

FRESH START YOUR IMMUNITY



with **10** simple strategies

45 Connect for Health and Happiness

25 Hydrothermal Therapy for Better Immunity

52 Immune-Boosting Recipes

Editorial

Our world has been battling an unprecedented global pandemic—the novel COVID-19 virus. At the present, over 173 million people have been infected worldwide, and over three million people have died. The rapid spread of the disease has brought many changes to our lives. It has disrupted economies, increased unemployment, suspended schools, closed businesses, and even churches. In some countries, health care systems have been overwhelmed. As Covid have risen, reports about the pandemic have dominated the news. No wonder thousands of people are worried and fearful about the future.

Have you felt overwhelmed with the Coronavirus this past year? Perhaps you've had changes in your eating patterns, difficulty sleeping, worsening chronic health problems, increased stress, loneliness, and anxiety about your health and that of your loved ones? You are not alone. Our life and health, and of our loved ones have been endangered like never before. But there is hope. We have good news for you!

A critical key with COVID-19 as with any other disease is to have a vigorous immune system. Then, we not only reduce the risk of getting the virus but also if we do get it, we will have fewer symptoms, and a shorter duration of the illness. But, we can't wait till we get the virus to strengthen our immunity, we must do it now while we are well. If another pandemic strikes, only those who are strong will survive.

Where can we learn how to boost our immunity? From the One who created us. God has given us laws or health principles—which if practiced regularly—will keep our body, mind, and spirit strong to prevent disease, and to overcome it when we do get it. Our Creator also has the solution on how we can beat stress and loneliness, as well as fear and anxiety. In this magazine, we will demonstrate how science has tested and validated God's health principles. Best of all, we'll show you how to incorporate these simple health principles into your lifestyle. These health principles follow the acronym **FreshStart**:

- F**resh Plant Food
- R**est
- E**xercise
- S**unlight
- H**₂O water
- S**elf-control
- T**hankfulness
- A**ir
- R**elationships
- T**rust in God

Are you ready to begin your journey to stronger immunity, as well as improved physical, mental, and spiritual health? Make **FreshStart** a part of your daily lifestyle. Our Creator wants to help you. He designed you to be healthy. "The thief does not come except to steal, and to kill, and to destroy. I have come that they may have life, and that they may have it more abundantly" (John 10:10 κκν). Let's take on that *abundant life*!



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FRESH
START

Fight Covid With Plant Foods

By Liliane Balbach,
MS, RDN

Would you like to know five life-changing strategies that can strengthen your immunity, lower and even reverse your risk of heart disease, hypertension, diabetes, as well as some cancers? Bonus health benefits include: optimized kidney function, healthy weight, improved mood, and longer life.

In the United States, we are so privileged to have the ability to produce an abundance of healthful food that's available all year round. Yet, a recent national report reveals that a poor diet is "now the leading cause of poor health in the U.S. and causes more than half a million deaths per year."¹ Cardiovascular disease afflicts half American adults. Nearly 3 in 4 Americans are obese or overweight, while 19% of our children and adolescents are obese. Nearly half of our adults suffer from diabetes and prediabetes. This is why so many Americans were vulnerable to COVID-19.¹

A current study looked at the metabolic health of Americans found that *only 12% don't have* high blood pressure, high cholesterol, high triglycerides, diabetes, or pre-diabetes.² These conditions, along with excess fat around the midsection, are called *metabolic syndrome*. Together they cause low-grade whole-body inflammation, and increased risk of infections, pneumonia, and cancers. Dr. Mozafarian, Dean of the Freidman School of Nutrition Science at Tufts University, states: "The statistics are horrifying but unlike Covid (these lifestyle diseases) happened *gradually* enough that people just shrugged their shoulders. However, beyond age, these are the biggest risk factors for illness and death from Covid-19. And Covid KILLS by causing an overwhelming inflammatory response that disables the body's ability to fight off pathogens."³

Plant-based nutrition to the rescue

If you or one of your loved ones has one of these diseases, it is time to make a change for life and health! The good news is that research repeatedly shows that a *plant-based diet* may lower the risk of cardiovascular disease (CVD), hypertension⁴, and type 2 diabetes⁵ and may prevent and often reverse them. A plant-based diet may prevent and treat asthma, thus lowering the threat of serious consequences if you develop a COVID-19 infection.⁶

Plant foods are loaded with vitamins C and E, beta-carotene, and zinc which can also boost immunity. Vegetarians have been shown to have more effective white blood cells compared to non-vegetarians due to their low intake of fat and high intake of vitamins from plants.⁷

Fruits, vegetables, nuts, seeds, and legumes are rich in phytonutrients and antioxidants which can protect us against harmful pathogens. Antioxidants in these foods help decrease inflamma-

tion by combating unstable compounds called free radicals. These compounds can cause inflammation when they build up at high levels in your body. Look which are the top antioxidant foods (see Table 1). The five lifestyle changes below will help to optimize your immune system, suppress inflammation, and even reverse certain diseases.

5 WAYS TO STRENGTHEN IMMUNITY AND FIGHT DISEASE

1. Eat anti-inflammatory foods

We know that inflammation has been linked with arthritis, but now also with heart disease, cancer, diabetes, asthma, and Alzheimer’s. Diet and exercise especially helpful in combating chronic inflammation.¹⁰ Berries, and red and purple fruits and vegetables are anti-inflammatory and antioxidative when they are consumed regularly. Berries may also boost our levels of natural killer cells—a type of white blood cell that’s critical in fighting viruses and cancerous cells.

Special antioxidants in berries and dark green leafies may make them brain foods. A study from Harvard University and Brigham and Woman’s Hospital looked at health and lifestyle questionnaires of 121,000 nurses, and found that those who consumed at least ½ cup of blueberries and 1 cup of strawberries per week had up to 2 ½ years slower rates of cognitive decline compared to those who didn’t have any.¹¹

.....
Practical tip:

Eat ½ cup of blueberries or berries, and other foods in this category daily.
.....



½ CUP OF BERRIES / DAILY AND OTHER PURPLE FOODS

Table 1

Top Antioxidant-Rich Fruits, Vegetables, and Spices ²⁷			
	Fruits	Vegetables	Spices
1	Blueberries, wild	Garlic	Amla*
2	Blackberries	Kale	Cloves
3	Raspberries	Asparagus	Peppermint
4	Blueberries, cultivated	Red cabbage	Allspice
5	Plums	Broccoli	Cinnamon
6	Red Grapes	Beet greens	Oregano
7	Pomegranate	Beets	Thyme
8	Strawberries	Spinach	Sage
9	Red Cherries	Onion	Rosemary
10	Oranges	Corn	

- Eat a variety of fruits and vegetables in a rainbow of colors.
- Avoid eating the same two or three choices.
- Foods with darker, richer colors are higher in antioxidants.

* Dried Indian gooseberry powder

2. Feed your Microbiome

Our body has trillions of bacteria, viruses, and fungi known as the *microbiome*. Most of them are found in a “pocket” of our large intestine and are called the *gut microbiome*.¹² While some bacteria are linked with disease, others are very important for our immune system, heart health, healthy weight, and general health. Since 70% of our immune system lives in the gut, a healthy gut microbiota is essential to a robust immune system.

The typical western diet high in saturated fat, seafood, dairy, sugar, and processed food encourages the growth of unhealthy gut bacteria that produce pro-inflammatory compounds and negatively affect our intestines, brain, liver, and immune system. But, when we eat a whole food plant-based diet, we stimulate our body to produce friendly gut bacteria that produce anti-inflammatory compounds. The fiber packaged in the plant foods we eat feeds our gut microbiome. A healthy gut microbiome can improve our immunity and help keep harmful pathogens from entering our body and digestive tract.¹³ For optimal gut health, we also need adequate sleep, and a

regular eating and sleeping schedule.¹⁴ The good news is that one month on a plant-based diet can increase the good guys and decrease the bad disease-causing bugs.

Legumes provide the highest source of fiber; next are vegetables, whole grains, fruits and nuts. (See Table 2.) There is zero fiber in meat, chicken, fish, or dairy! Eating a high fiber diet has been linked with a 40-50% decrease in respiratory-related deaths. *Soluble fiber* found in *beans, oats, peas, apples, citrus, carrots, and barley* binds cholesterol and decreases airway inflammation, and mucus, as well as improves lung function in asthmatics.¹⁵ If you would like to have improved blood sugar and insulin levels, a slimmer waist, as well as a lower risk of stroke, colon cancer, and obesity, **eat more beans**.^{16, 17} These dynamite health benefits come from the fiber, phytates, and folate found in beans. But only 3% of Americans are getting enough fiber in their diet. Make sure your body isn't starving for fiber. Next time you go food shopping, pick up a variety of dried or canned beans that you haven't had before and start enjoying the superb health benefits of this superfood.



LEGUMES:
1-3 cups daily

Table 2

FIBER CONTENT OF FOODS					
Food Category	Serving size	Fiber (g)	Food Category	Serving size	Fiber (g)
Fruit	1	2-5	Meat	Any	0
Vegetables	1	3-14	Chicken	Any	0
Whole grains	1	1-8	Fish	Any	0
Legumes (Beans)	1 cup	8-19	Dairy foods	Any	0
Nuts	1/4 cup	3-4	Dressings	Any	0
Oat bran, raw	1 ounce	12	White bread	Any	0.6
Fiber One Bran Cereal	1/2 cup	25	White rice	Any	0.6

Practical Tips:

- Use a variety of legumes: pinto beans, chickpeas, split peas, black, kidney, navy beans, lentils and red lentils.
- Eat 1-3 cups of beans daily.
- Add beans to salads, casseroles, veggie roasts, burgers, and spreads.
- Eat about 10-15 g of fiber at every meal. 1 cup of beans has 9-19 g of fiber per cup.
- Women need 25 g/day; men 38 g of fiber per day.
- Increase your fiber gradually up to 40+ g daily.

Drink 8-12 glasses of water per day.

3. Avoid Immune Suppressors

Added sugars, saturated and trans fats, red and processed meats, white flour foods, and vegetable oils combined with a sedentary lifestyle promote chronic inflammation.¹⁸ Saturated fats are found mostly in meats, dairy, processed foods, and coconut and palm oils, and they raise blood cholesterol. People who consume diets high in saturated fats and cholesterol are at risk for heart disease, stroke, diabetes, and cancer.¹⁹ So, if you have bacon and eggs for breakfast, that's your first saturated fat bomb; for snack you have a doughnut and coffee, that's another fat and sugar bomb. Then, just as inflammation starts to calm down, it's lunchtime! You may hit your arteries with another load of harmful food. So, unhealthy meals don't just harm us internally, but within hours of going into our mouth.

What about sugar? Research shows that added sugars and refined carbohydrates (white flour products, white rice, pastries, and many breakfast cereals) which are stripped of fiber, and nutrients contribute *greatly* to obesity. To strengthen our immunity and decrease inflammation, we need to limit our fat and sugar intake.¹⁹

Table 3

Top 10 High Sugar Foods ²⁰		
Food	Serving size	Sugar g (tsp)*
Milkshakes (blended with candy)	12 oz.	85 g (21 tsp.)
Grape juice	16 oz.	72 g (18 tsp.)
Sugary drinks (Cream soda)	16 oz.	66 g (16 tsp.)
Cake w/coconut frosting	1 slice	64 g (16 tsp.)
Commercial Candies (Skittles)	2 oz. bag	47 g (12 tsp.)
Lowfat fruit yogurt	1 cup	47 g (12 tsp.)
Pancakes with syrup (fast food)	3 pancakes	45 g (11 tsp.)
Cereal bars (Nutri-Grain)	1 bar	39 g (10 tsp.)
Sports drinks	20 oz.	38 g (10 tsp.)
Ready to Eat Cereals (Familia)	1 cup	28 g (7 tsp.)

*teaspoon

(See Table 3.) For example, a cream soda has 66 g of sugar and lowfat fruit yogurt 47g in one cup.

The next time you go to the grocery store if you are used to walking through the ice cream, cookie, and soda aisles, stop! Make a U-turn and go to the produce section.



FRUITS:
3-4 servings
daily

Stock up on those colorful fruits bursting with flavor, loaded with natural sugar, fiber, phytonutrients, and antioxidants.

Practical tip:

- Sugar intake: **Men** limit to less than 9 tsp. (37g) of added sugar per day; **women** less than 6 tsp. (25 g) per day (American Heart Assn.)
- Eat 3-4 fruit per day.

4. Eat healthy fats

Omega-3 fatty acids have powerful benefits for your body and brain. They reduce inflammation, improve risk factors for heart disease, may help prevent cancer and fight depression and anxiety. They are found in flax seeds, chia seeds, walnuts, avocados, edamame, and many dark green leafy vegetables. Add these whole plant fats to your diet but use vegetable oils sparingly. Research shows that oil may impair white blood cell function and that high-fat diets may lower immunity.^{21, 22} Even vegetarians might be using too much oil in their diet, and also frying foods, both of which increase inflammation.

Over the past few decades, we've had an increase in non-alcoholic fatty liver disease, cardiovascular disease, obesity, inflammatory bowel disease (IBD), rheumatoid arthritis, and Alzheimer's. This has coincided with a dramatic increase in the consumption of polyunsaturated vegetable oils, while our intake of omega-3 fats has been low.²³

Practical Tips:

- Add 2 tablespoons of ground flax or chia seeds/day to your cereal.
- Eat ¼ cup of raw nuts daily.
- Avoid frying foods in oil; steam in vegetable broth or a little water.
- Cook your soups without oil; add lots of onions and garlic for flavor.
- Use cold-pressed olive oil sparingly.

5. Eat foods rich in antioxidants

"Dark green leafy vegetables are the most nutrient-rich foods on earth. An analysis of all the different types of food, by a team of Harvard University researchers, showed that dark greens offer the strongest protection against major chronic diseases.²⁴ Each extra serving you eat per day reduces one's risk of a heart attack²⁵ and stroke by 20%.²⁶ The nitric oxide from vegetable nitrates improves oxygen efficiency opening arteries so more blood can flow to the brain.²⁷

Nitric oxide is a key messenger in the body; it signals muscles within artery walls to relax, it helps blood vessel dilation to promote better blood flow. There is evidence that it even helps lower blood pressure and improve brain function.²⁷ Without nitric oxide your arteries can stiffen and increase your risk of a heart attack. You can eat certain vegetables that are rich in natural nitrates which your body can convert into nitric oxide.²⁷

If you are immunocompromised, or just wish to enhance your immunity, you need to know the power of nitric oxide. A research study in 2005 found that nitric ox-



**NUTS, SEEDS,
AVOCATO, OLIVES:**
Limited seeds to 2
tablespoons daily.
Nuts 1/4 cup/daily.

ide significantly inhibited the replication of SARS coronavirus, meaning it disrupted the virus's ability to grow.²⁸

Beets are high in nitrates and can raise nitric oxide levels. One study showed that consuming a beet juice supplement raised nitric oxide levels in subjects by 21% in just 45 minutes. Another study showed drinking just 3.4 ounces of beet juice daily significantly raised nitric oxide levels in men and women. Several studies showed a 10-point systolic blood pressure drop in subjects within hours after drinking beet juice. This effect lasted all day.²⁹

Besides beets, dark green leafy vegetables like kale, broccoli, cabbage, spinach, arugula, and celery are packed with nitrates, which are converted to nitric oxide in your body. The single best way to get your nitric oxide fix is to eat one large green salad daily!²⁹ Not an iceberg salad, but romaine, and other dark leafy greens. Another great way to include dark green leafy veggies in your diet is by adding them to pasta sauces and soups during the last few minutes of cooking.

Garlic also boosts our nitric oxide levels; it diminishes an over-reactive immune system by squelching inflammation while boosting our protective immunity. Garlic also lowers blood pressure and cholesterol. In one trial, researchers studied the prevention of viral disease with garlic. Subjects taking garlic supplements had 60% fewer colds and recovered in only 1.5 days instead of five days.³⁰ My 90-year old dad believes in the immune power of garlic. He has his daily dose by covering every inch of his toast with avocado and thin slices of raw garlic, 3-4 cloves per day! Perhaps you may wish to try his recipe?

Practical Tip:

- Eat one large green leafy salad daily.
- Eat 1 clove of garlic a day. Use lots of garlic and onions in cooking, in salad dressings.

It's your choice

You may say: This all sounds great. Sure, I'd love to eat a plant-based diet, but I feel this diet is a little extreme. Dr. Caldwell Es-selstyn, the physician featured in "Forks Over Knives," has been helping hundreds of people stop and reverse the progression of heart disease states:

"Some people think the plant-based whole foods diet is extreme. Half a million people a year will have their chests opened up and a vein taken from their leg and sown on to their coronary artery. Some people would call that extreme."³¹

Tomorrow morning when you get up, drink 2-3 glasses of water, and instead of bacon and eggs, cook some oats, or quinoa, for breakfast. Sprinkle ground flaxseed and some blueberries and pour some almond milk on top. On the side, you have another two more fruits and a handful of walnuts. This breakfast is for champions who wish to boost their immunity and lower their risk of lifestyle diseases. Your family will thank you for going the extra mile and preparing a breakfast that extinguishes inflammation and prevents snacking.

Now as lunch rolls around, instead of having a hamburger and French fries, you can have a black bean burger and large salad with baked fries. For dinner, you can have Western chili and cornbread, served with broccoli and a large salad. Is it worth your time to shop, plan, and cook healthy meals for yourself and your loved ones?

GREENS:

Take 2-6 servings by mouth daily. Unlimited refills!

VEGETABLES:

4-5 servings daily

Table 4

Foods and Supplements to Boost Immunity		
Micronutrient	Dose	Food Sources
Garlic: antiviral	Eat 1/day	Fresh garlic, aged extract, and garlic supplements.
Turmeric Curcumin: antiviral, anti-inflammatory	Herb Supplement	Use freely in cooking and supplement.
Zinc: oral zinc supplement may protect against respiratory tract infections (common cold).	30 mg lozenge	Beans, lentils, nuts, pumpkin seeds, sesame seeds.
N-acetyl-cysteine (NAC)	600 mg 2x/day	NAC helps with serious lung infections. Several studies show that subjects with acute respiratory distress syndrome (ARDS) who were treated with NAC had shorter stays in the ICUs compared to the controls. ²⁹

Some supplements can interact with medications and may not be appropriate for people with certain health conditions. Be sure to check with your health-care provider before taking any supplements.

Absolutely! And by the way, get your family involved in the preparation of healthy food. Your health and their health depend on it!

Rx from Eden

By now perhaps you are curious to know who prescribed the original health-promoting plant-based diet? Over 6,000 years ago, a wise and loving Master Designer created man in His image and prescribed him the original plant-based diet in the garden of Eden. And God said, "See, I have

given you every herb *that* yields seed which *is* on the face of all the earth, and every tree whose fruit yields seed; to you, it shall be for food."³² This diet prevents inflammation, lowers our susceptibility to viruses, enhances our immunity, and prevents and even reverses some diseases. The Creator gave us fruits and vegetables in a rainbow of colors loaded with phytonutrients, antioxidants, vitamins, and minerals designed to nourish every cell of our body. Do you think He is interested in helping you get

back on the original plant-based diet? You can count on Him! As you begin your wellness journey, why not ask Him to renew your health and taste buds, and give you a desire to adopt a plant-based diet for optimal life and health? 🌿



Scan this QR code to watch an in-depth video presentation on this topic.

