆ **Glutamine**
- ◆ **Lactobacillus**
- ◆ **Saccharomyces**
- ◆ **Magnesium**
- ◆ **Progreens**
- ◆ **Marshmallow**
- ◆ **Mastica Gum (gastritis)**
- ◆ **Whey Protein**
- ◆ **Fructooligosaccharides**
- ◆ **Bifidobacterium**
- ◆ **Aloe**
- ◆ **Swedish Bitters**

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Naturopathic Treatment for Gastritis:

- ◆ **N-Acetyl-Cysteine**
- ◆ **Vitamin C**
- ◆ **Arginine**
- ◆ **Beta-Carotene**
- ◆ **Glutamine**
- ◆ **Vitamin A**
- ◆ **Zinc**
- ◆ **Mastica Gum**

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Naturopathic Treatment for Ulcerative Colitis:

- ◆ **Butyrate enemas**
- ◆ **Fish Oil**
- ◆ **Folic Acid**
- ◆ **Probiotics**
- ◆ **Aloe**
- ◆ **Boswelia**
- ◆ **DHEA**
- ◆ **Psyllium Husk**
- ◆ **Calendula**
- ◆ **Chamomille**
- ◆ **Flaxseed**
- ◆ **Licorice**
- ◆ **Marshmallow**
- ◆ **Myrrh**
- ◆ **Yarrow**
- ◆ **FOS**
- ◆ **Multiple strains of probiotics**

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Naturopathic Treatment for Parasites:

- ◆ **Propolis**
- ◆ **Berberine**
- ◆ **Ipecac**
- ◆ **Myrrh**
- ◆ **Anise**
- ◆ **Garlic**
- ◆ **Goldenseal**
- ◆ **Oregon Grape**
- ◆ **Pumpkin seeds**
- ◆ **Artemisinin**
- ◆ **Mimosa**
- ◆ **Black Walnut**

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Naturopathic Treatment for Digestive Toxin Absorber:

- ◆ **Psyllium seed husks**
- ◆ **Apple pectin**
- ◆ **Ginger root**
- ◆ **Peppermint leaf**
- ◆ **Bentonite Clay**
- ◆ **Chlorella**
- ◆ **Chlorophyll**
- ◆ **Charcoal**
- ◆ **Zeolite**

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Naturopathic Treatment for Intestinal Candida:

- ◆ **Caprylic Acid**
- ◆ **Molybdenum**
- ◆ **Theralac**
- ◆ **Saccharomyces**
- ◆ **Garlic**
- ◆ **Rosemary**
- ◆ **Thyme**
- ◆ **Grapefruit Seed Extract**
- ◆ **Digestive Enzymes**
- ◆ **Uva Ursi**
- ◆ **Pau D' Arco**
- ◆ **Oregon Grape**
- ◆ **Betaine HCl**
- ◆ **Goldenseal**
- ◆ **Peppermint**
- ◆ **Tea Tree**
- ◆ **Oregano**
- ◆ **Tea Tree Oil**

Lyme Disease and Naturopathic Care

Thyroid Issues

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Naturopathic Treatment for Metabolism Stimulation:

- ◆ **Vitamin B1**
- ◆ **Vitamin B2**
- ◆ **Vitamin B3**
- ◆ **Vitamin B6**
- ◆ **Iodine**
- ◆ **Zinc**
- ◆ **Selenium**
- ◆ **Manganese**
- ◆ **Vanadium**
- ◆ **L Glutamic Acid**
- ◆ **N acetyl cycsteine**
- ◆ **L Tyrosine**
- ◆ **Vitamin B12**
- ◆ **DHEA**
- ◆ **Licorice**
- ◆ **Eleuthero**
- ◆ **Asian Ginseng**

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Naturopathic Treatment for Hypothyroidism:

- ◆ **Iodine (only in some cases, need a serum measurement)**
- ◆ **Selenium**
- ◆ **Thyroid Extract**
- ◆ **Vitamin A**
- ◆ **Vitamin B3**
- ◆ **Bladderwrack**
- ◆ **Zinc**
- ◆ **T3**
- ◆ **T4**

Lyme Disease and Naturopathic Care

Adrenal Gland Issues

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Naturopathic Treatment for Adrenal Support:

- ◆ **Vitamin C**
- ◆ **Vitamin B1**
- ◆ **Vitamin B2**
- ◆ **Vitamin B3**
- ◆ **Vitamin B6**
- ◆ **Vitamin B12**
- ◆ **Folate**
- ◆ **Zinc**
- ◆ **Copper**
- ◆ **PABA**
- ◆ **Bioflavanoids**
- ◆ **Choline**
- ◆ **Inositol**
- ◆ **Siberian Ginseng**
- ◆ **Ashwaganda**
- ◆ **DHEA**
- ◆ **Rhodiola**
- ◆ **Pantothenic Acid (B5)**

Lyme Disease and Naturopathic Care

Muscle and Joint Issues

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Naturopathic Treatment for Lyme Arthritis:

- ◆ **Niacin (vitamin B3)**
- ◆ **Glucosamine Sulfate**
- ◆ **Chondroitin Sulfate**
- ◆ **MSM**
- ◆ **SAMe**
- ◆ **Boswellia**
- ◆ **Curcumin**
- ◆ **Ginger**
- ◆ **Rosemary**
- ◆ **Shea Nut**
- ◆ **White Willow Bark**
- ◆ **Cobroxin topical gel (homeopathic cobra venom)**
- ◆ **Magnesium, Emu oil and DMSA topical lotion**
- ◆ **Hyaluronic Acid**

