



Immunity to Fall for



Learn the evidence on which diet, lifestyle, supplements (& more) can best support your immune system into the fall/winter



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Understanding Immunity and Why Fall Challenges It

01

Fall is a season of change. Kids head back to school & are constantly being exposed to germs. As the days get shorter and the air gets cooler, our immune systems often need extra support to fend off seasonal illnesses. Whether it's the common cold, flu, or simply feeling run down, adopting healthy habits can help protect you.

But what's the evidence say about why?

The increase in colds and flu during the fall can be attributed to several interrelated factors, primarily linked to environmental changes & their effects on human health. As temperatures drop & weather becomes more variable, the conditions become favourable for the transmission of respiratory viruses.

Environmental Factors

Temperature Variability: Research indicates that rapid weather variability (RWV) in late autumn correlates with increased flu outbreaks in winter. This variability can weaken immune responses, particularly in vulnerable populations (Zinke 2020).

| 01

Cold Temperatures

Cold weather has been shown to negatively impact immune function, making individuals more susceptible to infections. A steep drop in temperature can significantly increase the risk of influenza transmission(Matsuki et al. 2023).

Behavioral Changes

Indoor Crowding: As temperatures fall, people tend to congregate indoors, facilitating the spread of airborne viruses. This behavior is particularly pronounced in densely populated areas(Zinke 2020) (Keilman 2019).

While these factors contribute to the rise in respiratory infections, it is also important to consider that not all individuals experience severe symptoms, and many cases can be managed effectively with vaccinations and appropriate treatments(Keilman 2019)(Farrer 2011).

Lifestyle Habits for Strong Immunity

| 02

Sleep

Rest is critical for immune health. Poor sleep weakens your body's defense system, leaving you vulnerable to illnesses. Aim for 7-9 hours of quality sleep per night, and try to keep a regular sleep schedule. Newer research has shown on average women require an extra hour of sleep than men. And additional hour during their menses. So ladies, rest up!

Stress Management

Chronic stress suppresses the immune system. Incorporate relaxation techniques like meditation, deep breathing, and mindfulness to reduce stress. Exercise is also an amazingly powerful stress reliever. No medication or supplement comes close to it's benefits. Try journaling - have a "mental dump" in the evening of the day, this can help not only allow for a more restful sleep, it can help you evaluate what you enjoyed in the day, what you'd like to work on, & support you in shifting things in a better direction specific for you.

Hygiene

Washing your hands frequently x 20 seconds & maintaining good personal hygiene is key to preventing illness. Keep surfaces clean & avoid touching your face (especially when out in public places) has shown to reduce the spread of germs.

02

Social connections

Studies are clear, that when in isolation, it decreases immune hardiness. Strong social ties and community engagement can bolster emotional well-being, which is linked to improved immune responses(Petkoska & Trajkovska-Broach 2020)(Villar-Álvarez et al. 2022).

Reach out to friends & family. Schedule events. During the darker days, it can seem more daunting, but as humans, we were meant to thrive best in community.

Immune-Supportive Foods

| 03

Nutrition in general

Adopting a Mediterranean diet, rich in fruits, vegetables, whole grains, & healthy fats, supports gut health & immune function comes out time & time again in the research as one of the best diets to follow. (Petkoska & Trajkovska-Broach 2020).

What Food specifically do studies show are the most beneficial?

Fruits, especially Gold Kiwifruit

Gold kiwifruit consumption has been shown to reduce symptoms of colds & influenza, such as head congestion & sore throat, & increase plasma vitamin C & other antioxidants.

Whole Grains, particularly Oats

Oats contain immunomodulating nutrients like dietary fiber (β -glucans), copper, iron, selenium, & zinc, which support both innate & adaptive immunity.

Plant-Based Foods

A diet rich in plant-based foods, including those high in vitamins C, D, & E, minerals like magnesium & zinc, & antioxidants like glutathione & quercetin, can enhance immune function & reduce the risk of infections.

03

Fermented Foods, such as Yoghurt

Yoghurt fermented with *Lactobacillus delbrueckii ssp. bulgaricus* has been shown to increase natural killer cell activity & reduce the risk of catching the common cold in elderly individuals. Probiotics in general as a blanket recommendation are not advised. The greatest microbial diversity increase immune hardiness, which generally comes from consuming a wide variety of whole foods.

Garlic

Aged garlic extract (AGE) has been found to enhance the function of immune cells like $\gamma\delta$ -T & NK cells, & reduce the severity of cold & flu symptoms. However, more studies are needed to confirm its effectiveness in preventing colds.

Carrots

Dietary supplementation with cRG-I from carrots has been shown to enhance immune responses and reduce the severity and duration of symptoms in individuals infected with rhinovirus.

Conclusion

A diet rich in variety is key to supporting the immune system and helping to reduce the incidence and severity of colds. Incorporating these foods into a balanced diet can enhance overall immune function & provide a natural defense against common infections.

Supplements for Fall Immunity

| 04

What Vitamins & Minerals are most researched?

Essential nutrients such as vitamins A, C, D, E & minerals like zinc & selenium, & magnesium are vital for immune health. Studies suggest that these vitamins and minerals support & enhance immune function.

Feel like you're coming down with a cold? Consider doing an IV. Doing so during those initial stages may be able to halt a cold in its tracks.

Vitamin D

Fall brings less sunlight, which means our bodies can't produce as much Vitamin D as in the summer months. This vitamin is crucial for immune function!

