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E. EXCEL'S WORLD



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Beyond the Label



Packaging and label details are for illustrative purposes only.

Most of us have been taught to read labels.

We compare vitamin content. We scan ingredient lists. We look for percentages, health claims, and familiar ingredients. Many of us believe that if we read the label carefully enough, we can determine whether a product is healthy, of high quality, and worth the price.

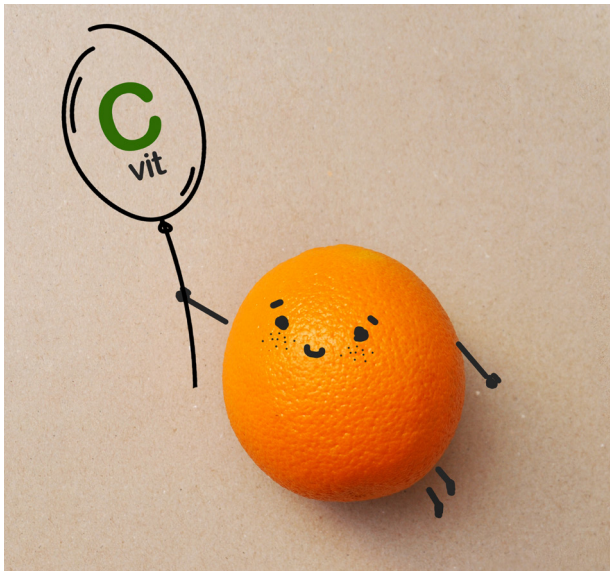
But what if the label only tells part of the story?

Labels are designed to provide a simplified snapshot of a product. They can tell us what ingredients were used and provide estimates of certain nutrients. What they often cannot tell us is how those ingredients were grown, processed, tested, packaged, stored, or how much of their nutritional value remains by the time the product reaches us.

Two products may display the same vitamin content yet contain different forms of those vitamins. Two products may list the same ingredient yet differ significantly in quality. A product with more of an ingredient may not necessarily provide more nutrition. Even the packaging can influence what survives inside.

Labels are useful, and they can help consumers make informed decisions. But nutrition, quality, and value are often far more complex than a list of ingredients and a table of numbers.

Before we trust the label, it may be worth asking a simple question: How much of the story are we not seeing?



Vitamin Numbers May Be Misleading

When consumers look at a nutrition label, one of the first things they often check is the vitamin content. A product containing 200%, 500%, or even 1,000% of the Daily Value can appear more nutritious than one with lower numbers. We have been conditioned to think that more vitamins mean better health. But is that really true?

Consider an orange. Most people see it as a source of vitamin C. Yet vitamin C is only a small part of what an orange contains. It also provides fiber and hundreds of naturally occurring compounds, including phytochemicals, flavonoids, and other compounds with antioxidant properties that do not appear on the nutrition label. In other words, food is far more than a list of vitamins and minerals.

This raises an interesting question: if humans truly needed massive amounts of vitamin C, why do fruits and vegetables not naturally contain such high concentrations? A medium orange contains about 70 mg of vitamin C, which is nearly enough to meet the daily requirement for most adults. Yet many vitamin C supplements provide 1,000 mg or more in a single pill—more than 10 times the Recommended Dietary Allowance (RDA).

Vitamins and minerals are essential, especially for people who are deficient. However, once basic needs are met, more is not always better. Consuming much larger amounts may provide little additional benefit and can even be harmful. Many people already get adequate amounts of most vitamins and minerals through their diet.

Labels also rarely tell us that many vitamins exist in different forms. For example, spinach contains folate, a naturally occurring form of vitamin B9, while many fortified foods and supplements contain folic acid, a synthetic form. They are not the same, and the body handles them differently.

The lesson is simple: vitamins matter, but nutrition is about more than the vitamins listed on a label.

Nutrition Labels Are Estimates

Many consumers assume that the numbers on a nutrition label are exact. In reality, they are estimates.

Different countries have different regulations and allowable margins of error. In the United States, for example, some variation between the labeled and actual nutrient content is permitted, and under some circumstances, differences of up to 20% may be acceptable.

Part of the challenge is that nutrients in natural foods, such as fruits and vegetables, are not fixed.



For example, the vitamin content can vary from harvest to harvest, and some may gradually decline during processing, storage, and transportation. By the time a product reaches consumers, it may no longer contain exactly the same nutrient levels it did when it was produced. Laboratory results can also vary depending on the testing method used.

To create more consistent vitamin levels, manufacturers often add vitamins during production, a process known as fortification. This helps maintain the declared values on the label.

But does adding vitamins make a product more valuable? Not necessarily. Many vitamins used in fortification are inexpensive ingredients that are added in very small amounts. This is one reason vitamin-fortified products can be found everywhere, from breakfast cereals and juices to cookies and candies.



Perhaps the most interesting point is that fresh fruits and vegetables do not require nutrition labels. Their nutrient content naturally varies, making exact numbers impossible to guarantee. Yet they remain some of the healthiest foods we can eat.

Maybe that is a reminder that good nutrition is not always something that can be reduced to a few numbers on a label.

A Vitamin Is Not Always Just One Vitamin

Most consumers assume that when a label says "Vitamin D" or "Vitamin B12," it refers to a single substance. In reality, many vitamins exist in multiple forms.

For example, vitamin D includes vitamin D2 and vitamin D3. Vitamin D2 is found in yeast and mushrooms, while vitamin D3 is the form our bodies naturally produce when exposed to sunlight. Although both are classified as vitamin D, they are not identical. Research suggests that vitamin D3 is generally more effective than vitamin D2 at raising and maintaining blood vitamin D levels. Yet nutrition labels often simply state "Vitamin D" without telling consumers which form is present.

The same is true for many other vitamins. Vitamin K exists as K1 and several forms of K2. Vitamin E is not a single compound but a family of tocopherols and tocotrienols. Vitamin B12 may appear as methylcobalamin, hydroxocobalamin, or cyanocobalamin. When manufacturers add vitamins to foods or supplements, they typically add one specific form, not every form found in nature. Yet labels often simply state "Vitamin K," "Vitamin E," or "Vitamin B12" without providing further details.



