



Naturopathy and Yoga as a Preventive and Adjuvant Measure to Manage Covid-19

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COVID 19 is a new disease caused by a newly identified single-stranded, positive-sense RNA corona virus called SARS-CoV-2 in Wuhan Province, China. The 2019 novel corona virus is related to SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome) corona viruses. Signs and symptoms of COVID 19 infection include flu-like symptoms that worsen to fever, cough, shortness of breath, runny or stuff nose, aches and painful condition, diarrhea, and sore throat. Some patients infected with the virus have no symptoms. The data till 2nd of May indicates 26,167 active cases, 9,950 cases are either cured or discharged from hospitals and the death toll is 1,218 as per mygov.in website. There is no specific antiviral drug or vaccine to treat infected individuals till date. Treatment is supportive in nature, and it may be necessary for a medical

professional to administer treatments in a hospital. Complications may include high fever, severe cough, difficulty breathing, pneumonia, organ failure and death.

Evidence clearly shows that stigma and fear of communicable diseases will decrease the response of cure. Best way to manage the current COVID 19 crisis is by adhering to the guidelines from the government official sources to limit the transmission of virus, optimizing the immune function by modifying the lifestyle factors. Further to implement Naturopathy and Yoga treatment modalities as an adjuvant therapy to modulate cellular defense and repair mechanisms and to modulate viral induced pathological cellular processes. Further more, showing empathy with those affected, understanding the disease, and adopting effective and practical measures so that



people could keep themselves and their loved ones safe. Misconceptions, rumors and misinformation can contribute to stigma and discrimination which may hamper response efforts. Correction of misconceptions by acknowledging the fact that people's feelings and subsequent behavior are real, even if the underlying assumption is false. To promote the importance of prevention, lifesaving actions, early screening and treatment are essential. As there are no drugs or vaccines to treat this condition, improving the immunity of an individual is very much essential at the present scenario.

Naturopathy and Yoga system of Indian Medicine is evidence based system to improve the immunity of an individual, thereby it acts as a preventive and supportive measures to treat COVID 19. Naturopathic dietetics, Yoga therapy, cultivating / reinforcing positive attitude, heliotherapy, hydrotherapy, acupuncture / acupressure and magneto therapy are beneficial to treat or prevent COVID 19. Also, general hygiene and sanitation measures are important in the prevention of COVID 19.

NATUROPATHIC DIETETICS

Dietary factors that depress immune function include nutrient deficiency, excess consumption of sugar, consumption of allergenic foods and high cholesterol levels in the blood. Dietary factors that enhance immune function include all essential nutrients, antioxidants, carotenoids and flavonoids. Some of the spices, herbs and fruits which improve immunity are explained below.

Courtesy : www.thestatesman.com;
learningherbs.com; Karpooravalli-
www.herbalcart.in; blogs.nicholas.duke.edu;



www.ndtv.com; htv.com.pk; Peppermint-
www.webmd.com

SPICES

GARLIC

Allicin present in garlic has anti-viral property. Allicin is found to be the best virucidal agent. Extensive research has shown that garlic has many immune-potentiating properties as it contains volatile factors composed of sulphur containing compounds: allicin, diallyldisulphide, diallyltrisulphide and others. Allicin stimulates enhanced cell-mediated cytotoxicity in human peripheral mononuclear cells. Garlic has been shown to enhance the pathogen-attacking activity of T cells, neutrophils and macrophages which increase the secretion of interleukin and natural killer cell activity. Garlic also acts as an expectorant.

TURMERIC

Turmeric contains curcumin as its anti-oxidant which is very effective in reducing inflammation and it is antimicrobial in nature.



GINGER

The pungent principles of ginger, namely gingerol and its derivatives are the most pharmacologically active components of ginger. Various components of ginger have been shown to be potent inhibitors of prostaglandin and leukotriene synthesis through blocking of the cyclooxygenase enzymes. Also, the pungent principles of ginger possess antimicrobial activity.



