

Nourishing Our Immune System with Herbs



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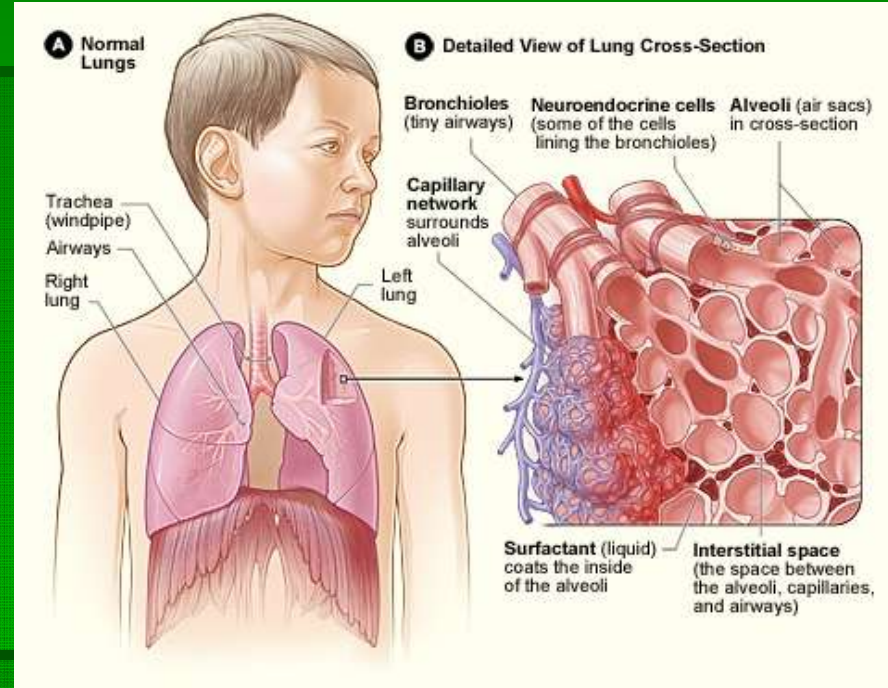
The Conventional “Military” Paradigm

The immune system is a network of cells, tissues, and organs that work together to defend the body against attacks by “foreign” invaders. These are primarily microbes—tiny organisms such as bacteria, parasites, and fungi that can cause infections.

-National Institutes of Health

The Wei Qi

- Our Protective Qi
- Housed in the Lungs, Opening to the Skin
- Our sense of Self
- Emotional patterns of sympathy, grief and sadness
- Winter tends to be cold and dry, diminishing Lung Yin and Wei Qi



