



# The fundamentals of health

A comprehensive resource for patients

# Table of contents

## **01 An introduction of health and well-being**

- 02** Health vs. disease
- 02** Surviving vs. thriving
- 03** Blue zones: the world's longest living population
- 05** Maslow's hierarchy of needs

## **06 Factors that influence well-being**

- 07** Physical well-being (basic needs)
- 25** Social well-being
- 26** Mental and emotional well-being
- 29** Spiritual well-being
- 30** Career and financial well-being

## **31 Resources**

- 32** Daily energy requirements
- 33** Phytonutrients: food sources and benefits
- 35** EWG's Dirty Dozen and Clean Fifteen
- 36** Hidden sugars list
- 37** Common food additives
- 38** Health claims
- 39** Grocery shopping list
- 41** Weekly meal planner
- 42** Physical activity guidelines
- 43** A comparison of water filtration systems

## **45 References**



# An introduction to health & well-being

Whether your goal is to achieve a certain health outcome or simply to stay healthy, you have the power to positively influence the trajectory of your health. In this guide, we'll discuss the major contributors to health and dive into the strategies you can incorporate into your daily life to improve your well-being.

# Health vs. disease

According to the World Health Organization (WHO), health is “a state of complete physical, mental, and social well-being and not merely the absence of disease”. In simple terms, diseases are medical conditions that have defined signs and symptoms. Disease can be chronic (long-term) or acute (short-term), localized (confined in one area) or systemic (involves multiple organs). Some diseases are influenced by lifestyle factors and may be prevented by participating in activities such as

regular physical activity, managing stress levels, getting quality sleep, and eating a healthy diet rich in whole foods.

Not only is health the absence of disease, but it's also the ability to recover from illness, injury, and other ailments. Many factors contribute to good health, including genetics, nutrition, physical activity, environment, personal relationships, education, and socioeconomic status.

# Surviving vs. thriving

In terms of health, there is a clear distinction between surviving and thriving. Surviving involves doing the bare minimum to stay alive, while thriving involves taking responsibility for one's health and continuously striving to reach and maintain optimal health. The path to

optimal health is a series of deliberate, daily behaviors or choices, such as engaging in regular physical activity and nurturing personal relationships, that are unique to each individual and may result in better health outcomes.



# Blue zones: the world's longest living populations

Researchers have identified five regions across the world, known as the **blue zones**, with the greatest percentage of individuals 100 years of age or older, also known as centenarians. Through the review of epidemiological data, statistics, and birth certificates, blue zones are proven to have ten times as many centenarians compared to the United States and the lifestyles of individuals living in these areas contribute significantly to their health, happiness, and longevity.



The following nine lifestyle commonalities between the five blue zone regions, commonly referred to as the Power 9, contribute to longevity and slowed aging.

## Natural movement

Individuals living in blue zone regions engage in everyday activities, such as gardening, walking, and climbing hills and mountains. They also refrain from using modern mechanical conveniences, such as washing machines and farming equipment, for daily tasks.

## Sense of purpose

They have a specific reason for waking up each day. Having a clear purpose in life may increase life expectancy by up to seven years.

## Downshift

The world's longest-living people engage in activities that help manage stress, such as napping, praying, and attending happy hour with friends.

## 80% rule

People in blue zones stop eating when their stomachs are 80% full. They also tend to eat smaller meals and avoid eating late in the day.

## Plant-centric diet

The majority of their meals come from plant sources. Animal proteins are consumed in small amounts about five times per month.

## Wine

Enjoying moderate amounts of wine (one to two glasses per day) with friends and family is a common practice.

## Spirituality

Most individuals belong to a faith-based community. Attending weekly faith-based services may add up to 14 years to life expectancy.

## Family first

Family relationships are a top priority for individuals in blue zone regions. Aging parents and grandparents typically live with family members, parents invest time in their children, and individuals have committed life partners.

## Strong social networks

Centenarians commonly choose to participate in social circles that support healthy lifestyles and behaviors.



# Maslow's hierarchy of needs

Maslow's hierarchy of needs was developed by Abraham Maslow in the 1940s to identify the factors that motivate human behavior. It defines the five needs of all human beings in a hierarchy structure, listed in order from most to least influential to human behavior.



## Why is this hierarchy important and how does it relate to health?

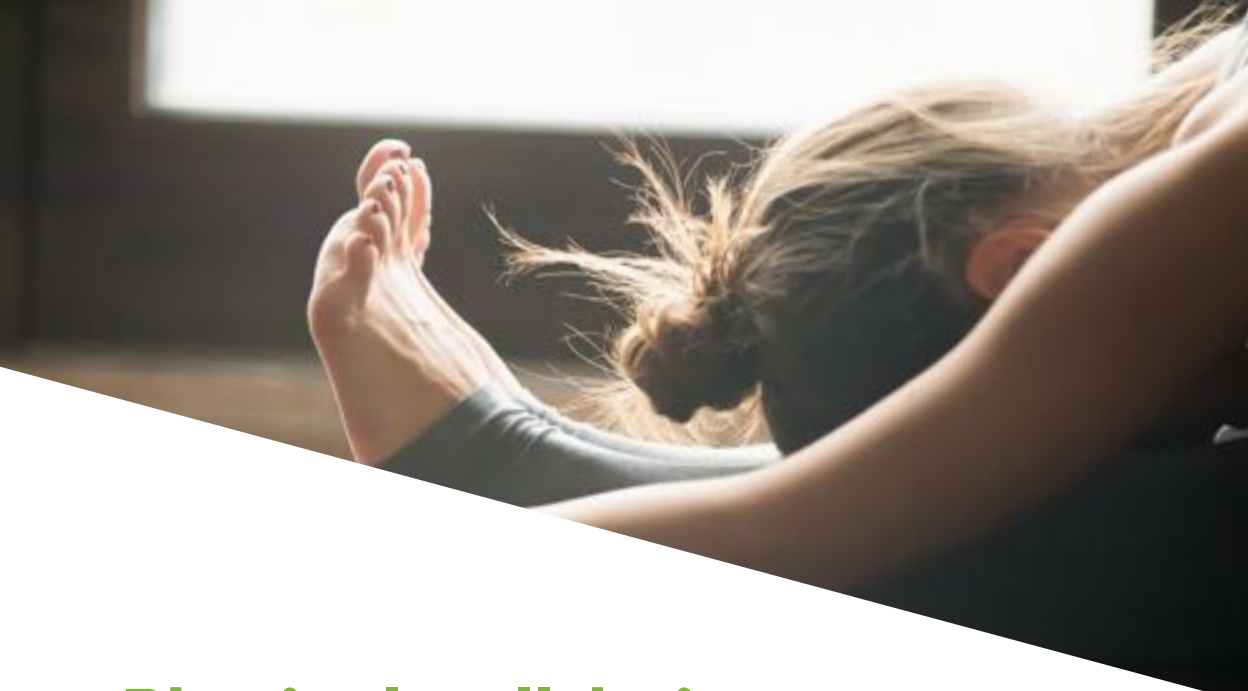
Without fulfilling basic needs first, those found at the bottom of the pyramid, Maslow suggests that improving other aspects of life is not possible. Furthermore, health can suffer if these needs are not met. Think of the fulfilment of these basic needs as a prerequisite to good health.



## Factors that influence health & well-being

A combination of physical, mental, emotional, and social factors influence your health and well-being. While you may not have control over every aspect of your life, you can positively impact your health by focusing on behaviors and lifestyle factors within your control.





# Physical well-being

Physical well-being extends beyond the absence of disease. It involves making intentional behavior choices to promote health, prevent disease, and pursue a balance between body and mind. Social and psychological health also contribute to physical well-being.

## The role of genes

The body is made up of trillions of cells, responsible for carrying out various bodily functions. Within each of these cells are 23 pairs of chromosomes that carry all of your genetic information.

Having a **genetic predisposition** to a certain disease simply means you have an increased likelihood of developing that disease based on family history and specific genetic variations you inherit from your parents. However, having a genetic

predisposition doesn't necessarily mean you'll develop the disease in your lifetime. For example, you can be born with the gene variant that increases your risk for celiac disease, but you may never develop the actual disease.

### Did you know?

**Fewer than 10% of individuals with an increased genetic susceptibility actually develop the clinical disease.**

# Epigenetics

Epigenetics is the study of modifications in gene expression. It refers to external modifications to DNA that can turn specific genes “on” or “off” without changing the genetic code. Epigenetics can change throughout your life and can contribute to the development of certain diseases.

Factors that influence epigenetics include:

- Chronic stress
- Diet
- Environmental toxin exposure
- Night shift work
- Obesity
- Physical activity
- Sleep habits
- Tobacco use and alcohol consumption

Although genetic predisposition may increase an individual’s risk of developing certain health conditions, environmental factors, such as maintaining a healthy diet and lifestyle, may reduce the risk and/or prevent their development.

## Did you know?

**Five out of ten leading causes of death, including stroke, non insulin-dependent (type 2) diabetes mellitus, and certain types of cancer, are associated with modifiable lifestyle factors such as regular physical activity and maintaining a healthy diet.**





# Diet & hydration

Your body should be able to obtain the building blocks it needs to survive, grow, and function optimally through nutrients and water from the diet. Nutritional needs vary based on a number of factors, such as age, gender, life stage, and state of health (or disease). Additionally, as activity level increases, the need for calories increases.

For a detailed chart depicting energy requirements based on age, gender, and activity level, refer to the estimated energy requirements table in the 'Resources' section.

## Hydration & health

Water comprises up to 75% of body weight and is present in all of your body's cells. It is an integral part in many body functions, including digestion, temperature regulation, and joint lubrication. Throughout the day, water is lost through the actions of breathing, sweating, urination, and digestion.

To maintain proper hydration, it's important to consume water and water-rich foods such as vegetables and fruit regularly. You can also improve hydration by limiting consumption of alcohol and caffeine-containing beverages, such as coffee, tea, and soda, as they can increase water excretion from the body.

Water needs vary based on size, gender, age, activity level, and the climate in which you live. The Food and Nutrition Board recommends that **women consume 2.7 liters (91 ounces)** and that **men consume 3.7 liters (125 ounces)** daily. An easy way to check your hydration status is to monitor the color of your urine. Your urine should be near colorless or pale yellow. If it's dark yellow, it's time to drink up.



## Essential nutrients for health

Nutrients are compounds required by the body in order to sustain life. Nutrient status plays a direct role in overall wellness. A broad range of nutrients is necessary to provide the body with energy and drive all biochemical processes. Nutrients are considered either essential or nonessential. **Essential nutrients** must be obtained through the food we eat,

such as vitamin C and zinc. **Nonessential** nutrients can be manufactured by the body even if they're not obtained through food, such as the amino acids arginine and glycine. Nutrients, primarily obtained from food, are classified into two main categories: macronutrients and micronutrients.





## Macronutrients

The three key macronutrients are carbohydrates, fats, and proteins. Required in large amounts, macronutrients provide the caloric basis for your daily energy needs, but also provide the building blocks for tissue development and repair, fiber for the microbiota, cholesterol for hormone production, and more.

