

More than **100 natural remedies**
for **today's common conditions**

With a Foreword and Medical Review by **T. C. THEOHARIDES, Ph.D., M.D.**

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7-SYNDROME *Healing*

Supplement

Essentials for the

Mind and Body

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Audio Presentation 5 The Immune Syndrome

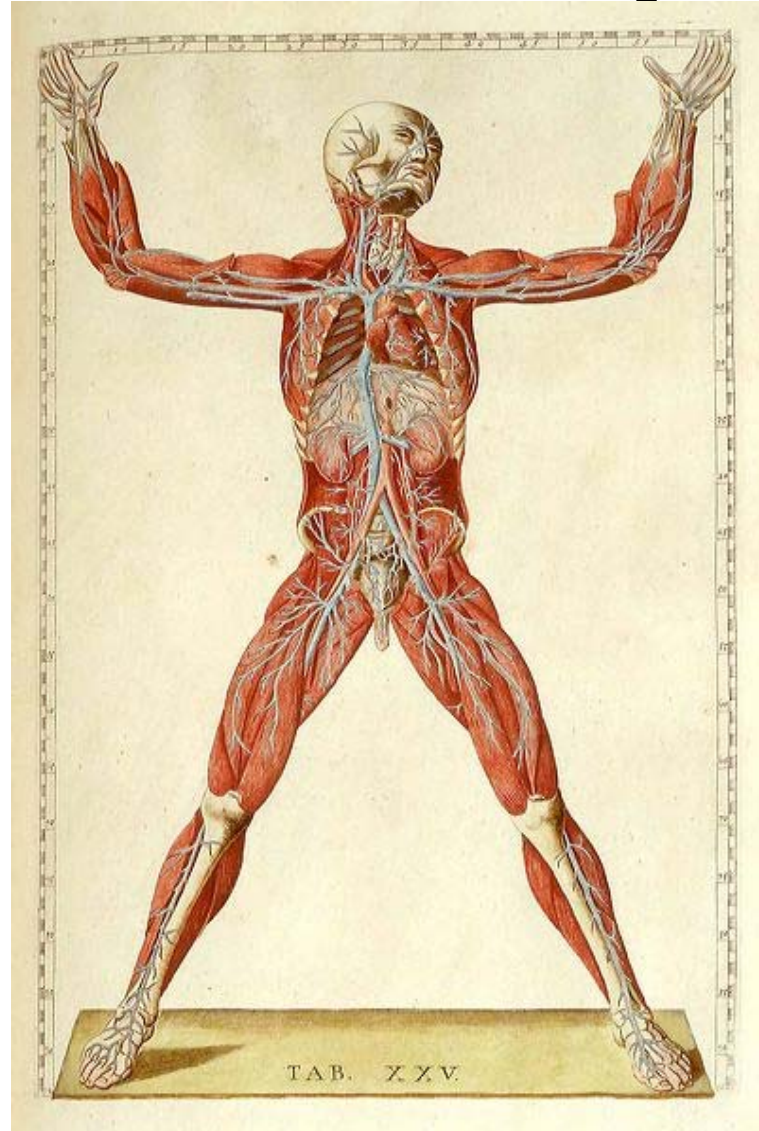
*helping everyone
understand natural
healing*
by Marcia Zimmerman

www.marciazimmerman.com

Defensive Systems of the Body

- Detoxification Systems
 - Xenobiotics – toxic, carcinogenic, and mutagenic chemicals
 - Phase 1,2 enzymes
 - SOD, catalase
 - Glutathione
 - Alpha lipoic acid
- Antioxidant Systems
 - Reactive oxygen species – internal reactions, and environmental factors
 - SOD, catalase
 - Glutathione
 - Alpha lipoic acid

The Immune System



Kinds of Immunity

- *Innate* – recognizes generic classes of foreign molecules, consists of anti-microbial molecules and macrophages, which trigger the inflammatory response and secrete cytokines that in turn recruit an influx of defensive cells
- *Adaptive* – endows the immune system with memory – specially trained B and T cells stick around, priming the body to ward off subsequent attack; ie vaccination

