

January/February 2019

# The art of growing young<sup>®</sup>

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Personal Trainers  
Fitness



In this Issue...

Personal  
Environmental  
Health

Hangry Kids: Low  
Blood Sugar Levels  
Make for Grumpy  
Children

Vitamins, Minerals  
and Nutrients for  
Those Over 40

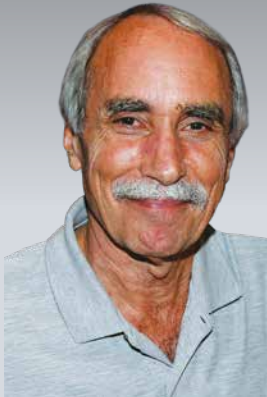




# In this Issue...

Welcome to 2019!

02



Nutritional News

03



Personal Trainers

04



Eat Lots of Vegetables!

12



02 Welcome to 2019!

03 Nutritional News

04 **Fitness**  
Personal Trainers

06 **Feature Article**  
Personal Environmental Health

10 **Lifestyle**  
The Power of Positive People

12 **Nutrition**  
Eat Lots of Vegetables!

14 **Feature Article**  
Water

18 **Herbs and Supplements**  
Matcha Tea

20 **Family Health**  
Hangry Kids: Low Blood Sugar Levels Make for Grumpy Children

22 **Family Health**  
Vitamins, Minerals and Nutrients for Those Over 40

24 **Family Health**  
Inflammation and Weight Gain

26 **Family Health**  
Detox Your Liver

29 Ask the Expert

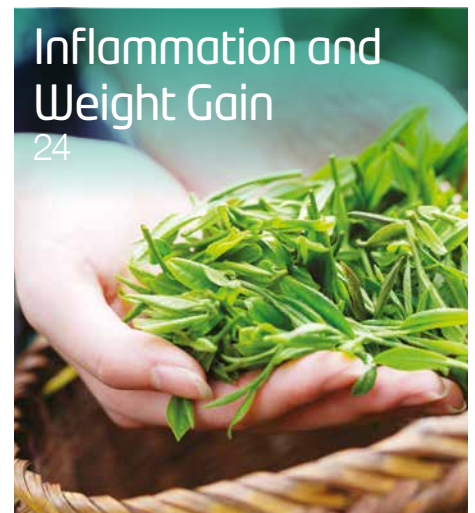
Water

14



Inflammation and Weight Gain

24



# Welcome to 2019!

Have you come up with a good New Year's resolution yet? I'm still working on one, and so are a lot of my friends. I've heard people talking about trying to lose weight, setting goals for the amount of days a week they will go to the gym, and cutting back on desserts—I even overheard one person tell another that her New Year's resolution was to include one vegetable with every meal.

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New Year's resolutions are fun because at the beginning of the year, everything feels possible. And here's a secret: Everything is possible if you set a realistic goal and stay focused on it. Just as with any other goal you set, your focus and attitude will determine whether or not you achieve it. So as part of setting new goals for the new year, let's all make a promise to ourselves to let go of all the things from our past that hold us back, and focus on nothing but the wonderful possibilities this year holds.

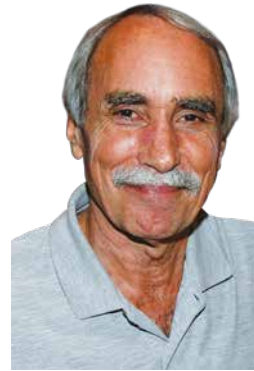
When you set a goal, you have to focus on not only attaining that goal, but also on how good it is going to feel to reach it. Hold that feeling in your mind and in your heart. Let it guide you and attract more opportunities for success to your life. The year 2019 is a time to start over and renew your passion for a healthy, positive lifestyle. Your resolution should be just that—healthy and positive.

Whatever you choose to go after, frame it in a positive way. For example, instead of saying you want to stop drinking soda, say you want to start drinking more water. That way, you focus on doing something good and healthy that will make you feel better. If you're focused on not doing something, every time you think of your goal, you will be reminded of the one thing you are trying to avoid!

As we start 2019 on a positive note, I urge you to take a few seconds right now to think about all the joy, love and wonderful memories you have from 2018. Carry that positivity into the new year, and your opportunities for success will be limitless!

*Dwight L. McKee M.D.*

Dwight L. McKee  
Scientific Director



# Nutritional News



## Run toward Relaxation

Feeling like you need to relax after a long, hard day? Instead of slowing down, try speeding up. Brief, aerobic exercise has beneficial effects on your mood. Fifteen minutes of exercise can make you feel more energetic than the same time spent relaxing, according to researchers.<sup>4</sup>



## A Diet for a Long Life

There's more good news for lovers of the Mediterranean diet. Rich in fish, nuts, fresh vegetables, olive oil and fruit, the Mediterranean diet has long been associated with a healthy lifestyle. The *British Journal of Nutrition* found that when people over the age of 65 stick to the healthy Mediterranean diet, they reduce their risk of death by 25 percent.<sup>2</sup>

## A Dirty House Is a Healthy House

New research published in the *Canadian Medical Association Journal* found that families that use household disinfectants at least weekly are more likely to have overweight children. Researchers believe that using too many disinfectants kills germs and ultimately alters the gut bacteria of small children and babies in a way that is now associated with obesity, and also with allergies.<sup>1</sup>

## Sleep Your Way to a Better Mood

Feeling lonely? Try going to bed earlier in order to boost your mood, feel less lonely and reduce your risk of mortality. According to the authors of a recent paper, too little sleep can lead to a neural and behavioral phenotype that triggers a social repulsion signal in the brain. If you're not feeling connected to your loved ones, it may be worth taking a nap.<sup>3</sup>



## Bike to Better Health

A study of more than 8,800 people across seven European cities concluded that bicycling is the mode of transport associated with the greatest health benefits. Regular bikers reported better general health, better mental health and reduced feelings of loneliness. The publishers of the paper stress that it's best for your body if you, whenever possible, bike to your destination instead of taking public transit or driving yourself.<sup>5</sup>



<sup>1</sup> Tun, Mon H., et al. "Postnatal Exposure to Household Disinfectants, Infant Gut Microbiota and Subsequent Risk of Overweight in Children." *Canadian Medical Association Journal*, vol. 190, no. 37, 2018, doi:10.1503/cmaj.170809.

<sup>2</sup> Bonaccio, Maria Laura, Augusto Di Castelnuovo, Simona Costanzo, Alessandro Gialluisi, Mariarosaria Persichillo, Chiara Cerletti, Maria Benedetta Donati, Giovanni de Gaetano, and Licia Iacoviello. "Mediterranean Diet and Mortality in the Elderly: A Prospective Cohort Study and a Meta-Analysis."

*British Journal of Nutrition* 120, no. 8 (2018): 841–54. doi:10.1017/S0007114518002179.

<sup>3</sup> Simon, Eti Ben, and Matthew P. Walker. "Sleep Loss Causes Social Withdrawal and Loneliness." *Nature Communications*, vol. 9, no. 1, 2018, doi:10.1038/s41467-018-05377-0.

<sup>4</sup> Legrand, Fabien D., et al. "Brief Aerobic Exercise Immediately Enhances Visual Attentional Control and Perceptual Speed. Testing the Mediating Role of Feelings of Energy." *Acta Psychologica*, vol. 191, 2018, pp. 25–31.,

doi:10.1016/j.actpsy.2018.08.020.

<sup>5</sup> Avila-Palencia, Ione, et al. "The Effects of Transport Mode Use on Self-Perceived Health, Mental Health, and Social Contact Measures: A Cross-Sectional and Longitudinal Study." *Environment International*, vol. 120, 2018, pp. 199–206., doi:10.1016/j.envint.2018.08.002.



# Personal Trainers

A healthy life is the sum of many intentional actions, thoughts and decisions to wisely invest in your wellness. Part of that investment might be the decision to take the time and spend the money to work with a personal trainer.

No matter where you are in your fitness journey, you may find that a personal trainer is what you need. But how do you know if a personal trainer is right for you? And if you do decide to hire one, how do you maximize the time spent with one to get the most out of your sessions?

## Before you decide to work with a personal trainer, contemplate the following:

What are your goals? Perhaps you've decided you'd like to run a marathon. Or maybe you often focus on sports, but you'd like to work on proper flexibility. It could be that you're in a rut at the gym, and you'd like some added inspiration.



It's important to make sure you establish goals that are specific in nature and that can be measured in some form (time, endurance, volume of weights).

It might also be helpful to put a deadline or time frame around what you want to accomplish.

What do you lack in knowledge and know-how that a trainer can help you with? Personal trainers are incredibly beneficial for those who are new to a gym or who are interested in trying something new when it comes to their exercise routine. A trainer can help decrease the feelings of intimidation that many people feel when they start at a new gym. For example, if one of your goals is to do a full-body toning workout twice a week, then a trainer can introduce you to the gym equipment and help you find the machines that work best for your goals. If you are already an avid exerciser and just in a rut, then a trainer can help tweak your routine to bring some novelty to it.



