

PHARMA HERALD BULLETIN

PHARMACY PROFESSIONALS

The immune booster supplements

A handy guide from **COLLEGE OF PHARMACY** on understanding
the Immunity of Human beings.



Third Edition August 2020

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The Association of Young Pharma Professionals



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Preface

The aim of this bulletin is to delineate the essential information about minerals, vitamins and herbal drugs to improve immunity. In the third volume of this bulletin, we are aware that India is facing an extraordinary challenge to protect its citizens from the rapidly spreading disease. It is a time of demand to do efforts act against the spread of COVID-19 across India. The technical education community in the country is well-capable of serving the humanity by utilizing the knowledge and resources.

We have a great responsibility of not only making the people aware of precautionary measures but also to provide a solution or helping hand to strengthen the Government and peoples in combating the COVID-19. In this bulletin we are trying to understand the uses of minerals, vitamins and herbal drugs against diseases and viral infection. On that basis professionals can design the prophylaxis treatment of corona virus by using minerals, vitamins, allopathic as well as ayurvedic medicine.

I hope this manageable Bulletin would serve to provide unique information for prevention, progression and control of viral infection. My sincere thanks are due to my colleagues for their valuable comments and suggestions.

Dr. A. K. Gupta

Dedicated

to

Human beings

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1. Introduction

The human body has a series of nonspecific defenses that make up the innate immune system. These defenses are not directed against any one pathogen but instead, provide a guard against all infection. Infectious diseases are caused by viruses, bacteria, fungi, protists, and other pathogens. Pathogens are often spread through coughing, sneezing, and physical contact between people. They can also be spread through contamination of water supply, or through the exchange of body fluids, including sexual intercourse or blood transfusion.

1.1 First line of defense

The body's most important nonspecific defense is the *skin*, which acts as a physical barrier to keep pathogens out. Even openings in the skin (such as the mouth and eyes) are protected by saliva, mucus, and tears, which contain an enzyme that breaks down bacterial cell walls.

1.2 Second line of defense

If a pathogen does make it into the body, there are secondary nonspecific defenses that take place.

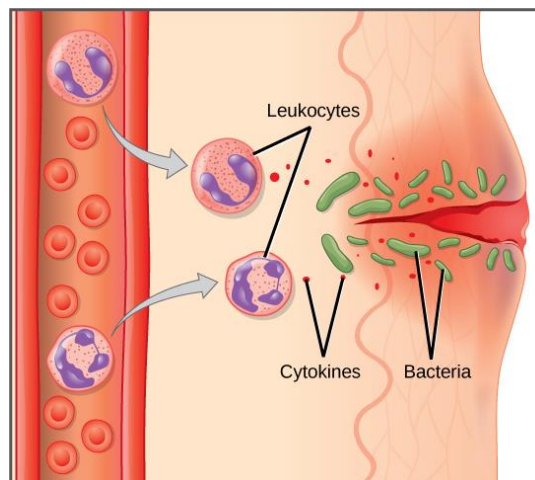


Fig: 1.1

An *inflammatory response* begins when a pathogen stimulates an increase in blood flow to the infected area. Blood vessels in that area expand, and white blood cells leak from the vessels to invade the infected tissue. These white blood cells, called *phagocytes* engulf and destroy bacteria. The area often becomes red, swollen, and painful during an inflammatory response.

When a pathogen has invaded, the immune system may also release chemicals that increase body temperature, producing a *fever*. Increased body temperature may slow or stop pathogens from growing and helps speed up the immune response.

1.3 Specific defense

When pathogens are able to bypass innate immune defenses, the adaptive immune system is activated. Cells that belong in the body carry specific markers that identify them as "self" and tell the immune system not to attack them. Once the immune system recognizes a pathogen as "non-self," it uses cellular and chemical defenses to attack it. After an encounter with a new pathogen, the adaptive immune system often "remembers" the pathogen, allowing for a faster response if the pathogen ever attacks again.

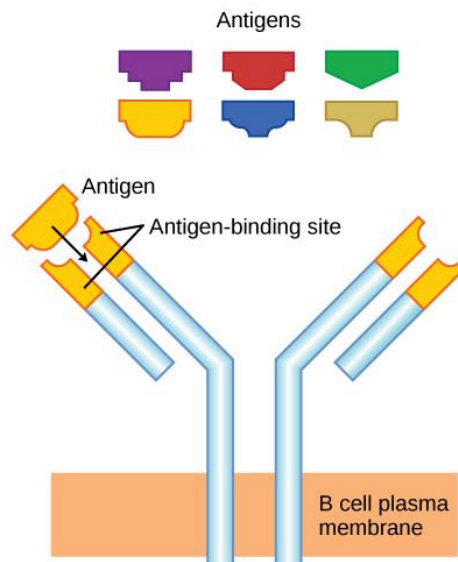


Fig: 1.2

Specific immune responses are triggered by antigens. Antigens are usually found on the surface of pathogens and are unique to that particular pathogen. The immune system responds to antigens by producing cells that directly attack the pathogen, or by producing special proteins called antibodies. Antibodies attach to an antigen and attract cells that will engulf and destroy the pathogen.

The main cells of the immune system are lymphocytes known as B cells and T cells. B cells are produced and mature in bone marrow. T cells are also produced in bone marrow, but they mature in the thymus.

2. Humoral immunity

Humoral immunity relies on the actions of antibodies circulating through the body.

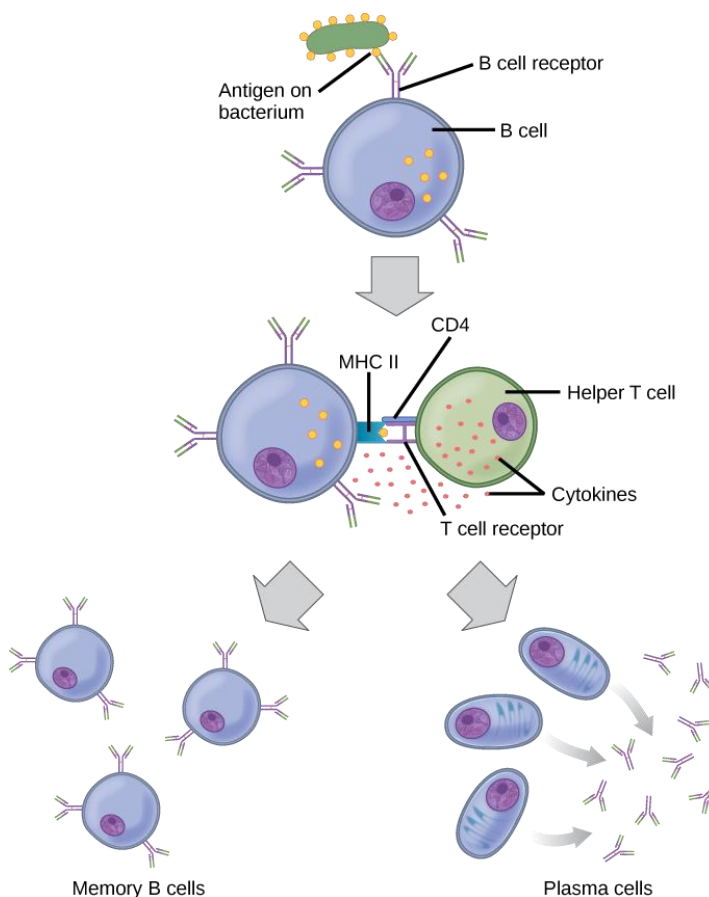


Fig: 2.1

Humoral immunity begins when an antibody on a B cell binds to an antigen. The B cell then internalizes the antigen and presents it to a specialized helper T cell, which in turn activates the B cell. Activated B cells grow rapidly, producing *plasma cells*, which release antibodies into the bloodstream, and *memory B cells*, which store information about the pathogen in order to provide future immunity.