Innate Immunity

- Rapid response system for detecting and clearing infections by any infectious agent
- Toll-like receptors (TLRs)
 - made by many defensive cells
 - trigger the production of signaling proteins that induce inflammation and a full-fledged immune response
 - If underactive, immune system fails
 - If overactive, autoimmune diseases and even CVD may result
- Cytokines are proteins that recruit more phagocytes and activate them to kill
- A balance between pro- and anti-inflammatory cytokines is essential for a healthy immune response

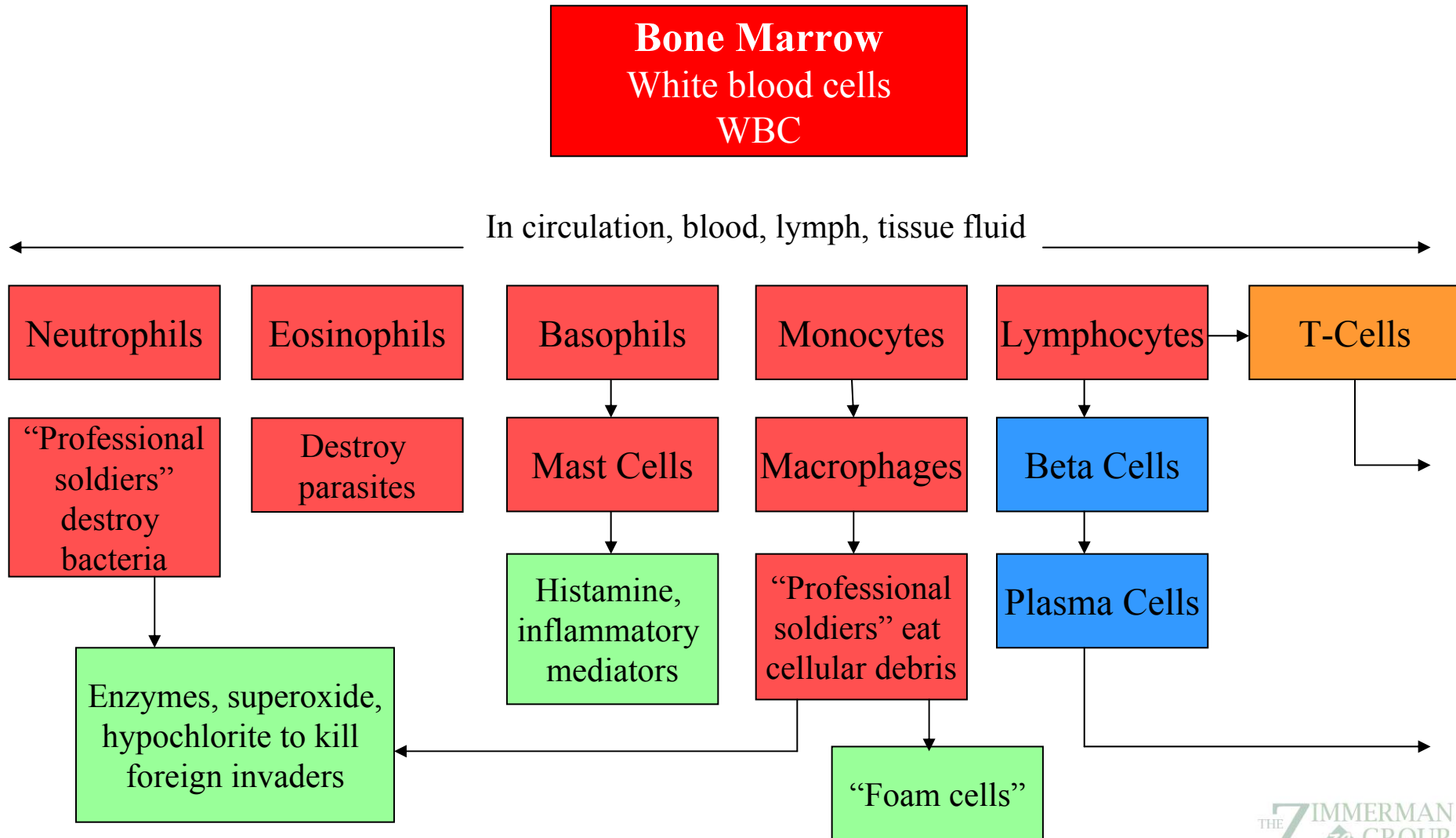
Adaptive Immunity

- Activated **B cells** secrete antibodies that attack specific kinds of invaders and destroy them or mark them for destruction
- **T-cells** recognize antigens displayed on cells, either attack directly or activate B cells and other T cells
- Memory cells are created from B and T cells, respond quickly to invaders encountered before