Or perhaps you've been out of the habit of exercising and you need someone to help you develop workout plans that you can easily complete at home with minimal equipment.



Do you need a personal trainer more to teach and guide you, or more for accountability? It's important to assess your level of motivation and dedication to your goals. Personal trainers will generally coach their clients to work harder than usual and push their personal records. However, if you just want some company during your workout, you may be better off attending exercise classes or teaming up with a friend.

What is your budget? Working with a personal trainer may be an expense you hadn't considered before. This is why it is particularly important that you are specific and clear about your goals. Perhaps you can budget enough for a couple of sessions and then monthly "tune-up" sessions. Or maybe you can afford only two sessions—one to review goals and establish a routine and a follow-up session to review form and technique and go over any questions.



**Make the most out of your time with your personal trainer with some of the following tips:**

Make the sessions less about doing the entire routine (that should be something you do separately), and more about focusing on learning from the trainer. He or she can teach you which exercises help contribute to your goals (e.g., core exercises for less back pain or cross-training exercises for a better running time). Trainers can also show you exactly how to do certain exercises to minimize injury. Specifically, make sure you are learning proper form—this will not only help reduce injury, but also activate muscles properly for increased strength.



If you have the budget to work more frequently with a trainer, he or she can help you establish realistic goals that fit your unique needs. The trainer can help you develop a personalized training plan, with variants and substitutes that work with your lifestyle.

As with all healthy choices, there are times when we can rely on ourselves to make the right decisions, do the research and be accountable. But often we need external assistance from others. And sometimes we may need a trained professional who can help guide, educate and motivate us.



# Personal Environmental Health

What is the link between the environment and our own personal health? And how can we influence it?







Every day, we are reminded of the environmental degradation going on in the world around us. The news tells us of natural disasters brought on by climate change. We see trash and litter in our cities and on our roadways. The weather forecast warns us about air quality and pollution. All these situations affect our health and the health of our communities. The overall problem can seem quite overwhelming and beyond the scope of what we can do to improve it.

Fortunately, a lot of our environmental health is based on our personal decisions and what we focus on. We have a fair amount of control over what happens in our homes and yards—and the small and big changes we make in our small sphere can improve our health! Just think of what a positive change we could make with a collective action.

And this change starts in the shower!

Toiletries and personal care products are now notorious for harboring chemicals and preservatives that damage our health and the environment. Look for products that are void of paraben preservatives, synthetic colors, synthetic fragrances, phthalates, triclosan formaldehyde and formaldehyde-like compounds (widely used in hair-straightening products), and toluene.

Parabens, or anything with the suffix of -paraben (e.g., butylparaben and propylparaben), are preservatives commonly used in personal care products. In 2012, the European Union banned the use of parabens in personal care products due to the growing concern of hormone disruption in the human body. Public health advocates have been trying to get the Food and Drug Administration in the United States to follow suit.<sup>1</sup>

### Use nontoxic cleaning products

A clean house is good for mental clarity as well as physical wellbeing. Even though we often see antibacterial cleaning products, water is truly one of the most important tools to naturally keep things clean. The problem with antibacterial agents is they also kill off the good bacteria that help us maintain health. And you don't need to spend lots of money on all-natural cleaners. Filling a spray bottle with water, essential oils and possibly vinegar or baking soda is simple, inexpensive and effective. Another popular substance to remove stains and clean your fruits and vegetables is regular-strength hydrogen peroxide (3%). Use a clean cloth to do the wiping. As with hand hygiene, much of the cleaning action has less to do with the actual cleaning product and more to do with the scrubbing action and rinsing with water.

<sup>1</sup> "Should People Be Concerned about Parabens in Beauty Products?" Scientific American. <https://www.scientificamerican.com/article/should-people-be-concerned-about-parabens-in-beauty-products/>.

<sup>2</sup> Jambeck, Jenna R., Roland Geyer, Chris Wilcox, Theodore R. Sieglar, Miriam Perryman, Anthony Andrady, Ramani Narayan, and Kara Lavender Law. "Plastic Waste Inputs from Land into

### Ditch the plastic and use glass

Think deeply about your use of plastic, particularly single-use soft plastics, all of which contain plasticizers (such as phthalates and bisphenol A, or BPA). Roughly five to 12 million metric tons of plastic enter the Earth's oceans every year.<sup>2</sup> Our food, cosmetics, cleaning products, clothing and more all come in plastic containers. Even plastic straws and utensils contribute to the waste. While some localities are eliminating the use of plastic grocery bags (or charging a fee to customers who use them), the use of plastic continues to grow worldwide. Earlier this decade, the BPA scare enlightened consumers about what plastic products contain and how they affect our health. Many plastic products such as baby bottles, children's cups and food storage containers now emphasize they are "BPA-free" on the labels; however, many of them simply substitute a chemical analogue of BPA. If it's soft plastic, it contains plasticizers, and any edible liquid or wet solids it contains will absorb some of these plasticizers and carry them into our bodies. Hard plastics that don't require plasticizers, such as high-density polyethylene (HDPE) are as inert as glass and are lighter and stronger; however, if they are not recycled, even these plastics pose a threat to our waterways and can indirectly affect our drinking water.

Today, you can get reusable silicone straws to stash in your car, pocket or purse to use at restaurants. Other consumers have decided to utilize more reusable glassware, including water bottles. And concern over plastic bags (because many municipalities in the United States don't recycle them) has prompted ecologically concerned citizens to employ multiuse plastic or cloth bags. Buying larger bottled items cuts down on packaging as well.

### Purify your air

Would it surprise you to learn that the quality of the air inside your house may be worse than the quality of air outside? With plants, though, purifying the air in your home also beautifies it! A three-decade-old study from the National Aeronautics and Space Administration (NASA) investigated the best plants for indoor air purification. The scientists were trying to find ways to improve the International Space Station's air quality. Some research has questioned this original study as laboratory versus reality—in a laboratory the outcomes were positive, but does that truly translate to a rigorous home environment? However, other research since then has attributed the microorganisms in the soil to greater human health outcomes.<sup>3</sup>

the Ocean." Science. February 13, 2015. <http://science.sciencemag.org/content/347/6223/768>.

<sup>3</sup> Orwell, Ralph L., et al. "Removal of Benzene by the Indoor Plant/Substrate Microcosm and Implications for Air Quality." SpringerLink, Humana Press, <link.springer.com/article/10.1023/B:WATE.0000038896.55713.5b>.





According to the NASA study, some of the recommended plants are dwarf date palm, Boston fern, spider plant, Chinese evergreen, English ivy, flamingo lily and weeping fig. Other ways to purify your air involve switching from wax candles to soy or beeswax ones (regular wax candles are usually petroleum-based) and utilizing bamboo and charcoal bags that help absorb impurities.

### Pay attention to the amount of exposure to EMFs

EM ... what? Electromagnetic fields, or EMFs, are invisible electric and magnetic energy that originate from everything from the Earth's atmosphere to electronic devices. Your body's nervous and muscle systems also contain EMFs. The problem is that we are becoming increasingly exposed to EMFs through our consumption of electronics—particularly cell phones, Wi-Fi, laptops, power lines and even kitchen appliances. You can reduce your exposure by using the speaker phone function on your cell phone and holding the phone away from your head. Don't carry your cell phone on your body, and keep it in airplane mode when not in use. Consider turning off your Wi-Fi at night when you're sleeping. Another option is to research and explore products that claim to block EMFs.

### Take your shoes off at the door

Taking your shoes off helps keep outside chemicals and toxins, well, outside. In addition, you can keep some indoor-only shoes or slippers by your door when you come in and quickly change into them. The bottom of your shoes see a lot of bad stuff—from all the chemicals associated with cars (when you walk on streets and in parking lots) to the germs they pick up when you walk through public spaces.

A large part of the issue is that most indoor public spaces (e.g., grocery stores, public bathrooms) are cleaned with antibacterial products that kill so many germs. Sounds good, right? The trouble is that these practices allow germs that can withstand those disinfectants, to flourish. In other words, superbugs can hurt us. When we leave our shoes at the door (or better yet outside the door), we aren't bringing those kinds of germs into our house.

### Research greenwashing

Nowadays, it is quite trendy to label products as “eco-friendly” or “all natural” when they truly are not. Unfortunately, it is up to the consumer to do the research. Websites like that of the Environmental Working Group are helpful in determining the level of toxicity a product has, based on its ingredients. Similarly, find a company that you can thoroughly research and trust, to buy products from. Although a product may say it is natural, it is up to you to check the ingredients or research the materials.