2.1 Cell-mediated immunity

Antibodies alone are often not enough to protect the body against pathogens. In these instances, the immune system uses cell-mediated immunity to destroy infected body cells.

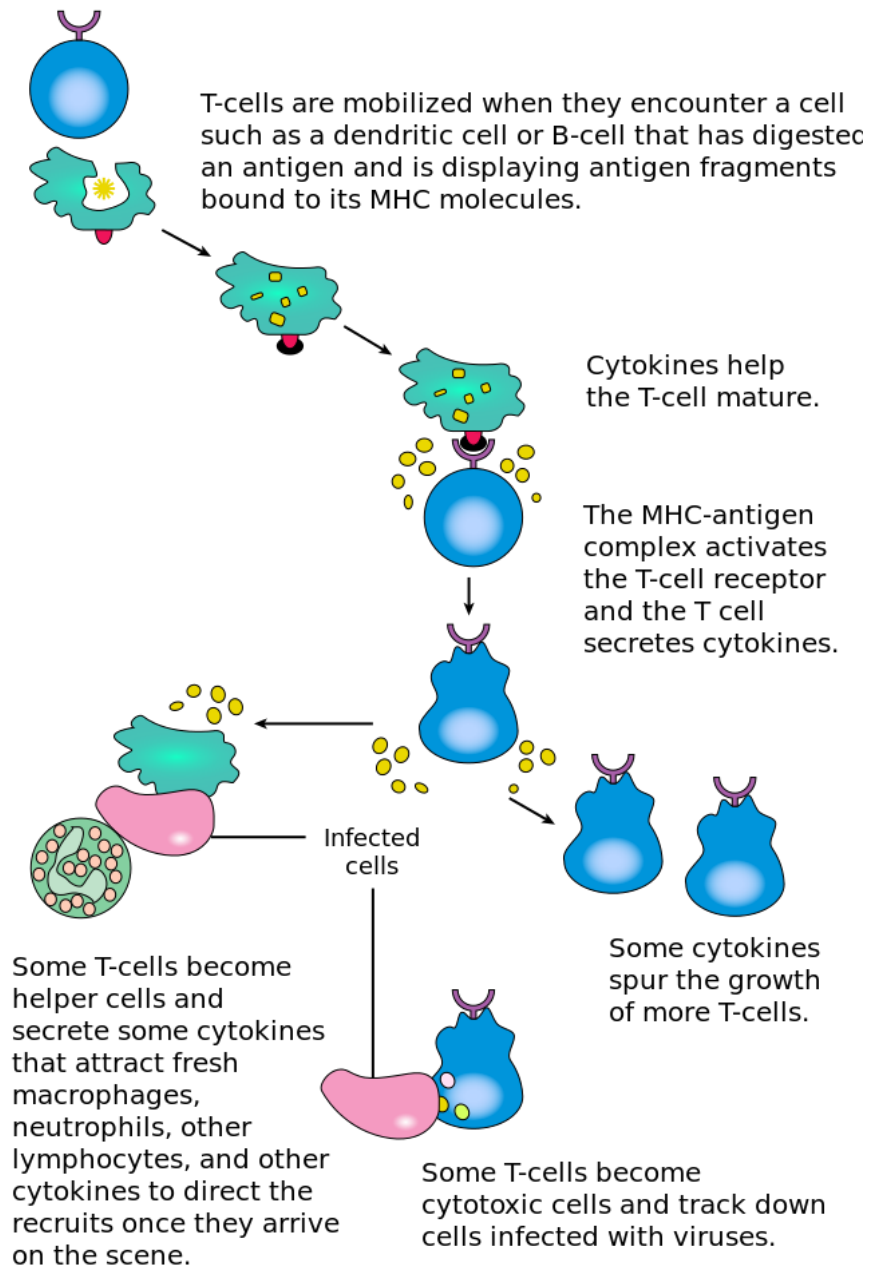


Fig: 2.2

T cells are responsible for cell-mediated immunity. *Killer T cells (cytotoxic T cells)* assist with the elimination of infected body cells by releasing toxins into them and promoting apoptosis. *Helper T cells* act to activate other immune cells.

2.2 Vaccines

Vaccines work by taking advantage of antigen recognition and the antibody response. A vaccine contains the antigens of a pathogen that causes disease. For example, the smallpox vaccine contains the antigens specific to smallpox. When a person is vaccinated against smallpox, the immune system responds by stimulating antibody-producing cells that are capable of making smallpox antibodies. As a result, if the body comes into contact with smallpox in the future, the body is prepared to fight it.

2.2.1 Viral structure

Viruses are infectious particles that reproduce by hijacking a host cell and using its machinery to make more viruses.

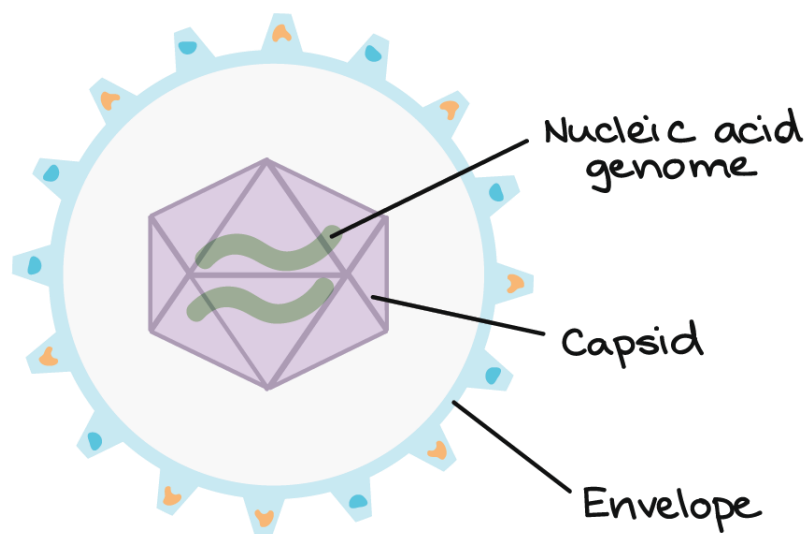


Fig: 2.3

The exterior layer is a membrane envelope. Inside the envelope is a protein capsid, which contains the nucleic acid genome.

There are many kinds of viruses, differing in structure, genome, and host specificity. However, viruses tend to have several features in common. All viruses contain a protective protein shell, or *capsid*, that houses their nucleic acid *genome* (either DNA or RNA).

Some viruses also have a membrane layer called an *envelope* that surrounds the capsid.

2.2.2 Steps of viral infection

Viruses reproduce by infecting their host cells, providing instructions in the form of viral DNA or RNA, and then using the host cell's resources to make more viruses.

