

Boosting Body Immunity: An Ayurvedic and Vegan Approach

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Received: May 17, 2020; **Published:** August 05, 2020

Abstract

While scientists all over the world are trying to figure out a cure for the CoVID-19 pandemic, very little attention is being paid to the scope of Ayurveda in this aspect. Ayurveda, having the most ancient medicinal history, contains guidance about the immense benefits of plants on human health. During such situations we need to make ourselves immune against infections to fight with such disease. Although there are many ways being proposed to boost our body immunity, Ayurveda has provided us many simple and cost-effective ways to do so. Here we have summarized many plants and herbal extracts with their surprising health benefits in accordance with Ayurveda. Along with this we have explained the effectiveness of these Ayurvedic methods with many scientific evidences. Most of the plants described here are easily available and can be found near any Indian house and thus anyone can afford these methods and avail the benefits without going outside of their home.

Keywords: Immunity; Ayurvedic; Vegan

Introduction

Scientific advancement against nature is making the humans more susceptible to disease and infections. Nature is being destroyed by humans day by day, so in order to protect itself it has developed many incurable diseases as a weapon against us. We can now see many hazardous events which are harmful for us in many ways. It seems like nature wants to balance itself by trying to eliminate those who're interfering with her. The natural selection process talks about "survival of the fittest" which means that who can fit in and adopt to the changes made by nature, can and will survive. Adoption to any healthy or unhealthy environment is determined by the immune system of our body and as we know the immune system is totally dependent upon our consumables i.e. food or medicines. Although our immune system is evolving along with the nature it doesn't seem sufficient for the ongoing pandemic (COVID-19). Till date we are unable to design a treatment for this and we don't know when it'll be ready. Many reports suggest that most of the people recovered from the viral disease had a strong immune system. So definitely at such situations we should rely on enhancing the defense mechanism of our body until the development of a vaccine. This'll undoubtedly be helpful for now and for future also.

Plant based foods and herbal extracts have been providing immense benefits since ancient times. Ayurveda, known as the oldest medical system of the world is the perfect example for this. Ancient Egyptians were applying honey on wounds before 4000 years which is now being used against infective diseases like flus. Ayurveda has a long history of treating many incurable diseases before homeopathy and allopathy came into existence. So, plant based food and herbal preparations have many significant effects in both treating diseases by

helping the immune system. In this article we have tried to discuss about Ayurvedic and Vegan approaches of boosting immunity. We are excluding the animal based products and prioritizing on plant based products because many harmful diseases like SARS (Severe Acute Respiratory Syndrome), MERS (Middle East Respiratory Syndrome), Ebola including the CoVID-19 etc. had a origin linked to animals as well as their products.

Understanding the immune system

Immune system is simply called the defense system of our body that reacts when any foreign microorganism (pathogenic and non-pathogenic) enters our body. It kills the pathogens with various strategies (phagocytosis and apoptosis). The immune system is divided into innate and adaptive immune system. The innate immune system acts as the first line of defense on pathogen invasion. If it fails to defend and kill the pathogens and pathogen somehow enters inside the cell then the adaptive immune system gets activated immediately to tackle the situation. The response of the adaptive immune system is specific for certain pathogens while innate immune system is non-specific.

However, the immune system, not being a single entity, comprises of many cells like leukocytes, T cells, B cells, cytokines, antigens and antibodies etc. These cells most of which are white blood corpuscles (WBCs) are the actual front line fighters of our immune system. They work consistently within our body to help the system to recognize and differentiate infected as well as healthy cells.

Immunity boosting strategies

As we know the whole immune system is not comprised of a single cell or single process, we can't boost it in a specific mean because researchers still don't know specifically what factors can impact the immune system. To work properly, the system needs balance and harmony between lifestyle, diet, exercise, sleep and stress etc. We know as far that "keeping a healthy lifestyle will help our body in increasing our immunity". A healthy lifestyle requires regular exercise, intake of healthy foods, enough sleep and a stress free mind and for the proper functioning of immune system we need to take extra supplements like proteins, vitamins and minerals etc. Everyone can't afford these because these are costly. In ancient times, people were using certain herbs and mixture of herbal extracts which were more beneficial than today's supplements. All the descriptions of those herbs lie within the Ayurvedic books. In a tough situation like now, it'll be very helpful for everyone to enhance our immunity while staying at home using many home remedies in an Ayurvedic way. Some of them are discussed here briefly.