Macronutrients are broken down through digestion into their simplest form, absorbed into the body, and used for various functions including energy production, or stored for future use. The foods we eat contain varying amounts of macronutrients. The table below outlines the three macronutrients, their functions, and common food sources.

Macronutrient	Simplest form	Key functions	Dietary sources
<b>Carbohydrates</b> (4 kcal/g)	Glucose	Regulates blood glucose, provides immediate energy	Vegetables, fruit, grains, beans, legumes, dairy
<b>Protein</b> (4 kcal/g)	Amino acids	Aids in tissue growth/repair; synthesizes DNA, hormones, enzymes, and neurotransmitters	Animal: meat, seafood, eggs, dairy Plant-based: beans, legumes, nuts, seeds
<b>Fat</b> (9 kcal/g)	Fatty acids	Stored as energy; contributes to endocrine function, immune function, and cellular structure	Animal: dairy, eggs, meat Plant-based: nuts, seeds, avocado, olives Healthy oils: olive oil, avocado oil, flaxseed oil, MCT oil

## Micronutrients

Micronutrients are required in trace amounts and include vitamins and minerals. Phytonutrients, such as anthocyanin found in blueberries or resveratrol found in grapes, are also often classified as micronutrients. Micronutrients do not provide caloric value but instead assist in certain physiological processes, such as tissue development, hormone and neurotransmitter production, brain function, and immune function.

### Vitamins

Vitamins, classified as water-soluble or fat-soluble, play an essential role in numerous biochemical functions and in maintaining optimal health. Water-soluble vitamins, which include vitamin C and the B vitamins, are not easily stored and excess is excreted from the body. Therefore, regular intake of these vitamins is required to prevent deficiencies.

Conversely, fat-soluble vitamins can be stored in body fat following absorption and regular intake is not always necessary. The four fat-soluble vitamins are vitamins A, D, E, and K. Before supplementing with fat-soluble vitamins, consult your integrative healthcare practitioner for recommendations.

### Minerals

Similar to vitamins, the body requires a number of essential minerals to maintain optimal health. These essential minerals can be categorized as macrominerals, which are required by the body in large amounts, and microminerals, also known as trace minerals, which are required in smaller amounts.

There are seven essential macrominerals: calcium, chloride, magnesium, phosphorus, potassium, sodium, and sulfur. There are eight essential trace minerals: cobalt, copper, fluoride, iodine, iron, manganese, selenium, and zinc.

### Phytonutrients

Phytonutrients, also known as phytochemicals, are plant-based bioactive compounds that play an important role in health and prevention of disease. Phytonutrients exert a range of health-promoting effects in the body, such as anti-microbial, anti-inflammatory, neuroprotective, and anti-oxidant effects. Phytonutrients are found in plant-based foods, and the color of these foods can provide an indication of the phytonutrients they contain. To ensure you're consuming a wide range of phytonutrients, eat varied colors of fruits and vegetables.

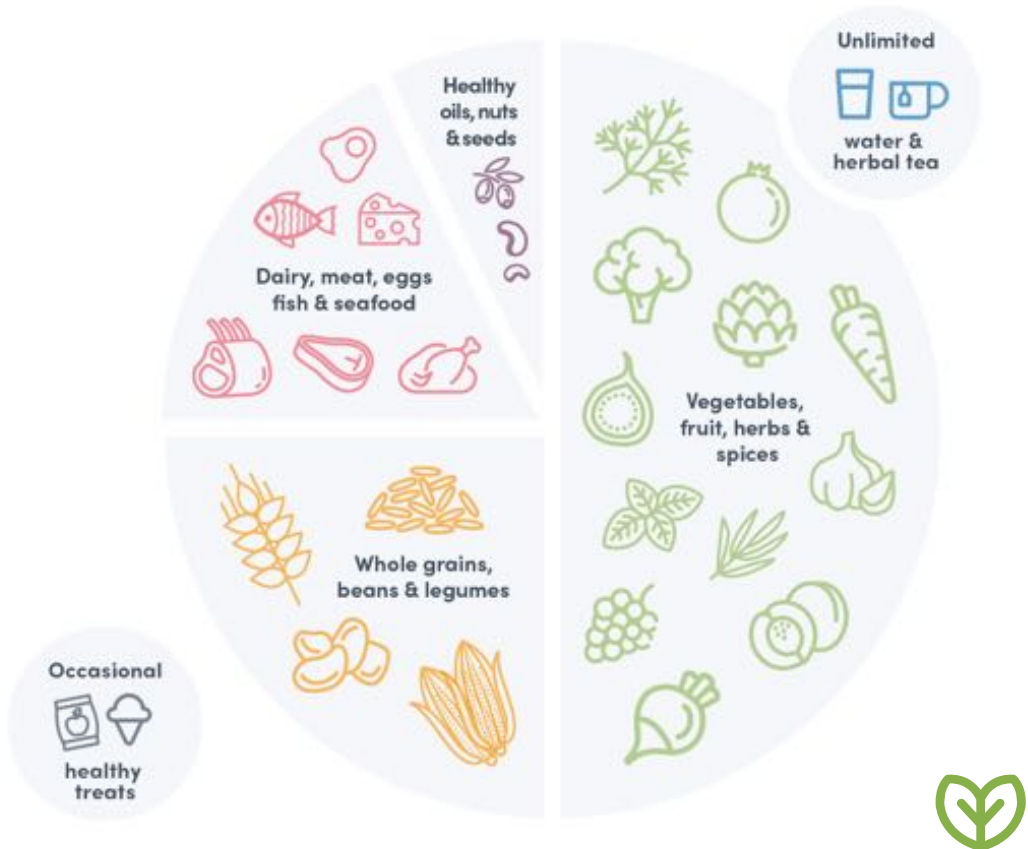
Refer to the phytonutrients table in the 'Resources' section for common food sources and benefits.





# Components of a healthy diet

A healthy diet is one that provides adequate energy and all the necessary macro and micronutrients to maintain optimal health. The recommendations outlined below can guide your food choices and help you form healthy eating habits.



✂ Print me out and stick me on the fridge!

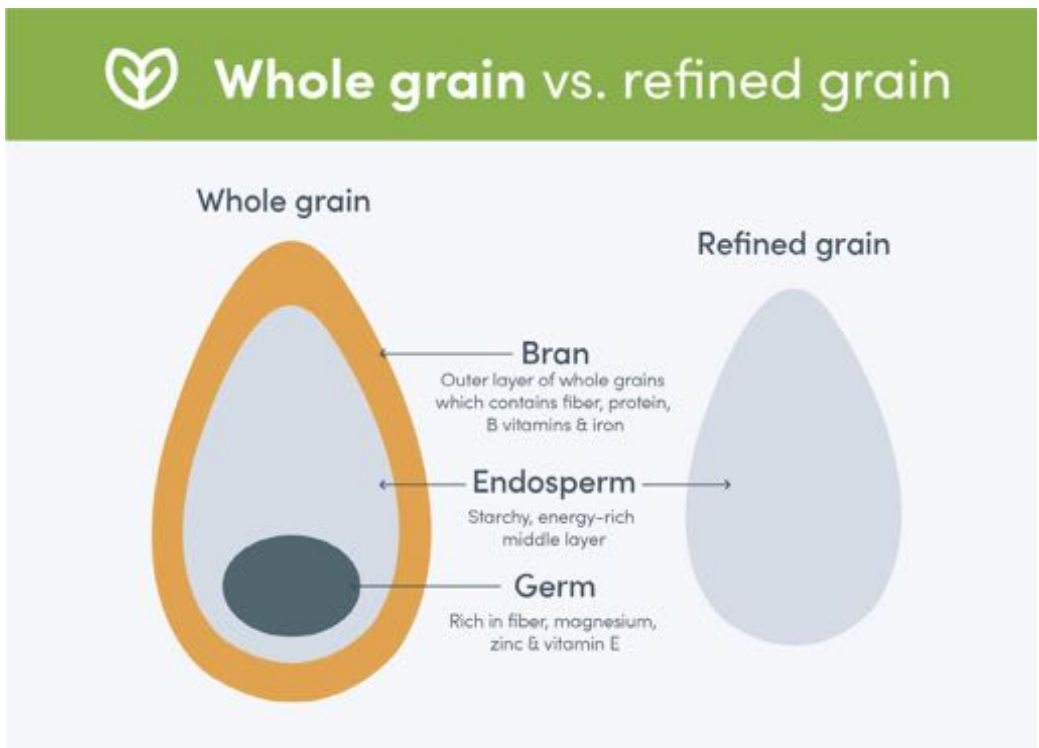
*Note: While the dietary recommendations provided in this guide are typically suitable to meet the needs of the general population, special diets may be required for certain individuals based on life stage, state of health (or disease), food allergies and sensitivities, or other individual needs. An integrative health practitioner can help monitor your health and determine the diet best suited to your individual needs.*

# 6 tips to following a healthy diet

## Eat a variety of good quality, whole, unprocessed foods

When choosing foods, whole, unprocessed foods are the way to go. Many foods are minimally processed (e.g., bagged lettuce and frozen fruit), which differ from ultra-processed foods. Ultra-processed foods often contain added sugar, salt, preservatives, artificial flavors, and colors. If the ingredient

list is long or if there are ingredients you don't recognize, that's a good sign the product is ultra-processed. Choose foods that are closest to how they're found in nature, such as a whole grain brown rice instead of white rice. Whole grains are rich in vitamins and minerals compared to refined grains.





## Choose organic

When possible, choose organic produce instead of conventionally grown produce. Buying organic produce can help decrease your exposure to herbicides and pesticides, which have been linked to cancer, as well as certain neurological, reproductive, endocrine, respiratory, and immunological conditions. In addition to produce, choose organic grains, legumes, dairy, and animal proteins to further reduce exposure to herbicides and pesticides.

Consulting the most recent version of the Clean Fifteen and Dirty Dozen lists can help you make healthier choices when choosing your produce. This list, released annually by the Environmental Working Group (EWG), identifies the top twelve fruits and vegetables with the highest pesticide residue and the top fifteen with the least residue. Refer to the 'Resources' section of this guide for a complete list.



# Always read food labels

The details on food labels can be used as a tool to help you make the best food choices possible. All ingredients are listed in order of predominance by weight, from the most abundant to the least abundant ingredient. Search for items that have a minimal number of listed ingredients that you can recognize. Pay close attention to serving sizes, calories, daily values, and added sugars.

Sugar comes in many forms and can be listed in various ways on food labels, which can make added sugars difficult to identify. Be sure to check nutrition labels for hidden sources of sugar, even in foods you might not expect to find them, such as condiments, table salt, protein bars, and crackers.

Additionally, food additives are frequently found in packaged foods to improve appearance, flavor, and shelf life.

Misleading health claims on products are also commonplace. Health claims are often used for marketing purposes by food manufacturers to highlight ingredients in a product and make their product appear healthier than it might be. For help identifying added sugars, additives, and health claims on food labels, refer to the diagram below for help deciphering the information on nutrition facts labels and to the 'Resources' section for additional information.