This raises another question: when a label states that a product contains a certain amount of a vitamin, what exactly is being added, and what exactly is being measured?

Different laboratory methods may measure different forms of a vitamin. Some measure only specific forms, while others measure a combination of forms. As a result, two laboratories using different testing methods may not always produce identical results for the same product.



To most consumers, a vitamin appears to be a simple number on a label. Behind that number, however, are different vitamin forms, different testing methods, and different assumptions about what is being measured.

More Is Not Always More

When comparing products, many consumers assume that more of a particular ingredient means more value. It seems logical: if a product contains more of a desirable ingredient, it should provide more benefits.

But quantity alone does not tell the whole story.

How an ingredient is processed can be just as important as how much of it is used. Different processing methods can affect how much of its naturally occurring compounds remain in the final product.



Take sea buckthorn, for example. Research has shown that freeze-dried sea buckthorn can retain about 1.5 to 3 times more phenolic compounds than sea buckthorn dried using other drying methods. This means that a product containing 10 grams of freeze-dried sea buckthorn may provide as many or more phenolic compounds as a product containing 15 grams of sea buckthorn dried using a different method.

Different nutrients also respond differently to processing. Mushrooms and soybeans, for example, are often cooked because heat can make certain nutrients and compounds more accessible to the body. Tomatoes and carrots are another example. Cooking can increase the availability of compounds such as lycopene and beta-carotene.

In other words, the value of an ingredient depends on more than its weight or percentage on a label. How it is processed can be just as important as how much is used.

Weight can be misleading for another reason: water content. Freeze-dried fruits typically contain only 2–4% moisture, while air-dried fruits may retain 15–25% moisture.

	Moisture	Actual Fruit Solids
Freeze-dried fruit (10 grams) 	4%	9.6g
Air-dried fruit (12 grams) 	25%	9g

For example, 10 grams of freeze-dried fruit containing 4% moisture provides about 9.6 grams of actual fruit solids. A product containing 12 grams of air-dried fruit with 25% moisture provides only about 9 grams of fruit solids. The label says 12 grams versus 10 grams, but the product with the smaller number actually contains more fruit.

The ingredient list can tell us what is inside a product. What it cannot tell us is how the ingredient was processed or how much of its nutrients survived processing.

The Same Ingredient Is Not Always the Same

Processing is only part of the story. The type of plant, where it is grown, and when it is harvested can all affect its nutritional composition.

Take acerola cherries as an example. Studies have found that fresh acerola cherries can contain anywhere from about 1,000 mg to 4,500 mg of vitamin C per 100 grams, depending on the type of acerola cherry, growing conditions, and stage of ripeness.





The same principle applies to many other foods. Not all blueberries, mushrooms, ginseng, or green tea are nutritionally identical simply because they share the same name. Different varieties, climate, growing conditions, harvest timing, storage, and processing can all influence nutrient levels.

Two products may contain the same ingredient on paper, yet provide very different amounts of naturally occurring nutrients and compounds.



Side Note: The Same Blind Spot Applies to Skincare Ingredients

This idea is not limited to food. Skincare products face a similar issue.

Many consumers assume that if two products list the same ingredient, they must be using the same material. In reality, most skincare ingredients can be manufactured in different grades and purity levels. This includes common ingredients such as alcohol, hyaluronic acid, niacinamide, vitamin C, and many others. Many of these ingredients are available in different grades, such as USP grade (which meets pharmaceutical-quality standards), FCC (Food Chemicals Codex) grade, cosmetic grade, or technical grade. These grades differ in purity, manufacturing controls, testing requirements, and allowable levels of impurities.

As consumers, we see the ingredient name on the label. What we usually do not see is the ingredient's grade, purity, manufacturing quality, or impurity profile. Two products may contain the same ingredient on the label, yet differ significantly in quality, cost, and the amount of unwanted impurities they contain.

Packaging May Matter More Than You Think

When comparing products, packaging is often judged by appearance, convenience, or whether it looks environmentally friendly.

But packaging does far more than hold a product together.

A product may leave the factory with excellent nutritional quality, yet nutrients can gradually degrade if the packaging fails to protect it from oxygen, moisture, heat, and light. Certain vitamins, antioxidants, oils, and flavors are particularly sensitive to these conditions.

Good packaging helps slow oxidation, protect against moisture and contamination, and reduce UV exposure. Some food packages are even flushed with nitrogen to reduce oxygen exposure and help preserve freshness. In some cases, effective packaging can also reduce the need for preservatives by protecting the product from the factors that cause spoilage.

Not all packaging materials perform equally. Their ability to block oxygen, moisture, and light can vary dramatically. As a result, two products with identical ingredients may not be in the same condition by the time they reach the consumer.



Packaging safety matters too. Packaging materials intended for food contact must be tested to ensure that substances such as inks, adhesives, pigments, and plasticizers do not migrate into the food.

Consumers often judge a product by what is written on the label. Yet one of the most important factors affecting quality may be the part they rarely look at: the packaging itself.



So How Should We Judge a Product?

If labels do not tell the whole story, does that mean labels are useless?

Not at all.

Labels remain a useful source of information. They can help us identify ingredients and avoid things we may not want. The problem is when we treat labels as the only measure of quality.

A good product is rarely defined by a single number, a vitamin percentage, or the presence of a trendy ingredient. Quality is often the result of many factors working together, including ingredient sourcing, the type of plant used, maturity, processing methods, purity, packaging, storage, and manufacturing standards.

It is also worth looking beyond the product itself. Who made it? Does the manufacturer have a history of producing safe, reliable products? Does the manufacturer invest in testing, quality control, and responsible sourcing? These factors often tell us more about quality than a few additional milligrams of a vitamin or a slightly higher percentage of an ingredient.

In other words, labels can help us ask better questions. They do not always provide all the answers.

The Bigger Picture

Perhaps the goal is not to find the perfect label.

The goal is to become a more discerning consumer.

The more we understand about food, ingredients, processing, manufacturing, and quality, the less likely we are to be impressed by a large number, a trendy ingredient, or a marketing claim.

A label can be useful.

But critical thinking is far more powerful.