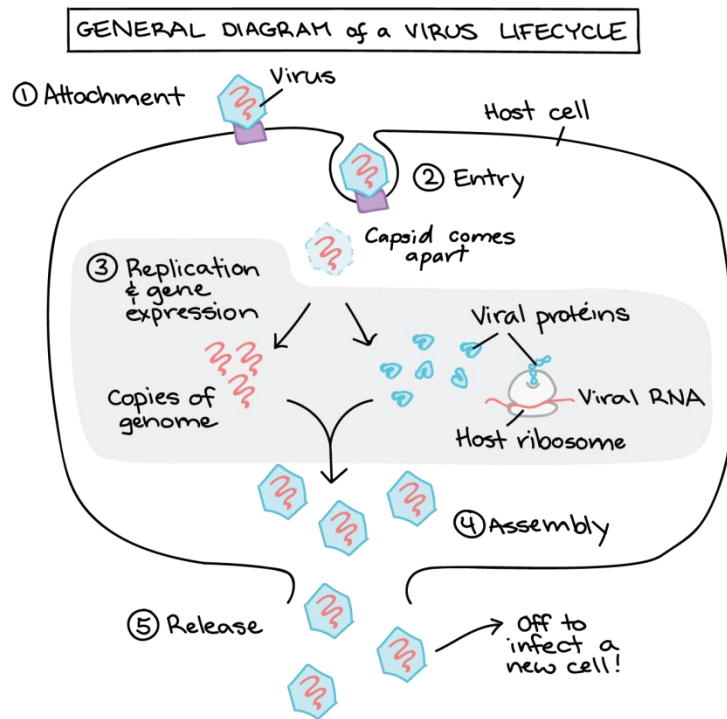


Fig: 2.4

Steps of a viral infection, illustrated generically for a virus with a + sense RNA genome.

1. **Attachment:** Virus binds to receptor on cell surface.
2. **Entry:** Virus enters cell by endocytosis. In the cytoplasm, the capsid comes apart, releasing the RNA genome.
3. **Replication and gene expression:** The RNA genome is copied (this would be done by a viral enzyme, not shown) and translated into viral proteins using a host ribosome. The viral proteins produced include capsid proteins.
4. **Assembly:** Capsid proteins and RNA genomes come together to make new viral particles.
5. **Release:** The cell lyses (bursts), releasing the viral particles, which can then infect other host cells.

1. The virus recognizes and binds to a host cell via a receptor molecule on the cell surface.
2. The virus or its genetic material enters the cell.
3. The viral genome is copied and its genes are expressed to make viral proteins.
4. New viral particles are assembled from the genome copies and viral proteins.
5. Completed viral particles exit the cell and can infect other cells.

Common mistakes and misconceptions

- Not all bacteria are pathogens. Most bacteria are actually harmless and, in fact, we would not survive without them! Bacteria help us digest food, produce vitamins, and act as fermenting agents in certain food preparations.

Some bacteria also fill niches that would otherwise be open for pathogenic bacteria. For example, the use of antibiotics can wipe out gastrointestinal (GI) flora. This allows competing pathogenic bacteria to fill the empty niche, which can result in diarrhea and GI upset.

- Some diseases have been nearly eliminated through the use of vaccines. However, this does not mean that we should stop vaccinating against these diseases. Most of these diseases still do exist in the human population, and without the continued use of vaccines, people are at risk of getting and spreading the disease.
- Some people may think that vaccines provide permanent immunity to a disease. For some diseases, a single vaccine is sufficient, but for many diseases you must get vaccinated more than once to be protected.

For example, the flu vaccine becomes less effective over time because of how rapidly the flu virus mutates. Therefore, the flu shot's formulation changes each year to protect against specific viruses that are predicted to be prominent each year.

3. Minerals

The body needs many minerals; these are called essential minerals. Essential minerals are sometimes divided up into major minerals (macrominerals) and trace minerals (microminerals). These two groups of minerals are equally important, but trace minerals are needed in smaller amounts than major minerals. The amounts needed in the body are not an indication of their importance.

A balanced diet usually provides all of the essential minerals. The two tables below list minerals, what they do in the body (their functions), and their sources in food.

Table 3.1 Macrominerals minerals may be used to improve Human immunity.

Macrominerals

Major minerals		
Mineral	Function	Sources
Sodium (Na)	Needed for proper fluid balance, nerve transmission, and muscle contraction	Table salt, soy sauce; large amounts in processed foods; small amounts in milk, breads, vegetables, and unprocessed meats
Chloride (Cl)	Needed for proper fluid balance, stomach acid	Table salt, soy sauce; large amounts in processed foods; small amounts in milk, meats, breads, and vegetables
Potassium (K)	Needed for proper fluid balance, nerve transmission, and muscle contraction	Meats, milk, fresh fruits and vegetables, whole grains, legumes
Calcium (Ca)	Important for healthy bones and teeth; helps muscles relax and contract; important in nerve functioning, blood clotting, blood pressure regulation, immune system health	Milk and milk products; canned fish with bones (salmon, sardines); fortified tofu and fortified soy milk; greens (broccoli, mustard greens); legumes
Phosphorus (P)	Important for healthy bones and teeth; found in every cell; part of the system that maintains acid-base balance	Meat, fish, poultry, eggs, milk, processed foods (including soda pop)
Magnesium (Mg)	Found in bones; needed for making protein, muscle contraction, nerve transmission, immune system health	Nuts and seeds; legumes; leafy, green vegetables; seafood; chocolate; artichokes; "hard" drinking water
Sulfur (S)	Found in protein molecules	Occurs in foods as part of protein: meats, poultry, fish, eggs, milk, legumes, nuts

Trace minerals (microminerals)

The body needs trace minerals in very small amounts. Note that **iron** is considered to be a trace mineral, although the amount needed is somewhat more than for other microminerals.

Table 3.2 Microminerals minerals may be used to improve Human immunity.

Trace minerals		
Mineral	Function	Sources
Iron (Fe)	Part of a molecule (hemoglobin) found in red blood cells that carries oxygen in the body; needed for energy metabolism	Organ meats; red meats; fish; poultry; shellfish (especially clams); egg yolks; legumes; dried fruits; dark, leafy greens; iron-enriched breads and cereals; and fortified cereals
Zinc (Zn)	Part of many enzymes; needed for making protein and genetic material; has a function in taste perception, wound healing, normal fetal development, production of sperm, normal growth and sexual maturation, immune system health	Meats, fish, poultry, leavened whole grains, vegetables
Iodine (I)	Found in thyroid hormone, which helps regulate growth, development, and metabolism	Seafood, foods grown in iodine-rich soil, iodized salt, bread, dairy products
Selenium (Se)	Antioxidant	Meats, seafood, grains
Copper (Cu)	Part of many enzymes; needed for iron metabolism	Legumes, nuts and seeds, whole grains, organ meats, drinking water
Manganese (Mn)	Part of many enzymes	Widespread in foods, especially plant foods
Fluoride (F)	Involved in formation of bones and teeth; helps prevent tooth decay	Drinking water (either fluoridated or naturally containing fluoride), fish, and most teas
Chromium (Cr)	Works closely with insulin to regulate blood sugar (glucose) levels	Unrefined foods, especially liver, brewer's yeast, whole grains, nuts, cheeses
Molybdenum (Mo)	Part of some enzymes	Legumes; breads and grains; leafy greens; leafy, green vegetables; milk; liver

Note:- Other trace nutrients known to be essential in tiny amounts include nickel, silicon, vanadium, and cobalt.

4. Immunity by Herbal Drugs

4.1 Medicinal Herbs

1. Mulethi:

Entire world is struggling to eradicate coronavirus completely and, a few have been partially successful. One of the countries who is showing commendable results in containing the novel virus is the epicentre of COVID-19 pandemic, China. and, its secret to controlling the coronavirus outbreak lies in traditional Chinese medicine concoctions. Licorice or Mulathi is what helped China in minimising the number of patients of COVID-19.

According to a recent study published in the journal the Lancet, concoctions with licorice extract as the main ingredient helped in the recovery 102 confirmed coronavirus infected patients exhibiting mild symptoms. Additionally, it was found that licorice concoctions work effectively and quickly compared to antivirals. The CT scans showed that patients had a negative presence of the SARS-CoV-2 coronavirus after consuming Mulaithi concoctions for a set number of days.

The study results showed that licorice extract can significantly inhibit the replication of new coronavirus. Notably, licorice is a flowering plant that contains a compound called liquiritin. This is what prevents replication of the virus.

