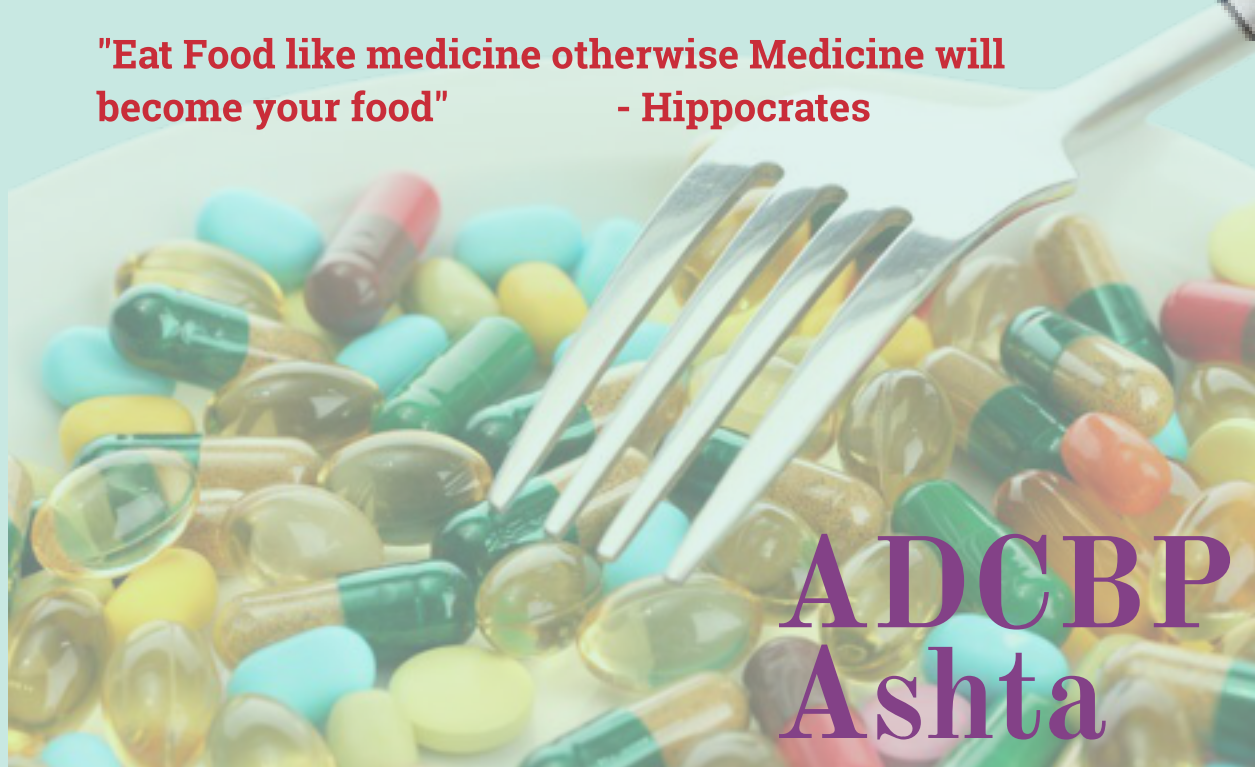




# Diet, Herbs & IMMUNITY

**"Eat Food like medicine otherwise Medicine will  
become your food"**

**- Hippocrates**



# Scienia

TECHNICAL MAGAZINE

ACADEMIC YEAR 2021-22

## ADCBP Ashta

Shaping Future Transforming Healthcare Education  
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# SCIENCIA

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## FROM PRINCIPAL DESK

**"The joy and satisfaction of a meal is equal to the passion and effort given to its preparation."**

**-Gordon Ramsay**

*It gives me immense pleasure to present the "Sciencia" Technical magazine issue 1 of our institute for the academic year 2021- 22.*

*The recent pandemic COVID- 19 has impacted the communities around the world, many people have wondered whether there are steps they can take to stay healthy. There are research evidences that diet and other lifestyle measures influence immune strength and susceptibility to infectious diseases. An all-round healthy diet is pivotal in order to fight diseases and boost the immune system. A balanced diet consisting of a range of vitamins and minerals, combined with healthy lifestyle factors like adequate sleep and exercise and low stress, most effectively primes the body to fight infection and disease.*

*I congratulate to Mr. Swapnil S Patil Editor in chief, Mr. Shailaja Desai Deputy Editor, Mr. Gopal Pawar Student Editor and all the authors for their contribution in making this magazine a thoughtful approach with valuable insights, suggestions with emphasis on how altering one's diet and life style helps to prevent and treat infections and chronic diseases.*

*We welcome any suggestions and feedback for further improvement, I hope you all will enjoy reading this issue ..... stay safe.....stay health.....*



**Prof. Dr. Mahesh G. Saralaya**  
**Executive Editor**  
**"Sciencia" Technical Magazine**





## FROM EDITORIAL DESK

**'Love yourself enough to live a healthy lifestyle.'**

*Dear Readers,*

*Hope you and your family are safe and are following the social distancing norms. The Covid-19 Pandemic has not come to end yet but in current situation we were facing immune issues in normal patients to fight against infectious diseases. It may be due to Covid, High intake of medicine or diet and food, so in-connection to the same....*

*It is my pleasure to present the "Sciencia" Technical magazine issue of the year 2021-22. Every year we are coming up with insight on new theme. Each year our team of Magazine, photographers, designers and correspondents involved in addition to generating creative content. Writers have given great contribution to upgrade the quality and standards of magazine. Insight of articles writers have written the articles on diet, herbal plants, Nutritional values, Ayurveda therapy as well problems associated with unhealthy food. In the end, balanced diet and nutrition rich food will help you to stay away from infectious diseases and will make stronger your immunity, that is the truth. Every article in our technical magazine aimed to focus on theme of present year i.e. "Diet Herbs and Immunity".*

*In the spirit of continuous improvement, any constructive input on streamlining our processes is very welcome. So this year's issue is a compilation of fascination, education, experience, joy and more! We have a pleasure presenting this edition to you. We are pushing barriers and reaching greater heights with every edition. We wish to come back with a much more exciting and value-adding edition, next year. Till then, enjoy this reading.*

**Mr. Swapnil S. Patil**  
**Editor in chief**  
**"Sciencia" Technical Magazine**





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Eating right has never been more important than now, the buzzword is "Immunity". "Immunity cannot be built in a day" it is a continuous process and an active immune system is critical for survival to fight against invading pathogens. Diet modulates the immune cells directly and indirectly by altering the composition of the intestinal microbiota and its products. Nutrition balance in diet has applications in clinical practice, as well as in healthy populations for better immune system to deal with many immunological diseases. Current research in role of nutrition in immune system may help in better understanding personalized nutrition diet in improving health.

For better immunological outcomes optimal nutrition is essential, which support the immune cell function to initiate active and effective responses against pathogens to repair any underlying chronic inflammation. For example, an amino acid Arginine is required for the macrophages to generate nitric oxide (NO), whereas micronutrients vitamin A and zinc is essentially required for regulation of cell division and proliferation of immune cells. Immune system is impaired in undernutrition, the impairment extent depends on severity of the deficiency, nutrients interactions, presence of infection, and subject age.

## DIET AND IMMUNITY



Some individual nutrient can exert multiple effects in immunity, for example vitamin E, has a role of antioxidant, inhibit activity of protein kinase C, potentially interact with transport enzymes and proteins. On the other, excessive intake of micronutrients can also impair immunity for example, iron supplementation in malaria patient may increase morbidity and mortality.

### Over nutrition and immunity:

The processed foods are high in bad fats, carbohydrates, and chemicals. These are used to improve the texture, taste, and shelf life of a food, consumption of high total calories has been associated with a rise in cardiovascular disease, diabetes and cancer, which are the leading causes of death. Over nutrition has led to the stunning rise in global obesity rates, which have nearly tripled over the last 40 years and obesity is associated with chronic inflammatory disease is well-established. Long-term high-fat diets (HFD) alters the distribution of tight intestinal junction proteins, increase intestinal permeability, increase serum LPS levels, or endotoxemia and bacterial product translocation contributing to a systemic proinflammatory response.

A study in mice with Short-term HFD feeding reported a loss of hematopoietic stem cells in bone marrow and reduced hematopoietic reconstitution potential via disruption of TGF $\beta$  receptors in lipid rafts.

The processed food is characterized by increased additives, such as emulsifiers, salt and sugar to make them more durable and hyper-palatable.

High sugar consumption can have direct effect on host immune response. For example, glucose is the preferred fuel source for Type 1 immunity, because it is important in the differentiation, proliferation and function of Th1 CD4<sup>+</sup> T cells, neutrophils, pro-inflammatory macrophages and activated dendritic cells resulting in autoimmune disease.

An additional issue, is that processed foods often contain “acellular” sugar that, unlike sugar in fruits and vegetables, does not need to be digested and are immediately available to the host and microbiota. Gordon and colleagues, reported that high sucrose diets led to an enrichment of anaerobic bacteria such as Enterobacteriaceae for processing simple sugars, these enzymes that bloom and contribute to intestinal inflammation. Processed foods are often deficient in fiber, so a high sugar diet may select against the symbiotic bacteria that help our digestion and select for bacteria that can best use simple sugars to proliferate quickly.

Emulsifiers are detergents in processed food products, that when fed to mice at low doses, leads to microbial encroachment and transferrable dysbiosis, which increases myeloperoxidase activity in the gut and results in endotoxemia.

Excessive salt consumption has a direct effect on immune cells due to a salt sensing kinase (SGK1) on CD4<sup>+</sup> T cells that stabilizes IL-23R expression and enhances Th17 differentiation. These changes led to greater induction of Th17 cells with upregulation of pro-inflammatory cytokines results in worsening autoimmunity.

### **Under nutrition, malnutrition and immunity**

Under nutrition is an insufficient caloric intake and malnutrition is insufficient quantities of specific nutrients and vitamins. Undernourished children exhibit a delayed maturation of the microbiome, with greater susceptibility to enteric pathogens and in turn chronic inflammation.

Micronutrients (vitamins and minerals) and phytonutrients play crucial role in many metabolic pathways to aid optimal human immune functions are primarily available in fruits, vegetables, greens, nuts, and whole grains.

Vitamin A deficiency may result in immune dysfunction and increased susceptibility to infection, since vitamin A is enzymatically converted to retinoic acid (RA) after absorption from the intestine which is a critical for the development of lymphoid tissue.

Vitamin E enhance immune responses to confer protection against several infectious diseases, by (1) inhibit COX2 activity mediated by decreased NO production results in reduced PGE2 production, (2) improve T cells immune synapse formation and stimulate T cell activation signals, and (3) the modulate cellular/humoral immunity.

The vitamin D receptor (VDR) is present in most immune cells that activate enzyme CYP27B1 to metabolise Vitamin D<sub>3</sub> to 1  $\alpha$ ,25-dihydroxy vitamin D<sub>3</sub>. Vitamin D<sub>3</sub> ligation to VDR stimulate immune cells to produce antimicrobial proteins and cytokines which are important in innate/adaptive immunity responses.

Zinc is an essential mineral has role in cell growth, division, wound healing and immune system. Mild deficiency in zinc will affects both the adaptive and innate immune responses.

Iron is required for monocyte to macrophage differentiation and for macrophages to successfully ward off intracellular bacteria by the NADPH mediated oxidative burst, it is critical for innate immune responses to bacteria. Iron deficiency is also associated with lower CD4/CD8 T cell counts and defects in IgG mediated humoral immunity. Additionally, high amounts of iron in the blood make the host prone to lethal bacteraemia.

Selenium is an essential mineral that plays a key role in maintaining metabolism of hormones, DNA synthesis, protect the body from oxidative damage and infections. Selenium deficiency may increase the high risk of chronic diseases including cancer, cardiovascular disease and human immunodeficiency virus (HIV)infection. Glutamine a nonessential amino acid regulates the functions of a number of immune cells including neutrophils, lymphocytes and macrophages. During infection, inflammation, trauma, glutamine is released into the circulation which is an essential process of metabolic pathway exerted by organs such as liver, skeletal muscle and gut.

