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E. EXCEL'S WORLD



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Not Limited by Age, One's Value is Infinite

Diamond Master Chuang Mei-Su



Chuang Mei-Su

From: Taiwan

Strengths and Hobbies:

Appreciates art and enjoys reading

Dream: Stay healthy into old age, have the ability to give, and not depend on others

Traveled with E. Excel to:

Bintan Island, Malaysia, Singapore, Hokkaido, Tokyo, Beijing, Shanghai, Hangzhou, Yunnan, Sanya, Hong Kong, Macau, Australia, Canada, Spain, South Korea, India, Royal Caribbean Cruise, Vietnam

While her peers are relishing the joys of grandparenting, Mei-Su, a proud grandmother, continues to shine in her career. This spring, she proudly achieved the rank of Diamond Master. With boundless enthusiasm, Mei-Su forges ahead on her life's journey, proving that age is no barrier to ambition. She shares the principles of Nutritional Immunology daily, participates in team courses and online study groups every week, and pushes herself to win incentive trips each year, traveling the world with E. Excel. "My pace may be slower, but I will never stop. I tell myself: I will never give up," Mei-Su said, her voice gentle yet resolute.

In a world where success is often associated with bold personalities, Mei-Su stands out in her own way. Low-key, with a quiet demeanor, she moves through life with humility, a stark contrast to the outgoing and career-driven individuals around her. Yet, with a warm smile, she confessed, "I am usually an introvert, but when it comes to sharing Nutritional Immunology, I just cannot stop. I cannot stand seeing others suffer from poor health, like I once did!"

Mei-Su laughed as she recalled a lifetime of frail health, one that began before she was even born. "My struggles started in my mother's womb. My parents were financially strained, and my mother was overworked and malnourished during her pregnancy. As a result, I was born weak and sickly. From as far back as I can remember, I have always been plagued by a constant stream of minor illnesses. Growing up in a farming family, I did not have the comforts of a pampered childhood. After school, I had to help in the fields, but even a brief time under the sun would leave me dizzy, faint, and exhausted. As a frail child, I envied those with strong, healthy bodies. But the good health I longed for did not come until half a lifetime later!"

When Mei-Su finally regained her health through Nutritional Immunology, she deeply realized how precious good health truly is. "The first time I heard a lecture on Nutritional Immunology, I was filled with regret—why had I not discovered Dr. Jau-Fei Chen's work sooner? That is why I feel an urgency to share this knowledge with those around me—every second makes a difference!"

At nearly 50 years old, Mei-Su decided to fully commit to her E. Excel career. However, before this, she had faced a completely different career challenge. In her youth, she pursued a dream with naive optimism, opening a custom fashion store despite having only self-taught sewing skills. But as times changed, the ready-to-wear industry quickly gained popularity, while demand for custom-made fashion declined, causing her business to suffer. She worked day and night just to afford rent, often skipping meals, and her already frail health worsened.

"Eventually, I had to let go of my entrepreneurial dream. I resigned myself to becoming an ordinary worker and spent my days at a factory in an engraving room making seals for electronic products.



But the work came at a cost—the heated rubber released harmful gases, further damaging my health.” Despite these hardships, she never lost hope. During this time, she discovered E. Excel’s Nutritional Immunology, and, for the first time, began to see improvements in her health. However, at that point, her only wish was simply to “stay healthy enough with E. Excel’s help to retire from factory work.”

Destiny often takes unexpected turns. One day, the factory suddenly announced that Mei-Su's position would not offer a guaranteed pension. “That was the last straw!” she recalled. “But this crisis also became the biggest turning point in my life!” When she took a step back to reassess her options, she was shocked to realize that her income from E. Excel had already surpassed the overtime pay she was earning at the factory. “At that moment, I decided to take a leap of faith and give myself a real chance to get healthy and generate income!”

Mei-Su fully committed to her E. Excel career and, drawing from her personal experiences, began passionately sharing Nutritional Immunology and E. Excel’s unique career opportunity. “In the past, I always prioritized work, neglecting both my health and the importance of making the right career choices. It was not until I discovered E. Excel that I truly understood—good health is the foundation of freedom. It gives you the energy to pursue the career and life you want.

“I have lived through changing times and experienced the frustration of being trapped in a job beyond my control. I have come to realize that to truly take charge of my life, I need to choose a career that evolves with the times and gives me the autonomy I desire.”

While many people start thinking about retirement as they approach their fifties, Mei-Su chose to chase another peak in her life. “Although I found such an amazing business opportunity with E. Excel later in life, age has never been a reason to stop moving forward. It is never too late to start, no matter how old you are. In fact, with age comes experience, wisdom, and a deeper understanding of others’ needs. That has put me in an even better position to help others.”

At 70, Mei-Su is living the life she has always dreamed of, thanks to E. Excel. “I have paid off my car loan and mortgage. I can drive around visiting friends, travel the world with E. Excel, breathe fresh air, and savor every moment of life. These are all the precious gifts that have come from choosing E. Excel!”

Mei-Su’s life is no longer just the sum of years, but a vibrant new journey filled with energy and hope. Through her actions, she proves that age is never a limitation. It is only by choosing the right path that one can truly live with freedom and purpose.

Life Motto—“Don’t make excuses or set limits for yourself if you are determined to succeed.”

A Lifelong Learning Career That Helps People

E. Exceller Peng Ning



Peng Ning

From: Canada

Strengths and Hobbies:

Application of nutrition and lifestyle principles, and exercise

Dream: To give back to society

Traveled with E. Excel to:

Shanghai, Hawaii, Malaysia, Thailand, Hong Kong, Macau, Taiwan, Hungary, the Czech Republic, Vietnam, Spain, France, Italy, Ireland, and multiple trips to the United States, the Dominican Republic, Mexico, and Royal Caribbean cruises

"E. Excel has been the most wonderful encounter of my life," said E. Exceller Peng Ning. "It has given me the opportunity to better understand myself, and by helping others, I have grown into a better person. It has introduced me to a community of beautiful souls and opened doors to experience worlds I had never encountered before. E. Excel has enriched my life in ways I never thought possible and completed my life!"

In 1998, while working at a renowned cancer research institute in Canada, a colleague invited Peng Ning to a Nutritional Immunology lecture. Peng Ning was deeply amazed and impressed by this preventive science. It also gave her hope at a time when she was struggling with health issues. "Nutritional Immunology helped me uncover the root causes of my health problems and enabled me to gradually regain my quality of life!" But life had an even greater surprise in store. Fate unexpectedly gifted Peng Ning with a beautiful miracle: She became pregnant with her second child! "E. Excel brought new life and renewed hope to my family! A healthy E. Excel baby." Even now, looking back, Peng Ning still feels deeply moved. With the support of Nutritional Immunology, her second son thrived, growing up strong and healthy. He graduated from university last year and is now an outstanding talent working on Wall Street in the United States.

Peng Ning's resolve to further her lifelong mission—to spread the wisdom of health and prevent regret—was profoundly strengthened by a child from Beijing, China. At the time, a severely ill child had been abandoned by his parents on the streets of Beijing. He was later adopted by a couple working at Harvard University in Boston and brought to the United States. Determined to give him the best possible care, they even temporarily left their jobs, taking turns at the hospital to ensure he received round-the-clock attention. Through a colleague who knew the adoptive parents, Peng Ning visited the child, hoping to find a way to help. Yet, despite the unwavering love, relentless efforts, and access to the most advanced medical treatment, the child ultimately lost his battle with the illness. His passing left an indelible mark on Peng Ning's heart!

"This child, who was the same age as my second son, made me reflect deeply: How many parents in this world face this kind of helplessness? Even if they give their child everything, they are still powerless in the face of illness. At that moment, an indescribable force ignited within me, and I suddenly understood Dr. Jau-Fei Chen's vision of 'creating a world without disease' on a much deeper level. It became my mission. I wanted to help more families understand how to prevent illness. From that moment on, no challenge could make me retreat!" Like an unceasing flame of passion, this unwavering sense of responsibility has propelled Peng Ning forward with relentless energy for the past 27 years, ensuring that more families gain the knowledge to live healthier, fuller lives!



When asked how to transform passion into tangible impact, Peng Ning shared an interesting perspective. “I always expect myself and my teammates to be self-motivated, to find motivation from within rather than relying on external forces!” she said. “The mission of ‘sharing the gifts of health and knowledge with mankind’ is the ultimate source of self-motivation.” She emphasized the importance of continuous self-improvement, maintaining a proactive attitude, and cultivating a positive mindset. “To achieve results, mindset, passion, and ability are all equally important,” Peng Ning stressed.

Learning is the foundation of all success. Surrounding yourself with outstanding mentors can provide valuable insights, as they may come from all walks of life. By observing their success and emulating their mindset and behaviors, you can grow alongside them. Learning professional knowledge is also essential! Drawing from her own journey, Peng Ning shared that over the years, to enrich her professional expertise, she has studied plant-based nutrition and lifestyle medicine at Cornell University and Harvard University in the United States, pursued an EMBA in management studies, traveled to China to study psychology, and taken courses in time management and communication. Whenever she identified a gap in her knowledge, she actively sought to bridge it. Even now, she has never stopped learning, and she encourages her teammates to do the same. She urges them to actively participate in the *E. Excel Study Group* and immerse themselves in the wealth of knowledge shared in *E. Excel’s World*—every article and every insight contributes to their growth.

Peng Ning also highlighted the importance of goal implementation. “Quantify your goals. How many people will you share with each day? How many clients will you follow up with? How many *E. Excel’s World* articles will you read? Write everything down in detail and, most importantly, follow through. At the end of each day, you should be able to confidently talk about what you accomplished!