Sources:

- Report of the 50th Anniversary of the White House Conference on Food, Nutrition, and Health: Honoring the Past, Taking Actions for our Future March 2020
- Araujo J, Cai J, Stevens J. (2019). Prevalence of Optimal Metabolic Health in American Adults: National Health and Nutrition Examination Survey 2009–2016. *Metab Syndr and Relat D* 17(1):46-52.
- Mozafarian D, Mande J, Micha R. Food Is Medicine—The Promise and Challenges of Integrating Food and Nutrition Into Health Care. *JAMA Intern Med.* 2019;179(6):793-795. doi:10.1001/jamainternmed.2019.0184.
- Kahleova H, Levin S, Barnard ND. Vegetarian dietary patterns and cardiovascular disease. *Prog Cardiovasc Dis.* Published online May 29, 2018.
- Hosseinpour-Niazi S, Mirmiran P, Hedayati M, Azizi F. Substitution of red meat with legumes in the therapeutic lifestyle change diet based on dietary advice improves cardiometabolic risk factors in overweight type 2 diabetes patients: a cross-over randomized clinical trial. *Eur J Clin Nutr.* October 29, 2014.
- Serafini M, Peluso I. Functional Foods for Health: The Interrelated Antioxidant and Anti-Inflammatory Role of Fruits, Vegetables, Herbs, Spices and Cocoa in Humans. *Curr Pharm Des.* 2016;22(44):6701-6715. doi: 10.2174/1381612823666161123094235.
- Vegetarian-based dietary patterns and their relation with inflammatory and immune biomarkers: a systematic review and meta-analysis. *Adv Nutr.* 2019;10:433-451.
- Pour, PM. The Signaling Pathways, and Therapeutic Targets of Antiviral Agents: Focusing on the Antiviral Approaches and Clinical Perspectives of Anthocyanins in the Management of Viral Diseases. *Front Pharmacol.* 08 November 2019.
- Yanling Yao. Plant-based Food Cyanidin-3-Glucoside Modulates Human Platelet Glycoprotein VI Signaling and Inhibits Platelet Activation and Thrombus Formation. *J. Nutr.* jn245944; first published online August 30, 2017.
- Nair AR, et al. Blueberry supplementation attenuates oxidative stress within monocytes and modulates immune cell levels in adults with metabolic syndrome: a randomized, double-blind, placebo-controlled trial. *Food Funct.* 2017 Nov 15;8(11):4118-4128. doi:10.1039/c7fo008153.
- Devore, EE et al. Dietary intakes of berries and flavonoids in relation to cognitive decline. *AnnNeurol.* 2012; DOI: 10.1002/ana.23594
- Qin J, et al. A human gut microbial gene catalogue established by metagenomic sequencing. *Nature* 2010 Mar 4;464(7285):59-65. doi: 10.1038/nature08821.
- Holscher HD. Dietary fiber and prebiotics and the gastrointestinal microbiota. *Gut Microbes.* 2017 Mar 4;8(2):172-184. doi: 10.1080/19490976.2017.1290756. Rinninella E et al. Food components and dietary habits: keys for a healthy gut microbiota composition. *Nutrients.* October 7, 2019.
- Hall E, Vale P. Twelve Ways to Improve Gut Health. May 7, 2020 wildwoodhealth.com/blog/twelve-natural-ways-to-improve-gut-health-without-probiotics/
- Wypych TP, Marsland J, UBags ND. 2017 Jul. 2017. The impact of diet on immunity and respiratory diseases. *Ann Am Thorac Soc.* Vol. 14, Issue Suppl. 5 July 2017.
- Hosseinpour-Niazi S et al. (2012). Legume intake is inversely associated with metabolic syndrome in adults. *Arch Iran Med* 2012 (15)9.
- Mollard RC et al. Regular consumption of pulses for 8 weeks reduces metabolic syndrome risk factors in overweight and obese adults. *Br J Nutr* 2012;108 – Suppl -1:S111-22.
- <https://health.clevelandclinic.org/5-foods-that-can-cause-inflammation>
- DiNicolantonio L et al. The Evidence for Saturated Fat and for Sugar Related to Coronary Heart Disease. *Prog Cardiovasc Dis.* Mar-Apr 2016;58(5):464-72.
- U.S. Agricultural Research Service Food Data Central. <https://fdc.nal.usda.gov/>
- Soldati L et al. The influence of diet on anti-cancer immune responsiveness. *J Transl Med.* 2018;16:75-93.
- Wood LG et al. Assessment of dietary fat intake and innate immune activation as risk factors for impaired lung function. *Eur J Clin Nutr.* 2010;64:818-825; Rasmussen LB et al. Effect of diet and plasma fatty acid composition on immune status in elderly men. *Am J Clin Nutr.* 1994;59:572-577.
- Patterson, et al. Health Implications of High Dietary Omega-6 Polyunsaturated Fatty Acids. *J Nutr Metab.* 2012; 2012: 539426.
- Hung HC et al. Fruit and vegetable intake and risk of major chronic disease. *J Natl Cancer Inst.* 2004;96(21):1577-84
- Joshiyura KJ, Hu FB, Manson JE, et al. Fruit and vegetable intake on risk of coronary heart disease. *Ann Intern Med.* 2001;134(12):1106-14.
- Joshiyura KJ, et al. Fruit and vegetable intake in relation to risk of ischemic stroke. *JAMA* 1999;282(13):1233-9.
- Greger, M. (2015). *How not to Die*, p. 136.
- Akerstrom A, et al. (2005). Nitric oxide inhibits the replication cycle of severe acute respiratory syndrome coronavirus. *J Virol* Feb;79(3):1966-9. doi: 10.1128/JVI.79.3.1966-1969.2005.
- Greger M. (2015 Sept. 30.) Oxygenating Blood with Nitrate-Rich Vegetables. Greger, M. (2015). *How not to Die*, p. 137.
- Greger M. (Jan 22, 2020.) Benefits of Garlic for Fighting Cancer and the Common Cold. *NutritionFacts.org.* Vol. 49.
- Esselstyn C Jr., Forks over Knives 2011.
- The Bible, Genesis 1:29, NKJV.

By Aldo Cordova, MD
with Serban Ionita, BS

Rest: The Key to a Fresh Start

Sleep is for the weak” has become the new slogan in our new culture that is always on the go with a coffee in one hand and a never-ending to-do list in the other. We see sleep as a waste of time instead of what it truly is—a pillar of a healthy life. According to data from the National Health Interview Survey, more than 30% of the adults in the U.S report sleeping less than 6 hours per night.¹ The Creator, in His mighty wisdom, granted us a time to rest, so that sleep, nature’s sweet restorer, would bring quiet and repose to overworked bodies and minds. We should sleep long enough to wake up fresh and ready to tackle the work and stresses of our day. The inspired word highlights the importance of sleep as it tells us: “yea, thou shalt lie down, and thy sleep shall be sweet”(Proverbs 3:24).

Why we sleep

This may seem like a simple statement with a simple answer. Indeed, we sleep to feel rested. But there is much more to why we sleep and why sleep is one of the key principles of good health. During sleep, our bodies are actually quite active. This is the time the body repairs cells and muscles, grows bones, makes proteins, and releases hormones. It also gets rid of toxic waste and restores our energy. All these functions are crucial for overall health, without which, our bodies will not operate well.

Physiologically speaking, sleep is important for our body to experience restoration and growth. Our blood supply to the muscles is increased in deep sleep and this allows our body to recover.¹ Our body temperature also decreases during sleep, conserving energy. Our body’s cellular activity levels are lowered allowing our tissues to rebuild and grow. Also, the secretion of growth hormone from the pituitary gland reaches its peak during deep sleep.¹ This hormone maximizes the restorative and growth effects of sleep.

Our sleep is divided into two main phases: Rapid Eye Movement (REM) and non-REM sleep. During the night, our bodies cycle through the various stages of sleep each occurring for about



90-120 minutes with four to five cycles taking place during a typical night of sleep. REM is the phase of sleep where some of the most intense nervous system activity takes place. During REM sleep, our oxygen levels increase, our brain tissue absorbs more amino acids and our blood circulation increases.

The REM stage of sleep is critical and is a stage of vigorous brain activity. During this stage, there is the firing of neurons that retrieve and store the memories we made during the day. Short-term memories are converted into long-term memories. Essentially, while we are sleeping, our brain is busy sorting all of the day's events making sure we will be able to remember them later on. When we learn something new, neurons form specific connections with other neurons. It is during REM sleep that much of the growth of specific neural connections takes place. These neural (nerve cell) pathways form a tangible framework for our memories.¹

Sleep requirements vary by age with infants needing about 16 hours/day, teenagers needing about 9 hours per day, and adults 7-8 hours per day. A 22-year population follow-up study showed that women sleeping less than 7 hours increased their risk of dying by 21%, and men by 26%.²

Sleep is protective against disease


Studies show that people who have long-term sleep deprivation have an increased risk of cardiovascular disease, obesity, and type 2 diabetes (see Table 1). Of

particular interest today in a world plagued by the SARS Coronavirus-19 (COVID-19) is the role of sleep on immune function. It's interesting that in the midst of a pandemic, how little attention is given to the importance of a vibrant immune system.

Our immunity is strongly affected by the amount of sleep we get. Research shows that individuals who don't get an adequate quality or quantity of sleep are more likely to get sick after being exposed to a virus like the common cold. Insufficient sleep can also slow down our recovery if we get sick.³

While we are sleeping, our immune system releases proteins called cytokines. The release of cytokines normally increases in situations of stress, injury, and infection, and results in inflammation. Sleep-deprivation places our body under stress and therefore, causes the body to ramp up its production of these inflammatory cytokines.⁴ Short-term (acute) inflammation is important to the healing process, but long-term (chronic) inflammation harms the body. Moreover, when we are sleep-deprived these cytokines work less effectively and result in what can best be described as a dysfunctional immune response. Besides that, other cells and antibodies that fight infection are reduced when we don't get adequate sleep.

The constant production of cytokines and the state of chronic inflammation due to sleep deprivation leaves our immune system depleted of the necessary building blocks and energy to mount an aggressive



Studies show that people who have long-term sleep deprivation have an increased risk of cardiovascular disease, obesity, and type 2 diabetes

counterattack when a new immune threat strikes—whether it be cancer, bacterial, viral or fungal in nature.

For example, a recent study took blood samples of 11 pairs of identical twins and found that the sibling with a shorter night's sleep had a depressed immune system compared to the sibling that had adequate sleep.⁵ Optimal sleep time should be 7 to 8 hours but not less than seven each night. Another study showed that people who lose as little as three hours of sleep could reduce the effectiveness of their immune system by 50%.⁶ Improper sleep over a long period is known to trigger dormant autoimmune disorders and can severely impede the body's ability to maintain optimal health. In conclusion, when we don't sleep, we weaken our immune system so it is unable to fight off foreign pathogens with which we come into contact.

Melatonin and the importance of routine

One of the key components of regulating our sleep cycle is melatonin. Melatonin is a hormone produced at the base of the brain in a small gland called the pineal gland. It takes the amino acid tryptophan, which we can get from our diet, and converts it into melatonin. The function of melatonin is to send signals to the brain and other organs that affect sleep and other body rhythms. The circadian day/night rhythms, are most important to sleep, and result in normal changes in mental and physical activity on a daily basis.

The conversion of tryptophan to melatonin is regulated by the presence of light. During daylight hours, the conversion to melatonin is decreased. During the night hours when there is less light, more melatonin is produced. As a result, melatonin levels increase after dark and peak in the middle of the night between the hours of 11 pm and 3 am. Since the function of melatonin is to make us drowsy and put us to sleep, this pattern of when melatonin is produced makes sense. The kind

of light that most suppresses the production of melatonin is that part of the visible light spectrum called Blue Light. Blue light is found in sunlight, but also in the light emitted by smart phones, TV/video monitors, and LED lights.

When our circadian rhythms work properly there is a normal cycle of wakefulness and sleep, rest and activity, tiredness, and alertness. It is important to limit environmental interference to our circadian rhythm such as: light, travel to different time zones, time of exercise, and time of eating. One study showed that the best time to exercise is in the afternoon, while exercising late at night can have a negative effect on circadian rhythms.⁷ Another study showed negative effect on the circadian rhythm of those eating late evening meals.⁸ Studies have shown how disturbances to our circadian rhythm can lead to increased risk for type 2 diabetes, obesity, certain cancers, memory loss, mood disorders, and depression. A healthy circadian rhythm is crucial to our health as it regulates all major functions of our body. Having a regular sleep schedule allows for the natural production of melatonin to take place while improving our immunity, our mental health, and preventing disease.

Food sources of melatonin

If you have trouble falling asleep at home, or are travelling and experiencing jetlag, you can take one or two plant foods to increase your blood levels of melatonin. Cranberries are the most melatonin-rich fruit. Eating just one ounce (1/3 cup) of fresh cranberries is equivalent to taking a melatonin supplement. But what about the extreme sourness? You can easily blend them in a smoothie. However, dry cranberries or cranberry juice have no melatonin.

Pistachios are the most melatonin-rich food ever recorded. To get a physiological dose you need to **eat only two pistachios**. That's over 200 mcg of melatonin per gram pistachios. To get the normal daily spike of

melatonin your brain gives you, eat just two nuts in the evening.⁹

Balancing our daily sleep-wake signals

In a healthy person, there are two competing signals: the alerting signal and the sleep drive signal. One signal tells you to “Go,” the other tells you to “Slow.” Both signals are produced by our internal clock. With every waking hour, there is an increase in our sleep drive (the desire to sleep). As we rest, our sleep drive dissipates and our alert drive increases causing us to wake up. This signal counteracts the sleep drive to allow us to stay awake for about 16-17 hours daily.

Figure 1 shows us a graphical representation of these competing signals and their effect on sleep activity.

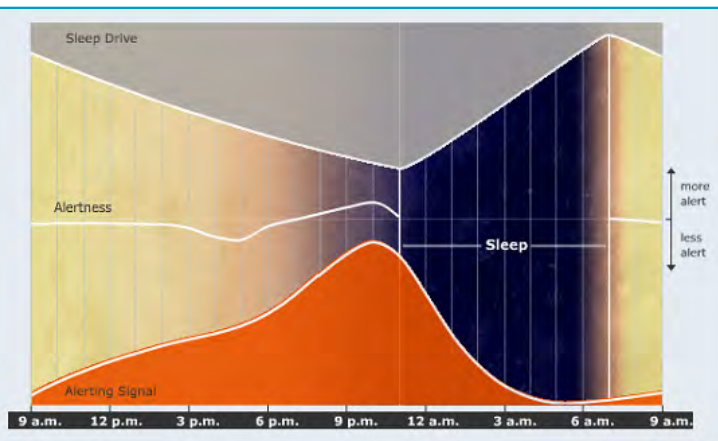
It is a common belief that people can adapt their sleep to their lifestyle and work schedule thinking, “If I go to bed late, I will catch up on sleep later.” The following scenarios portrayed by the Harvard Sleep Center demonstrate that such beliefs are false.¹⁰

Scenario 1: Social Jet-lag

A college student went out and partied with his friends until late at night, but he thought, “No problem, I will get caught up with sleep by sleeping late the next morning.” Does that work?

Sleep Drive vs. Alerting Signal

Figure 1



The next morning after sleeping in, he had a great reduction in his sleep drive, but also the timing of his internal clock had changed. The “Go” signal did not begin rising at the time that it should have. As a result, there was a shift in the rise of the alerting signal causing it to lag behind the rising sleep drive. This causes the alert signal to turn off later during the day making it difficult to fall asleep at a reasonable time. The shift in our internal clock causes the alerting signal to turn on later during the following morning, and this makes it hard to wake up the next day. In conclusion, sleeping in does not allow us to catch up on our sleep; it just unbalances the internal clock.

Scenario 2: Working the Night Shift

According to the Centers for Disease Control, in 2004 about 15 million Americans worked the night shift and slept during the day. Are these people getting proper rest? How does the body cope with this physiological paradox?

The biggest problem with night shift work is that there is a misalignment between the individual’s working wake schedule and their biological circadian rhythms. On the weekends, when not on the job, these workers have a more normal schedule. Unfortunately, the misalignment between their sleep and wake signal continues. The misalignment also distorts their sleep cycles and as a result, the night shift worker never gets enough restorative sleep.

Other studies on sleep reveal that there is more to getting a good night’s rest than⁷ melatonin alone. For example, a recent study showed that exercising late at night can have a negative effect on circadian rhythms.⁸ A similar effect is seen in those eating late evening meals.

10 Tips to Improve Sleep Quality

1. Exercise daily, preferably in the fresh air. Avoid strenuous exercise within three hours of bedtime.

Table 1

Long-Term Results of Sleep Deprivation	
Effect	Description
Cognitive	Poor performance with tasks requiring sustained attention and poor reaction time.
Mental Status	Negative mood, irritability, sadness, low energy, and poor judgment.
Car Crashes	Second leading cause of car crashes in the U.S.
Mortality	Increased mortality rate. Men who sleep <6 hours have 4x the risk of mortality.
Obesity	Increased risk of obesity and type 2 diabetes.
Cardiovascular	Higher risk of developing hypertension and coronary artery calcification.
Respiratory	Depressed ventilatory response to high levels of CO ² and low O ² and decreased respiratory muscle endurance.
Immune	Increased risk of infection.

- Eat a light evening meal at least three hours before bedtime.
- Set up a regular sleeping/waking schedule. Go to bed and wake up at regular times even on weekends. Most efficient sleep happens between 9 pm and 12 midnight.
- Avoid napping. If you need a nap, take a brief nap for 20-30 minutes around noon.
- Refrain from stimulants (coffee, cola, tea, chocolate, energy drinks), nicotine, and alcohol.
- Shut off blue lights (phone, computer, television) about two hours before bedtime. Turn off or lower house lights as these suppress the body's natural release of melatonin.
- Keep your bedroom well-ventilated, cool, dark, and quiet.
- Keep your bedroom for sleeping. If you can't sleep, go to another room, and read a book until you feel sleepy.
- Be thankful. Close your day by contemplating about your blessings. Write them down. Set aside your worries and anxieties and forgive those who have hurt you. Ask forgiveness of those you have offended.
- Relax your body and mind by taking a warm bath, listening to calming classical music, reading the Psalms, and prayer.

The best advice on sleep

The best advice on restful sleep comes from the Creator of sleep. In the Psalms and in the Bible we read several important

passages on sleep. Follow them and the science here presented, and you will have truly restful sleep.


1. Go to bed on time and don't be anxious

"It is vain for you to rise up early, to sit up late, to eat the bread of sorrows: for so he giveth his beloved sleep" (Psalm 127:2, NKJV).

2. Don't oversleep

"How long wilt thou sleep, O sluggard? when wilt thou arise out of thy sleep?" (Proverbs 6:9).

3. Go to sleep in peace because God is in control

"I will both lay me down in peace, and sleep: for thou, Lord, only makest me dwell in safety" (Psalm 4:8). 



Scan this QR code to watch an in-depth video presentation on this topic.

Sources:

- Maas, James B., and Megan L. Wherry. *Power Sleep: The Revolutionary Program That Prepares Your Mind for Peak Performance*. New York: Villard, 1998. Print.
- Wurtman, Richard (MD). *Physiology and clinical use of Melatonin*. Up-to-date: Evidence-Based Clinical Decision. January 14, 2014.
- Irwin M, et al. (1994, Nov-Dec.) Partial sleep deprivation reduces natural killer cell activity in humans. *Psychosom Med*. 56(6):493-8. doi: 10.1097/00006842-199411000-00004
- Krueger J. M. (2008). The role of cytokines in sleep regulation. *Current pharmaceutical design*, 14(32), 3408-3416. <https://doi.org/10.2174/138161208786549281>
- Chronic sleep deprivation suppresses the immune system. *Science News*, January 27, 2017. <https://www.sciencedaily.com/releases/2017/01/170127113010.htm>
- <https://nutritionfacts.org/video/how-to-treat-jet-lag-with-melatonin-rich-food/>
- Reynolds, Gretchen. "Why Afternoon May be the Best Time to Exercise." *Wellness*. NY Times, 12 Dec. 2012. Web.
- Sleep: A Dynamic Activity. (2014, May). *American Sleep Association*. N.p., n.d. Web. 13.
- <https://nutritionfacts.org/video/how-to-treat-jet-lag-with-melatonin-rich-food/>
- What Is Sleep? (2007, Dec. 17). *Healthy Sleep*. Harvard School of Medicine, 2007. Web. 01 May 2014. <http://healthysleep.med.harvard.edu/healthy/>

By Diana Baiense, BS

EXERCISE: HEALTH WITHIN WALKING DISTANCE



Are you interested in changing your life for the better and forming healthier habits? Maybe you're looking to get better sleep, maintain a healthy weight, or have more energy throughout your day. I am happy to share that there is something that can help you reach those goals. It's exercise! We all know that exercise is good for us and that it has a 101 benefits, but only 23% of U.S. adults get the recommended amount of exercise per week.¹ I used to be part of that statistic. As a pre med student at the university, I felt like my classes, work, volunteering, and other activities were overwhelming, and I was too tired to exercise. However, learning about the human body that God created, how it works, and specifically studying exercise physiology convinced me about the benefits of exercise. I realized that I can surely spare 30 minutes, five times per week for exercise. This lifestyle change helped me study, think, and feel better. You also have access to a better and healthier life today—within walking distance. Let's look at some significant benefits of exercise that will instantly change your life for the better.