## Conclusion:

Diet having optimal nutrients is essential for healthy cells functions, including immune cells and prepare the body for microbial attacks and inflammation. Diets that are limited in nutrients like processed foods will negatively affect a healthy immune system.







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## COW COLOSTRUM A NATURAL BOON FOR HUMAN IMMUNITY

Immunity has become a subject of interest to everyone at the dawn of the third millennium. Our confidence in Western medicine, and particularly in pharmacologic drugs, has been shaken by the appearance of drug-resistant strains of pathogenic (disease-causing) microorganisms and diseases, such as tuberculosis and staphylococcus, and entirely new and dangerous diseases that were unknown until recent years, such as AIDS, Ebola, SARS, bird flu and Covid-19, all of which are resistant to all known antibiotics. Also, the drug industry is facing the dangers of new drug interactions and side effects of test-tube created allopathic medicines, ultimately keeping trial lawyers employed due to fully unproven new medications released by the Food and Drug Administration (FDA) or other government officials. Fortunately, a new interest in an old remedy has emerged. It is a remedy that is as old as mankind itself, nay, older than, as old as mammals. There are several natural products that have shown promise in empowering the body to treat itself.

Colostrum is the first pre-milk substance that is produced by the mammary gland of female mammals, including humans, following the birth of the new-born. In fact, Albert Sabin, the physician credited with developing the first polio vaccine advocated the use of colostrum and in fact originally isolated anti-polio antibodies from bovine colostrum.

It is the first food tasted in this life by all mammals. It is a special substance that is very unlike other foods, even milk. It is loaded with immune factors, growth factors, and protective proteins as well as all the nutrients the new-born needs to survive. The immune factors in colostrum provide the immunity necessary to ward off potentially fatal infections until the new-born's own immune system can get up to speed, and the growth factors help complete the development of the gut, which is not fully developed at the time of birth.

The use of colostrum for the treatment of illness and for the maintenance of well-being dates back thousands of years. The Ayurvedic physicians and the Rishis of India have been using colostrum for medicinal purposes for 5000 years in the past. Ayurveda Epic Bhav-Prakash clearly indicates the strength of cow colostrums. Around the turn of the century, it was noted that antibody levels in the first milk after birth (colostrum) were much higher than in succeeding milk. At that time it was known that these antibodies had certain properties that evoked protection. Spolverini (1920) advocated that cow's colostrum be utilized as an infant food to protect the infant against shared human and bovine diseases. Prior to the development of sulpha drugs and antibiotics, colostrum was majorly used worldwide by leading medical practitioners for its antibiotic properties.



In fact, Albert Sabin, the physician credited with developing the first polio vaccine advocated the use of colostrum and in fact originally isolated anti-polio antibodies from bovine colostrum.

Colostrum is Nature's perfect food! It contains all the natural nutrients you need for optimal health and vitality. It is the only 100% natural source of vital growth and healing factors and cannot be laboratory reproduced.

## Use of Cow Colostrum

**Viral Illnesses:** -The GI component of the immune system produces about 75% of the antibodies in the human system, the ability of AIDS/HIV patients to fight infectious disease is severely compromised, partially due to damage to the gut from chronic inflammation and diarrhoea. Several recent studies report colostrum's role in the reversal of this chronic problem, stemming from opportunistic infections like *Candida albicans*, cryptosporidia, rotavirus, herpes simplex, pathogenic strains of *E.coli*, and intestinal flu infections. Colostrum handles all gut pathogens well without side effects.

**Heart Disease:** -Altered immunity may be the hidden cause of atherosclerosis and cardiovascular disease. For example, a type of chlamydia has been associated with arterial plaque formation in over 79% of patients with heart disease. A recent New England Journal of Medicine article indicated that heart disease is partially the result of immune sensitization to cardiac antigens. Immune-system-mediated injury results in myocarditis, with lymphocytes and macrophages being the predominant infiltrating cells. Colostrum PRP may have a role in reversing heart disease very much as it does with allergies and autoimmune diseases.

Additionally, IGF-1 and GH in colostrum can lower LDL cholesterol while increasing HDL cholesterol concentrations. Colostrum growth factors promote the repair and regeneration of heart muscle and the regeneration of new blood vessels for collateral coronary circulation.

**Cancer:** -The 1985 Steven Rosenberg book, *Quiet Strides in the War on Cancer*, first popularized the benefits of cytokines in the treatment of cancer. Since that time, the same cytokines found in colostrum (interleukins 1, 6, 10, interferon G, and lymphokines) have been the single most researched protocols in scientific research for the cure for cancer. Colostrum lactalbumin has been found to be able to cause the selective death (apoptosis) of cancer cells, leaving the surrounding noncancerous tissues unaffected. Lactoferrin has similarly been reported to possess anti-cancer activity. The mix of immune and growth factors in colostrum can inhibit the spread of cancer cells. If viruses are involved in either the initiation or the spread of cancer, colostrum could prove to be one of the best ways to prevent the disease in the first place.

**Diabetes:** -Juvenile diabetes (Type I, insulin-dependent) is thought to result from an autoimmune mechanism. Colostrum contains several factors that can offset this and other allergies. Colostrum IgE-1 can bind to both the insulin and IGF-1 receptors found on all cells. Human trials in 1990 reported that IGF-1 stimulates glucose utilization, effectively treating acute hypoglycaemia and lessening a Type II diabetic's dependence on insulin.

**Weight-loss Programs:** -The body requires IgF-1 to metabolize fat for energy through the Krebs cycle, with aging, less IgF-1 is produced in the body.

Inadequate levels are associated with an increased incidence of Type II diabetes and difficulty in losing weight despite a proper nutritional intake and adequate exercise, Colostrum provides a good source of IgF-1 as a complementary therapy for successful weight loss.

**Wound Healing:** -Several colostrum components stimulate wound healing.” Nucleotides, EgF, TgF, and IgF-1 stimulate skin growth cellular growth and repair by direct action on DNA and RVA. These growth factors facilitate the healing of tissues damaged by ulcers, trauma, burns, surgery, or inflammatory disease, Colostrum’s wound-healing properties specifically benefit the skin, muscle, cartilage, bone, and reserve cells. Powdered colostrum can be applied topically to gingivitis, sensitive teeth, aphthous ulcers, cuts, abrasions, and burns after they have been cleaned once disinfected. **Alzheimer’s disease and Cognitive Disorders:** -As the number of senior citizens increases with improved health care and longer life expectancy, the effects of Alzheimer’s disease will continue to take a toll on our health system and our senior citizens. Colostrum contains components that have been shown to benefit those suffering from this debilitating condition of 15 Alzheimer’s patients receiving PRP in a clinical trial, 8 showed clinical improvement and the rest stabilized, whereas of those receiving selenium or a placebo, none showed improvement.

**Antioxidants :-**Are antioxidants the fountain of youth? That question remains debatable, but it is known that oxidative stress and high levels of reactive oxygen species (ROS), by-products of normal metabolism which build up in the body, can cause widespread damage and increase the aging process.

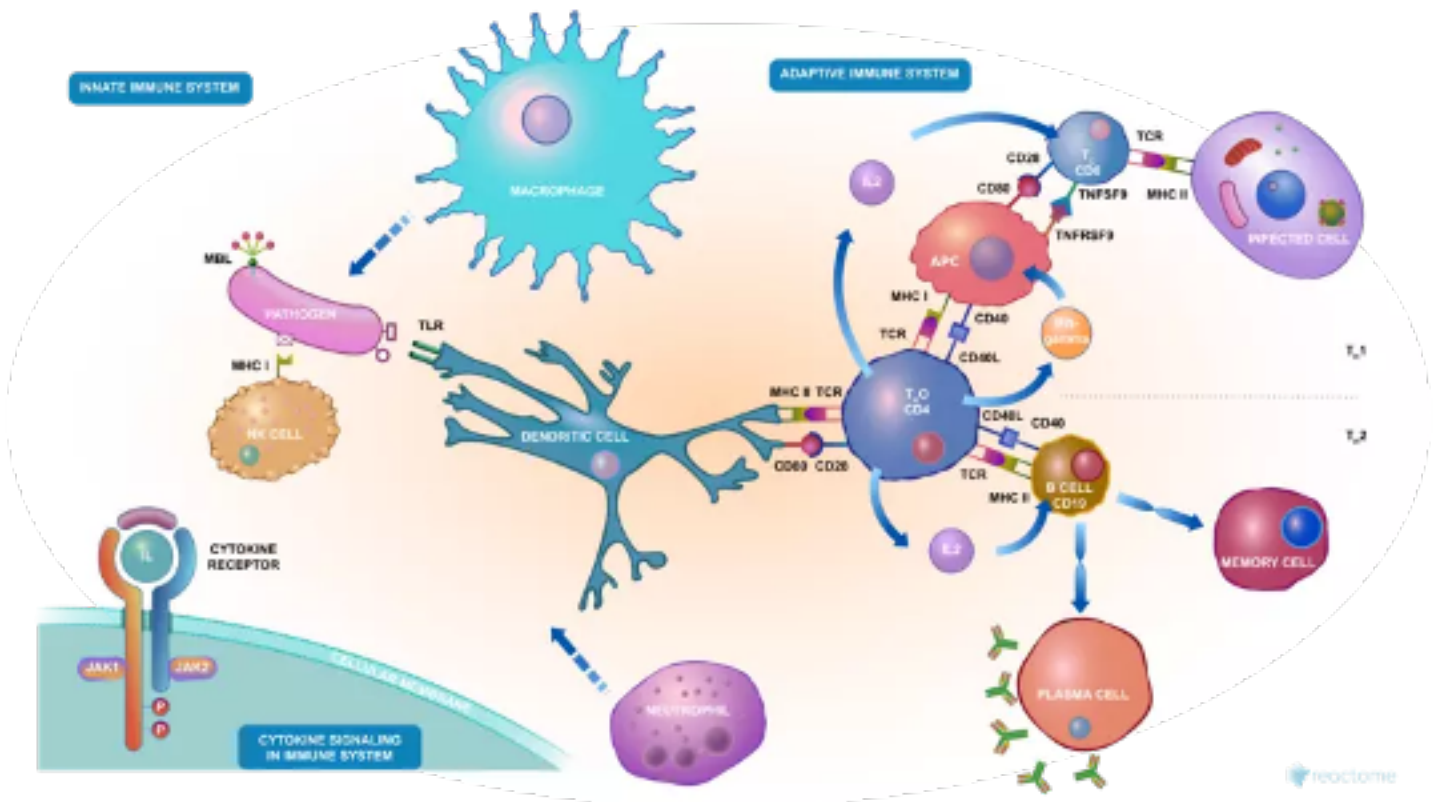
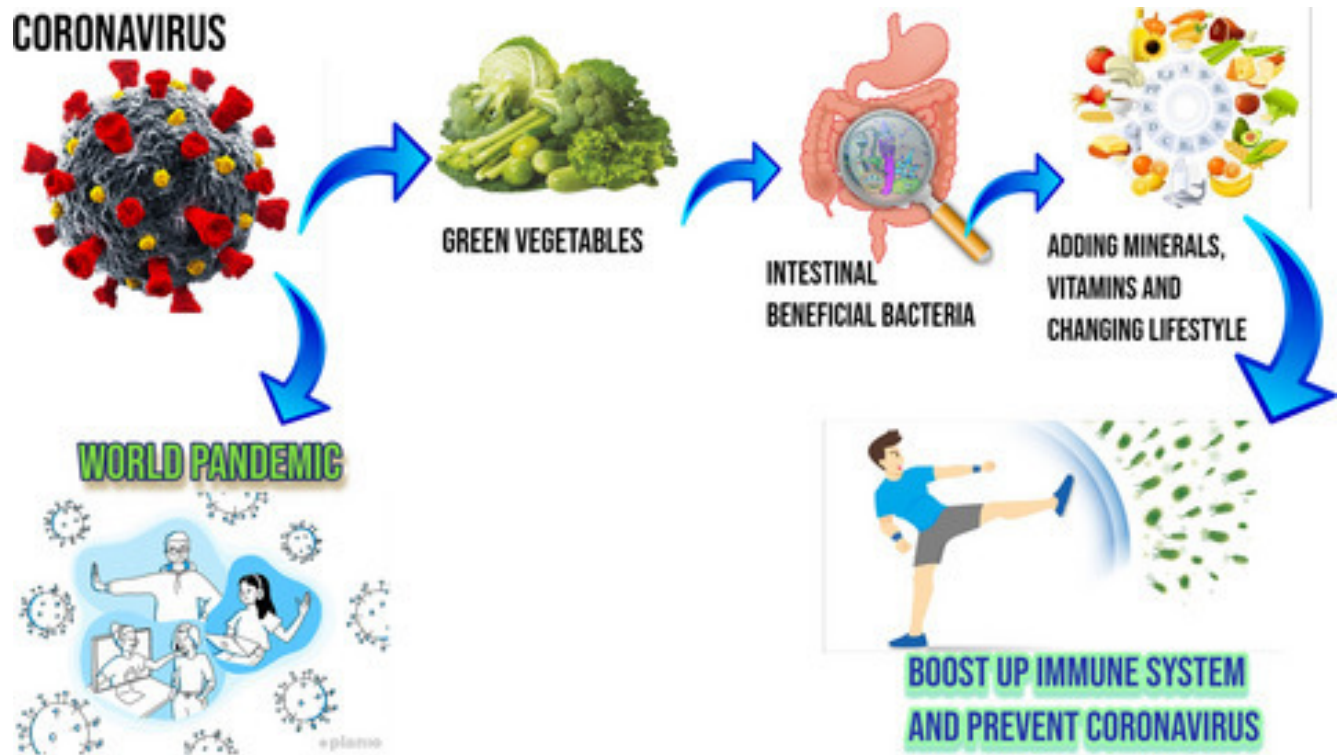
Colostrum contains antioxidants and the precursors to glutathione (the most powerful antioxidant known) which help clean up these pollutants from the body and reverse the damage they do to the body.