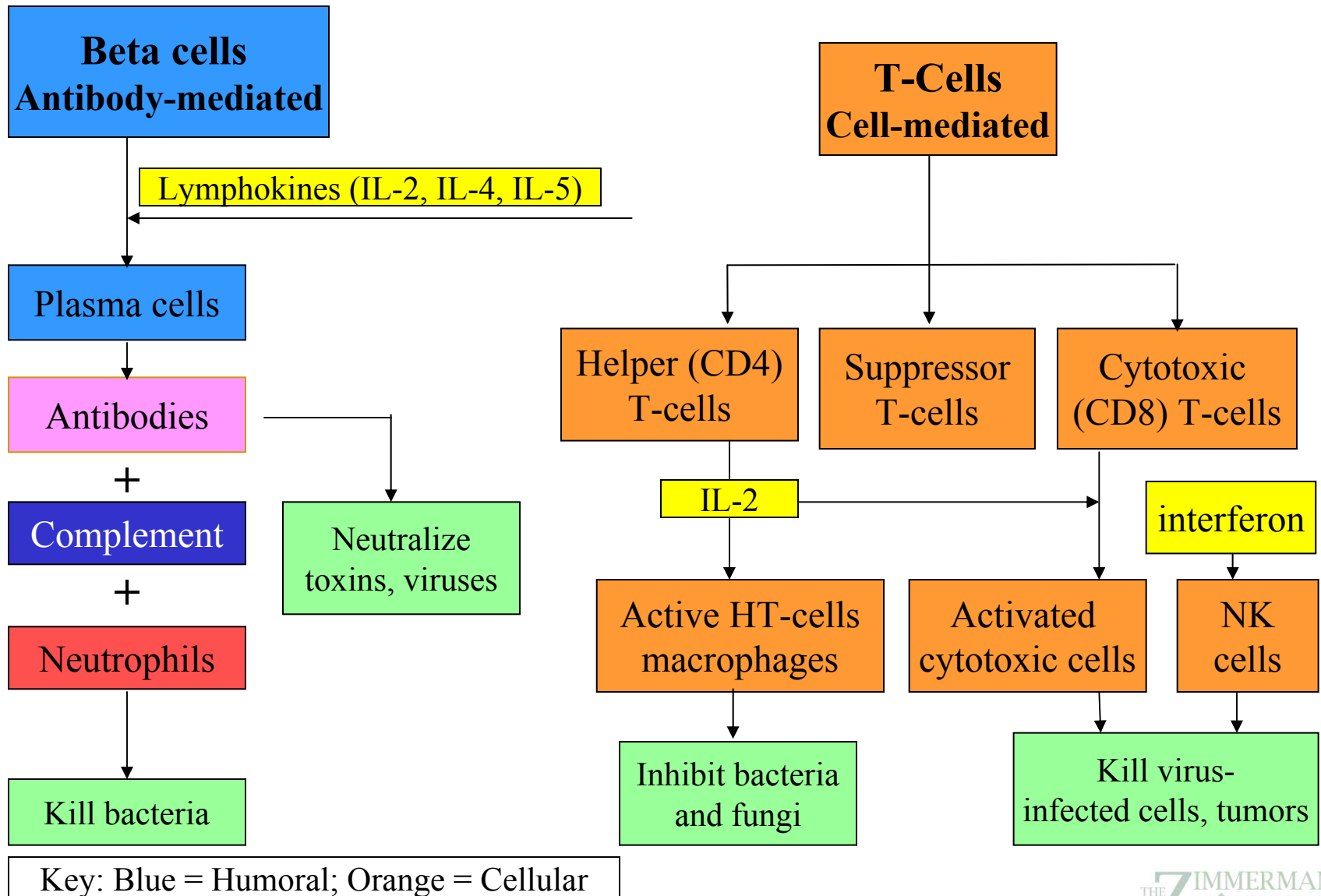
Immune Surveillance

- Macrophages – roving and fixed cells migrate to site of inflammation and release a cascade of activities
 - Phagocytosis (ingest bacteria, viruses, foreign particles)
 - Antigen presentation (ingested antigen pieces activate T-cells)
 - Cytokine production (IL-1, IL-6, TNF) (IL-2 – IL-5, gamma interferon, etc.)
 - Nitric Oxide
- Natural Killer Cells – kill virus-infected and tumor cells that have not been first “tagged” for destruction by antibodies

