

## Infectious Disease Measures based on Orthomolecular Nutrition

One of the ways to protect ourselves from virus infection is keeping our upper respiratory tract wet with mucous membrane containing mucins. Mucins are glycoproteins of which formation is sustained by SS-bond (or disulfide bond) involving sulphur atoms in proteins. As long as basal surface is covered with mucin, any infectious diseases can be prevented because viruses (novel corona virus as well as influenza virus) are stuck on the mucin surface and excreted altogether.

The mucosal layer secretes IgA antibody, a type of immunoglobulins that is mainly composed of protein. Favorable secretion of IgA antibody may depend on normal function of lymphocytes. **Glutamine** and **vitamin A** are essential nutrients to do so.

An infectious disease may be developed when mucous tissues are exposed to a virus by breaking the barrier of mucin and IgA antibody. Binding proteins are induced by **vitamin D** that is needed to make mucous cells strong. And **vitamin D** and **vitamin A** work together and play an important role to regulate immune reaction level. **Zinc** is a necessary nutrient to maintain the performance of **vitamin A**.

Furthermore, **vitamin D** also plays an important role to synthesize antiviral proteins that are normally secreted by virus infected cells. Despite those protection mechanisms, a virus infects a cell, then a local inflammation occurs. A sour throat is a typical symptom at an initial stage before having fever.

**Vitamin C** is one of essential nutrients at the first symptom such as a sour throat. **Vitamin C** works to enhance immune activity of the whole body to reduce a local inflammation. In case of lack of **vitamin C**, however, the inflammation might spread over the body with which arthralgia and fever occur.

When it comes to orthomolecular nutrition, **the molecule of oleuropein (olive leaf extract)** is a super natural medicine. By taking it at an early stage, virus infection on the whole body can be prevented. It can be taken by expectant mothers without side effect.

Nutrition approach for your immunity (ideal intake per day)

- **Vitamin A** and **Vitamin D** (10000 IU)
- **Glutamine**--a kind of amino acid (6000 mg)
- **Zinc** (15 – 30 mg)
- **Vitamin C** (2000 mg: take 200 – 250 mg at a time, and repeat the same several times in a day.)
- **Olive leaf extract (oleuropein)** if necessary

### About Olive Leaf Extract (Oleuropein)

The natural antivirus agent that kills viruses without damage to human cells. It has also effect to such pathogenic microbes as mycosis, candidiasis, yeast infection, etc. It can activate macrophage and neutrophil, and enhance immune strength. The effect of olive leaf tea to malaria was reported in the years between 1827 and 1855.

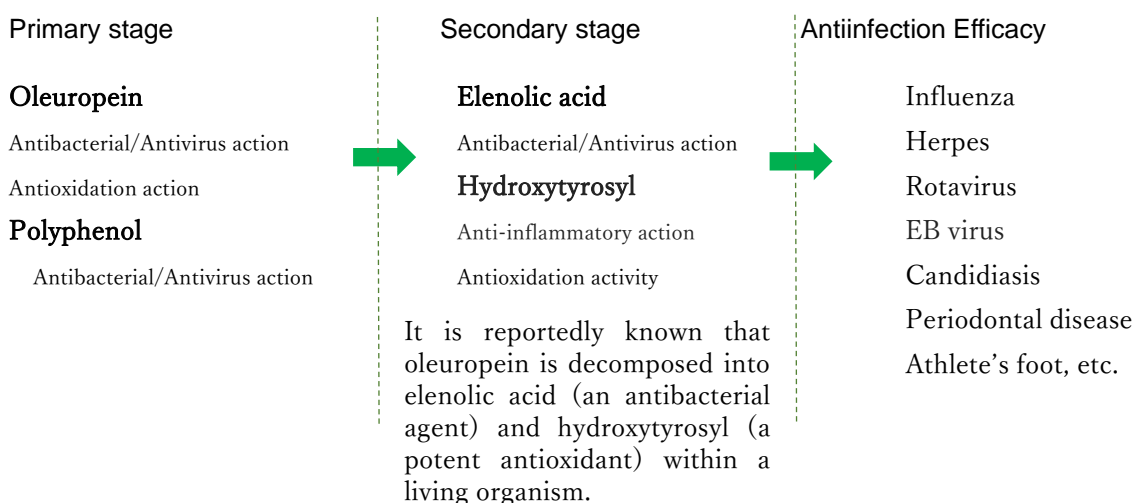


Olive Leaves

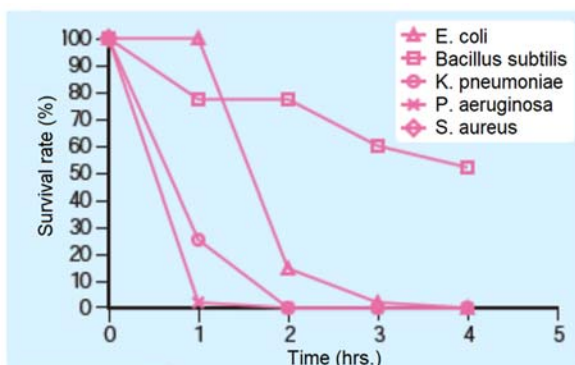
Unlike antibiotics, resistant bacteria may not be produced. It can be taken by any persons including expectant mothers, elderly people, and children. And there is no component to induce sleep.

- Summary
1. Enhance immune strength (activate leukocytes)
  2. Directly attack pathogenic microbes (kill microbes and viruses)

### Components and Activity of Olive Leaf Extract



Graph : Antibacterial action of olive leaf extract



0.6% solution of olive leaf extract was put in test tubes and specific bacteria were added respectively. One hour later, all bacteria except for Bacillus subtilis were rapidly killed.

Excerpt from D.Markin et al. (2003)  
Mycoses, 46, 132-136

## Echinacea—synergy effect to Olive Leaf Extract

Echinacea, a family of Asteraceae, has been widely used as a panacea by native Americans since a few hundred years ago. It contains polysaccharides including xyloglucan and arabinogalactan that may activate immune cells.

By using olive leaf extract together with echinacea extract (or grapefruit seed extract), synergetic disinfection (anti-flu) property has been confirmed (Kenbi family in 2001)



Echinacea

\* \* Referential site for olive leaf extract and echinacea

<https://www.orthomolecular.jp/nutrition/olive/>

[https://www.orthomolecular.jp/images/orthomolecular\\_column\\_202002.pdf](https://www.orthomolecular.jp/images/orthomolecular_column_202002.pdf)

