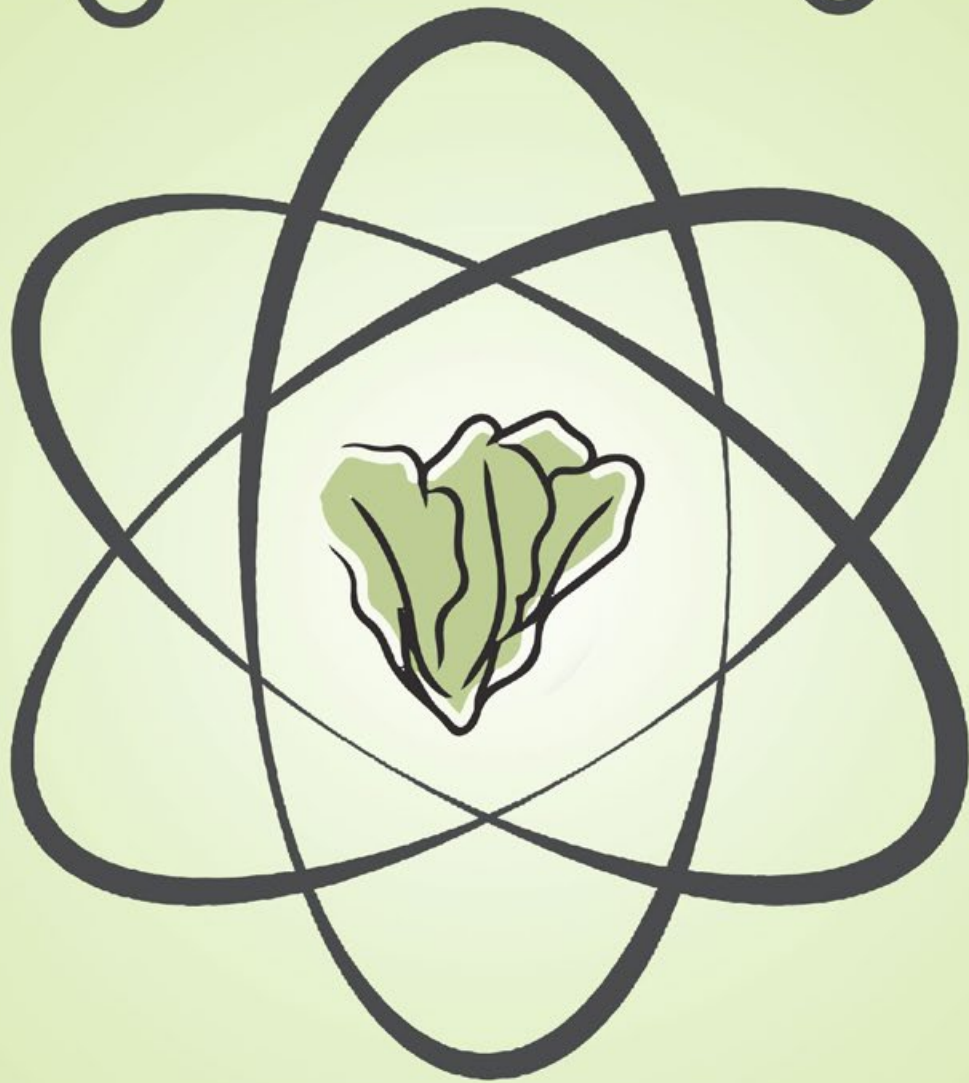


**Nutrivore**

GUIDE TO



# **Leafy Vegetables**

BY THE TEAM AT NUTRIVORE

# Table of Contents

- [3](#) Introduction to Leafy Vegetables
- [4](#) What Counts as Leafy Vegetables?
- [6](#) What Makes Leafy Vegetables So Great?
- [11](#) Health Benefits of Leafy Vegetables
- [14](#) Leafy Vegetables Nutrivore Scores
- [15](#) What about Iceberg Lettuce?!
- [16](#) Some Practical Pointers

## RECIPES

### [19](#) Breakfast

- [20](#) Bacon, Spinach and Olive Frittata
- [21](#) Red Velvet Beet Smoothie

### [22](#) Entrées

- [23](#) Tuna Salad Collard Wraps
- [24](#) Thai Beef Lettuce Wraps
- [25](#) Arctic Char en Papillote with Watercress
- [26](#) Cucumber and Watercress Sandwiches

### [27](#) Soups and Salads

- [28](#) Lettuce Soup
- [29](#) Pear, Fennel and Endive Salad
- [30](#) Arugula, Strawberry and Chèvre Salad with Candied Pecans

### [31](#) Sides

- [32](#) Wilted Spinach with Almonds and Cranberries
- [33](#) Braised Chard

### [34](#) Dessert

- [35](#) Hidden Spinach Brownies

### [37](#) About the Creators

### [38](#) References

# Introduction to Leafy Vegetables

When it comes to nutritional bang for the calorie buck, it's hard to beat leafy vegetables! These versatile foods have been part of the human diet since time immemorial, eventually earning their place as staples in ancient cultures around the globe. For example, lettuce was first farmed in Ancient Egypt as early as 2680 BC, where it went from being a wild-growing weed to a food crop used for its leaves and seed oil. Selection of brassica plants with enlarged leaves led to the development of kale in 5th century BCE. Meanwhile, Ancient Egyptians and Romans considered arugula leaves an aphrodisiac—and some writers even suggest this was the reason monasteries were forbidden to grow arugula during the Middle Ages!



Today, leafy vegetables are known not only for their culinary diversity, but also for their outstanding health benefits. In fact, they're among the most nutrient-dense foods on the planet, packed with phytonutrients, micronutrients, and fiber. Don't be-leaf it? Lettuce take a closer look at this fantastic food group!

# What Are Leafy Vegetables?

Leafy vegetables include any plant leaves eaten as vegetables. And while many food groups are united by a specific taxonomic family, leafy vegetables include members from all over the plant kingdom!

Most of the leafy veggies we eat come from the lettuce family, chard family, chicory family, Brassica (cruciferous) family, parsley (umbellifer) family, and mint family, but we also eat members of the legume family (such as pea shoots), the plantain family (such as broadleaf plantain), the daisy family (such as dandelion greens), the carnation family (such as chickweed), the valerian family (such as lamb's lettuce), the buckwheat family (such as sorrel), and the morning glory family (such as sweet potato greens and water spinach)... just to name a few!

Some of the most common leafy vegetables from the lettuce family include:

- BUTTERHEAD LETTUCE
- GREEN LEAF
- ICEBERG LETTUCE
- OAK LEAF LETTUCE
- RED LEAF
- ROMAINE LETTUCE
- SUMMERCRISS LETTUCE

*And from the chicory family:*

- BELGIAN ENDIVE
- CURLY ENDIVE
- ESCAROLE
- FRISÉE
- RADICCHIO

*And from the chard family:*

- AMARANTH GREENS
- BEET GREENS
- LAMBSQUARTERS
- SPINACH
- SWISS CHARD

*And from the brassica family:*

- ARUGULA
- BOK CHOY
- BROCCOLI LEAVES
- CABBAGE
- COLLARD GREENS
- GAI LAN
- GARDEN CRESS
- KALE
- MUSTARD GREENS
- RAPINI (BROCCOLI RABE)
- RED CABBAGE
- SAVOY CABBAGE
- WATERCRESS

*And from the parsley family:*

- CARROT TOPS
- CELERY
- CILANTRO
- DILL
- FENNEL
- HOGWEED
- LOVAGE
- PARSLEY

*And from the mint family:*

- BASIL
- LAVENDER
- LEMON BALM
- PEPPERMINT
- SAGE
- SPEARMINT
- TARRAGON

On top of “full size” leafy vegetables, microgreens are worth a mention here too! Microgreens are the tasty small shoots of vegetables and herbs, picked right after the first leaves have developed. Along with having delicate textures and distinctive flavors, microgreens are bursting with nutritional goodness. In fact, microgreens are significantly more nutrient-dense than their fully grown counterparts—boasting around a 40% higher concentration of phytonutrients, along with impressive levels of chlorophyll, carotenoids, and many vitamins and minerals. They also contain fewer anti-nutrients than mature plants, making it easier for our bodies to access the minerals they contain.

