



SUMMIT MEDICAL GROUP
Cancer Center

*Your Ultimate
Guide to*

**Nutrition for
Optimal Immunity**

What's Inside

1

Immunological Resilience

2

Types of Immune Response

3

Nutrition & Immunity

4

Recipes

What is Resilience?

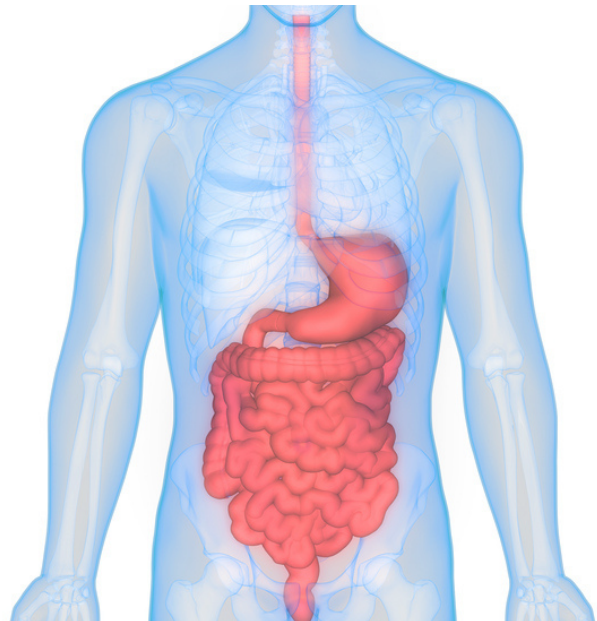
Immunological resilience allows our body to remain in a state of health or recover more quickly after exposure to a virus, detrimental bacteria, or toxin(s) occurs.

Both our mental health and immune system are dependent on a strong and resilient microbiome. While building resilience doesn't occur over the short-term, there are several practices we can engage in to support our overall immunological resilience.

did you know?

Trillions of microbes inhabit the intestines and form a complex ecological community that influences both normal physiology and susceptibility to disease.

Regular, intentional practices that support gut health can help to set a strong foundation and support our body's resilience against foreign invaders.



front-line defense

Our skin and mucous membranes serve as our first line of defense against foreign invaders by blocking pathogens from entering our body.


Each of these mechanisms are designed to trap foreign material and wash or move it out of the body via coughing, sneezing, etc. and contain antimicrobials, acids, or enzymes to inhibit the growth of or destroy microorganisms.

innate response

The innate immune response is the first response to an invading pathogen [virus, bacteria or other microorganism] or an injury. It involves release of cells [phagocytes, neutrophils, dendritic cells, mast cells, and eosinophils, among others] that ideally work in harmony to kill the invading pathogen, start repair, and signal the adaptive response.

adaptive response

While the innate response occurs quickly, the adaptive immune response is more specialized and often more effective. It has the ability to specifically recognize a pathogen and 'remember' it if exposure were to occur again. An example of an adaptive response is immunity to the chickenpox virus once exposure has occurred.



An example of an innate immune response: You catch a cold virus and your body's innate immune response causes you to develop a runny nose, cough, itchy eyes, etc.

Micronutrients

It has been well-established that clinically diagnosed micronutrient deficiencies can adversely affect the immune system and predispose individuals to infections. In order to achieve ideal immune function, optimal levels of micronutrients are required. When exposed to a pathogen, the body may lose micronutrients and cause the immune system to become increasingly active. Adequate micronutrient intake from real, nourishing food sources is essential to both prevent and aid in recovery from infection

vitamin D

Adequate intake supports our innate immune system and works as a pro-hormone (which supports a healthy brain, metabolism, thyroid function, bone health, etc.). A recent study published in the BMJ demonstrated that vitamin D supplementation decreased the risk of respiratory tract infections by 50% in those that were deficient and 10% in those with favorable vitamin D status.

food sources



wild salmon



pasture-raised
eggs



canned seafood



mushrooms

Micronutrients

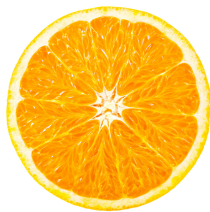
vitamin C

Vitamin C is widely recognized as a powerful antioxidant. It supports both the innate and adaptive immune responses, and supports the adrenal glands through metabolism of cortisol (primary stress hormone) in the body to curb the stress response. Additionally, clinical research indicates low levels of vitamin C can lead to increased susceptibility to virus and infection and compromised immune health.

food sources



bell peppers



citrus



berries



broccoli

zinc

Zinc is a powerful antioxidant and is required to activate certain immune cells. Zinc deficiency is associated with impaired immune function and increased risk of infections such as pneumonia in certain age groups.

food sources



oysters



beef



cashews



yogurt



Foods & Polyphenols

black & green tea

Both black and green tea contain polyphenols, which help to support a healthy gut microbiome and help to bind to a virus and reduce the ability for the virus to replicate. A Harvard research study determined that consuming 5 cups per day increased the virus-fighting compound, interferon by ten times! Enjoy 1-2 cups of organic green or black tea per day as a nourishing way to unwind and possibly support upper respiratory health

ginger root

Ginger has antimicrobial, anti-fungal, and antiviral properties. Ginger root supplementation has been shown to have anti-inflammatory and immune-supporting benefits. Grate into stir-fry, simmer slices in water to make tea, add to smoothies, and grate into soups.

garlic

Garlic contains alliin and allicin, which are compounds that have antimicrobial properties. While there isn't strong evidence on the impact of garlic on the immune system, the studies that have been conducted suggest garlic may stimulate the immune system and have antimicrobial actions as well as lower inflammation, cholesterol, and blood pressure.