Astragalus

Astragalus membranaceus

Sweet, slightly warm



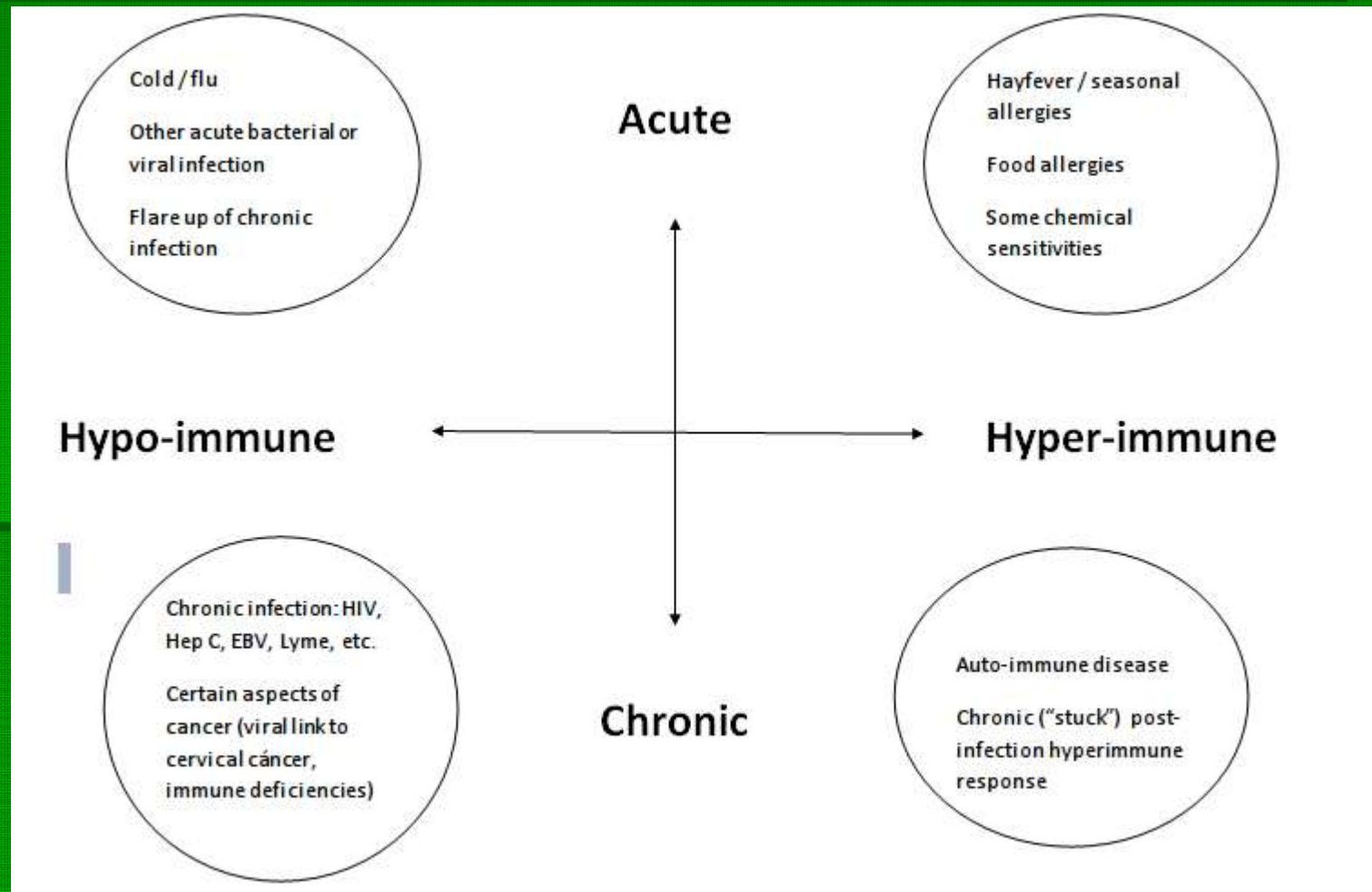
Anatomy/Physiology

The Immune System is not one “system” per se, but rather interacts closely with the nervous, endocrine, and lymphatic systems, as well as the GI tract (gut) and microbiome in general - but also extending to less obvious glands such as salivary and sweat glands.

Major components of Immune System

- Innate vs. Adaptive (Acquired) Immune Response
- white blood cells, macrophages
 - bone marrow
 - thymus
 - lymph
- appendix
- tonsils
- spleen
- skin
- G.I. tract (HCl and flora) and liver
- mucus membranes

Re-establishing Immune System Homeostasis: *a useful paradigm, but only to a point*



Shiitake

Lentinus edodes (syn. Lentinula edodes)