## Understanding the Nutrition Facts label

Nutrition Facts	
8 servings per container	
<b>Servings size</b> 2/3 cup (55g)	
Amount per serving	
<b>Calories</b> 230	
% Daily Value*	
<b>Total Fat</b> 6g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 160mg	7%
<b>Total Carbohydrate</b> 37g	13%
Dietary Fiber 4g	14%
<b>Total Sugars</b> 12g	
Includes 10g Added Sugars	20%
<b>Protein</b> 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a healthy diet. 2,000 calories a day is used for general nutrition advice.

**Serving size:** Indicates the number of servings per container and the individual serving size

**Calories:** Shows the number of calories provided in a single serving

**Amount per serving:** Nutrients with an established daily requirement will show the amount in both weight and % daily value to help you understand how you're achieving your dietary requirements

**Daily Values:** Reflects the percentage of daily nutrient requirement provided in a single serving (5% or less is low, 20% or more is high)

**Total Sugars:** Indicates the amount of both naturally-occurring and added sugar present in a single serving

**Added Sugars:** Indicates the amount of sugar from added sources in a single serving

Lists the nutrients that are generally low in current diets to help you consume enough

## Shop the perimeter of the store

The freshest and often healthiest options are found around the perimeter of the grocery store. Produce, meat, poultry, seafood, dairy, and eggs can all be found on the outer edges of most grocery stores. Stick to buying most of your food from these sections and use caution in the center aisles, end caps, and checkout lanes since highly processed foods are more likely to be kept there. There are, of course, exceptions to this rule. Other nutritious pantry staples, including beans, grains, nuts, and seeds are commonly found within the aisles. Refer to the “Resources” section for a healthy grocery shopping guide.

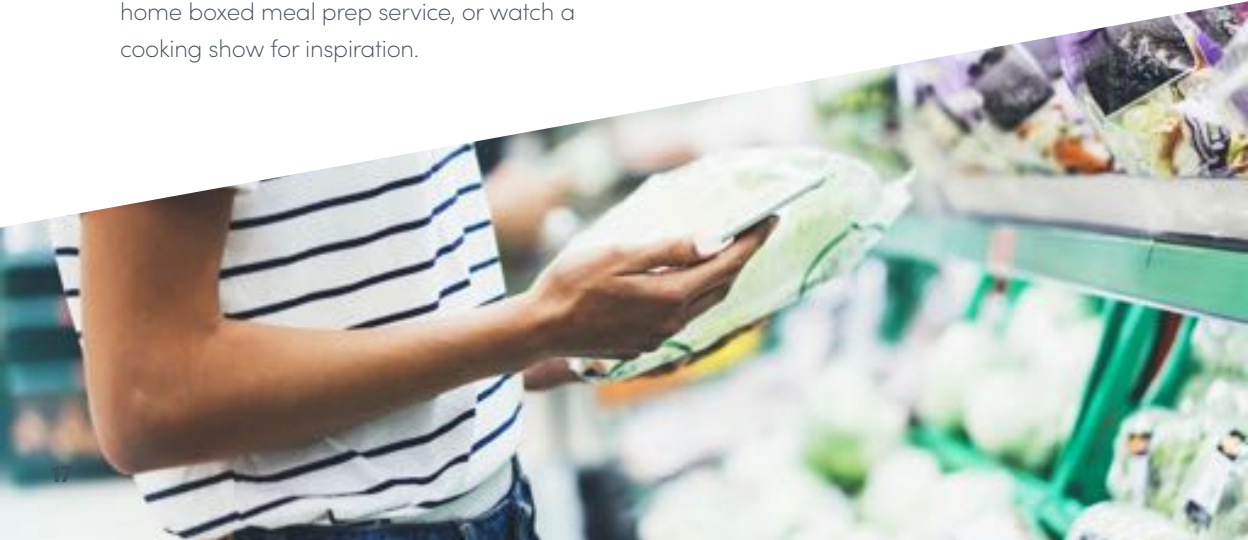
## Homemade is best

When possible, prepare the majority of your meals at home. When eating at a restaurant or purchasing prepared foods, you don't have control over the ingredients used. If you're new to cooking or aren't confident in your skills, pair up with a friend or family member who can cook with you, try an at-home boxed meal prep service, or watch a cooking show for inspiration.

Planning out your meals in advance requires time upfront, but can simplify your meal preparation throughout the week. Start by taking inventory of what's in your pantry and fridge. Plan your meals around what's readily available first and make a list of items you'll need from the store. To maximize your time, consider making multiple batches of a recipe to enjoy for a few days or to freeze for later. To help you with this process, use the weekly meal planner found in the 'Resources' section.

## Start by replacing unhealthy foods with healthier alternatives

Make simple swaps for foods in which you regularly indulge. For example, try eating air-popped popcorn instead of chips, or try fresh fruit instead of candy. Instead of concentrating on foods to remove from your diet, shift your focus to adding healthful foods to your diet. Challenge yourself to try at least one new and nutritious food each week.





## Dietary supplements

Eating a healthy diet is the best way to get the nutrients you need. However, nutrient deficiencies are more common than you might think. The Standard American diet, abundant in processed foods and lacking in nutrient-rich foods and variety, is a common culprit. Dietary supplements can help with filling in any nutritional gaps in your diet. Whether you're looking to maintain or improve your health, there are many supplements that can help. Striking a proper

balance between good nutrition and supplementation can ensure you're obtaining the recommended nutrient amounts each day.

Supplements including herbs, vitamins, and minerals may also be used to address certain health conditions. Consult your integrative healthcare practitioner for supplement recommendations tailored to your individual needs.

## Physical activity

We're often told about the benefits of physical activity and it is arguably one of the most beneficial and impactful things you can do to improve your health. Physical activity includes any bodily movement that improves cardiovascular conditioning, muscle strength, and/or flexibility.

The benefits of regular physical activity include:

- Better stress management
- Better weight management
- Elevated mood
- Greater flexibility and balance
- Improved glucose tolerance
- Improved memory and cognition
- Improved self esteem
- Increased bone mass and muscle strength
- Increased HDL (healthy) cholesterol and reduced LDL (bad) cholesterol
- Reduced blood pressure and resting heart rate
- Reduced risk of chronic conditions (e.g., heart disease, diabetes, cancer)

Exercise recommendations vary based on age and ability. For detailed exercise guidelines, refer to the 'Resources' section of this guide.



# 6 tips for incorporating exercise into your daily life

## Move often

Get up every hour if you work at a desk, go for a walk after dinner, or find an active hobby such as gardening or hiking.

## Move early

If it works for your schedule, exercise first thing in the morning before other responsibilities or distractions interfere.

## Schedule movement

Schedule exercising into your day as you would any other event. Add workouts to your calendar and set reminders for yourself.

## Make movement enjoyable

Find activities you enjoy and experiment with different types of exercises until you find a few that you like.

## Include family and friends

To stay motivated, involve friends, family members, or coworkers.

## Be realistic

Set realistic, attainable goals for yourself. Start small and build upon your goals once you've reached them.





# The role of sleep in health

Getting enough sleep is essential for good health, but many of us either don't get the minimum recommended hours of sleep each night or our sleep quality is sub-optimal.

Sleep affects almost every part of the body, including the lungs, heart, brain, and processes such as mood, immune function, and metabolism. Chronic poor-quality sleep or lack of sleep is associated with health conditions such as high blood pressure, cardiovascular disease, depression, obesity, and diabetes.

Regular, good-quality sleep has been shown to:

- Improve concentration
- Promote a healthy immune system
- Support brain functions, including removing toxin buildup in the brain, and helping create new memories
- Support emotional well-being
- Support physical health (e.g., aids in repairing tissue)

**The American Academy of Sleep Medicine & the Sleep Research Society recommend the following:**

Age group	Recommended hours of sleep per day
4-12 months	12-16 hours (including naps)
1-2 years	11-14 hours (including naps)
3-5 years	10-13 hours (including naps)
6-12 years	9-12 hours
13-18 years	8-10 hours
18+ years	7 or more hours

# 7 lifestyle tips for better sleep

Sleep hygiene is a collective group of habits you can use to improve your sleep.

## Follow a regular sleep schedule

Insomnia and poor sleep have been associated with an irregular sleep schedule. Establishing a regular bedtime routine, as well as consistent bedtimes and wake times can be helpful. A relaxing bedtime routine may include meditation, light stretching, a warm shower or bath, reading a paper book, and autonomous sensory meridian response (ASMR) stimulation.

### Did you know?

**ASMR is a sensory experience triggered by auditory or visual stimuli. It is characterized by a calming “tingling” feeling in the neck or scalp areas.**

## Create an environment conducive to better sleep

Excess noise in the bedroom should be reduced as it may increase nighttime arousals and contribute to insomnia. Engaging in highly demanding activities or using screens (e.g., TV, cellphones, computers) in the bedroom should also be avoided. Purchasing a proper mattress and pillow, maintaining a comfortable temperature

(e.g., between 60 and 67 degrees), and utilizing humidifiers, fans or “white noise” machines, earplugs, and blackout curtains are all techniques that may contribute to a more comfortable and relaxing environment.

## Avoid stimulants & other substances that may impair sleep

Consuming caffeine, nicotine, and alcohol, particularly close to bedtime, may contribute to sleep difficulties. The effects of caffeinated beverages, such as black tea, coffee, and soda, may last several hours after intake. Citrus fruit and very heavy, rich, or spicy foods may also contribute to sleep disruption in some individuals prone to digestive issues when consumed close to bedtime. Sleep disturbances may also occur as a side-effect of certain over-the-counter or prescription medications.

### Did you know?

**The stimulant effects of caffeine kick in quickly and reach their peak within 30 to 60 minutes. You may continue to experience effects of caffeine for the duration it is in your system, which is approximately three to five hours.**

## Avoid napping during the day

Daytime naps may result in difficulty falling asleep and fragmented sleep patterns, which may contribute to sleep deprivation and insomnia. If a nap is required, the National Sleep Foundation recommends limiting daytime naps to a maximum of 30 minutes.