Benefits of Exercise:

Achieve a healthy weight

Getting into the habit of including physical exercise throughout your week is proven to maintain weight loss for a longer period. Research shows that those who wish to lose weight should exercise one hour per day, five days a week.² A 10-year study found that adults who exercise reduce the risk of gaining significant amounts of weight by nearly two-thirds.³

Our weight also affects how we perceive ourselves. Studies show that women who ex-

ercised improved their body image significantly compared to those who did not exercise. Also, immediately after exercise, they had significantly improved their self-perceptions of body fat and strength.⁴

Live longer

Exercise can increase your longevity! A recently published study by Dr. Pedro Saint-Maurice discovered that adults walking 8,000 steps per day had a 51% lower risk of death from all causes compared to those who had only 4,000 steps per day. Furthermore,

12,000 steps per day were associated with a 65% lower risk of death. Higher step counts were also associated with lower rates of death from cardiovascular disease and cancer.⁵

Have less stress, anxiety, and a better mood

When we are stressed out by something significant, the body's fight-or-flight response is triggered. Our heart rate and respiration increase, and our hands get sweaty. But repeated activation of this chronic stress response has proven to hurt our body over time. It contributes to the formation of clogged arteries, anxiety, and depression. Dr. John Ratey, the author of SPARK, states, "We can literally run ourselves out of that frenzy. Just as the mind can affect the body, the body can affect the mind. . . . After all, the purpose of the fight-or-flight response is to mobilize us to act; so physical activity is the natural way to prevent the negative consequences of stress."⁶

Within just a few minutes of moderate exercise, we can experience its mood-enhancing effect. Scientists assert that active people are less depressed than inactive people.⁶ Exercise stimulates the body's nervous system and causes it to release neurotransmitters—chemicals such as serotonin and dopamine which regulate our mood and make us calm and happy. Endorphins are neurotransmitters that are released during exercise and help relieve pain and stress.

Be smarter and sharper

We all want to think better and quicker. Studies have shown that people learn vocabulary words 20% faster after exercise than before exercise. It was also discovered that exercise increases the levels of proteins in the brain, which work, to physically grow neurons and develop neural networks that support learning and memory. This means our brain literally grows in size and functions better with exercise.⁷

Have stronger bones and muscles

Whether you are younger or older, it's important to focus on developing strong bones and muscles to avoid injuries. Those more advanced in age are more likely to develop conditions like osteoarthritis and osteoporosis—degeneration of joints and loss of bone mass. These conditions cause pain and an increased risk of fractures. By doing regular aerobics, muscle-strengthening, and weight-bearing exercises, we slow osteoporosis while maintaining muscle mass and strength. Additionally, physically active people have a lower risk of hip fractures. In a recent study of men and women aged 50 and above, those who engaged in less than one hour of daily household activities, had an 85% higher risk of hip fracture than subjects spending 6 hours doing those activities. Subjects engaged in leisure time activities, had a 24% lower risk of hip fractures.⁸

Improve sleep

Do you struggle with getting a good night of uninterrupted sleep? So does 30% of the general population.⁹ Sleep and rest are necessary for the body to heal, rejuvenate, and repair itself. Lack of sleep produces poor judgment, bad mood, and can lower the ability to learn or retain information. People who sleep poorly are at greater risk for developing obesity, cardiovascular disease, and even early death.¹⁰ By exercising regularly, our sleep will be more restful, deep, and restorative.

Strengthen your immunity

Our immune system is our body's first line of defense against disease and pathogens. Exercise has also a positive effect on our immunity. A few studies from the University of Bath's Department of Health concluded that in the short term, exercise helps the immune system find and deal with pathogens. In the long term, regular exercise slows down changes in the immune



Exercise has been proven to improve the antipathogen activities of white blood cells and other immune cells.¹³ It was also shown to reduce the severity of acute respiratory infection symptoms, and lower the number of symptomatic days.¹⁴

system that result from aging, thus reducing the risk of infections.¹¹ Regarding the COVID-19 virus, researchers recommended that we should exercise regularly during this time.¹² Exercise has been proven to improve the antipathogen activities of white blood cells and other immune cells.¹³ It was also shown to reduce the severity of acute respiratory infection symptoms, and lower the number of symptomatic days.¹⁴

Lower your risk of cardiovascular disease and hypertension

Exercise and a plant-based diet are the key pillars in reducing cardiovascular risk and controlling hypertension. A study of men between (ages 42-60) found that 2.2 hours of leisure-time exercise each week reduced the risk of heart attacks by 69%.¹⁵ A mere 2.2 hours of exercise in a 168-hour week can significantly lower the risk of heart attacks. Those who engage in regular exercise are also better equipped to prevent, treat, and control hypertension. Hypertensive individuals should aim to do aerobic exercise of moderate intensity for at least 30 minutes for 5-7 days per week, and resistance training for 2-3 days per week.¹⁶

Keep blood sugar and insulin levels controlled

Physical activity can lower your blood sugar up to 24 hours or more after a workout by making your body more sensitive to insulin. In the short term, exercise can lower blood sugar. Regular exercise can also lower your A1C levels in diabetics (A1C test measures average blood sugar levels in the past 3 months).¹⁷

Reduce the risk of cancer

Regular exercise protects against cancer by improving the immune, pulmonary, and antioxidant defense systems. Researchers at the National Cancer Institute conducted a large study and found that exercise lowered the risk of developing 13 different types of cancer in comparison to those who weren't physically active.¹⁸

Increase energy and endurance

Are you affected by periods of low energy and fatigue throughout the day? The treatment may be a simple exercise session! For example, sedentary, otherwise healthy adults who engaged in as little as 20 minutes of low-to-moderate aerobic exercise, three days a week for six consecutive weeks, reported an increase in energy levels and feeling less fatigued.¹⁹ This is because exercise enhances blood flow carrying oxygen and nutrients to muscle tissue, thus improving their ability to produce more energy.

How to start:

Begin slowly. If you are not able to walk 30 minutes as suggested by the physical exercise guidelines, walk for 10 minutes. The next day, you might walk 12 minutes until you work up to your goal. But you can also divide your exercise into three 10-minute sessions, and that will also be effective.

1. Warm-up and cool-down

Begin and end your exercise session with a 5-minute walk or a few stretches to get your muscles warmed up. This helps prevent injuries.

2. Follow the simple FITT Formula

Frequency: 5+ times per week
Intensity: Moderate or vigorous
Time: 30 – 60 minutes per day
Type: Aerobic exercise

3. Choose activities you enjoy

By engaging in activities you truly en-



joy, you are more likely to stick with it. Vary your exercise activities for more fun.

4. Aerobic exercise

Moderate aerobic exercise such as walking, biking, playing basketball, or swimming should be done for about 150-300 minutes per week, 5-7 times per week. Aerobic exercise increases the efficiency of respiration, improves the delivery of blood to the muscles, decreases body fat, and strengthens muscles.²⁰

5. Strength and flexibility exercise

To build and strengthen muscles, two or more hours should be dedicated to strength and flexibility exercises: push-ups, weight training, resistance bands, squats, pull-ups, gardening.²⁴ It is vital to engage in these exercises 2-3 times a week because they protect against back pain and injuries, maintain bone strength, and prevent loss of muscle mass and disability as we age.

6. Get a health clearance

Get a health clearance before starting a moderate exercise program if you are a male over 40 or a woman over 50 years of age.

Designed for movement

Our body is made up of more than 600 muscles, which indicates that we were designed for action and movement. Did you know that by incorporating exercise into your daily routine you will be honoring our great Creator? You are God's masterpiece and He declares that you are "fearfully and

wonderfully made." God loves us and has created us for a purpose. This is why the Scripture reminds us: "Don't you realize that your body is the temple of the Holy Spirit, who lives in you and was given to you by God? You do not belong to yourself, for God bought you with a high price. So you must honor God with your body" (1 Corinthians 16:19, 20, NLT). Our body is compared to a beautiful sacred temple and we are challenged to keep it in the best working order. What a privilege and responsibility! Let's do our part in and keep our body healthy with good nutrition, rest, and exercise. Make the choice today to be the healthiest version of yourself so you may serve God and humanity with a strong body and a sharp mind! 🌿



Scan this QR code to watch an in-depth video presentation on this topic.

Sources:

- ¹ Blackwell DL, Clarke TC (2018). State Variation in Meeting the 2008 Federal Guidelines for Both Aerobic and Muscle-strengthening Activities Through Leisure-time Physical Activity Among Adults Aged 18-64: United States, 2010-2015. *National health statistics reports*, (112), 1-22.
- ² Benefits of Physical Activity. (2020, Feb. 25). <https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm>
- ³ Harvard Health Publishing. (n.d.). Leisure-time exercise. <https://www.health.harvard.edu/staying-healthy/leisure-time-exercise>
- ⁴ Salci E, Ginis, KA (2017). Acute effects of exercise on women with pre-existing body image concerns: A test of potential mediators. *Psychology of Sport and Exercise*, 31, 113-122. doi:10.1016/j.psychsport.2017.04.001
- ⁵ Saint-Maurice F, Troiano RP, et al (2020). Association of Daily step count and STEP intensity with mortality among us adults. *Jama*, 323(12),1151. doi:10.1001/jama.2020.1382
- ⁶ Ratey JJ, Hagerman E (2013). *Spark: The revolutionary new science of exercise and the brain*. New York: Little, Brown.
- ⁷ Bergland. (2013, October 11). Scientists discover why exercise makes you smarter. <https://www.psychologytoday.com/us/blog/the-athletes-way/201310/scientists-discover-why-exercise-makes-you-smarter>
- ⁸ Lagerros YT, Hantikainen E, et al (2017). Physical activity and the risk of hip fracture in the elderly: A prospective cohort study. *European Journal of Epidemiology*, 32(11), 983-991. doi:10.1007/s10654-017-0312-5
- ⁹ Insomnia. (n.d.). <https://www.sleepfoundation.org/sleep-disorders/insomnia>
- ¹⁰ Mullington JM, Haack M, et al (2009). Cardiovascular, inflammatory, and metabolic consequences of sleep deprivation. *Progress in Cardiovascular Diseases*, 51(4), 294-302. doi:10.1016/j.pcad.2008.10.003
- ¹¹ Simpson RJ, Campbell JP, et al (2020). Can exercise affect immune function to increase susceptibility to infection? *Exercise immunology review*, 26, 8-22.
- ¹² University of Bath. "Regular exercise benefits immunity—even in isolation." ScienceDaily. ScienceDaily, 31 March 2020. www.sciencedaily.com/releases/2020/03/2020031162314.htm
- ¹³ Nieman DC, Wentz LM (2019). The compelling link between physical activity and the body's defense system. *Journal of Sport and Health Science*, 8(3), 201-217. doi:10.1016/j.jshs.2018.09.009
- ¹⁴ Grande J, Keogh, J, et al (2020). Exercise versus no exercise for the occurrence, severity, and duration of acute respiratory infections. *Cochrane Database of Systematic Reviews*. doi:10.1002/14651858.cd010596.pub3
- ¹⁵ Harvard Health Publishing. (n.d.). Leisure-time exercise. <https://www.health.harvard.edu/staying-healthy/leisure-time-exercise>
- ¹⁶ Sharman JE, La Gerche A, et al. Exercise and cardiovascular risk in patients with hypertension. *Am J Hypertens*. 2014;28(2):147-158. doi: 10.1093/ajh/hpu191
- ¹⁷ Blood sugar and exercise. (n.d.). <https://www.diabetes.org/fitness/get-and-stay-fit/getting-started-safely/blood-glucose-and-exercise>
- ¹⁸ Moore SC, Lee IM, et al (2016). Association of Leisure-Time Physical Activity With Risk of 26 Types of Cancer in 1.44 Million Adults. *JAMA internal medicine*, 176(6), 816-825. <https://doi.org/10.1001/jamainternmed.2016.1548>
- ¹⁹ Puetz TW, Flowers SS, et al (2008). A randomized controlled trial of the effect of aerobic exercise training on feelings of energy and fatigue in sedentary young adults with persistent fatigue. *Psychotherapy and Psychosomatics*, 77(3), 167-174. doi:10.1159/000116610
- ²⁰ U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans*, 2nd edition. Washington, DC: U.S. Department of Health and Human Services

Plant-Based Diet Linked to Lower Risk of Severe Covid-19

By Liliane Balbach, MS, RDN

A new unprecedented study showed that plant-based diets could significantly slash one's risk of severe COVID-19. The research study was conducted at Columbia University by Sarah Seidelmann, MD, over a two-month period. The researchers surveyed 2,884 front-line doctors and nurses from six countries who had "substantial exposure to Covid-19 patients."¹ The participants filled out a medical history and lifestyle questionnaire, COVID-19 symptoms/outcomes, and a dietary intake questionnaire.

The results were groundbreaking: Participants who followed **solely a plant-based diet had 73% lower risk** of experiencing moderate-to-severe COVID-19 symptoms compared to participants who did not fol-

low a plant-based or vegetarian diet. When they **combined participants** who followed a plant-based, a vegetarian diet, or a pescatarian diet, they had **59% lower odds** of moderate-to-severe COVID-19. These associations did not change after adjusting for medical conditions, body weight, smoking, exercise, and access to personal protective equipment (PPE).¹

Conversely, those who followed a **low-carb, high-protein diet had a 48% greater risk** of moderate-to-severe COVID-19. Compared to those who followed plant-based diets, those on a **low-carb, high-protein diet had nearly a four-fold risk.**¹

What accounted for these differences? The researchers emphasized that plant-based diets are rich in nutrients, phy-

tochemicals, vitamins, minerals, and fiber. They stated: "These nutrients are hypothesized to support the immune system as they play important roles in the production of antibodies, proliferation of lymphocytes, and reduction of oxidative stress. . . . Our results suggest that a healthy diet rich in nutrient-dense foods may be considered for protection against severe COVID-19."¹

The data is in. If we want to reduce COVID severity, a health whole plant food diet has come out as the star. Let's enjoy our whole plant foods knowing that we are doing the best for our body and immune system! 🌿

Sources:

¹Seidelmann SB, et al. Plant-based diets, pescatarian diets and COVID-19 severity: a population-based case-control study in six countries. *BMJ Nutrition, Prevention & Health* 2021;bmjnp-2021-000272. doi: 10.1136/bmjnp-2021-000272



In these times of uncertainty, you can have hope over hopelessness, courage over discouragement, and faith over fear. Tune in to our YouTube channel: **STRENGTH IN SCRIPTURE.**



STRENGTH IN SCRIPTURE

By Ophelia Gherman, MD

Sunny Health

A global pandemic has marked 2020! In less than 5 months, the unabated COVID-19 virus, known as Sars-CoV2 has jumped across continents, leading to global uncertainty and threatening peace and security. And now, after four major disease outbreaks of the 21st century, most of us are realizing that despite our medical and technological advancements as well as our research and sanitation, we are unprepared and vulnerable to many more devastating pandemics. Many blame the emergence of these pandemics on the way humanity has inhabited the planet. But I'd like to take the view that humanity has exploited much more than just the planet. We have exploited our bodies, minds, and spirits, and gambled away our health.

We have fled from country life and agricultural labor, and now we've built a rich economic dependence on hydrocarbon resources. Our escalating suburban lifestyle along with our modern jobs, and high-tech hobbies have removed us from the intimate connection with nature. We drive to work and spend long hours sitting at our desks bathing in fluorescent-lit offices. We've been eating nutritionally-depleted foods while depending on modern medicine, doctors, hospitals, pharmaceutical companies, public health officials for direction on how to take care of our health and well-being.

As our world still struggles with COVID-19, scientists have already announced that a new, highly infectious strain of swine flu, called G4, has been discovered to potentially cause another outbreak. What makes some viruses a pandemic potential? The ultimate threat of a pathogen depends on a combination of two factors: The virus's virulence and the human body's immune response. To be highly virulent means to be able to attach quickly, invade the human body rapidly, and evade detection and attacks by the immune system. Likewise, a healthy immune system responds quickly by detecting the virus or pathogen and mounting a quick response to fight off the infection. It is well known that the coronavirus species has multiple mild strains that can cause mild illnesses in most individuals much like the common cold strains. However, the viruses known as MERS-CoV, Sars-CoV, and Sars-CoV2 are more aggressive and capable to rapidly taking advantage of those with compromised immune, cardiovascular, and respiratory systems. People at the greatest risk of fatal complications have one or more health problems such as high blood pressure, obesity, diabetes, arthritis, autoimmune disorders, and cancer. Smoking, the use of alcohol and recreational drugs, poor sanitary habits, lack of adequate sleep, and exercise are additional culprits. Such persons' im-

mune systems' mount an insufficient and unorganized response to the virus.

Sluggish immune system

Why do viruses still find a way to slide past our immune system's security checkpoint? Viruses are efficient machines that copy themselves more than a million times a day. They don't have a proofreading mechanism to correct mistakes; they experience constant mutations and adaptations to exploit the weakest immune system.

In chronic inflammatory diseases, such as diabetes, heart disease, and obesity, the cells of the body are constantly solicited to multiply, producing changes around the cell, and causing DNA damage. This leads to a higher risk of fatal infections. Yet, there is another worldwide nutritional deficiency that is associated with a lowered immune system, higher risk of disease complications, infections and increased mortality.¹

Vitamin D

Traditionally called the sunshine vitamin, Vitamin D acts more like a hormone than a vitamin. Vitamin D deficiency is a global pandemic with about 1 billion people having low vitamin D levels. It has been associated with multiple diseases and forms of cancer including breast, colon, and prostate cancers. Its role encompasses more than just acting as a contributor to cell functions. It acts as a director, a security guard, and the main actor in the process of manufacturing important proteins, activating our immune system, and insuring healthy DNA replication.²

The initial form of Vitamin D, as produced within the skin, is inactive, and must be activated beginning in the liver and finalized in the kidneys. The main enzyme responsible for this conversion is 1-alpha hydroxylase; it is largely present in the kidneys. But recent research has shown something amazing! Other organs can also produce their own Vitamin D, locally, because they too contain 1-alpha



hydroxylase. This discovery speaks volumes to the importance of the sunshine vitamin within the lymph nodes, brain, colon, pancreas, placenta, and skin.

Innate and adaptive immunity

Let's take a look at why Vitamin D is important for our immune system. The immune system is organized into two main groups: the adaptive and innate immune system. The role of the immune system is to distinguish between normal and abnormal cellular components and between 'self' and 'non-self'.³

The adaptive immune system contains several types of white blood cells that must be prepared to respond to a harmful invader. The adaptive immune system then remembers and recognizes similar attacks and responds more efficiently in the future. This well-orchestrated response can take weeks or even months to occur.