“Strive beyond excellence (Extra Excellence). Mindset drives action, and action creates results. As long as we sow and plant the seeds and accumulate little by little, every bit of our effort will not go to waste; we may not see a tree grow overnight, but one day, it will bear fruit! When facing difficulties, actively seek solutions. Every obstacle is an opportunity to understand ourselves better and become stronger, wiser, and happier!” Peng Ning encouraged.

“The universe has its own system for distributing the wealth of happiness. When a person has a small heart and only focuses on oneself, the universe will give them little in return. You must have a big heart! The more people you carry in your heart, the more responsibilities you take on, and the more people you help, you will find that the universe will respond by pouring wealth and resources into your life.” Peng Ning encouraged every *E. Exceller* to keep improving themselves and to continuously give to others. Peng Ning concluded the interview by sharing a passage close to her heart, dedicating it to all *E. Excellers*, “Help others without reservation! The heart’s life is a continuous process of projection and return; the gifts it receives are the ones it sends out. Love others first, and that love will always find its way back to you.”

Life Motto—“There is a force in the universe that helps those with good intentions and who work hard.”

Fermented Foods and Digestive Enzymes: A Cautionary Perspective



Fermentation is an age-old technique used to preserve food and enhance its flavors. It involves the breakdown of complex substances into simpler ones in the absence of oxygen, often with the help of microorganisms like yeast and bacteria. This process is responsible for creating popular foods and beverages such as beer, wine, kimchi, yogurt, and more.

In recent years, fermented foods have gained popularity as natural sources of probiotics (live beneficial microorganisms) and digestive enzymes. While most fermented foods are generally safe, it is essential to exercise caution when consuming them. This article explores the potential risks of fermented foods and why they should be consumed mindfully.



Not All Bacteria in Fermented Foods Are “Good”

A common belief is that all fermented foods contain only beneficial bacteria or probiotics. While many do, this is not always guaranteed. Microorganisms—some beneficial and some harmful—are tiny, invisible organisms found almost everywhere, including in water, soil, air, and on various surfaces, even our skin. Fermentation relies on these microorganisms, which can come naturally from the surfaces of fruits and vegetables, be introduced through starter cultures, or unintentionally through contamination, such as from the handler's hands.

During fermentation, which can last anywhere from days to months, both beneficial and harmful bacteria or fungi can grow, altering the food's texture and flavor. For example, *Lactobacillus*, a probiotic naturally present on many types of produce, converts sugars into lactic acid and carbon dioxide, giving fermented foods their characteristic sour taste. However, harmful bacteria like *Salmonella* can also be introduced through contamination, such as from dirty cutting boards, potentially leading to food poisoning.

The Risk of Cross-Contamination

Even in the cleanest kitchens, cross-contamination can occur, potentially introducing harmful bacteria into fermented foods. Some common causes include:

- Improperly cleaned jars or utensils used in fermentation.
- Handling food with unwashed hands during preparation.
- Wooden utensils harboring bacteria from previous uses.
- Storing different types of fermenting foods too close to each other, leading to airborne cross-contamination.
- Fermenting foods near other sources of bacteria around it.



While most harmful microbes struggle to survive in the salty, acidic, low-oxygen environment created during fermentation, problems can arise when brine or pH levels are not properly controlled. Pathogens such as *Clostridium botulinum* (which causes botulism), *E. coli*, and *Salmonella* pose great health risks. *Clostridium botulinum* can thrive in oxygen-free conditions and when the level of acidity (pH) is above 4.6. *E. coli* and *Salmonella* can result from poor sanitation practices. It is important to keep in mind that the ingredients used in fermentation are not sterile from the start.



Microorganisms Can Produce Harmful Toxins

During fermentation, undesirable microorganisms can produce harmful compounds such as mycotoxins, bacterial toxins, and biogenic amines, all of which pose serious health risks and are often difficult to detect. For example, mycotoxins like aflatoxins and citrinin, produced by molds, can cause severe health issues, including cancer and liver and kidney damage. These molds can contaminate grains such as barley, rice, soybeans, and maize, and cannot be fully removed through washing. They may go undetected during food preparation and can continue to release toxins throughout the fermentation process. Over time, consuming contaminated fermented foods can lead to the accumulation of these toxins in the body, resulting in long-term health problems such as cancer.

Although cooking fermented foods at high temperatures can kill most microorganisms, including harmful bacteria and fungi, it does not necessarily neutralize the toxins they leave behind. Many toxins produced by bacteria or molds are heat-stable. While heating may destroy bacteria like *Salmonella*, preventing immediate and obvious food poisoning symptoms, toxins from molds and bacteria can have more delayed and subtle effects. These toxins may not cause immediate discomfort, giving a false sense of security that the food is safe to eat. However, over time, regular consumption of small amounts of these toxins can lead to serious health issues, including cancer, liver damage, and kidney failure.

The Case of Red Yeast Rice

One alarming example of contamination with harmful toxins involves red yeast rice, a fermented product widely consumed in Asia. Made using the mold *Monascus purpureus*, red yeast rice is a source of monacolin K, a compound similar to the cholesterol-lowering drug lovastatin. While it is promoted as a natural remedy for high cholesterol, red yeast rice carries risks such as muscle myopathy and liver damage. Some red yeast rice products may contain a contaminant called citrinin, which can damage the kidneys and liver. The U.S. Food and Drug Administration (FDA) has issued warnings against red yeast rice products due to the presence of unauthorized drugs.



The Kobayashi red yeast rice scandal, first reported in Japan in March 2024, uncovered widespread contamination in red yeast rice supplements, resulting in severe health issues, including kidney failure. Tragically, over 100 deaths have been linked to the contaminated products, with many more people hospitalized. The affected batches were found to contain puberulic acid, a toxic compound produced by blue mold, which animal studies have shown to cause kidney damage. Under normal fermentation conditions, this toxin should not be present. This incident is not isolated. Similar cases have been reported, including kombucha causing liver toxicity, fermented milk products contaminated with aflatoxins, and fermented soybeans contaminated with bacteria that produce enterotoxins.

Microorganisms—Nature's Drug Factory

While fermented foods are often praised for their gut-health benefits, they are also popular for their potential therapeutic effects on certain health conditions. For example, kombucha has claims of possibly benefiting liver health or even preventing joint disease. However, unlike prescription drugs, the dosage of probiotics or other substances in fermented foods is not regulated, which poses potential health risks.



Many people assume that because fermented foods are “natural” and contain “good” microbes, the compounds they produce must be free from side effects. However, this is not always the case. “Good” microorganisms are commonly used to produce medicines like antibiotics and immunosuppressants, and these medicines do have side effects. Microbes are even used to produce insecticides. “Natural” does not always mean safer.

Drug	Use	Produced By
Cephalosporin	Antibiotic	<i>Acremonium chrysogenum</i> (a fungus)
Cyclosporine	Immunosuppressant	<i>Beauveria nivea</i> (a fungus)
Erythromycin	Antibiotic	<i>Saccharopolyspora erythraea</i> (a bacterium)
Insulin	Hormone for diabetes management	Genetically modified <i>Escherichia coli</i> (a bacterium) or yeast
Lovastatin	Cholesterol-lowering medication	<i>Aspergillus terreus</i> (a fungus)
Penicillin	Antibiotic	<i>Penicillium</i> (a fungus)
Streptomycin	Antibiotic	<i>Streptomyces griseus</i> (a bacterium)
Tacrolimus	Immunosuppressant	<i>Streptomyces tsukubaensis</i> (a bacterium)
Tetracycline	Antibiotic	<i>Streptomyces aureofaciens</i> (a bacterium)
Vancomycin	Antibiotic	<i>Amycolatopsis orientalis</i> (a bacterium)

Antibiotic Resistance in Fermented Foods

Fermented foods, despite their gut-health benefits, can also harbor antibiotic-resistant microbes and genes. This poses a significant risk, as these antibiotic resistance genes can potentially be transferred to harmful bacteria in the gut, leading to the development of new antibiotic-resistant bacterial strains.

A 2024 study published in the journal *Microorganisms* found that fermented food consumption significantly increased antibiotic resistance in the gut of healthy individuals. The researchers detected antibiotic-resistant bacteria in products like retail kimchi and artisan cheeses, emphasizing an overlooked public health risk—especially to those with compromised gut health or weakened immune systems. Even *Lactobacillus*, one of the most popular probiotics, has raised concerns as a potential reservoir for antibiotic resistance, meaning it could facilitate the spread of antibiotic resistance to harmful pathogens.



This highlights the need for stricter regulatory oversight in the production of fermented foods. For consumers, there are safer ways to support gut health beyond fermented products. A fiber-rich diet, for example, naturally promotes the growth of beneficial bacteria and helps maintain a balanced gut microbiome without the risks associated with antibiotic resistance.

Fermented Foods: A Source of Digestive Enzymes?

In addition to probiotics, proponents of fermented foods often highlight them as a natural source of digestive enzymes—specialized proteins that help break down the eaten food into a form that can be absorbed by the body. Our bodies naturally produce digestive enzymes in organs such as the salivary glands, pancreas, stomach, and small intestine. For instance, the pancreas produces key digestive enzymes like amylase, which breaks down carbohydrates; lipase, which breaks down fats; and protease, which breaks down proteins. In the small intestine, digestive enzymes such as lactase and sucrase help break down dairy sugar and table sugar, while pepsin in the stomach is crucial for breaking down proteins.