*Common microgreens include:*

- **BRASSICA FAMILY MICROGREENS** (*cauliflower, broccoli, watercress, radish, arugula, cabbage, mustard, kale, kohlrabi*)
- **LETTUCE MICROGREENS**
- **CHICORY FAMILY MICROGREENS** (*endive, chicory, radicchio*)
- **ALLIUM FAMILY MICROGREENS** (*garlic, onion, leek, chives*)
- **MELON FAMILY MICROGREENS** (*melon, squash, cucumber*)
- **CHARD FAMILY MICROGREENS** (*amaranth, Swiss chard, beet, spinach, quinoa*)
- **PARSLEY FAMILY MICROGREENS** (*dill, carrot, celery, fennel*)
- **MINT FAMILY MICROGREENS** (*basil, marjoram, mint, rosemary, sage, oregano*)



# What Makes Leafy Vegetables So Great?

One of the coolest things about leafy vegetables is their diversity of health-promoting compounds. Because they can come from so many different plant families, they possess a huge array of phytonutrients micronutrients, and of course, fiber. Let's take a look at what these tasty veggies have to offer!

## Phenomenal Phytonutrients

When it comes to the phytonutrients in leafy vegetables, some are near-universal for this food group and some are specific to certain plant families.

For starters, leafy green vegetables are among the only foods that contain **sulfoquinovose**—a unique sulfur-containing sugar derived from glucose. In plants, it plays a role in photosynthesis; in humans,

it may have important effects on gut health! Specifically, sulfoquinovose promotes the growth of a select few gut bacteria, one being **Eubacterium rectale**—a key microbe for producing butyrate, reducing intestinal inflammation, and maintaining colonic motility. Kale, spinach, and watercress are particularly high in this special phytonutrient!

Green-colored leafy vegetables are also excellent sources of **chlorophyll**—the pigment that traps light for photosynthesis and gives plants their green color. It boasts significant anti-inflammatory and antioxidant properties, with some research even showing it can beneficially modulate the gut microbiota—including in ways that contribute to healthy body composition.

What's more, the chlorophyll in green leafy vegetables is also a powerful cancer fighter, capable of binding to carcinogens and inhibiting their intestinal absorption—in turn preventing them from reaching our tissues and causing harm. In fact, chlorophyll binds to some of the most widespread foodborne carcinogens we're exposed to, including those that form when cooking meat at high temperatures (polycyclic aromatic hydrocarbons and heterocyclic amines) and those that can contaminate peanuts, corn, and dried spices (aflatoxin-B1). Chlorophyll can also help mitigate the potentially carcinogenic properties of heme iron—the form of iron abundant in red meat!



Leafy vegetables with a purplish or reddish color—such as red cabbage and purple kale—contain a group of flavonoids called **anthocyanins**. Anthocyanins appear to have anti-inflammatory and neuroprotective effects, could improve glucose tolerance, may reduce the risk of chronic diseases like heart disease and cancer, and may even have pain-relieving properties (due to an affinity for certain “pain-sensation” cell membrane receptors in the brain!).

Dark green leafy vegetables are also outstanding sources of carotenoids—plant pigments that increase resistance to oxidative stress, reduce inflammation, and have been shown to support vision health (particularly age-related eye diseases like macular degeneration and cataracts). Research shows a high intake of carotenoids could even protect against metabolic syndrome and diabetes! In particular, vegetables like spinach, kale, and collard greens tend to be high in beta-carotene (a precursor to vitamin A) and lutein (a carotenoid present in high concentration in the retina, and that helps filter harmful blue-light rays).



On top of all that, leafy vegetables boast some specific phytonutrients associated with the particular plant family they come from! Lettuces, for example, have several health-promoting compounds not found in other vegetables. These include a special carotenoid called **lactucaxanthin**, which demonstrates anti-diabetic activity, as well as the compounds **lactucin** and **lactucopicrin**, which have potent pain-reducing properties and gentle sleep-inducing effects!

Meanwhile, one of the standout features of chard family leafy vegetables is the presence of **betalains**—a group of phytonutrients that give many of these vegetables their unique coloration. For example, betalains are responsible for the burgundy hue in beet leaf stems, and the yellow, pink, or red color of Swiss chard stems!

Brassica family plants are exclusive sources of glucosinolates—a type of sulfur-containing phytonutrient that gives these veggies their characteristic pungent flavor. Leafy brassicas are no exception! **Glucosinolates** break down into another compound, **isothiocyanates**, when damaged via chewing, cutting, or other processing. Isothiocyanates, in turn, have tremendous anti-cancer properties, including against bladder cancer, lung cancer, colon cancer, breast cancer, and pancreatic cancer. In fact, one particular isothiocyanate, **sulforaphane**, has become famous for its cancer-fighting activity, with studies showing it can block DNA mutations and stop cancer cells from multiplying!

Leafy members of the parsley family (such as parsley, carrot tops, dill, fennel, and cilantro) are known for containing **apigenin**—a type of flavone with wide-ranging protective effects against diabetes, Alzheimer’s

disease, depression, insomnia, and cancer. It's also shown antimicrobial activity against a number of pathogens, including many of the ones responsible for foodborne illness. And, parsley family leaves also contain phytonutrients called **phthalides**, which support cardiovascular health and can help reduce high blood pressure!

And no phytonutrient spotlight would be complete without a tour of the mint family leafy vegetables! Basil, lemon balm, spearmint, peppermint, tarragon, lavender, and sage not only have delightful flavors and aromas; they're also rich in volatile oils and an astounding number of phytonutrients. These include **rosmarinic acid** (a powerful anti-inflammatory and anti-cancer compound, with potential benefits for arthritis, colitis, and atopic dermatitis); **ursolic acid** (a triterpene compound that can improve insulin signaling, reduce heart tissue damage, fight inflammation, boost antioxidant levels in the brain, protect against muscle wasting, and block cancer growth), **limonene** (a monoterpene that exhibits anti-cancer, antioxidant, anti-inflammatory, pain-reducing, cardio-protective, liver-protective, anti-microbial, immune-modulating, and diabetes-reducing activity)... just to name a few!