Mildly sweet, neutral



Garlic

Allium sativum

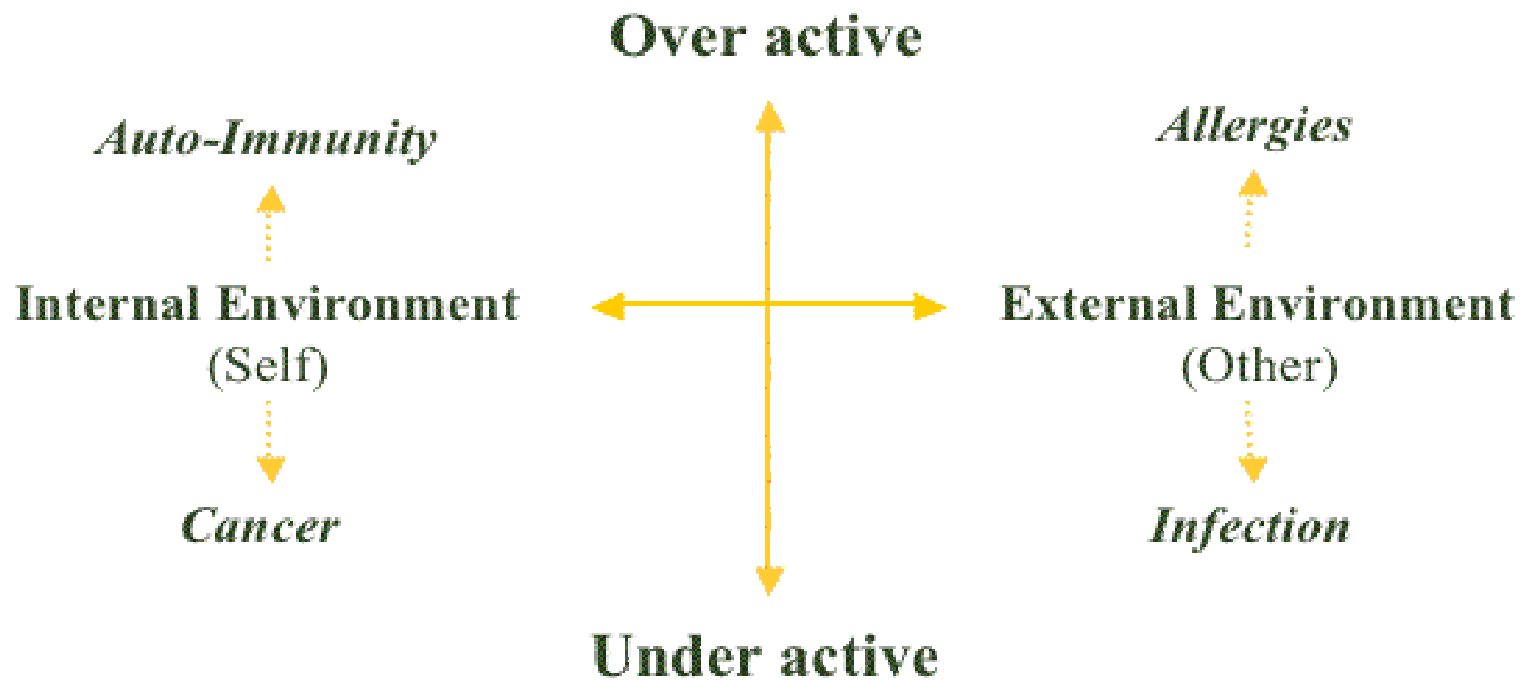
Pungent, warming and drying

“The whole drug has to be taken as it is, as a biological product of nature”

- Rudolf Weiss



Self versus Other: *An Out-Dated Paradigm?*



A good herbalist works with an individual not a condition, taking into account in addition to a biomedical diagnosis or explanation:

- **Constitution**
- **Energetics or tissue states**
- **Comprehensive state of health**
- **Traditional diagnostics**

Energetics

A SAMPLING OF RESPIRATORY ENERGETICS

Richard Mandelbaum RH 2015

Cooling and moistening herbs:

Red Clover
Marshmallow
Ophiopogon / mai men dong

HOT

Lobelia (cooling)
Horehound (cooling)

Cooling and drying herbs:

Sage
Eucalyptus
Wild cherry
Goldenseal / Coptis / barberry
Usnea
Wild lettuce

DRY

Tai zi shen (moistening)

Neutral herbs:

Mullein (mildly cooling)
Coltsfoot (flower is warming)
Elecampane (mildly warming)
Platycodon / balloonflower

DAMP

Thyme (drying)

Warming and moistening herbs:

Licorice
Honey

COLD

Warming and drying herbs:

Garlic
Onion
Osha
Ginger
Horseradish

Honeysuckle; jin yin hua

Lonicera japonica

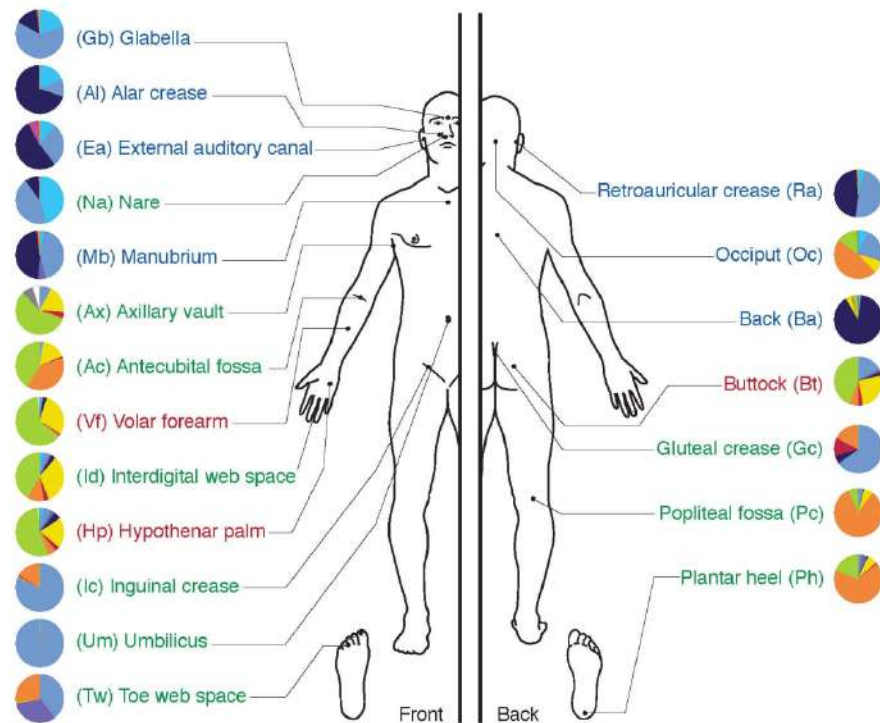
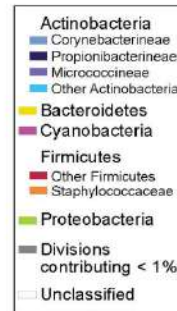
Cold, dry



For a Weakened Resistance: Tonics and Modulators

- Adaptogens: licorice, reishi, ginseng, Eleuthero, Cordyceps, Schisandra, Rhodiola*
- Immune tonics: Astragalus, chaga*
- Immuno-modulators: licorice, reishi, maitake, shiitake, chaga*, turkey tail, Cordyceps
- Respiratory tonics: elecampane, tai zi shen, Schisandra, thyme, marshmallow, mullein, Cordyceps, turkey tail, chaga*, reishi
- ** Avoid using when possible for ecological concerns*

Establishing the Context: The Human Microbiome



Gut microbes can shape responses to cancer immunotherapy

Studies find that species diversity and antibiotics influence cutting-edge treatments.

Heidi Ledford

02 November 2017

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Science/Kimmel Microscopy/DFI

Gut bacteria such as these *Clostridium* could improve a patient's response to cancer immunotherapies.

Cancer immunotherapies unleash the body's immune system to fight cancer, but microbes living in a patient's gut can affect the outcome of those treatments, two research teams have found.

Their studies, published on 2 November in *Science*^{1, 2}, are the latest in a wave of results linking two of the hottest fields in biomedical research: cancer immunotherapy and the role of the body's resident microbes, referred to collectively as the microbiome, in disease.

Elecampane

Inula helenium

Bitter, sweet, pungent, and warming



Establishing the Context: the Human Virome

The notion that all of these things would be harmful to us, of course, is ...just a terrible human fallacy, number one. And number two, the idea that...if you could again, flip that switch, suddenly all the viruses on the planet disappear. The effects, the ripple effects would be so incredibly profound on all of the microorganisms, in the ocean systems, in coral, in sort of soil communities, would be so dramatic...there's every reason to suspect that we would die and probably die out as a species very quickly if we did that.

-Nathan Wolfe, author, The Viral Storm
NPR, October 11, 2012

**An estimated 8% of the
“human” genome is viral
in origin.**

Masayuki Horie, Tomoyuki Honda, Yoshiyuki Suzuki, Yuki Kobayashi, Takuji Daito, Tatsuo Oshida, Kazuyoshi Ikuta, Patric Jern, Takashi Gojobori, John M. Coffin & Keizo Tomonaga. *Endogenous non-retroviral RNA virus elements in mammalian genomes*. *Nature*, 2010; 463 (7277): 84 DOI: [10.1038/nature08695](https://doi.org/10.1038/nature08695)

Ancient retroviral incorporation into our DNA is now being identified as crucial in the development of our nervous system function and consciousness, and our innate immune system function.

Pastuzyn , et al., The Neuronal Gene Arc Encodes a Repurposed Retrotransposon Gag Protein that Mediates Intercellular RNA Transfer, Cell, Jan 11, 2018 DOI: <https://doi.org/10.1016/j.cell.2017.12.024>

Edward B. Chuong, Nels C. Elde*,†, Cédric Feschotte*, Regulatory evolution of innate immunity through co-option of endogenous retroviruses, Science 04 Mar 2016:Vol. 351, Issue 6277, pp. 1083-1087 DOI: 10.1126/science.aad5497

The “Macrobiome”



The Microbiome of Echinacea plants may account for a large degree of its potency!