**Allergies and Autoimmune Diseases:** PRP (platelet-rich plasma) from colostrum can work as a regulatory substance of the thymus gland.” It has been demonstrated to improve or eliminate symptomatology of both allergies and autoimmune diseases (MS, rheumatoid arthritis, lupus, and myasthenia gravis). PRP inhibits the overproduction of lymphocytes and T-cells and reduces the major symptoms of allergies and autoimmune disease; pain, swelling, and inflammation

“Colostrum lactalbumin has been found to be able to cause the selective death(apoptosis) of cancer cells, leaving the surrounding non-cancerous tissues unaffected

Taking colostrum as a nutritional supplement helps maintain your health, particularly your gut health, which is critical to your overall health. Whole colostrum includes PRPs as well as a number of other immune factors, such as immunoglobulin’s, lactoferrin, and others, so you will receive significant immune benefit from taking whole colostrum.

## Corona Virus and Immune System







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“A plant based diet, regardless of when you begin, will help you work toward preventing numerous ailments and feeling better overall”

The immune system is the body's most potent natural defense system. It helps to prevent viral and bacterial infections. It aids in the healing of your cells following an illness. It may be useful in reducing the severity of an illness. That's why, especially when viruses and pests are prevalent in your neighborhood or even your own home, you should pay close attention to your immune system. Whole plant foods, such as vegetables, fruits, whole grains, legumes, nuts, and seeds, have the highest fiber content. Perhaps to solely on a particular micronutrient, such as vitamin C, it's crucial to eat a variety of foods since they contain a number of vitamins, minerals, antioxidants, and phytochemicals that act together.

Plant rich diets aid in the development of your immune system, and the essential nutrients included in plants help to reduce inflammation in the body. Phytochemicals and antioxidants support your immune system by removing toxins from the environment, processed foods, bacteria, viruses, and other sources.

## A PLANT BASED DIET



Herbs contain a variety of fatty acids (mono- and polyunsaturated against saturated and Trans) as well as carbs (complex and unprocessed versus simple and refined), which may both have a role in mediating beneficial health benefits. Second, plant-based diets include a high-fiber intake from legumes, grains, vegetables, and fruits, which may promote beneficial metabolic processes like unregulated carbohydrate fermentation and down regulated protein fermentation, improved gut hormonal-driven appetite regulation, and chronic disease prevention.

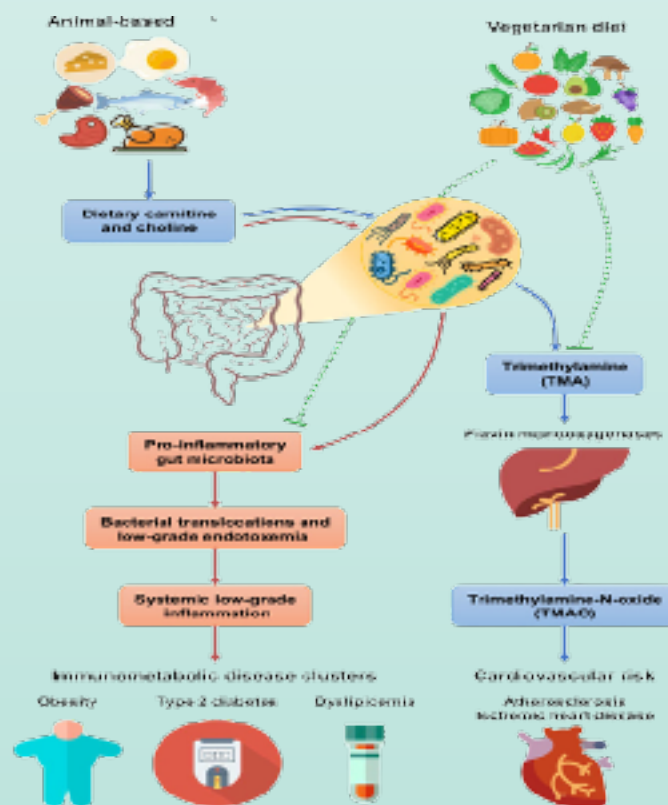


Figure 1: The effects of a plant-based diet and animal based diet on human body and overall health

The researchers also discovered a synergistic correlation between poor diet and increased socioeconomic deprivation and COVID-19 risk that was greater than the sum of each factor's risk alone. 138 of COVID 19 patients developed "moderate to severe" COVID 19 (fever, respiratory difficulties, and low oxygen levels, among other symptoms), whereas 439 developed "very light" or "mild" COVID 19. After analyzing data, the researchers discovered that persons who ate a plant-based diet had a 73 percent lower risk of developing moderate to severe COVID 19 than their counterparts.

The active ingredient in garlic, allicin sativum, is proposed to have antiviral and antimicrobial effects on the common cold, Cell studies have shown that tea catechins such as those found in green tea can prevent flu and some cold viruses from replicating and can increase immune activity. The research study concluded that herb diet have various positive and beneficial impacts on human immune system.



*“Eat a plant based diet which act like prebiotic and probiotics in the gut”*





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“A plant based diet, regardless of when you begin, will help you work toward preventing numerous ailments and feeling better overall”

Nutraceuticals are foods or parts of foods that provide medicinal or health advantages, such as illness prevention. They are natural compounds that include specific herbs that are utilized as nutritional supplements and controlled as foods in a broader sense. Because of their putative safety and numerous nutritional and therapeutic properties, plant-derived nutraceuticals getting a lot of attention. They are widely regarded as a powerful tool for combating nutritionally induced acute and chronic disorders, as well as for supporting good health and life. Curcumin from turmeric, glucosamine from ginseng, and omega-3 fatty acids from linseed are all examples of plant-derived (herbal) nutraceuticals. Term nutraceuticals was coined in 1989 by Stephen DeFelice. Definite use of nutraceuticals is to achieve therapeutic output with reduced side effects and is powerful in sustaining health effects promote optimal health and quality of life. Motive behind nutraceuticals is focused on prevention.

## NEUTRACEUTICALS



Nutraceuticals classified on the basis of sources.

·Natural/Traditional nutraceuticals

a.Plant

b.Animals

c.Minerals

d.Microbial

·Unnatural/Non-Traditional nutraceuticals

**Natural/Traditional Nutraceuticals** : Convey benefits beyond basic nutrition. Divided on the basis of

### 1.Chemical Constituents

·Nutrients

·Herbal

·Phytochemicals

2. Nutraceutical Enzymes

3. Probiotic Microorganism

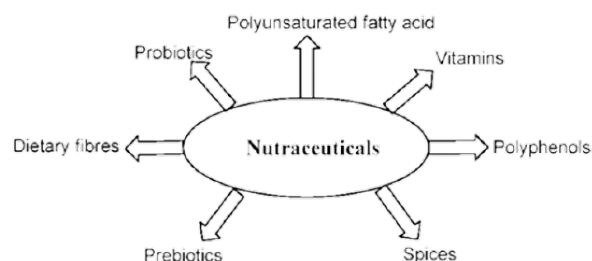


Fig- Types of Nutraceuticals available in market

Nutrients include amino acid, fatty acid, minerals and vitamins. Herbal nutrients improve health and avoid chronic diseases. Phytochemicals are plant nutrients with particular biologic activities. Nutraceuticals enzymes are derived from plant, animal and microbial sources. Probiotic microorganisms are responsive bacteria that promote healthy digestion and absorption of some nutrients. In India, functional foods are expected to see increased consumption over the next five years resulting in functional foods and beverages garnering greater product share in the market as opposed to dietary supplements

## Conclusion

Because of the presence of particular concentrations of physiologically active components, functional foods and nutraceuticals are claimed to be effective in the prevention and/or treatment of disease and the promotion of health. Natural foods, separated components from these foods that are added to other foods or packaged as nutritional supplements, and food components manufactured in the laboratory are all examples of functional foods.





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Personal immunity has become the biggest concern than ever for the people across the globe. It is rightly so, because the people all over the world are taking every precaution they can take to avoid falling prey to COVID-19. But as the human tendency go for any dangerous health problems, it is very easy to fall prey to overly extravagant health advice that can actually be harmful.

We all have gone through an extremely difficult one and half year since advent of COVID-19 pandemic. The pandemic warranted much-needed focus on individual health. But at the same time, it created a chaos among people about what is good for health and what is not. Naturally all attention was centered toward use natural remedies specifically herbs that can be part of diet or as supplements to boost immune system which was apparently the only way to avoid the dreaded pandemic. A steep rise was witnessed in demand for immunity-boosting supplements and alternate medicines.

Most companies advertized their version of a cure in vitamin C, zinc or protein supplements, as the best against pandemic. Social media platforms especially WhatsApp and family discussions were swamped with discussions about diet, nutrients, home remedies and recipes of Kadhas to boost immunity. The most searched question on Google in 2020 was "how to increase immunity".

## MISCONCEPTIONS ABOUT HERBS AND IMMUNITY

It clearly pointed towards the tendency of people to adopt anything and everything that would offer them immunity against Covid-19. Over the course of time some of the misconceptions about some mostly adviced herbal remedies have surfaced to be wrong. Some of them are discussed here.

### COMMON MISCONCEPTIONS ABOUT IMMUNITY BOOSTING BY HERBS THAT LATER PROVED WRONG

**·Increase intake of vitamin C supplements/herbs will boost immune system** Vitamin C is a significant nutrient for optimal immune function. However, studies have proved that taking its multiple doses either as supplements or consuming plenty herbs. that are rich source of vitamin C doesn't really useful to boost the immunity. Our body can only absorb a few hundred milligrams of vitamin C at a time. The recommended dietary daily amount of a vitamin C is 75 mg/day for adult females and 90 mg/day for adult males. So any amount which is above this is excreted in the urine.