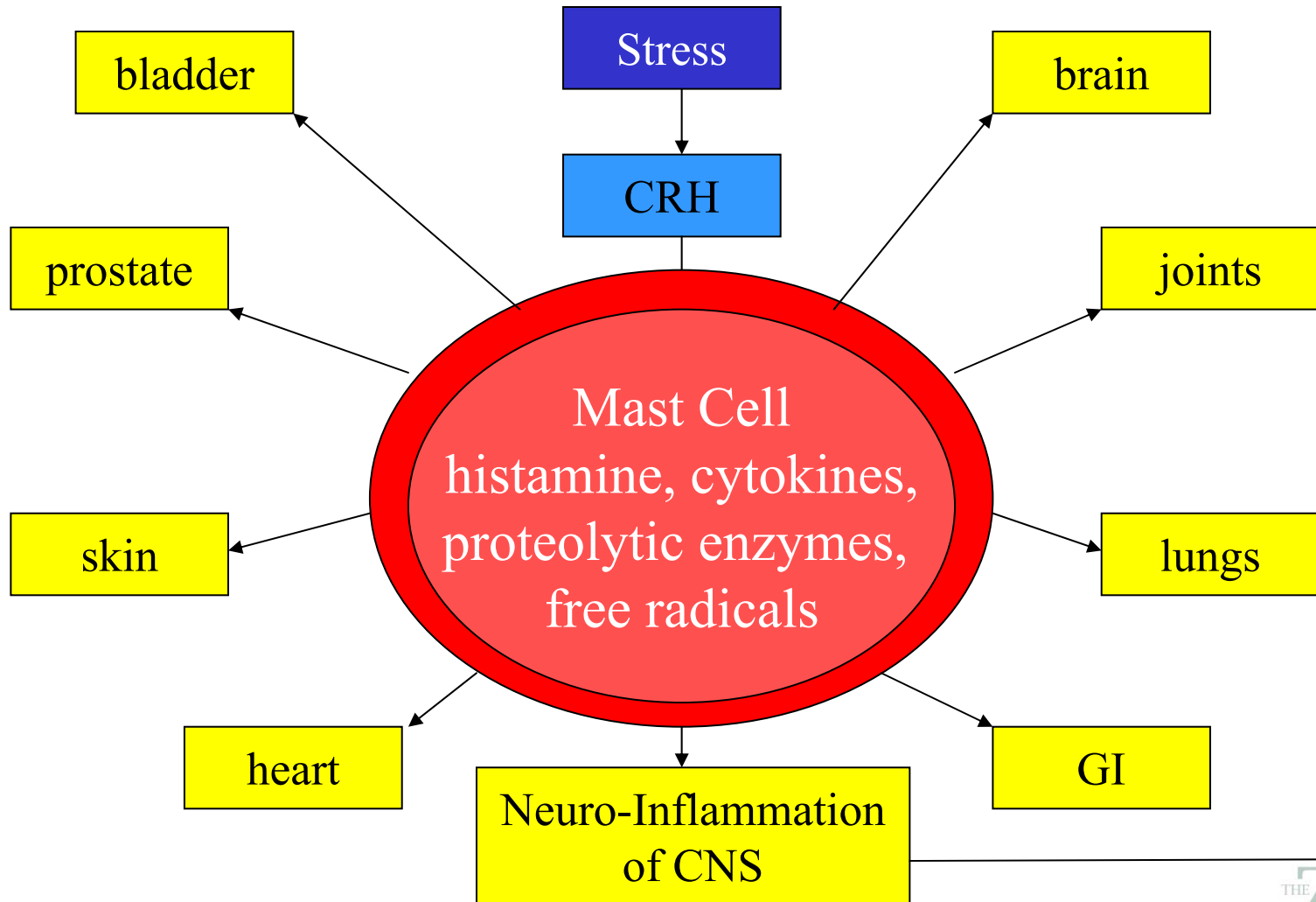
Cells Mediating Immune Response



The Immune Response



Mast Cell Effects



Mast Cells & Neuro-Inflammation

- Asthma (bronchoconstriction)
- Atopic dermatitis (skin vasodilatation, T-cell recruitment, inflammation, itching)
- Cardiovascular disease (coronary inflammation)
- Chronic prostatitis (prostate inflammation)
- Fibromyalgia (muscle inflammation)
- Interstitial cystitis of urinary bladder (inflammation)
- Irritable bowel, food allergies (inflammation, increased bowel permeability)
- Migraines (meningeal vasodilation, and inflammation)
- Multiple sclerosis (increased blood brain permeability, brain inflammation)
- Neurofibromatosis (skin nerve growth, fibrosis)
- Osteoarthritis (articular erosion and inflammation)
- Rheumatoid arthritis (joint inflammation, cartilage erosion)
- Scleroderma (skin inflammation and fibrosis)

Chronic Inflammation, Autoimmunity

- Zinc
- Lipoic acid
- Omega-3 fatty acids
- Medicinal Mushrooms
- Bifidobacteria and Colostrum
- Pomeratrol or Pycnogenol

Zinc

- Methionine amino acid chelated
- Mucosal and GI barrier immunity (with vitamin A)
- Humoral Immunity
 - Antibodies (IgA, IgD, IgE, IgG, and IgM)
 - Cytokine production and action
- Cellular Immunity
 - Thymus and bone marrow proliferation of T and B cells
 - Critical for phagocytic cell activation, chemotaxis
- Autoimmune (with vitamin D, iodine, omega-3s)

Alpha Lipoic Acid & Selenium

- ALA
 - Increases cellular glutathione (GSH)
 - Improves cell viability and protection against radiation
- Selenium
 - GSH is Se^{+2} dependent
 - May reduce cardiac toxicity of Coxsackievirus
 - Reduces oxidative damage to cellular RNA
 - Inhibits progression of viral infection

Essential Fatty Acids

- Omega-6