Believe it or not, that's still just scratching the surface of the phytonutrient goodness in leafy vegetables. The flavonoids **quercetin** and **kaempferol** present in leafy greens like kale have been extensively studied for their protective activity against heart disease, inflammation, cancer, and hypertension. Chickweed contains phytonutrients like **phytosterols** and **saponins** that have been shown to support digestion and healthy body composition. And dandelion greens contain an anti-diabetic phytonutrient called **chlorogenic acid!**

## Magnificent Micronutrients

As far as vitamin and minerals go, leafy vegetables pack a mighty bang for the buck! These veggies vary in their exact nutritional profiles, but they tend to be high in the following micronutrients:

- **VITAMIN K**, which plays a vital role in coagulation, bone metabolism, cellular function, and the prevention of soft tissue calcification. A two-cup serving of raw kale contains 162% of the DV for this nutrient! Cabbage, garden cress, watercress, gai lan, bok choy, and mustard greens are also wonderful sources.
- **VITAMIN B9 (FOLATE)**, an essential B vitamin that plays roles in blood cell production, the formation of genetic material (including DNA), cell growth, cardiovascular health, cancer protection, and cognitive and neurological health. Kale, collard greens, mustard greens, gai lan, and savoy cabbage are all great sources!
- **VITAMIN C**, a water-soluble vitamin with powerful antioxidant properties, with important roles in the immune system and collagen production. Mustard greens, kale, gai lan, garden cress, bok choy, savoy cabbage, and cabbage are chock full of vitamin C!
- **CALCIUM**, a major structural component of bones and teeth that also serves as an electrolyte—a type of electricity-conducting mineral needed for regulating nerve impulses, muscle contraction, heartbeat, blood pH, and fluid balance. Mustard greens, kale, and collard greens all contain 10% or more of the DV for calcium per two-cup serving.



- **MANGANESE**, a mineral that serves as a cofactor and component of numerous enzymes—giving it roles in carbohydrate metabolism, amino acid synthesis, gluconeogenesis, detoxification, lipid processing, free radical defense, bone and collagen formation, and wound healing. Mustard greens, kale, gai lan, garden cress, savoy cabbage, and collard greens all contain notable amounts!

## Fabulous Fiber

Across the board, leafy vegetables are fantastic sources of fiber. Fiber is a great example of a nutrient that isn't labelled as essential, but that is absolutely fundamental for our health! Along with regulating gut motility (promoting regularity) and some gastric hormones, it supplies our gut bacteria with fermentable substrate (i.e., food!) so that important microbes can flourish and remain diverse.

High fiber intake also reduces the risk of cardiovascular disease and of many forms of cancer (especially colorectal cancer, but also liver cancer, pancreatic cancer, and others), and promotes overall lower inflammation. High-fiber diets reduce the risk of mortality in cases of kidney disease and diabetes, and can even reduce your risk of dying from an infection!

Although all leafy vegetables supply plenty of fiber, leafy members of the chicory family deserve a shout-out for their high content of inulin—a prebiotic fiber with tremendous benefits for gut health (including boosting levels of the beneficial Bifidobacterium genus). Although most heavily concentrated in chicory root, inulin is also present in smaller amounts in the leaves of chicory family vegetables (think: endive, escarole, frisée, radicchio!).

Per serving, leafy vegetables contain the following amounts of fiber:

- **ARUGULA**: 0.6g
- **BASIL**: 0.1g
- **BEET GREENS**: 2.8g
- **BELGIAN ENDIVE**: 3.1g
- **BOK CHOY**: 1.0g
- **BUTTERHEAD LETTUCE**: 1.21g
- **CABBAGE**: 2.0g
- **CELERY**: 1.6g
- **CILANTRO**: 0.2g
- **COLLARD GREENS**: 2.9g
- **CURLY ENDIVE (CHICORY)**: 2.3g
- **DANDELION GREENS**: 3.9g
- **DILL**: 0.2g
- **FENNEL**: 2.8g

- GARDEN CRESS: 1.1g
- GREEN LEAF LETTUCE: 1.3g
- ICEBERG LETTUCE: 1.2g
- KALE: 4.1g
- MUSTARD GREENS: 3.2g
- NEW ZEALAND SPINACH: 1.5g
- PARSLEY: 3.3g
- PEPPERMINT: 8.0g
- RADICCHIO: 0.9g
- RAPINI (BROCCOLI RABE): 2.7g
- RED CABBAGE: 2.1g
- RED LEAF LETTUCE: 0.9g
- ROMAINE LETTUCE: 2.1g
- SAVOY CABBAGE: 3.1g
- SPEARMINT: 6.8g
- SPINACH: 2.2g
- SWEET POTATO GREENS: 5.3g
- SWISS CHARD: 1.6g
- WATER SPINACH: 2.1g
- WATERCRESS: 0.5g

# Health Benefits of Leafy Vegetables

Given their awesome phytonutrient, micronutrient, and fiber profiles, it shouldn't come as a surprise that leafy veggies have demonstrated wide-ranging health benefits and protection against a number of diseases. Here's a rundown of the many ways they've been scientifically shown to benefit our health!



## Reduced risk of cardiovascular disease:

Leafy vegetables are awesome for the heart! [A prospective study from 2013](#) found that consuming 1.5 servings of leafy greens per day, versus 1.5 servings per week, is associated with a 17% lower risk of coronary heart disease.



## Better cognitive health:

[A prospective study from 2018](#) found that eating just 1.3 servings of green leafy vegetables per day is associated with the equivalent of being 11 years younger in cognitive age.

Likewise, [a 2019 cross-sectional study](#) found that for people 55 and older, eating some leafy vegetables every day (versus not eating them every day) is associated with a whopping 78% reduction in risk of mild cognitive impairment!



## Reduced risk of breast cancer:

Leafy vegetables could slash the risk of one of the most common cancers. [A prospective study from 2012](#) tracked over 31,000 women and found that for every 50-gram increase in leafy vegetable consumption per day, the risk of developing breast cancer dropped by 15%. (For reference, 50 grams of kale is less than a cup!) This same study found that participants eating over 56 grams of leafy vegetables daily had a 30% lower risk of developing breast cancer, compared to those eating less than 15 grams daily.



## Reduced risk of lung cancer:

For people at high risk of lung cancer, regularly eating salads can be enormously protective. [A 1993 case-control study](#) found that relative to eating no lettuce, eating lettuce more than three times per week reduced the risk of lung cancer by 49% among former and current smokers.



## Reduced risk of colorectal cancer:

Upping those leafy veggies could protect against colorectal cancer! [A case-control study from 2017](#) found that men with the highest versus the lowest intake of green vegetables had a 51% lower risk of developing colorectal cancer. Similarly, in a [2004 prospective study](#) of over 107,000 men and women, frequent green leafy vegetable consumption was associated with a 40% lower risk of death from rectal cancer.



## Reduced risk of stomach cancer:

Leafy vegetables can even protect against stomach cancer! [In a 2006 prospective study](#) of over 81,000 adults, those consuming at least three servings of green vegetables per week had a 36% lower risk of stomach cancer than those consuming less than half of a serving per week.



## Reduced risk of diabetes:

Leafy vegetables can dramatically reduce the risk of diabetes. [A cross-sectional study from 1999](#) found that compared to infrequent consumption of salad vegetables (including leaves), eating salad vegetables daily or near-daily all year long was associated with an 84% lower risk of diabetes. (The all-year-long part is the key here: eating these veggies only during the summer didn't offer the same protection!)

And, [a 2008 prospective study](#) of over 71,000 nurses found that for every additional serving of leafy vegetables consumed per day, diabetes risk dropped by 9%!

And, a variety of animal studies have found that red cabbage in particular can combat not only diabetes, but also complications of the disease. For example, in animal models of diabetes, red cabbage extract has been shown to ameliorate diabetic nephropathy, inhibit digestive enzymes linked to type 2 diabetes, lower blood sugar levels, lower glycated hemoglobin levels, improve glucose tolerance, and increase the number of pancreatic beta-cells—all while also reducing vascular complications caused by diabetes.