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

Redefining Job Security in an Uncertain World



For years, the idea of job security was simple: choose a reputable company, earn a steady paycheck, climb the career ladder gradually, and retire on schedule. This model worked when the world changed slowly and wages kept pace with the cost of living. Today, that definition of job security is being redefined.

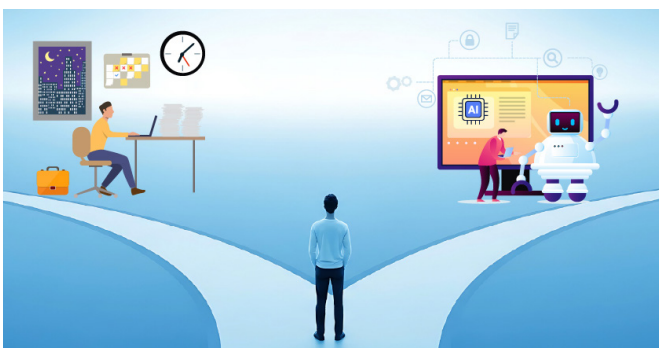
To understand why, consider the environment we now face: the World Economic Forum describes this era as a polycrisis—a reality in which multiple risks collide and reinforce one another: climate change, geopolitical disruption, cost-of-living pressures, declining agricultural output and resource stress, the spread of misinformation, and technological acceleration, all at once. When risks stack up this way, "security" is no longer something an employer can promise.

Old assumptions about job security are outdated. Job security is no longer just about having a job. It has become a system we build for ourselves—based on our skills, resilience, ownership, and health—so that our future is not tied to a single paycheck.

The "Safe Job" Is Becoming a Myth

In today's economy, even high performers can lose jobs due to external forces such as restructuring, economic shifts, offshoring, automation, or changing demand. We can do everything "right" and still be affected by decisions beyond our control.

This shift in job security is not theoretical—it is structural and already underway.



The World Economic Forum projects the creation of around 170 million jobs and the displacement of 92 million jobs globally between 2025 and 2030. This is not a distant future scenario. Many people will experience role changes, layoffs, or major reskilling while still mid-career. In other words, even competent and hardworking individuals can find that the category of work they rely on shrinks or transforms faster than they can adapt.





Artificial intelligence (AI) accelerates the speed of change. Clerical, secretarial, bank teller, cashier, postal, ticketing, and data-entry jobs are declining. Kristalina Georgieva, Managing Director of the International Monetary Fund (IMF), has warned of an AI-driven "tsunami" impacting large shares of jobs, while major employers have openly discussed automation and restructuring. Even if AI ultimately creates more jobs than it displaces, the transition period can still be highly disruptive to both entry-level and professional roles.

The world is changing faster than university degrees or job titles can protect you. Employment-based security is fragile—even a "good" job is unstable if your role sits in the path of faster-moving forces.

A Salary Is Not the Same as Security

A steady paycheck creates psychological comfort because it arrives on schedule. But income stability and life stability are not the same.

Inflation Rewrites Your Financial Reality

Even if your paycheck increases, your purchasing power can still fall. The Organization for Economic Co-operation and Development (OECD) reports that real wages have been recovering but remain below early-2021 levels in around two-thirds of OECD countries. That gap reflects the lived experience of "I'm earning a little more, but everything costs much more." Many households are still catching up after inflation outpaced wages.

Currency Risk Can Undo Years of Discipline

A widely circulated case from Japan describes a 45-year-old man who saved aggressively for 21 years in order to retire early. He lived an extremely frugal life, avoided comforts, and ultimately saved far more than his original retirement goal. However, once the yen's value was taken into account, the outcome changed dramatically. In 2020, ¥100 was worth about US$0.93. By 2024, it had fallen to roughly US$0.64. Currency depreciation alone reduced the dollar value of his savings by around 30%, significantly eroding the real outcome of decades of discipline.



Housing Magnifies the Pressure of Living

Housing is often the largest fixed expense in a household budget. In many parts of the world, it has become a major source of financial stress, even for middle- and high-income earners. The relationship between home prices and household income has stretched far beyond what previous generations considered normal. That means families often devote well over a decade's worth of income to buying a home—often requiring two incomes just to manage baseline living costs.



When housing costs (including mortgages, rent, and utilities) take up a larger share of income, families have less room for emergencies, children's education, healthcare, and long-term investing. A salary that looks "good" on paper can still feel tight in everyday life.

If your future relies only on a paycheck and savings, the foundation may be thinner than it appears. Inflation and rising housing costs quietly erode purchasing power. Over time, working harder does not always mean getting ahead—it can start to feel like running faster just to stay in place.

The Question Most People Do Not Ask (But Should)

Against this backdrop, one key question reveals the reality of your situation: If you stop working for a year, what will happen to your life?

Most traditional employment structures tie income directly to ongoing output, meaning your income is conditional on your time and your ability to keep producing. If illness, injury, caregiving responsibilities, or burnout interrupts you, the financial consequences can be immediate.



That leads to a deeper truth: **If your income depends entirely on your uninterrupted ability to work, then your security is conditional.**

A popular line often attributed to Warren Buffett captures this idea: "If you don't find a way to make money while you sleep, you will work until you die." The message is clear: Relying solely on labor income is fragile. Lasting security requires generating income without constant physical output.

What Does Real Job Security Look Like Today?

Real job security is not conditional. When you have real job security, your income comes from structures you control, and is not dependent on an employer or hours worked.

Job security is no longer about a "job" or a "position." It depends on creating a robust, multifaceted foundation—a structure built on five pillars:



Pillar 1: Adaptability (Skills That Are Actively Updated)

As roles evolve and skill requirements shift, those who can learn quickly and move across tools, teams, industries, and even countries if needed will fare better.

Adaptability is the habit of continuous learning and staying current, particularly in areas such as digital literacy, communication, teaching (turning knowledge into clarity), and working with new tools (including AI) rather than fearing them.

Pillar 2: Resilience (Financial and Personal Shock Absorption)

Resilience prevents surprises from becoming disasters. It includes emergency liquidity, such as a cash buffer; insurance and protections where appropriate; and health routines that reduce illness and preventable setbacks.