This is not the first time when licorice has shown positive results in treating a disease. It is an age-old herb that is still used as a home remedy for many health-related issues. Chewing licorice stick is known to provide relief from sore throat, cough, bronchitis, and even asthma. Daily use of Mulaithi can boost your immunity by increasing the production of lymphocytes and macrophages.

Even if you have digestive issues, you can consume licorice concoction as it contains compounds called glycyrrhizin and carbenoxolone. These are known to treat stomach discomfort, heartburn, constipation, acidity etc. Licorice has anti-inflammatory properties that can provide relief from arthritis by reducing the effects of free radicals and inflammation in the body. Women experiencing menopausal symptoms can consume this herb as its phytoestrogenic compounds can regulate hormonal imbalance and ease the symptoms including insomnia, sweating, mood swings, hot flashes etc.

2. Ginger – Aadrak

Ginger, known as Aadrak or Shunti in Sanskrit, is also known as Vishwa-Aushadh in Ayurveda, the Rasayana that is a cure to many disorders and hence the best immunity booster in Ayurveda. Have an inch long slice of Ginger with a pinch of rock salt prior to lunch, to cleanse the palate and stimulate appetite. This potent combination is also a known and effective antidote to Nausea. Interestingly, a

massage with a Ginger infused Body Massage Oil is beneficial to relieve the symptoms of common flu such as muscle ache, fatigue and headaches. Warm the cold-pressed oil using the double boiler method and massage on the chest, neck and shoulders, follow by dabbing a hot bag or herbal poultice over the pain points, to enhance the Ayurvedic oil's absorption.

It can also be effective against COVID-19. It contains gingerol – an antioxidant that can power up our immune system and kill viruses. Ginger is particularly good in preventing respiratory tract infections.

3. Tulsi:

Tulsi is also known as Holy Basil and is considered to be one of the best herbs available for medicinal purposes. In fact, it has such strong properties that having a Tulsi plant indoors can help protect you from certain infections and diseases such as cold, cough, and viral infections. These strong disinfectant and germicidal factors are not the only reason why Tulsi is a great herb for boosting your immunity. Recent studies have indicated that Tulsi can help slow down the growth of HIV cells and also inhibit development of certain carcinogenic cells. Tulsi also contains a lot of antioxidants and micronutrients, which helps your immune system by protecting it from damage caused by free radicals. The herb is known to cure fever, help treat respiratory diseases such as asthma, and help wounds heal faster. In order to strengthen your immunity with the help you Tulsi, you can take Tulsi supplements. Some of the commonly available Tulsi supplements are:

4. Garlic

Garlic is a rich source of vitamins and minerals such as Vitamin B1, B2, B3, B6, folate, magnesium, phosphorus, sodium, zinc, iron, manganese, calcium among others. What makes garlic a magical immunity booster is the presence of Allicin, which helps in fighting several ailments. In fact, the presence of immunity boosting nutrients and antioxidants, makes garlic a miraculous spice, which has been used for treating several diseases like smallpox, coronary diseases, seasonal flus, infections etc. Increased triglycerides can eventually affect your heart health and can lead to heart attacks. The presence of Allicin in garlic can help in naturally reducing the triglyceride level in the blood. One clove a day on an empty stomach can work wonders to improve your coronary health.

5. Curcumin:

Curcumin is a herb that is commonly known as Turmeric. Turmeric has multiple health benefits, making it a herb that has been used in Ayurveda for centuries. Curcumin is extremely rich in anti-oxidants, which helps boost your immunity and prevent any damage from occurring in your body due to the

presence of free radicals. These anti-oxidant properties of Curcumin have been linked with the prevention of cancer, specifically colon cancer, and it stops the growth of a specific type of protein that helps cancer cells to grow. It promotes the health of your liver and can improve your heart health as well. It can also help improve the quality of your skin, prevent cystic fibrosis, and manage diabetes. This herb is a great option for anyone looking to boost their immunity through natural herbs.

6. Neem:

Neem herbs come from neem trees which are native to India and now becoming popular around the globe. The leaves of the neem tree are widely used in medicine in different forms such as oil and dried leaves. Oils are extracted from the leaves to add in traditional medicines while the leaves are dried and used as herbs in alternative medicine. This herb can be used to boost your immunity as it affects your bodily functions in many different ways. The most pertinent way is that it detoxifies your blood, helping your body get rid of impurities that could otherwise be harmful and make you sick. It has high levels of anti-oxidants which helps in protecting your body from the damages caused by free radical attack. Anti-oxidants are also linked with lowering the risk of cancer and heart disease. Neem also has anti-fungal properties which can help in preventing or inhibiting the growth of fungal infections in your body. You can enjoy the immune-boosting properties of neem by taking this herb in the form of a supplement. Some of the commonly available neem supplements are:

7. Amalaki:

Amalaki is also known as Amla, or Indian Gooseberry and is a popular herb in Ayurvedic medicine. Amla can be used effectively to boost the immunity as they provide high amounts of Vitamin C to the body. Vitamin C not only helps in stimulating the production of antibodies but is also a great source of anti-oxidants. Amla also helps to increase the white blood cells (WBC) count in the body, which are the part of your immune system that are responsible for fighting off diseases. Finally, Amla also has strong anti-bacterial and astringent properties, which also helps your body strengthen its overall immunity. Some of the commonly available Amalaki supplements are:

8. Moringa:

Moringa has many different names including the Drumstick Tree, Ben Oil Tree, Miracle Tree, and Horseradish tree, and has become a popular herb. This is because it has many powerful properties and can help to boost your immunity. The ethanolic extracts of Moringa leaves have significant

immunomodulatory effect on immune system. Moringa helps to stimulate cellular immune response and show positive effects in increasing the level of lymphocyte, WBC and neutrophil count in the body. Furthermore, Moringa has anti-cancerous properties and can help in preventing tumour growth. It also helps the body fight off many diseases as it has anti-bacterial, anti-viral, and anti-fungal properties. Moringa is also known for its anti-oxidant properties which help your body to prevent liver damage, manage diabetes, improve your cardiovascular health, heal wounds faster, improve digestion, and prevent neurodegenerative disorders. You can use Moringa to boost your immune system by taking Moringa supplements.

8. Ginseng

Ginseng, which can be found in Korean and American varieties, is the root of plants in the *Panax* family. Long used in traditional Chinese medicine, it has been shown to be particularly effective at fighting viruses.

In animal and test-tube studies, Korean red ginseng extract has exhibited significant effects against RSV, herpes viruses, and hepatitis A.

Plus, compounds in ginseng called ginsenosides have antiviral effects against hepatitis B, norovirus, and coxsackieviruses, which are associated with several serious diseases — including an infection of the brain called meningoencephalitis.

9. Dandelion

Dandelions are widely regarded as weeds but have been studied for multiple medicinal properties, including potential antiviral effects. Test-tube research indicates that dandelion may combat hepatitis B, HIV, and influenza.

Moreover, one test-tube study noted that dandelion extract inhibited the replication of dengue, a mosquito-borne virus that causes dengue fever. This disease, which can be fatal, triggers symptoms like high fever, vomiting, and muscle pain.

10. Astragalus

Astragalus is a flowering herb popular in traditional Chinese medicine. It boasts Astragalus polysaccharide (APS), which has significant immune-enhancing and antiviral qualities. Test-tube and animal studies show that astragalus combats herpes viruses, hepatitis C, and avian influenza H9 virus.

Plus, test-tube studies suggest that APS may protect human astrocyte cells, the most abundant type of cell in the central nervous system, from infection with herpes.