## Ensure adequate exposure to sunlight

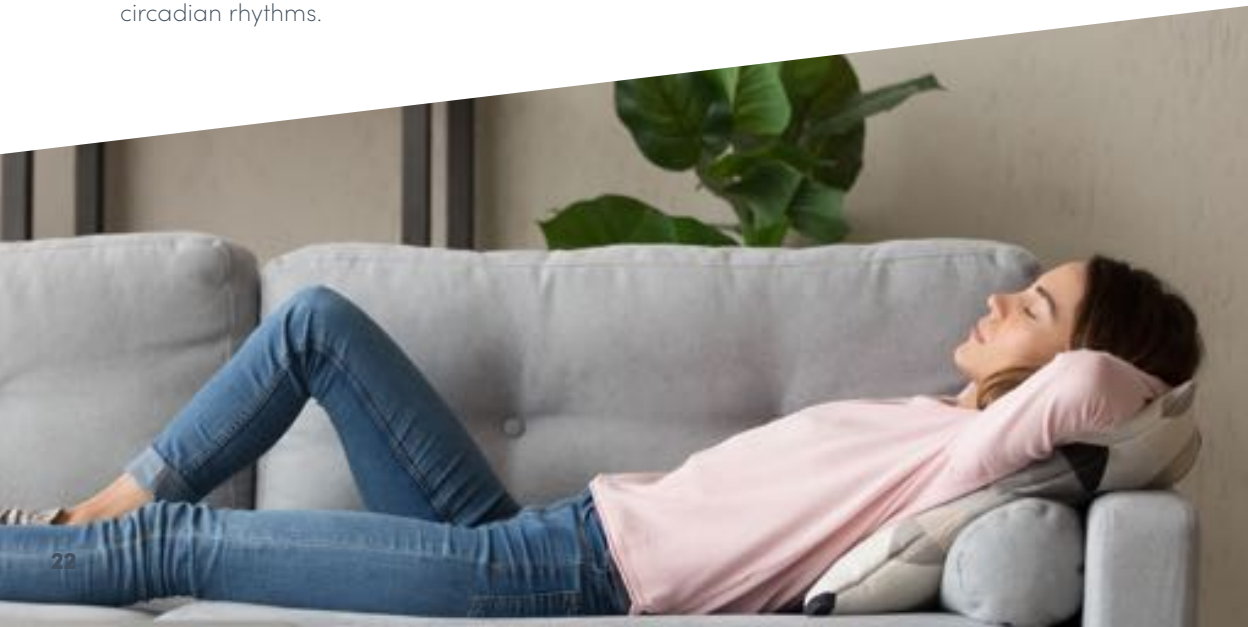
Exposure to natural light and darkness helps to regulate healthy sleep-wake cycles. Additionally, vitamin D deficiency has been associated with sleep disorders and symptoms such as short sleep duration, poor sleep quality, and sleepiness. Allowing natural light in the house and spending time outdoors during the day, even in colder climates, may help reduce the risk of vitamin D deficiency, improve sensitivity to light, and help synchronize the body's circadian rhythms.

## Engage in regular physical activity

Regular exercise may help improve sleep in both healthy individuals and those with sleep concerns. Although some sleep recommendations suggest that exercise too close to bedtime may interfere with sleep, research in healthy individuals has found that nighttime exercise did not disrupt sleep. For exercise recommendations, refer to the physical activity guidelines in the 'Resources' section.

## Incorporate stress management & relaxation techniques

Psychosocial stress has been shown to negatively impact sleep. To minimize exposure to stress, incorporate stress management and relaxation techniques. Refer to the stress and relaxation section of this guide for more information.





# Environmental health

Toxin exposure can occur through several ways, including inhalation of airborne toxins, olfactory transmission (smell), and dermally through skin contact. The good news is the body has built-in detoxification systems to help neutralize and remove these potentially harmful substances. The primary organ responsible for detoxification is the liver, which converts fat-soluble toxins into water-soluble waste products. These waste products can then be eliminated from the body via the feces, urine, sweat, and respiration.

While the detoxification systems can handle normal exposure to toxins, overexposure or accumulation of toxins in the body can contribute to a number of chronic health conditions, including immune dysfunction and autoimmune disease, cardiovascular conditions, neurocognitive conditions, cancer, and metabolic conditions such as obesity and diabetes.

## Air quality & pollution

The primary sources of air pollution include fossil fuel combustion for transportation, industry and factory pollutants (e.g., carbon monoxide, hydrocarbons, lead) and home heating and cooling. Outdoor air pollution may exacerbate asthma, increase sensitivity to allergens, and increase the risk of cardiovascular events such as stroke and arrhythmia (irregular heart rate or rhythm).

Reduce exposure by regularly spending time in nature away from major roadways and city pollution.

Indoor air pollutants also pose a risk. Short-term effects can include headaches, fatigue, dizziness, and irritation of the eyes, nose, and throat. Repeated or long-term periods of exposure to indoor pollutants may result in long-term health effects such as heart disease, cancer, and certain respiratory diseases. Ways to improve indoor air quality include:

- Eliminate individual sources of pollution (e.g., have professionals seal sources of asbestos, tighten joints/gaskets on gas stoves to ensure there isn't leakage, screen your home for mold)
- Regularly open windows and doors
- Improve ventilation through heating, ventilation, and air conditioning systems (HVAC) (included in many designs for new homes)
- Use a portable air cleaner and/or upgrade the air filter in your furnace or central heating, ventilation, and air-conditioning (HVAC) system
- Choose environmentally friendly building products, such as low VOC paint or installing hardwood flooring instead of carpets

## Water quality

Using a water filter can help remove toxins found in your water, such as fluoride, heavy metals (e.g., mercury, copper, cadmium), pesticides and herbicides, pharmaceutical residues, and volatile organic compounds (VOCs). Refer to the 'Resources' section for a table comparing different water filtering technologies based on information from EWG.

## Personal care & cleaning products

Many of the personal care products we use every day, including shampoos, soaps, lotions, and cosmetics, contain harmful chemicals like parabens and phthalates. Look for products that are labeled organic and free of these harmful chemicals.

When it comes to household cleaners, try making your own. It's easy, inexpensive, and, in most cases, you can make them with everyday ingredients you already have at home. Ingredients like baking soda, vinegar, and citric acid can help get rid of unwanted microorganisms without compromising your health. Certain antimicrobial essential oils such as tea tree oil can also be added to your products.

EWG's [Skin Deep Guide](#) and [Guide to Healthy Cleaning](#) can help you search for safer personal care and cleaning products.

## Smoking

The carcinogenic effects of smoking and second-hand smoke are well known. Out of over 7,000 chemical compounds found in cigarettes, at least 69 have been identified as carcinogens. The chemicals found in cigarette smoke have also been associated with respiratory, cardiovascular, reproductive, and developmental dysfunction. Limit second-hand smoke exposure by avoiding designated public spaces where smoking is permitted and visit smoke-free hotels and restaurants.

If you smoke, try reducing the number of cigarettes you smoke. Research suggests that smokers who reduce the daily number of cigarettes they smoke are more likely to be successful at achieving smoking cessation. Reach out to your practitioner for guidance.

### Did you know?

**Within three years of quitting smoking, the risk of having a heart attack decreases compared to that of a nonsmoker.**



## Alcohol and drug use

Chronic alcohol use, even in moderate amounts, can weaken immune function and increase your risk of health conditions including certain cancers, high blood pressure, stroke, arrhythmias, cirrhosis of the liver, and fatty liver disease.

Short-term effects of recreational drug use include changes in blood pressure, heart rate, and mood, as well as increased risk of heart attack, stroke, psychosis, and overdose.

Effects of long-term drug use include increased risk of mental illness, cancer, HIV/AIDS, and hepatitis.

The Dietary Guidelines for Americans defines moderate alcohol consumption as having up to one drink per day for women and up to two drinks per day for men. Minimize alcohol and drug use and, if needed, seek professional support for substance abuse.

## Social well-being

**As humans, we seek connection and meaningful relationships with others for the span of our lifetime. Despite technology designed to connect us at all times, many of us are more lonely than ever. Social isolation and loneliness is a common stressor and can increase the risk for many health conditions, including chronic inflammation, hypertension, and depression.**

Social well-being exists when we find healthy, stable relationships and a meaningful support network. Having a strong support system and supportive relationships can reduce stress levels and improve overall health.

The longest living people located in blue zone regions prioritize relationships and strong social networks, which contributes to their longevity. Individuals in Okinawa, Japan,

for example, develop lifelong friendships in designated groups of five, each committed to supporting one another's healthy behaviors. These groups, referred to as their moai, serve as a second family and they meet regularly to socialize and pool resources. Building social circles with other health conscious people, like Okinawans do, can help support your goals and give you a clear sense of purpose.

# Mental & emotional well-being

Your mental health, which includes your emotional, psychological, and social well-being, affects nearly every aspect of your life. It affects how you perceive and react to the world around you. Mental health issues can arise at any age and can be influenced by genes, life experiences, and lifestyle factors.

Factors that affect mental health:

- Environmental toxin exposure (e.g., lead, tobacco smoke)
- Family history or genetics
- Lifestyle (e.g., drug use, poor diet)
- Physical causes (e.g., brain injury, chronic illness, nutrient status)
- Trauma

Tips to support mental health include:

- Develop effective coping skills, such as mindfulness and meditation
- Engage in consistent exercise
- Get enough quality sleep
- Maintain social connectedness
- Seek professional help when needed

## Did you know?

**One in five people live with a mental illness, according to the National Institutes of Health.**

Furthermore, mental and emotional health are supported by effective stress management skills and a conscious effort to seek purpose in life.





## Stress & relaxation

Stress is defined as any disturbance that results in a stress response in the body. Examples of stressors include exposure to heat or cold, chemical toxins, pathogenic microorganisms, and physical or emotional trauma. Unaddressed chronic stress can contribute to a number of stress-related health conditions, such as anxiety, depression, hypertension, heart disease, memory impairment, chronic fatigue syndrome, and metabolic syndrome.

Practices to help you manage your stress include:

- Eating a healthy, balanced diet
- Engaging in regular exercise
- Practicing meditation and deep breathing
- Practicing progressive relaxation
- Prioritizing time management and communication

### Did you know?

**If you find yourself experiencing anxiety or other negative emotions, meditation may help shift your mindset.**

## Mindfulness & meditation

Mindfulness and meditation are common strategies used to combat stress.

Mindfulness is described as the quality of being focused and present in the moment, while meditation is a set of techniques that are intended to provide mental clarity and a calm state of mind.

The benefits of mindfulness and meditation include:

- Improved symptoms of anxiety and depression
- Improved weight management and obesity-related eating behaviors
- Reduced pain perception and improved mobility in individuals with chronic pain
- Improved sleep quality and duration associated with insomnia

# Mindfulness tips

**Mindfulness is a mental state defined as: the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment.**

**Developing mindfulness involves formal practices, such as sitting meditation, body scanning, and mindful movement, as well as informal mindfulness, where the practice is integrated into everyday activities such as commuting or doing dishes.**

## Start slowly

Some of the challenges individuals commonly report with mindfulness practice include a lack of motivation and insufficient time. If you're new to mindfulness, you can start with meditating for one to three minutes per day, gradually building up from there. It may be helpful to incorporate mindfulness practices consistently at the same time each day to establish a regular routine.

## Be patient with yourself

Remind yourself that mindfulness practice shouldn't be focused on an outcome, but on the experience itself. According to John Kabat-Zinn, a pioneer in contemporary mindfulness research and practice, "from the outset of practice, we are reminded that mindfulness is not about getting anywhere else or fixing anything. Rather, it is an invitation to allow oneself to be where one already is and to know the inner and outer landscape of the direct experience in each moment."

## Try different types of mindfulness practice

Discovering the mindfulness practices best suited to your lifestyle and preferences can help you stay committed long-term. Fortunately, there are many different types of mindfulness and meditation practices. You may want to try a variety of activities, ranging from informal mindfulness during your daily commute to guided mindfulness meditation or physical yoga classes.