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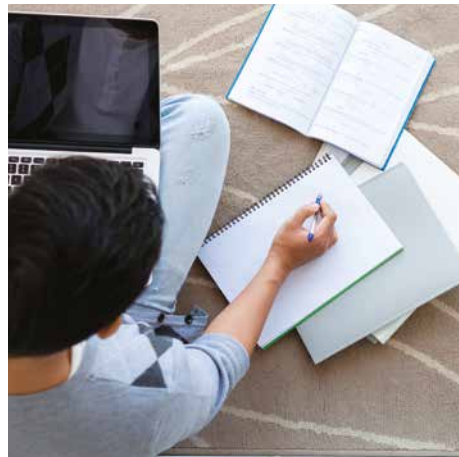
Food supplements should not be used as a substitute for a varied diet.

# The Power of Positive People

Have you heard the expression that you're only as good as the company you keep? The adage is usually associated with behaviors and social reputation, but it can also extend to the influence of others on your health and wellbeing.

When you surround yourself with positive people, you tend to also incorporate optimism, kindness and gratitude into your personal energy.

Positivity, as well as negativity, is contagious in both actual and virtual worlds. One study demonstrated this phenomenon by analyzing the Facebook posts of people who were experiencing rainfall in their respective cities.<sup>1</sup> The people experiencing rainfall expressed their emotional reactions in social media posts.



The researchers then analyzed how this affected the emotions of their Facebook connections via their respective status messages, particularly looking at the Facebook connections who were in cities that were not experiencing rainfall.

As one might expect, the emotions of the people experiencing sunny skies were significantly affected by the expressions of those who were experiencing rainfall in their own locale. The researchers concluded that the “online social networks may magnify the intensity of global emotional synchrony.”

Cultural behavioral norms contribute to mass health issues—consider the obesity epidemic in the United States, the culture of cycling as transport in the Netherlands or greater cardiovascular health in fish-eating places like Scandinavia and Japan. On a smaller scale, health innovations and lifestyle improvements are more readily accepted and adapted when the people you interact with are also embracing them.<sup>2</sup> While we cannot easily control the larger culture of our given region or country, we can see better health outcomes when we surround ourselves in our own social microcosms with positive people who are also seeking positive health outcomes in their lives.

In places like Okinawa, Japan, the concept of creating your positive village is initiated from a young age. Parents place their children into a “moai” or a group of roughly five people who then help guide, encourage and support one another throughout life. Part of a project studying and encouraging the concepts of blue zones (areas in the world that have higher levels of health with aging, among other positive attributes) includes forming intentional groups of people positively working together toward healthy goals. The groups meet for 10 weeks to engage in positive health activities, such as sharing plant-based diets or walking together.



It makes sense. If you hang out with a friend who parties late on Friday night and sleeps in on Saturday morning versus a friend who has a calm Friday night and then goes for a run Saturday morning, you're bound to be influenced by whichever of the two you're spending time with. That's because exercise is socially contagious.<sup>3</sup>

Negative emotions wreak a lot of havoc on the body. Stress, constant anger, depression and anxiety directly affect our hormones and endorphins and influence our lifestyle choices. It is quite hard to combat these feelings alone, and it is even more difficult to change these feelings when those around us help propagate them. Scientists have thoroughly documented the link of negative emotions to poor health outcomes.

<sup>1</sup> Coviello, Lorenzo, et al. “Detecting Emotional Contagion in Massive Social Networks.” PLOS ONE, Public Library of Science, Mar. 2014, journals.plos.org/plosone/article?id=10.1371/journal.pone.0090315#abstract0.

<sup>2</sup> Centola, Damon. “An Experimental Study of Homophily in the Adoption of Health Behavior.” Science, American Association for the Advancement of Science, 2 Dec. 2011, science.sciencemag.org/content/334/6060/1269.

<sup>3</sup> Aral, Sinan, and Christos Nicolaides. “Exercise Contagion in a Global Social Network.” Nature News, Nature Publishing Group, 18 Apr. 2017, www.nature.com/articles/ncomms14753.





Critical research has shown how positivity promotes vitality.<sup>4</sup> While that positivity on its own is powerful for better health outcomes, research also shows that the social connections are necessary as well. Researchers at Harvard University produced a monumental study of roughly 7,000 adults and found that those with few social connections were twice as likely to die over a nine-year period of time. Other research has shown that people exposed to a respiratory virus were less likely to develop symptoms when they had robust and positive social connections.<sup>5</sup>



One of the best things to do is pay close attention to how you feel emotionally.

You will be amazed at what you discover when you get in the habit of doing this. And while learning to do it, you will be amazed at how valuable it can be. When you realize you are having feelings of negativity, just get used to switching to thinking about something positive; anything positive will do. You will be amazed at how helpful this concept is.

<sup>4</sup> Rimer, Sara, and Madeline Drexler. "Happiness & Health: The Biology of Emotion—And What It May Teach Us About Helping People to Live Longer." The Nutrition Source, Harvard School of Public Health, 19 Feb. 2014. [www.hsph.harvard.edu/news/magazine/happiness-stress-heart-disease/](http://www.hsph.harvard.edu/news/magazine/happiness-stress-heart-disease/).

<sup>5</sup> "Do Social Ties Affect Our Health?" National Institutes of Health, U.S. Department of Health and Human Services, 8 Sept. 2017. [newsinhealth.nih.gov/2017/02/do-social-ties-affect-our-health](http://newsinhealth.nih.gov/2017/02/do-social-ties-affect-our-health).







# Eat Lots of Vegetables!

The benefits of a plant-based diet have been touted for decades now, but until recently veganism has largely been a fringe concept and not part of the mainstream.

In the last few years celebrities, as well as doctors and health care professionals have begun to try or encourage the adoption of plant-based diets. Some people make the switch as a way to lose weight, others after receiving a serious health diagnosis, and others for environmental and animal welfare reasons. Furthermore, some people try veganism as a temporary health challenge and others make the change as a long-term lifestyle choice.

Veganism entails eliminating animal products from your diet (and sometimes your clothing and household). While vegetarians will consume eggs, milk, yogurt, butter and honey, vegans abstain from eating any products that are animal-based.

The health benefits can be tremendous for some people. Because vegan diets derive from a large variety of vegetables and fruits, you are more likely to obtain many of your nutrients from actual whole foods.

Veganism can help protect against diseases such as cardiovascular disease, obesity and type 2 diabetes.<sup>1</sup>

A well-thought-out vegan diet can provide the eater with most of his or her nutrients. Because some nutrients are more prevalent in animal products, however, it is wise for vegans and vegetarians to supplement for vitamin B12, calcium, some fatty acids (mainly omega-3) and vitamin D.<sup>2</sup> One of the biggest traps for vegans is sugar, which is, of course, plant based (with the exception of honey), but an excessive intake of sugars, especially refined sugars, and even an excessive intake of maple syrup, palm, fruit, and cane sugar, will ultimately erode health and wellbeing if continued for years.

The environmental impact of veganism has been calculated to be the following: If one person is vegan for one month, he or she saves 33,000 gallons of water, 30 animal lives and prevents the emission of 600 pounds of CO<sub>2</sub>.<sup>3</sup> In fact, the United Nations Environment Program has endorsed the need for humanity to shift to a more plant-based diet due to the concerns of environmental degradation caused by raising animals for food sources.<sup>4</sup>

**Some data purports that if every United States citizen adopted a vegetarian (not vegan) diet for one day, he or she would:<sup>5</sup>**

- ✔ Save 100 billion gallons of water
- ✔ Offset 1.5 billion pounds of crops used to feed livestock and make that farmland available for use for other purposes
- ✔ Save 70 million gallons of gasoline used in the tending and transport of animal products
- ✔ Eliminate 4.5 million tons of livestock excrement currently polluting our waterways and air

If you're interested in experimenting with a plant-based diet, there are fun ways to do so.

Do an internet search and find a foodie blog or two that you like. You can get inspiration for exciting plant-based meals or meal plans. Pick up a cooking magazine or subscribe to a food-planning service that is focused on vegetarian or vegan cooking. Find a friend or family member who wants to partake in the challenge with you.



Perhaps, like so many other households, your family can adopt a weekly meal with no animal products.

Try to eat one of your daily meals meat-free. Or you can do a New Year's cleanse during which you forgo meat and dairy for a month. Explore ethnic or religious foods that use less meat, such as South Indian, Israeli, Taiwanese or Seventh Day Adventist.<sup>6</sup> You could take a vegan cooking class with a friend. Or go to a vegetarian potluck at a community center or Hindu temple.

Perhaps this all feels like a bit much for you. Importantly, you don't have to eliminate animal products altogether to benefit from a plant-based lifestyle. Others choose to go vegan for a week every month or for a month every year. The post-holiday period is a great time to focus on a plant-based diet as a sort of toxic cleanse from all the festive eating (think cookies, candies, large roasts and butter slathered on everything). For most people, being "totally vegan and extreme about it" is not the answer. Overall, just think about the value that this type of eating has, yet not necessarily as an absolute for everyone. Use common sense and pay attention to your body; it will tell you how you are doing. Regardless, it is extremely important to eat your veggies.