11. kalonji

It has been confirmed through many studies that kalonji seeds play an important role to enhance human immunity, particularly in immune compromise patients. These findings may be of great practical significance since a natural immune enhancer like the nigella seeds could play an important role in the treatment of cancer, viral infections and other diseased conditions associated with immune deficiency. In some research, it has been also shown that black seed enhanced the ratio between helper T-cells and suppresser T-cells by 55% with a 30% average enhancement of the natural killer cell activity.

Crystalline nigellone—well researched for increasing immune function, especially respiratory health; Thymoquinone—researched for cancer treatment, a compound not yet detected in any other plant; Beta sitosterol—highly researched for gallstones, urinary/prostate health, cancer and cholesterol reduction. Black Seed's other nutrients: Black Seed contains good fats such as oleic acid(olive oil's health-giving component); poly and monounsaturated unsaturated fatty acids including omega 3 (linolenic acid),omega 6 (linoleic acid), andomega 7 (palmitoleic acid, and arachidonic acid).It also contains protein in that 8 of the 9 essential amino acids that are combined to make "whole" protein. Black Seed also has essential growth elements like vitamin B1, vitamin B2, vitamin B3, folic acid, calcium, iron, copper, zinc and phosphorous

Kalonji oil is quite effective against viral infections such as cough & cold along with asthma and allergy. In some studies it is suggested that one should take a cup of warm water, one spoon of honey and half tea spoon of Kalonji oil. Mix this together and drink in the morning before the breakfast and after dinner. For better results, it should be continued for 30 days. The mix of one glass warm water, two spoons of kalonji oil and two spoons on Honey, if taken thrice a day once in the morning before breakfast, after lunch and after dinner; said to combat all types of viral infections.

12. Giloy

Giloy is a magical herb with immune boosting properties, which are much needed in the times of the COVID-19 pandemic. Read on to know the other health benefits of this Ayurvedic gift. Experts across the world suggest that you need to keep your immune system strong during the current COVID-19 pandemic. Giloy, an Ayurvedic herb, helps you do just that. Scientifically known as *Tinospora Cordifolia*, this herb has been used in traditional Indian medicines since ancient times. It is also known

by names like Heart-leaved moonseed and Gaduchi. Since many people these days are adopting more natural ways to stay fit, choosing this herb makes sense because its abundant medical properties can work wonders. Giloy is a powerhouse of antioxidants, which keep our body cells healthy by removing disease-causing bacteria and toxins. Besides the stem, its root can also be beneficial. You can take this in the form of a powder, as a juice and or in capsule form. Apart from boosting your immunity, there are several other health benefits that this herb offers. Take a look. Giloy is anti-pyretic in nature. It offers protection from dengue, malaria and swine flu symptoms. This nutritious herb helps in preventing the recurrence of dangerous fevers.

Table 4.1 List of medicinal plants from all over the world, which may prove useful to flu and other viral infection.

S. No.	Plant Botanical Name	Hindi Name	Principal chemical compounds	Anti-influenza action
1.	<i>Glycyrrhiza glabra</i>	Mulathee (Licorice)	Glycyrrhizinic acid	its efficacy against the influenza a virus due to inhibition of viral growth.
2.	<i>Zingiber officinale</i>	Adarak (Ginger)	TNF- α	reported as anti-influenza cytokine,
3.	<i>Ocimum sanctum</i>	(Tulsi)	main chemical constituents of <i>O. sanctum</i> are oleanolic acid, ursolic acid, rosmarinic acid, eugenol, carvacrol, linalool, and β -caryophyllene	The antimicrobial properties of <i>O. sanctum</i> make it useful for the management of novel H1N1 flu.
4.	<i>Allium sativum</i>	Lahasun (Garlic)	Allicin, Allyl alcohol, diallyltrisulfide and ajoene	Garlic extract showed <i>in vitro</i> activity against influenza A and B, viral pneumonia by stimulating Protective immune cells. Allyl alcohol and diallyl disulfide have also proven effective against HIV-infected cells
5.	<i>Curcuma longa</i>	Haldee (Turmeric)	<i>Curcumin</i>	<i>Curcumin</i> showed the anti-influenza activity against influenza viruses PR8, H1N1, and H6N1. The results showed more than 90% reduction in virus yield in cell
6.	<i>Origanum vulgare</i>	(Oregano)	carvacrol	Effective in inactivating MNV within 1 h of exposure by acting directly on the viral capsid and subsequently the RNA.
7.	<i>Foeniculum vulgare</i>	Saunf (Fennel)	Trans-anethole	effective in inflammatory pain with the anti-inflammatory effects of trans-anethole reported to derive from its regulation of NF- κ B signaling pathways.
8.	<i>Mentha piperita</i>	Pudina (Peppermint)	Phenolic acid and flavonoid	<i>Menthapiperita</i> L. leaves contained high levels of phenolic acid and flavonoid, showed antiviral activity against RSV with a high selectivity index, and significantly decreased the production of NO, TNF- α , IL-6, and PGE2 in lipopolysaccharide-stimulated RAW 264.7 cells.
9.	<i>Andrographis paniculata</i>	Kalmegh (Echinacea)	polysaccharides, glycoproteins, alkamides and cichoric acid; the latter is a derivative of <i>caffeic acid</i> .	<i>prevention were illustrated in 2002 with the sudden appearance of the SARS (severe acute respiratory syndrome) pandemic. Several herbal extracts have been shown recently to possess a combination of bioactivities that could be useful in the control of colds, flu, and bronchitis and, in retrospect, some</i>

				<i>of these could have been useful for SARS patients. It works on Influenza virus A (human and avian); influenza B; HSV-1 and -2; coronavirus; respiratory syncytial virus; rhinoviruses.</i>
10.	Sambucus nigra	Sambucus ^{12,13}	Pectin, pectic acid, protopectin, Capectate and cellulose. Glutamic acid, aspartic acid and alanine	Phenolic compounds from the elderberry fruit extract bind to H1N1 virions, thus blocking their ability to infect host cells. Standardized liquid extract of elderberry (Rubini®) Reduction in the spread of the foci size of influenza B human virus, reduction in the foci of influenza A (KAN-1) human virus in Madin Darby canine kidney cell culture (MDCK) Elderberry extract: Inhibition of influenza A (H1N1) human virus in MDCK; concentration of 252 µg/ml IC50 for H1N1; concentration of 1000 µg/ml 100% inhibition of H1N1 Concentrated elderberry juice: Inhibition of H1N1 in MDCK extract concentration of 720 µg/ml IC50 for H1N1 (samples were given during infection) Extract concentration of 3600 µg/ml IC50 for H1N1 (samples were given immediately after infection) Elderberry extracts Inhibition of infectious bronchitis virus (IBV)—a pathogenic chicken coronavirus. Reduction in IBV titers by several orders of magnitude, independence of the dose applied. Elder bark extract High activity against feline immunodeficiency virus (FIV)—common domestic cats virus
11.	Astragalus membranaceus	Astragalus	polysaccharides such as contain mannose, D-glucose, D-galactose, xylose and L-arabinose.	The effect on lymphocyte and serum antibody titers <i>in-vivo</i> was also investigated. IL-4, IL-6, IL-10, LITAF, IL-12 and antibody titers to H9N2 AIV were enhanced in the first week after APS treatment. The results indicated that APS treatment reduces H9N2 AIV replication and promotes early humoral immune responses in young chickens.
12.	Panax ginseng	Ginseng	mixture of zingerone, shogaols, and gingerols, volatile oils.	Compounds in ginger also increase levels of antioxidant enzymes, including superoxide dismutase and glutathione peroxidase, which may be beneficial in inflammatory reactions triggered by viral infections. Anti-influenza agents have been isolated