Lactic acid bacteria are used in food fermentation and produce digestive enzymes during the process. Similarly, in dairy products like yogurt and kefir, bacteria produce enzymes like lactase, which aids in lactose digestion. However, the type and quantity of these enzymes can vary significantly based on factors such as the starter culture, the food being fermented, and the microorganisms involved. Even if fermented foods initially contain digestive enzymes, many of these digestive enzymes are no longer active by the time they reach consumers. This is because most fermented products undergo heat treatment or pasteurization before packaging to extend shelf life and control fermentation. While this process helps preserve flavor and texture, it also neutralizes the enzymes, as they are highly sensitive to heat.



Do We Really Need Digestive Enzyme Supplements?

Despite the body's natural ability to produce digestive enzymes, many people believe that supplementation is necessary, or that more digestive enzymes are better. However, the body typically produces sufficient levels of enzymes to digest the food we eat, adjusting both the type and quantity of enzymes based on the type and amount of food consumed. An imbalance—whether too much or too little of an enzyme—can lead to digestive issues.



Digestive enzyme supplements are primarily needed only by those with certain medical conditions, such as cystic fibrosis, chronic pancreatitis, and exocrine pancreatic insufficiency, where pancreatic enzyme replacement therapy is medically necessary. For healthy individuals, digestive enzyme supplements are unnecessary. Some people take them after a large meal, thinking they will help digestion, but the body is capable of handling heavy meals on its own. Digestive enzyme supplements will not assist in digesting better or relieve issues such as bloating, gas, or bowel irregularity. For these issues, eating more fiber is a better approach. Increase your fiber intake gradually over a few weeks and drink more

water. Fiber promotes the growth of beneficial gut bacteria and supports a balanced gut microbiome—something that probiotics or enzyme supplements alone cannot achieve.

Potential Risks of Digestive Enzyme Supplementation

There is a significant difference between prescription digestive enzymes and over-the-counter (OTC) digestive enzyme supplements. Prescription digestive enzymes are produced under strict regulation, ensuring precise dosages and the absence of contaminants. In contrast, OTC digestive enzymes, sourced from animals, plants, bacteria, or yeasts, often lack consistency in both content and dosage. Similarly, even among the same types of fermented foods, the amount and type of digestive enzymes they contain can vary, and potential contaminants may be present.



It is important to note that neither OTC digestive enzyme supplements nor fermented foods are regulated by the U.S. FDA. This means there are no guarantees regarding dosage, ingredients, or enzyme concentration, and there may be potential side effects. Some supplements even make unsupported claims, like promoting weight loss or a flatter stomach through digestive enzyme use.

The best digestive enzymes are those naturally produced by the body, which knows exactly when and how much to produce based on the eaten food. Supplements, on the other hand, lack this precision and can lead to side effects. Digestive enzyme supplementation may cause issues such as diarrhea, constipation, abdominal cramps, nausea, headache, and heartburn. In rare cases, digestive enzyme supplementation has been linked to fibrosing colonopathy, a condition causing inflammation and scarring in the colon.

Fermented Foods Can be Ultra-Processed Foods

Humans have been eating fermented foods throughout history, but it was primarily out of necessity. Now that we have refrigerators and easy access to fresh food year-round, there is no real need for fermented foods, including for health reasons, other than simply enjoying their taste. Fermentation is now done on an industrial scale, and to produce products for supermarket shelves, many manufacturers add preservatives. Researchers in the UK found additives in nearly one-third of the fermented food products bought from supermarkets, classifying them as ultra-processed. Additionally, many fermented foods are pasteurized before being sold, which kills off bacteria, meaning they often do not contain any probiotics.



The Bottom Line

While many people will eat fermented foods for their proposed health benefits, the potential for harmful bacteria, cross-contamination, toxins, and the loss of beneficial probiotics through pasteurization are significant risks. Fermented foods are not necessary for gut health, and are not necessary. The strongest reason for eating fermented foods is because they taste good.

For those looking to improve digestion and gut health, safer alternatives include a fiber-rich diet, which naturally promotes the growth of beneficial bacteria and supports a balanced gut microbiome. It is important to prioritize wholesome, plant-based foods, stay hydrated, and engage in regular exercise to support overall digestive health. By maintaining a healthy lifestyle, we can naturally cultivate a gut microbiome that is as unique as our fingerprints, tailored to our individual needs.



The Lifelong Learning article is contributed by Dr. EE Zhang, MBChB.

Happiness is a Choice



We often think that happiness is a result of favorable circumstances. Many people pursue achievements, material wealth, or social status, believing these external factors will bring them lasting happiness. However, a deeper examination reveals that happiness is fundamentally a state of mind, an internal experience not solely dependent on external conditions.

Understanding that happiness is a way of perceiving and interacting with the world can be empowering. It arises from our interpretations and reactions to life events rather than the events themselves. Research in positive psychology indicates that external circumstances account for only a small fraction of our long-term happiness. Most of our happiness is within our control through our thoughts and actions.

A Rainy Day

Sam and Mark wake up on Saturday morning to find out that it is pouring rain. They have each planned to spend the day outdoors, but the downpour has disrupted their plans. While the situation is the same, their mindsets lead them to react in vastly different ways.

Sam: Instead of letting the rain ruin his day, Sam reframes the rain as an opportunity to do something different—he thinks about catching up on a good book or calling his friends to suggest a movie day indoors. He is flexible with his plans, which helps him stay positive and open to new experiences. By the end of the day, Sam feels refreshed, relaxed, and happy by making the most of the situation.





Mark: Instead of adapting to the situation, Mark's mood sours. He spends the morning brooding over how his day is "ruined." He has mentally committed to spending the day outdoors, and now that this is not possible, he feels stuck. He does not reach out to his friends or consider other fun indoor activities. He stays indoors but does not make the most of it—he scrolls through his phone, watches TV, and feels irritated by how things turned out. By the end of the day, Mark is still in a bad mood. The rain ultimately dictated his experience because he was not able to adapt his mindset or find joy in the situation.

This example shows how even a small event, like a rainy day, can feel frustrating or enjoyable, depending on how we interpret and respond to it. Sam's positive, flexible mindset allowed him to reappraise the situation and see

the rainy day as an opportunity. On the other hand, Mark's fixed, negative mindset led him to focus on what he had lost—the canceled outdoor plans. His inability to adapt caused him to spiral into frustration and disappointment, making the rainy day feel like a wasted one.

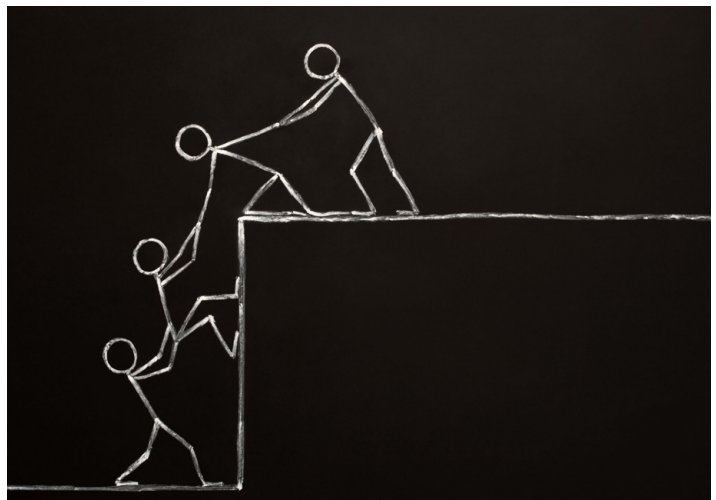
A mindset that focuses on flexibility, reappraisal, and openness to change can transform challenges into opportunities for happiness and fulfillment.

It is important to remember that happiness is neither an end goal nor a fixed state; instead, happiness exists on a continuum with varying degrees of intensity and duration. This continuum perspective allows for the coexistence of happiness with other emotions. Life is inherently complex, and experiencing a range of emotions is a natural part of the human experience. Acknowledging this complexity, we can understand happiness as a dynamic state that fluctuates over time, and that is okay.

Modern psychology has identified several elements in the cultivation of happiness: meaning and purpose, physical well-being, intellectual well-being, relationship and connection, and emotional flexibility.

Meaning and Purpose: Helping Others

Helping others is a powerful way to enhance our happiness because it aligns with many essential human principles, such as compassion, empathy, and the interconnectedness of humanity. When we empathize and extend kindness and support to others, we nurture our inner growth and cultivate a deeper understanding of the shared human experience, fostering a greater sense of connection and unity. At the same time, serving others encourages humility, reminding us that everyone faces challenges, and it is through collective support that we find strength. This heightened compassion can lead to deeper relationships and a sense of belonging. Finding meaning and purpose by helping others brings clarity, direction, and motivation to our actions.



This heightened compassion can lead to deeper relationships and a sense of belonging. Finding meaning and purpose by helping others brings clarity, direction, and motivation to our actions.

Our work comprises such a large part of our life that we should make sure that it aligns with our beliefs and values. When there is a sense of meaning and purpose in what we do—helping others—we will find it easier to face challenging or mundane tasks, and we are more likely to find fulfillment and satisfaction in our work.

We can find meaning and purpose simply by changing our perspective. Do you see your work as a chore, something you have little choice about doing? Do you see your work as a career because you want to advance and get a bonus or promotion? Or do you see your work as a mission? Is it purposeful? Do you care about it, and does it have significance for you? We all go through periods where we experience each of these perspectives at different times. Some days, work feels like a grind; other days, we focus on advancement; and there are days when we genuinely love what we do. The real question is, which mindset dominates most of the time? When work is seen as a mission, it goes beyond just earning a paycheck—it becomes a way to live out our purpose and contribute to something greater than the self. This perspective can transform how we approach our job, leading to greater passion, commitment, and satisfaction.