 - Linoleic acid
 - *Delta-6 desaturase*
 - Gamma-linolenic acid
 - Dihomo-gamma linolenic acid =
 - PGE_1 (**anti-inflammatory**)
Delta-5-desaturase
 - Arachidonic acid (**pro-inflammatory**)
 - Cyclooxygenase PGE_2
 - Lipoxygenase LTB_4
- Omega-3
 - Alpha-linolenic acid
 - *Delta-6 desaturase* (Mg, Zn, B6 needed)
 - Eicosapentaenoic acid
 - *Delta-5-desaturase*
 - Docosahexaenoic acid (**anti-inflammatory**)
 - Cyclooxygenase PGE_3
 - Lipoxygenase LTB_5

Pre- & Probiotics & Colostrum

- Probiotics include Bifidobacteria and Acidophilus
 - Measurable improvements in immunity in 6 weeks
- Prebiotics include Arabinogalactans (*Larix occidentalis*)
 - Promotes growth of friendly bacteria
 - stimulates natural killer cytotoxicity
 - Enhances immune functions and response
 - Activates phagocytes
- Synbiotics are combinations of pre- and probiotics
- Bovine Colostrum
 - first 6 hours after birth only, not transitional milk
 - Cows free from antibiotics, pesticides, synthetic hormones
 - contains immune system priming factors (interferon, gamma globulin, lactoferrin, growth hormone, insulin-like growth factor (IgF-1) and protease inhibitors

Medicinal Mushrooms

- Shiitake (*Lentinus edodes*)
- Maitake (*Grifola Frondosa*)
 - AHCC (activated hexose correlated compounds)
 - Enhance both innate and adaptive immune responses
 - Binds and activates macrophages and neutrophils to increase free radical production and phagocytosis
 - Activates NK cells up to 300-fold, T-cell activity
 - Enhances growth and development of progenitor cells in bone marrow and prolongs their survival
 - Anti-infective agents
 - Stimulates cytokine production
 - May reduce cancer metastases
 - May counter chronic fatigue, fibromyalgia, allergies, asthma