## Reduced risk of non-alcoholic fatty liver disease:

Eating leafy vegetables on a daily basis could protect against fatty liver disease. According to [a cross-sectional study from 2021](#), eating leafy green vegetables at least seven times per week was associated with a 28% lower risk of developing non-alcoholic fatty liver disease, compared to almost never eating green vegetables.



## Improved gut health:

[In a 2022 study of rotational shift workers](#), dark green leafy vegetable consumption was associated with higher production of beneficial short-chain fatty acids in the gut. In [an experiment with rats](#), a diet supplemented with kale was able to improve microbial

diversity, enhance several bacterial metabolic functions, and combat the inflammatory state induced by a high-fat diet!



## Improved bone health:

[A 2009 study](#) of female college students found that daily consumption of green vegetables (including leaves) was associated with a five-fold lower risk of low bone mass, compared to not eating green vegetables daily! And, [a randomized controlled trial](#) from 2020 found that among middle-aged and older individuals, consuming 200 grams of leafy vegetables daily improved markers of bone formation—which, if continued, would be expected to boost long-term skeletal health.



## Lower risk of death from all causes:

There's even evidence that leafy veggies reduce the risk of all-cause mortality. [A 2019 review](#) found that for every 100 grams of green leafy vegetables or salad eaten per day (that's less than a quarter of a pound!), there was a 22% reduction in all-cause mortality.



# Leafy Vegetables Nutrivore Scores

Given their ultra-low calorie content and ultra-high nutrient content, it shouldn't come as a surprise that leafy vegetables knock it out of the ballpark in terms of Nutrivore Scores! As a group, leafy vegetables have an average Nutrivore Score of 3476. On a veggie-by-veggie basis, their scores are:

|                           |       |                               |      |
|---------------------------|-------|-------------------------------|------|
| <b>Arugula</b>            | 2019  | <b>Kale</b>                   | 4233 |
| <b>Basil</b>              | 3381  | <b>Mustard greens</b>         | 5464 |
| <b>Beet greens</b>        | 3259  | <b>New Zealand spinach</b>    | 5541 |
| <b>Belgian endive</b>     | 2390  | <b>Parsley</b>                | 5491 |
| <b>Bok choy</b>           | 3428  | <b>Peppermint</b>             | 1011 |
| <b>Butterhead lettuce</b> | 1934  | <b>Radicchio</b>              | 2171 |
| <b>Cabbage</b>            | 1857  | <b>Rapini (broccoli rabe)</b> | 4155 |
| <b>Celery</b>             | 767   | <b>Red cabbage</b>            | 1369 |
| <b>Cilantro</b>           | 2609  | <b>Red leaf</b>               | 2684 |
| <b>Collard greens</b>     | 3323  | <b>Romaine lettuce</b>        | 2128 |
| <b>Curly endive</b>       | 3086  | <b>Savoy cabbage</b>          | 1321 |
| <b>Dandelion greens</b>   | 2815  | <b>Spearmint</b>              | 914  |
| <b>Dill</b>               | 1940  | <b>Spinach</b>                | 4548 |
| <b>Fennel</b>             | 663   | <b>Sweet potato greens</b>    | 1775 |
| <b>Fiddlehead</b>         | 1721  | <b>Swiss chard</b>            | 6198 |
| <b>Gai lan</b>            | 2431  | <b>Water spinach</b>          | 1271 |
| <b>Garden cress</b>       | 11265 | <b>Watercress</b>             | 6929 |
| <b>Green leaf Lettuce</b> | 2245  |                               |      |
| <b>Iceberg lettuce</b>    | 773   |                               |      |

# What About Iceberg Lettuce?!

You've probably heard rumors that iceberg lettuce is the nutritional equivalent of cardboard—barely supplying anything other than water and some fiber. Although it's true that iceberg lettuce doesn't pack quite the nutritional punch that other lettuces do (it has about a third of the nutrients per calorie of other lettuce types), it's still filled with fiber, vitamin K, and polyphenols. In fact, iceberg lettuce is more nutrient-dense than a number of other foods widely considered health promoting, such as blackberries and sock-eye salmon. So, there's no need to avoid iceberg lettuce—especially if you enjoy its mild, crispy crunch!



# Some Practical Pointers

If you've ever opened a bag of spinach and found a clump of slimy leaves, or found yourself tossing out half a head of lettuce due to wilting and browning, you've probably realized how delicate these vegetables can be! Luckily, proper selection and storage can help them stay fresh and flavorful.

## Selection:

- Choose fresh-looking leafy vegetables with vibrant color and crisp leaves. Avoid any that are wilted, yellowing, or showing dark spots.
- Check for moisture, avoiding leaves that are overly wet or slimy.
- Inspect the stems for signs of browning or rot; fresh stems indicate the leafy vegetables are still relatively young and may have a longer lifespan in the fridge.
- When possible, choose seasonal! Although leafy vegetables are often available year-round, choosing the varieties in season helps ensure the best flavor and nutrient content.



## Storage:

- Refrigerate immediately! To help extend their lifespan, refrigerate your leafy vegetables as soon as possible after bringing them home.
- Keep them dry—moisture can lead to spoilage and decay.
- If purchased pre-washed in a plastic clamshell container, store in the refrigerator as-is, making sure to keep the container sealed and tightly closed after opening.
- If purchased loose, pick out any wilted, slimy, or browning leaves, and wash and dry the remaining ones. You can wash your leafy veggies by submerging them in a bowl of cold water, lifting and re-dunking gently until any dirt or debris is removed, and then drying in a salad spinner.
- If you're short on fridge space, you can use the "rolling method" to store! Lay the veggies out on paper towels, loosely roll the towels, then place the roll into a re-sealable bag and store in the crisper drawer.



- If you have more abundant fridge space, you can use larger containers to store (this will help prevent your leafy veggies from getting crushed)! Line the bottom of a lidded container with paper towels, loosely fill the container with your leafy vegetables, then add one more layer of paper towels before securing the lid.
- Even when stored properly, tender veggies (like baby spinach, arugula, and butterhead lettuce) generally won't last beyond a week, so eat ASAP! Heartier leafy vegetables (like kale, swish chard, broccoli rabe, or collards) can generally last a bit longer.

## Seasonality:

Leafy vegetables have different peak seasons depending on the climate, local growing conditions, and the specific type of leafy green. With that in mind, here are the general seasons for some popular leafy greens!

- **ARUGULA:** Arugula is a cool-weather crop that is typically in season from early spring through late fall.
- **BOK CHOY:** Bok choy is also a cool-weather crop that is typically in season from late fall through early spring.
- **CHICORY (ENDIVE, RADICCHIO):** Chicory varieties like endive and radicchio are often in peak season in the fall and winter.
- **COLLARD GREENS:** Collard greens are in season from late fall to early spring, with peak season being in the winter months.
- **KALE:** Kale is a hardy green that can be grown year-round, but its peak season is from mid-winter through early spring!
- **LETTUCE:** Many types of lettuce, such as iceberg, are available year-round—but generally speaking, lettuces are a cool-weather crop most widely available in the early spring and fall.
- **MUSTARD GREENS:** Mustard greens are in season in the cooler months of the year, typically from late fall through early spring.
- **SPINACH:** For spinach, peak season is typically in the spring (March to June) and fall (September to November). It tends to bolt (go to seed) in hot weather, so it's often harvested before the summer heat!
- **SWISS CHARD:** Swiss chard is typically in peak season from late spring through early fall. It can withstand some heat, but it's often at its best in cooler temperatures.

Given the enormous assortment of leafy vegetables out there, you can always check with local farmers or markets to see what's in season in your area!