				from <i>Z. officinale</i> . TNF- α , reported as anti-influenza cytokine, has been reported to be present in ginger
13.	Taraxacummongolicum	Dandelion	(believed to have anti-inflammatory and anticancer effects). Other related compounds include beta-amyrin, taraxasterol, and taraxerol, as well as free sterols (sitosterin, stigmasterin, and phytosterin),	Taraxacummongolicum extract at 1-100 μ g/ml markedly inhibited DHBV DNA replication. Additionally, TME at 25-100 μ g/ml reduced HBsAg and HBeAg levels and produced inhibition rates of 91.39 and 91.72% at 100 μ g/ml, respectively. 0.625-5 mg/ml of dandelion extracts inhibited infections in Madin-Darby canine kidney (MDCK) cells or Human lung adenocarcinoma cell line (A549) of PR8 or WSN viruses, as well as inhibited polymerase activity and reduced virus nucleoprotein (NP) RNA level.
14.	Syzygiumaromaticum	Clove	main source of phenolic molecules like hidroxibenzoic acids, flavonoids, hidroxiphenylpropens, hidroxicinamic acids, and eugenol	The anti-inflammatory effects of eugenol were attributed to its effect to prevent neutrophil/macrophage chemotaxis and prostaglandin synthesis as well as cyclooxygenase II enzyme expressions. Research revealed the antiviral efficacy of <i>S. aromaticum</i> aqueous extracts against herpes simplex virus type 1 (HSV-1) and influenza A virus when combined with acyclovir.
15.	Piper nigrum	Black pepper	Its main alkaloid piperine and ten piperamides	Anti-viral properties against three viruses related to upper respiratory tract infections.

4.2 Plant Extract (Kadha Recipes) against Corona Virus

Formulation 1.

For making this kadha, you need 5-6 Tulsi leaves, 1 Black or 2 green cardamom, ½ cup sliced raw turmeric, 1 tbsp cloves, 1 tbsp black peppercorns, 1 stick cinnamon, 5-6 tbsp sliced ginger and 1 tbsp munakka.

Wash, peel and coarsely pound the raw turmeric and ginger in a mortar and pestle. Then boil it in 4 cups of water until the colour turns yellow and you start getting a whiff of ginger. This should take 5-6 minutes on medium heat. Then add the rest of the ingredients in the turmeric-ginger water and let it boil on simmer for at least 15-20 minutes. The water will reduce, so adjust the quantity according to how many cups you want to make. Put 1 tsp honey in a cup and strain the kadha. Sip when warm.

This kadha recipe is a tried and tested one and it is shared by a COVID-19 survivor. In the post, she said that the immunity-boosting kadha is a life saviour and has helped her get-through COVID. The addition of black pepper is what actually makes this kadha special. While most people might not think twice about a pinch of black pepper in the kadha, this actually plays an important role when added in a 1:10 ratio with Turmeric, it increases its absorption manifold. It also helps in getting rid of cough and cold and helps in keeping the lungs healthy. She suggests drinking this kadha twice a day while following all precautions for best results. You can also add jaggery or cinnamon to the drink if you find the taste too overwhelming and want to add a sweet taste.

Formulation 2.

Take 10-15 leaves of tulsi, 4-5 of parijata, 4-5 of neem, 6 of bael, and raw turmeric. Crush and boil the paste in one glass, or 250 ml of water, and reduce the solution to half. Add jaggery and cumin powder. Chaithrika recommends that you drink this after breakfast or lunch, and not on an empty stomach. “Having this decoction once a day for a week is enough. Don’t have it for long periods.

Formulation 3.

kadha recipe that can be prepared with some common herbs and spices like tulsi, ginger, turmeric, mulethi, cinnamon, black pepper and cloves. The best part is you can prepare and store it for future use. All these herbs and spices are power packed with various health benefiting nutrients and can be found easily in any Indian kitchen.

Ingredients:

Ginger- 1 inch, Raw turmeric- 1 inch, Tulsi- 8-10 leaves, Mulethi- 4-5 sticks, Cinnamon- 4-5 sticks, Black pepper- 10-12, Cloves- 10-12, Water- 8-10 cups.

Formulation 4. (Editor suggested)

Ingredients: Tulsi (10 leaves), Garlic (1 gram), Saunf (2 gram), Clove (2 pieces), Black pepper (3 pieces), Kalabansa (2 leaves), Guava (2 leaves), Mulheti (1 gram) , Ajwain (1 gram) *Paan* ka patta (1/2 leave), Dalchini (1 gram), Giloy (1 gram) .

Note:- All the medicine rinse within one litre water for overnight and boiling all material with water upto 100 ml solution left in container.

Dose: 20 ml in a day.

5. Conclusion:

Human Immunity can be increased by vitamin and mineral therapy. Well defined dose of minerals, vitamins and herbs may be beneficial for life threatening disease. Many traditional medicinal plants and herbs were reported to have strong antiviral activity against Influenza Virus. Aqueous and organic extractions have in general proved equally fruitful; In view of the signification number of plant extracts and herbal formulation that have yielded positive results it seems reasonable to conclude that there are probably numerous kinds of antiviral agents in these materials.

Present studies tell us minerals, vitamins and herbal formulation may be beneficial against various pathogens like bacteria, viruses etc.

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7. News paper cutting:

सॉट पाउडर और लहसुन से पांच दिन में हार रहा कोरोना

06.06.2020-Dainik Jagran



कोरोना को हारना है

घण्टे मिश्रा • लखनऊ

कोरोना संक्रमण के आरंभकाल से ही आयुर्वेदिक चिकित्सा इस खतरनाक वायरस को परत करने की कोशिश में शिद्दत से जुटी है। काढ़ा इसमें काफी हद तक कारगर साबित हुआ है। इसके अलावा सॉट के पाउडर और लहसुन से मरीजों की इम्युनिटी बढ़ाने में कमाल किया है। लखनऊ में लोकबंधु अस्पताल के डॉक्टरों ने सॉट पाउडर व लहसुन के प्रयोग से सिर्फ पांच दिनों में कोरोना को हराने का दावा किया है। पहले चरण में जिन 16 मरीजों को सॉट पाउडर व लहसुन दिया गया, उनकी रिपोर्ट पांच दिन में ही नेगेटिव आ गई। इन नतीजों के बाद मुरी पद्धति पर और अधिक स्टडी की तैयारी है।

लोकबंधु अस्पताल में पंचकर्म व आयुर्वेद विशेषज्ञ डॉ. आदिल रईस कोरोना के इलाज की इस पद्धति पर काम कर रहे हैं। उन्होंने बताया कि शुरू में 32 मरीजों को इलाज में शामिल किया गया। इनमें से आधे मरीजों को काढ़ा और आधे मरीजों को सॉट पाउडर व लहसुन सुबह-शाम दिया गया। आयु वर्ग 25 से 60 वर्ष के बीच रखा गया। स्टडी में यह पाया गया कि जिन 16 मरीजों को सॉट पाउडर व लहसुन दिया गया, उनकी रिपोर्ट पांच दिन में ही नेगेटिव आ गई। जिन्हें काढ़ा दिया, उसके नतीजे भी बेहतर रहे। सभी 16 मरीज सात से 12 दिन में ठीक हो गए।

डॉ. आदिल ने बताया कि सॉट पाउडर को गर्म पानी में मरीजों को सुबह-शाम दिया गया। साथ ही कच्चा लहसुन एक-दो पीस सुबह-शाम चबाकर खाने को दिया गया। काढ़ा बनाने की विधि सामान्य है, जिसमें दो-चार अतिरिक्त जड़ी-बूटी वाली औषधियां अपनी तरफ से मिलाई हैं। अभी हम इस पर काम कर रहे हैं। कुल 80 मरीजों पर प्रयोग के बाद काढ़ा बनाने की विधि सार्वजनिक की जाएगी।