Conversely, the human innate immune system is a non-specific response that is triggered just hours after an offender is sensed. It does not require prior exposure to the offender to be recognized. Innate immune protection is found mostly in the frontline protection barriers of the mouth, lungs, gastrointestinal system, genito-urinary system, skin and surface of the eye. The key immune cells that are present within the protective barriers are called macrophages. Their main role is to act as scavengers, engulfing bacteria, viruses,



and old, dying cells, as well as cancer cells. In order to control and maintain a focused attack by these cells, Vitamin D must be efficiently present in our body.⁴

Viral upper respiratory infections (URI), also called the common cold and seasonal flu, are major causes of illness and mortality each winter. The innate immune response is first in line to respond to the presence of a virus in the sinus lining, by causing mild inflammation, perhaps a fever, and mucus production. Fever is produced by the release of pyrogens, which trick the brain into thinking the body has cooled off. The brain turns up its thermostat and increases the body temperature internally while cooling the surface of the skin, producing chills. The difference between a balanced and imbalanced immune response is the ability of the body to produce a well-controlled fever, enough to awaken the immune system, degrade pathogens, and then appropriately begin to normalize. When the trigger of infection causes uncontrolled fever and inflammation, excessive mucus production begins to overwhelm the upper respiratory tract and overwhelms the body's response.⁵

A key example of impaired innate immune protection is a person who has a chronic runny nose, which results in continuous year-round inflammation and mucus production, leading to frequent sinus infections and bronchitis. Vitamin D can reduce one's susceptibility to chronic inflammation. A lack of Vitamin D can lead to poor allergy responses and high mucus production. Other respiratory tract diseases that have shown beneficial outcomes, in response to Vitamin D treatment have been tuberculosis, cystic fibrosis, and scleroderma.^{6, 7, 8}

Healthy levels of vitamin D

Notwithstanding the sun's universal presence, a great number of the human population's exposure to sunlight is limited by geographical latitude, seasonal patterns, air pollution, sunblock use, dress

codes, skin color—and to a great degree pollution. Poor absorption through the gut, a diseased liver or kidney deficiency, and some medications can silently lead to Vitamin D deficiency. An insignificant amount of Vitamin D can be obtained from fortified foods such as milk and yogurt.

Although we may think we are exposed to plenty of sunlight, the best way to know if your vitamin D level is adequate is to get a blood test. Measurement of 25-hydroxyvitamin D in the blood, and not 1,25-dihydroxy vitamin D, is used to determine vitamin D status. **An optimal Vitamin D blood level is between 40-60 ng/mL.** During the summer months, one can obtain and maintain a healthy Vitamin D level. Sensible sun exposure (usually 15-30 minutes on the arms and legs or the hands, arms, and face) three times per week is a reasonable approach to guarantee vitamin D sufficiency. Dark-skinned people need more time in the sun because they have melanin, a compound that protects against skin damage by reducing the amount of UVB light that is absorbed.

However, during the long winter months, Vitamin D levels should be supplemented with a Vitamin D supplement of 2,000 IU-5,000 IU per day. Research shows that consistent supplementation of Vitamin D was more beneficial compared to sporadic one-time doses. Before starting Vitamin D supplements, however, please consult with your health-care provider.^{9, 10, 11}

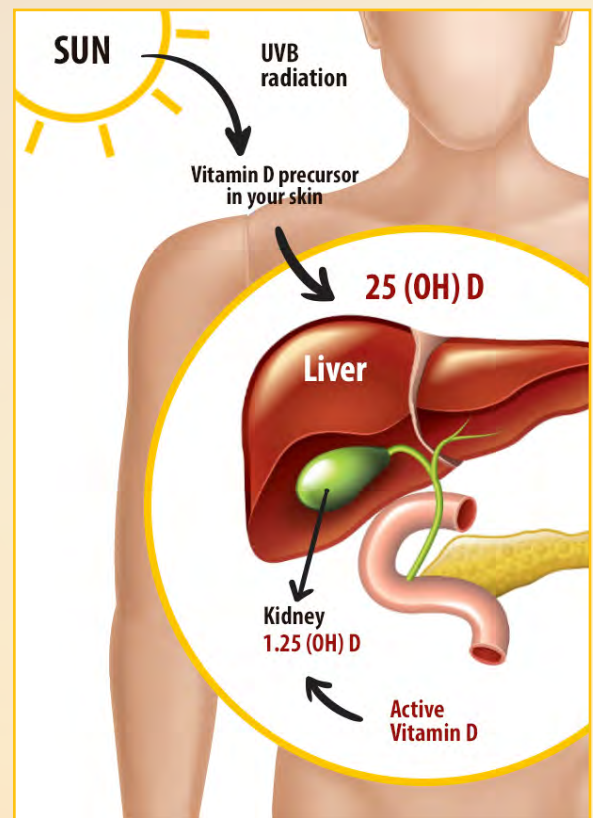
Sunbathing offers another mechanism of immune strengthening. Science has shown that regular sessions of thermal heating can release signals, thereby boosting your natural killer cells. Sunbathing and sauna baths, when heating the body core temperature

to 100–103°F for short durations of time, triggers the immune system to fire rapid attacks against the intruder, causing an unfavorable environment for viruses to inhabit and attack.

Spending more time in the fresh air and sunlight can help optimize our Vitamin D level and result in an increased sense of peace and happiness. Some of the latest studies show that sunlight cues our retina to trigger serotonin production. Serotonin production, in the brain, is not only important in preventing depression and imbalanced emotions and thoughts, but also for improving memory. The Bible emphasizes this positive benefit of sunlight as it relates to our mental health and happiness. “Truly the light is sweet, and it is pleasant for the eyes to behold the sun” (Ecclesiastes 11:7, NKJV).

Sunlight is important within the body as well as within our homes. A famous writer by the name of Ellen G. White wrote: “If the windows were freed from blinds and heavy curtains, and the air and sun permitted to enter freely the darkened rooms, there would be seen a change for the better in the mental and physical health of the children. The pure air would have an invigorating influence upon them, and the sun that carries healing in its beams would soothe and cheer, and make them happy, joyous, and healthy.”¹² Her advice, regarding sanitation and health, was way ahead of her times.

It is our privilege to optimize our immune system with a balance of healthy nutrition, exercise, fresh air, rest, moderation in work and liberation from anxiety and fear, and exposure to sunlight. Next time you get a chance to embrace and maximize sunlight’s energy, don’t gamble it away. Make decided



efforts to choose outdoor exercise in fresh air, where you can strengthen your cardiovascular system, and receive a rich boost in Vitamin D. For glowing health, experience the deep benefits of Vitamin D and remember to always keep a sunny disposition.

The sun’s energy turns a chemical in your skin into vitamin D₃, which is carried to your liver and then your kidneys to transform it to active vitamin D. 🌿



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Sources:

- ¹ Vanlint S. (2013). Vitamin D and obesity. *Nutrients*. Mar 20;5(3):949-56.
- ² Meeker S et al. “Protective links between vitamin D, inflammatory bowel disease, and colon cancer.” *World J Gastroenterol* vol. 22,3 (2016): 933-48. doi:10.3748/wjg.v22.i3.933
- ³ Aranow C. (2011). Vitamin D and the immune system. *J Invest M* 59,6: 881-6. doi:10.2310/JIM.0b013e31821b8755
- ⁴ Hewison M. (2010). Vitamin D and the immune system: new perspectives on an old theme. *Endocrinol Metab Clin North Am* 39,2: 365-79 doi:10.1016/j.ecl.2010.02.010
- ⁵ Aranow C. (2011). Vitamin D and the immune system. *J Invest M* 59,6: 881-6. doi:10.2310/JIM.0b013e31821b8755
- ⁶ Martineau AR et al. Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data. *BMJ* 2017; 356:i6583
- ⁷ Lane AP. (2009). The role of innate immunity in the pathogenesis of chronic rhinosinusitis. *Current allergy and asthma reports* vol. 9,3: 205-12. doi:10.1007/s11882-009-0030-5
- ⁸ Brockman-Schneider RA et al. (2014 Jan). Effects of vitamin D on airway epithelial cell morphology and rhinovirus replication. *PLoS one* vol. 9,1 e86755. doi:10.1371/journal.pone.0086755
- ⁹ Ben-Shoshan M. (2012). Vitamin D deficiency/insufficiency and challenges in developing global vitamin D fortification and supplementation policy in adults. *Int J Vitam Nutr Res*. 82(4):237-259. doi:10.1024/0300-9831/a000117
- ¹⁰ Anjum I et al. (2018 Jul 10). The Role of Vitamin D in Brain Health: A Mini Literature Review. *Cureus* 10,7 e2960. doi:10.7759/cureus.2960
- ¹¹ Meeker S et al. (2016). Protective links between vitamin D, inflammatory bowel disease, and colon cancer. *World J Gastroenterol* vol. 22,3 (2016): 933-48.
- ¹² White EG. (1915). Review and Herald Publ. Assn. *Healthful Living*, p. 229.

Hydrothermal Therapy for Better Immunity

By Dexter Shurney, MD

Because of the recent Coronavirus (COVID-19) pandemic, there has been a lot of talk about how we should protect ourselves during times of fatal infection. At the time of this writing, there are over 173 million confirmed cases and more than 3.7 million deaths from this infectious disease worldwide. Our public health officials have advised that we socially isolate ourselves, wash our hands frequently, and wear a mask whenever we are in public. Undoubtedly, these are all good recommendations to help us reduce our exposure to the virus and the subsequent risk of becoming infected. However, what has been missing from the discussion is how to improve our frontline defense of infection—any infection—including COVID-19, by having a strong immune system. This is important since it's impractical to believe that we can live our lives inside a "sterile bubble," nor would any of us wish to do so. Therefore, not only is a strong immune system essential to our current and future health, but it is also vital to our civil and religious freedoms. We want to live our lives more abundantly in the most basic ways through person-to-person interaction.

We know that a healthy lifestyle, which includes physical activity, proper diet, hydration, adequate sleep, temperance, spending time outdoors, and trust in God, leads to a healthy body. As a physician, I can say that I have seen remarkable transformations in the health of patients using these simple lifestyle principles. I have found this always to be the case and not the exception when used consistently and appropriately.

My patients, family, and friends have been asking me, "What can we do to reduce our risk and reduce the spread of the virus?" My answer is, a healthy body is the foundation of a healthy immune system.

A healthy lifestyle and a strong immune system are inextricably linked. In other words, you can't have one without the other.

Yet, are there still other things that should possibly be on our radar in our search to optimize our immune health? Public health authorities today have used data from 1918 Spanish flu records to promote social distancing to "flatten the curve" of the COVID-19 infection. These efforts are very important and saved countless lives in 1918. But is it possible that we can learn other valuable health lessons from the Spanish flu? We believe so!

Hydrotherapy—the therapeutic use of water—was used effectively during the 1918 pandemic. Hydrotherapy has been used from ancient times until the present. President Roosevelt used hydrotherapy to treat his polio. Historically, hydrotherapy was advocated by Seventh-day Adventists [SDA] as a key element in the training of SDA health-care professionals. The pioneers of the early Seventh-day Adventist movement advocated and popularized a powerful health message that included using lifestyle as a therapeutic intervention, expressly for the treatment of disease—beyond and in addition to disease prevention.

Let's go back 100 years to learn what they were doing during the 1918 Spanish flu before there were Intensive Care Units and ventilators. Dr. W. A. Ruble, a physician and a leader at a Seventh-day Adventist

[SDA] medical school (College of Medical Evangelists at Loma Linda, California) during the time of the Spanish flu, provides us with data on 1,123 patients in SDA sanitariums which we now refer to as Lifestyle Centers. In his analysis, Dr. Ruble reports and compares the results on the treatment of pneumonia and death between 10 Adventist Sanitariums with the U.S. Army hospitals. Of the 1,123 patients in his report, 446 were treated with hydrotherapy in sanitariums; 677 were treated as outpatients and were taught how to do hydrotherapy at home. (See Figure 1.)

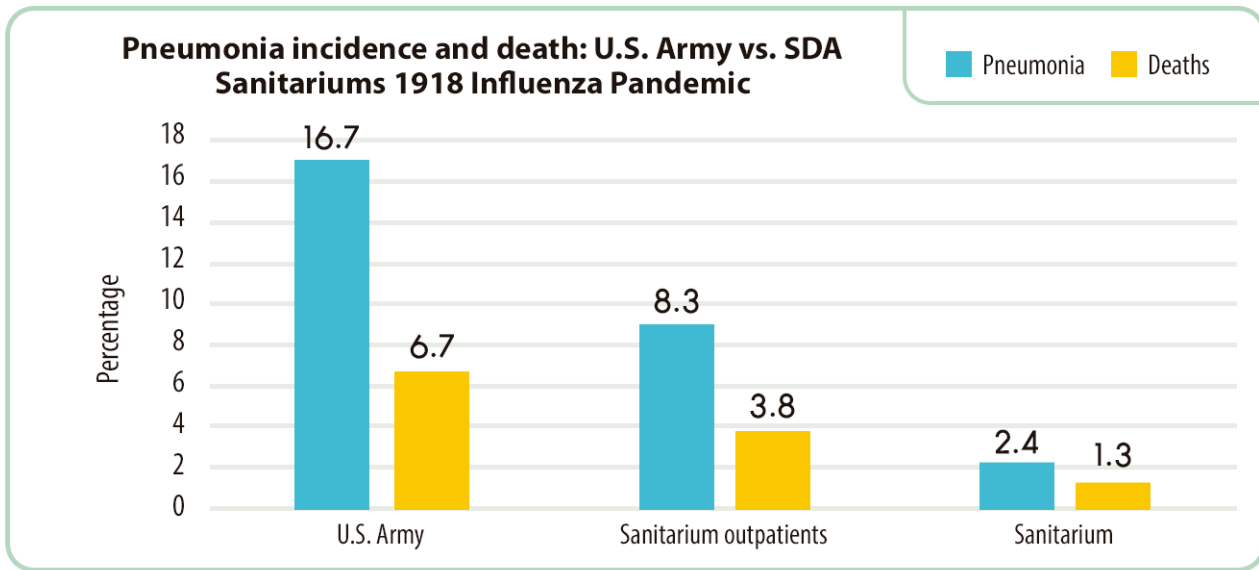
Results show that 16.7% of patients in U.S. Army hospitals contracted pneumonia even with the best medical care. (See graph 1.) Notice that patients who were treated as outpatients had about one half (8.3%) as much pneumonia as those in the U.S. Army. Of the Sanitarium patients only 2.4% had contracted pneumonia.¹

Death rates from the flu in U.S. Army hospitals were 6.7%. (See bar graph 1), while death rates in outpatients were only 3.8%. This was significantly lower, since the death rates for the general public treated in hospitals were from 13% to 40%. In contrast, only 1.3% of Sanitarium inpatients died with the flu.¹ What was the main difference between the U.S. Army hospitals and Sanitariums? The Sanitariums had a higher success rate, evidently due to the use of hydrothermal therapy treatments, a regulated diet, and good nursing care.



The Spanish flu, also known as the 1918 flu.

Figure 1



Adventist school beats the Spanish flu

Besides the SDA Sanitariums, several Adventist schools also practiced hydrotherapy during the 1918 pandemic. When the deadly Spanish flu hit an Adventist seminary in Minnesota, the outlook looked grim since the Spanish flu was known to be unusually fatal for young adults. At least 120 people on campus were exposed to the flu. They were all housed under one roof. Although 90 of them developed symptoms, not a single person developed pneumonia or died. These results were remarkable compared to national and worldwide statistics.

What treatment did these patients receive? The doctor had ordered: strict bed rest, a regulated diet, and hot and cold hydrotherapy treatments. No drugs were given. The patients were required to remain in bed and follow social distancing for 5-7 days after recovery. A report by a Hutchinson City Health Officer stated: "The record is remarkable. It makes the ordinary methods of dealing with the flu appear irrational."²

How hydrothermal therapy helps our immune function

Hydrothermal therapy is a form of whole-body heat therapy that was in common use before the discovery of an-

tibiotics as a treatment for pneumonia and other infectious diseases. The 1927 Nobel Prize in Medicine was awarded to the Austrian neuro-psychiatrist Julius Wagner Jauregg for "introducing fever therapy"³ in the treatment of neurosyphilis. The term hydrothermal therapy is simply using water—alternating hot and cold—to produce the desired thermal (heat) effect.

This form of thermal therapy is now being rediscovered and is timely in light of COVID-19 because of its ability to boost the function of our immune system. Our immune system is comprised of several components that work harmoniously to protect us from infection. There is a highly specialized adaptive immune system which is responsible for making antibodies in response to specific antigens, which are foreign microbial and non-microbial substances. Another part of our immune system is the innate immune system, comprised of natural killer cells and phagocytes such as monocytes. These are cells that engulf and swallow invading harmful



microorganisms. It is the innate immune system that acts as the first responder to an infectious threat. It is this part of the immune system that COVID-19 and similar viruses attack to gain an advantage over our immune defenses. This part of the immune system is where hydrothermal therapy appears to be the most beneficial.

What does science say about hydrotherapy treatments? A randomized controlled trial out of the Netherlands showed that taking routine hot-to-cold showers resulted in a significant reduction of self-reported sickness absence without any reported adverse effects.⁴

Another study describes how regular sauna bathing was found to reduce the incidence of the common cold by as much as fifty percent (50%) within six months.⁵ While the favorable effects of various forms of heat therapy have been known since antiquity, it is only recently that we have understood how. We now know that the effect is precisely at the innate level of immunity by boosting monocyte activation and function.

Numerous studies show the link between heat and our body's ability to fight infection. In 2002, Dr. Maria Zellner, based on her study of volunteers placed into hot water (39.5° C), to determine the effect on monocyte expression, concluded that the "thermal effect of fever has been associated with better survival and a shorter duration of disease in cases of infection."⁶ In summary, hot water increases circulation, and white blood

cells counts; it increases metabolism and muscle relaxation. Cold water moves toxins to the lungs, the liver, and the kidneys. (See Figure 2.) The best way to see how hydrotherapy works is to try it for yourself.

Practical tips and precautions for hydrothermal therapy

When you get up tomorrow morning, get a drink of 2-3 glasses of water. Do your morning routine of exercise/devotions. Next, prepare to take your shower.

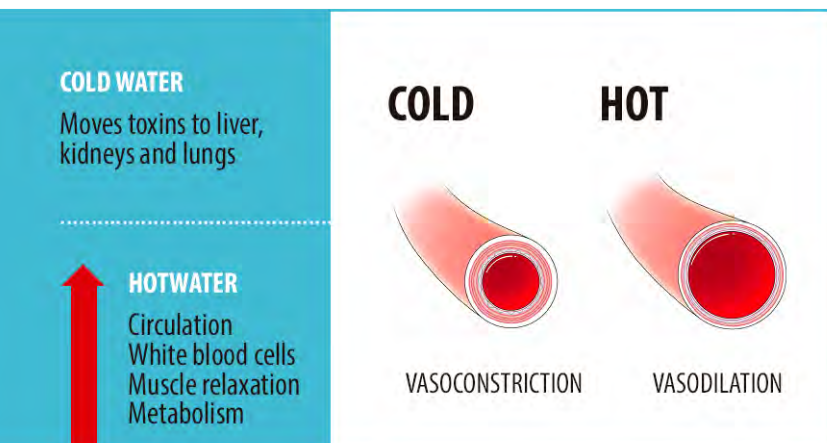
Contrast shower

1. A good start is to take a 3-minute hot shower, then quickly turn on the cold for 30 seconds. Switch back to hot, then cold again for three cycles.
2. For best results, make the changes from hot to cold abruptly. Always finish with cold, then dry off quickly.
3. Focus the spray where you need it the most: on the face if you have a sinus infection, on the mid-back if you are tired, or on sore muscles.
4. Make sure to keep your head cool.
5. If you are catching a cold, take a 5-minute hot, then a 1-minute cold shower. Repeat 3-minute cold, 1-minute hot for two cycles, and up to five cycles.
6. By taking a contrast shower 1-2 times daily, many people can remain free from colds and cases of the flu.
7. Contraindications: atherosclerosis, heart disease, high blood pressure

Better than coffee

I've had patients tell me, "I can't wake up in the morning unless I have a cup of coffee." I'd respond: "A hot and cold shower is better than coffee. Besides stimulating your

Figure 2



innate immunity and natural killer cells, it wakes you up, and gives you pep for the day. Best of all, it has no side effects." Saunas can be taken 3-4 times per week. After treatment, disinfect the sauna or steam bath with eucalyptus oil, which contains both antibacterial and antiviral properties.

Moist heat fomentations

The room where you do this treatment should be quiet, have dim lights, and be free from drafts. Before you do this treatment, always have a prayer. Ask the Great Physician to bless the simple water treatment and relieve the patient's health problem.