Vitamin D enhances the production of antimicrobial peptides, such as cathelicidin, which are vital for innate immunity (Linder 2012). It also modulates T-lymphocyte & B-lymphocyte functions, which is crucial for adaptive immunity, which improves the immune response to infections(Florkowski 2016).

Observational studies indicate a correlation between low vitamin D levels & increased incidence of respiratory infections, including colds. Seasonal variations in vitamin D levels align with the frequency of respiratory infections, suggesting a protective effect during higher vitamin D availability (Linder 2012).

| 04

The majority of the patients I test are deficient or below optimal levels (at least >100), so consider a supplement, especially if you're indoors more often. Health Canada recommends we consume at least 2500IU daily - & up to 4000IU/d is considered safe for adults.

Vitamin C

Well known for immune benefits, Vitamin C supports the production of white blood cells. It enhances both innate and adaptive immunity.

Vitamin C is essential for the function of immune cells, including phagocytes and T-cells, which require it to effectively combat pathogens (Ströhle & Hahn 2009). It is also a potent antioxidant, which helps protect immune cells from oxidative stress, thereby maintaining their functionality (Jafari et al. 2019)

Impact on Cold Symptoms:

- **Duration Reduction:** Regular supplementation (1-2g/day) has been shown to reduce the duration of cold symptoms by approximately 8% in adults and 14% in children (Rondanelli et al. 2018).
- **Economic Benefits:** A study indicated that vitamin C use could decrease the average duration of cold-related absenteeism by 0.47 days, highlighting its potential economic impact (Oğuzhan et al. 2021).

While vitamin C supplementation may not prevent colds entirely, its ability to mitigate symptoms & support immune function underscores its importance in maintaining health during cold seasons. However, some studies suggest that its efficacy may vary based on individual health status & dietary intake (Ströhle & Hahn 2009) (Rondanelli et al. 2018).

04

Zinc

Zinc plays a crucial role in supporting the immune system, particularly in the context of respiratory infections like the common cold. Its immunomodulatory effects enhance both innate & adaptive immunity, making it a vital nutrient for maintaining health.

Mechanisms of Action

- **Antiviral Properties:** Zinc exhibits direct antiviral effects by inhibiting viral replication & enhancing immune responses against pathogens (Read et al. 2019)(Sadeghsoltani et al. 2021).
- **Immune Cell Function:** It is essential for the development & function of immune cells, including T cells & macrophages, which are critical in fighting infections(Kanwar & Sharma 2022)(Tayyib et al. 2020).
- **Symptom Relief:** Zinc lozenges taken within 24 hours of cold symptoms can significantly reduce the duration and severity of symptoms (Piaszczyński et al. 2024).

Zinc Deficiency and Health Risks

- **Prevalence:** Zinc deficiency is common and can lead to increased susceptibility to infections, including respiratory viruses(Read et al. 2019)(Kanwar & Sharma 2022).
- **Health Implications:** Low zinc levels are associated with poor immune function, delayed wound healing, & increased risk of viral infections(Kanwar & Sharma 2022).

Exercise for a Strong Immune System

05

Regular exercise plays a crucial role in enhancing the immune system, thereby reducing the risk of respiratory infections like the common cold. This effect is primarily attributed to the modulation of immune responses and the improvement of overall health.

Immune Function Enhancement

- Moderate exercise has been shown to boost both specific & nonspecific immune mechanisms, which are vital for recognizing & eliminating infections (Ami 2021).
- Individuals who engage in regular physical activity exhibit improved immune cell circulation, leading to a more robust defense against pathogens (Wang 2024).

Impact of Exercise Intensity

- While moderate exercise is beneficial, excessive or intense training can lead to a higher incidence of upper respiratory infections, particularly among endurance athletes (Jones & Davison 2018). This suggests a U-shaped relationship between exercise intensity & immune function.

Physiological Changes

- Exercise induces physiological changes that enhance immune responses, such as increased circulation of immune cells & the secretion of protective substances like immunoglobulin A (IgA) in mucosal areas (Wang 2024), ("Methods in exercise immunology", 2022).

Fall-Specific Wellness Practices

06

Consider Essential oils in a Diffuser

Oils like eucalyptus, tea tree, & lavender have long been shown to have immune supportive properties. Use a diffuser or use a roll on by Saje to help clear sinuses & smell amazing.

Get outside

I know the tendency is to stay indoors when it's no longer warm & sunny, but studies have shown that when we spend more time in nature, it supports not only the immune system, but has shown to decrease stress & decreases can be seen by up to 2 weeks after just 20 minutes in the forest. We're so lucky in the west coast to be surrounded by numerous trails. Consider joining a hiking group to meet your local community.

Herbal teas

This is one of our oldest medicines, & the fall is the perfect time to bring them back into your routine. Traditional medicinals & Yogi teas two of my fav brands, but pukka tea in all their beautiful packaging makes making a cup of tea feel all the more special. Teas are a great way of getting medicine into the body. Throat coat/comfort are a few of my go to's I love for colds.

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Create Your Fall Immunity Plan

How to make it all work

By incorporating these habits into your daily life, you can support your immune system throughout the fall & beyond. Choose a few key practices from each chapter to start, & slowly build them into your routine.

This fall, stay healthy & strong by prioritizing your immune health through balanced lifestyle choices, nutritious foods, targeted supplements, & regular exercise.

I truly hope you found this evidenced based guide to fall immunity helpful for you & gave you some ideas how best to support you through the fall & winter.

Disclaimer

As with any advice you receive online, specific guidelines are best followed with the support of your doctor. Nothing in this ebook are meant to be medical advice, nor should it replace seeking care from a medical professional.

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