सॉट व लहसुन के गुण
राजभवन के पूर्व आयुर्वेद चिकित्साधिकारी डॉ. शिव शंकर त्रिपाठी बताते हैं कि सॉट में वात व कफ नाशक एंटी बैक्टीरियल गुण होते हैं। पाचन शक्ति को बढ़ाने के साथ भूख कम लगने की शिकायत व सुस्ती को दूर करने के गुण भी इसमें होते हैं। वहीं, लहसुन वातनाशक, एंटीबायरल, एंटीबैक्टीरियल, एंटी फंगल व कोलेस्ट्रॉल को कम करने वाला होता है। यह जोड़ी के दर्द कम करने के साथ ही दिल का ब्लॉकज तक दूर कर देता है। यह बेहतर तरीका कफ दोष नाशक है।

ऐसे बनता है काढ़ा
चार भाग तुलसी, दो भाग दालचीनी, दो भाग सोंठ, एक भाग कालीमिर्च को कूट लें। उसके बाद दो कप पानी में तीन ग्राम फूटा हुआ पाउडर व स्वादानुसार गुड़ या राब मिलाकर आग पर काएँ। एक कप पेय रह जाने पर काढ़ा तैयार हो जाता है। इसे छानकर गर्म चाय की तरह पीएँ।

इम्युनिटी सिस्टम को मजबूती मिलेगी टेबलेट और काढ़े से

ग्यालिवर (नईदुनिया रिपोर्टर)। कोविड-19 के कारण आज पूरा विश्व प्रभावित हो रहा है। हर कोई इम्युनिटी सिस्टम को मजबूत बनाने की बात कर रहा है। ऐसे में वीनदयाल औषधि के रिसर्च एंड डेवलपमेंट डिपार्टमेंट और जेयू के बायोकेमिस्ट्री डिपार्टमेंट ने इम्युनोप्लस टेबलेट और काढ़ा तैयार किया है। आज यह टेबलेट और काढ़ा उत्तरप्रदेश, राजस्थान, मध्यप्रदेश एवं केरल में काफी प्रसिद्ध हो गया है। काढ़े और टेबलेट को बनाने के लिए

कई जड़ी-बूटियों को इस्तेमाल में लाया गया है। इनमें गिलोय, हरिद्रा, तुलसी, कालमेघ, आंवला, मुलैठी और त्रिकटु चूर्ण शामिल है। इस मिश्रण की मदद से कोरोना से तो दूर रखा जा सकता है, साथ ही तनाव से मुक्ति पाई जा सकती है। काढ़ा और टेबलेट पाने के लिए वीलतगंज स्थित वीनदयाल औषधालय में संपर्क किया जा सकता है।





कितना

ते हैं। यह किसी भी साथ ले जाने के बाद ने में तीन नप्राश की है।

कोरोना पर विशेषज्ञ

वैद्य राजेश कोटेचा, सचिव, आयुष मंत्रालय

गिलोय कितना फायदेमंद है और कैसे सेवन कर सकते हैं?
गिलोय का सेवन कई तरह से कर सकते हैं। 12 साल से ऊपर के लोग टी टेबलेट (tablets) सुबह और दो टेबलेट शाम को ले सकते हैं। इसका कोई साइड इफेक्ट (side effects) नहीं है। यह कई रोगों में फायदेमंद है। 12 साल से कम आयु के बच्चों को सुबह-शाम एक गोली देनी चाहिए। अगर साल के बच्चों को उसका पूर्ण पी और रात में मिला कर देना चाहिए। अगर लाल गिलोय है तो उसके तने के कोट-कोट टुकड़े कर के, कितना गिलोय है, उसका 16 गुना पानी डाल कर उसको उबलना चाहिए। जब पानी आधा हो जाए तो उसे छान कर काढ़ा के रूप में पी सकते हैं। यह टेबलेट की तुलना में ज्यादा फायदा करता है।

एक दिन में व्यक्ति को कितना पानी पीना चाहिए?
इसे लेकर कई भावियां हैं, जैसे कड़ा जलत है कि पानी बूब पीना चाहिए। तो लोग 8-10 से लेकर 12-15 लीटर पानी पीने लगते हैं। अत्यधिक पानी पीना खतरा नहीं है। इससे उकसान हो सकता है। मौसम और व्यक्ति की प्रकृति के अनुसार पानी पीना चाहिए। जैसे उरत भारत में गर्मी का मौसम है, दक्षिण भारत में गरम है, लेकिन नमी वाली गर्मी है, तो वहां पानी ज्यादा पीना चाहिए। लेकिन जहां मौसम ठंडा है या रात में मौसम ठंडा हो जाता है तो वहां लोगों को कम पानी पीना चाहिए। एक और बात ध्यान रखनी है कि एक बार में पानी न पीएँ, बल्कि थोड़ा-थोड़ा दिन भर पीना चाहिए।

गर्म पानी पीने के क्या फायदे हैं?
आईसीएमएआर (ICMR) की ओर से नेशनल प्रोटोकॉल (National Protocol) में भी गरम पानी थोड़ी-थोड़ी देर में पीने के लिए कहा गया है। आयुर्वेद में लॉजिक (logic) है कि गरम पानी पीने से उदरनि सही रहती है और रोग नहीं होते। इसी तरह गरम पानी पीने से वायरस के एंट्री प्वाइंट (entry point) पानी गले में वायरस मल्टीप्लाई (multiply) नहीं कर पाते और शरीर को ज्यादा प्रभावित नहीं कर पाते हैं।

8. Prophylaxis treatment:

कोरोना वायरस (COVID 19) महामारी की वजह से भारत समेत लगभग पूरी दुनिया एक अभूतपूर्व संकट का सामना कर रही है। इसके प्रसार को रोकने के लिए जरूरी है कि हमारे पास सही जानकारी हो और हम सावधान तथा जागरूक रहें। उम्मीद है कि यहां प्रस्तुत जानकारियां कोरोना वायरस के खिलाफ लड़ाई में आपके काम आएंगी।

S. No.	Particular	Drug/Herbs	Remarks
1.	गुग्गल और नीमका धुआँ	गुग्गल और नीम के पत्तों के धुएं में एक जीवाणुरोधी गुण होता है। नीम हानिकारक कवक, परजीवी और वायरस के खिलाफ सफलतापूर्वक कार्य करता है।	गोबबर के उपले पर गुग्गल और नीम की पत्तियों को जलाये। जिससे वातावरण शुद्ध हो जाएगा।
2.	गरम पानी का उपयोग	सुबह और शाम गरम पानी में नमक मिलाकर गरारा करना चाहिए। सुबह और शाम गरम पानी का ही प्रयोग करे।
3.	KMnO ₄ or Thermokind gargle	KMnO ₄ and Water (1:2000)	जब भी आप बाहर से आये, इनसे कुल्ला करे।
4.	Dettol	नहाने के पानी में थोड़ा डेटोल डालकर नहाएं।	डेटॉल प्रोडक्ट्स बनाने वाली कंपनी रेकित बेकिंजर ने अपने ऑफिशियल ट्विटर हैंडल से एक यूजर को जवाब देते हुए कहा है कि उनके प्रोडक्ट्स MERS-CoV और SARS-CoV जैसे कोरोना वायरस के खिलाफ प्रभावी हैं।
5.	Vitamin C (Ascorbic Acid)	<ul style="list-style-type: none"> विटामिन सी की गोली सुबह और शाम खाना खाने के बाद खाइए। विटामिन-C से भरपूर आहार का ही प्रयोग करे। 	जो व्यक्ति Covid-19 का शिकार हो जाता है, उसके शरीर में निमोनिया तेजी से बढ़ता है। ऐसे में हेल्थ एक्सपर्ट्स का मानना है कि यदि विटामिन-C से भरपूर डायट ली जाए तो कोरोना वायरस के इन्फेक्शन से रिकवरी में मदद मिल सकती है।
6.	Ecosporin (Aspirin) 75 mg one tablet per day	Corona Virus के इन्फेक्शन में ब्लड को जमने से रोकता है।	Covid-19 रोगियों में एस्पिरिन के शुरुआती उपयोग, जिसमें वायरस प्रतिकृति, एंटी-प्लेटलेट एक्वीकरण, विरोधी भड़काऊ और विरोधी फेफड़े की चोट को रोकने के प्रभाव हैं, गंभीर और गंभीर रोगियों की घटनाओं को कम करने की उम्मीद है, अस्पताल की अवधि और हृदय संबंधी जटिलताओं की घटनाओं को कम करता है। (https://clinicaltrials.gov/ct2/show/NCT04365309)
7.	Vitamin D and Calcium tablet or Pouch in a week	one tablet per day	विटामिन डी को पहले ही तीव्र श्वसन संक्रमण से बचाने के लिए दिया जाता है और इसे सुरक्षित दिखाया गया है। हमारा मानना है, कि हम COVID-19 संक्रमण से बचाने के लिए विटामिन डी सप्लीमेंट की सलाह दे सकते हैं।