Examine your work and finish these three sentences:

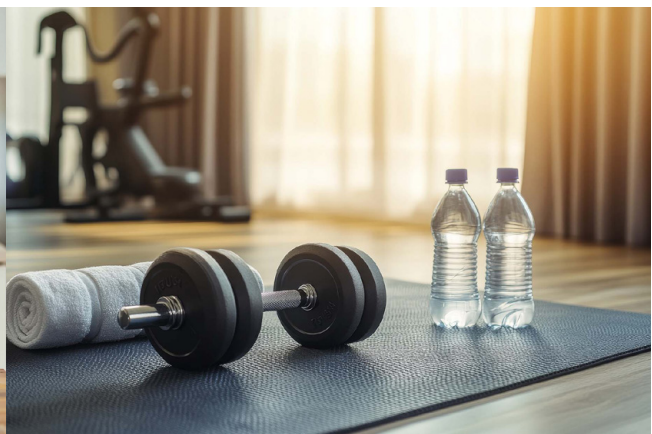
My work is important to me because _____.

I am passionate about _____.

I help others by _____.

Physical Well-being

Our physical health directly influences our mental and emotional states, making it essential to adopt habits that support a healthy lifestyle. This includes regular exercise, a balanced diet, quality sleep, and stress management. By prioritizing our physical well-being, we can significantly enhance our overall happiness.



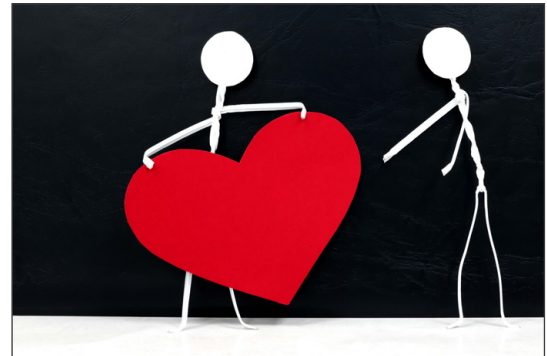


We must first take care of ourselves before we can effectively care for others. Many people, driven by the belief that sacrificing their well-being is a necessary act of love for their families, push themselves to the brink of burnout. While the intention is noble, this mindset often results in serious harm to the individuals and their families. In today's work culture, many jobs demand long hours, often without considering the toll on employees' physical and mental health. Workers are left with little to no time for essential self-care activities like exercise, mindfulness, or even eating

proper, nutritious meals. Instead, unhealthy food becomes the norm simply because it is quick and accessible amidst hectic schedules.

As this cycle of neglect continues, individuals begin to suffer from exhaustion, stress, and eventual burnout. They may develop chronic health issues, fatigue, and emotional distress, all of which diminish their ability to care for those they love. The act of "sacrifice," meant to support the family, becomes a burden that strains relationships and erodes their ability to function effectively. Moreover, companies often do not provide employees the flexibility or support to maintain a healthy lifestyle, contributing to this work-life imbalance. They compromise personal well-being for the sake of productivity. However, this sacrifice comes at a high cost.

Without self-care, the ability to be present, supportive, and genuinely engaged with family members diminishes. On the other hand, prioritizing time for exercise, healthy eating, rest, and mindfulness leads to better physical and mental health. People who invest in their own health and happiness become more resilient, more patient, and more capable of providing long-term support and care to their families. Self-care is not selfish but an essential foundation for caring for others. It allows us to be our best selves, not just for ourselves but for those we love the most.



In what ways does my work positively influence my physical well-being?

Am I eating healthfully, with a diet rich in different fruits and vegetables? Am I paying attention to the quality and quantity of food consumed?

Am I engaging in a form of exercise every day? (It could be running, hitting the gym, taking a fitness class, playing a sport, or simply meeting your step count.)

How consistent is my sleep routine? Do I feel rested and recovered when I wake up?

Am I actively managing stress and taking time to be mindful? Engaging in relaxation techniques such as deep breathing exercises or meditation can help lower stress levels.

Intellectual Well-being

Intellectual stimulation and continuous learning are essential for maintaining a vibrant and resilient mind, which supports emotional and psychological well-being. In this way, intellectual curiosity and the pursuit of knowledge are crucial. We have to challenge our minds through the acquisition of knowledge and skills. This could be by exploring new topics, acquiring new skills, reading, taking courses, attending lectures, or engaging in meaningful discussions. Being part of intellectual communities and connecting with like-minded individuals further provides meaningful discussions and collaborative learning opportunities. A commitment to intellectual growth keeps the mind sharp and enriches life with greater purpose and satisfaction.



Developing a Growth Mindset

A growth mindset, popularized by psychologist Carol Dweck, is the belief that we can develop abilities and intelligence through dedication, hard work, and a willingness to learn from mistakes. This mindset contrasts with a fixed mindset, whereby individuals believe that their abilities are static and unchangeable, that they are either born with an ability or not (e.g., we are either smart or not).

A growth mindset fosters resilience. Individuals with a growth mindset do not avoid difficult tasks; they embrace them as opportunities to learn and grow, understanding that overcoming challenges leads to personal development. They do not give up easily when faced with setbacks; they see failure not as a reflection of their abilities but as a temporary obstacle they can overcome with effort and perseverance. People with a growth mindset value effort as the key to success; they believe that putting time and energy into practice and learning will eventually lead to improving and mastering a skill or subject. Instead of feeling threatened by the success of others, individuals with a growth mindset are inspired by it; they see others' achievements as proof that success is possible and use it as motivation to keep striving toward their own goals.



You can start developing a growth mindset by valuing the effort over the result. For example, as you are learning Nutritional Immunology, emphasize the effort and energy spent learning the material instead of the outcome. If you have been doing well, reward yourself for understanding the material and investing the time to learn. If you need to improve, focus on what you have learned and how to learn more. Emphasize the hard work and effort involved, not the result. If you are a leader, share your mistakes and failures with others and how you learned from them.



Do I fear working outside of my comfort zone?

What have I learned from being rejected?

Have I ever given up? What can I learn from that experience?

Do I self-reflect and reassess after making a mistake?

We must focus on nurturing and engaging the mind. Continual learning and the pursuit of knowledge boost self-efficacy and self-confidence, foster personal growth, and maintain cognitive health. They are potent contributors to happiness.



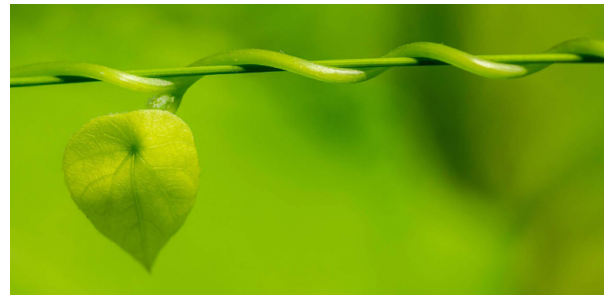
Am I learning new knowledge at work? Am I exploring new topics or acquiring new skills? Am I developing a deeper understanding of something?

Am I continuing to learn outside of work? What learning activities do I engage in (e.g. discussion groups, attending lectures or classes, exchanging ideas with others, and reading)?

How many hours do I spend every day on self-learning? What is something I can do to spend more time learning (e.g. replace 30 minutes of the one hour I spend scrolling TikTok before bed with reviewing the knowledge I have learned today)?

Relationship and Connection

Unsurprisingly, loneliness can erode happiness, contributing to depression, heart disease, and a weakened immune system. However, having close, supportive, and intimate connections with others, whether with family, friends, or colleagues, is linked to higher levels of happiness and reduced stress and depression. The quality and depth of these connections, rather than the quantity, matters greatly; meaningful bonds with a few individuals can be far more fulfilling than numerous superficial ones. Effective communication, characterized by openness, honesty, and empathy, is crucial for maintaining these vital relationships. Providing and receiving emotional support reinforces our sense of security and belonging and helps us develop greater empathy, kindness, and compassion. In turn, we become healthier, happier, more ethical, and more generous.



Do I have friends or family that I trust? Do I have friends or family who will support me when I am down?

Do I have deep, meaningful conversations with my friends or family?

Emotional Flexibility

Life is not without hardships and suffering; we will inevitably feel negative or painful emotions. Emotional well-being includes the acceptance of all emotions, both positive and negative, however intense they are. Instead of denying or suppressing unpleasant feelings, emotionally healthy people acknowledge and accept them as a normal part of life. When we reject painful emotions, such as grief, anger, and fear, they intensify and persist longer. Our emotions are a natural part of human existence. By accepting these emotions, we allow them to dissipate instead of escalate; we become more flexible in the face of hardship and open ourselves up to more feel-good emotions.

Accepting emotions is not the same as giving up—"I feel sad, and there is nothing I can do about that." First, accept that you feel sad, then take the appropriate action. Accept that it may be painful when you fall, but do not stay down; get back up again.



A Breakup

Rachel and Anne have recently broken up with their long-term partners. Their ability to maintain emotional well-being throughout this challenging period differs significantly due to their respective approaches to self-care and emotional processing.

Rachel's Approach: Nurturing Emotional Well-being

Rachel understands the importance of prioritizing her emotional well-being to navigate through the breakup.

Emotional Acknowledgment: Instead of suppressing her feelings or pretending to be okay, she gives herself the space to fully process all of the emotions she feels—sadness, anger, disappointment, grief—knowing that emotional well-being is built on acceptance, not avoidance.

Healthy Coping Mechanisms: Rachel leans into practices that promote resilience. She starts journaling to make sense of her feelings and practices mindfulness to stay grounded. She understands that taking care of her mental health is not just about pushing through the pain but allowing herself to heal at her own pace.



Social Support: Rachel surrounds herself with supportive friends and family, allowing her to talk openly about the breakup. She does not isolate herself or try to carry the burden alone. By seeking social support, she can process her feelings and gain perspective.



