

## Business Outlook

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## Nutrivigilance Promoting Responsible Nutrition



The Nutraceutical industry is a booming field in India as the consumers are increasingly gaining exposure to various Dietary supplements and fortified products. Despite increasing awareness, nutrition remains an incompletely understood concept in India and a large portion of the population suffers from Malnutrition in one or the other form.

As Nutraceuticals are presumed to be safe and are marketed without prescription in India, it is crucial to impose stringent guidelines and regulations over the active ingredients of nutraceuticals, identity, purity and bioavailability for the rationale use of nutraceuticals.

### <----- Types of Malnutrition ----->

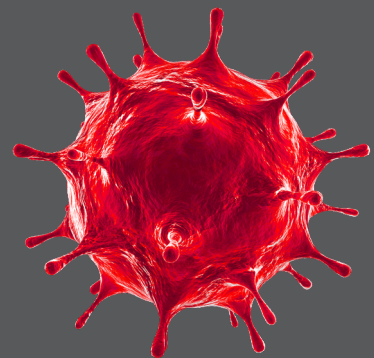
Under nourished

Over nourished

Nourished with calories but not nutrients

Nutrivigilance is necessary to incorporate monitoring schemes to identify the adverse effects caused by nutraceuticals for the consumer safety.

Nutrivigilance  
Category in focus:  
Immunity boosters  
Nutraceuticals for COVID





## Improving Nutrivigilance



### Reporting by Healthcare providers

Healthcare providers play a vital role as they are actively connected with patients and consumers. They are also aware of the health profile, history and current medication regimen of their patients. They can thus be tapped as influencers to educate the consumers about ensuring the right Nutrition.



### Educating the consumer

Providing Nutrivigilance guidance, awareness and updates as leaflets to consumers can improve awareness among them. Once again, healthcare providers can be instrumental in explaining potential side effects or inappropriate use and potentially risky combination of Nutraceuticals with other medicines.



### Combating adverse effects of Nutraceuticals

- Avoiding prolonged use of Nutraceuticals without guidance of healthcare professionals
- Not taking Nutraceuticals to treat self diagnosed conditions
- Not consuming Nutraceuticals with, or instead of Prescription medications without consulting a Healthcare professional
- Consulting healthcare professionals about the supplements taken before a surgical procedure
- Abstaining use of Nutraceuticals sold through improper and untrustworthy channels
- Being cognizant of labels and information provided on Nutraceutical products



### Regulatory perspective

The Dietary Supplement Health and Education act as well as the Food Safety and Standards act have issued rules and regulations regarding registration and licensing of Nutraceuticals in India. As per norms, the manufacturer:

- Is accountable for product analysis, development, authentication and safety of Nutraceuticals it makes and supplies
- Must not print any misleading information on the labels
- Must not claim that the product will diagnose, treat or prevent any disease
- Must guarantee purity, composition and identity of their Nutraceuticals





## Immunity boosters

The recent pandemic has highlighted the importance of immunity. It is thus essential to understand the reality beyond perception for building immunity through Nutraceuticals.

A recent study on perception of 'Immunity boosters' through analysis of the infosphere on Google determined that the most popular approaches for boosting immune system were fruits (69%), vitamins (67%), antioxidants (52%), probiotics (51%), minerals (50%) and Vitamin C (49%). Although the only evidence based approach is through vaccines, it was listed in only 12% of the infosphere.

This indicates the importance and potential usage of Nutraceuticals in Immunity in the near future. To deliver responsible nutrition, let us look at the clinical evidence backed Nutraceutical ingredients for boosting immunity.



## Nutraceutical ingredients for boosting immunity

### Vitamins

Vitamins of the groups A, B, C, D and E have evidence and proven mechanisms that are relevant to maintaining and boosting immunity. Vitamin C forms the most important part of the group for this function.

### Minerals

Zinc and selenium have been considered important for immune response. The importance of healthcare professionals can be highlighted here as Zinc in high doses is also known to have an immunosuppressant effect.

### Probiotics

Evidence suggests that sterile gut flora greatly hampers in immune response as there is more immune tissue in the GI tract than anywhere else in the body. Probiotics compete with harmful bacteria and keep them from proliferating.

### Herbal extracts

Ingredients such as Ginseng, Astragalus, Thymus and Garlic have been known to improve overall immunity by increasing resistance and shortening the overall recovery time for ailments such as common cold and flu.



## Novel ingredients

### CoQ10 (Ubiquinone)

CoQ10 is a lipid antioxidant that prevents generation of free radicals. It is an essential nutrient that also improves energy levels in addition to improving immune response.

### Quercetin

Quercetin is known for its antioxidant activity in radical scavenging and anti-allergic properties characterized by stimulation of immune system, antiviral activity, inhibition of histamine release, decrease in pro-inflammatory cytokines, leukotrienes creation, and suppresses interleukin IL-4 production.

### Note

Ingredients & Nutraceuticals purported to boost immunity despite being proven effective can only promote health and are not curative.



## Nutraceuticals for COVID-19

As of April 21<sup>st</sup> 2020, total 18 clinical trials have undergone all around the world on dietary supplements for COVID-19, out of which 2 are completed but results are awaited. Remaining 16 studies are still undergoing. Following are few of the examples of used DS and Nutraceuticals.



## Vitamins C & D

Vitamins C & D are being looked at as immunomodulators in the Covid infected patients. Combinations of the vitamins with Zinc Gluconate individually are also being studied for Acute Respiratory Distress Syndrome which is a symptom of Covid-19.



## Natural Honey

The study is being conducted in Egypt. Natural honey has shown positive results for Herpes and Varicella zoster virus (chickenpox). The study has started in the month of March and results are awaited for its efficacy against Covid.



## Anti-oxidants

Anti-oxidant oral nutrition Supplement (ONS) trial was started in the month of May. The ONS with omega 3 and other anti-oxidant rich solution will ameliorate the Cytokine storm (Inflammatory response) in the COVID-19 patients.



## Curcumin

Curcumin is one of the most studied ingredient for building immunity and various other aspects of health and well-being. Curcumin has also shown to inhibit entry of RNA virus in many studies. It is thus being studied for its efficacy on the coronavirus



## Other Ingredients

**Resistant Potato Starch:** Reduces IL-6 production and reduces inflammation. The research is about to start.

**Virgin coconut oil:** The active ingredient like Lauric acid and Monolaurin have shown to be active against viral infections.

**Cinnamon Bark:** A- Procyanidine trimer and pentamer polyphenols has shown anti-viral properties against H1N1 and H3N2.

**Palmitoylethanolamide** has shown symptomatic relief of flu symptoms. PEA that exerted the anti-inflammatory action, present not only in egg yolk, but also in other foods, such as soy oil, peanut oil, and corn

**Luteolin, Apigenin, Quercetin and Chlorogenic acid** are being studied to function as anti-viral.