Importantly, it also includes having **diversified income sources** (more than one income stream). Lasting security requires creating income streams that are not dependent on your continuous ability to work. Adding a second income stream and making it scalable does not happen overnight. A second stream becomes meaningful when it is repeatable, teachable, and not trapped within your physical hours.

High income with zero resilience can be less secure than moderate income with strong buffers.

Pillar 3: Ownership (Assets That Keep Producing)

Ownership can take many forms:

- Equity or a stake in a business
- A personal brand with market trust
- An audience or client base
- A team or system that generates value without your constant presence



Ownership is the difference between "I get paid when I show up" and "I get paid because value continues to flow through something I built."

Pillar 4: Purpose (A Reason Strong Enough to Persist Through Discomfort)

Do you have a purpose that drives you forward even when things get tough? The cost of success includes risk. Purpose is what keeps someone learning when the learning curve feels humiliating, and what keeps someone consistent when results are delayed.

Pillar 5: Continuity
A job cannot be inherited. Nothing built in a job truly belongs to the worker. A position or title cannot be passed on, nor can years of effort. When work stops, income stops, and the next generation starts from zero.

Whether the "inheritance" is a business, a customer base, or a brand, the principle remains the same: Real security includes continuity.



Health Is a Stable Global Need

In a world of constant change, very few needs remain stable. Health is one of them. Regardless of AI, automation, or economic cycles, people will always need to protect their health. Health underpins every aspect of life. Your body is your productivity engine. Your mind is your decision engine. If either breaks down, career plans and financial plans suffer. Without health, there is no career, no income, and no future.

Health Is in Growing Demand

Wellness spending is growing on a massive scale. The Global Wellness Institute estimates that the global wellness economy reached US$6.8 trillion in 2024, representing slightly over 6% of global GDP.

That means two crucial things are true at the same time:

1. Consumers are increasingly investing in daily health behaviors and prevention, not just reactive healthcare.

2. The market for trusted education and evidence-based wellness continues to expand.

Healthy aging, prevention, at-home health solutions, and science-backed nutrition are becoming global priorities. Younger generations are investing in wellness earlier than any generation before—not out of fear, but out of awareness.



Health Is Personally Relevant Across All Life Stages

The world is aging fast. The World Health Organization (WHO) reports that by 2030, one in six people globally will be aged 60 or older, and by 2050, the number of people aged 60+ is expected to reach 2.1 billion. Aging populations increase demand for prevention, chronic disease management, mobility support, cognitive health, and everyday nutrition.

Health matters at every life stage. It is not a side goal, and it is not optional. It is the infrastructure beneath every career, business, and financial plan. Without health, income capacity declines. With it, people can keep building careers, assets, and long-term security for longer, with fewer avoidable setbacks.

The E. Excel Career: Why Health-Based Ownership Matters



E. Excel operates at this intersection—improving health as a lifelong need while offering a business model that allows individuals to build something that can grow beyond a single employer, a single job market, or a single currency.

Whether a person chooses E. Excel or any other vehicle, the core question remains the same: What platform allows me to build ownership in a category that remains relevant, even as technology, geopolitics, or the economy shifts?

E. Excel's health-centered platform has three strategic advantages:
1. It aligns with long-term demand drivers (aging, prevention, chronic disease burden).

2. It offers daily value (health behaviors happen every day, not once a year).

3. It can scale through relationships and education (trust compounds, and networks compound).

The keyword is compound. Compounding is what salaries do not do automatically. A salary is linear: you trade time for money, month after month. However, ownership, when built well, can become exponential—systems, relationships, customer trust, and team capability can grow beyond what one person can produce alone.

E. Excel provides a platform for ownership, allowing individuals to build an independent business that can expand internationally, participate in global demand, rally around the purpose of improving health through nutrition, and serve a need the world will always have.



What Job Security Today Gives You

The most empowering move is not predicting the next change or crisis; rather, it is building a life that stays stable even when you are surprised.

The new definition of job security in today's uncertain world:

- not an employer's promise, but your own capability
- not a title, but transferable skills
- not a paycheck alone, but resilience and ownership
- not fear of change, but preparedness for it
- not working forever, but building the right to choose when to stop



When you build adaptability, resilience, ownership, purpose, and continuity, you gain something deeper than stability: the right to choose.

Choose work that aligns with your values. Choose rest without panic. Choose to pivot when the world pivots. Choose to protect the people you love without begging the economy to remain calm.

Why let employers, markets, or chance decide your future?

You can choose your future.



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.

Silver Spoons, Squirrels, and Poisonous Mushrooms



Mushrooms are having a moment. Some people think they are a superfood. Others think they are mysterious, dangerous, or even magical. And thanks to social media, mushroom myths seem to spread almost as fast as mushroom spores.

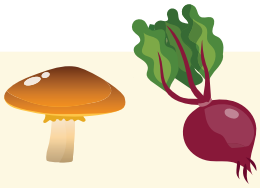
The truth is that edible mushrooms are among the healthiest foods you can add to your diet.

Research suggests that eating as little as 18 grams of mushrooms a day may be associated with a lower risk of cancer. Mushrooms are a major dietary source of ergothioneine, a unique antioxidant that helps protect cells from damage. Many edible mushrooms, including shiitake, oyster, maitake, king oyster, and Brazilian mushrooms, contain this compound.

Mushrooms may also support healthy aging. Researchers at the National University of Singapore found that older adults who ate more than two portions of mushrooms per week were significantly less likely to develop mild cognitive impairment.

That is the good news.

The bad news? Mushrooms are surrounded by myths. Some people think bright colors mean danger. Others trust silver spoons, garlic, eggs, or even squirrels to identify poisonous mushrooms. And some assume that if a mushroom makes headlines, it must be good for them. Before you trust folklore, social media, or your neighborhood squirrel, let's separate mushroom facts from mushroom fiction.



Myth:

Mushrooms are vegetables.



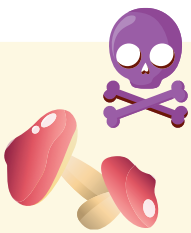
Truth:

Mushrooms are fungi, not vegetables. Most of us think of mushrooms as vegetables because they are typically sold in the produce section alongside fresh fruits and vegetables. But biologically speaking, mushrooms are not vegetables at all. They belong to their own kingdom: fungi.