# Recipes





BREAKFAST

# Bacon, Spinach and Olive Frittata

**PREP TIME**

10 minutes

**COOK TIME**

30 minutes

**YIELD**

3-4 servings

6 ounces bacon (about 6 to 7 thick slices), cut into small pieces

½ medium-sized yellow onion, or 1 small onion, finely diced

1½ cups red bell pepper, diced (about 1 large pepper)

1 cup sliced black olives, or 1 (2.25-ounce) can sliced black olives

4 cups chopped fresh spinach

8 large eggs, beaten

1. Heat an ovenproof large skillet over medium- high heat and turn the broiler on high to preheat the oven.
2. Add the bacon and onion to the pan and cook, stirring occasionally, until the bacon is crisp and the onion is fully cooked and caramelized, 8 to 10 minutes.
3. Add the pepper and olives to the pan and sauté, stirring occasionally, until the pepper is cooked (4 to 5 minutes). Add the spinach and stir to wilt, about 1 minute.
4. Add the beaten eggs. Let cook on the stovetop for 1 to 2 minutes, stirring a couple of times.
5. Place the skillet in the oven and broil until the eggs are completely cooked, puffed up, and starting to brown on top, 7 to 10 minutes (it varies from oven to oven, so watch carefully). Serve.



# Red Velvet Beet Smoothie

**PREP TIME**

5 minutes

**COOK TIME**

none

**YIELD**

1 servings

1 beet, peeled and chopped (fresh, canned or frozen),  
2 cups strawberries  
1 cup milk  
½ cup strong brewed coffee or 1 double shot espresso  
1 tablespoon chia seeds  
1 tablespoon cacao powder  
1-2 teaspoons honey, optional  
1-2 scoops protein powder, optional  
2-3 cups beet greens, spinach, or leafy green of choice

1. Add all ingredients to a blender and blend until smooth.



# ENTRÉES

# Tuna Salad Collard Wraps

**PREP TIME**

20 minutes

**COOK TIME**

none

**YIELD**

2-3 servings

½ bunch collard greens, about 3-4 leaves

2 cans tuna, drained

3 tablespoons chopped red onion

2 stalks celery, chopped

¼ cup chopped fresh herbs (dill, parsley, etc)

¼ cup mayonnaise

Juice from ½ lemon

1 teaspoon Dijon mustard

2-3 tablespoons diced pickles or cucumber

Splash of pickle juice, optional

Salt and pepper to taste

1. Rinse the collard leaves to clean them and then lay them flat to dry.
2. With a small paring knife, remove the part of the stem that extends beyond the leaves. Shave the thicker parts of the stem that remain by running the knife perpendicular to the stem in order to make the leaf flat.
3. Add remaining ingredients except pickled radishes to a large bowl and stir to combine.
4. Add the tuna salad to the middle of each leaf. Top with pickled radishes. Fold the top and bottom edges in and then roll like a burrito, making sure all the filling stays inside.
5. Cut in half and serve.





# Thai Beef Lettuce Wraps

**PREP TIME**

10 minutes

**COOK TIME**

20 minutes

**YIELD**

5 servings

2 pounds ground beef

2 cups beef broth

3 cloves garlic, minced

 $\frac{1}{3}$  cup lime juice fresh squeezed  
(about 2 -3 limes)

3 tablespoons fish sauce

 $\frac{2}{3}$  cups chopped cilantro $\frac{2}{3}$  cups chopped mint

1 large head romaine lettuce

Cooked rice, optional

1. Brown ground beef in a large skillet over medium-high heat, breaking up frequently with a spoon or spatula to achieve a fine cooked ground beef texture, 8-10 minutes.
2. Add broth to beef. If broth is unseasoned, add  $\frac{1}{2}$  teaspoon of salt. Let simmer, stirring occasionally, until broth has completely boiled away, about 6-8 minutes.
3. Meanwhile, combine crushed garlic, lime juice and fish sauce. Finely chop and then combine cilantro and mint in a separate bowl. Separate lettuce leaves and cut in half if very large.
4. Once broth has boiled off completely, stir in the lime juice mixture. Simmer, stirring, until the lime juice mixture has also boiled away, about 2-3 minutes.
5. Stir in chopped herbs, immediately remove beef from heat and serve.
6. **TO SERVE:** scoop a generous spoonful of beef mixture into a lettuce leaf, add a scoop of rice if using, wrap the lettuce leaf up around the beef mixture and enjoy!  
You can also serve as a salad on a bed of shredded lettuce.



# Arctic Char en Papillote with Watercress

**PREP TIME**

20 minutes

**COOK TIME**

20 minutes

**YIELD**

4 servings

2 medium carrots

1 bunch watercress

4 ounces mushrooms, thinly sliced

2 tablespoons olive oil or oil of choice

2 tablespoons chopped fresh parsley

1 teaspoon lemon zest

¼ teaspoon pepper

½ teaspoon sea salt

4 Arctic char fillets (about 1½ pounds)

1. Preheat the oven to 400°F.
2. Using a vegetable peeler or mandoline slicer, shave carrots into lengthwise thin strips. Remove tough stems from watercress.
3. In a bowl, toss carrots, watercress, mushrooms, olive oil, parsley, lemon zest, salt and pepper.
4. Cut four pieces of parchment paper that are about 2 ½ times the length and width of each fish fillet.
5. Prepare the parchment envelopes for the fish. Spoon three quarters of the watercress mixture onto one-half of parchment paper pieces, leaving 3 to 4 inches of space (in addition to one long side) around it for folding the parchment paper over, and dividing the mixture equally between the four pieces. Place the Arctic char fillets on top of the watercress mixture on each parchment paper piece. Place the remaining one-quarter watercress mixture on top of the Arctic char fillets, dividing equally between the four fillets. Fold over the long side of the parchment paper to cover the fish. Then triple fold all three open sides to form a seal.
6. Place the packets on a rimmed baking sheet in oven and bake for 15 minutes, or until the fish is opaque throughout and segments easily flake apart. Cut open the parchment packets. Serve!



**TIP:** This recipe is also delicious with salmon, steelhead trout, or halibut!



# Cucumber and Watercress Sandwiches

**PREP TIME**

10 minutes

**COOK TIME**

none

**YIELD**

4 sandwiches

4 ounces cream cheese

½ lemon, juiced

2 tablespoons chopped chives

Salt and pepper to taste

8 slices of bread

½ English cucumber, thinly sliced

1 bunch watercress, about 2 cups  
(substitute arugula if watercress is  
unavailable)

1. Combine cream cheese with lemon juice, chives and salt and pepper.
2. Spread herbed cream cheese mixture onto each slice of bread.
3. Place cucumber slices on half of the bread slices and then top with watercress.
4. Place remaining bread slices on top. Cut each sandwich in half and serve.