FRUITS RICH IN VITAMIN C

PINEAPPLE

Bromelain is present in pineapple. It is a sulphur containing enzyme and has endoproteolytic and catalytic activity and predominantly splits peptides, amides and other ester bonds involving lysine, alanine, tyrosine, glycine and other basic amino acids. Bromelain's efficacy in treating respiratory tract diseases seems to be due to its mucolytic activity. It reduces sputum viscosity and possesses an antitussive effect (to prevent or relieve cough).

OTHER FRUITS RICH IN VITAMIN C

Other fruits available in South India which are rich in vitamin C include lemon, orange, guava, berries, particularly, Indian gooseberry (amla). All these fruits contain higher amounts of citrus bioflavonoids and quercetin. Quercetin and many other flavonoids have been shown to be potent inhibitors of mast cell, neutrophil and basophil degranulation. Also, quercetin inhibits inflammatory processes probably due to its membrane stabilizing action, potent antioxidant effect, inhibition of the enzyme hyaluronidase and inhibition of pro-inflammatory cytokines.

Courtesy: www.thetreecenter.com;
greenblender.com;
www.gardeningknowhow.com;
www.namkeenwale.in; www.huffingtonpost.com

GREEN LEAFY VEGETABLES

Green leafy vegetables provide the richest sources of carotenes. Carotenoids provide the majority of dietary vitamin-A. Carotenes have demonstrated significant effects in enhancing immune function by increasing interferon's stimulatory action on the immune system. Interferons cause protection against viral infections.

HERBS

TULSI

The medicinal properties of tulsi have been studied in hundreds of scientific studies. These studies reveal that tulsi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti-oxidant, anti-cataract, anti-inflammatory, chemopreventive, radioprotective, hepato-protective, neuro-protective, cardio-protective,



anti-diabetic, anti-hypercholesterolemia, anti-hypertensive, anti-carcinogenic, analgesic, anti-pyretic, anti-allergic, immune modulatory, central nervous system depressant, memory enhancement, anti-asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritis, adaptogenic, anti-stress, anti-cataract, anti-leukodermal and anti-coagulant activities. These pharmacological actions help the body and mind to cope with a wide range of chemical, physical, infectious and emotional stresses and restore physiological and psychological function.

MEXICAN MINT (Plectranthusamboinicus)

These leaves have a high content of nutrients, especially iron and carotene. Consumption of leaves have many benefits, such as antipyretic, analgesic, wound medicine, cough medicine, and thrush, antioxidant, antitumor, anticancer, and hypotensive. Apigenin is a flavonoid which is the active substance contained in the parsley and known to have antioxidant properties and effectively inhibits the pro-oxidative activity of cadmium and contains effects of anti-cancerous condition of lungs.

PEPPERMINT

Peppermint (*Menthapiperita*) has major medicinal component as menthol. Peppermint possesses significant antiviral activity which is attributed to its polyphenols. Leaves of peppermint can be crushed and the juice can be applied over chest and the nasal cavity. Also, decoction of the leaves as herbal tea can be given.

LICORICE

Licorice (*Glycyrrhizaglabra*) is known to have many pharmacologic actions. Few of them are anti-

inflammatory, anti-allergic, anti-viral, expectorant and antitussive properties. Licorice contains glycyrrhizin which induces interferons which cause significant antiviral activity. Interferons bind to cell surfaces and stimulate synthesis of intracellular proteins that block the transcription of viral DNA. Induction of interferons is followed by activation of macrophages and augmentation of natural killer cell activity. Glycyrrhizin was shown to directly inhibit the growth of several DNA and RNA viruses in cell cultures. Glycyrrhizin also inhibits the thymolytic and immunosuppressive action of cortisone.

PROBIOTICS

Research studies show that natural probiotics are beneficial to improve immunity in an individual. Cooked rice soaked in water overnight is a natural probiotic.

MICRONUTRIENTS

Micronutrients like vitamins B and C act as cofactors, supporting the activity of different enzymes which are essential in various biochemical reactions that help in maintaining the integrity of tissues. Vitamin D is essential to improve immunity and prevent infections. Zinc is essential for the production and function of many enzymes. Manganese serves as a cofactor in enzyme functions and in the development of connective tissue. Selenium acts as a cofactor for the activity of antioxidant enzymes. These micronutrients are available in plenty in nuts and whole grains.