Unlike plants, mushrooms do not photosynthesize. They do not use sunlight to make their own food, and they do not have roots, stems, or leaves. Instead, they obtain nutrients by breaking down organic matter in their environment.

In fact, fungi are more closely related to animals than to plants. So the mushroom on your pizza is technically a closer cousin to you than it is to the lettuce in your salad. That said, do not start looking for mushrooms in the meat section of the grocery store.

Bottom Line: We may cook mushrooms like vegetables, but scientifically they are fungi—a kingdom all their own.



Myth:

Garlic and eggs can tell whether a mushroom is poisonous.



Truth:

Garlic and eggs are useful ingredients in the kitchen, but they cannot detect poisonous mushrooms. A common folk belief says that adding garlic or a peeled hard-boiled egg while cooking wild mushrooms will reveal whether the mushrooms are poisonous. If the garlic or egg darkens, the mushrooms are supposedly poisonous; if not, they are considered safe. Unfortunately, mushroom toxins do not conveniently announce their presence this way. A mushroom can be deadly even if the garlic stays white and the egg looks perfectly normal.

Color changes in garlic, eggs, onions, or metals are usually caused by ordinary chemical reactions involving sulfur compounds, minerals, acidity, or heat, not by mushroom toxins. Garlic can naturally turn blue, green, or darken during cooking because of reactions involving its own sulfur compounds. Eggs also undergo chemical reactions during cooking that cause color changes unrelated to mushroom toxicity. So a poisonous mushroom may cause no color change at all, while a perfectly edible mushroom might.

Bottom Line: There is no simple cooking trick that can reveal whether a mushroom is poisonous. The only reliable way is to properly identify the mushroom itself.

Myth:

Vegetarians and vegans cannot eat mushrooms because mushrooms are not plants.





Truth:

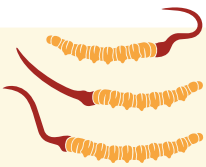
Mushrooms are generally suitable for both vegetarians and vegans.

Vegetarian and vegan diets exclude animal flesh. Mushrooms are fungi, and therefore they are not animals. The confusion often comes from the fact that fungi are more closely related to animals than to plants in evolutionary terms. But being related to animals is not the same as being an animal. After all, we are related to bananas too. Humans share genes with nearly every living thing on Earth.

Bottom Line: Mushrooms may not be plants, but they are not animals either. That is why they are generally suitable for both vegetarians and vegans.

Myth:

Wild cordyceps is more nutritious than cultivated cordyceps mycelium.





Truth:

More expensive does not necessarily mean more nutritious. Wild cordyceps (formerly *Cordyceps sinensis*, now *Ophiocordyceps sinensis*) often sells for extremely high prices, leading many people to assume it must be superior to cultivated cordyceps mycelium. The biggest difference? Wild cordyceps comes attached to a caterpillar. Cultivated cordyceps mycelium does not.

Fortunately, most people are interested in the fungus, not the caterpillar. The key nutritional compounds come primarily from the fungal mycelium, which is why cultivated cordyceps mycelium and wild cordyceps have very similar nutritional profiles. While wild cordyceps is highly prized for its rarity and long history of traditional use, cultivated cordyceps mycelium is produced under controlled conditions and offers many of the same nutritional benefits—without requiring a trek across the Tibetan Plateau or a dead insect.

Bottom Line: Current evidence suggests that cultivated cordyceps mycelium can provide nutritional benefits similar to those of wild cordyceps. The main thing it is missing is the caterpillar, and most people are not shopping for that anyway.

Did You Know?

Cultivated cordyceps mycelium is generally considered vegetarian- and vegan-friendly because it is grown on grain-based substrates. Wild cordyceps, however, grows on insect larvae, so some vegans choose to give it a pass. Wild cordyceps may be one of the few mushrooms that gives vegans pause—and comes with a caterpillar.

Myth:

Cooking makes any mushroom safe to eat.





Amanita phalloides

Truth:

Cooking does not make all mushrooms safe to eat. Many people believe that any mushroom becomes harmless once it is cooked. Unfortunately, that is not how mushroom toxins work. While cooking can destroy some naturally occurring compounds and improve digestibility, it does not neutralize all mushroom toxins.

Some poisonous mushrooms contain heat-stable toxins that survive frying, boiling, baking, and other cooking methods. For example, the death cap mushroom (*Amanita phalloides*) contains toxins that can cause severe liver damage or even death, and these toxins are not destroyed by cooking. In other words, a poisonous mushroom does not become edible just because it has been thrown into a hot pot.

Bottom Line: Cooking can improve the safety and digestibility of edible mushrooms, but it cannot turn a poisonous mushroom into a safe edible one.

Myth:

A silver coin or spoon can tell if a mushroom is poisonous.





Amanita bisporigera

Truth:

Silver cannot tell whether a mushroom is poisonous. A long-standing folk belief says that if a silver coin or spoon turns black while cooking mushrooms, the mushrooms must be toxic.

The idea comes from the fact that silver can react with certain sulfur-containing compounds and become tarnished. However, the presence or absence of sulfur compounds has nothing to do with whether a mushroom is edible or poisonous.

Many perfectly edible mushrooms contain sulfur compounds and may cause silver to darken. At the same time, some of the deadliest mushrooms contain toxins that do not react with silver at all.

So if a silver spoon stays shiny, it does not prove that the mushrooms are safe. And if it tarnishes, it does not prove that they are dangerous.

Bottom Line: A silver coin or spoon cannot detect poisonous mushrooms. Mushroom toxins do not care whether there is silver in the pot.



Myth:

All mushrooms have the same nutrients.



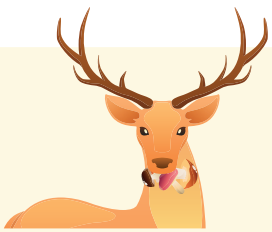
Truth:

It is easy to think of mushrooms as one big category, but each mushroom species has its own nutritional profile.