### ·Super foods that are cure for all immunity problems

Eating healthy keeps our immune system running at optimal capacity. There is no single super food that will magically boost immunity. Eating a variety of colorful fruits and vegetables can provide us multiple vitamins and minerals that are important for our immune system.

## ·Only citrus fruits can boost immunity

Citrus fruits viz lemons; oranges etc are the valuable sources of the immunity boosting vitamin C. But they are not the only foods that can support immune system Red peppers, Garlic or Carrots are also proved to be actively helpful in immunity.

## ·Foods and vitamins are the only way to improve immunity.

A diet providing important nutrients to body is crucial for overall health and a strong immune system. But interestingly, many lifestyle factors also play a role in immune system. Sleep, stress, exercise, addiction etc are such lifestyle factors.

## ·Herbal medicines are good for everyone.

While herbal medicine can offer immune support to many, they don't offer a one for all approach. Individuals with autoimmune disease or other certain diseases need a careful prescription of herbal medicines.

## ·Enhanced intake of mineral water and health drinks are needed to boost immunity.

Mineral waters and sports drinks are often a source of added ingredients which can cause harm if taken persistently.

## CONCLUSION

A healthy immune system is achieved by practicing long-term healthy habits, including eating a balanced diet comprising fruits, vegetables, and whole foods, doing exercise, getting enough sleep and taking care of mental well-being. So being a smart people we should not follow the advices blindly, but use some common sense for our own good.





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Since ancient period the humanity made drugs from the excerpts of natural accoutrements and has been used for colorful purposes. In 1989 Dr. Stephen chased the term “Nutraceuticals” which is combination of nutrition and medicinal. Nutraceuticals have a come long way since a new trend in the care of companion creatures surfaced in the 1990s and the analogous trends in the mortal sector as well. With the passage of the salutary supplement health and education act of 1994, the description of nutraceuticals has been expanded to include vitamins, minerals, sauces and other botanicals, amino acids, and salutary substance for mortal use as a supplement diet. The term nutraceutical isn't well accepted on global, nonsupervisory systems while the salutary supplements are considered to be more prominent. Presently over 470 nutraceutical and functional food products are available with proved health benefits.

The success of traditional curatives is basically due to the art of balancing the effect of one variety of food with other so that all congratulated each other. Presently, the medical interpreters are considered as magic wand to cure complaint. A recent study reports that 70 of cases generally consult a medical guru before or during the traditional remedy, indicates the disapprobation of the natural remedy.

## NEUTRACEUTICALS

Still, the cases are important apprehensive of the side goods, contraindications caused due to the chemical agents in short and long term remedy.

Therefore the interest to help drug from every small complaint came into trend and accordingly led to new exploration on indispensable curatives rather with the help of nutritive approaches. This review gives highlights of some important data regarding remedial use of nutraceuticals as the marketable and traditional remedies.

### CONCEPTS OF NUTRACEUTICALS

In the pharmaceutical development process, it's a demand to have clinical test results from beast tests and studies, for verification of the goods. On the other hand, in the case of nutrition, there was no verification system for foods in precluding conditions in the history. In recent times still, as food composition has been scientifically proven to beget life- related conditions, and has come a social issue.

### REGULATORY ASPECTS OF NUTRACEUTICALS

The regulatory framework of nutraceuticals in India needs attention from the relevant authorities. Globally, the regulatory authorities are aware of changing needs of consumers and proactively protect consumers by amending existing laws to accommodate changes but in India old laws such as Prevention of Food adulteration Act, 1954, which regulates packaged foods, still exist for manufacturers.



Nutraceuticals are non-specific biological therapies used to promote wellness, prevent malignant processes and control symptoms. They are categorized as follows

## 1. Based on chemical constituents

### (a) Nutrients

### (b) Herbals

### (c) Dietary Supplement

## 2. Traditional and Non-Traditional nutraceuticals

### (a) Traditional Nutraceuticals

### (2) Nontraditional Nutraceuticals

## 3. Based on Diseases

## NUTRACEUTICAL SCENARIO IN INDIA

The Indian nutraceutical industry has great prospects. Over the last decade a wide range of products have been available, giving an impetus into the tremendous growth. On one hand a booming frugality has redounded in overall increase in disposable income of population. Added to this unhealthy, eating habits coupled with sedentary life have led to increase prevalence of diet and its affiliated health issues. On the other hand, there's a growing mindfulness on the significance of nutrition and diet for long term good health. These have contributed to a favorable request conditions for Nutraceutical assiduity in India. India has a lot of advantages like good mortal coffers, world class R & D installations and varied raw material- aspects that give our country a commanding edge. The Indian Nutritional request is estimated to be USD 1 Billion. While the global request is growing at a CAGR of 7, the Indian request has been growing much briskly at a CAGR of 18 for the last three times, driven by Functional food and potables orders.

Still the idle request in India is two to four times the current request size and is between USD 2 to USD 4 billion with nearly 148 million implicit guests. In USD 1 billion request size functional food having 54 request share followed by 32 request share of Salutory supplement and 14 share of Functional potables. The Indian nutraceutical request is dominated primarily by medicinals and FMCG companies with veritably many pure play nutraceutical companies. Some major companies Marketing Nutraceuticals in India are GlaxoSmithKline consumer healthcare, Dabur India, Cadila Health care, EID Parry's, Zandu Pharmaceuticals, Himalaya herbal Healthcare, Amway, Sami labs, Elder medicinals and Ranbaxy.

## CONCLUSION

Numerous nutraceuticals, functional foods and naturally being composites that have been delved and reported in colorful studies revealed that these products are extremely active, have profound effect on cell metabolism and frequently have little adverse effect. It's natural that people's focus is shifting to a positive approach for for estallment of conditions to stay healthy. Nutraceuticals is scientific area generated each over the world. In numerous cases nutraceuticals offer an advantage over the synthetic medicines under development by the medicinals assiduity. It's new pharmacological exertion that are come intriguing in their possible clinical use and therefore helping in for estallment and remedial in several conditions. Utmost of the medicinals companies frequently warrant provocation to pursue these difficulties in carrying the patents. It's stopgap that government agencies and exploration centers will give support for farther exploration in nutraceuticals.

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Herbal immunomodulator is substance which stimulates or suppresses the components of immune system including both innate and adaptive immune responses. The modulation of immune system by various medicinal plant products has become subject for scientific investigations currently worldwide.

Modulation of immune functions using medicinal plants and their products as a possible therapeutic measure has become an accepted therapeutic approach. Plants and minerals have been used since ancient times for the treatment of many ailments and diseases. It is now being recognized that immunomodulation of immune response could provide an alternative to conventional chemotherapy for a variety of disease conditions, especially when the host's defense mechanism has to be activated under conditions of impaired immune responsiveness or when a selective immunosuppressant has to be induced in situation like autoimmune disorders and organ transplantation. Immunity is a homeostatic process, a series of delicately balanced complex, multicellular and physiologic mechanisms that allow an individual to distinguish foreign material from "self" and neutralize and/or eliminate the foreign matter.

## HERBAL IMMUNOMODULATOR



**Immunomodulation:** Development in clinical and experimental immunology strongly suggests that many infectious diseases and disorders arise because of stressful environmental conditions associated with suppression of immune system. It is evident that certain types of stress evoke physiological changes that influence susceptibility to infection and malignance. The ability to modify the immune response in animals and humans evolved from a desire to confer greater protection against infectious agents through a more complete understanding of the functioning of the immune system, and of the ways in which nonspecific and specific immune mechanisms developed. Naturally occurring or synthetic compounds capable of altering those mechanisms offered further possibilities for modulating immune responses.

**Herbal Plants as Immunomodulator:** An in India wide range of traditional medicine that is from ancient time use for medicinal purpose. India is heritage for wide range of medicinal plants. These medicinal plants show various pharmacological action like anti-inflammatory, Anti diabetic, Antiulcer, Stimulant, Nervine tonic and many more. In that some plants contain some micronutrients present in form of secondary metabolite and produce action of immunomodulation.

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## NUTRITION AND IMMUNITY



During the Covid season or times of illness, people often seek special foods or vitamin supplements that are believed to boost immunity. Vitamin C and foods like citrus fruits, chicken soup, and tea with honey are popular examples. Yet the design of our immune system is complex and influenced by an ideal balance of many factors, not just diet, and especially not by any one specific food or nutrient. However, a balanced diet consisting of a range of vitamins and minerals, combined with healthy lifestyle factors like adequate sleep and exercise and low stress, most effectively primes the body to fight infection and disease.

Our immune system, a network of intricate stages and pathways in the body, protects us against these harmful microbes as well as certain diseases. It recognizes foreign invaders like bacteria, viruses, and parasites and takes immediate action. and adaptive.

Immune system is a first-line defense from pathogens that try to enter our bodies, achieved through protective barriers. These barriers include:

- Skin that keeps out the majority of pathogens
- Mucus that traps pathogens
- Stomach acid that destroys pathogens
- Enzymes in our sweat and tears that help create anti-bacterial compounds
- Immune system cells that attack all foreign cells entering the body.

**Immunity** is a system that learns to recognize a pathogen. It is regulated by cells and organs in our body like the spleen, thymus, bone marrow, and lymph nodes. When a foreign substance enters the body, these cells and organs create antibodies and lead to multiplication of immune cells (including different types of white blood cells) that are specific to that harmful substance and attack and destroy it. Our immune system then adapts by remembering the foreign substance so that if it enters again, these antibodies and cells are even more efficient and quick to destroy it.

### Does an Immune-Boosting Diet Exist?

Dietary patterns may better prepare the body for microbial attacks and excess inflammation, but it is unlikely that individual foods offer special protection. Each stage of the body's immune response relies on the presence of many micronutrients. Examples of nutrients that have been identified as critical for the growth and function of immune cells include vitamin C, vitamin D, zinc, selenium, iron, and protein (including the amino acid glutamine). They are found in a variety of plant and animal foods.

A diet containing probiotic and prebiotic foods may be beneficial. Probiotic foods contain live helpful bacteria, and prebiotic foods contain fiber and oligosaccharides that feed and maintain healthy colonies of those bacteria.

**Probiotic foods** include kefir, yogurt with live active cultures, fermented vegetables, sauerkraut, tempeh, kombucha tea, kimchi, and miso.

**Prebiotic foods** include garlic, onions, leeks, asparagus, Jerusalem artichokes, dandelion greens, bananas, and seaweed. However, a more general rule is to eat a variety of offruits, vegetables, beans, and whole grains for dietary prebiotics.

**Vitamin or Herbal** A deficiency of single nutrients can alter the body's immune response. Animal studies have found that deficiencies in zinc, selenium, iron, copper, folic acid and vitamins A, B6, C, D, and E can alter immune responses. These nutrients help the immune system in several ways: working as an antioxidant to protect healthy cells, supporting growth and activity of immune cells, and producing antibodies. Epidemiological studies find that those who are poorly nourished are at greater risk of bacterial, viral and other infections.

Eating a good quality diet, as depicted by the Healthy Eating Plate, can prevent deficiencies in these nutrients. However, there are certain populations and situations in which one can not always eat a variety of nutritious foods, or who have increased nutrient needs. In these cases a vitamin and mineral supplement may help to fill nutritional gaps.





## Immune Boosting Foods

*A strong immune system helps to keep a person healthy. Can specific foods boost the immune system?*

The immune system consists of organs, cells, tissues, and proteins. Together, these carry out bodily processes that fight off pathogens, which are the viruses, bacteria, and foreign bodies that cause infection or disease.

When the immune system comes into contact with a pathogen, it triggers an immune response. The immune system releases antibodies, which attach to antigens on the pathogens and kill them.