## Use a mindfulness app

A number of mobile mindfulness apps exist, helping you learn mindfulness techniques and stay accountable. Many apps are free, with optional in-app purchases for additional features.



## Spiritual well-being

Spirituality is a broad concept that simply means having a sense of connection to something greater than yourself. How you practice spirituality is unique to you and there's no universal definition. You may choose to practice spirituality in a place of worship or to seek interconnectedness within your home or in nature.

Spirituality is often associated with having a defined purpose in life. Research suggests that having a strong purpose in life is associated with longevity and better health outcomes. Additionally, those who practice spirituality are often more compassionate and gracious. Ask yourself where you find true meaning and value in life. Dig deeper by exploring what interests you, helping others in need, or considering what social

issues bother you. There are no right or wrong answers.

As mentioned earlier, individuals in blue zones commonly belong to faith-based communities of any denomination. Research has also shown that individuals who attend weekly faith-based services may extend their life expectancy by four to 14 years.



# Career & financial well-being

Career well-being isn't just about enjoying what you do for a living, it's also about finding fulfillment and feeling appreciated for the work you do. A large portion of your life may be spent at work and job dissatisfaction can have an impact on your health. Psychological issues including chronic stress, depression, and emotional exhaustion (burnout) are common issues in the workplace.

Signs of career dissatisfaction include lack of motivation, feeling resentful about your current role and prospects, and feeling misunderstood by your peers and leadership. Reflect on what's most important to you, find your strengths, and seek out areas upon which you can improve. Consider if your current career complements your goals and life purpose.

## Managing your finances

Financial wellness involves effectively managing your finances and having a sense of security. Poor financial stability can be a significant source of stress, leaving you vulnerable to stress-related conditions such as type 2 diabetes, hypertension, and heart disease.

Healthy habits for financial well-being include:

- Create a monthly budget to determine how to allocate your money
- Spend less money than you earn
- Prioritize saving for the future
- Pay off debt and resist borrowing money for non-essential expenses
- Set specific and achievable financial goals for yourself

Try a budgeting app to help you track your finances, and seek out professional guidance when needed. For accessible financial advice, look to community-based financial services programs, or check with your financial institution to see what is offered.





# Resources



# Estimated energy requirements specific to gender, age & activity level

Gender	Age	Sedentary (kcal/day)	Moderately active (kcal/day)	Active (kcal/day)
<b>Female</b>	2-3	1,000	1,000-1,400	1,000-1,400
	4-8	1,200	1,400-1,600	1,400-1,800
	9-13	1,600	1,600-2,000	1,800-2,000
	14-18	1,800	2,000	2,400
	19-30	2,000	2,000-2,200	2,400
	31-50	1,800	2,000	2,200
	51+	1,600	1,800	2,000-2,200
<b>Male</b>	2-3	1,000	1,000-1,400	1,000-1,400
	4-8	1,400	1,400-1,600	1,600-2,000
	9-13	1,800	1,800-2,200	2,000-2,600
	14-18	2,200	2,600-2,800	2,800-3,200
	19-30	2,400	2,600-2,800	3,000
	31-50	2,200	2,400-2,600	2,800-3,000
	51+	2,000	2,200-2,400	2,400-2,800

**Sedentary:** light physical activity (related to basic activities of daily living) and sitting for most of the day

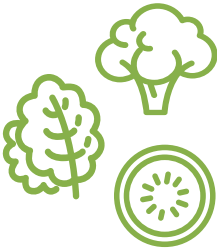
**Moderately active:** daily activities and walking up to three miles per day

**Active:** walking more than three miles per day in addition to basic activities of daily living

# Phytonutrients: food sources & benefits

	Phytonutrients	Food sources	Benefits
	<ul style="list-style-type: none"> <li>Anthocyanidins</li> <li>Carotenoids</li> <li>Ellagitannins</li> <li>Fisetin</li> <li>Flavonols</li> <li>Lycopene</li> <li>Proanthocyanidins</li> <li>Quercetin</li> </ul>	<ul style="list-style-type: none"> <li>Cherries</li> <li>Beets</li> <li>Pink grapefruit</li> <li>Pomegranates</li> <li>Radishes</li> <li>Red apples</li> <li>Red berries</li> <li>Red grapes</li> </ul>	<ul style="list-style-type: none"> <li>Anti-inflammatory</li> <li>Antioxidant</li> <li>Cancer prevention</li> <li>DNA health</li> <li>Heart health</li> <li>Immune health</li> </ul>
	<ul style="list-style-type: none"> <li>Alpha-carotene</li> <li>Beta-carotene</li> <li>Beta-cryptoxanthin</li> <li>Bioflavonoids</li> <li>Carotenoids</li> <li>Curcuminoids</li> <li>Naringenin</li> </ul>	<ul style="list-style-type: none"> <li>Bell peppers</li> <li>Butternut squash</li> <li>Cantaloupe</li> <li>Carrots</li> <li>Mango</li> <li>Oranges</li> <li>Sweet potato</li> <li>Turmeric</li> </ul>	<ul style="list-style-type: none"> <li>Anti-bacterial</li> <li>Anti-inflammatory</li> <li>Cancer prevention</li> <li>Immune health</li> <li>Reproductive health</li> <li>Skin health</li> </ul>
	<ul style="list-style-type: none"> <li>Lutein</li> <li>Zeaxanthin</li> </ul>	<ul style="list-style-type: none"> <li>Apples</li> <li>Banana</li> <li>Corn</li> <li>Grapefruit</li> <li>Lemons</li> <li>Pears</li> <li>Pineapple</li> <li>Plantains</li> <li>Squash</li> </ul>	<ul style="list-style-type: none"> <li>Anti-inflammatory</li> <li>Antioxidant</li> <li>Cognitive health</li> <li>Heart health</li> <li>Eye health</li> <li>Skin health</li> </ul>

# Phytonutrients: food sources & benefits

	Phytonutrients	Food sources	Benefits
	<ul style="list-style-type: none"> <li>Beta-carotene</li> <li>Chlorophyll</li> <li>Flavones</li> <li>Flavonols</li> <li>Glucosinolates</li> <li>Phenols</li> <li>Phytosterols</li> <li>Sulforaphane</li> </ul>	<ul style="list-style-type: none"> <li>Asparagus</li> <li>Avocado</li> <li>Broccoli</li> <li>Celery</li> <li>Cucumbers</li> <li>Green grapes</li> <li>Kiwi</li> <li>Leafy greens and herbs</li> </ul>	<ul style="list-style-type: none"> <li>Anti-inflammatory</li> <li>Cancer prevention</li> <li>Cognitive health</li> <li>Hormone balance</li> <li>Liver health</li> <li>Skin health</li> </ul>

	<ul style="list-style-type: none"> <li>Anthocyanidins</li> <li>Hydroxystilbenes</li> <li>Proanthocyanidins</li> <li>Pterostilbene</li> <li>Resveratro</li> </ul>	<ul style="list-style-type: none"> <li>Blackberries</li> <li>Blueberries</li> <li>Eggplant</li> <li>Figs</li> <li>Grapes</li> <li>Plums</li> <li>Purple cabbage</li> <li>Purple sweet potatoes</li> </ul>	<ul style="list-style-type: none"> <li>Anti-inflammatory</li> <li>Antioxidant</li> <li>Blood sugar support</li> <li>Cancer prevention</li> <li>Cognitive health</li> <li>Heart health</li> </ul>
--	--	---	--

	<ul style="list-style-type: none"> <li>Allicin</li> <li>Allyl sulfides</li> <li>Lignans</li> <li>Lignins</li> <li>Phytosterols</li> <li>Sesamin</li> <li>Tannins</li> <li>Terpenoids</li> </ul>	<ul style="list-style-type: none"> <li>Cauliflower</li> <li>Coconut</li> <li>Garlic</li> <li>Ginger</li> <li>Mushrooms</li> <li>Onions</li> <li>Turnips</li> <li>Bean and lentils</li> <li>Nuts and seeds</li> <li>Whole grains</li> </ul>	<ul style="list-style-type: none"> <li>Cancer prevention</li> <li>Anti-microbial</li> <li>GI health</li> <li>Heart health</li> <li>Hormone balance</li> <li>Liver health</li> </ul>
---	---	--	---

# EWG's clean fifteen & dirty dozen



Buying organic produce can help decrease your exposure to herbicides and pesticides. Consulting the 2020 Clean Fifteen and Dirty Dozen lists can help you make healthier choices when choosing your produce. This list, released annually by the Environmental Working Group (EWG), identifies fruits and vegetables with the highest and lowest pesticide residue.

The infographic is a vertical rectangle with a dashed border. It is divided into two main sections. The top section has a red header with the text 'EWG's dirty dozen'. Below the header, there are three columns of produce names: Strawberries, Apples, Pears; Spinach, Grapes, Tomatoes; Kale, Peaches, Celery; and Nectarines, Cherries, Potatoes. A red bar below this section contains the text 'Buy organic'. The bottom section has a green header with the text 'EWG's clean fifteen'. Below the header, there are three columns of produce names: Avocados, Sweet peas, Broccoli; Sweet Corn, Eggplant, Mushrooms; Pineapple, Asparagus, Cabbage; Onion, Cauliflower, Honeydew melon; and Papaya, Cantaloupe, Kiwi. A green bar below this section contains the text 'Buy conventional or organic'.

EWG's dirty dozen		
Strawberries	Apples	Pears
Spinach	Grapes	Tomatoes
Kale	Peaches	Celery
Nectarines	Cherries	Potatoes

Buy organic

EWG's clean fifteen		
Avocados	Sweet peas	Broccoli
Sweet Corn	Eggplant	Mushrooms
Pineapple	Asparagus	Cabbage
Onion	Cauliflower	Honeydew melon
Papaya	Cantaloupe	Kiwi

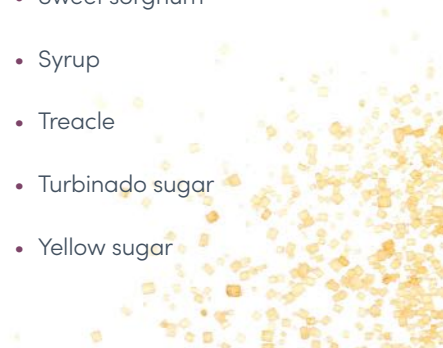
Buy conventional or organic

✂ Cut me out and keep me in your wallet!

