**Spotlight on culinary antimicrobials**

Let your immune health start in the kitchen!

I have a little secret for you. Looking after your immune health doesn’t have to involve fancy supplements or expensive juice cleanses. Look no further than the supermarket/ local grocer for affordable foods that taste delicious and may help to prevent respiratory infections.

Culinary antimicrobials are foods that we use everyday in the kitchen that have been scientifically proven to improve the function of our immune system. My favourites include garlic, ginger and thyme. Read below for more info on these superstar, including ways to incorporate them into your meals.

**Garlic**

Garlic is my number one ingredient for any savoury dish. I put it in literally everything - soups, pasta, stir-fry, omelettes and salad dressings. And there is a very good reason - garlic is an incredible superfood benefiting the cardiovascular and immune system.

In the immune system garlic helps to increase the action of natural killer cells - cells whose job it is to identify any foreign invaders in the body (like germs causing infection) and attack. Garlic also increases the release of virus-killing compounds such as nitric oxide. Studies have observed that long term supplementation with concentrated garlic extracts reduces the severity and length of common colds and influenza.

For immune boosting effects aim to consume 1 clove a day (2-5g). Garlic should be crushed and left out to breathe for at least 10 minutes before using to help activate immune-boosting compounds.

Garlic may cause tummy upset for those who are FODMAP intolerant. In this case a concentrated garlic insured oil may be more appropriate. High dose garlic should also be avoided in people taking blood thinners such as warfarin.

**Ginger**

Ginger is undoubtedly one of my all-time favourite medicinal herbs. Ginger has been used for centuries as a remedy for colds and flu. Several constituents in ginger are directly anti-viral and anti-microbial again an array of infection causing microorganisms.

In the case of a cold or flu ginger is also wonderful for managing symptoms due to its anti-inflammatory nature. When we have an infection such as a cold or flu, the symptoms we experience (like fever and congestion) are a result of inflammation stimulated by our immune response. A little bit of inflammation is required to help our body fight infection, but too much inflammation causes tissue damage and severe symptoms. Ginger can help reduce inflammation, especially in the respiratory system (lungs and nasal passages), to reduce severity of symptoms and protect the body from damage.

Aim to consume 1-2g of fresh ginger a day.

To make ginger tea, steep half a thumb of grated ginger in 1 cup of hot water for 10 minutes and consume (add lemon and raw honey for extra flavour). You may make a big batch in the morning and drink throughout the day.

\*\* Top tip - to peel fresh ginger, use a teaspoon to scrape away the skin.

**Thyme**

We all know thyme from our favourite Italian dishes, but what is less well known is thyme’s amazing respiratory antiseptic qualities. Thyme is my number one go-to for coughs, bronchitis, lung infections and sore throats.

Thyme extract and essential oil have potent anti-bacterial, anti-viral and anti-fungal qualities. This makes it perfect of fighting respiratory infections. In traditional herbal medicine thyme is also considered to improve coughs by increasing the lungs ability to clear mucous, therefore decreasing the need to constantly cough.

Aim to consume up to 6 tsp daily of medical grade dried thyme. This can be purchased from health food stores.

To make thyme tea: steep 2 teaspoons of dried thyme in 150ml of hot water for 10 minutes, strain and consume. You can buy medicinal quality thyme at most health food stores.

**References**

Fani, M., & Kohanteb, J. (2017). In Vitro Antimicrobial Activity of Thymus vulgaris Essential Oil Against Major Oral Pathogens. *Journal of evidence-based complementary & alternative medicine*, *22*(4), 660–666. https://doi.org/10.1177/2156587217700772

Mao, Q. Q., Xu, X. Y., Cao, S. Y., Gan, R. Y., Corke, H., Beta, T., & Li, H. B. (2019). Bioactive Compounds and Bioactivities of Ginger (*Zingiber officinale* Roscoe). *Foods (Basel, Switzerland)*, *8*(6), 185. <https://doi.org/10.3390/foods8060185>

Nantz, M. P., Rowe, C. A., Muller, C. E., Creasy, R. A., Stanilka, J. M., & Percival, S. S. (2012). *Supplementation with aged garlic extract improves both NK and γδ-T cell function and reduces the severity of cold and flu symptoms: A randomized, double-blind, placebo-controlled nutrition intervention. Clinical Nutrition, 31(3), 337–344.* doi:10.1016/j.clnu.2011.11.019

Sultan, M. T., Buttxs, M. S., Qayyum, M. M. N., & Suleria, H. A. R. (2014). *Immunity: Plants as Effective Mediators. Critical Reviews in Food Science and Nutrition, 54(10), 1298–1308.* doi:10.1080/10408398.2011.633249

**Gut health and the immune system**

Did you know that 70% of our immune system is in our gut?

This means that having optimal gut health is absolutely essential for having a strong immune system.

The main controller of the immune system inside the gut is the 'microbiome' - a collection of trillions of bugs living peacefully inside our gut.

This ecosystem of gut bugs is made up of lots of different types of species which can broadly be categorized into beneficial 'good bugs' and potentially harmful 'bad bugs.' As long as we have lots of different types of 'good bugs' the 'bad bugs' are kept under control.

Scientific studies have observed that having less types of 'good bugs' in the gut predisposes us to respiratory illnesses such as the flu and common cold. Therefore, supporting the growth of our beneficial gut bugs is an important component of immune system care.

**So the question is: what foods do we need to keep our gut microbes happy?**

**Prebiotic foods** are plant-based foods that act as a nourishing fertilizer for our microbiome. These foods are gobbled up by our gut bugs to create signalling molecules which support the immune system.

Sources include:

• Fruits - Apples, nectarines, white peaches, persimmon, tamarillo, watermelon, rambutan, grapefruit, pomegranate, green (unripe) banana

• Vegetables - Jerusalem artichokes, chicory, garlic, onion, leek, shallots, spring onion, asparagus, beetroot, fennel bulb, green peas, snow peas, sweetcorn, savoy cabbage, cooked and cooled potatoes

• Nuts - Cashews, pistachio nuts, flax seeds

• Grains - Barley, rye bread, rye crackers, pasta, gnocchi, couscous, wheat bran, wheat bread, oats.

• Legumes - Chickpeas, lentils, red kidney beans, baked beans, soybeans

**Probiotic foods** are fermented foods that contain live bacteria. These bacteria travel to the gut where they temporarily interact with our own gut bugs to promote their health.

Sources include: Miso, kefir, yoghurt (dairy and non-dairy) kombucha, sauerkraut, raw apple cider vinegar and kimchi.

To start with, why not try my healthy apple muffin recipe below which contains prebiotics! Top it with yoghurt for some probiotic goodness.

**INGREDIENTS**

2 apples - grated 2 cups almond meal 1 tsp baking powder 1 tsp bicarb soda 2 eggs

1/3 cup sultanas (can swap for walnuts)

1/4 cup raw honey 1/3 cup soy milk 1 tsp cinnamon

1/4 cup coconut oil - melted

**METHOD**

* Preheat oven to 180 degrees Celsius
* Line a tray with muffin liners or grease a muffin tin with extra coconut oil
* In a large bowl mix together the almond flour, baking powder and bicarb soda. In a separate bowl mix together the remaining ingredients (apple, eggs, sultanas, honey, milk, cinnamon and coconut oil).
* Fold the wet mixture into the almond flour mixture until well combined.
* Pour into muffin holders - filling around 3/4 way. This mixture should make 10-12 muffins.
* Bake for 20-25 minutes or until muffins start to brown.