YOGA

Yoga is known to bring a balance in the psychoneuroimmunologic mechanisms. Yoga provides a strong influence on NF- κ B (nuclear factor kappa-light-chain-enhancer of activated B cells) and



— COW FACE POSE —
— BHUJANGASANA —



IRF (interferon regulatory factor), glucocorticoid receptor, cAMP (cyclic adenosine monophosphate), sTNF-RII (tumour necrosis factor receptor 2), SOD (superoxide dismutase), leukocytes, eosinophils, monocytes and lymphocytes. Yoga has an influence on the immune system through anti-inflammatory mechanism. Yogic practices like asanas, shatkarma (cleansing procedures), pranayama, mudra and meditation are known to improve immunity.

Courtesy: Matsyasana-www.w3doctor.com; workouttrends.com; www.ajarya.com; legacyofwisdom.blogspot.com; www.theayurveda.org

Asanas like matsyasana, gomukhasana, ardhachakrasana and bhujangasana are few asanas to improve lung health. Nadishodhana pranayama, suryabhedana pranayama, bhastrika and bhamari

pranayama can produce beneficial effects on the respiratory system. Practice of different mudras improves the psycho-neural circuits, thereby improving the positive mental attitude and enhancing the functions of all organs, particularly the lungs. Jalaneti, vamana dhauti and kapalbhati are important shatkarma to combat respiratory disorders. Vamanadhauti is effective to remove excess mucous from the respiratory tract. Effects of jalaneti are known to treat viral upper respiratory tract infections. Jalaneti helps to dissolve and expel the mucous out of nasal cavity and it also enhances body's protection mechanism against nasal and upper respiratory infections. Jalaneti helps in preventing and managing upper respiratory infections in an effective manner by improving mucociliary clearance, thinning of mucus, and by



decreasing inflammation. In a review which was done across 20 randomized control trials and more than 1600 participants, it was found that mindfulness meditation can modulate some select immune parameters in a manner that suggests a more salutogenic immune profile. Specifically, mindfulness mediation appears to be associated with reduction in pro-inflammatory processes, increase in cell-mediated defense parameters and enzyme activity that guard against cell aging.

PHYSICAL EXERCISES

Simple physical exercises can be practiced. Movements produced in the muscles due to practice of exercises, bring about the release of myokines called interleukin-6 which inhibit the production of pro-inflammatory cytokines and promote the production of interleukin-10 which is anti-inflammatory in nature. Thus, physical exercises are beneficial to prevent the inflammatory damage which is induced by immune suppression.

CULTIVATION/RE-INFORCING POSITIVE ATTITUDE

Research in the field of psychoneuroimmunology indicates that every part of the immune system is connected to the brain either through nervous tissue or through chemical messengers and hormones. Positive emotions such as joy, happiness and optimism tend to boost immune system function, whereas negative emotions such as depression, sadness and pessimism tend to suppress it. Studies have shown that optimists have increased secretory immunoglobulin-A function, natural killer cell activity and cell mediated immunity which is demonstrated by better ratios of helper to suppressor-T cells than those of pessimists. Negative emotions and stress paralyze

many aspects of immune function and can cause natural killer cells to burst. Depression and stress also appear to hinder the cell's ability to repair damage to DNA.

Immunosuppression is proportional to the level of stress and involves a common mechanism: increase in glucocorticoids, pro-inflammatory cytokines and catecholamine's resulting in significant alterations in hypothalamic-pituitary-adrenal (HPA) and sympathetic-adrenal medullary (SAM) axes, leucocyte function, thymic involution and suppressed lymphopoiesis. Alteration in these compounds leads to disruption of cellular trafficking, proliferation, cytokinesecretion, antibody production and cytolytic activity resulting in dysregulation of cell-mediated immune responses.

HELIO THERAPY

Sun bath has been shown to improve vitamin D level in the body, which is helpful to reduce blood pressure, regulate blood glucose and lipid profile and improve immunity by increasing white blood cells (WBC) count. Vitamin D can induce cathelicidins and defensins which have the property to lower viral replication rates and reduce concentrations of pro-inflammatory cytokines that produce the inflammation which injures the lining of the lungs, leading to pneumonia and increasing concentrations of anti-inflammatory cytokines. Exposure to sunlight with minimal clothing in the morning by 7 am or in the evening by 5 pm (during summer months) for 20 minutes daily will be beneficial.