Reframing the Experience: Rachel begins to reframe the breakup as a learning experience. She reflects on the relationship, recognizing what she can learn about herself, her needs, and her boundaries. Focusing on her personal growth, she starts to foster a deeper self-awareness and emotional strength.

Rachel maintains her emotional well-being through these practices, even during a difficult period. She understands that caring for her emotional health is essential for her long-term happiness and mental resilience.

Anne's Approach: Neglecting Emotional Well-being

Anne struggles to maintain her emotional well-being after the breakup. Her approach to dealing with the pain is more reactive and less mindful.

Emotional Suppression: Instead of allowing herself to feel the full range of emotions, Anne suppresses her sadness and frustration. She believes that "toughing it out" will make the pain disappear faster, so she distracts herself with work and other activities. However, this only amplifies her feelings of anxiety and unresolved grief over time.

Unhealthy Coping Mechanisms: To numb her emotions, Anne turns to unhealthy habits, such as excessive drinking and binge-watching TV late into the night. These coping mechanisms temporarily distract her but prevent her from fully processing the breakup, leaving her emotional well-being in a fragile state.



Isolation: Instead of reaching out to friends or family for support, Anne withdraws from social interactions. She feels embarrassed about the breakup and does not want to appear vulnerable. This isolation leaves her feeling lonelier and more disconnected.

Ruminating on the Past: Anne gets stuck in a cycle of replaying what went wrong in the relationship. She focuses on self-blame and regrets, constantly revisiting the breakup in her mind. This rumination keeps her trapped in emotional pain, making it difficult for her to move forward or find closure.

As a result of neglecting her emotional well-being, Anne becomes more emotionally exhausted, and her ability to function day-to-day deteriorates. Without allowing herself the space to heal, her unresolved emotions begin to affect her mental health, leading to prolonged sadness, irritability, and difficulty in concentrating on other aspects of her life.

Both Rachel and Anne experience the same painful event—a breakup—but their approaches to emotional well-being determine how they cope and heal. In times of distress, we should nurture our emotional health through acceptance and constructive coping strategies, which can lead to resilience and growth.



Do I have constructive outlets for emotions, such as talking to a trusted friend or journaling?

Do I practice self-compassion? Being kind to oneself, especially during difficult times, helps reduce self-criticism and fosters a more supportive internal environment.

Do I cultivate positive emotions, such as expressing gratitude to others?



Happiness Fuels Success

Happiness is often a strong precursor of success. Happiness fosters traits like creativity, resilience, and motivation, which are often essential for success. People who are happy tend to have more energy, motivation, better relationships, and a more positive outlook, all of which can contribute to achieving success in various areas of life, including career, education, and personal endeavors.



According to Shawn Achor in his book *The Happiness Advantage*, research in both neuroscience and psychology supports the idea that we become more successful when we are happier:

- Doctors in a positive mood before they make a diagnosis show almost three times more intelligence and creativity than doctors in a neutral state and make accurate diagnoses 19 percent faster.
- Optimistic salespeople outsell their pessimistic counterparts by 56 percent.
- Students primed to feel happy before taking a math test far outperform their neutral peers.

Our brains are hardwired to perform at their best, not when they are in a negative or neutral state, but when they are in a positive state.

Both happiness and success are choices that we can actively cultivate. By choosing to prioritize happiness and aligning our pursuit of success with meaningful goals, we can create a virtuous cycle where happiness leads to success, and success, in turn, reinforces and deepens our happiness.

Happiness is not a consequence of external circumstances but a complex state of mind that we can cultivate through intentional practices. In the end, the most joyful lives are those that fully engage with the richness and complexity of the human experience, finding happiness within rather than searching for it without.



The Professional Development article is contributed by Elei Zhang, JD.

Knowledge is power. Knowledge is instrumental to value-creation and is a critical asset in life. It is in many ways the primary instrument of progress and innovation. However, knowledge can be messy, particularly when false. Today, information spreads rapidly and comprehensively, and websites and social media outlets are easy access points for false information.

We're here to help discern fact from fiction. Knowledge becomes powerful in the right culture—collectively sharing in the truth and continually seeking progress and ideas. Building the right knowledge base is neither a short-term effort nor a one-off project. It is a lifelong process of discovery.

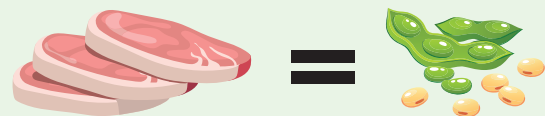
Protein Myths: Time to Set the Record Straight



Let's face it—protein is the superstar of the nutrition world. It is hailed as the magic ingredient for everything from building muscle to losing weight. But with all that hype, it is no surprise that a whole bunch of myths have sneaked in, making protein seem either like a miracle worker or, in some cases, the villain of your diet. So, how much of what you hear is actually true, and how much is just nonsense? Whether you are downing protein shakes like it is your job, or avoiding them because you have heard bad things about them, it is time to separate fact from fiction.

Myth:

All proteins are the same.

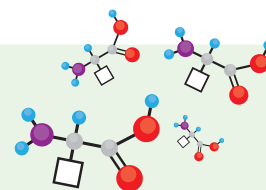


Truth:

No, not all proteins are the same. In fact, there are over 10,000 different proteins in your body. Proteins are composed of amino acids. The sequence in which amino acids link together determines the type of protein, and these proteins fold into unique 3D structures, each with a specific function. So, the proteins in a steak are not the same as those in soybeans, even though they are both proteins.

Myth:

An amino acid is an amino acid—it does not matter what kind.



Truth:

Nope! Not all amino acids are created equal! Animal proteins contain more sulfur amino acids than plant proteins do. Research shows that a higher intake of sulfur amino acids can increase the risk of insulin resistance, heart disease, stroke, and even liver disease. So yes, the type of protein you eat does make a difference to your health. In this case, tofu might have the edge over steak!

Myth:

Plant proteins are incomplete and not as good as animal proteins.



Truth:

While it is true that animal-based proteins like meat, eggs, and dairy are typically complete proteins—meaning they contain all nine essential amino acids that the human body cannot produce—not all plant proteins are lacking. In fact, soy protein is one of the few plant proteins that qualifies as a complete protein. This makes soy an excellent plant-based protein option, especially for those on vegetarian or vegan diets.

Myth:

Plant proteins are not well-absorbed by the human body.

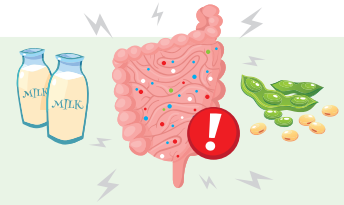


Truth:

While it is often said that plant proteins are not as digestible or bioavailable as animal proteins, soy protein is an exception. Soy protein has a Digestible Indispensable Amino Acid Score (DIAAS) of nearly 100, meaning it is efficiently absorbed and digested by the body. Plus, it comes without the extra calories, fat, and cholesterol found in many animal proteins. Many athletes and bodybuilders thrive on plant-based diets, building muscle with plant proteins just as effectively as with animal proteins.

Myth:

Milk protein and soy protein affect gut microbiome the same.



Truth:

No, milk protein (whey protein and casein) and soy protein impact the gut microbiome differently. Soy protein has been shown to have a more positive effect on the gut microbiome due to its prebiotic properties, which promote the growth of beneficial gut bacteria, compared to milk protein.

Myth:

Milk protein and soy protein have the same effect on heart disease and diabetes risks.



Truth:

Not quite. Milk protein, particularly from high-fat dairy products, has been associated with higher cholesterol levels and insulin resistance. In contrast, soy protein has been shown to lower LDL ("bad") cholesterol and improve insulin sensitivity. Additionally, animal studies suggest that soy protein may reduce hepatic steatosis (fat buildup in the liver), a benefit not typically seen with milk protein. Overall, soy protein is a healthier option for reducing the risk of heart disease and diabetes.

Myth:

You need to eat protein immediately after a workout for muscle growth.



Truth:

While there is a "window of opportunity" after a workout, it is broader than just the first hour. You do not need to rush to eat protein right away after a workout. As long as you are getting enough protein throughout the day, the exact timing is not as crucial as once believed.



Myth:

Only bodybuilders and athletes need extra protein.



Truth:

While athletes may need more protein, it is essential for everyone, not just bodybuilders. Protein plays a critical role in basic body functions like tissue repair, immune health, and vital chemical reactions in the body. As we age, it becomes even more important. The International Osteoporosis Foundation points out that seniors with low protein intake tend to have less muscle strength, which increases their risk of falls. For weight loss, protein helps curb cravings by digesting more slowly than carbohydrates and having minimal impact on blood sugar, which is especially useful for diabetics managing their blood sugar levels.

Myth:

More protein always equals more muscle.



Truth:

While protein is essential for muscle growth, simply eating more protein will not magically bulk you up. Muscle growth also requires strength training and a balanced calorie intake. Even if you consume plenty of protein and exercise, if you are eating too many calories overall, you might build muscle, but it will be hidden under fat. So, the key is a combination of restricted calories, increased protein intake, and strength training to help you build muscle that is visible and well-defined.

Myth:

You need to eat protein throughout the day to prevent muscle breakdown.



Truth:

Spreading your protein intake evenly throughout the day can help optimize muscle synthesis, but your body will not go into muscle breakdown mode just because you miss a meal.

You can only absorb a certain amount of protein per meal.



The idea that your body can only absorb 20 – 30 grams of protein per meal is misleading. While your body may prioritize using that amount for muscle repair and growth, any extra protein is not wasted—it is still utilized for other important functions like supporting your immune system and providing energy.

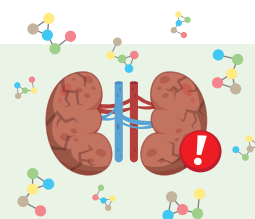


High-protein diets harm kidneys.