Equipment needed:

- 4 towels or fomentations
- 4 blankets (preferably wool), cut to size to cover the fomentations/towels
- 2 washcloths
- 2 sheets to cover the bed and patient; one blanket
- Bucket or small tub for a footbath.
- Large bowl for dipping washcloths in ice water
- Ice

Procedure:

1. Lay the patient on his/her back on a bed or sofa and cover him/her with a sheet and blanket.
2. Place the patient's feet gently into a bucket or tub of hot water. (100° F for diabetic neuropathy.) Make sure the water for a diabetic does not burn him/her.
3. Keep the head of the patient cool with a cold washcloth.
4. Wet a fomentation or a towel in water. Roll it and place it in a plastic grocery bag in the microwave oven for 4 min-

utes. Put a second wet fomentation or towel in the microwave for 4 minutes.

5. Wrap hot moist fomentation/towel in a wool blanket that is cut to size. Apply the hot heat pack to the front of the chest. If it is too hot, put another dry towel underneath to avoid burning the patient.
6. Place the second heat pack on the back, under the spine from the nape to the pelvis. Cover patient with blankets. Place the third fomentation into microwave.
7. Replace fomentation every 4-5 min. Between each exchange, rub the chest and back with a washcloth dipped in ice water.
8. Continue with three exchanges or until profuse perspiring. Keep the head cool!
9. End with a cold mitten friction (washcloth) rub to the chest. Cover patient with blankets.
10. When the treatment is complete, pour cold water over the feet and remove the foot-bath.
11. Continue cold to the head until perspiring subsides.
12. Bed rest for 20-30 minutes.

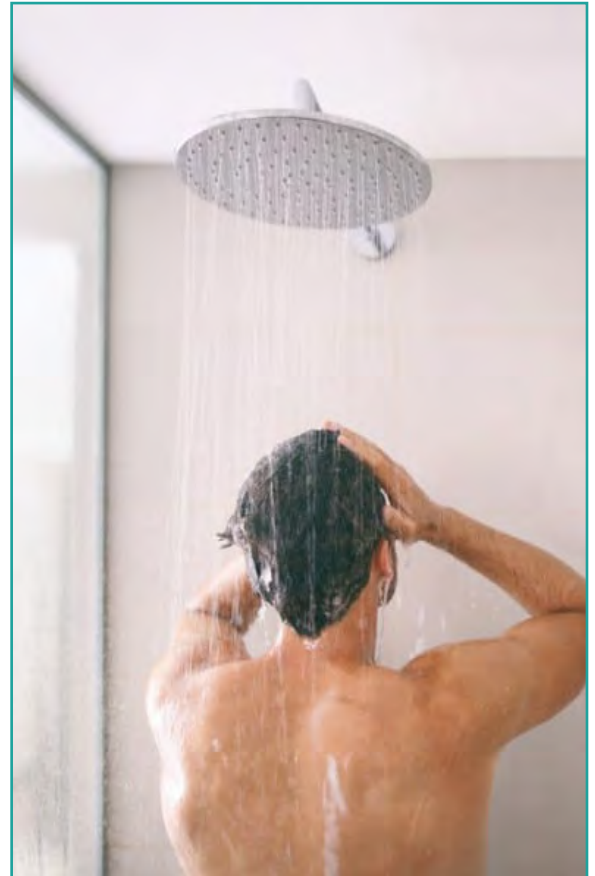
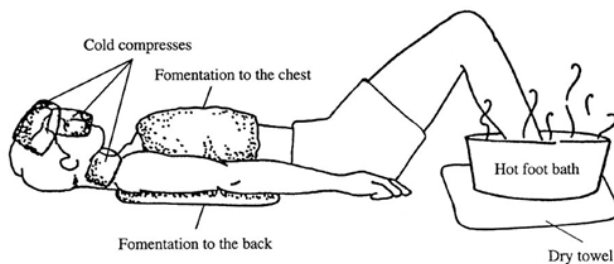
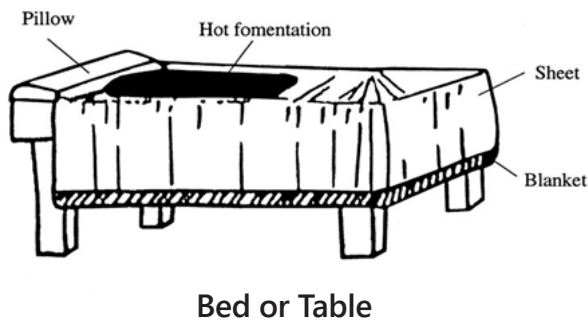
Contraindications:

Before doing this treatment, it is recommended that you first consult your health-care provider; this is particularly true if you are pregnant or have an irregular heartbeat. Other contraindications to hydrotherapy:

- Neuropathy
- Peripheral vascular disease
- Cancer
- Heart disease, heart failure
- High blood pressure
- HIV infection
- Diabetes

The room where you do this treatment should be quiet, have dim lights, and be free from drafts. Before you do this treatment, always have a prayer. Ask the Great Physician to bless the simple water treatment and relieve the patient's health problem.

PROCEDURE FOR FOMENTATIONS



A well-functioning immune system is critical for survival. The immune system must be constantly alert, monitoring for signs of danger. Heat followed by cold, such as in the case of hydrothermal therapy, may significantly improve your innate immunity, and we have shared with you several practical ways to put this into practice and achieve the health benefits.

“Beloved, I wish above all things that thou mayest prosper and be in health, even as thy soul prospereth.”⁷ This Bible text is quite illuminating and reassuring when it comes to our health. It tells us that God is interested,

“above all things,” both in our physical and spiritual condition, and He wants us to enjoy the best of health. God puts within our reach practical restorative methods, such as hydrothermal therapy, so that we may achieve optimal health. The good news is that there may be only a few “degrees” of separation between you and better health! 🌿



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Sources:

- ¹ Ruble WA. Sanitarium Treatment of Influenza, *Life & Health*, May 1919. Accessed at <http://documents.adventistarchives.org/Periodicals/LH/LH19190501-V34-05.pdf>
- ² Shepherd F. Health Officer, Hutchinson City, *Northern Union Paper*, 1918.
- ³ Karamanou M. et.al. Julius Wagner-Jauregg (1857-1940): Introducing fever therapy in the treatment of neurosyphilis. *Psychiatriki*. 2013 Jul-Sep;24(3): 208-12.
- ⁴ Buijze G. et.al. The Effect of Cold Showering on Health and Work: A Randomized Controlled Trial.

- Plos One*. 2016; 11(9): e0161749. September 15, 2016. <https://doi.org/10.1371/journal.pone.0161749>
- ⁵ Ernst, E. et al. Regular Sauna Bathing and the Incidence of Common Colds. *Ann Med* 1990;22(4):225-7. doi: 10.3109/07853899009148930.
- ⁶ Zellner M. et al. Human monocyte stimulation by experimental whole-body hyperthermia. *Wien Klin Wochenschr*. 2002 Feb 15;114(3):102-7.
- ⁷ Bible: 3 John 2.

Self-Control, a Healing Virtue

By Valerie Karvatski, NP-C



Should I eat an apple or a donut? Should I forgive or hold a grudge? Should I work overtime, or go home to have dinner with my family? Self-control is defined as the ability to have restraint over one's impulses, emotions, or desires. It is the ability to delay gratification, to resist an unwanted urge, and to reach one's long-term goals. Self-control is what makes humans different from the animal kingdom. Self-control is primarily embedded in the prefrontal cortex; this is the problem-solving, planning, and decision-making center of the brain.

The idea of self-control is not an easy one in our age of self-pleasing excesses. Placing limits or saying "no" to oneself is not considered conducive to happiness. However, contrary to current belief, research shows that people are happier when they are the "origin of their behavior," or live with intentionality.¹ John Milton the English poet once said, "He who reigns within himself and rules his passions, desires, and fears, is more than a king." But a revival of true self-control in living is greatly needed, especially today.

If I were to tell you that temperance was much more than a good discipline for character development, but also a significant promoter of health, well-being, and overall success, would you believe it? A study that followed a group of 1000 children from birth to 32 years of age showed that self-control during childhood predicted their financial success, substance abuse, physical health, and criminal outcomes. What's more, researchers also noticed that some children had mastered concepts of self-control by as early as ten years of age, while others had not.² With this data in mind, it is not surprising that a 19th-century writer and educator wrote: "Temperance and self-control should be taught from the cradle."³ Another study found links between self-control and mental health. Their findings suggest that those with more self-control had fewer physical health problems, less mental health symptoms, and avoidance-style coping.⁴

The research is fascinating, but in which practical ways can self-control produce health and well-being for us? To figure this out, we have to look at lifestyle practices where we sometimes "overdo it." Most of us know about the importance of abstaining from alcohol and tobacco. These areas require complete abstinence, not moderation. Modern medicine has established a link between these health-destroying habits and diseases. But what about self-restraint in other areas that are less obvious, such as screen time, social media, and work? Do we also need to practice self-restraint in things that are good for us, such as exercise, eating, and sleeping? Let's look at temperance as it relates to these practices.

Screen time

Technology in itself is not a bad thing, in fact, the advent of "screens" has given us capabilities that were unthinkable just 20 years ago. But even good things can become harmful when carried to excess. Parents of young children may be aware of



the American Academy of Pediatrics' recommendation to avoid all screen time with children under the age of 2, given the specific concern that screen time will limit their engagement in useful and interactive play. Sadly, recent guidelines now place screen time limits per parental discretion.⁵ I often wonder what useful activities I miss out on when absorbed by my phone, or any screen for that matter. How many books have remained unread, conversations passed over, and precious little life moments skipped? Most smartphones have a screen time feature in which you can track the amount of time you spend on your phone; this may be something you may want to check weekly. But it's not just what we miss out on, but rather how we feel that makes excessive screen time a problem. In teenagers, an association has been found between social media and television with symptoms of depression.⁶ As human beings, we need to be engaged with others and with our physical environment, thus interacting with the world around us. This is a great place to begin to practice temperance in our daily lives.

Work

Learning how to work hard and enjoy it is one of life's great blessings! A strong work ethic is a profound contributor to our overall happiness and success. For some, the problem lies in a lack of desire to work for others, it may be difficult knowing when to stop and rest. And yes, overwork can

be detrimental to our health. There is evidence that shows an association between working long hours—55 or more hours per week—and an increased incidence of heart disease and stroke.⁷ It may not just be the work itself but the stress that seems to come with it. What's more, it's not just putting in hours at the office. How many of us have trouble winding down at the end of the day while scrambling to finish one more task on our *to-do* list? Whether we work at home or outside the home, we never seem to get our work all done. That is the time to exercise self-control, take a deep breath, and make time for rest. Slow down after 7 to 8 pm and take time for family and personal devotions, even if this means leaving some things undone.



Exercise

Most of us need to exercise more. But how much exercise is too much? It may surprise you to know that with exercise there is a threshold beyond which more is not better, which does not equate to increased health benefits. A study published in the *Journal of the American Academy of Cardiology* found an association between the amount of jogging and all-cause mortality. Namely, light joggers had a lower risk of death than sedentary people who didn't jog; however, the mortality rate of strenuous joggers was not different from those who didn't jog at all.⁸ Can you believe it? Those who jogged excessively had the same rate of death as the sedentary folks. Moderation is crucial,



and by being temperate in everything we do, we will find the balance necessary for health. For more information on exercise, please see the article "A Healthier Life Within Walking Distance." (See p. 16.)

Eating

Eating can be a real struggle. We worry about what to eat and what not to eat. Even those who eat a healthy plant-based diet can overeat or eat excessive amounts of certain foods. So how much should I eat, and when should I stop? Overeating has been a problem for mankind since the beginning of time. This can be traced to a lack of self-control or temperance. The Okinawans in Japan are known for their longevity, as some of the healthiest centenarians on earth. They follow "hara hachi bu," the practice of eating until they are 80 percent full.⁹ This concept is unheard of in the Western world where our fries are supersized and "two for the price of one," is an expectation. The Wise man gives us the secret of self-control when it comes to food, "Hast thou found honey? eat so much as is sufficient for thee, lest thou be filled therewith, and vomit it."¹⁰ These are strong words. The next time you are tempted to overeat or snack between meals, why not challenge your impulses with the strong words of the wise king Solomon?





Sleep

How many of us wish we could just sleep later in the morning, unhindered by our work restraints, children, and schedules? I know I have at times! We all want more sleep, and we suppose that more must be better. The National Sleep Foundation recommends 7-9 hours of sleep for healthy adults between the ages of 18 and 64.¹¹ As with the other lifestyle practices, there is also a need to balance our sleep, and more may not be better. Certainly, if you are falling below the 7-hour minimum you do need more sleep. For those of us getting more than 9 hours of sleep, we may be doing more harm than good. A study out of Finland found that sleep duration of more than 9 hours nightly was associated with increased inflammation in the body.¹² Further research has also suggested that sleep outside of the 6-8 hour range may be associated with increased risk of death and cardiovascular issues.¹³ So set your alarms to avoid oversleeping! Our focus should be on the quality of sleep more than duration. We often feel tired, not because we didn't sleep long enough, but because our sleep quality was poor due to late evening meals. This causes our digestion to continue far into the night. Eating light and early evening meals is important for achieving restful sleep.

7 tips to cultivate self-control

Knowing all the research is nice, but how do I personally establish new habits of self-control? Where do I start? In my own experience, anytime I try hard to make a change

in my life, I sometimes have success here or there. However, as time passes, I fail miserably in achieving lasting change. Thankfully, we are not left to battle our human tendencies alone. There is a Great Physician, Jesus Christ. He not only heals us but can transform our intemperate bad habits! And yes, He can help you cultivate self-control in your life. Here are a few simple steps:

1. Identify the problem

If you're not sure which lifestyle habits in your life are intemperate, ask one of your family members. They can often see the imbalance in your life better than you do. Ask God to show you which behaviors or activities in your life require self-control. Say, "Lord, show me the areas in my life that are out of balance."

2. Give away the problem

Give the problem to God every morning, and throughout the day when you're tempted to be intemperate. Pray for His Holy Spirit to cultivate the fruit of temperance in your life.

3. Set goals

Set an achievable and specific goal regarding the area you struggle with. For example, if you struggle with getting up on time, your goal would be: I will set my alarm clock to 6:00 a.m. each morning for the next 7 days.

4. Remove temptation

For example, if you are struggling with screen time, consider leaving your phone in another room or turning it off after 7 p.m.

5. Be positive

Often when we are struggling with a bad habit, we have a lot of negative thinking surrounding it. The next time you are struggling and thinking, "I can't do this, it's too hard," say out loud: "I can do all things through Christ who strengthens me" (Philippians 4:13, NKJV). Each time you resist the temptation will be easier to resist the next time.

There is no magic pill or potion for good health or longevity. Health and wellness are found in our daily habits of living and the far-reaching principles by which we govern our

"I can do all things through Christ who strengthens me."

lives. In seeking health many fall to extremes of either excess or deficiency. However, modern science has confirmed the old idea of temperance and its health-related virtues. It's time for another revival of temperance—only this time in your personal life! With Christ's help, let's live a life of moderation, balance, and restraint. Improved health and wellness will be sure to follow. 🌿



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Sources:

- ¹ Seligman, Martin E P. (2011). *Flourish: A Visionary New Understanding of Happiness and Well-being*. New York: Free Press.
- ² Moffitt TE, et al. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *PNAS*, 108 (7) 2693-2698.
- ³ White, E.G. (1901) *Child Guidance*, p. 408. Review and Herald Publ. Assn.
- ⁴ Boals A, Vandellen MR, Banks JB. (2011). The relationship between self-control and health: The mediating effect of avoidant coping. *Psychol Health*. 26(8):1049-1062. doi:10.1080/08870446.2010.529139
- ⁵ American Academy of Pediatrics. (2015). Growing up digital: Media research symposium. Retrieved from https://www.aap.org/enus/Documents/digital_media_symposium_proceedings.pdf
- ⁶ Boers E, Afzali MH, Newton N, Conrad P. (2019). Association of Screen Time and Depression in Adolescence. *JAMA Pediatrics*. 173(9):853-859.
- ⁷ Kivimäki M, Jokela M, Nyberg ST, et al. (2015). Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603,836 individuals. *Lancet*. 386(10005):1739-1746.

- ⁸ Schnohr P, O'Keefe JH, Marott JL, Lange P, Jensen GB. (2015). Dose of jogging and long-term mortality: the Copenhagen City Heart Study. *J Am Coll Cardiol*. 65(5):411-419.
- ⁹ Buettner, D. (2008). *Blue Zones*. Washington DC: National Geographic Society.
- ¹⁰ Proverbs 25:16.
- ¹¹ National Sleep Foundation. (2015). Sleep Health: The Journal of the National Sleep Foundation. Retrieved from <https://www.sleepfoundation.org/press-release/national-sleep-foundation-recommends-new-sleep-times>
- ¹² Grandner MA, et al. Buxton OM, Jackson N, Sands-Lincoln M, Pandey A, Jean-Louis G. (2013). Extreme sleep durations and increased C-reactive protein: effects of sex and ethno-racial group. *Sleep*. 36(5):769-779E.
- ¹³ Chuangshi, W et al. (2019) Association of estimated sleep duration and naps with mortality and cardiovascular events: a study of 116 632 people from 21 countries, *European Heart Journal*, 40(20)1620-1629.

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FRESH
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By Septimiu D. Muresan, MS

THANKFULNESS for Better Health

There is something you know about me that is very personal. And there is something I know about you that is very central to your well-being. There is something that we know about every person we meet anywhere in the world that is the driving force of everything they do and put up with. That “something” is the pursuit of happiness. How we imagine our happiness, differs from one person to another.

So, what is the connection between happiness and thankfulness? Many people would say, “Well, that’s very easy. When you are happy, you are thankful!” Is it true that happy people are thankful? We all know several people who have everything they need to be happy, and yet they are not happy. We also know people who have a lot of adversity and who are genuinely happy. Why? Because they are thankful or grateful. So, it is not happiness that makes us thankful. It is thankfulness that makes us happy!

What is thankfulness?

Cicero, the early statesman and scholar, regarded gratitude not only as “the greatest of the virtues but the parent of all others.” The word gratitude, derived from the Latin root *gratia*, is the root word of “grace,” “grateful,” and “gracious.” In Latin, all derivatives of the word gratitude have to do with kindness, generosity, gifts, the beauty of giving and receiving, or getting something for nothing.

What do we mean by thankfulness? And how does it work? Think of your own experience. Someone gives you something valuable, a gift. You haven’t bought it. You haven’t earned it. You haven’t worked for it. It was just given to you. So when you receive something truly valuable to you and realize it was freely given, then thankfulness spontaneously springs in your heart. That’s how thankfulness happens.

Gratitude makes us healthier

Research studies show that being grateful has many benefits on one’s mental and physical health. It can decrease pain, lower blood pressure, improve immune function, and provide more efficient sleep. There is even some limited research, showing that gratitude can extend our lifespan by a few months or even years.^{1, 2, 3}

A study from the University of California San Diego, School of Medicine found that more grateful people had better heart health due to less inflammation and healthier heart rhythms.⁴

By simply being thankful to God for all the daily gifts He gives us, our body experiences many health benefits! And science now confirms what the Bible already declared thousands of years ago: “A merry heart doeth good like a medicine: but a broken spirit drieth the bones” (Proverbs 17:22). To be merry means to be cheerful, lively, and joyful. What a great gift from our heavenly Father!

Gratitude improves your sleep

Gratitude can help with insomnia by reducing the amount of time required to fall asleep, increasing sleep quality and sleep duration. The key is what’s on our minds as we’re trying to fall asleep. If we are worrying about our children or work, the level of stress in our body will

GRATITUDE BENEFITS AT A GLANCE

Study Results

Counting Blessings vs. Burdens (2003)⁵

Participants who kept a gratitude journal reported:

- 16% fewer physical symptoms
- 19% more time spent exercising
- 10% less physical pain
- 8% more sleep
- 25% increased sleep quality

The Grateful Heart (2004)⁶

Emotions of appreciation and gratitude have been shown to induce a relaxation response.