Activities and Prevalence of Proteobacteria Members Colonizing
Echinacea purpurea Fully Account for Macrophage Activation
Exhibited by Extracts of this Botanical, *Planta Med.* 2016 September ; 82(14):
1258–1265. doi:10.1055/s-0042-108590

Germ versus Terrain Theory

Terrain = Strong Underlying
Immune Function

The Lungs are Prone to Dryness (Yin Depletion)

Low ambient humidity impairs barrier function and innate resistance against influenza infection

Eriko Kudo, Eric Song,  Laura J. Yockey, Tasfia Rakib, Patrick W. Wong, Robert J. Homer, and  Akiko Iwasaki

PNAS May 28, 2019 116 (22) 10905-10910; first published May 13, 2019; <https://doi.org/10.1073/pnas.1902840116>

Contributed by Akiko Iwasaki, April 4, 2019 (sent for review February 19, 2019; reviewed by Gabriel Núñez and Peter Palese)

Check for updates

“The researchers found that low humidity hindered the immune response...in three ways. It prevented cilia...from removing viral particles and mucus. It also reduced the ability of airway cells to repair damage caused by the virus in the lungs. The third mechanism involved interferons... In the low-humidity environment, this innate immune defense system failed.”

<https://news.yale.edu/2019/05/13/flu-virus-best-friend-low-humidity>

Licorice

Glycyrrhiza glabra, G.uralensis

Mildly warming and moistening



Licorice should be avoided by people with hypertension or edema / fluid retention

Contributing Factors to an Imbalanced Immune System

- Dysbiosis / Hyper-permeability / other GI imbalances (incl. antibiotic use esp. in early life)
- Impaired hepatic function
- Poor nutrition
- Pollutants
- Chronic Stress
- Sleep deprivation
- Social isolation
- Lack of adequate physical activity
- Chronic pain or other illness
- Suboptimal liver function
- Lack of natural exposure (“hygiene theory”) and alienation from our natural world – biodiversity deficiency

Nutrients and foods specific to Immune Function

- **Vitamin C**
- **Vitamin D**
- **Zinc**

Also:

- Antioxidants
- Carotenoids
- Bioflavonoids
- Selenium
- Omega 3 fatty acids
- Sulfur compounds (Brassicas, Alliums)
- Probiotic and prebiotic foods
- Bitters and digestives
- Raw honey