Incorporating specific foods into the diet may strengthen a person's immune response.



CITRUS FRUITS



VEGETABLES



TURMERIC



PINEAPPLE



GINGER



PUMPKIN SEEDS

TOP 10 IMMUNE  
BOOSTING FOODS



GARLIC



BERRIES



YOGHURT



WHEATGRASS







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Covid pandemic enforced us to think about the ancient medical science Ayurveda, the science of life in a revised manner. Ayurveda specifies various therapies and medicines which boost our immunity. The Acquired immunity is a strong weapon that one can use to keep safe from infections. Vyadhikshmatva is given by Ayurveda is of similar element. Bala and Ojas are two pillars directed by Ayurveda increases our resistance power against diseases. Rasayana branch deals with immunity boosting. Ayurveda help to improve and adapt immunity and to live a healthy disease free life.

It was noticed that in spite of living in same infected surrounding and utilization of unwholesome and contaminated food and drinks only some persons get affected while others remain unaffected. It was also seen that some of the diseases persons get rid of their disease even without treatments. These variations among the individuals forced the ancient scholars to think on those factors which are responsible for these variations. As a result Vyadhikshmatva is named by Acharya Charak. The letter scholars and commentator gave some concept and tried their best for making concerning principles. It was indicative of some internal energy or force latter on describe as Ojas or Bala.

The term Vyadhikshamatva is made of two words Vyadhi +kshamatva. The word Vyadhi denotes to harm, to injure, to damage, or to hurt and kshamatva indicates to composed, to suppress the anger or keep resist the disease.

## VYADHIKSHAMATVA



Vyadhikshmatva was first explained by Chakapani in scientific manner as it is the capacity of the body to fight against manifested disease i.e. natural immunity and Vyadhi-Utpada-Pratibandhakatvam is noting but capacity of body to not allow producing disease. It is not only defence mechanism of the body against first occurrence of disease but also it will not allow the disease to be manifested because of possessing specific resistance power.

Vyadhikshamatva helps in to achieve the aim of

स्वास्थ्यस्य स्वास्थ्य रक्षणम्। आतुरस्य विकार प्रशमनम् च॥

which means Ayurveda aims at maintaining good health in a healthy persons and aims to cure the person who is diseased or sick.

### CONCEPT OF OJAS AND BALA

The relation between Bala and Ojas is same as that of relation between cause and effect or mass and energy. Ojas is known by Upachaya of all Dhatus while Bala is indicated by work. Thus Ojas and Bala represent the outer and inner aspects of same things.

The Ojas is not only providing the power of resistance to diseases but it is source of mental and physical energy and strength. So Ojas should always been restored because it is root cause or pillar for diseases free condition.

**Oajas** is defined as the final and excellent essence of Saptadhatu: Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra dhatu. Oajas of the body is situated in heart and is white, yellowish and reddish in colour, or color of ghee, taste like Honey and smell like fried paddy. Acharya charak says that Oajas is Pranayatanı means, if Oajas is destroyed, the human being also perish. Properties of Oajas are Guru(heavy), Sheet(cool), Mrudu(soft) Slakshna(smooth), Bahal(dense), Madhura(sweet), Sthira(responsible for stability), Prasanna (clear), Picchila (slimy) and Snigdha (unctuous).

**Bala** term is used as synonyms of Oajas. The Bala signifies the physical, mental strength of body resistance. Bala has been classified into three types as –Sahaja bala, Kalaja bala and Yuktikruta bala. Sahajabala is both mental and physical strength present naturally by birth. Kalajabala is strength due to favorable conditions like youth, season and Yuktikrutabala is strength acquired by the intake of diet such as flesh, ghee etc and by proper exercise.

**“Rasayana”** in Ayurveda is a comprehensive term which refers to a group of herbs, formulations and therapies for enhancing body resistance by attaining optimal level of Rasadi Dhatu. This is attained through specific medicinal herbs, formulations and some specific codes of conduct. Rasayana promotes strength, vitality, longevity, memory, intelligence, perseverance of youthfulness and the maintenance of optimum strength of the body and senses.

There is a substantial body of scientific information on the said herbs and their phytoconstituents in public domain regarding the various activities viz; immunomodulation, antioxidant activities, neuro degenerative disorders, rejuvenators and nutritional supplements.

## CONCLUSION

We can develop Vyadhikshamatva by following the lifestyle and guidelines given in ancient Ayurvedic literature. Such as following Dincharya, Ritucharya and practicing Rasayana therapies as explained. Immunomodulatory effect of Ashwagandha (*Withania somnifera*) has been proved. It is said to be anti inflammatory, antiarthritic, antitumour, antistress, and antioxidant, hemopoietic and rejuvenating properties. It has a positive effect on the endocrine, cardiopulmonary and central nervous system. Guduchi (*Tinospora cordifolia*) has effect on the bacteria *e coli* and can be used as immunomodulator for activation of macrophages, antitumor and immunostimulatory. Amalkia (*Emblica officinate*) is antioxidant, immunomodulatory, cytoprotective activity. Bhasmas also perform many vital functions as Rasayana such as stimulant, antioxidant, improves strength, immunity, longevity memory and intelligence etc.

Thus it can be said that with the help of Rasayanas, **Vyadhikshamatva can be acquired and Yuktikrita Bala can be achieved which helps to fight against diseases.**



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## BOOSTING YOUR IMMUNE SYSTEM AGAINST CORONAVIRUS



Covid – 19 or Coronavirus was declared as a global pandemic by the World Health Organization. And while the countries are grappling with imminent dangers that this virus poses to humanity, there are few key measures that individuals can take to fight this pandemic.

While it is crucial to mention hygiene standards like washing your hands frequently, especially if you have travelled by public transport. Using an alcohol sanitizer, in case you are travelling to disinfect your hands, wearing a mask (cover your nose and mouth) and avoiding touching your hand or mouth. There are also certain methods to improve your immunity which is paramount at this juncture.

Individuals in certain pre-existing illnesses like diabetes, hypertension, cardio vascular disease, and respiratory issues are at a higher risk of having Covid 19 complications, it also aggravates with age as the general immunity reduces as you get older. In the younger generation with no underlying illnesses, Covid 19 can result in a minor infection, provided you have a robust immunity and do not engage in activities like smoking or vaping to combat the onslaught of the virus.

### Improve Your Diet

The food you eat plays a key aspect in determining your overall health and immunity. Eat low carb diets, as this will help control high blood sugar and pressure. A low carb diet will help slow down diabetes and focus on a protein-rich diet to keep you in good shape. And regularly consume vegetables and fruits rich in Beta carotene, Ascorbic acid & other essential vitamins. Certain foods like mushrooms, tomato, bell pepper and green vegetables like broccoli, spinach are also good options to build resilience in the body against infections.

You can also eat supplements rich in omega 3 & 6 fatty acids for your daily dose, if stepping out to buy groceries is not an option during social distancing. Some natural immunity supplements include ginger, gooseberries (amla) and turmeric. Some of these super foods are common ingredients in Indian dishes and snacks. There are several herbs that help in boosting immunity like garlic, Basil leaves and Black cumin. Certain seeds and nuts like sunflower seeds, Flax seed, pumpkin seeds and melon seeds are excellent sources of protein and vitamin E.

Probiotics like Yoghurt, Yakult and fermented food are also excellent sources to rejuvenate the composition of gut bacteria, which is important for nutrient absorption by the body. These are good options for the older generation too.

## Supplements and immunity boosting foods

While all the above-mentioned tips will definitely help, the need of the hour is a quick boost to your immunity system to keep it fighting fit. If you're concerned whether you are getting the right amount of nutrients from your diet, consult with your doctor about a supplementation regimen to boost your immune system. Here are a few common supplements and super foods that can help.

### Vitamin C

This particular vitamin is a crucial participant in the army of immunity. It helps prevent the common cold. It acts as a powerful antioxidant and protects against damage induced by oxidative stress. For severe infections, including sepsis and acute respiratory distress syndrome (ARDS), high dose intravenous vitamin C treatment has been shown to significantly improve symptoms in patients.

### Vitamin D

Vitamin D supplements have a mild protective effect against respiratory tract infections. Most people are deficient in Vitamin-D, so it's best to consult with a doctor about taking a Vitamin D supplement to boost immune response.

### Zinc

Zinc is a vital component to WBC (white blood corpuscles) which fights infections. Zinc deficiency often makes one more susceptible to flu, cold and other viral infections. It is advisable to take a zinc supplement, especially for older people.

## Elderberry

Elderberries are full of nutrients including minerals like phosphorus, potassium, iron, copper and vitamins, such as vitamin A, B, and C, proteins and dietary fibre. Elderberries have antibacterial and antiviral qualities which help fight cold and influenza.

## Turmeric and Garlic

The bright yellow spice, Turmeric, contains a compound called curcumin, which boosts the immune function. Garlic has powerful anti-inflammatory and antiviral properties which enhances body immunity.

Apart from maintaining a healthy lifestyle and taking supplements, the Indian health ministry is also suggesting few organic and natural ways to practice as preventive measures to fight COVID-19. The Ministry of AYUSH has recommended the following self-care guidelines as preventive measures and to boost immunity with special reference to respiratory health.

- Warm water throughout the day.
- Practice Meditation, Yogasana, and Pranayama.
- Increase the intake of Turmeric, Cumin, Coriander and garlic.
- Drink Drink herbal tea or decoction of Holy basil, Cinnamon, Black pepper, Dry Ginger and Raisin.
- Avoid sugar and replace it with jaggery if needed.
- Apply Ghee (clarified butter), Sesame oil, or Coconut oil in both the nostrils to keep the nostrils clean.
- Inhale steam with Mint leaves and Caraway seeds.



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## NUTRITION AND IMMUNITY



A healthy diet is essential for good health and nutrition. It protects you against many chronic noncommunicable diseases, such as heart disease, diabetes and cancer. For healthy life we have to take healthy diet, and maintain some discipline in our routine life. So that we can enjoy each and every second of beautiful gift given by God i.e. LIFE

Our immune system, a network of intricate stages and pathways in the body, protects us against these harmful microbes as well as certain diseases. It recognizes foreign invaders like bacteria, viruses, and parasites and takes immediate action. and adaptive.

Immune system is a first-line defense from pathogens that try to enter our bodies, achieved through protective barriers. These barriers include:

- Skin that keeps out the majority of pathogens
- Mucus that traps pathogens
- Stomach acid that destroys pathogens
- Enzymes in our sweat and tears that help create anti-bacterial compounds
- Immune system cells that attack all foreign cells entering the body.

**Immunity** is a system that learns to recognize a pathogen. It is regulated by cells and organs in our body like the spleen, thymus, bone marrow, and lymph nodes. When a foreign substance enters the body, these cells and organs create antibodies and lead to multiplication of immune cells (including different types of white blood cells) that are specific to that harmful substance and attack and destroy it. Our immune system then adapts by remembering the foreign substance so that if it enters again, these antibodies and cells are even more efficient and quick to destroy it.

### Does an Immune-Boosting Diet Exist?

Dietary patterns may better prepare the body for microbial attacks and excess inflammation, but it is unlikely that individual foods offer special protection. Each stage of the body's immune response relies on the presence of many micronutrients. Examples of nutrients that have been identified as critical for the growth and function of immune cells include vitamin C, vitamin D, zinc, selenium, iron, and protein (including the amino acid glutamine. They are found in a variety of plant and animal foods.



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## DIET, EXERCISE AND LIFESTYLE: HAPPY HEALTH



In this article, I have mentioned about causes of diseases and stress by considering today's lifestyle of us. Also I have briefed about what should be done for improvement of our collapsed health as Healthy diet, Meditation and Yoga helps in building a healthy lifestyle. When we will start to take nutritious diet with little exercise, our health will automatically get convert into happy and auspicious condition.