Be sure to discuss increased garlic use (or supplementation) with a healthcare practitioner if you are currently taking a blood thinner, insulin, or protease inhibitor.

quercetin

Quercetin, a polyphenol derived from plants, has been shown to reduce the incidence and severity of upper respiratory tract infection symptoms and may provide additional immune-supporting effects when combined with vitamin C. Food sources include: apples, berries, capers, grapes, onions, tomatoes and nuts/seeds.

Recipes

Sesame Ginger Broccoli

Prep Time: 15 minutes

Total Time: 30 minutes

Yield: 4 servings

Ingredients

- 6 cups broccoli florets, chopped and steamed
- 1 Tbs sesame oil
- 1 tsp ginger, grated
- 2 tsp soy sauce
- 2 tsp sesame seeds

Instructions

Prep

1. Wash and chop broccoli into bite-sized pieces.
2. Steam broccoli until just bright green.
3. Grate ginger.

Make

1. Warm sesame oil, ginger and soy sauce in a large sauté pan until ginger starts to sizzle.
2. Add broccoli, cook over medium heat for 3-5 minutes.
3. Season with additional soy sauce if desired.

Note: steaming the broccoli ahead - batch cooking - saves time and prevents the ginger from burning. This is an excellent recipe for any leftover steamed vegetables.

Detox Green Smoothie

Prep Time: 5 minutes

Total Time: 5 minutes

Yield: 1 serving

Ingredients

- 1 cup romaine lettuce, chopped
- 1/2 cup pineapple, chopped
- 1 Tbsp ginger, chopped
- 1 cup cucumber, peeled and chopped
- 2 cups water
- 2 kiwis, peeled & chopped
- 2 Tbsp parsley, chopped
- 1/4 avocado
- Stevia, to taste

Instructions

Prep

1. Chop romaine and pineapple.
2. Peel and chop ginger, cucumber and kiwis.
3. Remove flesh from avocado.

Make

1. Add ingredients to blender and process until smooth. Add more water as needed.

Recipes

Avocado Lime Salmon

Prep Time: 15 minutes

Total Time: 30 minutes

Yield: 4 servings

Ingredients

- 1 1/2 lb salmon
- 1 clove garlic, minced
- 1 tsp olive oil
- salt & pepper, to taste
- 2 tsp paprika
- 1 avocado, chopped
- 1 red onion, diced
- 4 Tbsp cilantro, chopped
- 4 Tbs olive oil
- 4 Tbs lime juice

Instructions

Make

1. Preheat oven to 400 degrees.
2. On a baking sheet, season salmon with garlic, olive oil, salt, pepper, and paprika.
3. Bake for 10-12 minutes.
4. In a small bowl, mix remaining ingredients until fully incorporated. Do not over-mix.
5. Spoon avocado mixture over the salmon.

"No-Tuna" Salad (Chickpeas)

Prep Time: 15 minutes

Total Time: 15 minutes

Yield: 4 servings

Ingredients

- 1 (15 oz.) can chickpeas, drained and rinsed
- 3 Tbs tahini
- 1 tsp dijon mustard
- 1 Tbs maple syrup
- 1/4 cup red onion, diced
- 1/4 cup celery, diced
- 1/4 cup pickles, diced
- 2 Tbs lemon juice
- 1 tsp capers
- salt & pepper, to taste
- 1 Tbs sunflower seeds
- 4 whole leaves Bibb lettuce
- 1 tomato, sliced

Instructions

Prep

1. Drain and rinse chickpeas, dice red onion, celery, pickles, and thinly slice tomato.

Make

1. Place the chickpeas in a mixing bowl and mash with a fork or potato masher.
2. Add tahini, mustard, maple syrup, red onion, celery, pickles, lemon or pickle juice, capers, salt & pepper, and sunflower seeds. Toss well to coat.
3. Lay whole leaves of lettuce on a platter.
4. Scoop 1/4 of the chickpea mixture into each lettuce cup. Top with tomato and additional onion if desired.

Note: No lemon juice? You can also use pickle juice! Enjoy within 4-5 days.

Recipes

Simple Bone Broth (Chicken)

Prep Time: 15 minutes

Total Time: 120 minutes

Yield: 8 servings

Ingredients

- Bones from two chickens [skin and tendons included]
- 4 carrots, peeled and chopped
- 4 stalks celery, chopped
- 6 garlic cloves, halved
- 1 onion or 4-6 scallions, chopped
- 1 bunch parsley [or another herb]
- 2 Tbs apple cider vinegar [or another acid like lemon juice]
- 1 Tbs mixed seasonings of choice [turmeric, oregano, ginger, curry, etc.]
- 2 tsp salt
- 1 bay leaf
- 8+ cups water [enough to cover bones and vegetables]

Instructions

Prep

1. Chop all vegetables into large pieces.

Make

1. Add all ingredients in order listed to an Instant Pot and process on high for 2 hours.
2. Let sit for an additional 20 minutes so pot releases some pressure.
3. Release pressure valve and pour the broth through a fine strainer.
4. Place in a mason jar and consume within 4 days or freeze.
5. Reserve cooked vegetables to mash with cauliflower [be sure to remove herbs, bay leaf, and any small bones.]

NOTE: Broth can also be made in slow cooker. Time = 1-1.5 hours on high.

Tip: Save bones in freezer until you have enough for broth. You can use any bone to achieve the flavor you prefer.