<sup>1</sup> Le, Lap Tai, and Joan Sabaté. "Beyond Meatless, the Health Effects of Vegan Diets: Findings from the Adventist Cohorts." *Nutrients*, U.S. National Library of Medicine, June 2014, www.ncbi.nlm.nih.gov/pmc/articles/PMC4073139/.  
<sup>2</sup> Craig, and Winston J. "Health Effects of Vegan Diets." *The American Journal of Clinical Nutrition*, Oxford University Press, 11 Mar. 2009, academic.oup.com/ajcn/

article/89/5/1627S/4596952.  
<sup>3</sup> "The Vegan Calculator." thevegancalculator.com/#calculator.  
<sup>4</sup> United Nations Environment Programme. *Sustainable Consumption and Production: A Handbook for Policy Makers*, 2015, sustainabledevelopment.un.org/content/documents/1951Sustainable\_Consumption.pdf.  
<sup>5</sup> Freston, Kathy. *Veganist: Lose Weight, Get Healthy, Change*

the World. Weinstein, 2011.  
<sup>6</sup> Sawe, Benjamin Elisha. "Countries With The Highest Rates Of Vegetarianism." *World Atlas—Maps, Geography, Travel*, World Atlas, 1 May 2017, www.worldatlas.com/articles/countries-with-the-highest-rates-of-vegetarianism.html.

# Water

We all know that part of a healthy life is maintaining our hydration. Public health campaigns promoting the consumption of drinking water have maintained the importance of drinking eight 8-ounce (240-milliliter) cups of water a day.<sup>1</sup> But the average American drinks just four cups of water a day. In Europe, Norway leads the pack for the highest water consumption per person, with Portugal and Greece following.<sup>2</sup>







While the eight-by-eight “rule” is fairly ubiquitous, however, there is some evidence to suggest that this amount may not be sufficient! The National Academies of Science, Engineering and Medicine generally recommend that women get a total daily water intake of 2.7 liters from combined food and drinks and that men get 3.7 liters.<sup>9</sup> They also recommend that pregnant and breastfeeding women consume more due to increased blood volume and need for milk production, respectively.

Water is good for your gut! Drinking water is one of the keys to proper digestion. It helps prevent constipation and the straining that comes along with it. If you find that your stools are not soft enough, it could be that you need to increase your water intake.

Water consumption can also help control your appetite. Consuming water before or with a meal helps people feel more satiated while eating less.<sup>4,5</sup> You may be surprised at times when you seem hungry that drinking some water will satisfy you; your body may be telling you that you need water. Another option for increasing the sensation of fullness is to begin your meal with a broth-based soup.<sup>6,7</sup> To further support the case for drinking water as a way to maintain a healthy weight: water plays a key role in metabolism. You can maximize this metabolic benefit by drinking half a liter, or 17 ounces, about 30 minutes before a large meal.<sup>8</sup> Most people think that drinking water causes you to retain water in your body, when just the opposite is true. It is difficult for most people to realize that drinking adequate amounts of water actually helps you eliminate excess body fluid.

Water is helpful in the alleviation of pain and discomfort. With respect to muscle aches and cramping, water helps flush out the lactic acid that often causes them. When we perform a very hard exercise (think a fast sprint or heavy weightlifting), our bodies go into an anaerobic state due to the decrease of oxygen to the body, and lactic acid will form as a by-product of this process. Lactic acid is part of what causes the aches because it builds up in your muscles. Drinking water helps flush that lactic acid out of your body and helps relieve the soreness.

<sup>1</sup> Sebastian RS, Wilkinson Enns C, Goldman JD. Drinking Water Intake in the U.S.: What We Eat In America, NHANES 2005-2008. Food Surveys Research Group Dietary Data Brief No. 7. September 2011. Available from: <http://ars.usda.gov/Services/docs.htm?docid=19476>.

<sup>2</sup> “Europe’s Water in Figures: An Overview of the European Drinking Water and Waste Water Sectors.” DANVA, EurEau The European Federation of National Water Services, 2017, [www.danva.dk/media/3645/eureau\\_water\\_in\\_figures.pdf](http://www.danva.dk/media/3645/eureau_water_in_figures.pdf).

<sup>3</sup> “Dietary Reference Intakes: Water, Potassium, Sodium, Chloride, and Sulfate.” The National Academies of Sciences, Engineering, and Medicine, 19 Aug. 2015, [nationalacademies.org/hmd/Reports/2004/Dietary-Reference-Intakes-Water-Potassium-Sodium-Chloride-and-Sulfate.aspx](http://nationalacademies.org/hmd/Reports/2004/Dietary-Reference-Intakes-Water-Potassium-Sodium-Chloride-and-Sulfate.aspx).

<sup>4</sup> Davy, B M, et al. “Water Consumption Reduces Energy Intake at a Breakfast Meal in Obese Older Adults.” *Journal of the*

Water also helps to alleviate common headaches. While scientists don’t know the cause of many headaches, there is some consensus that many headaches are due to dehydration.<sup>9</sup>

The next time you have a headache, instead of immediately reaching for pain medication, try drinking a half-liter of water and see if it helps.

Speaking of pain, there are few things as painful as passing a kidney stone or suffering from a urinary tract infection. Maintaining excellent hydration helps prevent both ailments. That is because the kidneys, the bladder and the urinary tract are all involved in flushing toxins out of your body. Toxins or pathogenic bacteria can build up if you aren’t drinking enough water.

Several studies have highlighted the benefits of water intake as it relates to cancer prevention. One study looked at 48,000 men over the course of 10 years and found that those who consumed higher amounts of water had less chance of developing bladder cancer.<sup>10</sup> Another study saw similarly correlative outcomes for higher consumption of water as it relates to colorectal cancer.<sup>11</sup> However, that is not conclusive, as other studies did not see results that were statistically relevant.<sup>12,13</sup>

American Dietetic Association, U.S. National Library of Medicine, July 2008, [www.ncbi.nlm.nih.gov/pubmed/18589036](http://www.ncbi.nlm.nih.gov/pubmed/18589036).

<sup>5</sup> Rolls BJ, Castellanos VH, Halford JC, Kilara A, Panyam D, Pelkman CL, Smith GP, Thorwart ML. Volume of food consumed affects satiety in men. *Am J Clin Nutr* 67: 1170-1177, 1998.

<sup>6</sup> Rolls BJ, Bell EA, Thorwart ML. Water incorporated into a food but not served with a food decreases energy intake in lean women. *Am J Clin Nutr* 70: 448-455, 1999.

<sup>7</sup> Stookey JD. Energy density, energy intake and weight status in a large free-living sample of Chinese adults: exploring the underlying roles of fat, protein, carbohydrate, fiber and water intakes. *Eur J Clin Nutr* 55: 349-359, 2001.

<sup>8</sup> Boschmann, M, et al. “Water-Induced Thermogenesis.” *The Journal of Clinical Endocrinology and Metabolism*, U.S. National Library of Medicine, Dec. 2003, [www.ncbi.nlm.nih.gov/pubmed/14671205](http://www.ncbi.nlm.nih.gov/pubmed/14671205).

<sup>9</sup> Blau, J N, et al. “Water-Deprivation Headache: a New Headache with Two Variants.” *Headache*, U.S. National Library of Medicine, Jan. 2004, [www.ncbi.nlm.nih.gov/pubmed/14979888](http://www.ncbi.nlm.nih.gov/pubmed/14979888).

<sup>10</sup> Michaud DS, Spiegelman D, Clinton SK, Rimm EB, Curhan GC, Willett WC, Giovannucci EL. Fluid intake and the risk of bladder cancer in men. *N Engl J Med N Engl J Med* 340: 1424-1426, 1999 and 340: 1390-1397, 1999.

<sup>11</sup> Lubin F, Rozen P, Arieli B, Farbstein M, Knaani Y, Bat L, Farbstein H. Nutritional and lifestyle habits and water-fiber interaction in colorectal adenoma etiology. *Cancer Epidemiol Biomarkers Prev* 6: 79-85, 1997.

<sup>12</sup> Geoffroy-Perez B, Cordier S. Fluid consumption and the risk of bladder cancer: results of a multicenter case-control study. *Int J Cancer* 93: 880-887, 2001.

<sup>13</sup> Bruemmer B, White E, Vaughan TL, Cheney CL. Fluid intake and the incidence of bladder cancer among middle-aged men and women in a three-county area of western Washington. *Nutr Cancer* 29: 163-168, 1997.



So, how do you improve your water intake? Nowadays, due perhaps in large part to the eight-by-eight public health campaigns across the world, people drink water everywhere. Trendy water bottles are packed in our briefcases, work bags, diaper bags and backpacks. At conferences or in classrooms, lecturers teach and talk with a handy bottle of water nearby. Even basic cars now have large cup holders in the front seats and back. Perhaps the first step is getting a water bottle (preferably a glass bottle encased in rubber to reduce breakage risk if dropped) that you think would be convenient for you.