Positive Psychology (2005)⁷

- A gratitude visit reduced depressive symptoms by 35% for several weeks.
- A gratitude journal lowered depressive symptoms by 30%+ as long as the practice was continued.

Gratitude: Effects on Blood Pressure (2007)⁸

Patients with hypertension who counted their blessings once a week had a significant decrease in systolic blood pressure.

Gratitude Influences Sleep (2009)⁹

Gratitude was correlated with reduced time to fall asleep, improved sleep quality, and increased sleep duration.

increase, keeping us awake and reducing our sleep quality and quantity. However, if we're thinking about a few things that we are grateful for today, this will induce the relaxation response and put us to sleep. Yes, gratitude is a safe and free sleeping aid!

In one study, 65 subjects with chronic pain were asked to complete a daily gratitude journal at night.¹⁰ The results showed that they reported half an hour more sleep than the control group. In another study of 400 healthy participants, those who had higher scores on a gratitude test also had significantly better and longer sleep. They reported falling asleep faster and having less difficulty staying awake during the day. The reason that grateful people slept better is not that their life was better. Levels of gratitude were more dependent on personality and life perspective than on life situations.¹¹

The Bible says, "The sleep of a laboring man is sweet, whether he eats little or much; but the abundance of the rich will not permit him to sleep" (Ecclesiastes 5:12, NKJV). A person that works diligently and lives with an attitude of gratitude experiences a sweet sleep according to the Scriptures. We can see that it's not the abundance of riches that brings happiness, but rather a thankful attitude. On the contrary, worry, anxiety, stress, and many other negative side effects may be brought by an ungrateful attitude. What a privilege we have to be thankful to God for life, light, sunshine, water, food, and thousands of other blessings that we sometimes take for granted.

Gratitude helps us live longer

The results of a few different studies also show that an attitude of gratitude appears to extend our lifespan. We know that optimism has been used to successfully predict mortality decades later. Studies have shown that optimists lived a few years longer than pessimists. A few years may not sound like much, but I know that when I'm about to die, I would like to have a few more extra years. We also know that gratitude is strongly correlated with positive emotions like optimism.¹²

King David experienced the mental, physical, and spiritual health benefits of

being thankful because Psalm 136 tells us: "O give thanks unto the Lord for his mercy endureth for ever" 26 times. He certainly knew by experience the great blessings of an attitude of gratitude. This is an excellent psalm to read to encourage gratitude in us and remind us of the things we can be thankful for. Take a few moments and read Psalm 136. Read it especially when you are feeling overwhelmed and anxious. Since the mercy of God endures or lasts forever, that means that those who live thankful lives, trusting in His salvation, will not only live longer but will live forever!

Gratitude increases energy levels

Gratitude and vitality are strongly correlated. Grateful people are much more likely to report physical and mental vigor. A study of 1662 people also found a correlation between vitality and gratitude even after controlling for extroversion, agreeableness, neuroticism, and perceived social desirability. This means that vitality and gratitude are strongly correlated because high-energy people and highly grateful people share personality traits like extroversion in common.¹³

Robbers of thankfulness

Various factors may rob us of a thankful attitude. The first one is *cynicism*, which is an inclination to believe that people are motivated purely by self-interest. Cynicism is especially poisonous to the person who has this attitude. *Pessimism* is another robber of a thankful attitude. In this case, we may be inclined to question whether something will happen or whether it is worthwhile. Another robber of thankfulness may be *materialism*, which is a tendency to consider material possessions and physical comfort as more important than spiritual values. Materialism goes hand in hand with envy—feelings of discontent or resentment. These feelings are aroused by seeing someone else's possessions, talents, or qualities. *Narcissism* is another negative attribute that can hinder or kill our attitude of gratitude. A narcissist has an excessive interest in or admiration of oneself and one's physical appearance.¹⁴



Instead of cultivating these negative attributes, let us rather develop these positive thoughts and attributes: “Whatever things are true, whatever things are noble, whatever things are just, whatever things are pure, whatever things are lovely, whatever things are of good report, if there is any virtue and if there is anything praiseworthy—meditate on these things” (Philippians 4:8, NKJV).

Increase your daily dose of thankfulness

The key to receiving the health benefits of thankfulness is that we must have a continual attitude of thankfulness. We cannot experience gratitude only once in a while. The Bible says, “In everything give thanks: for this is the will of God in Christ Jesus concerning you” (1 Thessalonians 5:18). That means being thankful in good times and in bad times, in all the circumstances of life. How is that possible? By becoming aware that every given moment is a gift. I haven’t earned it. I haven’t brought it about. I have no guarantee that another moment will be given to me. This moment is the most valuable thing that I have. This moment, with all the opportunities, is life. The life we all have, the moments we receive to improve or correct are all from God! He gives us everything. “For in him we live, and move, and have our being” (Acts 17:28). Being thankful and making

the most of every day that our Creator gives us is the key to a healthy and happy life here and in the world to come.

1. Keep a thankfulness journal and write down 5-10 things you’re thankful for each evening.
2. Offer thanks to God throughout the day—for a beautiful sunrise or breathtaking sunset, for food, shelter, home, family, and friends . . . for the gift of His Son Jesus Christ.
3. Express your appreciation to a few people each day—family members, neighbors, coworkers, the mailman, or anyone who needs it.
4. As your brain shifts into a thankful mode, ask God to help you find good even in difficult circumstances.

Rejoice and be glad

Medical science has recently discovered the health benefits of thankfulness that the Bible has been teaching us for thousands of years: “A merry heart doeth good like a medicine: but a broken spirit drieth the bones” (Proverbs 17:22). Begin and finish each day with this potent dose of thankfulness: “This is the day which the LORD has made; we will rejoice and be glad in it” (Psalm 118:24, NKJV). 🍃



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Sources:

¹ Danner DD, et al. (2001, May). Positive Emotions in Early Life and Longevity: Findings From The Nun Study. *J Pers Soc Psychol*, 80(5): 804-813. <https://psycnet.apa.org/buy/2001-17232-009>

² Maruta T, et al. (2000, February). Optimists vs. Pessimists Survival Rate Among Medical Patients Over a 30-Year Period. *Mayo Clinic Proceedings*, 75(2): 133-134. <https://www.sciencedirect.com/science/article/abs/pii/S0025619611641840>

³ Brummett BH, et al. (2006 February). Prediction of All-Cause Mortality by the Minnesota Multiphasic Personality Inventory Optimism-Pessimism Scale Scores: Study of a College Sample During a 40-Year Follow-up Period. *Mayo Clinic Proceedings*, 81(12): 541-1544. <https://www.sciencedirect.com/science/article/abs/pii/S0025619611609397#>

⁴ Mill PJ, et al. (2015) The Role of Gratitude in Spiritual Well-Being in Asymptomatic Heart Failure Patients. *Spirituality in Clinical Practice* 2(1): 5–17. <http://dx.doi.org/10.1037/scp0000050>

⁵ Froh JJ, Sefick WJ, Emmons RA. Counting Blessings versus Burdens: An Experimental Investigation of Gratitude and Subjective Well-Being in Daily Life. *J School Psych*, 46(2): 213-233. <https://www.sciencedirect.com/science/article/pii/S0022440507000386>

⁶ McCraty R, Childre D. (2004). The psychology of gratitude. [Sect. 12 The Grateful Heart: The Psychophysiology of Appreciation].

⁷ Seligman, ME et al. (2005). Positive Psychology Progress: Empirical Validation of Interventions. *Am Psychol*, 60(5): 410–421.

⁸ Shipon RW. (2007). Gratitude: Effect on perspectives and blood pressure of inner-city African-American hypertensive patients. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 68(3-B), 1977.

⁹ Wood AM, Joseph S, Lloyd J, Atkins J. (2009, Jan). Gratitude Influences Sleep Through the Mechanism of Pre-Sleep Cognitions. *J Psychosom Res*, 66(1): 43-48. <https://www.sciencedirect.com/science/article/abs/pii/S0022399908004224>

¹⁰ Froh JJ, Sefick WJ, Emmons RA. Counting Blessings versus Burdens: An Experimental Investigation of Gratitude and Subjective Well-Being in Daily Life. *J School Psych*, 46(2): 213-233.

¹¹ See ref. 9. 1 Danner DD, Snowdon DA, Friesen, WV. (2001, May). Positive Emotions in Early Life and Longevity: Findings From The Nun Study. *J Pers Soc Psychol*, 80(5): 804-813. <https://psycnet.apa.org/buy/2001-17232-009>

¹² Danner DD, et al. (2001, May). Positive Emotions in Early Life and Longevity: Findings From The Nun Study. *J Pers Soc Psychol*, 80(5): 804-813. Maruta T, et al. (2000, February). Optimists vs. Pessimists Survival Rate Among Medical Patients Over a 30-Year Period. *Mayo Clinic Proceedings*, 75(2): 133-134. Brummett BH, et al. (2006 February). Prediction of All-Cause Mortality by the Minnesota Multiphasic Personality Inventory Optimism-Pessimism Scale Scores: Study of a College Sample During a 40-Year Follow-up Period. *Mayo Clinic Proceedings*, 81(12): 541-1544.

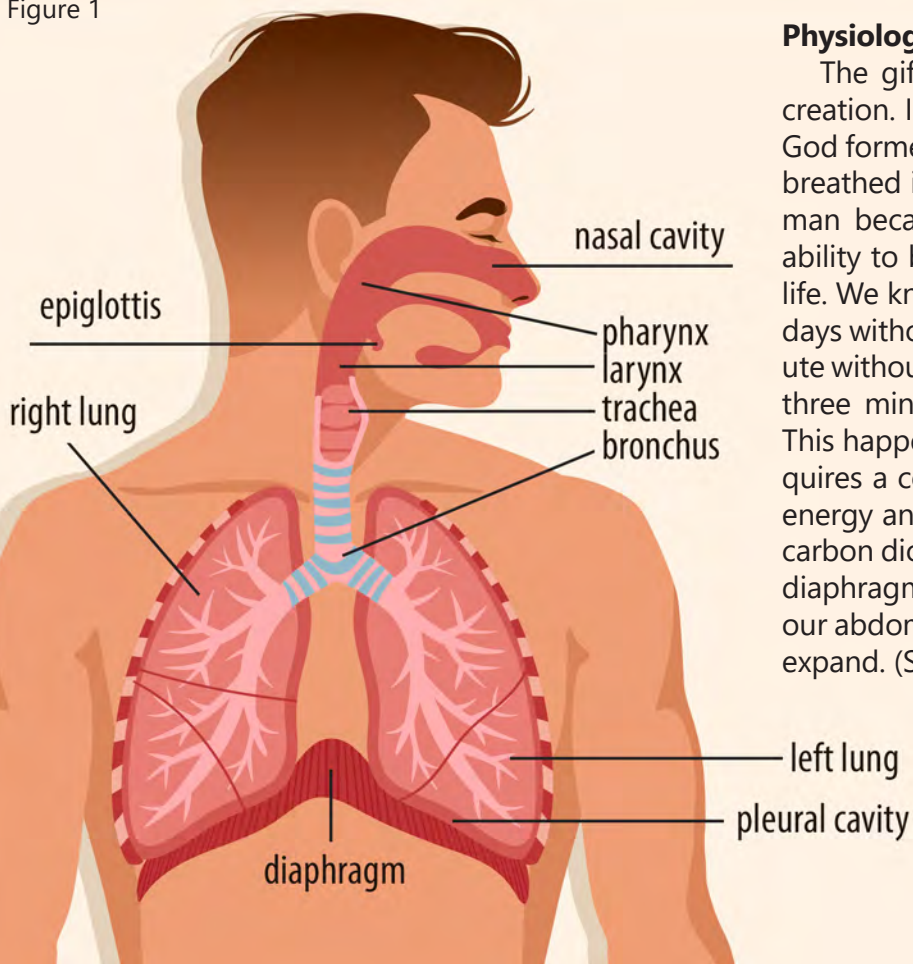
¹³ McCullough, ME, et al. (2002) The Grateful Disposition: A Conceptual and Empirical Topography. The grateful disposition: A conceptual and empirical topography. *J Pers Soc Psychol*, 82(1), 112–127. <https://psycnet.apa.org/doiLanding?doi=10.1037%2F0022-3514.82.1.112>

¹⁴ Solom, RC. (2013). Thieves of thankfulness: inhibitors of gratitude. EWU Master’s Thesis Collection. 126. <https://dc.ewu.edu/cgi/viewcontent.cgi?article=1125&context=theses>

Improve Immunity WITH FRESH AIR

In 1918-1919 the H1N1 Spanish flu pandemic killed nearly 50-100 million people and became known as one of the most fatal pandemics, more fatal than the one we are facing now with COVID-19.¹ During the tragedy, a technique was developed that aided the recovery process and slowed down the spread of disease. This technique was known as the "open-air regimen," in which tents or wards were built outside U.S. hospitals, and patients were exposed to fresh air during the day; at night, patients were kept warm with hot water bottles. This was not a new concept, as similar practices had been used by British doctors to treat children with tuberculosis. The concept was so effective that a famous physiologist Dr. Leonard Hill published an article in the British Medical Journal stating that the best way to heal from influenza was to practice "deep breathing of cool air and sleeping in the open."² And so, as we face a new pandemic, we have one of the best remedies available to us, the gift of fresh air.

Figure 1



Physiology of breathing

The gift of breathing was granted to us at creation. In Genesis 2:7 we read: "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul." God gave us the ability to breathe, and this became essential to life. We know this is true as humans can last for days without food and water, but after one minute without air, brain cells begin to die. After just three minutes, there is serious brain damage. This happens because every cell in our body requires a constant supply of oxygen to produce energy and to help eliminate waste, specifically carbon dioxide (CO₂). This process begins as our diaphragm, the muscle dividing our chest from our abdomen, contracts and allows our lungs to expand. (See Figure 1.)

Air enters through our nose or mouth, into our airway which begins at the *trachea*, and branches out like a tree into *bronchi*. These branches become smaller until they are very tiny turning into terminal *bronchioles* which house *alveoli*—small sacs of air that resemble grape clusters.³ It is here that oxygen exchange takes place. (See Figure 2.) These alveoli are surrounded by a mesh of tiny blood vessels known as *capillaries*. Oxygen diffuses from the alveoli into the capillaries and CO₂ diffuses into the alveoli; and as we exhale, CO₂ is eliminated. This pathway works well if we breathe fresh air, which is high in oxygen and low in CO₂. The concentration difference allows for oxygen to diffuse into our blood and for carbon dioxide to be eliminated.

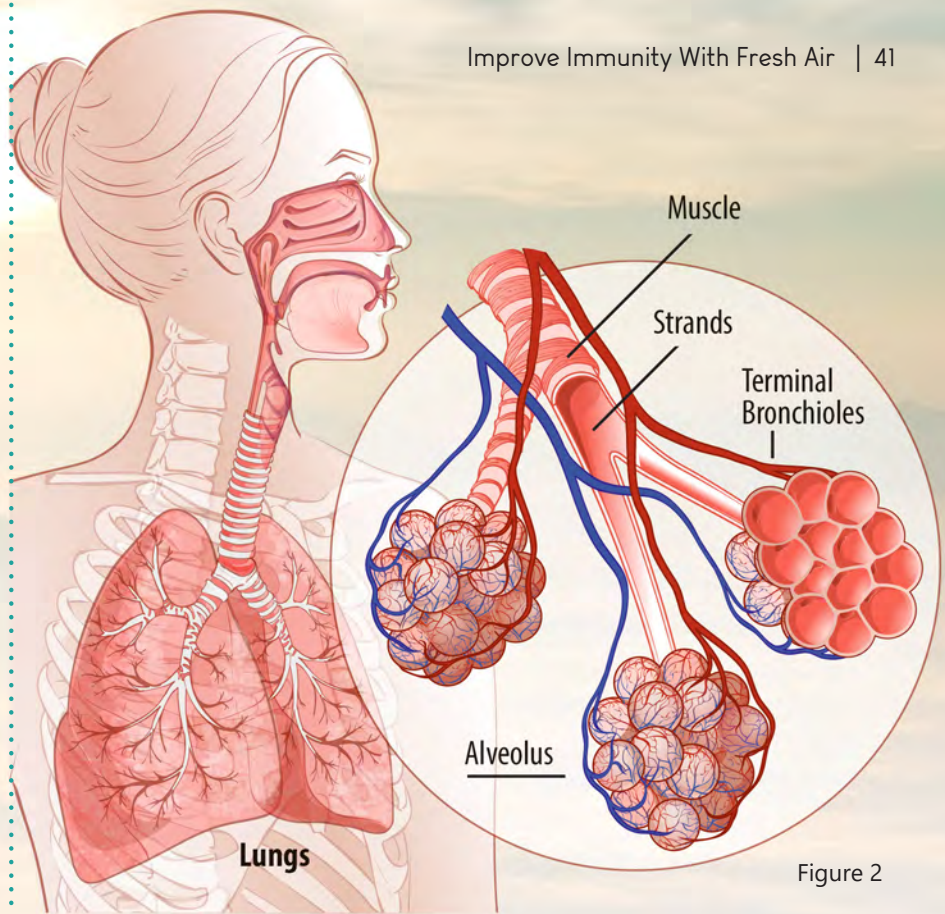


Figure 2

Proper ventilation

What happens if we breathe recycled air at our work or in our homes? Living or working in close, ill-ventilated rooms weakens our body, and slows down our circulation because the blood is not purified or vitalized by oxygen in the air.⁴ Breathing recycled air with a higher concentration of carbon dioxide causes our body to eliminate less of it, and then we become robbed of vitality. In contrast, when we are outside, our blood is well oxygenated, and we get all the benefits of fresh air.

We need to open the windows and let fresh air come into our homes and offices, as this will improve our mood. Scientists have found that serotonin (the happiness hormone) release is affected by the amount of oxygen in the blood. So, the more air we take in, and the more deeply we breathe, the higher the levels of serotonin, which makes us happy and gives us a sense of well-being, helping to prevent depression.⁵ We can also add a brisk walk in the open air to our daily routine. This will promote good circulation throughout the body, give a healthful glow to the skin, and bring oxygen-vitalized blood to the extremities.⁶



Effect of negative air ions

Have you noticed when you go to the beach or a waterfall in the mountains, how relaxed you feel after walking around for several hours? This is another amazing benefit of inhaling fresh air. Few people know about this benefit of negative air ions (NAIs). These are electrically charged molecules in the atmosphere. They are formed when a gas molecule receives enough energy to accept an electron (smallest particle of energy with negative charge or electricity). Air rich in NAIs is found in the mountains, by waterfalls, rivers, and beaches.⁷ NAIs have many health benefits. As they enter our bloodstream, they stimulate biochemical reactions that increase levels of serotonin helping to fight depression. A study at Columbia University showed that patients exposed to a negative ion generator had as much clinical improvement as if they were taking antidepressants.⁸

NAIs also increase the flow of oxygen to the brain, enhancing alertness and mental energy, helping to protect us against germs and allergens found in the environment.⁹ This is another reason that we need to be regularly in nature, enjoying fresh air. One health educator speaks about the benefits of country living for our health. "So far as possible, all who are seeking to recover health should place themselves amid country surroundings where they can have the benefit of outdoor life. Nature is God's physician. The pure air, the glad sunshine, the flowers and trees, the orchards and vineyards, and outdoor exercise amid these surroundings, are health-giving, life-giving."¹⁰

Breathing technique and posture

In 2016 Apple released the "Breathe" App on all their smartwatches. This app works by alarming the user to engage in deep breathing sessions for 1–5 minutes every five hours to reduce stress. We know that "to have good blood, we must breathe well. Full, deep inspirations of pure

air which fill the lungs with oxygen, purify the blood. They impart to it a bright color, and send a life-giving current to every part of the body. Deep respiration soothes the nerves; it stimulates the appetite and renders digestion more perfect; and it induces sound, refreshing sleep."¹¹ Most people don't experience this benefit due to what is known as *apical breathing*. This refers to shallow breathing, which uses only the upper part of the chest and not the diaphragm. With this type of breathing, there is not enough time for gas exchange as we only bring air to the top of our lungs. If we want oxygen to enter our blood, we must learn to take deep breaths more often. This problem is more common now because people work indoors, sitting slouched on their desks, taking shallow breaths. This is why proper posture is also essential for effective breathing. Let's begin by teaching our children correct breathing techniques. "The teacher should impress upon his pupils the importance of deep breathing. . . . Let exercises be given which will promote this and see that the habit becomes established."¹² If children and youth would be taught this concept from a young age, they would have more energy and healthier blood to nourish the entire organism.