Garlic (*Allium sativum*)

Garlic (Hindi: Lahsun) belonging to onion family is described as one of the "Rasayana" i.e. rejuvenator in Ayurveda. It is the only vegetable having 5 tastes out of the total 6 tastes existing in nature. It also has a vast range of benefits that is hard to imagine [1]. Starting from treating indigestion to neurological disorder, in every aspect it's considered to be helpful. When it comes to boost the immunity, it's proved to be the best among all because of its antimicrobial activities [2]. It contains a compound "alliin" which gets converted to allicin when crushed. This allicin contains sulfur compounds which is the reason behind medicinal properties of Garlic [3]. These compounds actually enhances the response of disease fighting WBCs thus helps the body when it is exposed to a virus or flu [3,4]. We need 600 - 1200 gm of garlic dose daily and to fulfil this we can use homemade garlic oil, garlic powder and any other garlic supplements that can help boost our immunity to fight against viruses and flu in a greater extent [5].

Ginger (*Zingiber officinale*)

Ginger (Hindi: Adrak, Sanskrit: Shunti) is another vegetable used in Rasayana, described as Vishwa-Aushadh in ayurvedic scriptures [6]. It has robust effects on our body including many anti-inflammatory and antioxidant properties [7]. It contains zingerones, gingerols,

shogaols, sesquiterpenes and paradols like compounds which are mainly responsible for its antioxidant and anti-inflammatory properties which in turn make the immune system stronger [8,9]. In Ayurvedic language, strong immunity is linked to a healthy digestive systems and studies have reported that ginger is much effective in enhancing the digestive system and also in healing stomach problems like bloating or intestinal cramping [10]. Ginger also have been proven effective against bacterial and viral disease like common cold and flu due to its antimicrobial activities [11].

So, adding slices of ginger in our daily cooking, using ayurvedic ginger oil or ginger shots like beverages and mixing it with lemon juice or honey can enhance immunity in terms of improving digestive system to fight against this CoVID-19 pandemics.

The holy basil or tulsi (*Ocimum sanctum*)

Tulsi occupies a special place in Ayurveda because of its importance in medicinal as well as spiritual values. It's called the "Mother of Medicines" or "The Queen of all Herbs" in Ayurveda [12]. It's found in the front yard of almost every house in India as Hindus worship the plant regularly. This herb is very unique and holistic than others as the medicinal properties of the plant was hidden behind the advancement of synthetic medicines. Ayurveda describes that its leaf extracts can be used as a tonic for body, mind and spirit as well [13]. Tulsi contains many phenolic compounds which has many antioxidant properties and the Krishna (black) Tulsi has more phenolic compounds than Vana (wild) Tulsi [14]. Tulsi also has numerous therapeutic benefits like anti-stress, anti-viral, anti-fungal, anti-malaria, anti-bacterial, anti-carcinogenic, anti-diabetic properties etc [13]. Some researchers also credited the herb as a great "immunomodulator" as this help in keeping the immune system well-functioning by helping the fighter cells of the body [14,15].

Along with its parts including leaves, stem, root, seed and oil, the whole plant is sacred to the Hindus as they worship the plant as their mythological Goddess. But the plant must be considered as sacred by everyone, not just Hindus, in a scientific approach as it has a number of benefits. We can drink the Tulsi juice daily or directly consume its leave by chewing. We can also mix the leaves in our daily drinks like tea or coffees. Using its oil for body massages can also prevent mosquito bites. Thus, by making Tulsi as a part of our daily life will not only makes us stress free but also make our immune system ready and fit to fight against this this pandemic.

Indian gooseberry or amla (*Phyllanthus emblica*)

Among all the Rasayana described in Ayurvedic texts, Amla is considered as the most nourishing and potent one. According to Charaka Samhita "the best among all rejuvenating herbs is Amla" [16]. Although it is known for its abundancy in Vitamin C, it contains a lot of other essential minerals like phosphorus, calcium, iron, magnesium, selenium, niacin, fibre and many more along with carbohydrate and less protein [17]. It has a number of health benefits, such as: hair and skin care, eye care, anti-aging effects, diuretic, liver health boosting, anticancer abilities, improvement in calcium absorption and many more [18]. Apart from these major health benefits, this help in immunity boosting and increases the digestion with its high fiber content. Due to presence of vast amount of Vitamin C and A, flavonoids, polyphenols and alkanoids, the Indian Gooseberries act as natural immune enhancers for our body [19]. It also has antibacterial and anti-inflammatory effects which prevents our body from external infections [19]. Many Ayurvedic scriptures have mentioned that the Amla juice can help in increasing the disease fighter cells in blood i.e. WBCs and thus can improve immunity [20].