Pine
Pinus spp.
Pungent, bitter



Vitamin D and Covid: ***emerging evidence***

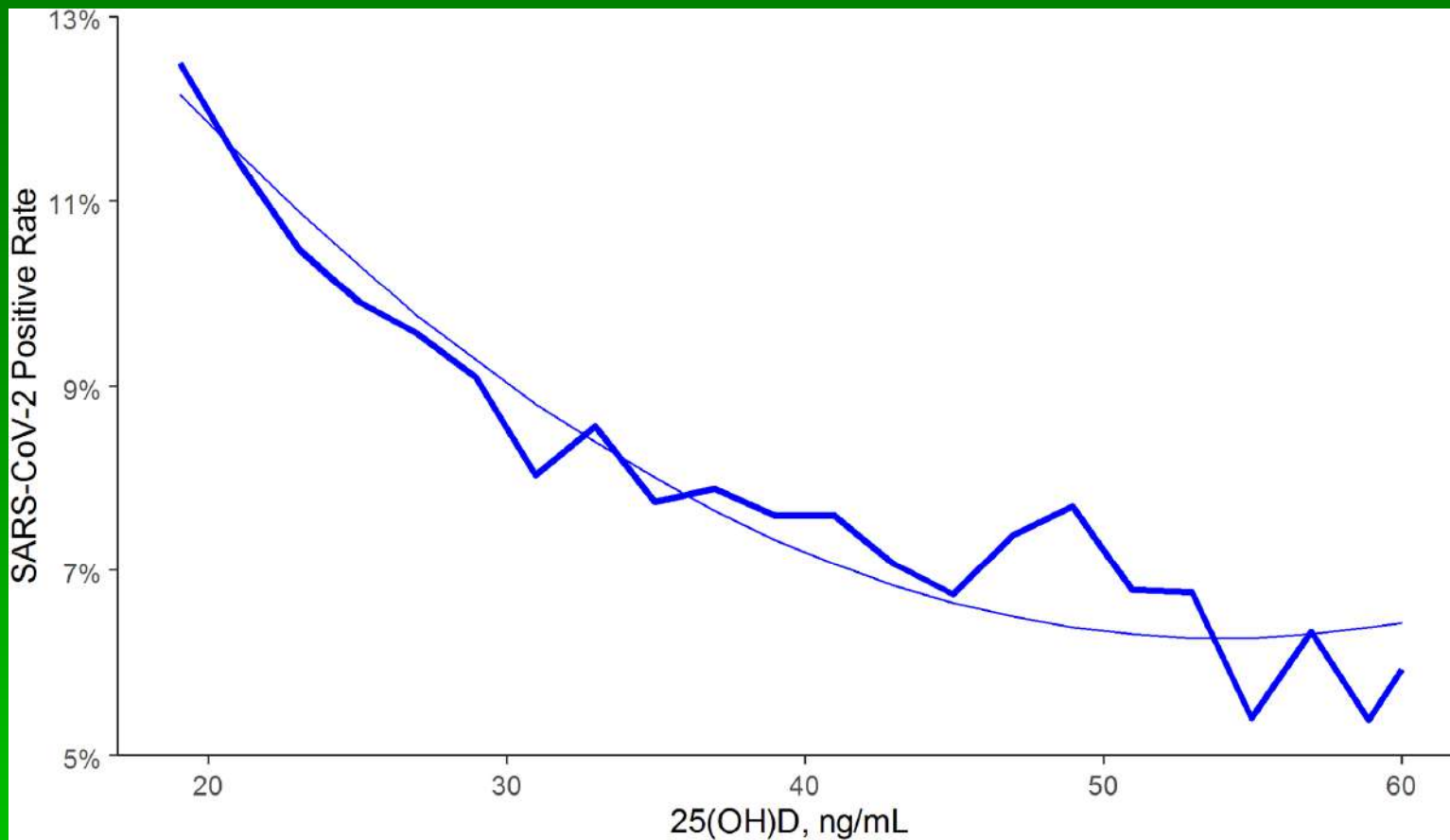
There are now multiple studies conducted by different research teams, in various countries (Iran, U.S.A., Israel, Spain) showing a strong correlation between Vitamin D deficiency and rate of infection but more so severity of Covid-19 cases (such as hospitalization rates).

*More Evidence That
Vitamin D Sufficiency
Equals Less Severe
COVID-19, Medscape
News, 9/30/2020*

<https://www.medscape.com/viewarticle/938303>

“Vitamin D...is known to regulate innate and adaptive immunity in ways that might reduce the viral load in patients exposed to SARS-CoV-2 and mitigate the severity and consequences of cytokine storm.”

There is still more to be studied regarding causation vs. correlation.



SARS-CoV-2 positivity rates associated with circulating 25-hydroxyvitamin D levels

Published: September 17, 2020

<https://doi.org/10.1371/journal.pone.0239252>

Medicinal Mushrooms



- Medicinal mushrooms, but mainly *Cordyceps*, *Ganoderma*, and *Trametes*, have long been used as Lung tonics for recovering from chronic illness and convalescence.
- To strengthen the Lungs, for coughing and wheezing, and to dispel phlegm caused by Cold, including asthma and dyspnea, dry cough, hemoptysis, tuberculosis, chronic bronchitis, pneumonia and COPD
- Useful in lung cancer protocols
- Dietary source of ergosterol (proVitamin D), macro- and trace minerals: Mg, Zn, Se etc., and amino acids

Reishi

Ganoderma lucidum, Ganoderma spp.

Bitter, warm

Lifts the Spirit, Calms the Mind



Herbal Approaches to Immune System Imbalances: Re-establishing Immune System Homeostasis

Chronic

Immuno-modulators

Adaptogens

Nervines

vs.

Acute

Immune stimulants

(infections)

Antivirals

Antimicrobials

Diaphoretics

*Deficiency**

Immuno-modulators

Adaptogens and nervines

Immune stimulants

Immune tonics (builders)

vs.

*Excess**

Immuno-modulators

Adaptogens

Anti-inflammatories

Addressing Acute Infections (and flare ups)

*Setting aside the
nourishing tonics and
Releasing the Exterior*



Addressing Acute infections

Holistic approaches mean to support the body's immune response rather than to fight it.

Address the individual pattern – address the person not the illness.

- Immune boosters/stimulants
- Antibacterial and antiviral herbs as indicated
- Expectorants / antitussives
- Diaphoretics and sudorifics
- Plus: nervines, anodynes, lymphatics, digestive tonics

Echinacea

Echinacea purpurea, Echinacea angustifolia, Echinacea spp.