How breathing affects different organs

When God designed the human body, all organs were designed to work in cooperation with each other. So, our breathing affects many other organs. Fresh air purifies the blood, refreshes our body, and thus invigorates our brain. It makes our mind clearer, resulting in composure and serenity, which can help those suffering from anxiety.¹³ This is why we feel mentally renewed when we take a stroll in nature and inhale fresh air. Fresh air soothes our nervous system and induces sound sleep, which helps us awake refreshed and happy.¹⁴ Interestingly, our gut has its own nervous system and fresh air improves our digestion, by increasing blood flow to the

Fresh air purifies the blood, refreshes our body, and thus invigorates our brain. It makes our mind clearer, resulting in composure and serenity, which can help those suffering from anxiety.

intestines which helps us absorb more nutrients. Air is so important that proper abdominal breathing has been used as therapy for Irritable Bowel Syndrome (IBS), which causes abdominal cramping, bloating, and loose stools or constipation. Diaphragmatic (deep) breathing increases blood flow to the abdomen and relieves pain. Well-oxygenated blood helps cleanse the liver of impurities, viruses, and bacteria.¹⁵ There is no doubt that with an abundant supply of fresh air, every organ—including our immune system—will function more efficiently and receive a healthy stimulus.

Effect of fresh air on the immune system

As we've faced the uncertainty of COVID-19, many have chosen to stay at home—and though this is considered socially responsible, very few are aware that exposure to fresh air can strengthen our immune system. Let's see how forest bathing can improve our immunity. When we are outdoors, our innate immune system is invigorated, offering an immediate defense when we are exposed to harm such as a virus. Natural Killer (NK) cells are part of the innate immune system and have enzymes that destroy cancer cells and also viruses, some of which are Granulysin, Perforin, and Granzyme A and B. Research shows that something as simple as "forest bathing," which is simply walking through the forest, can help stimulate these cells and protect us from the disease. A study done by Stanford Medicine in collaboration with the University in Tokyo aimed to prove this relationship.¹⁶ In the first study, they sent the subjects to walk in the forest for 3 days. They told them to walk for 2 hours (1.5 mi

or 2.5 km) on the first day and 3 miles (5 km) on the second day. After analyzing their blood, they found that the number of NK cells and killer enzymes had increased each time blood was collected. But why did this happen? The explanation given, in the study, was that *phytoncides* are released from trees like *alpha-pinene*, *beta-pinene*, and *isoprene*.¹⁷ These molecules have an enhancing effect on NK cells.

A second study was performed to confirm these benefits on a larger scale. In the second study, they had two groups of subjects; one group was assigned to the forest, while the other was taken to a big city. The subjects walked, either in the forest or in the city. Blood samples were collected on the 7th day and 30th day after the study. During the study, the researchers also quantified the number of phytoncides (*alpha-pinene*, *beta-pinene*, and *isoprene*) in both settings, and concluded that these molecules were abundant in the forest, but none in the city.¹⁷ The results were consistent with their first study which showed that subjects who walked in the forest had an increased number of natural killer (NK) cells. The amazing thing is that the levels of NK cells remained high even 7 days after the study, with only a small decrease by day 30. Another benefit for those who walked in the forest, was that their urine adrenaline levels dropped significantly. Adrenaline is a stress hormone known to decrease the number of natural killer cells. So those who walked in the forest had lower levels of adrenaline, while those in the city had much higher levels and therefore lower immunity.¹⁷ This is part of the reason why people living in large cities are more susceptible to getting sick,

while those who spend at least a few hours in nature, even if it is just once a week, can have better immunity. Now imagine how great we would feel if we lived in the country instead of in the city!

How can we apply the research from Japan to our lives? Ideally, it is best to live in country settings away from the pollution of the city. However, if that is not possible, we can go to the country on the weekend and spend time walking/hiking in the mountains, in the forest, or near bodies of water. Based on the studies from Japan, the natural killer cells in our immune system will remain elevated up to seven days after our nature walks, and by the 30th day, it will be slightly decreased. Only a wise and loving Creator could give us such amazing results as we obey His laws and enjoy the relaxing and immune-strengthening benefits of fresh air. But don't despair if you can't live in the country. Bring green plants into your house to oxygenate the air, open the windows, and pull away the drapes. Plant flowers, and shrubs in your balcony and your backyard. Every change you implement to bring fresh air into your environment will help get rid of viruses, mold, and pollen.

How to get more fresh air

- Breathe in deeply through your nose.
- Wear loose-fitting clothing
- Avoid smoking and exposure to second-hand smoke.
- Exercise outdoors.
- Go on nature walk/hikes in the forest, waterfalls, lakes, or oceans one day a week for several hours.

- If possible, live in country settings.
- Keep your windows open and let the sun and oxygen come in.
- Add potted plants in the home and office to improve air quality.

Breathing exercises

Breathe deeply once every 10 seconds by timing yourself with a stopwatch. The only way to breathe only 6 times a minute and not get short of breath, is to take deep breaths. This type of breathing exercise will improve your oxygen saturation throughout the whole day. Another good daily habit is to take 10-20 slow, deep abdominal breaths after each meal and before bedtime.¹⁸

Take a deep breath

The gift of air, given to us by the Creator, affects our body and mind. Let us take daily walks outdoors and ventilate every room in our home. If at all possible, live in the country where the air is pure, or at least visit once a week. Then as we learn to obey our Creator's simple health laws, we will improve our health, prevent disease, and stimulate our immune system. As you take each breath today, remember, "the Spirit of God hath made me, and the breath of the Almighty hath given me life" (Job 33:4). 🌿



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Sources:

¹Hobday, RA, Cason, JW. The Open-air treatment of pandemic influenza. *Am J Public Health*, Oct. 2009. www.ncbi.nlm.nih.gov/pmc/articles/PMC4504358/.
²Hill, L. (1919, Mar 1). The defense of the respiratory membrane against influenza. *Br Med J*.1(3035):238-40.
³Human Physiology - Respiration. *Human Physiology Respiration*, people.eku.edu/ritchison/301notes6.htm. Accessed 7 May 2020.
⁴White, EG. (1976). *Healthful Living*, Leaves-of-Autumn Books, pp. 72, 73.
⁵White, EG. (1951). *Counsels on Health*, Pacific Press Publ. Assn., p. 59.
⁶White, EG. (1905). *The Ministry of Healing*, p. 272. Pacific Press Publ. Assn.
⁷Jiang, SY, et al. (2018, Sept. 28). Negative air ions and their effects on human health and air quality improvement. *Int J Mol Sci*, MDPI. www.ncbi.nlm.nih.gov/pmc/articles/PMC6213340/.
⁸Terman M, Terman JS. (1995 Jan1). *Altern Complement Med*. 1(1):87-9. doi: 10.1089/acm.1995.1.87.
⁹Mann, D. (2002, May 6). Negative Ions Create Positive Vibes. *WebMD*. www.webmd.com/balance/features/negative-ions-create-positive-vibes#2

¹⁰White, EG. (1905). *The Ministry of Healing*, pp. 263, 264. Pacific Press Publ. Assn.

¹¹White, EG. (1951). *Counsels on Health*, p. 59. Pacific Press Publ. Assn.

¹²White, EG. (1932). *Child Guidance*, p. 365. Pacific Press Publ. Assn.

¹³White, EG. (1890). *Christian Temperance and Bible Hygiene*, p. 104. Good Health Publ. Co.

¹⁴White, EG. (1905). *The Ministry of Healing*, p. 272. Pacific Press Publ. Assn.

¹⁵Diaphragmatic Breathing. (2017, October). *Resource Center*. <https://bio-medical.com/resources/healing-irritable-bowel-syndrome-with-diaphragmatic-breathing/>

¹⁶Li, Q et al. Forest bathing enhances human natural killer activity and expression of anti-cancer proteins. (2007). *Int Immunopathol and Pharmacol*, vol. 20, no. 2_suppl, pp. 3-8. doi:10.1177/03946320070200s202.

¹⁷Li, Q et al. (2008). Visiting a forest, but not a city, increases human natural killer activity and expression of anti-cancer proteins. *Int J of Immunopathol and Pharmacol*, vol. 21, no. 2, pp. 117-127. doi:10.1177/039463200802100113.

¹⁸Nedley, N. (2011). *The Lost Art of Thinking*. Nedley Publishing, p. 253.

Relationships for Health and Happiness

By John Baer, DC



A lonely 94-year old man in Minnesota decided to put in a swimming pool in his back yard for the neighborhood children. Now his back yard is the focal point of activity in the summer, filled with laughter, splashing, happy children, and their parents and grandparents. And now, he is no longer lonely. A new survey of 10,000 people showed that more than three in 5 Americans are lonely, with more and more people reporting feeling that they are left out, poorly understood, and lacking companionship.¹ Another survey of 2000 people revealed that 1 in 4 people don't feel they have someone to confide in.² And we know loneliness has been on the rise especially with the COVID-19 pandemic.

Social connectedness creates a positive feedback loop of physical, social, and emotional well-being. Social connectedness has been diminishing in our world. Sadly, there are many people in our country today that have no one to confide in, no close friends, and no one that they can call just to chat with or share a problem that they're facing.

Benefits of social connections

The opposite feeling of loneliness is social connectedness. What is social connectedness? It is the subjective experience of feeling close to someone, having a sense of belonging. Healthy social connections

not only give us pleasure, but can have a large positive impact on our mental, emotional, and physiological health. One landmark study by House and co-investigators revealed that lack of social connections is more detrimental to our health than smoking, high blood pressure, and obesity.³ Reversely, 148 studies found that people who had healthy robust relationships had a 50% increased chance of living longer regardless of age, gender, and country of origin. Just like exercise and healthy weight are crucial to our physical health, the presence or absence of healthy relationships is recognized as a potential risk or protective factor for morbidity and mortality.⁴

Our social connectedness is tied to a host of conditions including the development and progression of cardiovascular disease, repeated myocardial infarctions, atherosclerosis, autoimmune dysregulation, cancer, high blood pressure, and slower wound healing.⁵ Poor social ties have also been related to impaired immune function.⁶ COVID-19 with its social distancing and stay at home orders has had a negative impact on relationships. Many people have not been able to attend church and to visit friends and family.

Social relationships affect your health through behavioral, psychosocial, and physiological pathways. Relationships have a cumulative impact on your health. So, through-



out life, as time passes, the benefits accumulate over time. For instance, it was found that socially isolated adults with coronary artery disease had a 2 to 4 times greater risk of subsequent cardiac death than their peers who were more socially connected.⁷

In the interest of protecting our elders, there is a progression of loneliness in our world. This social disconnection may have cumulative effects over time. Loneliness increases the risk of depression and anxiety. Increased physical health problems ultimately lead to premature mortality.⁸ It will be very interesting to see future research, post-Covid on the impact the pandemic has had on our world health in populations that never contracted the disease. The fear, worry, anxiety, and loneliness that has resulted from the COVID-19 pandemic, I believe, will impact health and mortality to a larger extent than we imagined.

What makes social connections healthful

Researchers are exploring the behavioral and biological factors which produce the health benefits of connecting with others. For instance, they have found that social connections help lower the harmful levels of stress which can negatively affect our gut function, coronary arteries, insulin regulation, and the immune system. Also, there is evidence that caring behaviors trigger the release of stress-reducing hormones.

Our social needs

Are you wondering where our needs for social connection came from? After God created Adam and placed him in a beautiful garden, He watched him and said: "It is not good that man should be alone; I will make him a helper comparable to him" (Genesis 2:18, NKJV). Then He created Eve for him. We usually use this verse to refer to marriage, but it is a basic principle that applies to all relationships. God created us to live in families, groups, or communities. Family as well as friends are important to healthy social relationships.

Life is more fulfilling when we do it with others! We accomplish more, we share the burdens and the celebrations. This is why Solomon says: "Two are better than one, because they have a good reward for their labor. For if they fall, one will lift up his companion. But woe to him who is alone when he falls, for he has no one to help him up" (Ecclesiastes 4:9-11, NKJV).

Motivation for connection

Do you feel like you have only a few people with whom you can have meaningful relationships? Or perhaps you have no motivation to make new connections with others? Good relationships begin with our connection to Jesus Christ. He taught us that love is the basis of connecting with others: "A new commandment I give to you, that you love one another; as I have loved you, that you also love one another" (John 13:34, 35, NKJV). Without being connected to Jesus Christ in a loving relationship, our connections with others may be self-centered. But being connected to Him, the fountain of love, our love for others will always be fresh and true. "Let each of you look out not only for his own interests, but also for the interests of others" (Philippians 2:4, NKJV).

How to connect with others

Showing someone that we care, does not need to be expensive like putting a pool in our backyard. It requires no special equipment. We can show a person we care about them by offering to help. Research shows that engaging in daily conversation can improve mental and physical health. Here are some other practical ideas:

1. Focus on healthy social relationships. If they are not healthy, let them go.
2. Concentrate on quality, not quantity relationships. You may have 1,000 Facebook or Instagram friends, but they may not be quality relationships.

3. Share and listen. Engage in heart to heart conversations. Be a good listener. Allow people the opportunity to express how they feel and what they think. This will build solid relationships.
4. Show that you care and are interested in others. The best way to do this is to ask questions. Use *open-ended questions* that ask *what* and *why*. This will build deeper conversations and understanding of the other person.
5. Be regular in communicating with others. Stay in touch in person, by phone, and by text.
6. Be positive and seek to help others and you will boost your cognitive health.
7. Create new connections. Broaden your horizons and take an interest to meet the friends of your friends.
8. Start or join a group that centers around a common interest such as gardening, cooking, hiking, etc.
9. Re-activate previous relationships that you may have allowed to die. Re-connect with old friends and relatives that you may not have spoken with for a long time.

It is positively good for your health to take a moment of your time to share with

someone else. Thinking deeply and sharing lovingly will stimulate brain functions, thereby slowing cognitive decline.

Seize the opportunity

Are you wondering where to begin scattering your love? Begin where you are, with your family members, coworkers, neighbors, and anyone in your sphere of influence. So instead of shutting up our love and sympathy to ourselves, let us seize the opportunity and contribute to the good of others.

“Kind words, looks of sympathy, expressions of appreciation, [these gestures] would be to many a struggling and lonely one as the cup of cold water to a thirsty [person]. . . . Every word or deed of unselfish kindness to [someone] with whom we are brought in connection is an expression of the love that Jesus has manifested for the whole human family.”⁹

I have come to believe that our greatest personal asset is not our car, house, retirement plan, or even the size of our bank account, rather our largest personal asset are the relationships that we possess. So, invest in this asset regularly and liberally, and you will be blessed with health and happiness all the days of your life. I challenge you to seize the opportunity each day to build intentional healthy relationships. 🌿



Scan this QR code to watch an in-depth video presentation on this topic.

Sources:

¹ <https://www.multivu.com/players/English/8294451-cigna-us-loneliness-survey/>
² NY Post April 30, 2019. <https://nypost.com/2019/04/30/1-in-4-americans-feel-they-have-no-one-to-confide-in/>
³ House, JS, Landis, KR, Umberson D (1988). Social Relationships and Health. *Science* 241(4865)540-5.
⁴ Umberson, D, Moutez JK. (2010). Social Relationships and Health: A Flashpoint for Health Policy. *J Health Soc Behav*; 51(5) S54-S66.
⁵ Ertel KA, et al. (2009). Social Networks and Health: A Life Course Perspective Integrating

Observational and Experimental Evidence. *J Soc Pers* 26:73-92.
⁶ Kiecolt-Glaser JK, et al. (2002). Emotions, Morbidity and Mortality: New Perspectives From Psycho-Immunology. *Annu Rev Psychol* 53:83-107.
⁷ Brummett BH, et al. (2001) Characteristics of Socially Isolated Patients with Coronary Artery Disease who are at Elevated Risk for Mortality. *Psychosom Med* 63: 267-72.
⁸ Luchetti M, et al. (2020), June 22). The Trajectory of Loneliness in Response to Covid-19. *Am Psychol*. Advance online publication. <http://dx.doi.org/10.1037/amp0000690>
⁹ White, EG. *In Heavenly Places*, p. 207. Review and Herald Publishing Assn. 1967.

By Paul M. Balbach, FNP, NP-C

TRUST: FAITH OVER FEAR

Anxiety, stress, and fear. How can we handle them and prevent them from being consumed by them? How can we counteract their negative effects on our immune system and health?

Anxiety is gripping our nation and the world due to the pandemic, natural disasters, economic insecurity, and social deterioration. To escalate the problem, news and social media are flooded with the latest stories of devastation, disease, and death. All of this negativity is causing a significant impact on the mental health of individuals and families. Is there something you can do to reduce your stress, with its harmful effects on health, and maintain a positive attitude in these challenging times?

The solution

The Bible offers God as the solution for our dilemma and His promises to help us face the future with faith and hope. Jesus speaks of our time, "Men's hearts failing them for fear, and for looking after those things which are coming on the earth: for the powers of heaven shall be shaken" (Luke 21:26 AKJV). But the next passage says, "And then shall they see the Son of man coming in a cloud with power and great glory. And when these things begin to come to pass, then look up, and lift up your heads; for your redemption [draws near]."¹

Whether you are overwhelmed with fear or filled with faith and hope depends on where is your focus? If your focus is on natural disasters, on the pandemic, or on economic insecurity your heart will be filled with fear, but Jesus says, "Look up." When we look to Heaven's sanctuary, we see Jesus and discover the strength of His promises. In Christ we find confidence, and our hearts are filled with faith because He loves us with an everlasting love.

We do not fear because Jesus is always by our side no matter what we must go through.

"Fear not, for I am with you; be not dismayed, for I am your God. I will strengthen you, Yes, I will help you, I will uphold you with My righteous right hand."²



Science proves health benefits of trust

Did you know that science proves the health benefits of trusting God? Research studies show numerous mental and physical health benefits for people who have faith in God and attend church. Evidence from over 1,200 studies and 400 reviews, shows significant health benefits for people of faith who are involved in organized religion. Especially, persons with physical disease have greater needs, but these needs may be met by trusting in God. These benefits include improved health, longer life, improved coping, as well as improved quality of life.³

Research studies confirm that spirituality is so powerful it helps persons cope with stress. Spirituality protects people from heart disease and cancer, lowers blood pressure, and strengthens immunity. Studies show that people of faith have increased positivity and optimism. What provides all these benefits? Just three words—faith in God. A compilation of multiple research articles shows the many health benefits of religion and spirituality. Religious people have a “Someone” to go to with all their worries, cares, and stresses. Based on a large body of evidence-based research, these persons can enjoy improved mental health, and adapt to adverse health situations more easily than others. The benefits of trust also include the body’s reaction to diseases and how it responds to treatment.⁴

This should not be a surprise because in the Psalms we read: “Commit your way to the Lord; trust also in Him, and He shall bring it to pass.”⁵ When we give our plans, worries, and health problems to God, and believe that He will help us, then we can stop worrying. This verse states that when we trust God, He will “bring it to pass.” Bring what to pass? He will help us pass through our current difficulties, stressors, or family conflicts. Whatever it may be, when we have faith in Him, “He will bring it to pass!”

Dr. Harold Koenig, from Duke University, has made it his lifework to study religion and health. He shows the following mental benefits for people who are spiritual and religious:⁶

- Improving management of stress, illness, chronic pain.
- Creating positive emotions—happiness, hope, positivity.
- Providing a purpose and meaning in life.
- Improving self-worth.
- Helping with depression, anxiety, and some mood disorders.
- Improving balanced thinking.
- Decreasing suicide cases and attempts up to 80%.