For example, different mushroom species contain varying types and amounts of polysaccharides, including beta-glucans, as well as varying amounts of fiber, antioxidants, and other naturally occurring compounds.

Think of mushrooms like fruits and vegetables. Oranges, blueberries, and tomatoes are all nutritious, but they do not provide exactly the same mix of nutrients. Likewise, each mushroom species offers its own unique combination of nutrients and naturally occurring compounds.

Bottom Line: No single species of mushroom contains everything. By enjoying a variety of mushrooms, we can benefit from the unique nutritional qualities that each species provides.



Myth:

If animals eat a mushroom, it must be safe.



Amanita pantherina

Truth:

A mushroom that is safe for animals may still be dangerous for humans. Many people assume that if squirrels, deer, rabbits, or other animals can eat a mushroom, it must be safe to eat. Nature, however, does not work that way.

Different species can respond very differently to the same mushroom. Some animals can consume mushrooms that would make humans seriously ill. For example, squirrels have been observed eating the panther cap (*Amanita pantherina*) with no apparent ill effects. Humans, however, can be poisoned by this mushroom because it contains ibotenic acid and muscimol, compounds that can affect the nervous system and cause symptoms such as confusion, hallucinations, seizures, and memory disturbances.

Animals also do not always show obvious signs of illness immediately, making it easy to assume that a mushroom is safe to eat when it is not. A squirrel's menu is not a mushroom safety guide.

Bottom Line: If a squirrel eats a mushroom, it tells us something about squirrels, but not necessarily about mushrooms.



Myth:

If a mushroom bruises blue, it is toxic.


Gyroporus cyanescens

Truth:

A blue bruise does not mean a mushroom is poisonous. Some poisonous mushrooms bruise blue or bluish-green when damaged, while many edible mushrooms do the same. For example, the blueing bolete (*Gyroporus cyanescens*) turns a striking blue when sliced and is considered an excellent edible mushroom. Meanwhile, some of the world's most dangerous mushrooms, including the death cap and destroying angel, do not bruise blue at all.

The blue color is usually caused by natural compounds reacting with oxygen when the mushroom is damaged, much like a sliced apple turns brown. It may tell us something about the mushroom's chemistry, but it will not help us decide whether it belongs on a dinner plate.

Bottom Line: A mushroom may bruise blue whether it is edible or poisonous. Color changes alone are not a reliable way to identify whether a mushroom is safe to eat.



Myth:

You can identify poisonous mushrooms by their bright colors.


Hypomyces lactifluorum

Truth:

Color alone cannot tell us whether a mushroom is poisonous. Many people believe that brightly colored mushrooms are toxic, while plain-looking mushrooms are safe to eat. In reality, color tells us very little about whether a mushroom is edible or poisonous.

Poisonous mushrooms come in a wide variety of colors, shapes, and sizes, and many closely resemble edible species. For example, the deadly death cap (*Amanita phalloides*) can look similar to some common edible white mushrooms and is easily mistaken for them. At the same time, some edible mushrooms are brightly colored. The lobster mushroom (*Hypomyces lactifluorum*) is a vivid orange-red and highly prized by foragers.

Plus, if bright colors are supposed to be a warning sign, somebody forgot to tell the destroying angels (*Amanita bisporigera* and *Amanita virosa*). These deadly mushrooms are almost entirely white but can cause fatal poisoning. Mushrooms, it seems, have not agreed on a universal color-coding system.

Bottom Line: Bright colors do not mean a mushroom is poisonous, and dull colors do not mean it is safe. Color alone is never a reliable way to identify a mushroom's edibility.

Myth:

Eating raw mushrooms is healthier.





Truth:

Mushrooms are not salads. Many people assume that raw mushrooms are healthier because we often eat vegetables raw. But mushrooms are different.

Button, cremini, and portobello mushrooms contain a naturally occurring compound called agaritine. Agaritine has been the subject of scientific research, and normal cooking helps reduce it, which is one reason these mushrooms are generally recommended to be cooked before eating. Cooking also makes mushrooms easier to digest by softening tough fungal cell walls.

In other words, unlike lettuce, mushrooms generally benefit from a little time in the frying pan.

Bottom Line: Unlike many salad vegetables, mushrooms are one food that generally benefits from cooking.

Myth:

Wild mushrooms are better than cultivated mushrooms.





Truth:

Wild does not always mean cleaner, safer, or better. Many people assume that mushrooms growing in the wild are healthier because they are "natural." But fungi have a unique ability to absorb substances from their environment, and some species can even break down certain pollutants.

In fact, scientists use fungi in a process called mycoremediation to help clean contaminated soil and water. Some mushrooms can absorb heavy metals, pesticides, petroleum products, industrial pollutants, and even certain radioactive materials. That is great for environmental cleanup, but not necessarily for dinner.

A mushroom growing in a polluted area may accumulate contaminants from the environment around it. Cultivated mushrooms, by contrast, are typically grown on controlled substrates under monitored conditions. So the question is not "Wild or cultivated?" It is "Where did it grow?"

Bottom Line: Wild mushrooms are not automatically better than cultivated mushrooms. Sometimes, a farm-grown mushroom may actually be the cleaner, safer choice because we do not always know what a wild mushroom has been exposed to.

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.

Chia Seeds and Kiwifruit Seeds



Chia Seeds May Help Lower Blood Pressure

A review of eight randomized controlled trials examined whether chia seed consumption affects blood pressure. The analysis found that chia seeds significantly lowered both systolic and diastolic blood pressure. The blood pressure-lowering effect was mainly observed in people whose baseline systolic blood pressure was below 140 mmHg. This suggests that chia seeds may be more beneficial for individuals with normal to moderately elevated blood pressure than for those with more severe hypertension. The effect did not appear to depend on the amount consumed. Overall, chia seeds may provide modest support for blood pressure management.

TaghipourSheshdeh F, Behzadi M, Bashiri S, Mohammadi-Sartang M. The effect of chia seed on blood pressure, body composition, and glycemic control: a GRADE-assessed systematic review and dose-response meta-analysis of randomized controlled trials. *Nutr Rev*. 2025;83(3):448–465. doi.org/10.1093/nutrit/nuae113

Chia Seeds May Protect Against Heart Disease

This study examined the relationship between obesity and cardiovascular disease and evaluated whether chia seed supplementation can protect the heart in rats fed a high-fat diet.