As with many myths, there is a kernel of truth that has been taken out of context. People with kidney disease need to monitor their protein intake because their kidneys cannot remove all the waste products of the protein that is broken down. This leads to a buildup of excess protein waste in the blood, causing nausea and weakness. For people with kidney disease, too much protein waste can be very stressful on their kidneys, which have to work hard to get rid of it, causing the

kidneys to wear out faster. However, for healthy individuals, excessive protein intake does not cause kidney issues. According to a meta-analysis published in *The Journal of Nutrition*, there is no evidence that high-protein diets may cause kidney damage in healthy adults.



High-protein diets cause dehydration.



While protein metabolism does require water, a high-protein diet does not automatically cause dehydration. Staying hydrated is important regardless of your diet, and as long as you are drinking enough water, your protein intake will not leave you parched.



Myth:

Too much protein causes digestive issues.

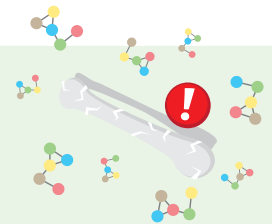


Truth:

A high-protein diet usually does not cause digestive problems unless you are sensitive to certain types of protein (e.g., lactose in whey protein). Some people may experience bloating when eating soy as it contains oligosaccharides and fiber, which can slow digestion and cause gas. Fiber and oligosaccharides in soy are fermented by gut bacteria, leading to gas production. To minimize this, start with small portions to help your body adjust, and gradually increase fiber intake. Over time, your digestive system will adapt.

Myth:

Protein is bad for your bones.



Truth:

This myth comes from the belief that protein creates an acidic environment in the body, which could leach calcium from bones, leading to more calcium in the urine and increasing the risk of osteoporosis. However, that is not how it works. Your body tightly regulates blood pH, with a pH range of about 7.35 to 7.45. While foods can affect urine pH, they do not change blood pH. In fact, the International Osteoporosis Foundation found that higher protein intake (above the recommended dietary allowance of 0.8 g/kg body weight/day) is linked to greater bone mineral density, slower bone loss, and fewer hip fractures in the elderly with osteoporosis.

Myth:

Protein bars are healthy snacks.



Truth:

Although often marketed as a health food, some protein bars are closer to candy bars than health foods. Many are loaded with artificial sweeteners, additives, fats, and low-quality protein sources. In fact, wholesome snacks like nuts, soybeans, or boiled egg whites are often healthier choices than some commercial protein bars.

Myth:

Eating a lot of protein increases fat mass.



Truth:

Protein itself does not cause fat gain. Excess calories from any source—whether carbohydrates, fat or protein—can lead to weight gain. In fact, protein helps maintain muscle mass. Plus, a low-calorie, high-protein diet combined with exercise can increase lean muscle, boosting energy expenditure and contributing to a reduction in fat mass.



Myth:

Cutting down on protein is a good way to lose weight.



Truth:

The opposite is true! Not eating enough protein can make it harder to lose weight, since protein can keep you feeling full for longer. If you lose weight by not eating protein, you might be losing muscle too. Protein is essential for building muscles, and muscles burn more calories than fat at rest. If you lose muscle mass, you burn fewer calories, which means that it is easier to gain weight and harder to keep it off.



Good things come in pairs. So here's another Beyond article. Enjoy!



Coffee

Myth:

Pregnant women should avoid all coffee.



Truth:

According to the American College of Obstetricians and Gynecologists, research suggests that it is safe for pregnant women to consume less than 200 mg of caffeine daily—that is about one 12-ounce cup of coffee (about 354 ml).



Myth:

Caffeine is only found in coffee.



Truth:

There are many foods that contain caffeine, such as:

- Chocolate and chocolate flavored foods
- Tea
- Some sodas
- Yerba mate
- Guarana
- Kombucha
- Kola nut

Myth:

Coffee is highly addictive.



Truth:

Many people might casually use the word “addicted” when describing their caffeine habit, but caffeine is not actually addictive. They might have a dependence on caffeine, but that is very different from an addiction. An addiction occurs when a drug or other substance causes an imbalance in the brain’s reward pathways, leading to severe withdrawal symptoms and destructive behavior. In contrast, food dependence is more of a habitual reliance on certain foods due to their effects on mood, energy levels, or psychological comfort. It often involves cravings, difficulty controlling intake, and withdrawal-like

symptoms when the food is reduced or eliminated. For example, some people may experience mild symptoms such as headaches, irritability, or fatigue if they suddenly stop drinking coffee, but these effects typically last only a few days. Unlike truly addictive substances, caffeine withdrawal does not cause life-threatening symptoms or self-destructive behaviors.

This pattern of dependence is not unique to caffeine. Many foods can create strong cravings without serious consequences. A well-known example is cheese. It contains casein, which, during digestion, releases casomorphins—compounds that trigger pleasure centers in the brain, leading to cravings and a sense of satisfaction. Many people struggle to cut down on cheese due to its rich flavor and comforting qualities. Other foods that can trigger similar dependencies include spicy foods, which stimulate endorphin release from capsaicin; chocolate, which contains theobromine and serotonin; and processed junk foods, which are engineered with an addictive mix of fats, salt, and artificial flavors.

Myth:

Coffee dehydrates you.



Truth:

People may notice that after drinking coffee, they might go to the bathroom more. While it is true that coffee is a diuretic, the effect is not strong enough to actually dehydrate someone. A cup of coffee is mostly water. The water content in the coffee is more than enough to offset the small diuretic effect. In fact, a cup of coffee is hydrating, not dehydrating.

Myth:

Coffee stunts growth because it causes bone loss.

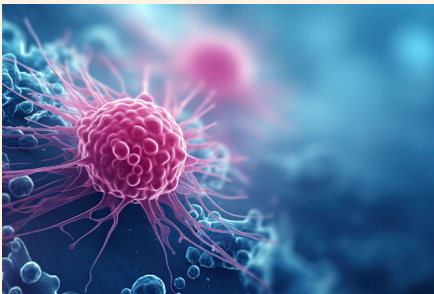


Truth:

There is no scientific evidence that coffee stunts growth, affects height, bone development, or causes osteoporosis. Older studies once suggested that caffeine-containing beverages might lead to calcium loss in the body, but later research found that the effect is too minor to have any real impact. In fact, the small effect caffeine has on calcium absorption is so minor, it can be easily offset by just one or two tablespoons of milk. Ultimately, a person's height is primarily determined by genetics, proper nutrition, and overall health during their growing years.

Myth:

Coffee causes cancer.



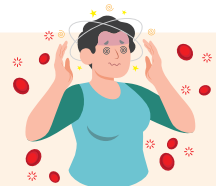
Truth:

Coffee contains acrylamide, a substance that has been linked to cancer concerns. However, the key lies in the amounts. Acrylamide is naturally formed when foods are cooked at high temperatures, with longer and hotter cooking processes leading to higher levels. This compound is not unique to coffee; it is also found in a variety of foods such as fried potato products (like French fries and potato chips), biscuits, toasted bread, and barbecued food. Currently, many countries do not have strict

regulations on acrylamide safety limits. However, the European Commission has set a benchmark level of 400 µg/kg for acrylamide in roasted coffee under Commission Regulation (EU) 2017/2158. The acrylamide content in coffee can vary, depending on roasting time, temperature, and differences between batches of coffee beans. To minimize exposure, it is important for consumers to choose coffee from reliable sources that conduct regular acrylamide testing, ensuring safety and quality.

Myth:

Coffee causes anemia.



Truth:

Coffee, tea, and cocoa contain polyphenols, powerful antioxidants that offer various health benefits. While it is true that polyphenols can inhibit the absorption of non-heme iron found in plant-based foods, the effect is too minor to cause anemia in healthy individuals. Interestingly, other polyphenol-rich foods, such as apples, blueberries, broccoli, carrots, and ginger, are rarely blamed for causing anemia. Yet, coffee often takes the blame for many things without solid evidence to back it up.

Myth:

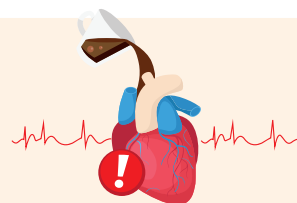
Coffee causes heart disease or arrhythmias.



Truth:

Many people worry that coffee, due to its caffeine content, might harm the heart by causing it to race. However, research shows that the real concern is how much you consume. In fact, moderate coffee intake has been linked to a lower risk of heart-related conditions such as hypertension, high cholesterol, heart failure, and atrial fibrillation. Some studies suggest that it is not the caffeine but other beneficial compounds in coffee, such as antioxidants and phytonutrients, that may contribute to this

reduced risk. According to the U.S. Food and Drug Administration (FDA), healthy adults can safely enjoy two to three cups of coffee per day.



Myth:

Coffee is bad for the stomach and can cause stomach ulcers.



Truth:

Many people believe that coffee irritates the stomach and worsens gut disorders like irritable bowel syndrome (IBS), causing issues such as heartburn, ulcers, nausea, acid reflux, and indigestion. Some even suggest that because coffee is acidic, drinking it on an empty stomach is particularly harmful since it might damage the stomach lining.

Let's clear up this myth: There is no scientific evidence to support the idea that coffee causes digestive problems, whether consumed on an empty stomach or not. In fact, the pH of black coffee is around 5—about the same as the pH of banana—making it far less acidic than commonly believed.



Myth:

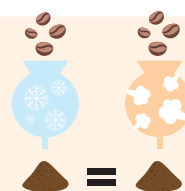
Freeze-dried coffee is the same as spray-dried coffee.