			(https://www.researchsquare.com/article/rs-21211/v1)
8.	Multivitamin Tablet/ Capsule (Zincovit)	शाम को खाना खाने के बाद खाइए।	यह प्रतिरक्षा प्रणाली को बहुत आवश्यक बढ़ावा प्रदान करता है। इसे सरल शब्दों में कहें तो जिंकॉवित आपकी प्रतिरक्षा प्रणाली को किसी भी संभावित खतरे से लड़ने के लिए मदद करता है। (https://www.indiatvnews.com/fyi/covid-19-prevention)
9.	Ivermectin (12mg) tablet	Available in India	According the Registered Medical practitioner
10.	HCQ (200mg) tablet	Available in India	According the Registered Medical practitioner
11.	Favipiravir (200mg)tablet (Fabi flu)	Available in India	According the Registered Medical practitioner
12.	Remdesivir 100mg injection	Available in India	According the Registered Medical practitioner
Herbal Medicines			
13.	Tulsi Drop	10 -10 Drops in a day	
14.	Ayush Kadha	<ol style="list-style-type: none"> 1. तुलसी (10 पत्ते), 2. सोंठ (1/4 चम्मच), 3. सौंफ (2 चम्मच), 4. लौंग (4 दाने), 5. काली मिर्च (3 दाने), 6. काला बाँस (4 पत्ते), 7. अमरूद (2 पत्ते), 8. मुलेठी (1/4 चम्मच) , 9. अजवाईन (1/4 चम्मच) 10. पान का पत्ता (1/2 पत्ते) 11. दालचीनी (1/4 चम्मच), 12. गिलोय (1/4 चम्मच) <p>सभी दवा 1 लीटर पानी में रात भर पानी में डुबोकर रखते हैं और 200 मिलीलीटर रहने तक उबालते हैं। Dose: 15 ml Kadha दिन में दो बार ।</p>	यह होममेड टॉनिक हैं। इसमें एंटी-बैक्टीरियल, एंटी-वायरल और एंटी-इंफ्लेमेट्री गुण होते हैं। इसलिए ये शरीर की वायरस, बैक्टीरिया आदि से रक्षा करते हैं और कैंसर कोशिकाओं को पनपने से रोकते हैं। काढ़े में मौजूद औषधि आपके शरीर के प्रतिरक्षा तंत्र यानी इम्यून सिस्टम को मजबूत बनाते हैं, जिससे बीमारियां शरीर से दूर रहती हैं। इसके अलावा काढ़े में मौजूद तत्वों के गुणों के कारण फेफड़ों में जमा गंदगी और अतिरिक्त बलगम बाहर निकल जाते हैं। इसलिए ये टॉनिक पीने से आपके फेफड़े साफ हो जाते हैं और पूरा शरीर स्वस्थ रहता है।

9. Unique Immunity Booster

SHAKTI HERBAL

एलेमी हर्ब्स शक्ति हर्बल सिरप विभिन्न जटिल जड़ीबूटियों से बनाया जाता है, इसके नियमित सेवन से ताकत और ताजगी आती है, और भूख एवं पाचन शक्ति को बढ़ाता है। शरीर में खून की मात्रा बढ़ाकर तंदुरुस्त बनाता है। एलेमी हर्ब्स शक्ति हर्बल सिरप एक आयुर्वेदिक हेल्थ टॉनिक है, जिसके साथ साथ यह कई बीमारियों को दूर करता है।

एलेमी हर्ब्स शक्ति हर्बल सिरप के फायदे :

1. इसके इस्तेमाल से कमजोरी दूर होकर शरीर को ताकत मिलती है।
2. इसके अलावा भूख न लगना, अपच, गैस, खून की कमी, खांसी और वजन बढ़ाने के लिए इसका उपयोग किया जाता है।
3. एलेमी हर्ब्स शक्ति हर्बल सिरप कमजोरी को दूर करता है।
4. शरीर को शक्ति देता है। यह पाचन तंत्र को ताकत देता है।
5. सीने में जलन, अपचन और गैस की प्रॉब्लम को दूर करता है और डाइजेशन को ठीक करता है।
6. थकावट, बेचैनी, नींद न आना, किसी भी काम में मन न लगना, हमेशा कमजोरी महसूस करना, यह सारी समस्या इसके सेवन से दूर हो जाती है और हमेशा चुस्ती-फुर्ती और ताजगी प्रदान करता है।
7. यह लीवर को जतवदह बनाता है, कब्ज की प्रॉब्लम को ठीक करता है।
8. इससे भूख बढ़ती है, डाइजेशन को ठीक करता है, जिससे वजन बढ़ने में मदद होती है और वजन जल्दी बढ़ता है।
9. बहुत से लोगों का वजन डाइजेशन की प्रॉब्लम से नहीं पढ़ पाता, यह डाइजेशन को पूरी तरह से ठीक करता है, तथा भूख भी अच्छी लगती है, और आप जो खाना खाते हैं उसका पूरा फायदा आपको मिलता है।
10. छोटे बच्चों की हेल्थ बनने में मदद करता है और शारीरिक विकास करता है।
11. Wrestlers, Sportsman, Athletes में स्टैमिना बनाने एवं सौंस चढ़ने को भी काम करता है।

एलेमी हर्ब्स शक्ति हर्बल सिरप का सेवन कैसे करना है:-

6 साल के ऊपर वाले बच्चों को एक-एक चम्मच समभाग पानी के साथ सुबह - शाम खाने के बाद दें।

12 साल के ऊपर वाले बच्चों को दो - दो चम्मच समभाग पानी के साथ दें।

18 साल के ऊपर वाले सभी लोग 2 से 5 चम्मच समभाग पानी के साथ सुबह - शाम खाने के बाद लें।

इसे आप 6 महीने तक कंतिन्यू सेवन कर सकते हैं, इसका कोई भी साइड इफेक्ट नहीं है।

स्त्री, पुरुष, बुजुर्ग एवं बच्चे सभी इसका उपयोग कर सकते हैं।



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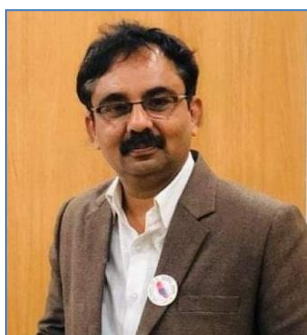
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