If you want to measure your water consumption, get a water bottle that has volume markings on it or go the extra-techy route and download a water app onto your phone. Maybe you already have fitness and food apps—those often also include water consumption. One trick is to fill some containers with water first thing in the morning and just make sure you drink that water throughout the day. Some people find it difficult to drink water consistently. You may try adding just a little balsamic vinegar or lemon to it. This seems to help for some people. A simple and effective way to know if you are getting enough water is to look at the color of your urine. You want your urine to be a pale yellow. Dark yellow urine or urine that is orange or brown means you are probably dehydrated, and your body is reabsorbing as much water as possible from the kidneys, resulting in very concentrated urine. Keep in mind that you may have one or two voids that are bright yellow after taking some supplements that contain B vitamins (especially riboflavin) or eating some foods like nutritional yeast.

Some people just don't appreciate drinking water, whether because of taste or from habit. You can spruce up your water by adding natural fruit to it—from the old standard of lemon slices to unique options such as cucumber or strawberry slices. Or you can try herbal teas such as mint or chamomile. Another option is to eat your water! Vegetables have lots of water in them—particularly cucumbers, cabbage, greens and tomatoes. Fruits such as oranges, pineapples and melons are also packed with water.

While most tap water in developed countries is safe for drinking, water purification is an extra process that is particularly advantageous.

**Tap water often comes from sources such as reservoirs, rivers and lakes and is then sanitized in a municipal water plant.**

Depending on your country's or municipality's environmental regulations, this purification often involves processes and chemicals such as sand filtration and flocculation.

One concern with tap water is that older pipes can leak out dangerous metals such as lead, hexavalent chromium and cadmium. Another concern is that cracks in the piping can contaminate the water source with bacteria, parasites or other germs.

Some areas sanitize water, as mentioned above, but add things to it such as fluoride or chlorine. Other areas purify the water. Purified water is accomplished through filtration, sedimentation, disinfection, coagulation, flocculation and/or reverse osmosis. Not all processes are needed—it depends on the quality of the water source and the applicable governmental standards. Private point-of-use purification removes chlorine (widely used to kill bacteria in water purification facilities), as well as other toxins (including many pharmaceuticals that enter the water system through other people's urine) that may not be completely removed by municipal water purification facilities.

But you need not buy bottled water to reap the benefits of purified water. In fact, skip the bottled water, as it most often is packaged in plastic, which is not good for your health or the environment. Buying a water purifier for your home is ideal. There are different types of at-home water purification systems. Some at-home purifiers remove chlorine, which helps water taste better and is better for your health. Some remove fluoride, which at very high levels is a neurotoxin and can also suppress thyroid function. You'll definitely want to make sure you purchase one that removes lead, which is also a neurotoxin.

At-home systems remove impurities via filtration (such as charcoal), reverse osmosis or the use of ultraviolet light. When buying a water purification system for your home, look for devices and systems that are certified by either the American National Standards Institute (ANSI) or NSF International.

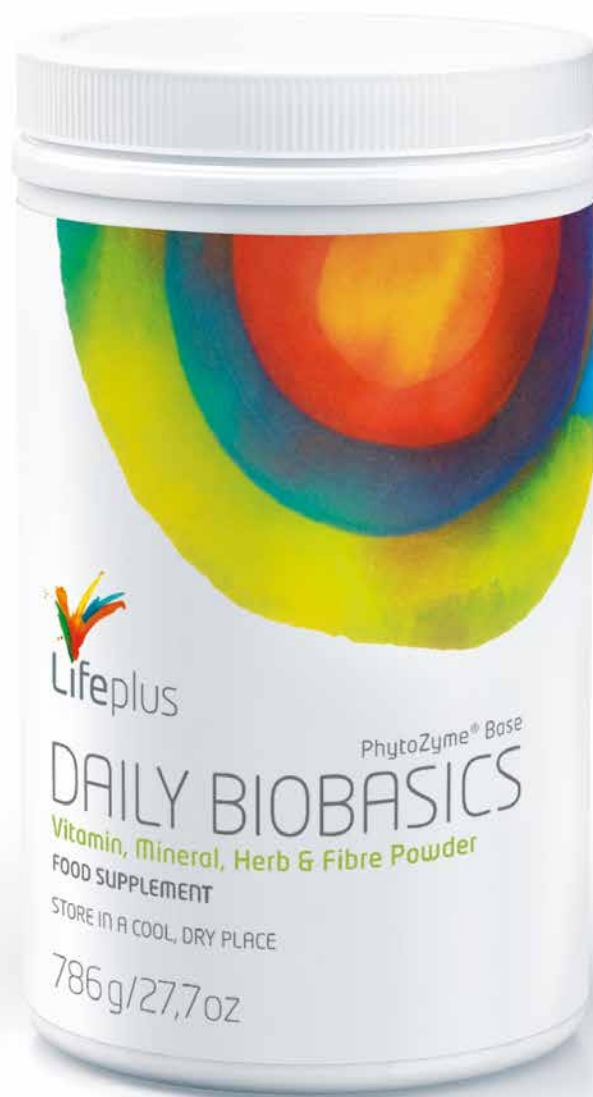


# Daily BioBasics

Our nutritional powerhouse; a potent balance of essential important nutrients to provide targeted support to overall health.

Daily BioBasics nutritional drink provides a refined combination of ingredients to support you in staying at your physical and mental best.

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Food supplements should not be used as a substitute for a varied diet.







# Matcha Tea

Matcha tea, which has antioxidant, detoxifying and energy-boosting benefits, has the perfect combination to help us start the new year on a healthy, positive note.

Matcha tea has recently gained mainstream popularity as coffee shops whip it into lattes, smoothie places blend it into their drinks and fancier restaurants incorporate it into desserts. Hailing from Japan, matcha tea has been used for centuries in Buddhist ceremonies. It comes from the same plant as green tea, *Camellia sinensis*, but it is grown, harvested and prepared with different standards.

The history of matcha tea can be traced back to the seventh century in China. During this time, steamed tea leaves were often packed into tightly formed bricks for easier transport for trading. People would then roast the leaves and grind them into a powder for preparation. In later centuries, the tea was introduced in Japan, where a different method for growing the tea was developed.

During the 30 days prior to harvest, farmers cover the tea plants to shield them from the sun. This is believed to help the tea leaves more purely maintain their antioxidative properties.



The leaves are then steamed, dried out, de-stemmed, de-veined and ground into a very fine powder—the tea—often with a granite stone.

The tea is then transported for sale in an airtight and dark container to retain its color, taste and health benefits.

Traditionally, the tea is prepared by whisking a small amount into very hot water. But you can follow the lead of trendy drink shops and add it to your morning smoothie or stir it into warmed coconut milk. The caffeine content in matcha tea is higher than that in green tea and more similar to that of standard coffee. It is believed that because of the amino acid L-theanine in matcha tea, the caffeine produces a more sustained effect in terms of energy, without the jittery feeling coffee can give.

Matcha tea is chock-full of antioxidants because it contains catechins, which are a group of antioxidants that are particularly powerful.<sup>1</sup> When compared with other antioxidant-rich foods, matcha is among the extraordinary. Top antioxidant superfoods include dark chocolate, açai berries, oregano, cloves, peppermint and sumac. Green tea is also a valuable source of antioxidants. But since matcha tea is essentially more pure and concentrated green tea, it packs a more powerful punch in protecting our bodies against a free radical attack.<sup>2,3</sup>

The liver is the body's detoxifier, and matcha tea may augment the detoxification process by keeping the liver in top working order. An analysis of 15 studies concluded that drinking green tea decreases the risk of liver disease.<sup>4</sup> Again, matcha tea is a more concentrated green tea.



A recent study looked at the fat-burning effects of matcha tea when paired with exercise.

The female participants demonstrated increased burning of body fat during a 30-minute brisk walk when they consumed matcha tea.<sup>5</sup>

There is good news for those at risk of or battling diabetes or cardiovascular diseases: Matcha tea helps lower "bad" LDL cholesterol.<sup>6</sup> Additionally, the tea helps lower blood sugar levels.<sup>7</sup> A meta-analysis of nine studies analyzing a total of 4,378 strokes among nearly 200,000 people concluded that drinking three cups of tea (black or green) a day helps prevent strokes.<sup>8</sup>

Incorporating matcha tea into your everyday foods is an easy way to increase your antioxidants and benefit your health. After the festivities of the holiday season, matcha tea is a good way to reset your health by detoxing your body. It can give you a healthy energy boost and help you recharge during the last months of winter.

<sup>1</sup> Weiss, D J, and C R Anderton. "Determination of Catechins in Matcha Green Tea by Micellar Electrokinetic Chromatography." *Journal of Chromatography A*, U.S. National Library of Medicine, 5 Sept. 2003, [www.ncbi.nlm.nih.gov/pubmed/14518774](http://www.ncbi.nlm.nih.gov/pubmed/14518774).

<sup>2</sup> Xu, P, et al. "The Effects of the Aqueous Extract and Residue of Matcha on the Antioxidant Status and Lipid and Glucose Levels in Mice Fed a High-Fat Diet." *Food and Function*, U.S. National Library of Medicine, Jan. 2016, [www.ncbi.nlm.nih.gov/pubmed/26448271](http://www.ncbi.nlm.nih.gov/pubmed/26448271).