Flavonoids

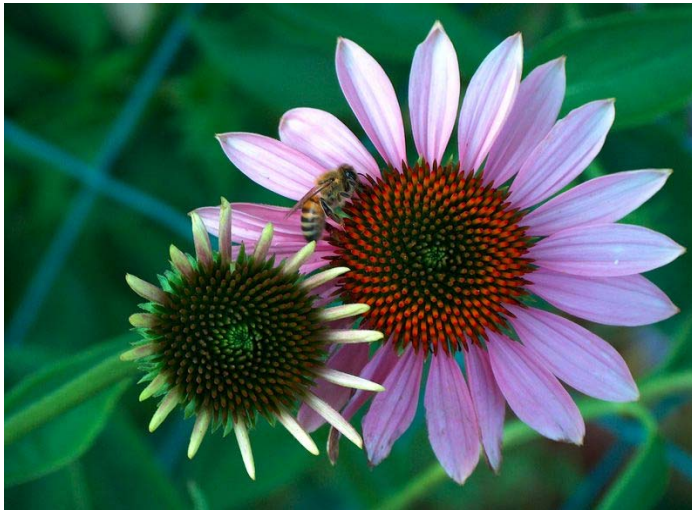
- Naturally occurring polyphenols found in fruits, vegetables, nuts, seeds, herbs, spices and red wine
- 4,000 different flavonoids
- Possess anti-allergic, anti-inflammatory, cytoprotective and anti-carcinogenic activities
- Quercetin interrupts stress-induced neuro-inflammation

Vitamin D₃

- Calcium, phosphorus, magnesium absorption and metabolism in bone health
- Reduces the risk of multiple sclerosis, other autoimmune diseases
- Strengthens the immune system, regulates T-helper and dendritic cell function
- Reduces risk of 17 types of cancer including prostate, colon, bladder, breast, esophageal, gastric, ovarian, rectal, renal, and uterine cancer
- Induces cell differentiation and apoptosis
- May increase immune response to TB by stimulating macrophages
- Reduces metastasis and angiogenesis
- Enhances muscle strength

Acute Inflammation and Infection

Acute Inflammation and Infection



Andrographis

Astragalus

Echinacea

Elderberry

Garlic

Olive leaf, Oregano oil

Andrographis and Elderberry

Andrographis paniculata – Paractin®

- Ayurvedic medicine for infections diseases (tonsillitis, bronchitis, pneumonia, enteritis, dysentery, ear infections)
- Anti-inflammatory
- Respiratory diseases, colds, flu
- Elderberry (*Sambucus nigra*) 50:1 extract
 - Immunomodulating and antioxidant properties
 - Anti-viral by “bending” viral “hooks”
 - Increase cytokine production

Astragalus

- *Astragalus membranaceus* (0.4% hydroxy-methoxyisoflavone)
- Major Chinese Qi tonic herb
- Increases immune response, cellular immunity
- Increases WBC and activates macrophages
- Anti-inflammatory effects
- NK cell activity increased
- Reduces vascular permeability action of NO, histamine and serotonin
- Improves circulation
 - » Tang, W; Eisenbrand, G; Chinese Drugs of Plant Origin

Echinacea

- (*Echinacea purpurea, angustifolia, pallida*)
- Immunomodulatory and immune stimulant activity
- Antitumor and antimycotic activity
- Increases WBC migration, phagocytosis
- Induces cytokine production
- Increases NO production and cytotoxicity of macrophages
- NK cell activity