# SOUPS AND SALADS

# Lettuce Soup

**PREP TIME**

10 minutes

**COOK TIME**

30 minutes

**YIELD**

2-4 servings

3 tablespoons olive oil or oil of choice  
1 cup chopped shallots (about 3 large shallots)  
1 garlic clove, chopped  
 $\frac{3}{4}$  teaspoon ground coriander  
 $\frac{1}{8}$  teaspoon ground cardamom  
 $\frac{1}{4}$  teaspoon ground black pepper  
 $\frac{3}{4}$  teaspoon sea salt

1 pound (about 2 large heads) lettuce, roughly chopped  
4 cups chicken stock  
1 green plantain or Russet potato, peeled and cut into 1-inch chunks  
Yogurt or dairy free alternative, for serving (optional)

1. Heat the oil in a large soup pot over medium-high heat. Add the shallots and cook, stirring frequently, until beginning to soften, about 5 minutes.
2. Add the garlic, spices, salt. Cook, stirring frequently, for another minute or until fragrant.
3. Add the lettuce. Stir constantly for 2 to 3 minutes to wilt the lettuce.
4. Add the stock and plantain. Bring to a boil and then reduce heat to maintain a simmer for 20 minutes.
5. Puree the soup by putting the entire contents of the pot into your blender and blending on high for 1 minute (do this in batches if you have a small blender). An immersion blender can also be used, but will be harder to get that perfect creamy consistency. Taste for seasoning and add more salt if desired.
6. Spoon into bowls and garnish with a dollop of yogurt, if desired.



**TIP:** If you can't find green plantains, you can use a Russet potato, white sweet potato, or 2 medium parsnips instead. Boston or Bibb varieties are classically used for lettuce soup, but any variety you have on hand will work.

**MEAL SUGGESTION:** Serve with lox or crab.



# Pear, Fennel and Endive Salad

**PREP TIME**

30 minutes

**COOK TIME**

10 minutes

**YIELD**

4 servings

1 cup walnut halves

¼ cup olive oil or oil of choice

¼ cup apple cider vinegar

1 tablespoon Dijon mustard

1 teaspoon chopped fresh tarragon

¾ teaspoon sea salt

¼ teaspoon cracked pepper

5 medium pears

2 large fennel bulbs (about 1 pound each)

2 medium heads curly endive or 4  
medium heads Belgian endive

1. Preheat oven to 350°F. Arrange walnuts on a cookie sheet in a single layer. Bake 8 to 10 minutes, checking frequently to make sure they don't burn. Remove and set aside to cool.
2. Prepare dressing: In a small bowl, whisk together olive oil, vinegar, mustard, tarragon, salt and pepper.
3. Core pears and slice each into 12 lengthwise wedges. Trim top and bottom from each fennel bulb and cut in half lengthwise. Cut diagonally on either side of the core to remove. Slice crosswise into as thin of slices as possible, or use a mandoline slicer. Rip or cut endive into bite-size pieces.
4. In a large bowl, combine fennel, endive, pear, and dressing and gently toss to coat. Sprinkle the toasted walnuts over the top.



**MEAL SUGGESTION:** Serve with pork or salmon.



# Arugula, Strawberry and Chèvre Salad with Candied Pecans

**PREP TIME**

10 minutes

**COOK TIME**40 minutes for candied  
pecans**YIELD**

4 servings

¼ cup brown sugar  
2 teaspoons cinnamon  
1 tsp nutmeg  
½ tsp allspice  
¼ tsp cardamom  
½ teaspoon salt  
2 cups unsalted pecans halves  
1 egg white

Juice of two limes (approximately 4 table-  
spoons)  
¼ cup olive oil or oil of choice  
¼ teaspoon fresh cracked pepper  
8-12 cups fresh arugula  
1 pound fresh strawberries, sliced  
½ cup crumbled chèvre (goat cheese or  
cashew chèvre)

1. Make candied pecans: Preheat the oven to 300°F. Line a large baking sheet with a silicone baking sheet or parchment paper. In a medium bowl combine sugar, spices and salt. In a separate bowl, whisk the egg white until frothy. Add the pecans to the whisked egg white and toss until the pecans are well coated. Add the sugar and spice mixture and toss to combine. Spread the pecans onto the prepared baking sheet. Bake for about 40 minutes, stirring half-way through. Let cool.
2. **MAKE DRESSING:** Whisk together lime juice, olive oil and cracked pepper.
3. Gently toss arugula, strawberries and pecans in a serving bowl. Top with crumbled chèvre.
4. Drizzle lime dressing over salad immediately before serving.



SIDES

# Wilted Spinach with Almonds and Cranberries

**PREP TIME**

5 minutes

**COOK TIME**

7 minutes

**YIELD**

2 servings

1½ tablespoons olive oil or oil of choice

2 cups chopped kale

3 cups spinach

¼ cup dried cranberries

2 tablespoons sliced almonds

1-2 tablespoons water

1 pinch salt, to taste

1. Heat oil in a skillet over medium-high heat.
2. Add kale with 1 tablespoon water. Cook, stirring frequently, until kale has softened, about 3 to 4 minutes.
3. Add cranberries and continue to cook 2 to 3 more minutes.
4. Add spinach. If the kale is starting to stick, also add another tablespoon of water. Stir and cook until spinach is wilted.
5. Stir in almonds and add salt to taste.



# Braised Chard

**PREP TIME**

10 minutes

**COOK TIME**

10 minutes

**YIELD**

4 servings

2 tablespoons olive oil or oil of choice

12 cups chard chopped

 $\frac{1}{2}$ -1 cup broth

Salt and pepper, to taste

Squeeze of lemon juice

1. Heat oil in a large skillet over medium-high heat.
2. Add the chard and 1 to 3 tablespoons of the broth. Stir relatively frequently. If the broth evaporates before the greens are fully cooked, add a little more.
3. When the greens are done to your liking, taste and season with salt, pepper, and a squeeze of lemon juice.





DESSERT

# Hidden Spinach Brownies

**PREP TIME**

15 minutes

**COOK TIME**

40 minutes

**YIELD**

24 brownies

1¼ cups frozen chopped spinach,  
measured frozen

1 cup puréed green plantain, about  
1 large plantain or 1½ medium plan-  
tains

6 oz semisweet chocolate

1 cup canola oil or oil of choice

6 eggs

1 tablespoon maple syrup or honey

1 tablespoon molasses

½ cup cocoa powder

1 tablespoon vanilla extract

¼ teaspoon baking soda

½ teaspoon salt

½ teaspoon cream of tartar

1. Preheat oven to 325°F. Line a 9"x13" baking pan with wax paper or use a silicone baking pan.
2. Melt oil and chocolate together over low heat on the stove top or medium power in the microwave. Add vanilla and stir to incorporate. Let cool.
3. Mix cocoa powder, baking soda, cream of tartar, salt and cinnamon.
4. Blend spinach, plantain, egg, honey and molasses together in a food processor or blender, until completely smooth (2-4 minutes).
5. Add melted chocolate mixture to egg mixture slowly, processing or blending constantly.
6. Mix in dry ingredients and process or stir to fully incorporate.
7. Pour batter into prepared baking pan and spread out with a spatula.
8. Bake for 40 minutes. Cool completely in pan before cutting into squares.



# About the Creators of this Book

## Dr. Sarah Ballantyne, PhD

### FOUNDER OF NUTRIVORE

Award-winning public speaker, New York Times bestselling author and world-renowned health expert, Dr. Sarah Ballantyne, PhD believes the key to improving public health is scientific literacy. She creates educational resources to help people improve their day-to-day diet and lifestyle choices, empowered and informed by the most current evidenced-based scientific research.



## Charissa Joy, AOS

### CHIEF OPERATIONS OFFICER

Charissa Joy has over 15 years of experience working in the wellness space. Charissa has many roles on the team. She is Dr. Sarah's right hand woman and touches every part of Dr. Sarah's businesses. She manages all communications for Nutrivore, both external and internal. She is the project and team manager. She handles all marketing internal and external marketing, as well as all brand/affiliate partnerships.



## Nicole Anouar, BA

### GRAPHIC DESIGNER

Nicole Anouar has a B.A in graphic design from the University of San Francisco and specializes in branding and educational design for healers and health professionals in the online space. With 8+ years of education and practice in graphic design, content marketing and ancestral lifestyle tradition, Nicole expresses her passion for truth and her love for alternative living into the work she does every day.