Truth:

Freeze-dried coffee offers several advantages over spray-dried coffee, particularly in preserving the aroma and flavor. It retains more of the coffee's aromatic qualities, resulting in a taste that closely matches a freshly brewed cup, both in flavor and nutrition. The freeze-drying process creates irregular crystal-shaped granules that dissolve instantly in water or milk, making it a convenient option for hot or iced coffee. In contrast, spray-dried coffee tends to have a more burnt and bitter taste

due to the high heat used in processing. It typically comes in a fine powder form, which requires more time and stirring to dissolve, especially in cold liquids. While both methods provide instant coffee solutions, freeze-dried coffee delivers a superior taste experience with quicker dissolvability and better aroma retention.



Myth:

Dark roast coffee has more caffeine than a light roast.



Truth:

Some people assume that the darker the roast, the higher the caffeine content. There is even the opposing view that the darker the roast, the lower the caffeine content. However, that is not true. The caffeine content varies, depending on factors such as the type of coffee bean, different batches of coffee beans, the way a coffee is brewed, and the volume of the coffee beans. When compared by weight, the caffeine content for a dark roast and a light roast is about the same.



Myth:

Filtered coffee and unfiltered coffee are the same.



Truth:

Filtered coffee offers more health benefits than unfiltered types like French press or Turkish coffee. A study tracking over 500,000 people found that drinking one to four cups of filtered coffee daily significantly reduced the risks of heart disease and overall mortality, especially in individuals younger than 60. The reason lies in diterpenes—compounds present in unfiltered coffee that can raise cholesterol levels—making filtered coffee the healthier choice.



Myth:

Freeze-dried coffee has less nutrition compared to freshly brewed coffee.



Truth:

Freeze-dried coffee and freshly brewed coffee contain the same nutritional value. The freeze-drying process does not remove nutrients; instead, it preserves them by “locking” them in place. Freshly brewed or even freshly roasted coffee has become a popular trend, often seen as a more expensive and “gourmet” option. However, drinking coffee is not just about taste—it is also about safety. Responsible producers of freeze-dried coffee follow standardized processes, including acrylamide testing and filtering out diterpenes, to ensure a safer cup of coffee.



In contrast, small-batch, freshly roasted, and brewed coffee may not always undergo the same rigorous testing.

The process of making freeze-dried coffee is essentially the same as preparing a cup of gourmet coffee. After careful roasting, testing, and brewing under controlled conditions, the coffee is freeze-dried to remove water while preserving its aroma and flavor, delivering a high-quality and consistent experience.

There are treasure troves of mysteries in nature waiting to be discovered and explored. Countless scientists have devoted themselves to unraveling them in the hopes of improving human health and wellbeing. Their work is vital to understanding and treating disease.

We bring you their research findings in our goal to enrich and expand public knowledge.

Red Raspberry (*Rubus idaeus*)



Red Raspberry May Protect Against Arthritis-related Damage

A red raspberry fruit extract was studied in an arthritis rat model, where it reduced arthritis symptoms, including bone resorption, soft tissue swelling, and osteophyte formation, effectively preventing joint destruction. With its strong antioxidant and anti-inflammatory effects, the extract shows promise in protecting against inflammation and arthritis-related damage.

Figueira ME, Câmara MB, Direito R, et al. Chemical characterization of a red raspberry fruit extract and evaluation of its pharmacological effects in experimental models of acute inflammation and collagen-induced arthritis. *Food Funct.* 2014;5(12):3241–3251. doi.org/10.1039/c4fo00376d

Ellagitannins Found in Raspberries May Protect Against Gastric Ulcers

This study highlights the protective effects of ellagitannins—compounds found in berries like blackberries and raspberries—against gastric ulcers. Ellagitannins from these berries help protect the stomach against ethanol-induced gastric lesions in rat models. Researchers found that ellagitannins decrease measures of inflammation and protected the rats from oxidative stress through blocking key pathways involved in inflammation.

Sangiovanni E, Vrhovsek U, Rossoni G, et al. Ellagitannins from *Rubus* berries for the control of gastric inflammation: *in vitro* and *in vivo* studies. *PLoS One.* 2013;8(8):e71762. doi.org/10.1371/journal.pone.0071762

Ellagic Acid, a Raspberry Polyphenol, Can Protect Against Gastric Damage

Researchers investigated the protective effects of ellagic acid—a polyphenol found in raspberries—against gastric damage caused by harmful chemicals and conditions such as ischemia in rats. They found that in the ex vivo gastritis and in vivo Crohn's disease models, ellagic acid helped protect the stomach from damage caused by the combination of ammonium hydroxide and lack of blood flow. Ellagic acid also acted as a powerful antioxidant. It reduced gastric lipid peroxidation and neutrophil infiltration as well as the overproduction of proinflammatory enzymes in intestinal tissues.



Iino T, Tashima K, Umeda M, et al. Effect of ellagic acid on gastric damage induced in ischemic rat stomachs following ammonia or reperfusion. *Life Sci.* 2002;70(10):1139–1150. doi.org/10.1016/s0024-3205(01)01493-x

Raspberry Anthocyanins Can Help with Colitis

A study investigated the anti-inflammatory effects of red raspberry anthocyanin-rich fractions (RR-ARFs). Researchers found that the anthocyanin-rich fraction ameliorated symptoms of colitis in the mouse models. RR-ARFs strongly reduce inflammation by decreasing the production of nitric oxide and inflammatory molecules in immune cells. They also blocked two key inflammatory signaling pathways.

Li L, Wang L, Wu Z, et al. Anthocyanin-rich fractions from red raspberries attenuate inflammation in both RAW264.7 macrophages and a mouse model of colitis. *Sci Rep.* 2014;4:6234. doi.org/10.1038/srep06234



Ellagic Acid in Raspberries Could Protect Against Atherosclerosis

Atherosclerosis is the buildup of plaque in and on the artery walls. If the plaque bursts, it may lead to a blood clot. Researchers looked into how ellagic acid, a compound found in raspberries, could reduce inflammation and help prevent the early stages of atherosclerosis.

An early stage in atherosclerosis is the binding of immune cells to endothelial cells. Ellagic acid reduces this binding. It can also block the activation of NF- κ B (a key protein involved in inflammation) and reduce reactive oxygen species.

Proliferation of intimal vascular smooth muscle cells is vital to the development of atherosclerosis. Ellagic acid reduced the oxidized-LDL-induced proliferation of rat aortic smooth muscle cells.

Oxidative stress is one of the major risk factors for atherosclerosis. Researchers found that ellagic acid could lower oxidative stress. Ellagic acid demonstrated strong antioxidative properties, reducing free radicals and inhibiting LDL oxidation, which are key factors in atherosclerosis development.

Researchers have found that ellagic acid can effectively reduce serum triglycerides and total cholesterol in rabbits fed a high-fat, cholesterol-rich diet. Histological analysis revealed that ellagic acid significantly reduced lipid lesions in the aorta compared to the control group.



Additionally, ellagic acid can suppress inappropriate and excessive cell growth by blocking parts of the cell cycle progression.

Arteriosclerosis/atherosclerosis. Mayo Clinic. September 20, 2024. Accessed January 10, 2025. <https://www.mayoclinic.org/diseases-conditions/arteriosclerosis-atherosclerosis/symptoms-causes/syc-20350569>

Yu YM, Wang ZH, Liu CH, Chen CS. Ellagic acid inhibits IL-1 β -induced cell adhesion molecule expression in human umbilical vein endothelial cells. *Br J Nutr.* 2007;97(4):692–698. doi.org/10.1017/S0007114507666409

Chang WC, Yu YM, Chiang SY, Tseng CY. Ellagic acid suppresses oxidised low-density lipoprotein-induced aortic smooth muscle cell proliferation: studies on the activation of extracellular signal-regulated kinase 1/2 and proliferating cell nuclear antigen expression. *Br J Nutr.* 2008;99(4):709–714. doi.org/10.1017/S0007114507831734

Rani UP, Kesavan R, Ganugula R, et al. Ellagic acid inhibits PDGF-BB-induced vascular smooth muscle cell proliferation and prevents atheroma formation in streptozotocin-induced diabetic rats. *J Nutr Biochem.* 2013;24(11):1830–1839. doi.org/10.1016/j.jnutbio.2013.04.004

Yu YM, Chang WC, Wu CH, Chiang SY. Reduction of oxidative stress and apoptosis in hyperlipidemic rabbits by ellagic acid. *J Nutr Biochem.* 2005;16(11):675–681. doi.org/10.1016/j.jnutbio.2005.03.013



Raspberry Extracts Can Help Break Down Blood Clots

Researchers have found that red raspberry extracts have anticoagulant and fibrinolytic activities in a series of *in vitro* assay systems, meaning they can help break down blood clots. The antioxidants and other compounds, such as flavonoids, likely contribute to these effects.

Torres-Urrutia C, Guzmán L, Schmeda-Hirschmann G, et al. Antiplatelet, anticoagulant, and fibrinolytic activity *in vitro* of extracts from selected fruits and vegetables. *Blood Coagul Fibrinolysis*. 2011;22(3):197–205. doi.org/10.1097/MBC.0b013e328343f7da



Raspberry Juice Helps Prevent Early Atherosclerosis

Researchers evaluated the effects of three varieties of raspberry juices on preventing early atherosclerosis in hamsters fed a high-fat diet lacking antioxidants. They found that all raspberry juices showed protective effects when consumed daily for 12 weeks. The raspberry juices lowered triglyceride levels and decreased oxidative stress by reducing NADPH oxidase activity and superoxide anion production in cardiac and aortic tissues.