Pungent, bitter, cooling and drying



Elder

Sambucus canadensis, S. nigra

Gently cooling and moistening



Medicine Chest for winter colds/flu/bronchitis etc.

- Immune nourishing herbs if needed
- Echinacea
- Boneset
- Elder
- Ginger
- Osha*
- Honeysuckle
- Elecampane
- Pine
- Thyme
- Sage
- Barberry / goldenseal* / Coptis
- Garlic
- Honey and propolis
- Licorice
- Umckaloabo

Propolis / Honey

Warming and moistening



Ginger

Zingiber officinale

Hot and dry



Goldenseal

Hydrastis canadensis

Bitter, cold and dry

At risk: use cultivated herb only and consider using barberry (below right) or other substitutes



Thyme

Thymus spp.

Pungent, drying, and warming



Summary: Major Herbs for the Immune system

- Adaptogens: Ginseng, Licorice, Codonopsis, Ashwagandha, Reishi, Cordyceps, Holy Basil, Schisandra, Rhodiola*
- Immunomodulators – normalizers: Reishi, Shiitake, Maitake, Turkey tail, Licorice
- Immune tonics/builders: Astragalus, Chaga*
- Immune stimulants: Echinacea, Boneset, Spilanthes, Elder, Osha, Thuja
- Diaphoretics: Yarrow, Boneset, Elder flower
- Antimicrobials:
 - Antifungals / Antibacterials
 - Black walnut, Garlic, Usnea, Barberry, Elecampane, Goldenseal, Tea tree, Neem, Propolis, Wild Indigo, Umckaloabo
 - Antivirals Licorice, Honeysuckle, Elder, Lemon balm, Isatis (woad), St Johnswort, Thuja, Hyssop, Basil



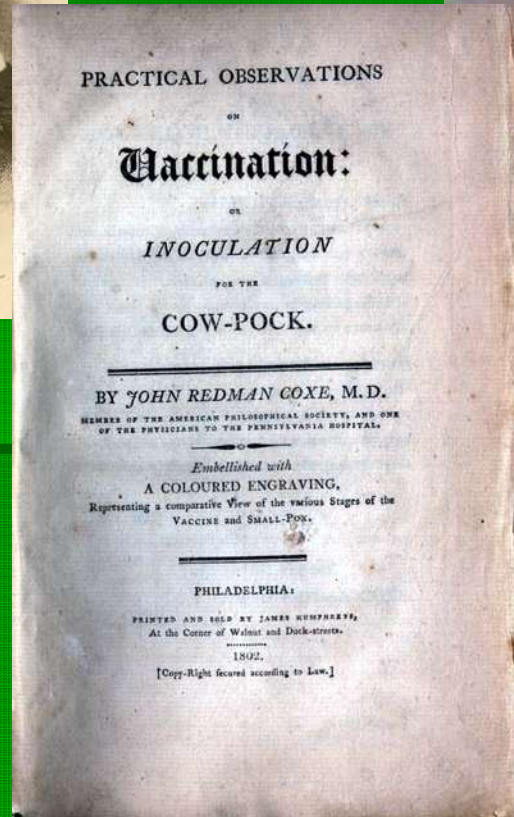
thank you

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Immunization and Vaccines



Autoimmune Disease



Some of the more common recognized autoimmune diseases

- Alopecia areata
- Diabetes (type 1)
- Graves' disease
- Guillain-Barré syndrome
- Multiple Sclerosis
- Pernicious anemia
- Psoriasis
- Rheumatoid Arthritis
- Scleroderma
- Sjögren's syndrome
- Systemic Lupus Erythematosus
- Hashimoto's thyroiditis
- Vitiligo

Cancer and Herbal Remedies *outside the scope of today's class*



Allergy

Allergies of all kinds (food, drug, environmental, etc.) have been increasing dramatically since the early 1980s (doubled over past 20 years).

Approximately one in five Americans suffer from allergies of one kind or another.

40 million Americans suffer from seasonal allergies / hay fever.