# Hidden sugars list

Did you know that there are over 60 different names for sugar? Typically, you will be able to recognize if an ingredient is present in a food by referring to the ingredient label. However, certain dietary ingredients may be listed under a different name or may be derived from a certain food, making them difficult to recognize. The Mediterranean diet limits the intake of added sugars, which include:

- Agave nectar
- Barbados sugar
- Barley malt
- Barley malt syrup
- Beet sugar
- Brown sugar
- Buttered syrup
- Cane juice
- Cane juice crystals
- Cane sugar
- Caramel
- Carob syrup
- Castor sugar
- Confectioner's sugar
- Corn sweetener
- Corn syrup
- Corn syrup solids
- Date sugar
- Dehydrated cane juice
- Demerara sugar
- Dextrin
- Dextrose
- Evaporated cane juice
- Fructose
- Fruit juice
- Fruit juice concentrate
- Glucose
- Golden sugar
- Golden syrup
- Granulated sugar
- Grape sugar
- High-fructose corn syrup
- Icing sugar
- Invert sugar
- Malt syrup
- Maltodextrin
- Maltol
- Maltose
- Mannose
- Molasses
- Muscovado
- Panocha
- Powdered sugar
- Raw sugar
- Refiner's syrup
- Rice syrup
- Saccharose
- Sorghum syrup
- Sucrose
- Sweet sorghum
- Syrup
- Treacle
- Turbinado sugar
- Yellow sugar



# Common food additives

Additive	Function	Common names	Common sources	Concerns
<b>Artificial food coloring</b>	Coloring	FD&C Blue No. 1, FD&C Red No. 40, FD&C Yellow No. 5	Candy, desserts, packaged snack foods, soda	May cause hyperactivity in some children
<b>Artificial sweeteners</b>	Sweetener	Sucralose (Splenda), aspartame (Equal), saccharin (Sweet 'N Low), acesulfame-K (Sunnett)	Chewing gum, diet beverages, zero-calorie snacks and candies	Daily consumption of artificially sweetened beverages may increase risk of metabolic syndrome and type 2 diabetes
<b>Carrageenan</b>	Emulsifier	N/A	Ice cream, dairy products, margarine, chocolate, non-dairy beverages	May increase inflammation
<b>Guar gum</b>	Thickener	N/A	Dairy products, non-dairy beverages, baked goods, condiments	May cause gas and bloating
<b>High-fructose corn syrup</b>	Sweetener	Glucose-fructose syrup	Soda, packaged snack foods, and desserts	Possible link to weight gain and diabetes
<b>Monosodium glutamate (MSG)</b>	Flavor enhancer	Glutamic acid, calcium glutamate, yeast extract	Fast food, packaged snack foods (e.g., chips, crackers), instant ramen, processed meats, seasonings and spice mixes	Safe for most people in moderation; however, those with MSG sensitivities may experience headache or mood changes
<b>Sodium nitrate</b>	Preservative	N/A	Processed meats (e.g., bacon, deli meats, beef jerky, hot dogs, sausage)	High intake increases risk of colorectal cancer
<b>Xanthan gum</b>	Thickener	N/A	Salad dressings, condiments	May cause gas and bloating

Note: The food additives outlined in this table are generally recognized as safe when consumed in small quantities.

# Health claims

Claim	Meaning
<b>All natural</b>	Product comes from a natural source, but may contain genetically modified ingredients, hormones, antibiotics, or chemicals.
<b>Fat-free</b>	Contains less than 0.5 g of fat
<b>Gluten-free</b>	Product must contain less than 20 ppm of gluten
<b>Light/lite</b>	Contains one third fewer calories than original product
<b>Low calorie</b>	40 calories or less per serving
<b>Low sodium</b>	Contains less than 140 mg of sodium
<b>Multigrain</b>	Contains multiple types of grains, not necessarily whole grains
<b>Made with real fruit</b>	Contains real fruit or fruit juice, but no minimum amount required
<b>Reduced fat/calories/sugar</b>	Contains at least 25% less fat, calories, or sugar than the original product





# Grocery shopping list

The following list includes whole foods that can support your health goals. This list can be printed and used as a resource when shopping.

## Vegetables

- Artichoke
- Asparagus
- Beets
- Bok choy
- Broccoli
- Brussels sprouts
- Cabbage
- Carrots
- Cauliflower
- Celery
- Chard
- Collards
- Cucumbers
- Endives
- Fennel
- Garlic
- Green beans
- Kale
- Leek
- Okra
- Onion
- Oyster mushrooms
- Parsnips
- Peas
- Pumpkin
- Radishes
- Shiitake mushrooms
- Sweet potatoes
- Turnips, turnip greens
- Watercress
- Button mushrooms
- Yams
- Zucchini

## Fruits

- Apples
- Bell peppers
- Blueberries
- Goji berries
- Grapefruit
- Grapes
- Kiwi
- Lemon
- Orange
- Raspberries
- Strawberries
- Tomatoes

## Grains, pseudograins & flours

- Amaranth
- Barley
- Brown rice
- Buckwheat
- Farro
- Oats
- Quinoa
- Whole wheat

## Beans & legumes

- Adzuki beans
- Black beans
- Black-eyed peas
- Fava beans
- Garbanzo beans
- Kidney beans.
- Lentils
- Peanuts
- Pinto beans
- Soybeans
- Split peas
- Tofu

## Nuts & seeds

- Almonds
- Brazil nuts
- Cashews
- Chia seeds
- Flaxseeds
- Hazelnuts
- Macadamia nuts
- Pumpkin seeds
- Spinach
- Sunflower seeds
- Walnuts

## Oils

- Cod liver oil
- Virgin avocado oil
- Extra virgin olive oil
- Virgin coconut oil

## Meat, eggs, fish & shellfish

- Beef, beef liver
- Chicken
- Eggs
- Crab
- Herring
- Lobster
- Mackerel
- Oyster
- Pork
- Salmon
- Sardines
- Swordfish
- Tuna
- Trout

## Sweeteners

- Coconut sugar
- Honey (raw)
- Monk fruit (lakanto)
- Pure maple syrup
- Purified stevia extract
- Stevia

## Fermented foods

- Kefir
- Kimchi
- Kombucha
- Miso
- Pickled vegetables (unpasteurized)
- Sauerkraut
- Tempeh
- Yogurt

## Herbs & spices

- Anise
- Basil
- Black pepper
- Caraway
- Cayenne pepper
- Cinnamon
- Clove
- Cumin
- Fenugreek
- Garlic
- Ginger
- Mint
- Oregano
- Peppermint
- Rosemary
- Sage
- Thyme
- Turmeric

## Vinegars

- Apple cider vinegar
- Balsamic vinegar
- Red wine vinegar
- White wine vinegar

## Teas

- Chamomile
- Dandelion root
- Ginger
- Green tea
- Lavender
- Nettle
- Oolong tea
- Peppermint
- Rooibos
- Thistle
- Turmeric
- White tea

## Notes

# Weekly meal planner



Week of \_\_\_\_\_

Day	Breakfast	Lunch	Dinner
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

## Items to use up this week

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## Grocery list

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

# Physical activity guidelines

Population	Type of activity	Activity frequency	Activity duration (minimum)
<b>Children 3 to 5</b>	Active play (variety of activities)	Daily	Unlimited throughout the day
<b>Children 6 to 17</b>	Aerobic	Daily	60 minutes /day; aerobic activity should make up most of the 60 minutes
	Muscle-strengthening	3 or more days /week	
	Bone-strengthening	3 or more days /week	
<b>Adults</b>	Moderate intensity aerobic	Spread throughout the week	150 to 300 minutes /week
	Muscle-strengthening; involving all major muscle groups	2 or more days /week	
<b>Older adults</b>	A combination of:  Balance training, aerobic activity, muscle-strengthening, and bone-strengthening  Intensity should be determined by individual level of fitness	Spread throughout the week	150 minutes /week

The information provided in this table is based on recommendations from U.S. Department of Health and Human Services Physical Activity Guidelines for Americans, 2nd edition. Please note that individual recommendations may vary depending on health status, life events (e.g., pregnancy), and health conditions.

## Physical activity examples

- **Muscle-strengthening activities:** lifting weights, hiking, climbing stairs, working with resistance bands, body weight exercises (e.g., pushups, squats)
- **Aerobic activities:** brisk walking, jogging, dancing, swimming, tennis, cycling, ice skating
- **Balance training:** tai chi, yoga, pilates, using a stability ball or balance board
- **Bone-strengthening activities:** jumping jacks, jumping rope, lifting weights, skipping, running

# A comparison of water filtration systems

Technology	How it works	Pros	Cons
<b>Carbon/activated carbon</b>	<p>Chemically bonds with contaminants</p> <p>Carbon block: activated carbon shaped into blocks under high pressure; more effective due to higher surface area</p> <p>Granulated activated carbon: Fine grains of activated carbon; less effectiveness due to smaller surface area</p>	<p>Removes chlorine</p> <p>Improves taste</p> <p>Some will remove asbestos, lead, mercury, and/or VOCs</p>	<p>Varies in effectiveness</p> <p>Does not remove inorganic pollutants (i.e., arsenic, fluoride, hexavalent chromium, nitrate, perchlorate)</p> <p>Not all will remove asbestos, lead, mercury, and/or VOCs</p>
<b>Ceramic</b>	Tiny holes to filter water, but blocks certain contaminants	Removes solid contaminants (i.e., cysts, sediments)	Does not remove chemical contaminants
<b>Deionization</b>	Uses ion-exchange to remove certain contaminants	Removes mineral salts and other electrically charged molecules or ions	Does not remove microorganisms, non-ionic contaminants (i.e., VOCs)
<b>Distillation</b>	Uses heat to evaporate water and condenses steam back to water	Removes many bacteria, viruses, and chemicals with a higher boiling point than water	<p>May remove beneficial minerals</p> <p>Does not remove chlorine, trihalomethanes or VOCs</p>
<b>Ion exchange</b>	Replaces undesirable ions with desirable ions by passing water over a resin (i.e., water softeners)	Removes undesirable ions	Ions in resin must be replaced periodically

# A comparison of water filtration systems

Technology	How it works	Pros	Cons
<b>Mechanical filters</b>	<p>Use tiny holes to filter water but block certain contaminants</p> <p>Often used with other filtering methods</p>	Removes solid contaminants (i.e., cysts, sediments)	Does not remove chemical contaminants
<b>Ozone</b>	<p>Uses ozone to kill bacteria and other microorganisms</p> <p>Often used with other filtering methods</p>	Kills bacteria and other microorganisms	Does not remove chemical contaminants
<b>Reverse osmosis</b>	<p>Semi-permeable membrane that filters out particles larger than water</p> <p>Many include an activated carbon component</p>	Removes contaminants not removed by activated carbon (i.e., arsenic, fluoride, hexavalent chromium, nitrates, perchlorate)	<p>Does not remove chlorine, trihalomethanes, VOCs</p> <p>Increases water waste</p>
<b>UV (ultraviolet)</b>	Kills bacteria and other microorganisms using ultraviolet light	Removes bacteria and other microorganisms	Does not remove chemical contaminants
<b>Water softeners</b>	Reduces calcium and magnesium via ion exchange; usually replaces magnesium and calcium with sodium	<p>Prevents build-up of calcium and magnesium in plumbing and fixtures</p> <p>Removes barium and certain forms of radium</p>	<p>Does not reduce remove most other contaminants</p> <p>Not suitable for some individuals due to sodium content</p> <p>Not suitable for watering plants</p>