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Kidney Issues

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Naturopathic Treatment for Kidney Support:

- ◆ **Dandelion**
- ◆ **Burdock**
- ◆ **Vitamin C**
- ◆ **Pure Spring Water**
- ◆ **Hydranges root**
- ◆ **Birch bark**
- ◆ **Stoneroot root**
- ◆ **Yarrow**
- ◆ **Red Clover blossoms**
- ◆ **Parsley root**
- ◆ **Marshmallow root**
- ◆ **Licorice root**

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Liver and Gall Bladder Issues

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Naturopathic Treatment for Liver and Gall Bladder Support:

- ◆ **Dandelion root**
- ◆ **Milk Thistle**
- ◆ **Artichoke leaf**
- ◆ **Lycium berry**
- ◆ **LIV 52**
- ◆ **Licorice root**
- ◆ **Citrus bioflavanoids**
- ◆ **Reishi mushroom extract**
- ◆ **Barberry root**
- ◆ **Coffee enemas**
- ◆ **Colon hydrotherapy**
- ◆ **Castor Oil packs**

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Naturopathic Treatment for Heavy Metal Detox:

- ◆ **Chlorella**
- ◆ **Cilantro**
- ◆ **Byron White Formulas (BT Detox, NT Detox)**
- ◆ **Omega 3, 6, 9 fatty acids**
- ◆ **Multiminerals**
- ◆ **Spirulina**
- ◆ **Progreens**
- ◆ **Vitamin C**
- ◆ **EDTA**
- ◆ **Bentonite Clay**
- ◆ **Lipoic Acid**
- ◆ **DMSA as last resort**

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Skin Issues

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Naturopathic Treatment for Eczema:

- ◆ **Borage Oil**
- ◆ **Evening Primrose Oil**
- ◆ **Fish Oil**
- ◆ **Probiotics**
- ◆ **Calendula**
- ◆ **Chamomille**
- ◆ **Witch Hazel**
- ◆ **Vitamin C cream**
- ◆ **Chickweed**
- ◆ **Oak**
- ◆ **Vitamin D oil**
- ◆ **Vitamin E oil**
- ◆ **Oats**
- ◆ **Onion**
- ◆ **Red Clover**
- ◆ **Licorice**
- ◆ **Remove food allergens**

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- ◆ **What are SNPs?**
- ◆ **Single nucleotide polymorphisms, or genetic mutations, where one base pair is substituted for another**

ATCGATTCCGT gets substituted by:

- ◇ **CTAGCCTTAC**
- ◇ **Examples:**
 - ◇ **MTHFR**
 - ◇ **COMT**

Lyme Disease and Naturopathic Care

MTHFR genetic mutations:

- ◆ **C677T**
- ◆ **A1298C**

- ✧ **Unable to methylate properly**
- ✧ **Decreased methylation incorporates uracil into DNA making it difficult to repair (uracil is an RNA nucleobase NOT DNA)**
- ✧ **Unable to metabolize folate properly**
- ✧ **High Homocysteine levels**
- ✧ **Low SAME levels**

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- ❖ **MTHFR C677T Hetero – 40% decreased methylation function**
- ❖ **MTHFR C677T Homo – 75% decreased methylation function**

- ❖ **MTHFR A1298C Hetero – 20% decreased methylation function**
- ❖ **MTHFR A1298C Homo – 40% decreased methylation function**

- ❖ **Compound MTHFR SNP**
 - ❖ **C677T**
 - ❖ **A1298T**
 - ❖ **40% decreased methylation function**

Lyme Disease and Naturopathic Care

- ❖ **45% of human population has C677T mutation:**

- ❖ **These are probably the patients who have the most severe herx reactions, and who have the most difficulty detoxifying during Lyme Disease treatment.**

- ❖ **need to boost folate**
- ❖ **need to boost B12**
- ❖ **need to boost SAME**

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Folate Functions:

- ◆ **Aids in the biochemical methylation process**
- ◆ **Helps make SAMe**
- ◆ **Synthesizes nucleic acids**
- ◆ **Involved in single carbon metabolism**
- ◆ **Aids in the formation of WBCs and RBCs**

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How to treat MTHFR mutations:

- ◆ **Diet**
 - ◆ **Lifestyle**
 - ◆ **Vitamin B2**
 - ◆ **Vitamin B6**
 - ◆ **Vitamin B12 (hydroxy or adenosylcobalamin IM injections)**
 - ◆ **Magnesium**
 - ◆ **Fatty Acids**
 - ◆ **SAMe**
-
- ◆ **MUST LOOK AT THE INDIVIDUAL BECAUSE EVERYONE NEEDS SOMETHING DIFFERENT!**

Lyme Disease and Naturopathic Care

Tips for Healing – A Spiritual Perspective

- ◆ **Forgiveness for what has happened**
- ◆ **Mindfulness for the need of others**
- ◆ **Gratefulness for what you DO have**
- ◆ **Positive thoughts**
- ◆ **Spiritual practice or prayer**
- ◆ **Don' t look back**
- ◆ **Look to the future**
- ◆ **Try and help others who suffer**
- ◆ **Don' t gossip**
- ◆ **Rest assured that every step you take is in the forward direction**
- ◆ **Have faith in your practitioner**
- ◆ **Learn whatever lessons you are being asked to learn gracefully**

Lyme Disease and Naturopathic Care

Compliance, Persistence and Perseverance are the keys to managing/curing this disease!

There are NO text book cases!

Individuality MATTERS!

Thank you for your attention!

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