Supplementation with chia seeds significantly reduced body weight gain, abdominal fat ratios, fasting glucose, insulin resistance, triglycerides, total cholesterol, LDL ("bad") cholesterol, VLDL (very-low-density lipoprotein), mean arterial pressure, inflammatory markers, and cardiac injury markers,

while increasing HDL ("good") cholesterol. Cardiac structure and function were partially restored, tissue damage was reduced, and apoptotic signaling shifted toward cell survival. The protective effects of chia seeds are attributed to their high content of dietary fiber, omega-3 fatty acids (especially alpha-linolenic acid), antioxidants, bioactive compounds, and minerals such as magnesium and potassium.

Aref M, FaragAllah EM, Goda NIA, et al. Chia seeds ameliorate cardiac disease risk factors via alleviating oxidative stress and inflammation in rats fed high-fat diet. *Sci Rep*. 2024;14(1):2940. doi.org/10.1038/s41598-023-41370-4





Chia Seeds May Help Lower Triglyceride Levels

Triglycerides are fats in the blood that provide energy but, when elevated, increase the risk of cardiovascular disease and pancreatitis. Chia seeds are rich in fiber, protein, omega-3 fatty acids, and antioxidants. They have been studied for their potential to lower triglyceride levels and improve metabolic health. Evidence from observational and experimental studies suggests that chia seeds may reduce triglycerides, inflammation, insulin resistance, and abdominal fat while increasing HDL ("good") cholesterol. Animal and human studies also indicate that chia seed oil can improve lipid profiles, including lowering triglycerides, leptin levels, and liver cholesterol.

Khalid W, Arshad MS, Aziz A, et al. Chia seeds (*Salvia hispanica* L.): A therapeutic weapon in metabolic disorders. *Food Sci Nutr*. 2022;11(1):3–16. doi.org/10.1002/fsn3.3035

Chia Seeds May Help Improve Metabolic Markers

This study examined the effects of chia seed oil, a rich plant source of the omega-3 fatty acid alpha-linolenic acid, in mice with metabolic syndrome induced by a high-fat diet. Chia seed oil supplementation improved several metabolic markers by altering lipid profiles in the liver and adipose tissue, decreasing triglycerides, insulin, leptin, and liver cholesterol, and enhancing insulin signaling in muscle tissue. These findings suggest improvements in insulin sensitivity and lipid metabolism in this animal model.

Citelli M, Fonte-Faria T, Vargas-Silva S, Barja-Fidalgo C. Dietary supplementation with chia (*Salvia hispanica* L.) oil reduces the complications caused by high-fat diet-induced obesity. *FASEB J*. 2016;30(1_suppl):907.20. doi.org/10.1096/fasebj.30.1_supplement.907.20

Chia Seeds May Support Healthy HDL Levels

Cholesterol is essential for normal cell function but, when imbalanced, may increase the risk of cardiovascular disease. HDL cholesterol is considered "good" cholesterol because it helps remove excess cholesterol from the bloodstream and is associated with a lower risk of heart disease.



Chia seeds are rich in soluble fiber and omega-3 fatty acids, especially alpha-linolenic acid (ALA). Studies show that chia seed consumption increases blood levels of ALA and EPA (an omega-3 fatty acid) and may improve dyslipidemia, insulin resistance, and visceral fat accumulation. Animal studies further suggest that chia seeds support healthy fat and blood sugar balance, highlighting their potential benefits for cardiovascular and metabolic health.

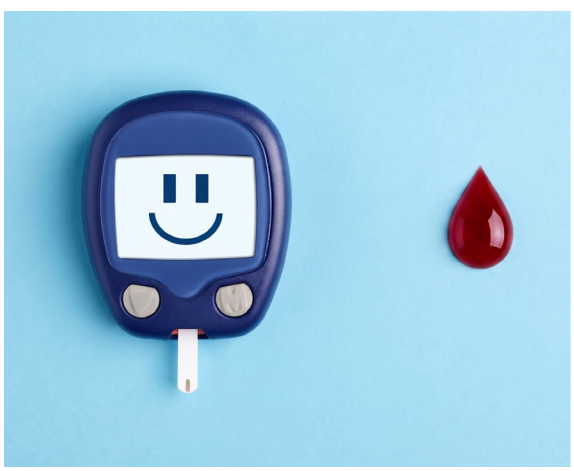
Khalid W, Arshad MS, Aziz A, et al. Chia seeds (*Salvia hispanica* L.): A therapeutic weapon in metabolic disorders. *Food Sci Nutr*. 2022;11(1):3–16. doi.org/10.1002/fsn3.3035

Chia Seeds May Protect Against Dyslipidemia

This study provides detailed evidence that chia seeds, when used as the primary dietary fat source, may exert protective and restorative effects against diet-induced lipid and glucose disorders. Replacing maize oil with chia seeds—thereby markedly lowering the dietary omega-6 to omega-3 ratio—prevented and reversed dyslipidemia and insulin resistance in rats fed a sucrose-rich diet.

Chia seed intake prevented the early development of hypertriglyceridemia and insulin resistance during short-term exposure to a sucrose-rich diet without altering blood glucose levels. In long-term feeding, chia seeds reversed established hypertriglyceridemia and insulin resistance, even when introduced later in the dietary intervention. These improvements occurred without changes in body weight, energy intake, or circulating insulin levels, indicating a direct metabolic effect rather than reduced caloric consumption.

Chicco AG, D'Alessandro ME, Hein GJ, Oliva ME, Lombardo YB. Dietary chia seed (*Salvia hispanica* L.) rich in alpha-linolenic acid improves adiposity and normalises hypertriacylglycerolaemia and insulin resistance in dyslipaemic rats. *Br J Nutr*. 2009;101(1):41–50. doi.org/10.1017/S000711450899053X





Chia Seeds May Have Anti-Inflammatory Effects

This meta-analysis reviewed randomized controlled trials examining chia seed consumption and inflammation, focusing on the inflammatory markers CRP, IL-6, and TNF-α in overweight individuals and those with type 2 diabetes. Across four trials, chia seed intake significantly reduced CRP levels. Proposed mechanisms include the omega-3 fatty acids, fiber, and polyphenols found in chia seeds, which have antioxidant and anti-inflammatory properties and may improve insulin sensitivity.