# References

1. Abelson, A. (2011). Health effects of outdoor air pollution. *Canadian Family Physician*, 57(8), 881–887. Retrieved from
2. Alegria-Torres, J. A., Baccarelli, A., & Bollati, V. (2011). Epigenetics and lifestyle. *Epigenomics*, 3(3), 267–277. Retrieved from
3. Barrett, J. R. (2005). Chemical exposures: The ugly side of beauty products. *Environmental Health Perspectives*, 113(1). Retrieved from
4. Begh, R., Lindson-Hawley, N., & Aveyard, P. (2015). Does reduced smoking if you can't stop make any difference? *BMC Medicine*, 13(1).
5. Bhui, K., Dinos, S., Galant-Miecznikowska, M., de Jongh, B., & Stansfeld, S. (2016). Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study. *BJPsych Bulletin*, 40(6), 318–325.
6. Bidlack, W. R. (1996). Interrelationships of food, nutrition, diet and health: the National Association of State Universities and Land Grant Colleges White Paper. *Journal of the American College of Nutrition*, 15(5), 422–433.
7. Birtwell, K., Williams, K., van Marwijk, H., Armitage, C. J., & Sheffield, D. (2018). An exploration of formal and informal mindfulness practice and associations with wellbeing. *Mindfulness*, 10(1), 89–99.
8. Blazer, D. G., & Hernandez, L. M. (2006). Genes, Behavior, and the social environment: Moving beyond the nature/nurture debate (1st ed.). Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK19932/>
9. Bond, D. S., Raynor, H. A., Thomas, J. G., Unick, J., Webster, J., Ryder, B., & Vithiananthan, S. (2017). Greater adherence to recommended morning physical activity is associated with greater total intervention-related physical activity changes in bariatric surgery patients. *Journal of Physical Activity and Health*, 14(6), 492–498.
10. Booth, F. W., Roberts, C. K., & Laye, M. J. (2012). Lack of exercise is a major cause of chronic diseases. *Comprehensive Physiology*, 2(2), 1143–1211.
11. Borthakur, A., Bhattacharyya, S., Anbazhagan, A. N., Kumar, A., Dudeja, P. K., & Tobacman, J. K. (2012). Prolongation of carrageenan-induced inflammation in human colonic epithelial cells by activation of an NFκB-BCL10 loop. *Biochimica et Biophysica Acta (BBA) - Molecular Basis of Disease*, 1822(8), 1300–1307.
12. Boyd, K. M. (2000). Disease, illness, sickness, health, healing and wholeness: exploring some elusive concepts. *Medical Humanities*, 26(1), 9–17.
13. Boyle, P. A., Barnes, L. L., Buchman, A. S., & Bennett, D. A. (2009). Purpose in life is associated with mortality among community-dwelling older persons. *Psychosomatic Medicine*, 71(5), 574–579.
14. Buettner, D., & Skemp, S. (2016). Blue zones. *American Journal of Lifestyle Medicine*, 10(5), 318–321.
15. Carreiro, A. L., Dhillon, J., Gordon, S., Higgins, K. A., Jacobs, A. G., McArthur, B. M., ... Mattes, R. D. (2016). The macronutrients, appetite, and energy intake. *Annual Review of Nutrition*, 36(1), 73–103.
16. Carrière, K., Khoury, B., Günak, M. M., & Knäuper, B. (2017). Mindfulness-based interventions for weight loss: a systematic review and meta-analysis. *Obesity Reviews*, 19(2), 164–177.
17. Centers for Disease Control. (2017, March 2). How much sleep do I need?. Retrieved from [https://www.cdc.gov/sleep/about\\_sleep/how\\_much\\_sleep.html](https://www.cdc.gov/sleep/about_sleep/how_much_sleep.html)
18. Centers for Disease Control. (2020, January 15). Alcohol questions and answers. Retrieved from <https://www.cdc.gov/alcohol/faqs.htm>
19. Centers for Disease Control and Prevention. (2018, August 8). Sleep and sleep disorders. Retrieved from [https://www.cdc.gov/sleep/about\\_sleep/chronic\\_disease.html](https://www.cdc.gov/sleep/about_sleep/chronic_disease.html)
20. Conklin, A. I., Ferozhi, N. G., Surtees, P., Khaw, K.-T., Wareham, N. J., & Monsivais, P. (2014). Social relationships and healthful dietary behaviour: Evidence from over-50s in the EPIC cohort, UK. *Social Science & Medicine*, 100, 167–175.
21. Daly, J., Tomlin, J., & Read, N. W. (1993). The effect of feeding xanthan gum on colonic function in man: correlation with in vitro determinants of bacterial breakdown. *British Journal of Nutrition*, 69(3), 897–902.
22. Delgado, C. (2005). A discussion of the concept of spirituality. *Nursing Science Quarterly*, 18(2), 157–162.
23. Dobson, A. J., Alexander, H. M., Heller, R. F., & Lloyd, D. M. (1991). How soon after quitting smoking does risk of heart attack decline? *Journal of Clinical Epidemiology*, 44(11), 1247–1253.



24. Drake, D. (1997). Antibacterial activity of baking soda. *Compendium of Continuing Education in Dentistry*, 18(21), S17–S21.
25. Environmental Working Group. (n.d.-a). EWG's Shopper's Guide to Pesticides in Produce. Retrieved May 6, 2020, from <https://www.ewg.org/foodnews/clean-fifteen.php>
26. Environmental Working Group. (n.d.-b). EWG's tap water database: What about lead? . Retrieved May 6, 2020, from <https://www.ewg.org/tapwater/water-filter-guide.php>
27. Farhud, D. (2015). Impact of lifestyle on health. *Iranian Journal of Public Health*, 44(11), 1442–1444.
28. Gao, Q., Kou, T., Zhuang, B., Ren, Y., Dong, X., & Wang, Q. (2018). The association between vitamin D deficiency and sleep disorders: A systematic review and meta-analysis. *Nutrients*, 10(10), 1395.
29. Garcia, A. N., & Salloum, I. M. (2015). Polysomnographic sleep disturbances in nicotine, caffeine, alcohol, cocaine, opioid, and cannabis use: A focused review. *The American Journal on Addictions*, 24(7), 590–598.
30. Greatorex, J. S., Page, R. F., Curran, M. D., Digard, P., Enstone, J. E., Wreghitt, T., ... Nguyen-Van-Tam, J. S. (2010). Effectiveness of common household cleaning agents in reducing the viability of human influenza A/H1N1. *PLoS ONE*, 5(2), e8987.
31. Gupta, C., & Prakash, D. (2014). Phytonutrients as therapeutic agents. *Journal of Complementary and Integrative Medicine*, 11(3), 151–169.
32. Henwood, B. F., Derejko, K.-S., Couture, J., & Padgett, D. K. (2014). Maslow and mental health recovery: A comparative study of homeless programs for adults with serious mental illness. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(2), 220–228.
33. Higuchi, S., & Saito, T. (2013). Reduction in alcohol consumption: therapeutic goal in alcohol dependence treatment. *Nihon Arukoru Yakubutsu Igakkai Zasshi*, 48(1), 17–31.
34. Hodges, R. E., & Minich, D. M. (2015). Modulation of metabolic detoxification pathways using foods and food-derived components: A scientific review with clinical application. *Journal of Nutrition and Metabolism*, 2015, 1–23.
35. Horne, J. A. (1981). The effects of exercise upon sleep: A critical review. *Biological Psychology*, 12(4), 241–290.
36. Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No more FOMO: Limiting social media decreases loneliness and depression. *Journal of Social and Clinical Psychology*, 37(10), 751–768.
37. Institute of Medicine. (2005). Dietary reference intakes for water, potassium, sodium, chloride, and sulfate (1st ed.). Retrieved from [https://www.nal.usda.gov/sites/default/files/fnic\\_uploads/water\\_full\\_report.pdf](https://www.nal.usda.gov/sites/default/files/fnic_uploads/water_full_report.pdf)
38. Irish, L. A., Kline, C. E., Gunn, H. E., Buysse, D. J., & Hall, M. H. (2015). The role of sleep hygiene in promoting public health: A review of empirical evidence. *Sleep Medicine Reviews*, 22, 23–36.
39. Irwin, M., McClintick, J., Costlow, C., Fortner, M., White, J., & Gillin, J. C. (1996). Partial night sleep deprivation reduces natural killer and cellular immune responses in humans. *The FASEB Journal*, 10(5), 643–653.
40. Kassem, H. Sh., Girolami, F., & Sanoudou, D. (2012). Molecular genetics made simple. *Global Cardiology Science and Practice*, 2012(1), 6.
41. Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., ... Hofmann, S. G. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*, 33(6), 763–771. Retrieved from [https://psicoterapiabilbao.es/wp-content/uploads/2015/12/Khoury\\_2013\\_mindfulness-metaanalys.pdf](https://psicoterapiabilbao.es/wp-content/uploads/2015/12/Khoury_2013_mindfulness-metaanalys.pdf)
42. Leitzmann, C. (2016). Characteristics and health benefits of phytochemicals. *Complementary Medicine Research*, 23(2), 69–74.
43. Liao, L., He, Y., Li, L., Meng, H., Dong, Y., Yi, F., & Xiao, P. (2018). A preliminary review of studies on adaptogens: comparison of their bioactivity in TCM with that of ginseng-like herbs used worldwide. *Chinese Medicine*, 13(1).
44. Lykstad, J., & Sharma, S. (2020). Biochemistry, water soluble vitamins. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK538510/>
45. Majeed, M. H., Ali, A. A., & Sudak, D. M. (2018). Mindfulness-based interventions for chronic pain: Evidence and applications. *Asian Journal of Psychiatry*, 32, 79–83.
46. Makki, K., Deehan, E. C., Walter, J., & Bäckhed, F. (2018). The impact of dietary fiber on gut microbiota in host health and disease. *Cell Host & Microbe*, 23(6), 705–715.
47. Man, A., Santacroce, L., Iacob, R., Mare, A., & Man, L. (2019). Antimicrobial activity of six essential oils against a group of human pathogens: A comparative study. *Pathogens*, 8(1), 15.
48. Marcus, J. B. (2013). Vitamin and mineral basics: The ABCs of healthy foods and beverages, including phytonutrients and functional foods. *Culinary Nutrition*, 279–331.
49. Marti, A., Martínez-González, M. A., & Martínez, J. A. (2008). Interaction between genes and lifestyle factors on obesity. *Proceedings of the Nutrition Society*, 67(1), 1–8.
50. Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–396.
51. McNaughton, S. A., Crawford, D., Ball, K., & Salmon, J. (2012). Understanding determinants of nutrition, physical activity and quality of life among older adults: the wellbeing, eating and exercise for a long life (WELL) study. *Health and Quality of Life Outcomes*, 10(1), 109.