Over so years ago, the WHO organization defined health as being more than freedom from illness, disease and debilitation conditions. In recent years, public health experts have identified wellness as “a sense of well being and quality of life”.

Health, nutrition, diet and lifestyle plays an important role in our daily life. Good health is a primarily important for our society. Health is not only to live happy, wealthy, successfully and absence of disease but it is a state of mind and body that can survive in worst conditions also. For that regular physical activity, exercise and meditation can help to stay happy, healthy, energetic, calm and independent. Exercise, yoga plays a vital role in preventing health diseases and stroke and the meditation can reduce stress, anxiety, boost happy chemicals, improves self confidence, increase the brain power, sharpen the memory and increases our strength.

It also helps in preventing and reducing diseases, obesity, blood sugar fluctuations and cardiovascular disorders.

Nowadays, everyone is in hurry, everyone is busy in their life and their life is also passing as fast as so many tasks have to finish per day. Henceforth, we use to finish our meals in very short time, we are not sparing so much time with our self. Hence our body requirement is not fulfilled through meals. By including leafy vegetables, cereals, milk, fruits, meat helps to get all the things that our body requires.

Fast food is now fashion of the day but fast food. This is one of the cause to reduce our health quality. Along with that, daily screening of mobile device, television, playing video games leads to weight gain, joints pain later and inertness of individual. So that we need to participate in different kinds of sports; need to keep active in each task of life. Need to spare some time in greenery sites or with nature, need to do meditation and yoga, need to take balanced diet need to drink more water and say good bye to all illness, negativity around us.

### Conclusion:

Considering the today's life pattern, we as a human have lost our happy and valuable health, due to lack of awareness or due to over eating, lack of exercise, meditation and yoga and also due to unhealthy diet. If we want to improve our health, we need to start up with good habits and positive attitude towards the life and good knowledge about the balanced diet and health.

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The term “**medicinal plant**” include various types of plants used in herbalism ("herbology" or "herbal medicine"). It is the use of plants for medicinal purposes, and the study of such uses.

The word “**herb**” has been derived from the Latin word, “*herba*” and an old French word “*herbe*”. Now a days, herb refers to any part of the plant like fruit, seed, stem, bark, flower, leaf, stigma or a root, as well as a non-woody plant. Earlier, the term “herb” was only applied to non-woody plants, including those that come from trees and shrubs. These medicinal plants are also used as food, flavonoid, medicine or perfume and also in certain spiritual activities.

Plants have been used for medicinal purposes long before prehistoric period. Ancient Unani manuscripts Egyptian papyrus and Chinese writings described the use of herbs. Evidence exist that Unani Hakims, Indian Vaidas and European and Mediterranean cultures were using herbs for over 4000 years as medicine. Indigenous cultures such as Rome, Egypt, Iran, Africa and America used herbs in their healing rituals, while other developed traditional medical systems such as Unani, Ayurveda and Chinese Medicine in which herbal therapies were used systematically.

## HERBS WITH THEIR MEDICINAL VALUES

Traditional systems of medicine continue to be widely practised on many accounts. Population rise, inadequate supply of drugs, prohibitive cost of treatments, side effects of several synthetic drugs and development of resistance to currently used drugs for infectious diseases have led to increased emphasis on the use of plant materials as a source of medicines for a wide variety of human ailments.

Recently, WHO (World Health Organization) estimated that 80 percent of people worldwide rely on herbal medicines for some aspect of their primary health care needs. According to WHO, around 21,000 plant species have the potential for being used as medicinal plants.

Medicinal plants such as *Aloe*, *Tulsi*, *Neem*, *Turmeric* and *Ginger* cure several common ailments. These are considered as home remedies in many parts of the country. It is known fact that lots of consumers are using Basil (*Tulsi*) for making medicines, black tea, in *pooja* and other activities in their day to day life.

In several parts of the world many herbs are used to honour their kings showing it as a symbol of luck. Now, after finding the role of herbs in medicine, lots of consumers started the plantation of tulsi and other medicinal plants in their home gardens.

Medicinal plants are considered as a rich resources of ingredients which can be used in drug development either pharmacopoeial, non-pharmacopoeial or synthetic drugs. Apart from that, these plants play a critical role in the development of human cultures around the whole world. Moreover, some plants are considered as important source of nutrition and as a result of that they are recommended for their therapeutic values. Some of these plants include ginger, green tea, walnuts, aloe, pepper and turmeric etc. Some plants and their derivatives are considered as important source for active ingredients which are used in aspirin and toothpaste etc.

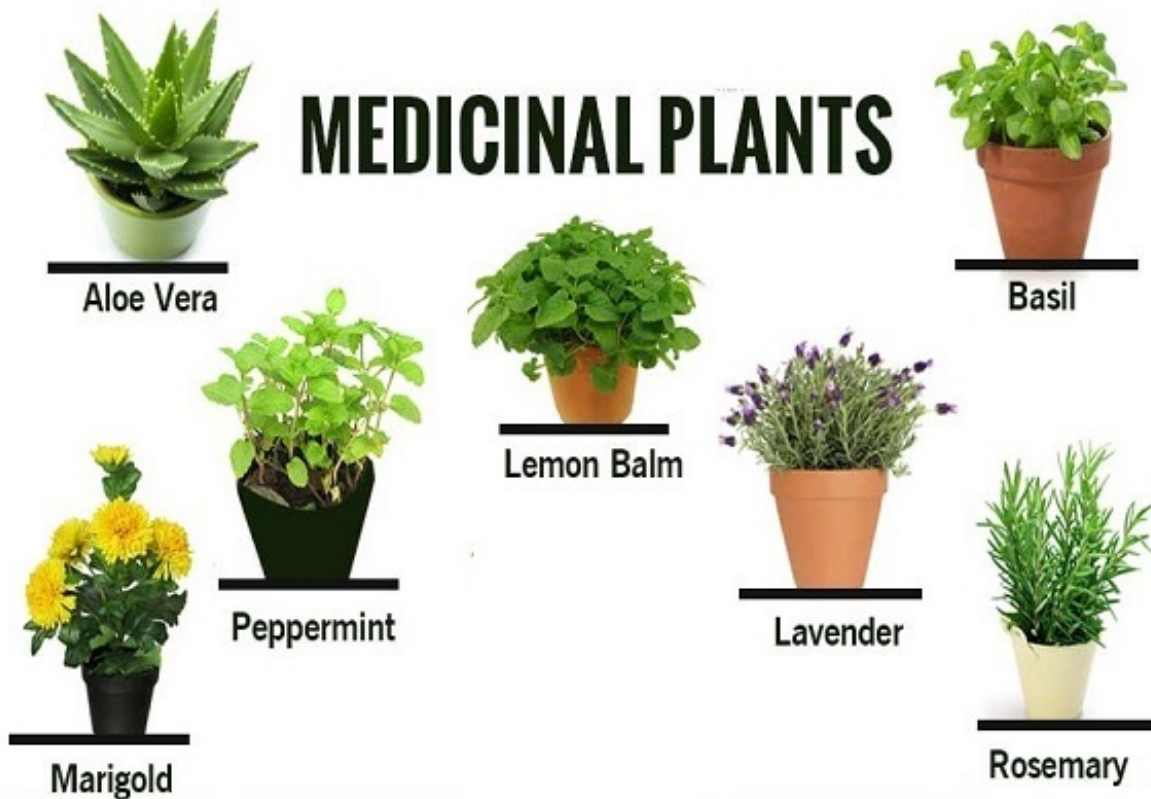
Apart from the medicinal uses, herbs are also used in natural dye, pest control, food, perfume, tea and so on. In many countries different kinds of medicinal plants/ herbs are used to keep ants, flies, mice and flee away from homes and offices. Now a days medicinal herbs are important sources for pharmaceutical manufacturing.

## Importance of Some Herbs with Their Medicinal Values

- Herbs such as black pepper, cinnamon, myrrh, aloe, sandalwood, ginseng, red clover, burdock, bayberry, and safflower are used to heal wounds, sores and boils.
- Basil, Fennel, Chives, Cilantro, Apple Mint, Thyme, Golden Oregano, Variegated Lemon Balm, Rosemary, Variegated Sage are some important medicinal herbs and can be planted in kitchen garden. These herbs are easy to grow, look good, taste and smell amazing and many of them are magnets for bees and butterflies.
- Many herbs are used as blood purifiers to alter or change a long-standing condition by eliminating the metabolic toxins. These are also known as 'blood cleansers'. Certain herbs improve the immunity of the person, thereby reducing conditions such as fever.
- Some herbs are also having antibiotic properties. Turmeric is useful in inhibiting the growth of germs, harmful microbes and bacteria. Turmeric is widely used as a home remedy to heal cut and wounds.
- To reduce fever and the production of heat caused by the condition, certain antipyretic herbs such as *Chirayta*, black pepper, sandal wood and safflower are recommended by traditional Indian medicine practitioners.
- Sandalwood and Cinnamon are great astringents apart from being aromatic. Sandalwood is especially used in arresting the discharge of blood, mucus etc.



## Herbs and Medicinal Value



<b>OREGANO</b> helps soothe stomach muscles		<b>Thyme</b> relaxes respiratory muscles
<b>MINT</b> can ease hiccups		<b>TURMERIC</b> anti-cancer
<b>GINGER</b> anti-nausea remedy		<b>BASIL</b> can relieve gas and soothe stomach upsets
<b>GARLIC</b> natural antiseptic		<b>BLACK PEPPER</b> help relieve indigestion
<b>FENUGREEK</b> helps flush out harmful toxins		<b>CAYENNE</b> can stop a heart attack
<b>Fennel</b> can reduce bad breath and body odor		<b>CINNAMON</b> helps lower blood pressure
<b>CLOVE</b> anti-microbial		<b>Dill</b> treat heartburn, colic and gas
<b>SAGE</b> antiseptic and antibiotic		<b>Rosemary</b> antioxidant

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## GOOD HEALTH & IMMUNITY IS ESSENTIAL FOR FIGHT AGAINST VIRAL INFECTION

Good health & immunity is essential for fight against viral infection. Diet plan, use of some herbs, green vegetables, fruits, dietary supplements, exercise yoga & some Naturopathy therapies are plays a vital role in boosting immune system.



Corona virus created a very harmful health Problems to people/ Public. Medical researchers around the world is trying to find out treatment for the corona virus infection. In this situation, there is a need of herbal home remedies to boost the immunity power for fight against the viral infection. Several herbs which are used for Various home remedies and are assumed to be effective against corona & in boosting health immunity.

Home remedies can be played a important role as immunity booster. That's way in this present study, an challenge is to find out such herbal remedies and identify its immunomodulator effect against corona virus infection.

Not only the herbs but also some food may be helpful for boosting the immunity. Certain foods, diet plan, herbs, nutraceuticals, dietary supplements, green vegetables all are having a vital role in boosting the immune system.

Some of the herbal drugs are most effective and used as a home remedies that are :-

*Azadirachta Indica*

*Zingiber Officinale*

*Ocimum Sanctum*

*Curcuma Long*

*Indian Gooseberry*

Some immune boosting antioxidants and food supplements against covid 19 are:-

Many nutritional supplements like herbs, fruits, roots and vegetables can reduce the risk of viral infection by boosting the immunity. Protein rich diet, zinc metal, vitamin D & C supplements, Curcumin, probiotics are plays a vital role in immunomodulatory.

**"EAT' VEGETABLES, STAY' HEALTHY'  
FOLLOW DAILY ROUTINE, BOOST' YOUR  
IMMUNITY' "**

Regularly consume beta carotene, ascorbic acid and other essential vitamin rich vegetable, fruits.

- Certain food like mushrooms, tomato and Green vegetables like broccoli, Spinach are also good to build immune system in body against infection.
- Some seeds like sunflower seed, Pumpkin seed, Flax seed are excellent sources of protein and Vitamin C.

