Standard Process
WHOLE FOOD NUTRIENT SOLUTIONS

Nutritional Support Protocol

Support for Upper Respiratory Tract Immune Function

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

Upper Respiratory Tract Physiology

The major structures of the upper respiratory tract include the nasal cavity and nostrils, the mouth, the pharynx, and the larynx. The upper respiratory tract warms and humidifies ambient air. It also filters inhaled pathogens, allergens, and debris from the external environment.

The upper respiratory tract plays a protective role for the lungs and lower respiratory system where pathogen colonization can result in more severe symptoms and deeper-rooted pathology. Goblet cells of the upper respiratory tract secrete mucus as a first line of defense against pathogens, while respiratory cilia clear inhaled particles and foreign matter via mucociliary clearance. Secretory immunoglobulin A is the major immunoglobulin found in mucosal secretions and helps to inhibit the adherence of pathogens to the respiratory epithelium. Innate immune cells respond to foreign invaders by neutralizing and killing infectious agents, mediating inflammation, and directly interacting with the acquired immune system.

Common upper respiratory system pathogens include rhinovirus, adenovirus, coronavirus, and parainfluenza virus. In the presence of an upper respiratory pathogen, parasympathetic neural pathways coordinate local responses by dilating capillaries of the nasal passages causing edema and drainage, as well as activating the mucus glands to increase discharge.

Nutritional and lifestyle interventions can support respiratory tract function, healthy mucus membranes, and immune system response to respiratory pathogens.

Supportive Lifestyle Practices

- Recommend gentle-to-moderate exercise, which has been shown to improve outcomes following respiratory viral infections. Exercise increases secretory IgA levels and promotes the shift from a Th1 to a Th2 immune response, driving the secretion of anti-inflammatory cytokines.[1] Patients should be cautious about engaging in intensive, long-duration exercise which can lead to immunosuppression.
- Counsel patients on the importance of sleep duration and quality. Sleep plays a key regulatory role in immune system function. Sleep deprivation has been shown to diminish the immune response including a reduction in T-cell proliferation and natural killer cell cytotoxicity.[2]

Whole Foods Nutritional Recommendations

- Recommend the use of cayenne pepper while cooking. Bioactive compounds in cayenne can support healthy nasal mucosa through the modulation of cytokines, balanced viral activity, and vasodilation.[3-4]
- Encourage adding zinc-rich foods such as pumpkin seeds, oysters, crab, nuts, and beef. Zinc can support viral and bacterial immune processes. Zinc also impacts the activity of cytokines, mucociliary clearance, and barrier function of the respiratory epithelium.[5]
- Recommend consuming foods rich in preformed or provitamin A such as carrots, squash, liver, fish, eggs, and dairy products. Vitamin A modulates immune function and supports the health of the upper respiratory epithelium and mucus membranes.[6]

Dietary Supplement Regimen

Immuplex®

Suggested Use: **2 capsules per meal**

Immuplex® is a daily supplement that supports a healthy immune system response. It contains a blend of micronutrients, minerals, and specialized extracts.*

- Supports a healthy immune system response function*
- Helps maintain normal white blood cell activity already within a normal range*
- Contains Protomorphogen™ & Cytosol™ extracts
- Supports the body's normal inflammatory response function*
- Provides ingredients with antioxidant activity*
- Excellent source of zinc, iron, copper, chromium, folate and vitamins A, B_6, and B_{12} and antioxidant vitamins C and E
- Good source of selenium

Congaplex®

Suggested Use: **3 capsules per meal**

Congaplex® is used for support of the immune system.*

- Supports healthy immune system response function*
- Supports the thymus gland*
- Contains a combination of key ingredients from Cataplex® A-C, Thymex®, Calcium Lactate®, and Ribonucleic Acid (RNA)
- Excellent source of antioxidant vitamin A

Sinus Forte

Suggested Use: **1 tablet 3-4 times daily**

Sinus Forte contains Eyebright, Golden Rod, Echinacea, Golden Seal, and Cayenne. These herbs have been traditionally used in herbal preparations to:

- Maintain healthy and normal mucus secretion in nasal passages*
- Support healthy mucous membranes (particularly of the nose and sinus)*
- Assist in maintaining healthy breathing passages to support normal breathing*

Andrographis Complex

Suggested Use: **1 tablet 2-4 times daily**

Andrographis Complex contains Andrographis, Echinacea and Holy Basil. These herbs have been traditionally used in herbal preparations to:

- Help maintain healthy immune system function*
- Support healthy respiratory system function*
- Support and maintain normal body temperature already in a normal range*
- Support healthy immune system response during seasonal stresses*

Assessment of Upper Respiratory Tract Health

In Office/Physical Exam

- Lab Studies: complete blood count with differential (CBC), comprehensive metabolic panel (CMP), c-reactive protein (CRP)
- Physical Exam: vital signs, assess upper respiratory mucus membranes (ears, eyes, nose, throat), auscultate lungs, palpate lymph nodes
- Signs/Symptoms such as injected oropharynx, lymphadenopathy, cough, rhinorrhea, catarrh, fever, facial pain, nasal congestion, sore throat, myalgia
- In-Office Testing: Rapid Strep Test

REFERENCES

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2. Robinson, C. H., et al (2021). Family practice, 38(6), 802–810.
3. Batiha, G. E., et al. (2020). International journal of molecular sciences, 21(15), 5179.
4. Toukan, N., et al (2022). Respiratory medicine, 194, 106772.
5. Skalny, A. V., et al. (2020). International journal of molecular medicine, 46(1), 17–26
6. Vit a Huang, Z., et al (2018). Journal of clinical medicine, 7(9), 258.

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*These statements have not been evaluated by the Food and Drug Administration These products are not intended to diagnose, treat, cure, or prevent any disease.

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