Suh JH, Romain C, González-Barrio R, et al. Raspberry juice consumption, oxidative stress and reduction of atherosclerosis risk factors in hypercholesterolemic golden Syrian hamsters. *Food Funct*. 2011;2(7):400–405. doi.org/10.1039/c1fo10047e



Raspberry Extracts Can Help Reduce High Blood Pressure

Studies conducted with raspberry extracts in spontaneously hypertensive rats have shown that these extracts reduce systolic blood pressure in a dose- and time-dependent manner. The mechanism appears to involve increased nitric oxide production, enhanced superoxide dismutase activity, and a reduction in endothelin levels. This helps shift the balance toward increased vasodilation and improved endothelial function, which are crucial for managing high blood pressure.

Jia H, Liu JW, Ufur H, He GS, Liqian H, Chen P. The antihypertensive effect of ethyl acetate extract from red raspberry fruit in hypertensive rats. *Pharmacogn Mag*. 2011;7(25):19–24. doi.org/10.4103/0973-1296.75885

Anthocyanins and Anthocyanidins in Raspberries Can Stimulate Insulin Secretion

This study explored the effects of anthocyanins and anthocyanidins on insulin secretion from rodent pancreatic beta-cells in vitro. Among the tested anthocyanins and anthocyanidins found in foods such as red raspberries, the anthocyanins—cyanidin-3-glucoside and delphinidin-3-glucoside—were the most effective in stimulating insulin secretions. Pelargonidin, an anthocyanidin, also caused a notable increase in insulin secretion.



Jayaprakasam B, Vareed SK, Olson LK, Nair MG. Insulin secretion by bioactive anthocyanins and anthocyanidins present in fruits. *J Agric Food Chem*. 2005;53(1):28–31. doi.org/10.1021/jf049018+

Anthocyanins in Raspberries Help Prevent Obesity and Diabetes

Adiponectin is a hormone that decreases inflammation and increases insulin sensitivity. Low levels of adiponectin are associated with obesity and type 2 diabetes. Leptin is a hormone that sends a signal to your brain to help you feel full.

A study found that anthocyanins found in raspberries enhanced both adiponectin and leptin secretion, demonstrating their potential for improving insulin sensitivity and preventing obesity and diabetes.

Adiponectin. Cleveland Clinic. Accessed January 9, 2025. <https://my.clevelandclinic.org/health/articles/22439-adiponectin>

Wiginton K. The facts on leptin: FAQ. WebMD. February 16, 2024. Accessed January 9, 2025. <https://www.webmd.com/obesity/features/the-facts-on-leptin-faq>

Tsuda T, Ueno Y, Aoki H, et al. Anthocyanin enhances adipocytokine secretion and adipocyte-specific gene expression in isolated rat adipocytes. *Biochem Biophys Res Commun*. 2004;316(1):149–157. doi.org/10.1016/j.bbrc.2004.02.031



Cyanidin-3-glucoside Found in Raspberries Can Improve Insulin Sensitivity and Lower Blood Sugar Levels

Inflammation is involved in the development of type 2 diabetes. Studies in diabetic animal models have shown that cyanidin-3-glucoside (C3G), a compound found in fruits like red raspberries, helps reduce inflammation and improve health in obese mice. In mice fed a high-fat diet or with diabetes, C3G reduced the amount of harmful inflammation in fat tissue and the liver. It also helped lower blood sugar levels. C3G was shown to improve insulin sensitivity and lower blood sugar levels in diabetic mice.

Hoffman M. Diabetes and inflammation. WebMD. July 7, 2023. Accessed January 9, 2025. <https://www.webmd.com/diabetes/inflammation-and-diabetes>

Guo H, Xia M, Zou T, Ling W, Zhong R, Zhang W. Cyanidin 3-glucoside attenuates obesity-associated insulin resistance and hepatic steatosis in high-fat diet-fed and *db/db* mice via the transcription factor FoxO1. *J Nutr Biochem*. 2012;23(4):349–360. doi.org/10.1016/j.jnutbio.2010.12.013

Sasaki R, Nishimura N, Hoshino H, et al. Cyanidin 3-glucoside ameliorates hyperglycemia and insulin sensitivity due to downregulation of retinol binding protein 4 expression in diabetic mice. *Biochem Pharmacol*. 2007;74(11):1619–1627. doi.org/10.1016/j.bcp.2007.08.008

Raspberry Ketones Can Help Prevent Obesity

Researchers investigated how raspberry ketones help prevent obesity in mice fed a high-fat diet. They found that raspberry ketones successfully reduced body weight and fat storage without changing overall energy intake. Specifically, raspberry ketones helped prevent fatty liver and the accumulation of fat in visceral tissues. Additionally, raspberry ketones suppressed dietary fat absorption by inhibiting pancreatic lipase and boosted lipolysis in white adipose tissue while increasing thermogenesis in brown adipose tissue. The researchers concluded that raspberry ketones prevent and improve obesity and fatty liver by altering lipid metabolism.



Morimoto C, Satoh Y, Hara M, Inoue S, Tsujita T, Okuda H. Anti-obese action of raspberry ketone. *Life Sci.* 2005;77(2):194–204. doi.org/10.1016/j.lfs.2004.12.029



Here's another Research Findings article. Enjoy!

Kiwi Fruit (*Actinidia chinensis*) Seed



A Healthy Ratio of Omega-3 to Omega-6 Fatty Acids

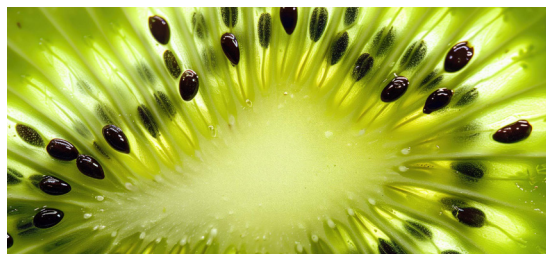
We need both omega-3 and omega-6 fatty acids for good health. But many people consume too much omega-6 fatty acids and not enough omega-3 fatty acids. This disparity increases the risk of inflammation, heart disease, cancer, and cognitive decline with age.

Kiwi fruit seeds are a plant source of omega-3 fatty acids, which are crucial for brain and heart health. Kiwi fruits stand out as one of the foods with a healthy ratio of omega-3 to omega-6 fatty acids.

Bruso J. The benefits of kiwi seeds. *Livestrong.com*. Accessed January 3, 2025. <https://www.livestrong.com/article/409089-the-benefits-of-kiwi-seeds/>

Strong Anti-inflammatory Activity

The polyphenols found in kiwi fruit seeds exhibit remarkable antioxidant and anti-inflammatory properties. The primary mechanism of these effects is the reduction of oxidative stress through free radical scavenging. Key polyphenolic compounds in kiwi fruit seeds include protocatechuic acid, *p*-hydroxybenzoic acid, caffeic acid, *p*-coumaric acid, and ferulic acid.



Deng J, Liu Q, Zhang C, Cao W, Fan D, Yang H. Extraction optimization of polyphenols from waste kiwi fruit seeds (*Actinidia chinensis* Planch.) and evaluation of its antioxidant and anti-inflammatory properties. *Molecules*. 2016;21(7):832. doi.org/10.3390/molecules21070832

Helps Combat Obesity

In a study, 12 weeks of continuous kiwi fruit seed oil supplementation resulted in a notable reduction in body weight gain, inguinal fat tissue weight, and blood glucose levels of mice on a high-fat diet. It also decreased the levels of total cholesterol, triglycerides, and LDL cholesterol ("bad" cholesterol) while increasing HDL cholesterol ("good" cholesterol). The findings demonstrated that long-term kiwi fruit seed oil supplementation combats obesity by reducing inflammation, enhancing adipose thermogenesis, and improving gut microbiota balance.

Qu L, Liu Q, Zhang Q, et al. Kiwifruit seed oil prevents obesity by regulating inflammation, thermogenesis, and gut microbiota in high-fat diet-induced obese C57BL/6 mice. *Food Chem Toxicol*. 2019;125:85–94. doi.org/10.1016/j.fct.2018.12.046



One of the Richest Sources of Alpha-linolenic Acid (ALA)

Kiwi fruit seed oil has an exceptionally high percentage of essential fatty acids: omega-3 alpha-linolenic acid at 62.3% and omega-6 linoleic acid at 16.1%, contributing to a total of 78.4% polyunsaturated fatty acids. This makes kiwi fruit seed oil one of the richest natural sources of alpha-linolenic acid.

Research shows that the polyunsaturated essential fatty acids in kiwi fruit seed oil have excellent bioavailability. Additionally, kiwi fruit seed oil is rich in sterols and tocopherols, further supporting its nutritional benefits.

Piombo G, Barouh N, Barea B, et al. Characterization of the seed oils from kiwi (*Actinidia chinensis*), passion fruit (*Passiflora edulis*) and guava (*Psidium guajava*). *OCL*. 2006;13(2–3):195–199. doi.org/10.1051/ocl.2006.0026

Boosts Cardiovascular Health

Modern research and clinical studies have demonstrated that kiwi fruit seed oil can regulate blood lipids and soften blood vessels. Additionally, a study has shown that an absolute 1% increase in alpha-linolenic acid (ALA) is linked to a 5 mmHg decrease in systolic, diastolic, and mean arterial pressure, highlighting the potential cardiovascular benefits of kiwi fruit seeds.

Liu B, Li X, Liu Q, Tan Z. Extraction and purification of kiwifruit seed oil using three-phase partitioning: an efficient and value-adding method for agro-industrial residue utilization. *Processes*. 2023;11(9):2581. doi.org/10.3390/pr11092581

Berry EM, Hirsch J. Does dietary linolenic acid influence blood pressure?. *Am J Clin Nutr*. 1986;44(3):336–340. doi.org/10.1093/ajcn/44.3.336



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