Along with Herbs, diet, nutrition, food supplements, some other things are also included such as:-



# SCIENCIA

1. **Don't compromise sleep** :-Daily 7-8 hrs sleep is best way to help in built immunity.
2. **Stay Hydrated**:-Drink up to 8-10 glasses water in a day. Other than water, drink citrus juice and coconut water.
3. **Don't skip exercise** :-Do daily exercise for 30-45 minutes to improve metabolism, which is related with immunity.
4. **Naturopathy treatment** :-To prevent and Cure infection, it is used as boosting therapy. It include-
  - **Wet Packs** -Relief from joint pain and swelling.
  - **Salt water Gargeling**-Relief from sore throat.
  - Steam**-Relief from inhalation problems.

**CONCLUSION**:-Perfect diet plan and maintain regular routine plays as important role for good health.

We have to consume food with nutrients, fruits and also some herbs in our daily life for improving our immunity and for good health. Exercise, yoga, sleep & some Naturopathy therapies are also plays an essential role to boosting immune system.







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Health is more than that of physically fitness that is mentally calmness and emotionally steady with proper meditation, diet and exercise. Balancing three doshas that are vata, pitta and kapha by increasing intake of sattvic food will helps to balance our life.



Health means not only an absence of disease. Health is being established in the self. It is the dynamic expression of life. The perfect health is when one is physically fit, mentally calm and emotionally stable. When we take long breath we feel full of energy and when breath out we go in deep relaxation. So breath is a key point in health. Our first act in this world is to take a deep breath in and our last act will be breath out. Breathing is life. Breath impact on the mind and body. We can control negative emotions like anger and fear and manage the stress level using breath. To manage the breath meditation is the key point. Our body is like an instrument which needs daily tuning. A perfect instrument is key for perfect music. Likewise, for good quality meditation a light and healthy body is essential.

## MEDITATION, DIET AND EXERCISE: KEY POINTS FOR HEALTHY LIFE

The bad food habits has direct impact on our body. The type and amount of food we consume directly affected on our body and mind.

According to ayurveda, the human body is divided into three doshas and three gunas. The doshas are Vata, Pitta and Kapha. The gunas are Tamas, Rajas and Sattva. The basic nature of our mind is to be calm, happy, creative and sattvic along with right amount of rajas and tamas. Sattvic food contains freshly cooked green vegetables, grains, fruits and juices. That helps to keep healthy, light, energetic and enthusiastic throughout the day. Tamas food contains meat, non veg, heavy foods that produces laziness, sleep throughout the day. Rajas food includes hot and spicy foods and sweets that may leads to focus on action, restlessness, many thoughts and creates ego and aggression among the individuals.

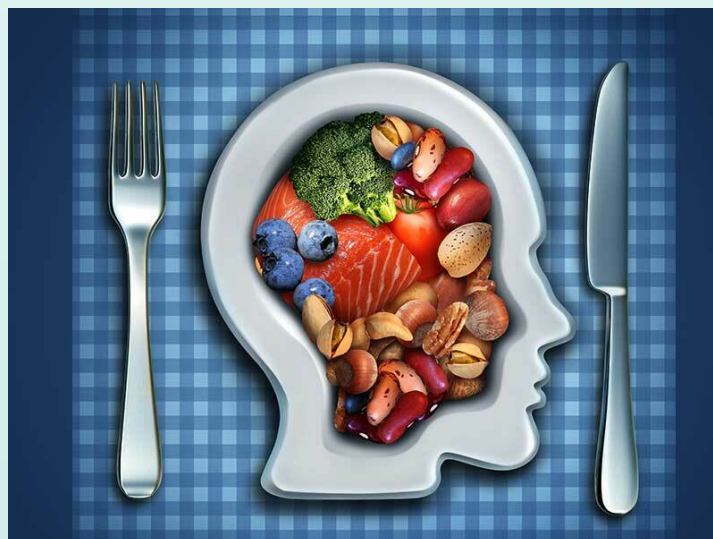
Along with it yoga, exercise makes your emotions softer and peaceful. Doing yoga, exercise on daily basis helps to improve health, physical strength, mental strength, protects from injury and detoxify our body. Our system is seamless blend of body, mind and spirit. An irregularity in the body affects the mind and unpleasantness and restlessness in mind. Yoga poses helps to improve immunity. Regular yoga practice helps to strengthen body muscles also make them strong.

God gifted everyone that body. Taking care of it that is our responsibility. Don't make our body a dustbin to throw everything in it. It is a precious gift and life dosent give a second chance to change something. It is never too early or too late to work towards being the healthiest you. So, simple change in your food habits with regular practice of yoga and meditation and make your life better.

**Ms. Akansha A. khandekar****F. Y. B. Pharm****Annasaheb Dange College of B. Pharmacy Ashta**

## ESSENTIAL NUTRIENTS FOR A HEALTHY BALANCED DIET

Now days immune system plays very important role .Immune system keeps our body healthy and strong it has ability to avoid or fight against diseases.



Nutrient	% of daily calories	Function	Sources
Carbs	45 to 55 %	Energy	Grains(Refined and unrefined) : Wheat, Maze,
Protines	10 to 35 %	Tissue growth and maintenance	Meat, Fish, Nuts, Eggs, Soya beans and Pulses
Fat	20 to 35 %	Energy, Energy storage, Hormone Production	Nuts, Seeds, Plant oils, Dairy products (Milk,
Fibre	Included in carbs	Regulate blood sugar levels, Bowel function and bowel health	Peas, Beans, Vegetables, Fruits, Oats, Whole grains, Brown rice, Nuts Seeds
Vitamins and minerals	Trace	Metabolism regulation, Aiding cell growth, Other biochemical functions	Specific to each vitamin/mineral. A range of vegetables, Lean meat,

The food plays a key aspect in determining your overall health and immunity .Mention in your diet green vegetables, fruits because of green vegetables delivers many nutrients such as vitamins,antioxidants , fibres, magnesium, potassium, iron and calcium.

**Some natural herbs that help in boosting immunity are as given below :**

**Ginger:** Ginger has been an age old remedy for flu and the common cold .It contains gingerol, an antioxidant that can power up our immune system and kill viruses.Ginger is particularly good in preventing respiratory tract infections .

**Garlic:**Just like ginger, garlic too may help you to stay protected from corona virus by stimulating your immunity .It contains a allicin, a plant compound that acts as a germicide. But remember, to make the most of benefits of garlic, consume it raw or partially cooked .

**Turmeric:**Every time your grandmother said you need to consume turmeric for your healthy life, she was right .Turmeric contains curcumin a phytochemical that can help remove toxins from your body and strengthen your immune system to fight off germs and bacteria .Add extra dash of turmeric to your meals or consume it with milk

**Neem:**Since time immemorial, neem has been respected and widely used as an immunity booster.It is very effective in keeping the body safe from attacks by harmful pathogens , and its properties is anti viral, anti bacterial and anti fungal.

Neem can also keep your blood clean.It purifies the blood by flushing away toxins and this can strengthen immunity.

**Tulsi:** Tulsi is another wonder herb that is much favoured by Ayurveda Tulsi or basil is a powerful germicide . Because of its phytochemicals and antioxidants, it can help locate germs, viruses and bacteria the moment they enter your body and destroy them.

Simply chew a few leaves first thing in the morning . You can also add a few drops of water boiled with tulsi leaves into your food.

**Giloy:** Giloy is scientifically known as Tinospora Cordifolia or Guduchi in Hindi. The stem of Giloy is considered highly effective because of its high nutritional content and the alkaloids found in it but the root and leaves also can be used.

The compound present in giloy have effective against various disorders, such as diabetes ,cancer neurological problems,fever etc. So giloy is a strong immunity booster , antotoxic, antipyretic (that reduces fever) anti inflammatory and antioxidant.

Thus by planning proper diet and practicing it in our day to day life we can improve our immune system and stay healthy.



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‘A healthy outside starts from the inside’ — this can be achieved with a few simple do’s and don’ts. But it must be noted that no single food can help build immunity. One needs to consume desired amount of all nutrients, water and eat a variety of foods within each food group to ensure adequate intake of important nutrients,

Some important micronutrients that can impact our immune system are selenium, B6, B12, folate and magnesium. Indians are blessed to have herbs and condiments right in their kitchen and turmeric, tulsi, clove, garlic, ginger and cinnamon can play an important role in immunity building.

Along with balanced diet rich in macro and micronutrients, it is also important to have a good sleep pattern, incorporate exercise in the daily routine and manage stress to stay active and healthy.

Immunity boosting herbs to add to your diet:

By taking small steps towards building up our immunity we’d suggest you take a trip to your kitchen and let these simple home remedies help you in fighting those germs and keeping your body’s defenses up.

As part of a healthy diet, many plants provide a powerful source of nutrition through antioxidants, polyphenols, phytochemicals and other bioactive compounds, together with needed vitamins and minerals.

## IMMUNITY DIET WITH HERBS

1. Ginger: Not only is it calming to the soul but the ginger in it also helps easing throat infections. Its anti-inflammatory, anti-viral, anti-bacterial properties keeps the body’s defenses up against cough, fever, chills and congestion. A spoonful of honey mixed with ginger extract can help your child get rid of all the irritation and congestion in their respiratory tract. Ginger can also help ease out the aches and pains.

2. Garlic: Garlic has benefits un-paralleled. From help keeping your blood pressure in check to keep your gut healthy, it does it all. It’s antimicrobial and anti-fungal properties.

stimulate the immune system and keep diseases at bay. Add some garlic to your everyday curries, mix it up with some chutneys and enjoy the flavor and the health! The Allicin in garlic also helps to fight allergies and respiratory infections, it is also a great natural blood thinner.

3. Turmeric: The age-old ingredient from mom’s kitchen can work wonders when it comes to immunity. Be it in your food, milk or even your tea, turmeric helps cure wounds, clears skins, aids in digestions and benefits your bones. Curcumin, a compound present in turmeric, is known to possess anti-inflammatory properties that help boost immunity. It also is a great anti-oxidant which helps to slow down the oxidative processes in the body and keep you young!



4. Hing (Asafoetida): Hing or Asafoetida has properties that help boost your immunity with its anti-inflammatory, antibiotic and anti-viral properties. It keeps the digestive tract in-check and targets cell damaging free radicals, which are contributors of various diseases. You can add it in your dal and other meals to enhance taste and wellness.

5. Pepper: Pepper has anti-bacterial and anti-inflammatory properties. Its carminative properties also help in digestion and maintaining gut health, but importantly, its expectorant properties helps break up the mucus and phlegm depositions in the respiratory tract thereby providing relief from the nasal congestion and sinusitis. You can add this effective ingredient in your diet by sprinkling some on your eggs, your salads, soups and even spice up your chai!

6. Cloves: Cloves contain an active ingredient eugenol that fights off disease causing bacteria in the body thus, reducing the chance of infection. They also have antioxidant properties which aid the immune system in fighting off oxidative damage and cell-damaging free radicals. Clove has been used for ages as a remedy for acute pains and it is also an excellent respiratory herb.

7. Cinnamon: Commonly known as Dalchini, Cinnamon contains sufficient amounts of manganese, iron, calcium and fiber. Its essential oils including Cinnamyl acetate and cinnam aldehyde boost immunity. Cinnamon is also used as a wonderful cardio-protective herb which helps to keep the blood pressure in check and it is also a great anti-oxidant.

### Conclusion:

With respect to herbs and spices, the current review's findings can help to inform and support future recommendations for a standard within the professions of health to provide an improved, healthier, and well-educated dietary guidance for individuals





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A healthy diet is essential for good health and nutrition. Eating a variety of food is not enough or beneficial. Having a balanced, varied diet allows to get the right amount of nutrients everyday. so, eating balanced diet is essential for growth, development and maintenance of good health.

Ayurveda asserts that every food is a medicine so there is no good or bad food and provides a logical approach to designing balanced foods for optimal nutrition by formulating food groups that work in harmony, induce proper digestion and promote maximum absorption of essential nutrients.