<sup>3</sup> Pham-Huy, Lien Ai, et al. "Free Radicals, Antioxidants in Disease and Health." *International Journal of Biomedical Science*, U.S. National Library of Medicine, June 2008,

[www.ncbi.nlm.nih.gov/pmc/articles/PMC3614697/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3614697/).

<sup>4</sup> Yin, Xueru, et al. "The Effect of Green Tea Intake on Risk of Liver Disease: A Meta Analysis." *International Journal of Clinical and Experimental Medicine*, U.S. National Library of Medicine, June 2015, [www.ncbi.nlm.nih.gov/pmc/articles/PMC4538013/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4538013/).

<sup>5</sup> Willems, Mark, Elisabeth Theodorus, et al. "Matcha Green Tea Drinks Enhance Fat Oxidation During Brisk Walking in Females." *International Journal of Sport Nutrition and Exercise Metabolism*, vol. 28, no. 5, 2018, pp. 536–541., doi:10.1123/ijsnem.2017-0237.

<sup>6</sup> Zheng, Xin-Xin, et al. "Green Tea Intake Lowers Fasting Serum Total and LDL Cholesterol in Adults: a Meta-Analysis of 14

Randomized Controlled Trials." *The American Journal of Clinical Nutrition*, vol. 94, no. 2, 2011, pp. 601–610., doi:10.3945/ajcn.110.010926.

<sup>7</sup> Xu, Ping, et al. "The Effects of the Aqueous Extract and Residue of Matcha on the Antioxidant Status and Lipid and Glucose Levels in Mice Fed a High-Fat Diet." *Food & Function*, vol. 7, no. 1, Jan. 2016, pp. 294–300., doi:10.1039/c5fo00828j.

<sup>8</sup> Arab, Lenore, et al. "Green and Black Tea Consumption and Risk of Stroke." *Stroke*, vol. 40, no. 5, May 2009, pp. 1786–1792., doi:10.1161/strokeaha.108.538470.

# Hangry Kids: Low Blood Sugar Levels Make for Grumpy Children

Skipping meals or eating the wrong types of food can lead to behavioral changes in children. How can we as parents spot the symptoms of low blood sugar? And how can we avoid it altogether?

There are myriad reasons for behavioral issues in children, but what and when children eat may have a lot more to do with it than the mainstream recognizes.



We are starting to see how food plays a part.

Packaged foods, too much sugar, refined carbohydrates and juices are all culprits. The preservatives, additives and coloring in many foods can also be linked to behavioral problems.<sup>1</sup>

Low blood sugar levels are particularly concerning since that triggers a stress response in the body. When blood sugar drops, adrenaline in the body increases and the adrenal glands release the stress hormone cortisol. Cortisol comes into action because your body thinks that it has to draw its energy from other sources, namely stored glucose. This puts the body into a state of stress that affects the muscles, brain and heart. This is not that problematic when it occurs occasionally, but when it happens often, it puts children's bodies into a constant state of stress that can be damaging.

**Parents (as well as teachers and caretakers) can identify these symptoms of low blood sugar in children:**

- ✓ Difficulty sticking to a task, even when it is a task they enjoy
- ✓ Not attentively listening, based on their developmental age's ability to do so
- ✓ Easily distracted
- ✓ Irritable and quick to anger and frustration
- ✓ Struggling to calm down when upset
- ✓ Appearing tired despite having had appropriate rest

The best way to prevent this is to make an effort to ensure your child's blood sugar is stable between meals. Sugary or refined foods tend to spike the sugar levels and then quickly drop them. We all know the post-dessert slump—we feel great right after that big slice of cake, but then we quickly feel the decrease in energy afterward.

Try to prepare and encourage your child to eat foods that will help carry them to that next meal.

Think of the sugar levels needing to be like the soft, rolling hills of Tuscany as opposed to the dramatic peaks and valleys of the Alps.

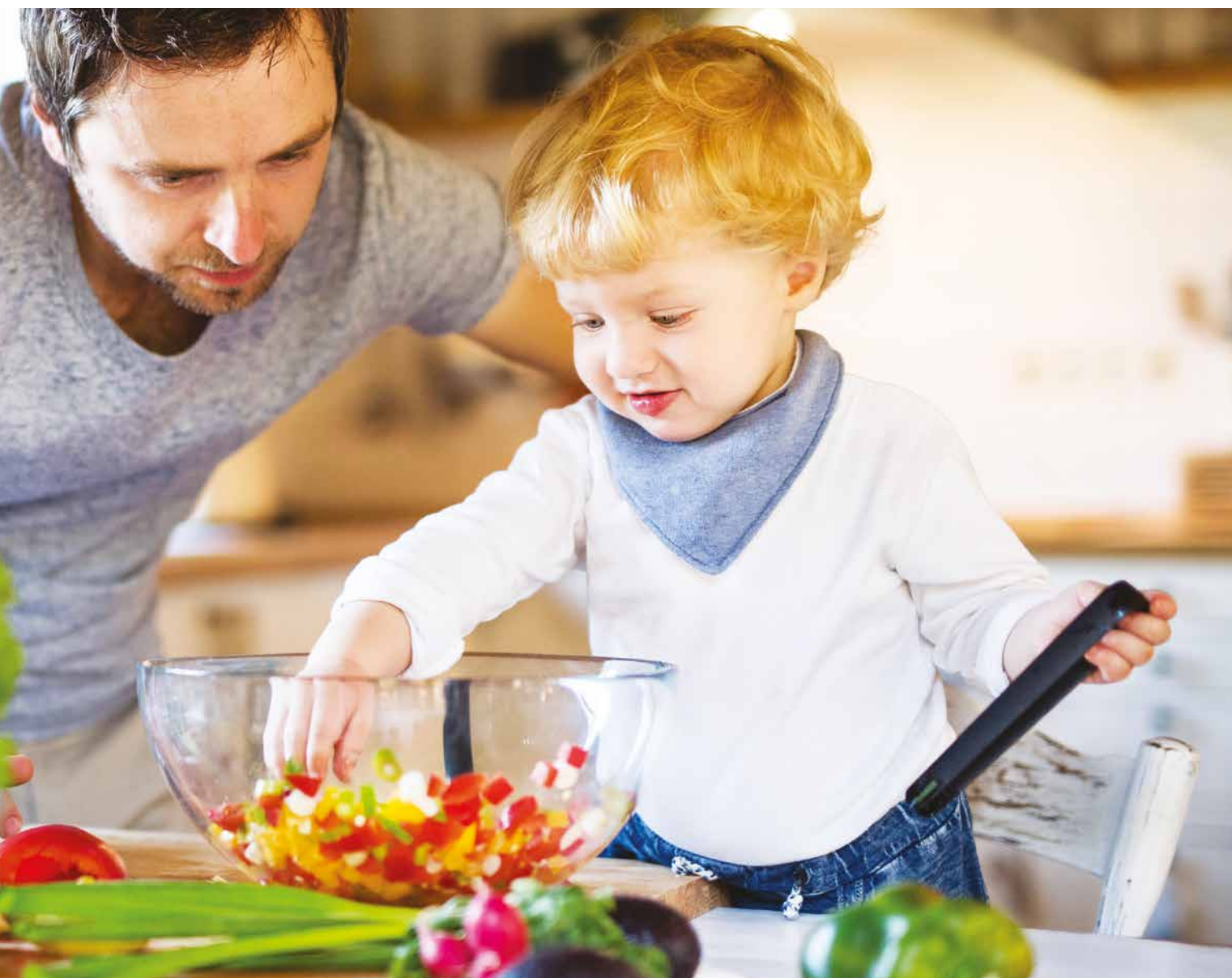


Restrict refined carbohydrates and sugary foods to very special occasions—keep them from even being an option, by keeping them out of your house entirely. A lot of kids like refined carbohydrates, and there can be a lot of struggle to get past them.

While in an ideal world you'd be feeding your children greens and lean proteins, often they want pastas, breads and potatoes. Offer breads made with almond and coconut flour, with plenty of seeds and nuts in them—these will provide energy that lasts much longer than that provided by grain-based breads. See if you can exchange white potatoes for purple or sweet potatoes.

<sup>1</sup>Harrington, Rebecca. "Does Artificial Food Coloring Contribute to ADHD in Children?" Scientific American, 27 Apr. 2015, [www.scientificamerican.com/article/does-artificial-food-coloring-contribute-to-adhd-in-children/](http://www.scientificamerican.com/article/does-artificial-food-coloring-contribute-to-adhd-in-children/).





## Protein is important in helping with concentration.

Serve your children whole-milk Greek yogurt with a sprinkle of cacao or a small drizzle of raw and local honey. Scramble up eggs for breakfast, add cheese and spinach and shake some turmeric on them. Snack time should be vegetable-based. Be cautious feeding them lots of fruits because their overconsumption can also lead to a lot of carbohydrate consumption in the form of fructose (the naturally occurring sugar in most fruits), which can lead to fatty liver, especially if children maintain a dietary habit of high-fruit intake into maturity.