Pam P, Asemani S, Azizi MH, Jamilian P. Chia seed supplementation and inflammatory biomarkers: a systematic review and meta-analysis. *J Nutr Sci*. 2024;13:e91. doi.org/10.1017/jns.2024.70





Kiwifruit Seeds May Help Lower Lipid Levels

This study examined the effects of kiwifruit and kiwifruit seeds on diet-induced hypercholesterolemia (an excess of cholesterol in the bloodstream) in rats. Hypercholesterolemia resulted in increases in body weight; total cholesterol and triglyceride levels in both serum and liver; LDL ("bad") cholesterol; the atherogenic index; and liver enzyme activities, along with reduced HDL ("good") cholesterol and antioxidant status.

Supplementation with kiwifruit and kiwifruit seeds significantly improved lipid metabolism in a dose-dependent manner. This supplementation lowered serum and hepatic total cholesterol, triglycerides, LDL cholesterol, and the atherogenic index while increasing HDL cholesterol and the HDL-to-total cholesterol ratio. It also reduced liver lipid accumulation and improved liver function, as indicated by decreased activities of the liver enzymes AST and ALT.

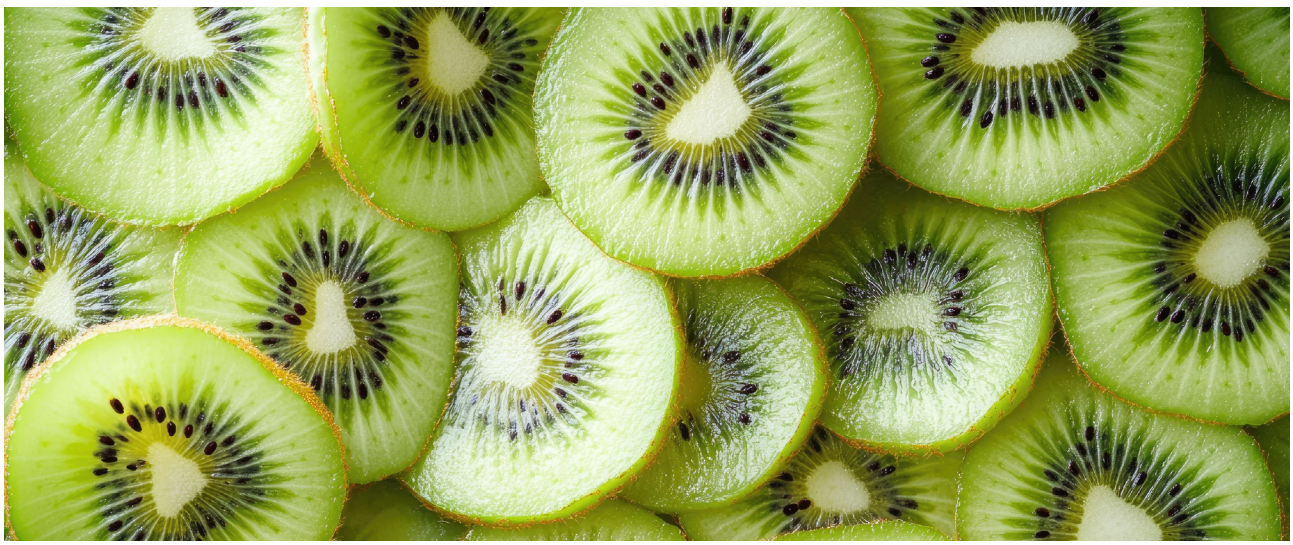
Shehata MM, Soltan SSA. Effects of bioactive component of kiwi fruit and avocado (fruit and seed) on hypercholesterolemic rats. *World J Dairy Food Sci*. 2013;8(1):82–93. https://idosi.org/wjdfs/wjdfs8%281%2913/11.pdf

Kiwifruit Seeds Are High in Omega-3 Fatty Acids and Other Nutrients

Kiwifruit seeds are a nutritionally valuable but often overlooked part of the fruit and contribute to its health benefits. The seeds contain polyunsaturated fatty acids (PUFAs), a type of beneficial fat. These include alpha-linolenic acid (ALA), an omega-3 fatty acid and an essential fatty acid that the human body cannot produce and must be obtained from food. ALA helps support lipid metabolism and is linked to heart health and anti-inflammatory processes.

The lipid fraction of kiwifruit seeds complements the fruit's overall nutrient profile and may contribute to hypolipidemic (lowering fats in the blood) effects, including reductions in total cholesterol, triglycerides, and LDL ("bad") cholesterol while helping to maintain or increase HDL ("good") cholesterol. Omega-3 fatty acids from plant sources like kiwifruit seeds are also associated with improved insulin sensitivity and modulation of metabolic disorders such as dyslipidemia and insulin resistance.

In addition to omega-3 fatty acids, kiwifruit seeds contain dietary fiber and bioactive phytochemicals, including polyphenols and flavonoids, which may enhance antioxidant capacity and help protect against oxidative stress. These compounds may work synergistically with omega-3 fatty acids to support cardiovascular and metabolic health.



Khutare SR, Deshmukh AS. A review on various medicinal applications of kiwi fruit. *Int J Sci Res Arch*. 2023;8(2):193–206. doi.org/10.30574/ijsra.2023.8.2.0112

He X, Fang J, Chen X, et al. *Actinidia chinensis* Planch.: a review of chemistry and pharmacology. *Front Pharmacol*. 2019;10:1236. doi.org/10.3389/fphar.2019.01236

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

Bertoni C, Abodi M, D'Oria V, Milani GP, Agostoni C, Mazzocchi A. Alpha-linolenic acid and cardiovascular events: a narrative review. *Int J Mol Sci*. 2023;24(18):14319. doi.org/10.3390/ijms241814319

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

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