## Kiersten Peterson, BA, NTP

### CONTENT CREATOR AND PHOTOGRAPHER

Kiersten is a Content Creator for Nutrivore with a focus on recipe creation, practical resources and food photography, with a little writing on the side. After experiencing full body healing with the help of Dr. Sarah's and others' work, she now enjoys finding and creating beauty both in her work for Nutrivore and in her home as she raises two daughters alongside her military husband.



## Denise Minger

### CONTENT CREATOR AND RESEARCHER

Denise is a health researcher and author of the best-selling book, “Death By Food Pyramid”—an award-winning exposé of the forces that shaped our dietary guidelines and beliefs, and that’s been featured in documentaries, UPenn medical writing curricula, the Nutritional Therapy Association certification program, and numerous other health education courses around the world.



## Jacqueline Leeflang, PEng

### CONTENT CREATOR AND RESEARCHER

Jacqueline has a degree in Chemical Engineering (Bachelor of Applied Science) from the University of British Columbia in Canada, along with a master’s degree in renewable energy technology from the United Kingdom. She has also achieved her Professional Engineering designation in her home province of Alberta, Canada.



Jacqueline does a wide variety of tasks for Nutrivore including, article writing, data design, data visualization, all things excel, research, and content creation. When she’s not googling her way out of the excel jungle, she is parenting her two young boys and spending time outdoors.

## Lisa Hunter, MSc

### CONTENT CREATOR AND RESEARCHER

Lisa has a Bachelor of Science degree in Chemistry and Biochemistry, a Master of Science degree in Biochemistry, and worked in the pharmaceutical industry developing bio-products for 7 years, prior to taking time off to raise her two children.



On Nutrivore.com she is a researcher, writer, and content creator and is responsible for developing and maintaining the expanded Nutrivore Score database of over 7,500 foods (plus many of the nerdy puns sprinkled throughout the website!).

# REFERENCES

- Aloo SO, Ofosu FK, Kilonzi SM, Shabbir U, Oh DH. Edible Plant Sprouts: Health Benefits, Trends, and Opportunities for Novel Exploration. *Nutrients*. 2021 Aug 21;13(8):2882. doi: 10.3390/nu13082882.
- Anandakumar P, Kamaraj S, Vanitha MK. D-limonene: A multifunctional compound with potent therapeutic effects. *J Food Biochem*. 2021 Jan;45(1):e13566. doi: 10.1111/jfbc.13566.
- Aune D, Giovannucci E, Boffetta P, Fadnes LT, Keum N, Norat T, Greenwood DC, Riboli E, Vatten LJ, Tonstad S. Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality—a systematic review and dose-response meta-analysis of prospective studies. *Int J Epidemiol*. 2017 Jun 1;46(3):1029-1056. doi: 10.1093/ije/dyw319.
- Bazzano LA, Li TY, Joshipura KJ, Hu FB. Intake of fruit, vegetables, and fruit juices and risk of diabetes in women. *Diabetes Care*. 2008 Jul;31(7):1311-7. doi: 10.2337/dc08-0080.
- Benincasa P, Falcinelli B, Lutts S, Stagnari F, Galieni A. Sprouted Grains: A Comprehensive Review. *Nutrients*. 2019 Feb 17;11(2):421. doi: 10.3390/nu11020421.
- Bhupathiraju SN, Wedick NM, Pan A, Manson JE, Rexrode KM, Willett WC, Rimm EB, Hu FB. Quantity and variety in fruit and vegetable intake and risk of coronary heart disease. *Am J Clin Nutr*. 2013 Dec;98(6):1514-23. doi: 10.3945/ajcn.113.066381.
- Bolkent S, Yanardağ R, Tabakoğlu-Oğuz A, Özsoy-Saçan O. Effects of chard (*Beta vulgaris* L. var. *Cicla*) extract on pancreatic B cells in streptozotocin-diabetic rats: a morphological and biochemical study. *J Ethnopharmacol*. 2000 Nov;73(1-2):251-9. doi: 10.1016/s0378-8741(00)00328-7.
- Buko V, Zavodnik I, Kanuka O, Belonovskaya E, Naruta E, Lukivskaya O, Kirko S, Budryn G, Żyżelewicz D, Oracz J, Sybirna N. Antidiabetic effects and erythrocyte stabilization by red cabbage extract in streptozotocin-treated rats. *Food Funct*. 2018 Mar 1;9(3):1850-1863. doi: 10.1039/c7fo01823a.
- Calvi P, Terzo S, Amato A. Betalains: colours for human health. *Nat Prod Res*. 2022 Aug 3:1-20. doi: 10.1080/14786419.2022.2106481.
- Chen L, Zhu Y, Hu Z, Wu S, Jin C. Beetroot as a functional food with huge health benefits: Antioxidant, antitumor, physical function, and chronic metabolomics activity. *Food Sci Nutr*. 2021 Sep 9;9(11):6406-6420. doi: 10.1002/fsn3.2577.
- de Vogel J, Jonker-Termont DS, van Lieshout EM, Katan MB, van der Meer R. Green vegetables, red meat and colon cancer: chlorophyll prevents the cytotoxic and hyperproliferative effects of haem in rat colon. *Carcinogenesis*. 2005 Feb;26(2):387-93. doi: 10.1093/carcin/bgh331.



- Fujii H, Noda T, Sairenchi T, Muto T. Daily intake of green and yellow vegetables is effective for maintaining bone mass in young women. *Tohoku J Exp Med.* 2009 Jun;218(2):149-54. doi: 10.1620/tjem.218.149.
- Gao CM, Tajima K, Kuroishi T, Hirose K, Inoue M. Protective effects of raw vegetables and fruit against lung cancer among smokers and ex-smokers: a case-control study in the Tokai area of Japan. *Jpn J Cancer Res.* 1993 Jun;84(6):594-600. doi: 10.1111/j.1349-7006.1993.tb02018.x.
- Gopal SS, Lakshmi MJ, Sharavana G, Sathaiah G, Sreerama YN, Baskaran V. Lactucaxanthin - a potential anti-diabetic carotenoid from lettuce (*Lactuca sativa*) inhibits  $\alpha$ -amylase and  $\alpha$ -glucosidase activity in vitro and in diabetic rats. *Food Funct.* 2017 Mar 22;8(3):1124-1131. doi: 10.1039/c6fo01655c.
- Hanson BT, Dimitri Kits K, Löffler J, Burrichter AG, Fiedler A, Denger K, Frommeyer B, Herbold CW, Rattei T, Karcher N, Segata N, Schleheck D, Loy A. Sulfoquinovose is a select nutrient of prominent bacteria and a source of hydrogen sulfide in the human gut. *ISME J.* 2021 Sep;15(9):2779-2791. doi: 10.1038/s41396-021-00968-0.
- Helay AA, Maray M, El Hamd ASA, Mohamed A. Physical and chemical changes in the endive plants (*Cichorium endivia* L. var. *crispum*) during developmental stages. *Adv Plants Agric Res.* 2016;5(1):436-441. doi: 10.15406/apar.2016.05.00164.
- Henriques JF, Serra D, Dinis TCP, Almeida LM. The Anti-Neuroinflammatory Role of Anthocyanins and Their Metabolites for the Prevention and Treatment of Brain Disorders. *Int J Mol Sci.* 2020 Nov 17;21(22):8653. doi: 10.3390/ijms21228653.
- Hiel S, Bindels LB, Pachikian BD, Kalala G, Broers V, Zamariola G, Chang BPI, Kambashi B, Rodriguez J, Cani PD, Neyrinck AM, Thissen JP, Luminet O, Bindelle J, Delzenne NM. Effects of a diet based on inulin-rich vegetables on gut health and nutritional behavior in healthy humans. *Am J Clin Nutr.* 2019 Jun 1;109(6):1683-1695. doi: 10.1093/ajcn/nqz001.
- Kadkhoda G, Zarkesh M, Saidpour A, Oghaz MH, Hedayati M, Khalaj A. Association of dietary intake of fruit and green vegetables with PTEN and P53 mRNA gene expression in visceral and subcutaneous adipose tissues of obese and non-obese adults. *Gene.* 2020 Apr 5;733:144353. doi: 10.1016/j.gene.2020.144353.
- Kataya HA, Hamza AA. Red Cabbage (*Brassica oleracea*) Ameliorates Diabetic Nephropathy in Rats. *Evid Based Complement Alternat Med.* 2008 Sep;5(3):281-7. doi: 10.1093/ecam/nem029.
- Kojima M, Wakai K, Tamakoshi K, Tokudome S, Toyoshima H, Watanabe Y, Hayakawa N, Suzuki K, Hashimoto S, Ito Y, Tamakoshi A; Japan Collaborative Cohort Study Group. Diet and colorectal cancer mortality: results from the Japan Collaborative Cohort Study. *Nutr Cancer.* 2004;50(1):23-32. doi: 10.1207/s15327914nc5001\_4.
- Kondo S, Suzuki A, Kurokawa M, Hasumi K. Intake of kale suppresses postprandial increases in plasma glucose: A randomized, double-blind, placebo-controlled, crossover study. *Biomed Rep.* 2016 Nov;5(5):553-558. doi: 10.3892/br.2016.767.