Keep in mind that “green-washing” or “natural-washing” (making foods sound all-natural when they actually are not) in marketing food to kids makes it tough for parents too. The primary ingredient in squeeze fruit and vegetable packs is usually a high-sugar fruit. The packaging says “kale” or “spinach,” but a look at the ingredient list reveals that those leafy greens are all the way at the end of it. Similarly, steer clear of most juices as they contain very little nutritive value and are full of the fruits’ sugar; all the fiber that allows the sugars to be absorbed much more slowly have been removed. Always read the section of the package label titled “Nutritional Information.” This section is the most informative.

# Vitamins, Minerals and Nutrients for Those Over 40

As our bodies age, our need for certain vitamins and minerals increases. It's always important to eat a variety of foods, particularly fruits and vegetables. But even with our best efforts, it is difficult to ensure that we're getting the nutrients we need. As we age, our bodies don't work as efficiently as they did during our younger years. This is the time when it may be a good idea to take supplements to fill in some of the nutritional gaps.

The vitamins and minerals that an older adult needs are slightly different from those younger people require.

## The B vitamins

B-complex supplements often contain all eight of this group. The various B vitamins help our bodies with combating free radicals, boosting energy and maintaining cellular health. In particular, B12 is important for older adults because of a protein made in the gut called gastric intrinsic factor. Gastric intrinsic factor helps our body absorb B12. As we age, our bodies make less gastric intrinsic factor, so we absorb less B12; therefore, fortified foods and supplements can be useful.<sup>1</sup> The best foods that contain B12 are animal products, particularly beef liver and clams as well as dairy products and other animal proteins.

## Calcium

In older adults, the body uses more calcium than it is able to absorb. This can then lead to the body drawing from the stores of calcium in the bones, which in turn weakens the skeleton. Calcium plays a vital role in heart health and muscle contraction as well as our bone density. Drinking milk and eating yogurt are well-known choices for getting calcium. Sardines and canned salmon are great choices because of their edible bones.



Almonds, beans and lentils, seeds, and cheese are other options.

## Vitamin D

While actually a hormone, this vitamin is imperative for immune function yet difficult to find in food sources.<sup>2</sup> But it also should be paired with calcium for maximum absorption by the body. That is why cow's milk is fortified with vitamin D—so that we can more easily absorb the calcium. The primary source of vitamin D is not food or supplements but the sun. However, many of us either don't have the opportunity for much sun exposure (especially during the winter) or are concerned about skin damage.

## Magnesium

Throughout the life span—not simply seniors—magnesium is often deficient, largely due to the depletion of the mineral in our soil.

Magnesium is helpful in calming our nerves, aiding in digestion (it particularly helps people suffering from constipation) and helping us get quality sleep.

While oral supplements are effective, as with vitamin D, the skin is a great way to take in more magnesium. Topical magnesium is available in lotions and salts.

## Melatonin

While not a vitamin or mineral, melatonin is an essential hormone that plays a vital role in the sleep-wake cycle. It also has the lesser-known ability to fend off free-radical attacks on the body. Unfortunately, as we age, melatonin production decreases.<sup>3</sup> As people age, many complain of more difficulty sleeping the suggested seven to eight hours.

This can create a domino effect of poor health—less melatonin, less sleep, less ability to maintain health. Tart cherry juice has high food-based levels of melatonin and has been shown to aid in going to sleep and staying asleep.<sup>4</sup>

## Probiotics

A healthy gut is one of the keys to being able to absorb and process all the vitamins, minerals and nutrients we need.



Fermented foods like yogurt and sauerkraut have probiotics, but foods tend to not have the wide variety of strains that a high-quality supplement does.

The best sources of these nutrients are whole foods and drinks. However, for many reasons, sometimes it is necessary to fill in the nutritional gaps with supplements or fortified foods.

<sup>1</sup> "Office of Dietary Supplements – Vitamin B12." NIH Office of Dietary Supplements, U.S. Department of Health & Human Services, June 2011, [ods.od.nih.gov/factsheets/VitaminB12-Consumer/](https://ods.od.nih.gov/factsheets/VitaminB12-Consumer/).

<sup>2</sup> "Office of Dietary Supplements – Vitamin D." NIH Office of

Dietary Supplements, U.S. Department of Health & Human Services, Sept. 2018, [ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/](https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/).

<sup>3</sup> Karasek, M. "Melatonin, Human Aging, and Age-Related Diseases." *Experimental Gerontology*, vol. 39, no. 11–12, 2004,

pp. 1723–1729, doi:10.1016/j.exger.2004.04.012.

<sup>4</sup> Howatson, Glyn, et al. "Effect of Tart Cherry Juice (*Prunus Cerasus*) on Melatonin Levels and Enhanced Sleep Quality." *European Journal of Nutrition*, vol. 51, no. 8, Dec. 2011, pp. 909–916, doi:10.1007/s00394-011-0263-7.





# Inflammation and Weight Gain

## Can certain foods cause inflammation that leads to weight gain?

There is nothing quite like the start of the new year that makes so many people start questioning their weight and start striving for a healthier body. Of course, temporary dieting is less successful than a lifestyle change that includes plenty of vegetables and daily exercise and consuming the best foods. But if you have a goal to achieve a healthier weight, sometimes what isn't as visible is the culprit.

Inflammation is a natural and healthy bodily reaction when the body is fighting off an infection or responding to some other injury. Think about the last time you accidentally cut your finger while chopping up something for dinner or skinned your knee after a fall. The blood that rushed to that area also set off reactions that caused your body's immune system to begin the work of healing that cut. Part of that immune response was inflammation—the swelling around the area is what we often see and associate with inflammation. This is a normal, natural and healthy immune response. It's a “good” sort of inflammation that helps you heal.

The trouble with inflammation occurs when it becomes a chronic issue. When we eat lots of sugar or consume high-calorie foods with little nutrients, or foods containing inflammatory compounds such as gluten or other lectin proteins, we become predisposed to chronic inflammation. Also, when we don't exercise, chronic inflammation is more likely to develop. This chronic inflammation is a constant attack and stress on the body. It's as if the immune system is turned on and can't turn off.

Abdominal fat and fat surrounding our internal organs are particularly egregious when it comes to inflammation. These fats contribute to cardiovascular disease and hormone disruption. Unfortunately, it can be a vicious cycle—fat causes inflammation, and inflammation makes it difficult to burn fat.

C-reactive protein (CRP) is one marker in the blood that correlates with the level of inflammation. It can be measured when your doctor orders blood testing. When you are ill with an acute respiratory virus, for example, your CRP would increase and reflect the inflammatory response that your body is using at that time to fight off the infection. Western diets and lack of exercise put people at risk for inflammation, as reflected in their CRP levels.<sup>1</sup> Losing weight helps the fat cells that may be enlarged shrink back down to a normal size, and that helps decrease the ongoing inflammatory mechanisms in the body.<sup>2</sup>

Chronic inflammation is a culprit of many health problems—from leaky gut and gastrointestinal distress to chronic pain and achy joints. Chronic inflammation stems from many factors, including chronic stress, lack of sleep, exposure to environmental stressors (such as pollution or work hazards) and, in particular, unhealthy eating habits, especially when they lead to obesity. It takes a while for chronic inflammation to build up in the body. And it takes a while to reduce it.

What you eat may be the key factor in reducing inflammation. A study analyzed more than 300 obese or overweight older adults who were enrolled in a program with a lower-calorie diet and increased exercise. The study concluded that the lower calorie consumption played a larger part in decreasing the levels of CRP than the exercise did.<sup>3</sup> That means not that the exercise was not beneficial, but rather that the key was healthy eating.

Make sure the foods and drinks you're consuming are rich in antioxidants. Antioxidants help combat free radical attacks on your body that are significant factors of chronic inflammation. Drink green tea, eat leafy greens and consume berries, all of which are antioxidant-rich and anti-inflammatory foods.

As noted, the antioxidant-rich foods are also anti-inflammatory. Other anti-inflammatory foods are wild-caught, fatty fish such as anchovies, sardines, salmon and halibut. Raw nuts and seeds, avocados and non-starchy vegetables also help keep inflammation at bay. Fermented foods such as sauerkraut, kefir, kimchi and kombucha are anti-inflammatory. Be sure to incorporate anti-inflammatory spices such as turmeric, ginger and oregano (virtually all spices are rich in antioxidants and work against chronic inflammation; they also contain many compounds with anti-cancer properties).



<sup>1</sup> Thompson, Amanda L., et al. “Weight Gain Trajectories Associated With Elevated C-Reactive Protein Levels in Chinese Adults.” *Journal of the American Heart Association*, vol. 5, no. 9, Sept. 2016, doi:10.1161/jaha.116.003262.