Allergic Asthma

Schisandra chinensis

warming, drying



Ginkgo biloba

neutral (midly cooling and drying)



Lobelia

Lobelia inflata
acrid, bitter,
mildly cooling



Seasonal Allergies

- Allergens, pollen, mold, dust mites, etc. trigger antibody production
- Upon exposure, Mast cells lining the mucous membranes initiate inflammatory response in mucosal lining (including histamine)
- Cross-reactivity can then develop



Importance of Distinguishing Allergic Rhinitis from Colds and Flu

Allergic rhinitis:

Clear thin watery
mucus discharge

Congestion, wheezing

Rarely fever or muscle
ache

Can be sudden onset
of symptoms, lasting
as long as exposure
continues.

Cold:

Thick, yellow/green
mucus discharge

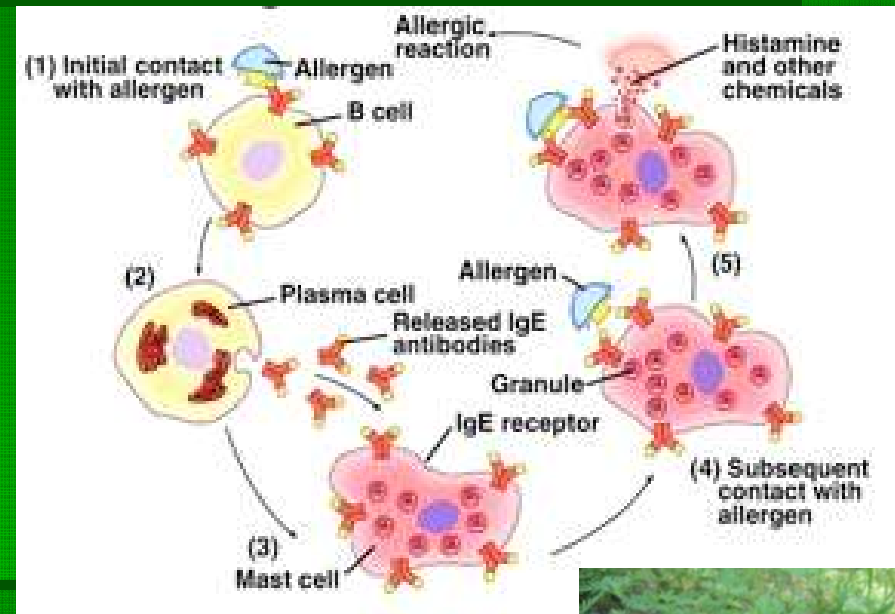
Sneezing

Fever, weakness,
fatigue

Incubation period of 1-
3 days, generally
seasonal; lasting 5-7
days.

Hyperimmune response leading to chronic inflammation

- Allergens, in this case mainly pollen, trigger antibody production
- Upon exposure, Mast cells lining the mucous membranes initiate inflammatory response in mucosal lining (including histamine)
- Cross-reactivity can then develop



Contributing Factors to Seasonal Allergies

- Micro- and microbiome imbalance
- Hyper-permeability / dysbiosis / GI imbalances
- Inflammatory diet
- Food triggers
- Poor nutrition
- Pollutants
- Impaired hepatic function; hepatic congestion
- Stress
- Intestinal permeability
- Adrenal insufficiency
- Genetic disposition

Herbal Approaches to Allergies

- Immuno-modulators
- Anti-inflammatorys
- Decongestants

Plus:

- Nervines
- Adaptogens and adrenal tonics
- Hepatics

Key Herbs for Seasonal Allergies

- Reishi
- Licorice
- Turmeric

- Eyebright: anti-allergic, antihistamine, anti-inflammatory, decongestant, expectorant, astringent



Key Herbs for Seasonal Allergies and Hay Fever



- Nettle: antihistamine, anti-inflammatory, nutritive, alterative, astringent to MM



- Butterbur (PA free) Anti-allergic, antihistamine, expectorant, antitussive, antispasmodic, analgesic

Additional helpful herbs for seasonal allergies

Licorice

Goldenseal or Coptis

Hyssop

Dandelion root, gentian, artichoke leaf

Astragalus

Other medicinal mushrooms: shiitake, maitake

Huang qin (*Scutellaria baicalensis*)

Bupleurum

Elderberry

Green tea

Herbal steam inhalations or nasal irrigation (neti)

Specific remedies for asthma:

Khella

Schisandra

Ginkgo

The image features a painting of a flowering branch, likely an almond tree, set against a vibrant blue background. The painting is characterized by visible brushstrokes and a rich, textured appearance. A green grid is overlaid on the painting, with a prominent vertical line on the left side. The text "thank you" is written in a white, italicized, sans-serif font across the center of the image.

thank you

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