» Blumenthal, M; ed. ABC Clinical Guide to Herbs 2003

Garlic

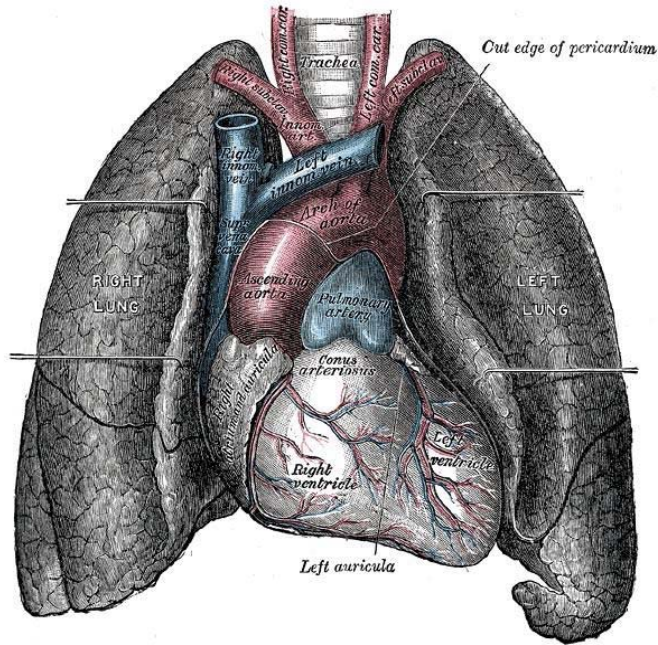
Garlic (Alisure®) *Allium sativum*

- Kills MRSA “super-bug” and other bacteria, including *H. pylori*, *E.coli*, *Salmonella*, *Staph*, *Strep*, *Klebsiella*, *Proteus*, *Bacillus* and *Clostridium*
- Antifungal and anti-mycotoxin activity *Aspergillus*, *Cryptococcus*, *Candida*, *Microsporium*
- Anti-parasitic *Entamoeba histolytica*, *Giardia lamblia*, *leishmania major* *Leptomonas colosoma*, *Crithidia fasciculata*
- Antiviral activity Cytomegalovirus, influenza B, herpes simplex types 1, 2, rhinovirus
- Anti-cancer, reduces nitrosamines
- Stimulates macrophage activity, NK cells, may increase certain cytokines

Olive Leaf and Oregano Oil

- Olive leaf extract (*Olea europaea*) phenolic active in olive leaves, fruit and oil is oleuropein
 - Antimicrobial
 - Antioxidant
- Oregano oil (*Origanum vulgare*) essential oils
 - Antibacterial (*Listeria monocytogenes*)
 - Antioxidant

Allergies and Asthma



- Allergies
 - NAC, quercetin, nettle, Pycnogenol, vitamin C
- Asthma
 - Forskolin, bromelain,

Quercetin

- Inhibits vasoactive leukotrienes, which are intimately involved in inflammation, allergies and asthma
- Inhibits production of pro-inflammatory prostaglandins
- Reduces platelet aggregation, release of inflammatory mediators, thromboxane A₂, serotonin
- Reduces strand breaks in DNA
- Enhances detoxifying activity of GSH
- Modulate activity of WBC, stabilize
- Powerful antioxidant

N-Acetyl Cysteine

- Reduces oxidative stress induced inflammation
 - Reducing transcription factors (NF-kappa B, TNF alpha, IL-1)
 - Increasing anti-inflammatory mediators (IL-2, IL-10)
- Increases GSH levels to fight oxidative stress
- Activates T-cells and NK cells
- Protects liver against hepatotoxins (acetaminophen)
- Anti-cancer
- Anti-mucolytic and expectorant

Vitamin C, Nettles

- Natural vitamin C from Amla (*Phyllanthus emblica*)
 - Reduces symptoms significantly, especially if taken preventively
- Bioflavonoids, rutin, grape seed extract, hesperidin
- Effervescent vitamin C powder with B-vitamins, minerals
- Nettles (*Urtica dioica*) (1.6% silica)
 - Rich in micronutrients, neurotransmitters
 - Allergic rhinitis, hayfever, sinusitis, congestion
 - Anti-inflammatory
 - Eczema, hair and skin tonic
 - Anti-arthritis, anti-rheumatic (gout, tendonitis)

Forskolin and Bromelain

- Forskolin (*Coleus forskohlii*) 10% forskolin
 - Ayurvedic medicine used as a tonic
 - Activates cAMP, reduces inflammation
 - Inhibits histamine release from basophils
 - Induces relaxation in constricted airways, bronchial dilation
 - Stimulates the release of ACTH
 - Stimulates the release of fatty acids from body stores
- Bromelain
 - proteolytic enzyme, cellular debris
 - Anti-infective
 - Anti-inflammatory

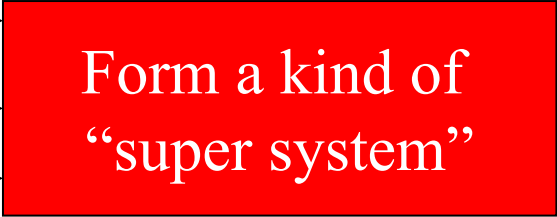
To Sum It All Up

- Stress and Immunity are interconnected

- Neuroendocrine system

- Central nervous system

- Immune system



Form a kind of
“super system”

- Other organ systems

- Metabolic Syndrome

- Cardiovascular Syndrome

- Malabsorption Syndrome

- Hormone Syndrome

- Osteo Syndrome