As described earlier, Ayurveda says a healthy digestive system is the key to a healthy immune system, we must consume those which helps in proper digestion. The digestive solution also lies in Amla, as the presence of high soluble fiber content helps in food movement through the bowel, reduces constipation, stimulates gastric juice secretions, prevent diarrhea which in turn increases the digestion efficiency [21]. So, considering Amla as a precious gift from nature, we must make it a part of our daily diet during day time and simultaneously avoid its consumption after sunset as it'll have negative impact on body according to Ayurveda [6].

Some other immunity boosting herbs

The above described herbs are the most effective and easily available immune system boosters as well as digestive system enhancers. There are a wide range of other herbs which also help to increase our immunity. As described in Charaka Samhita, there is not a single plant on earth having no benefits, neither we can ignore one nor we can describe all here. So, some other plants which are also helpful for boosting our immune system are described briefly:

1. **Guduchi (*Tinospora cordifolia*):** These plants are rich in zinc and copper and other trace elements. As per literature, these plant products have high antioxidant properties that helps in protection of cells from free radicals and maintain homeostasis [22,23].
2. **Ashwagandha (*Withania somnifera*):** This plant have anti-carcinogenic, stress relieving capacity as well as helpful in treating anxiety [23,24]. It helps in reducing stress by decreasing the cortisol level of our body and extracts of this plants can boost both physical and mental health which helps in fighting from infections and achieving longevity [24].
3. **Yasthimadhu or Licorice (*Glycyrrhiza glabra*):** It is also known as Mulethi in India and it is one of the best herbs among Ayurvedic rasayanans. It contains "Glycyrrhizin" which is a saponin responsible for its antimicrobial activities and thus it's much effective against cough and cold. Studies have found it as an immunomodulator, having anti-aging properties and also cure improper digestion [25,26]. The powder of its roots with honey or ghee provides us better immunity [26].
4. **Shatavari (*Asparagus racemosus*):** This plant is considered as an adaptogenic herb which mainly helps in adaptation to stress situations [27]. It contains many antioxidants in its roots like Asparagamine A, Racemosol and newly identified Racemofuran which act as free radical scavengers in our body, thus having anti-aging effect and stress relieving capacity [28]. The Shatavari root juice act as a best remedy for cough and cold and simultaneously boost our immune system.

Homemade remedies preparation

The above described herbs or herbal extracts have a great impact on immunity enhancement but if we use the mixture of these herbs at certain proportions their effectiveness might get higher. Some of the remedies we can prepare are instructed in here:

1. The powder of liquorice or mulethi roots with honey and ghee have a great impact on our immune system [26]
2. Juice of tulsi leaves, ginger along with honey is great remedy against many problems and protects against many infections. This help in improving food metabolism, digestion and immunity [26].
3. Ashwagandha powder is recommended to be consumed with milk to increase the immunity [29].
4. The most precious ayurvedic formulations ever called "the Chyawanprash" which is loaded with around 50 types herbal extracts and many minerals is essential for people of all age groups to remain healthy. This traditional health supplement is used since ancient times to boost immunity and longevity and is considered to have the capacity to solve most of the problems in our body [30].

Conclusion

"Survival of the fittest theory" of Darwin talks about the fittest who is strong enough using the natural resources available can survive in the race of nature. Nature has gifted us many resources with paramount benefits. It'll only make sense for us if we use them wisely and

routinely. Ayurveda described about the plants available in nature with lots of health benefits, which are purely natural. We are now going through a hard time and trying our best to find a remedy for the CoVID-19 pandemic, but the nature may have the cure hidden inside it and we need to find out that particular herb. Ayurveda describes the usefulness of almost all plants on Earth but seemingly a very less researches have been done on this. Nature has been the source of healing for the human body since ancient times and it will play the same role against COVID-19, if given full emphasis. We have discussed all the strategies to boost our immunity during the pandemic just in a purely Ayurvedic and Vegan way. A common plant or herb available in nature can act like a miracle against any infections without spending a single penny. Some animal rights organization like PETA (People for the Ethical Treatment of Animals) are spreading awareness among people about how veganism or only plant based foods helps us to live longer without suffering from any harmful diseases. Surprisingly we are offered with many miraculous gifts of nature to live a healthy life but we need to utilize those gifts wisely with better understandings. Hence more studies need to be conducted on Ayurveda and its importance to make a disease free surrounding.

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Volume 16 Issue 9 September 2020

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