Perhaps you need to make lifestyle changes such as lose weight, lower your blood pressure, or blood sugars, but have not been successful in the past. Have you considered that the power to change may need to come from without rather than from within? Consider that science is now discovering what the Scriptures revealed thousands of years ago: “Blessed is that man that makes the Lord his trust.”⁷

The physical and social health benefits of trusting God, praying, and attending church are listed below:⁸

- Improved sleep.
- Decreased anxiety, panic attacks, and stress.
- Improved mood, happiness, joy, and peace.
- Positive relationships with others in 87% of people studied.
- Decreased substance abuse in 86% of people.
- Improved interpersonal relationships, empathy, and compassion.
- Decreased crime.
- Improved marital stability.
- Improved respect, social support, and social interaction.
- Smoking cessation, increased physical activity, and improved dietary choices.

Effects on immunity

What is the relationship between our mental state, religious involvement, and immunity? Studies have connected emotional stress to the development of the common cold⁹ and the incidence of infectious diseases in general. Other research has linked religious involve-

ment to lower levels of inflammatory cytokines (a molecule secreted by immune cells that promotes inflammation) and markers of immune dysregulation.¹⁰ One compelling study showed that persons living with HIV, who have used religious coping after their diagnosis, suffered significantly less decline in their CD4 cell counts (important white blood cells for fighting infection), and had a slower progression of the disease over four years than those who did not.¹¹

You can trust Him

As we have seen, research studies show a strong correlation between trusting in God and experiencing far-reaching mental, physical, and social health benefits. You can trust God, the Creator of the universe with all your anxieties and fears. He loves you and cares about your health and every detail of your life. To trust God means to have faith in Him. Faith is trusting God as your best friend. Believing that you are not a speck of cosmic dust, but that you have been created by a loving God who wants to help you in health, sickness, joy, and sorrow in being the best version of you.

Overcome fear with faith

Anxiety and worry are states of mistrust that had led to many dangerous consequences ranging from drug addiction to suicide. They may lead to high blood pressure, heart disease, and even cancer. Anxiety is more prevalent than ever, but the good news is there is a prescription for anxiety in the Bible! It says, "Casting all your [anxiety] upon Him for He cares for you."¹² What does that mean? *Take your eyes off the situations and people that make you anxious and tell God all about your troubles. Then trust that He will take care of you.*

What can you trust God with? "Trust in the Lord with all your heart, and lean not on your

own understanding; in all your ways acknowledge Him, and He shall direct your paths."¹³ We need to trust God with our finances, our family, our worries, the pandemic, and the future—trust Him with everything.

Next time when problems overwhelm you, read Philippians 4:6, 7 in the Scriptures. "Be anxious for nothing, but in everything by prayer and supplication, with thanksgiving, let your requests be made known to God; and the peace of God, which surpasses all understanding, will guard your hearts and minds through Christ Jesus."¹⁴ Then tell yourself, "I am not going to be anxious about this problem. I will tell God about it in prayer." After all, God has over 1,000 solutions that you know nothing about, so why don't you trust Him?

Start getting the benefits today

Although the world we live in may be full of troubles and problems, you can have faith over fear because God has revealed the future to us. We know Jesus is coming again, and we want to be ready to meet Him. "Let not your heart be troubled; you believe in God, believe also in Me. In My Father's house are many mansions; if it were not so, I would have told you. I go to prepare a place for you. And if I go and prepare a place for you, I will come again and receive you to Myself; that where I am, there you may be also."¹⁵

Now is the time to build a trusting relationship with God by talking to Him daily in prayer and learning His will by reading His word—the Bible. Your mental, physical, emotional, and spiritual health benefits are just 3 words away—Faith in God! 🌿



Scan this QR code to watch an in-depth video presentation on this topic.

Sources:

¹ Luke 21:26–28, AKJV.

² Isaiah 41:10, NKJV.

³ Mueller PS, Plevak DJ, Rummans TA. Religious involvement, spirituality, and medicine: implications for clinical practice. *Mayo Clin Proc.* 2001 Dec;76(12):1225–35. doi: 10.4065/76.12.1225. PMID: 11761504.

⁴ Koenig HG, McCullough ME, Larson, DB. *Handbook of Religion and Health.* Oxford University Press, 2001.

⁵ Psalm 37:5, NKJV.

⁶ Koenig HG, McCullough ME, Larson, DB. *Handbook of Religion and Health.* Oxford University Press, 2001.

⁷ Psalm 40:4 NKJV.

⁸ Koenig HG, McCullough ME, Larson, DB. *Handbook of Religion and Health.* Oxford University Press, 2001.

⁹ Cohen S et al. (1991). Psychological stress and susceptibility to the common cold. *NEJM* 325(9): 606–12.

¹⁰ Koenig H et al. (1997). Attendance at religious services, interleukin-6, and other biological parameters of immune

function in older adults. *Int J Psychiatry Med.* 27(3): 233–50.

¹¹ Ironson G et al. An increase in religiousness/spirituality occurs after HIV diagnosis and predicts slower disease progression over 4 years in people with HIV. *J Gen Intern Med* 2006 Dec; 21 Suppl 5: S62–8.

¹² 1 Peter 5:7, NKJV.

¹³ Proverbs 3:5, 6, NKJV.

¹⁴ Philippians 4:5, 6, NKJV.

¹⁵ John 14:1–3, NKJV.



IMMUNE-BOOSTING RECIPES

Layered Rainbow Salad | By Diane Baer

Ingredients:

4 cups spinach
1 cup cherry tomatoes, chopped
1 red bell pepper, chopped
2 carrots chopped

1 cup cucumber, chopped
1 cup broccoli (raw or steamed)
1 1/2 oz. can lentils, drained and rinsed
1/4 cup sunflower seeds

2 tablespoons lemon juice
2 tablespoons extra virgin olive oil
Salt to taste

Assemble the Salad:

1. Layer all vegetables in a bowl and top with lentils and seeds.
2. Mix the lemon juice, olive oil, sea salt, and red pepper in a small bowl.
3. Drizzle dressing over the salad. Serves 4.



Vegan Spinach Lasagna | By Ana Lucia Souza

Ingredients:

1 lb. lasagna noodles
1 large package spinach, steamed and chopped or 1 cup mushrooms, or 2 small zucchinis

Tofu-Basil Ricotta

16-ounces firm tofu, well-drained
2 tablespoons fresh lemon juice
1/4 cup vegan mayonnaise (optional)
2 cloves garlic, pressed
2 tablespoons nutritional yeast flakes

1/2 cup fresh basil, finely chopped
1/4 teaspoon cayenne pepper

Directions:

1. Remove moisture from tofu with a paper towel.
2. Mash tofu until creamy like ricotta. Combine with cashew sauce and mix well.

White sauce

1 ½ cups of cashews
 4 cups of water
 salt to taste
 4 cloves of garlic
 ½ cup nutritional yeast flakes

Directions:

1. Blend all ingredients in the blender until very smooth. Place cashew cream in a saucepan. on low heat.
2. Stir constantly until it boils. Turn off.
3. Mix spinach with the cashew sauce.

Red sauce

6 tomatoes peeled
 4 cloves of garlic
 1 tablespoon oil
 2 teaspoons oregano
 salt to taste

1 cup of tomato sauce (optional)

Directions:

1. Blend the tomato mixture in the blender until creamy. Do not cook the sauce.

**To assemble:**

Preheat oven to 375°F

Layer the ingredients as follows:

1. 1 cup tomato sauce. Cooked lasagna noodles. Tofu-Basil Ricotta. White sauce.
2. Lasagna noodles. 1 cup red sauce. Tofu-basil ricotta. Vegetables. White sauce.
3. Lasagna noodles. 1 cup red sauce. Tofu-basil ricotta. Vegetables. White sauce.
4. Lasagna noodles. Red sauce. Drizzle with remaining white sauce.
5. Bake lasagna at 375°F (190°C) for 45–50 minutes covered with foil.

Roasted Vegetables

By Liliane Balbach

Ingredients:

1 small butternut or other squash, cubed	1 tablespoon chopped fresh thyme
2 red bell peppers, seeded and diced	2 tablespoons chopped fresh rosemary
3 potatoes, cubed	2 tablespoons olive oil
2 sweet potatoes, peeled and cubed	2 tablespoons lemon juice
1 red onion, quartered	Salt to taste
1 pound firm tofu, cubed (optional)	2 tablespoons chicken-style seasoning

Directions:

1. Preheat oven to 450°F (245°C).
2. Dry tofu with paper towels. Cut in cubes. Mix with chicken-style seasoning and a little salt. Let it marinate while you prepare veggies.
3. Cut vegetables into medium-large chunks. Combine squash, red bell peppers, sweet potato, and potatoes in a large bowl. Separate the onion quarters into pieces and add them to the mixture.
4. In a small bowl, stir together thyme, rosemary, olive oil, lemon juice, and salt. Toss with vegetables until they are coated. Spread evenly on a large roasting pan.
5. Roast for 35 to 40 minutes in the preheated oven, stirring every 10 minutes, or until vegetables are cooked through and browned. Serves 12.



Maria's Lithuanian Borscht

By Marline Balbach

Ingredients:

1 tablespoon water or canola oil
1 large onion, chopped
1 crushed clove garlic
6 medium potatoes, diced

3 teaspoons salt
8 cups of water
4 bay leaves
3-4 cups cooked beets, peeled and shredded



Directions:

1. Sauté the onion and garlic in a soup pot with 1 tablespoon water or oil.
2. Add diced potatoes. Do not add water. Turn on medium-low. Cover and let it simmer 10-15 minutes. Stir occasionally.
3. Add 8 cups water, bay leaves, and shredded beets.
4. Bring to a boil. Turn on medium. Cook for about 45 minutes.
5. Add up to ¼ cup fresh lemon juice or to taste.
6. Add plant-based sour cream or yogurt. Serves 4-6.

Fresh Kale Salad

By Liliane Balbach

Ingredients:

⅓ cup freshly squeezed lemon juice
3 tablespoons Braggs liquid aminos or soy sauce
⅓ cup juice from 1 can of black olives
½ teaspoon garlic powder or 1 large clove, chopped.
1 teaspoon onion powder

⅓ cup raw sunflower seeds
7 cups fresh kale, finely chopped
4 green onions chopped
1 cup frozen corn, thawed
½ cup sliced black olives
1 cup red bell pepper, diced.

Directions:

1. To make the dressing, combine the first 5 ingredients in a jar and shake.
2. Toss kale, olives, corn, peppers, scallions in a large bowl. Pour the dressing over the salad and stir to mix. Allow the salad to marinate about an hour or overnight.
3. Just before serving, add the sunflower seeds and red bell pepper. Makes 8 cups.



Cream of Mushroom Soup | By Mariola Dumitru

Ingredients:

½ cup onions, chopped

3 garlic cloves, minced

1 cup celery, chopped

½ cup carrots, peeled and chopped

½ cup leeks, finely chopped

¼ cup chopped parsley

6 cups of sliced mushrooms

1 tablespoon of McKay's seasoning

Salt to taste

1 cup cashews, soaked for a few hours

2 tablespoons arrowroot powder

Directions:

1. Blend soaked cashews with 1 cup of water until creamy.
2. Sauté onions and garlic in a few tablespoons of water until onions are transparent.
3. Add carrots, celery, leeks, parsley, and seasonings. Sauté for a few more minutes.
4. Add mushrooms and enough water to cover the vegetables.
5. Bring soup to a boil until all the vegetables are well cooked.
6. Add arrowroot powder or corn starch dissolved in ½ cup of water.
7. Simmer for 5 or more minutes and turn off the burner.
8. Add blended cashew cream.
9. Serve with finely chopped green onions and garlic bread!



Quinoa-Black Bean Bowl

By Liliane Balbach

Ingredients:

Quinoa

1 cup quinoa, red or multi-colored
2 cups water

½ teaspoon salt
½ teaspoon cumin
½ teaspoon chili powder

¼ teaspoon garlic powder
Juice of half a lime
2 tablespoons cilantro or parsley, chopped

Directions:

1. Rinse and drain quinoa. Bring water to a boil over high heat.
2. When water is boiling, reduce heat to medium and add quinoa.
3. Cover pot and simmer until water is absorbed, about 15-20 minutes. Add salt.

Ingredients:

Sweet Potatoes

2 large sweet potatoes, diced

1 teaspoon olive oil
¼ teaspoon cumin

½ teaspoon chili powder
¼ teaspoon salt

Directions:

1. Preheat oven to 425°F.
2. Peel the potatoes, cube them, and toss in a bowl with spices and olive oil.
3. Place an even layer on the baking sheet. Roast them for 20 minutes or until tender but still firm.

Ingredients:

Cashew Cream Drizzle

½ cup raw cashews, washed
½ cup water

Juice of 1 lime
¼ cup of cilantro or parsley, chopped
Pinch of salt, chili powder and garlic powder

Directions:

1. Blend all the above ingredients until smooth.

To assemble the Bowls:

1. 2-3 cups of black beans canned or freshly cooked.
2. Divide the quinoa into 4 bowls. Place the black beans to one side of the bowl, and sweet potatoes on the other. Drizzle with cashew cream on top.
3. This recipe can be made quickly if the quinoa and beans are cooked a day before.
4. Makes 4 servings.



Veggie Patch Tabouleh Salad

By Marline Balbach

Ingredients:

1 cup bulghur wheat

1 cup boiling water

1 teaspoon salt



Directions:

1. Cover the bulghur wheat with boiling water. Add salt.
2. Let it sit for one hour.

Chop and mince the following vegetables:

3 cups parsley, finely chopped (add fresh peppermint or basil to the mix)
 1 cup cucumber, finely diced
 ½ cup red, yellow, or orange pepper
 2 tomatoes, diced
 ½ cup onion, finely diced
 3 green onions, finely sliced
 ½ cup chopped avocado

3 tablespoons lemon juice
 1 ½ teaspoon salt
 2 tablespoons olive oil
 ¼ teaspoon coriander
 1 garlic clove, minced
 dash of cayenne

Secret tips to a good tabouleh salad:

1. Mix the rehydrated bulghur with all the diced vegetables.
2. The secret to a good tabouleh salad is that the bulghur wheat is not too soggy.
3. Use lots of minced parsley, but not too much tomato.
4. The salad tastes best when refrigerated for 1 hour.
5. Consume salad within 24 hours. Serves 6 people.
6. Serve salad with lentils, brown rice, and hummus with pita bread.

Golden Sauce

By Liliane Balbach

Ingredients:

- | | |
|--|--|
| 1 ½ cups water | 1 teaspoon olive oil |
| 1 cup potatoes, diced | ½ teaspoon onion powder |
| ½ cup carrots, diced | 1 small clove garlic, optional |
| 1 teaspoon sea salt | 1 tablespoon chicken-style seasoning |
| 2 tablespoons freshly squeezed lemon juice | 4 tablespoons nutritional yeast flakes |



Directions:

1. Place water, carrots, and salt into boiling water. Cook about 10 minutes until soft, but not mushy.
2. Put potato-carrot mixture with water into blender; add lemon juice, chicken-style seasoning, oil, and yeast flakes. Blend until smooth and creamy.
3. Serving suggestion: great topping for patties, pilaf, roasts, and steamed vegetables.

Oatmeal Nut Roast

By Heidi Silva

Ingredients:

- | | |
|--|---|
| 1 onion diced | 1 tablespoon onion powder |
| 1 tablespoon olive oil or 1 tablespoon vegetable broth | 4 cups water |
| 1 ½ teaspoon basil | ½ cup Braggs liquid aminos or soy sauce |
| 1 teaspoon oregano | 4 cups quick oats |
| ⅓ cup nutritional yeast flakes | 1 cup chopped nuts (cashews are best) |
| 1 teaspoon garlic powder | |

Directions:

1. Preheat oven to 375°F.
2. Sauté onion and nuts until translucent. Add seasonings and mix well. Let it cook for 2 minutes.
3. Add liquids and bring to a boil. Add oats and let boil for 5 minutes. Pour into mold and let it sit for 1 hour.
4. Bake at 375°F degrees for 45 minutes.
5. Variation: Add some frozen corn, diced celery, roasted bell peppers, and olives for added flavor and visual appeal.
6. Use this roast recipe to make burgers, or meatless meatballs for spaghetti.
7. Best when served the next day, but if it must be eaten immediately, allow roast to cool for 20-30 minutes.

Green Smoothie

By Susan Lausevic

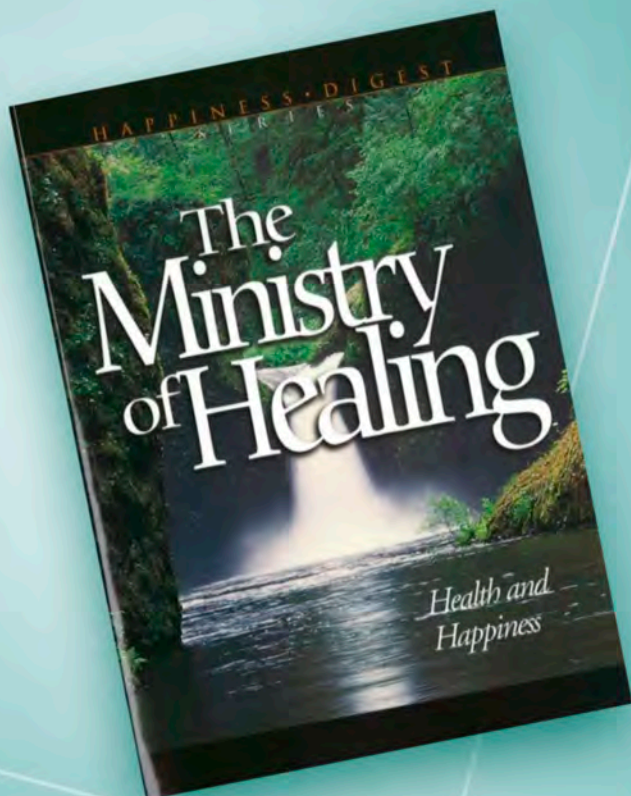
Ingredients:

1 banana	1 tablespoon chia seeds
1 pear	1 tablespoon flax seeds
1 apple	3 cups kale leaves, chopped
1 cup chopped pineapple	2 cups water



Directions:

1. Place the ingredients into the blender in the order given.
2. Add water. Blend well till creamy.



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Hope in Difficult Times

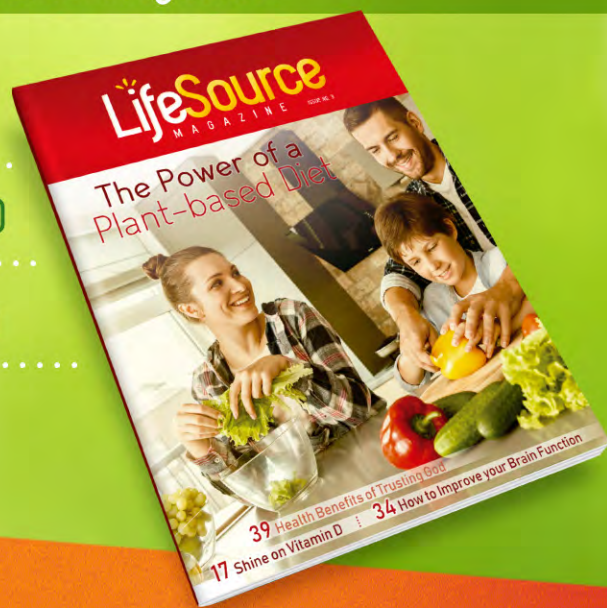
“I will lift up my eyes to the hills—from whence comes my help? My help comes from the Lord, Who made heaven and earth. He will not allow your foot to be moved; He who keeps you will not slumber. Behold, He who keeps Israel shall neither slumber nor sleep” (Psalm 121:1-4, NKJV).

“Why are you cast down, O my soul? and why are you disquieted within me? hope you in God: for I shall yet praise him, who is the health of my countenance, and my God” (Psalm 42:1, AKJV).

“Now may the God of hope fill you with all joy and peace in believing, that you may abound in hope by the power of the Holy Spirit” (Romans 15:13, NKJV).

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