<sup>2</sup> Yatsuya, H., et al. “Changes in C-Reactive Protein During Weight Loss and the Association with Changes in Anthropometric Variables in Men and Women: LIFE Study.” *International Journal of Obesity*, vol. 35, no. 5, May 2010, pp. 684–691., doi:10.1038/ijo.2010.200.

<sup>3</sup> Nicklas, Barbara J., et al. “Diet-Induced Weight Loss, Exercise, and Chronic Inflammation in Older, Obese Adults: A Randomized Controlled Clinical Trial.” *The American Journal of Clinical Nutrition*, vol. 79, no. 4, Apr. 2004, pp. 544–551., doi:10.1093/ajcn/79.4.544.





Don't avoid consuming plenty of high-quality fats like those in most nuts, avocados, olive oil and coconut. Do avoid refined, bleached and deodorized (highly processed) vegetable oils.

Help maintain a healthy gut (digestive system) with high-quality probiotics. Manage stress with plenty of nightly sleep. Exercise in a way that pushes your limits slightly but that doesn't overburden your body (i.e. don't overdo it). Keep in mind that too much exercise can be as inflammatory as not enough.

Try to restrict your alcohol and sugar intake, and keep caffeine use to a level that doesn't overstimulate you or interfere with sleep.

This all may sound like a lot to do, but don't dwell on all of this excessively. Just be aware and do your best, that's all.

Extremism and becoming a zealot can also produce stress and therefore produce inflammation in your body as well. Avoiding chronic inflammation is a key factor in avoiding the modern plagues of degenerative, cardiovascular, malignant and autoimmune diseases. Health is by far our greatest wealth.



# Detox Your Liver

The holiday season has come and gone, but many of us may still be feeling the effects.

It is easy to gorge during the winter months on more processed foods, desserts and sweets, and enjoy plenty of alcohol-induced merriment. Cookies, cakes and cocktails—the feasts and festivities may be over, but has your liver paid the price for overindulgence?

The liver is a powerhouse organ with little fanfare. Much is said—with due reason, of course—about the brain and the heart, but the liver takes an essential behind-the-scenes role in our health maintenance.

A part of the digestive system, the liver is responsible for helping produce digestive juices such as bile, producing proteins necessary for clotting and filtering our blood, metabolizing medications and detoxifying the body of detrimental substances.

It's important not to take its vital role for granted!

By the time January comes around, we may forget the last time we exercised or ate a vegetable-filled meal. We might feel bloated and exhausted and may very well crave a recharging detox.

Antioxidants, as usual, are your friends in general health, but also in detoxing after all of the parties.

Start your days with warm water and freshly squeezed lemon juice. If you're so inclined, add some turmeric to that concoction for additional antioxidative benefits. Drink green tea throughout your morning and have a breakfast or mid-morning snack that involves berries and yogurt.

That yogurt can be part of your probiotic-rich foods that help with getting your digestive system back in order after all the fun. Include probiotic powerhouse foods such as sauerkraut, miso soup, kimchi and kombucha.



Foods that are particularly valuable to the liver are artichokes, grapefruits, cactus leaves (nopal), grapes and cranberries.<sup>1</sup> The algae spirulina and chlorella also help protect the liver.<sup>1</sup>



Fortunately for many of us who require it and enjoy it each morning, coffee has been shown to be important to liver health.

Specifically, it lowers the risk of developing liver cirrhosis, which is chronic liver scarring and damage.<sup>2</sup>

Milk thistle can help safeguard against the damage that mild-to-moderate intake of alcohol can do to the liver. Milk thistle is an herb that hails from the Mediterranean and is part of the same botanical family as sunflowers and daisies.

<sup>1</sup> Madrigal-Santillán, Eduardo. "Review of Natural Products with Hepatoprotective Effects." *World Journal of Gastroenterology*, vol. 20, no. 40, Oct. 2014, p. 14787., doi:10.3748/wjg.v20.i40.14787.

<sup>2</sup> Chen, Shaohua, et al. "Coffee and Non-Alcoholic Fatty Liver Disease: Brewing Evidence for Hepatoprotection?" *Journal of Gastroenterology and Hepatology*, vol. 29, no. 3, Mar. 2014, pp. 435–441., doi:10.1111/jgh.12422.





It has pinkish-purple sunburst-like flowers and glossy leaves with white veins.

Milk thistle contains a flavonoid called silybin or silibinin that has liver-benefiting powers.

How silibinin works is not entirely understood, but it may act as a barrier—that is, preventing toxins from binding to liver cells.<sup>3</sup> It has antioxidant and anti-inflammatory properties that may contribute to its detoxifying prowess, particularly as it relates to hepatoprotective qualities.



Some studies analyzed the hepatic (liver) markers in patients who were receiving chemotherapy while also taking milk thistle, and reported positive outcomes for liver health.<sup>4</sup>

Throughout Europe, milk thistle is given intravenously as the primary antidote for mushroom poisoning, and there is a clinical trial underway in the United States looking at intravenously treating mushroom poisoning patients with derivatives of milk thistle.<sup>5</sup>

<sup>3</sup>Abenavoli, Ludovico, et al. "Milk Thistle in Liver Diseases: Past, Present, Future." *Phytotherapy Research*, vol. 24, no. 10, Oct. 2010, pp. 1423–1432., doi:10.1002/ptr.3207.

<sup>4</sup>Siegel, Abby B, and Justin Stebbing. "Milk Thistle: Early Seeds of Potential." *The Lancet Oncology*, vol. 14, no. 10, Sept. 2013, pp. 929–930., doi:10.1016/s1470-2045(13)70414-5.

<sup>5</sup>"Intravenous Milk Thistle (Silybin-Legalon) for Hepatic Failure Induced by Amatoxin/Amanita Mushroom Poisoning—Full Text View." *ClinicalTrials.gov*, National Institute of Health—U.S. National Library of Medicine, [clinicaltrials.gov/ct2/show/NCT00915681](https://clinicaltrials.gov/ct2/show/NCT00915681).

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# Ask the Expert



## How do I know if I'm getting enough vitamin D right now?

First, let's talk about why vitamin D is important. Vitamin D helps protect your immune system so it can ward off respiratory

illnesses. Vitamin D also helps boost the number of white blood cells and decreases inflammation. All of this is especially important right now in the winter when we are faced with even less sunlight exposure, and people are more likely to stay indoors, where germs can be passed around.

Because direct sunlight exposure is the only way to make the body produce vitamin D, it can be harder to get the recommended amount during these cold winter months. There are some dietary sources of vitamin D that can help ensure you are getting enough of this "sunshine" vitamin: these include fatty fish such as herring and salmon, mushrooms, eggs, fortified milk, orange juice and cereal. However, none of these sources come close to the amount your body can produce naturally when it is exposed to direct, unfiltered sunlight. To find out whether your body is getting enough vitamin D, ask yourself how much time you have spent in the sun lately. It takes only about 20 minutes of sun exposure during peak times for your body to produce enough vitamin D. It may take a little longer during the winter when the sunlight isn't as strong for most of the day and we tend to be covered up a lot more. And of course, supplementing with vitamin D can be very helpful. Remember to ask your doctor to request your vitamin D (25-hydroxy vitamin D) levels at least twice yearly when he or she orders blood chemistry workups.

## How can I detoxify my body?

As we go through life, our bodies collect toxins and chemicals from pollution, improperly washed foods, secondhand smoke and other sources. Fortunately, our bodies are also incredibly good at removing most of these toxins through natural processes when we support our bodies with the right nutrition. It has been said that what you do not eat is more important than what you do eat. Some of the best detoxifying foods you can eat are foods that contain fiber. When fiber passes through the digestive system, it binds with many toxins such as the trace amounts of pesticides and herbicides that can be found on fruits and vegetables if they haven't been washed thoroughly (and some pesticides and herbicides can't be washed away). When bound to fiber, these unwanted chemicals cannot be absorbed into the body, so they pass through as waste. You can also help detoxify by protecting your liver, which is constantly working to remove toxins in your body. Research has shown that milk thistle extract may protect the cells of the liver by preventing entry of harmful toxins into liver cells.<sup>1</sup> Milk thistle



is a Mediterranean herb in the same family as sunflowers. A healthy liver that functions at optimum levels will be able to work hard at removing unwanted waste from the body. Other liver-protecting foods include foods that are particularly valuable to the liver, such as artichokes (also in the thistle family),

grapefruits, cactus leaves (nopal), grapes and cranberries.<sup>2</sup>

<sup>1</sup> Faulstich H, Jahn W, and Wieland T. Silibinin inhibition of amatoxin uptake in the perfused rat liver. *Arzneim-Forsch Drug Res* 1980;30:452-4.

<sup>2</sup> Madrigal-Santillán, Eduardo. "Review of Natural Products with Hepatoprotective Effects." *World Journal of Gastroenterology*, vol. 20, no. 40, Oct. 2014, p. 14,787, doi:10.3748/wjg.v20.i40.14787.

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