“Don't focus on HOW MUCH YOU EAT

Focus on WHAT YOU EAT !”

Herbs and spices play an important role in ayurvedic nutrition, for they are used to bring humoral balance in the food .

In ayurvedic classics “Immunity” is known as “vyadhi-kshmatva”. Natural, organic food is always best but not always essential it is for more important to have a whole food diet.

## HEALTHY DIET AND NUTRITION

A healthy lifestyle is also important. Yoga, Pranayama and regular exercise are also all factors that boost a strong immune system. Being outdoors in nature with enough exposure to vitamin D are invaluable to a healthy immune system. ASTRAGALUS is an herb commonly used in traditional Chinese medicine {TCM}. To boost our immunity against the diseases like COVID-19. Vitamin C, green tea extract, zinc, quercetin, elderberry, etc are beneficial.

Leafy green vegetables are an important part of a healthy diet. They are packed with vitamins, minerals and fiber but low in calories. Eating a diet rich in leafy green can offer numerous health benefits including reduced risk of obesity, heart diseases, high blood pressure and mental decline.

पूजितं नित्यं बलमूर्जं च यच्छति ।

अपूजितं तु तद्भुक्तमुभयं नाशयेदितम् ॥

Means, “Food part taken of with reverence results in strength and longevity and the destruction of both, when part taken of irreverentially.”

Naturopathy stimulates positive thinking, lowers stress, anxiety and depression, improves overall health, enhances outlook, boosts optimism, improves on ones ability to cope with health-related issues. It is an individualized treatment that aims at transforming ones overall well-being. Immunomodulation can enhance humoral and cell mediated immune responses and can cause tumor regression. It enhance defence to bacterial, viral and protozoan infections.

Neutraceuticals may be used to improve health, delay the ageing process, prevent chronic diseases, increase life expectancy or support the structure or function of the body. Nowadays, neutraceuticals have received considerable interest due to potential nutritional, safety and therapeutic efforts. Overall, “OUR HEALTH IS WEALTH.”



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The following article contains the information related to immunity with respect to diet, food supplements, exercise, etc. Also, the impact of life style of a person on his health. In this article information related to dietary supplement is mentioned.

“Immunity” is the ‘capability of multicellular organisms to resist harmful micro-organisms.’ This is the scientific definition of immunity. In simple words, Immunity means ‘power of body to fight against the bad organisms.’

In past two years, we have heard the “Immunity” word for the several times because of “COVID-19” situation. In covid situation it is necessary to improve our immunity to fight against corona virus. In accordance with the improving immunity, people are using various types of home remedies. Though it is home remedy, it has very important and dominant base of ‘Science and Ayurveda’. At the domestic level, people can use various food materials to improve immunity such as whole plant foods like fruits, vegetables, nuts, seeds and legumes are rich in nutrients and antioxidants that may give an upper hand against harmful pathogens. Also the basic materials like Turmeric, Lemon, Tulsi, Milk, Green tea, Clove, Cinnamon, etc. plays very important role in boosting the immune power and keep the mankind healthy. These immunity boosters are useful in covid situation as well as day-to-day life.

## FOOD SUPPLEMENTS AND THEIR IMPACT ON HEALTH

Here, Immune power is not only depend on the food materials and dietary supplements but also on the lifestyle of the human being. This fast life style affecting the community health very badly. To maintain the good health and immunity, it is necessary to balance our lifestyle with proper diet, proper timing for the diet and the proper sleep. It is very important to take a meal time to time on daily basis which is rich in nutrition. And also, the proper sleep of 6 to 8 hours at proper time is mandatory.

Along with all of above things, exercise is also important criteria for the healthy life. There are different types of exercises are designed for the different health conditions. Such as, cardiac exercise, exercise for belly fat, exercise for PCOD’s, exercise for diabetes, like this there are various types of exercises for the improving immunity and maintaining health. Along with this type of exercise, many of people prefer “Yoga” for the healthy life. Though there are various types of exercises available, it is necessary to do it under the supervision or the guidance of the professionals. Timing for the exercise also plays the major role on the health and immunity.

As we have seen home remedies, there are also different types of marketed preparations are available. Such as capsules, vitamin tablets, churnas, protein powders, etc. which comes under the Nutraceuticals, Ayurvedic preparations, Health and Dietary Supplements. They are also useful in improving human health and have high demand in the pharmaceutical market.



Maintaining the health means the maintaining the proper balanced diet and well managed life style. Lifestyle of the person plays the major role on the health of that person. If a person can able to manage his time table of diet and sleep with the good exercise practice then there will be a huge positive impact on the health and immunity. 'A good health of a person leads to a good health of a community'.

So, at last I would say that,

“Eat Healthy, Sleep Healthy, Exercise Properly and Be Healthy”.

### **Conclusion:-**

For the healthy life style and better immunity, there are various home remedies as well as marketed preparations are available, it is our responsibility to take benefit of this. It is necessary to take healthy diet and proper sleep on the proper time with the good exercise practice.



## **HOW TO BOOST YOUR IMMUNE SYSTEM**



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Green food are packed with nutrients and are an extremely important part of our diet. They are the healthiest and most nutritious food. There are numerous options to choose from and they can easily be incorporated into meals. Some popular green foods include spinach, peas, cabbage and broccoli to name a few.

The power of green food can revitalize one's health as green food are easy on glucose levels. They are very low sugars and because they are packed with fiber and water they actually help to regulate your blood sugar levels throughout the day. Green peas are a great source of bone building vitamin K and manganese. They are a significant source of vitamin C that helps in supporting your immune system. Broccoli offers high levels of immune system boosting vitamin C, bone strengthening vitamin K and plays a great role in regulating cell growth and reproduction.

According to my view, simple modification of food habits, including adopting a diet rich in cereals, fish and green leafy vegetables, can drastically reduce the chances of major diseases.



## GREEN FOODS AND BENEFITS



Green foods are packed full of antioxidants and nutrients that may specifically benefit your cardiovascular system. Some research suggests that eating dark leafy greens nearly every day could lower heart disease risk by almost 16%.

The heart is a major part of your circulatory system (but you already know that, right?). It's about the size of a fist and it pumps blood around the body, sending oxygen and nutrients to the areas that need it, and transporting waste (like CO<sub>2</sub>) to the lungs so that it can be removed.

Oxidative stress promotes high blood pressure, atherosclerosis (the narrowing of the arteries), and cardiovascular disease, all of which are serious conditions that increase the risk of heart attacks and strokes.





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Important to enhance immune system to fight against the infection. Strong immunity will serve as our multi-level defense network against harmful pathogen, bacteria and viruses. This increase demand for several nutrients due to a beneficial effect on the immune system. This article presents the information about what to do for increase immunity and about the food and nutrients.

Certain foods may be helpful for boosting immune system and improving cold and flu. Our immune system maintain homeostasis by defending against viruses and bacteria which can cause inflammation in the body, illness and disease. Nutritional deficiencies can impair immune function; increasing both the risk and severity of the infection. Although presence of many more drugs to care, prevent disease and to improve immune system. Fruits and vegetables are loaded with vitamins, minerals and other compounds which helps in improving immune system.

Signs of Good Immune System –

- Absence of laziness
- Experiencing strong hunger
- Deep sleep
- No pain in body
- Experiencing positive thoughts

## WAYS TO BOOST IMMUNE

What to do for healthy body or to increasing immunity –

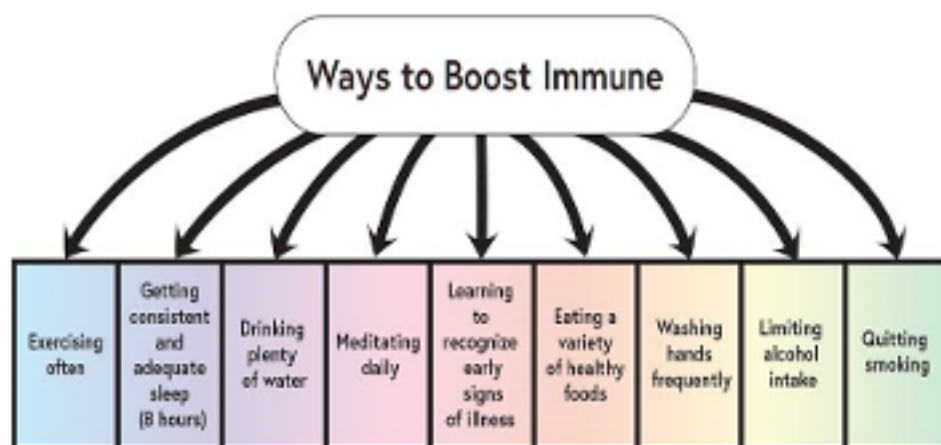
1. Eat balance diet :- Balanced diet includes a variety of food to promote good health and strong immune system. Nutrients work together to lead best health results.

What to take in balanced diet – 3- 5 portion of different fresh fruit and vegetables daily

Include whole grain food; consume legumes 2 – 3 times / week ; choose healthy fat – olive oil , avocados , unsalted nuts

2. Drink plenty of fluids – To keeping your body hydrated is important for overall good health and good immune system response .

Drink about 8 glasses of water a day ; take other fruit juices ; take kadhas in early morning with empty stomach .



3. Exercise – Do exercise daily . in this we can use various type of exercise . Exercise like walking, running, cycling, games, instead of using leaft take stairs.

4. Getting consistent and adequate sleep – We have to take deep sleep for 8 hours. After taking deep sleep we experience the more energy .

5. Yoga – If anyone have major problems related body ; yoga works quicker than any other exercise . Continuous practice of yoga increase the immunity that protects to body from getting infected by diseases. The medicinal yoga is beneficial in to reducing conditions such as anxiety, depression, insomnia, hypertension, chronic pain, etc. Yoga includes various asana, pranayama, meditation, suryanamskar etc.

6. Ayurveda – Ayurveda is a one of the world renowned form of medicine i.e. originated in India and has unique traditional values . Synthetic chemicals have side effects to human body on other hands ayurvedic medicines not have any side effects .

Conclusion :- Perfect food is essential to gain good health . We have to consume food which is responsible for building our immune system . Consumption of fruits and good food will helps to tackle all diseases . Yoga plays vital role into the improving weakened immune system .

Nutrients	Examples	Functions
Vitamin A	Carrots, Fish liver, Butter, Pumpkin, Mangoes, Turnip	Good vision, Help to bone growth, lowers prostate and lung cancer risk
Vitamin B (Thiamin)	Brown rice, Pork chops, Soya milk, Peas, Oatmeal,	Maintain healthy skin, hairs, muscles and brain
Vitamin C (Ascorbic acid)	Citric fruits, Potatoes, capsicum, Broccoli, Spinach, tomatoes	Protect cell from chemical destruction, Assist the body defense, Reduce the risk of cancer, Faster healing of wounds
Vitamin D (Caciferol)	Morning sunlight, cereals, eggs, butter	Helps to maintain regular blood levels of calcium and phosphorous to strengthen the bone.
Vitamin E	Corn, Sunflower, avocado, vegetables oil, leafy green vegetables	Anti- inflammatory, Stabilization of immune system, Modulate hormones and cholesterol level
Vitamin K	Cabbage, Liver, Sprouts, Kiwi, Milk , Eggs	Activates calcium and protein for Blood clottin



## ■ Institute Vision

**"To create competent pharmacy professionals who can efficiently contribute for the healthcare system of society and to the pharmacy profession."**

## ■ Institute Mission

- 1) To provide student centric active innovative learning environment, with strategically planned quality pharmacy education consistent with the policies of state and nation.
- 2) To nurture and inculcate the team spirit, research, innovation, creativity and entrepreneurship.
- 3) To strengthen Industry-Institute and Institute - Institute interaction for the overall development of students.
- 4) To help the students to disseminate acquired knowledge through the fullest commitment for health care services.