HYDROTHERAPY

Steam inhalation, luke warm salt water gargling and neutral chest packs are beneficial to treat



congestion in the respiratory tract. Application of moist heat helps to ease respiration.

ACUPUNCTURE/ACUPRESSURE

Acupuncture/ acupressure are effective to strengthen the channels related to respiratory organs and improve immunity. LI 4, LI 11, CV 6, CV 12, CV 17, Liv 2, ST 21 and ST 36 are some of the acupuncture points which are beneficial to improve immunity and treat lung disorders. However, the treatment must be taken by a qualified Naturopathy and Yoga Medical professional.

MAGNETOTHERAPY

Magnetic fields increase the health of white blood cells, which are an important part of the immune system. In addition to direct bio-energetic support of the immune system, magnetic fields also naturally lower acidity in the body, making it more difficult for microorganisms to survive. As a result of such effects, magnetotherapy can function as an antibiotic, eliminating many microbes, viruses, bacteria, and fungi, including strains which may be resistant to pharmaceutical antibiotics or other drugs. Magnetic fields are capable of penetrating all levels and regions of the body, and can therefore reach every cell, supporting and recharging the natural polarity of cells. The resulting effect is to stimulate greater physical energy, strength, and vitality throughout the body.

SANITARY AND HYGIENIC MEASURES TO PREVENT COVID 19 INFECTION

- Wash hands frequently and carefully for at least 20 to 30 seconds with a soap. If washing hands is not possible, use alcohol based hand sanitizer. Make sure that the nails are not spared from cleansing.
- Avoid touching your face, especially eyes, nose

and mouth and biting nails.

- Avoid touching surfaces like door handles/ knobs. If that is not possible, disinfect such surfaces with alcohol based disinfectant. Clean walls and floors with disinfectant frequently.
- Don't share personal items. Also cell phones and laptops can be wiped with disinfectant.
- Maintain social distancing with at least 1metre distance between people and avoid shaking hands with anyone.
- Use face masks while going out. Make sure to dispose or wash the mask (cloth mask) properly.
- While coughing/ sneezing, cover mouth and nose with a kerchief/ tissue and wash or dispose it properly. Also, it is advisable to use elbow instead of palms while coughing/ sneezing.
- Clean vegetables and fruits with hot saline water and ensure to peel the skin before consuming or cooking.
- Drinking hot water in which a slice of lemon is infused can be used frequently.

TAKE HOME MESSAGE

To tackle with COVID 19 infection, the following measures can be adopted

- ❖ Expose to sunlight for 15-20 minutes every day.
- ❖ Drink 2-3 litres of hot water daily.
- ❖ Consume fresh and wholesome food with spices and herbs possessing immunity enhancing function.
- ❖ Take plenty of micronutrients and natural probiotics.
- ❖ Practice regular Yoga, physical exercises, breathing exercises and meditation.
- ❖ Restrict on excess calories.
- ❖ Have positive attitude of mind.
- ❖ Adopt hygienic and sanitary measures with social distancing.



CONCLUSION

This article explained that Naturopathy and Yoga therapeutic modalities possess evidence based mechanisms to improve immunity of an individual which can support to treat viral infections of the respiratory system. Also practice of sanitary and hygienic measures along with social distancing can be beneficial to prevent COVID 19 infection. Those practices which require guidance must be strictly practiced under the supervision of a Naturopathy and Yoga Medical professional. Simple measures like Naturopathy dietetics, luke warm salt water gargling and heliotherapy can be followed to improve immunity and prevent and treat COVID-19 infection. As Naturopathy and Yoga system of Indian Medicine always emphasizes on "Prevention is better than cure", preventive measures can be taken by the reader of this article and educate the public about the importance of prevention of COVID 19 through Naturopathy and Yoga system. Stay home, stay safe and stay healthy to make our nation healthy and COVID 19 free.

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