

How to deal with COVID – 19??

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Abstract

This document presents a comprehensive approach to managing COVID-19, focusing on both naturopathic and conventional treatments. It highlights lifestyle habits that support immune function, including proper sleep, physical activity, stress management, and preventive measures such as social distancing and mask-wearing. Dietary recommendations emphasize reducing systemic hyperinflammation through a Mediterranean diet, avoiding processed foods, intermittent fasting, and optimizing the ratio of omega-3 to omega-6 fatty acids. Key nutrients such as vitamin D, selenium, zinc, and vitamin C are identified as crucial for immunity. The document also explores immunomodulators like ashwagandha, astragalus, and Siberian ginseng for preventing immunosuppression in early COVID-19 stages. Potential antiviral agents, including quercetin, Andrographis, licorice, garlic, turmeric, and green tea, are reviewed for their efficacy against COVID-19. The role of probiotics in improving gut health and enhancing immune responses is also discussed. In addition to naturopathic methods, conventional treatments such as antiviral drugs (remdesivir, favipiravir), corticosteroids (dexamethasone, prednisone), and immune-based therapy (convalescent plasma) are included. The document categorizes COVID-19 symptoms from common (fever, cough, fatigue) to serious (hypoxia, respiratory distress, chest pain) and outlines differential diagnoses for similar conditions. The pathogenesis of COVID-19 is divided into three stages: early infection (Stage I), pulmonary involvement (Stage II), and systemic hyperinflammation (Stage III, cytokine storm), with a detailed discussion on cytokine activity and inflammatory biomarkers. Lastly, diagnostic methods such as molecular PCR tests via nasal and throat swabs are outlined. This document serves as a comprehensive guide for understanding COVID-19 from a holistic perspective, integrating both natural and medical approaches to prevention, treatment, and management.

Keywords: COVID-19, naturopathic treatment, immunity, antivirals, cytokine storm, inflammation, diagnostics

Summary

A possible naturopathic approach to treating COVID

- Lifestyle habits to support immune function
- Diet to reduce systemic hyperinflammation
- Ensure adequate nutrients involved in immunity
- Immunomodulators in early-stage to prevent immuno-suppression
- Antivirals with potential against covid

- Improve gut flora

Naturopathic Treatments:

LIFESTYLE HABITS TO SUPPORT IMMUNE FUNCTION

- Improve sleep quality
- Remain physically active
- Practice social distancing
- Wash hands frequently
- Wear a mask
- Manage stress

DIET TO REDUCE SYSTEMIC HYPERINFLAMMATION

- Mediterranean diet
- Include lots of fruits and vegetables
- Avoid processed foods
- Limit intake of refined sugar (dessert, soda, candy, etc)
- Do not over-eat
- No snacking after dinner
- Intermittent fasting (12-16 hours a day)
- increase omega-3 to omega-6 fatty acids (avoid omega-6 rich "vegetable oils" including corn oil, soybean oil, cottonseed oil) & increase omega-3s (fish oil, flax, walnuts, chia)

ENSURE ADEQUATE NUTRIENTS INVOLVED IN IMMUNITY

- vitamin D (perhaps one of the most important treatments)
- selenium
- zinc
- vitamin C

IMMUNOMODULATORS IN THE EARLY STAGE TO PREVENT IMMUNO-SUPPRESSION

- ashwagandha (*Withania somnifera*)
- Siberian ginseng (*Eleutherococcus senticosus*)
- astragalus (*Astragalus propinquus*; *Astragalus membranaceus*)
- cat's claw (*Uncaria tomentosa*)

ANTIVIRALS WITH POTENTIAL AGAINST COVID

- quercetin
- andrographis (*Andrographis paniculata*)
- licorice (*Glycyrrhiza glabra*)

- garlic (Allium sativum)
- black seed (Nigella sativa)
- Sweet Annie (Artemisia annua)
- lemon balm (Melissa officinalis)
- turmeric (Curcuma longa)
- St. John's Wort (Hypericum perforatum)
- green tea (Camellia sinensis)
- Chinese rhubarb (Rheum palmatum)
- feverfew (Tanacetum parthenium)
- Chinese skullcap (Scutellaria baicalensis)
- ginger (Zingiber officinale)
- oregano oil
- garden angelica (Angelica archangelica)
- neem (Azadirachta indica)
- marijuana (Cannabis sativa)
- bee propolis
- honey

IMPROVE GUT FLORA

- probiotics - the following are associated with improved immune health:
 - *Faecalibacterium prausnitzii*
 - *Eubacterium rectale*
 - *Bifidobacteria*
 - *Lactobacillus paracasei*
 - *Lactobacillus plantarum*
 - *Lactobacillus rhamnosus*

Conventional Treatments:

Antiviral drugs

- remdesivir
- favipiravir
- merimepodib

Corticosteroid

- Dexamethasone - best choice for severe cases
- prednisone
- methylprednisolone

- hydrocortisone

Immune-based therapy

- convalescent plasma

Signs & Symptoms:

COMMON

- fever
- dry cough
- fatigue

LESS COMMON

- body pain
- sore throat
- diarrhea
- conjunctivitis
- headache
- loss of taste or smell
- rash

SERIOUS SYMPTOMS

- hypoxia
- difficulty breathing
- shortness of breath
- chest pain or pressure

Differential Diagnosis (DDx)

- common cold
- influenza
- other viruses (chikungunya, zika virus, mononucleosis, cytomegalovirus)
- pulmonary embolism
- congestive heart failure
- pericarditis
- vasculitis
- chronic obstructive pulmonary disease (COPD)

Pathogenesis:

STAGE I (MILD)—EARLY INFECTION

- virus binds ACE2 receptor to attach themselves to cells
- virus releases viral RNA into the host cell
- the infection usually presents with mild respiratory and systemic symptoms
- mild immunosuppression & CBC may reveal lymphopenia and neutropenia

Note: ACE2 receptor is found on many cells in the body, including

- type II alveolar
- oral mucosal
- nasal epithelial cells
- cornea
- heart
- kidneys

STAGE II (MODERATE)—PULMONARY INVOLVEMENT & POSSIBLE HYPOXIA

- viral multiplication and localized inflammation in the lung leading to viral pneumonia
- localized inflammation in the lungs may affect gas exchange, leading to hypoxia

STAGE III (SEVERE)—SYSTEMIC HYPERINFLAMMATION "CYTOKINE STORM"

- extrapulmonary systemic hyperinflammation syndrome occurs in a minority of patients
- elevation of cytokines and biomarkers including IL-2, IL-6, IL-7, granulocyte colony-stimulating factor, macrophage inflammatory protein 1- α , tumor necrosis factor- α , C-reactive protein, ferritin, and D-dimer
- may lead to shock, vasoplegia, respiratory failure, and even cardiopulmonary collapse

Diagnostics

Nasal swabs & throat swabs - molecular tests (PCR tests, viral RNA tests, nucleic acid tests)