52. Mendel, J. R., Baig, S. A., Hall, M. G., Jeong, M., Byron, M. J., Morgan, J. C., ... Brewer, N. T. (2018). Brand switching and toxic chemicals in cigarette smoke: A national study. *PLOS ONE*, 13(1), e0189928.
53. Miller, P. E., Lazarus, P., Lesko, S. M., Cross, A. J., Sinha, R., Laio, J., ... Hartman, T. J. (2013). Meat-related compounds and colorectal cancer risk by anatomical subsite. *Nutrition and Cancer*, 65(2), 202–226.
54. Mills, P. J., Redwine, L., Wilson, K., Pung, M. A., Chinh, K., Greenberg, B. H., ... Chopra, D. (2015). The role of gratitude in spiritual well-being in asymptomatic heart failure patients. *Spirituality in Clinical Practice*, 2(1), 5–17.
55. Monteiro, C. A., Cannon, G., Levy, R. B., Moubarac, J.-C., Louzada, M. L., Rauber, F., ... Jaime, P. C. (2019). Ultra-processed foods: what they are and how to identify them. *Public Health Nutrition*, 22(5), 936–941.
56. Musich, S., Wang, S. S., Kraemer, S., Hawkins, K., & Wicker, E. (2018). Purpose in life and positive health outcomes among older adults. *Population Health Management*, 21(2), 139–147.
57. National Institute on Drug Abuse. (2012, December 14). Health consequences of drug misuse. Retrieved from <https://www.drugabuse.gov/related-topics/health-consequences-drug-misuse>
58. National Institutes for Health. (2019, February 1). Mental illness. Retrieved from <https://www.nlm.nih.gov/health/statistics/mental-illness.shtml>
59. National Institutes of Health. (n.d.). Sleep Deprivation and Deficiency . Retrieved May 6, 2020, from <https://www.nlm.nih.gov/health-topics/sleep-deprivation-and-deficiency>
60. National Institutes of Health. (2007). Information about mental illness and the brain. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK20369/>
61. National Institutes of Health. (2013, February 13). Energy balance and obesity, healthy weight basics. Retrieved from <https://www.nlm.nih.gov/health/educational/wecan/healthy-weight-basics/balance.htm>
62. National Institutes of Health. (2019, August 13). Brain basics: Understanding sleep . Retrieved from <https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep>
63. National Institutes of Health. (2020, March 2). Minerals. Retrieved from <https://medlineplus.gov/minerals.html>
64. National Institutes of Health. (2020, March 13). Alcohol's effects on the body. Retrieved from <https://www.niaaa.nih.gov/alcohols-effects-health/alcohols-effects-body>
65. National Institutes of Health. (2020, April 9). Amino acids. Retrieved from <https://medlineplus.gov/ency/article/002222.htm>
66. National Institutes of Health. (2020, April 28). What are proteins and what do they do? Retrieved from <https://ghr.nlm.nih.gov/primer/howgeneswork/protein>
67. National Institutes of Health. (2020, April 28). What does it mean to have a genetic predisposition to a disease? Retrieved from <https://ghr.nlm.nih.gov/primer/mutationsanddisorders/predisposition>
68. Nettleton, J. A., Lutsey, P. L., Wang, Y., Lima, J. A., Michos, E. D., & Jacobs, D. R. (2009). Diet soda intake and risk of incident metabolic syndrome and type 2 diabetes in the multi-ethnic study of atherosclerosis (MESA). *Diabetes Care*, 32(4), 688–694.
69. Nicolopoulou-Stamati, P., Maipas, S., Kotampasi, C., Stamatis, P., & Hens, L. (2016). Chemical pesticides and human health: The urgent need for a new concept in agriculture. *Frontiers in Public Health*, 4.
70. Northey, J. M., Cherbuin, N., Pumpa, K. L., Smee, D. J., & Rattray, B. (2017). Exercise interventions for cognitive function in adults older than 50: a systematic review with meta-analysis. *British Journal of Sports Medicine*, 52(3), 154–160.
71. O'Dougherty, M., Arikawa, A., Kaufman, B. C., Kurzer, M. S., & Schmitz, K. H. (2010). Purposeful exercise and lifestyle physical activity in the lives of young adult women: Findings from a diary study. *Women & Health*, 49(8), 642–661.
72. Oka, R., King, A., & Young, D. (1995). Sources of social support as predictors of exercise adherence in women and men ages 50 to 65 years. *Womens Health*, 1(2), 161–175.
73. Ong, J. C., Manber, R., Segal, Z., Xia, Y., Shapiro, S., & Wyatt, J. K. (2014). A randomized controlled trial of mindfulness meditation for chronic insomnia. *Sleep*, 37(9), 1553–1563.
74. Passarino, G., De Rango, F., & Montesanto, A. (2016). Human longevity: Genetics or lifestyle? It takes two to tango. *Immunity & Ageing*, 13(12).
75. Patel, P., & Zwiabel, H. (2020). Physiology, Exercise. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK482280/>
76. Pawar, V. S., & Shivakumar, H. (2012). A current status of adaptogens: natural remedy to stress. *Asian Pacific Journal of Tropical Disease*, 2, S480–S490.
77. Perrier, E. T., Johnson, E. C., McKenzie, A. L., Ellis, L. A., & Armstrong, L. E. (2015). Urine colour change as an indicator of change in daily water intake: a quantitative analysis. *European Journal of Nutrition*, 55(5), 1943–1949.
78. Poirier, P., Giles, T. D., Bray, G. A., Hong, Y., Stern, J. S., Pi-Sunyer, F. X., & Eckel, R. H. (2006). Obesity and cardiovascular disease: Pathophysiology, evaluation, and effect of weight loss. *Circulation*, 113(6), 898–918.
79. Polhuis, K., Wijnen, A., Sierksma, A., Calame, W., & Tieland, M. (2017). The diuretic action of weak and strong alcoholic beverages in elderly men: A randomized diet-controlled crossover trial. *Nutrients*, 9(7), 660.

80. Popkin, B. M., D'Anci, K. E., & Rosenberg, I. H. (2010). Water, hydration, and health. *Nutrition Reviews*, 68(8), 439–458.
81. Prentice, A. M. (2005). Macronutrients as sources of food energy. *Public Health Nutrition*, 8(7a), 932–939.
82. Reddy, P., & Jialal, I. (2018). Biochemistry, vitamin, fat soluble. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK534869/>
83. Ryan-Harshman, M., & Aldoori, W. (2005). Health benefits of selected minerals. *Canadian Family Physician*, 51(5), 673–675.
84. SCHAB, D. W., & TRINH, N.-H. T. (2004). Do artificial food colors promote hyperactivity in children with hyperactive syndromes? A meta-analysis of double-blind placebo-controlled trials. *Journal of Developmental & Behavioral Pediatrics*, 25(6), 423–434.
85. Sears, M. E., & Genus, S. J. (2012). Environmental determinants of chronic disease and medical approaches: Recognition, avoidance, supportive therapy, and detoxification. *Journal of Environmental and Public Health*, 2012, 1–15.
86. Shapero, B. G., Greenberg, J., Pedrelli, P., de Jong, M., & Desbordes, G. (2018). Mindfulness-based interventions in psychiatry. *FOCUS*, 16(1), 32–39.
87. Shenkin, A. (2006). Micronutrients in health and disease. *Postgraduate Medical Journal*, 82(971), 559–567.
88. Singh, R. (2002). The importance of exercise as a therapeutic agent. *The Malaysian Journal of Medical Sciences*, 9(2), 7–17.
89. Havel, P. J. (2009). Consuming fructose-sweetened, not glucose-sweetened, beverages increases visceral adiposity and lipids and decreases insulin sensitivity in overweight/obese humans. *Journal of Clinical Investigation*, 119(5), 1322–1334.
90. Sturgeon, J. A., Arewasikporn, A., Okun, M. A., Davis, M. C., Ong, A. D., & Zautra, A. J. (2016). The psychosocial context of financial stress. *Psychosomatic Medicine*, 78(2), 134–143.
91. Tapsell, L. C., Neale, E. P., Satija, A., & Hu, F. B. (2016). Foods, nutrients, and dietary patterns: Interconnections and implications for dietary guidelines. *Advances in Nutrition*, 7(3), 445–454.
92. Todd, P. A., Benfield, P., & Goa, K. L. (1990). Guar Gum. *Drugs*, 39(6), 917–928.
93. United States Environmental Protection Agency. (2020, February 13). Improving indoor air quality. Retrieved from <https://www.epa.gov/indoor-air-quality-iaq/improving-indoor-air-quality>
94. United States Environmental Protection Agency. (2020, March 9). Air cleaners and air filters in the home. Retrieved from <https://www.epa.gov/indoor-air-quality-iaq/air-cleaners-and-air-filters-home-0>
95. United States Environmental Protection Agency. (2020, April 14). Introduction to indoor air quality. Retrieved from <https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality>
96. U.S. Department of Health & Human Services. (2019, April 5). What Is mental health?. Retrieved from <https://www.mentalhealth.gov/basics/what-is-mental-health>
97. U.S. Department of Health and Human Services. (2020, January 30). Current Guidelines . Retrieved from <https://health.gov/our-work/physical-activity/current-guidelines>
98. U.S. Food and Drug Administration. (2018, July 16). Gluten and food labeling. Retrieved from <https://www.fda.gov/food/nutrition-education-resources-materials/gluten-and-food-labeling>
99. van den Hurk, P. A. M., Wiggins, T., Giommi, F., Barendregt, H. P., Speckens, A. E. M., & van Schie, H. T. (2011). On the relationship between the practice of mindfulness meditation and personality—an exploratory analysis of the mediating role of mindfulness skills. *Mindfulness*, 2(3), 194–200.
100. Visser, J., Rozing, J., Sapone, A., Lammers, K., & Fasano, A. (2009). Tight junctions, intestinal permeability, and autoimmunity. *Annals of the New York Academy of Sciences*, 1165(1), 195–205. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2886850/>
101. Waite, L. (2018). Future directions for the demography of aging: Proceedings of a workshop. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK513086/>
102. Whitehead, B. R., & Bergeman, C. S. (2015). The effect of the financial crisis on physical health: Perceived impact matters. *Journal of Health Psychology*, 22(7), 864–873.
103. World Health Organization. (n.d.). World Health Organization Constitution. Retrieved May 6, 2020, from <https://www.who.int/about/who-we-are/constitution>
104. World Health Organization. (2017, December 19). Nutrients. Retrieved from <https://www.who.int/elena/nutrient/en/>
105. World Health Organization. (2019, May 28). Burn-out an “occupational phenomenon.” Retrieved from [https://www.who.int/mental\\_health/evidence/burn-out/en/](https://www.who.int/mental_health/evidence/burn-out/en/)
106. Yaribeygi, H., Panahi, Y., Sahraei, H., Johnston, T., & Sahebkar, A. (2017). The impact of stress on body function: A review. *EXCLI Journal*, 16, 1057–1072.
107. Zanfircu, A., Ungurianu, A., Tsatsakis, A. M., Nițulescu, G. M., Kouretas, D., Veskokis, A., ... Margină, D. (2019). A review of the alleged health hazards of monosodium glutamate. *Comprehensive Reviews in Food Science and Food Safety*, 18(4), 1111–1134.



support@fullscript.com

1 866 807 3828

Monday to Thursday 9am - 9pm EST

Friday & Saturday 9am - 5pm EST

**For more educational articles and content:**

**[fullscript.com/blog](https://fullscript.com/blog)**

These statements have not been evaluated by the Food and Drug Administration. This information is not intended to diagnose, treat, cure, or prevent disease.