- Korte G, Dreiseitel A, Schreier P, Oehme A, Locher S, Hajak G, Sand PG. An examination of anthocyanins' and anthocyanidins' affinity for cannabinoid receptors. *J Med Food*. 2009 Dec;12(6):1407-10. doi: 10.1089/jmf.2008.0243.
- Lafarga T, Bobo G, Viñas I, Collazo C, Aguiló-Aguayo I. Effects of thermal and non-thermal processing of cruciferous vegetables on glucosinolates and its derived forms. *J Food Sci Technol*. 2018 Jun;55(6):1973-1981. doi: 10.1007/s13197-018-3153-7.
- Larsson SC, Bergkvist L, Wolk A. Fruit and vegetable consumption and incidence of gastric cancer: a prospective study. *Cancer Epidemiol Biomarkers Prev*. 2006 Oct;15(10):1998-2001. doi: 10.1158/1055-9965.EPI-06-0402.
- Lee J, Shin A, Oh JH, Kim J. Colors of vegetables and fruits and the risks of colorectal cancer. *World J Gastroenterol*. 2017 Apr 14;23(14):2527-2538. doi: 10.3748/wjg.v23.i14.2527.
- León A, Del-Ángel M, Ávila JL, Delgado G. Phthalides: Distribution in Nature, Chemical Reactivity, Synthesis, and Biological Activity. *Prog Chem Org Nat Prod*. 2017;104:127-246. doi: 10.1007/978-3-319-45618-8\_2.
- Li H, Wang X, Ye M, Zhang S, Zhang Q, Meng G, Liu L, Wu H, Gu Y, Wang Y, Zhang T, Sun S, Wang X, Zhou M, Jia Q, Song K, Wang Y, Niu K. Does a high intake of green leafy vegetables protect from NAFLD? Evidence from a large population study. *Nutr Metab Cardiovasc Dis*. 2021 Jun 7;31(6):1691-1701. doi: 10.1016/j.numecd.2021.01.009.
- Li M, Fan Y, Zhang X, Hou W, Tang Z. Fruit and vegetable intake and risk of type 2 diabetes mellitus: meta-analysis of prospective cohort studies. *BMJ Open*. 2014 Nov 5;4(11):e005497. doi: 10.1136/bmjopen-2014-005497.
- Li N, Wu X, Zhuang W, Wu C, Rao Z, Du L, Zhou Y. Cruciferous vegetable and isothiocyanate intake and multiple health outcomes. *Food Chem*. 2022 May 1;375:131816. doi: 10.1016/j.foodchem.2021.131816.
- Li W, Sun L, Yue L, Li G, Xiao S. The Association Between Eating Green Vegetables Every Day And Mild Cognitive Impairment: A Community-Based Cross-Sectional Study In Shanghai. *Neuropsychiatr Dis Treat*. 2019 Nov 18;15:3213-3218. doi: 10.2147/NDT.S221074.
- Luo C, Zou L, Sun H, Peng J, Gao C, Bao L, Ji R, Jin Y, Sun S. A Review of the Anti-Inflammatory Effects of Rosmarinic Acid on Inflammatory Diseases. *Front Pharmacol*. 2020 Feb 28;11:153. doi: 10.3389/fphar.2020.00153.
- Madadi E, Mazloum-Ravasan S, Yu JS, Ha JW, Hamishehkar H, Kim KH. Therapeutic Application of Betalains: A Review. *Plants (Basel)*. 2020 Sep 17;9(9):1219. doi: 10.3390/plants9091219.
- Mangla B, Javed S, Sultan MH, Kumar P, Kohli K, Najmi A, Alhazmi HA, Al Bratty M, Ahsan W. Sulforaphane: A review of its therapeutic potentials, advances in its nanodelivery, recent patents, and clinical trials. *Phytother Res*. 2021 Oct;35(10):5440-5458. doi: 10.1002/ptr.7176.

- Menni C, Louca P, Berry SE, et al. High intake of vegetables is linked to lower white blood cell profile and the effect is mediated by the gut microbiome. *BMC Medicine*. 2021 Feb;19(1):37. DOI: 10.1186/s12916-021-01913-w.
- Miyahira RF, Lopes JO, Antunes AEC. The Use of Sprouts to Improve the Nutritional Value of Food Products: A Brief Review. *Plant Foods Hum Nutr*. 2021 Jun;76(2):143-152. doi: 10.1007/s11130-021-00888-6.
- Montenegro CF, Kwong DA, Minow ZA, Davis BA, Lozada CF, Casazza GA. Betalain-rich concentrate supplementation improves exercise performance and recovery in competitive triathletes. *Appl Physiol Nutr Metab*. 2017 Feb;42(2):166-172. doi: 10.1139/apnm-2016-0452.
- Morris MC, Wang Y, Barnes LL, Bennett DA, Dawson-Hughes B, Booth SL. Nutrients and bioactives in green leafy vegetables and cognitive decline: Prospective study. *Neurology*. 2018 Jan 16;90(3):e214-e222. doi: 10.1212/WNL.0000000000004815. Epub 2017 Dec 20.
- Mortaş H, Bilici S, Öztürk H, Karakan T. Changes in intestinal parameters and their association with dietary patterns in rotational shift workers. *Chronobiol Int*. 2022 Jun;39(6):872-885. doi: 10.1080/07420528.2022.2044349.
- Salehi B, Venditti A, Sharifi-Rad M, Kręgiel D, Sharifi-Rad J, Durazzo A, Lucarini M, Santini A, Souto EB, Novellino E, Antolak H, Azzini E, Setzer WN, Martins N. The Therapeutic Potential of Apigenin. *Int J Mol Sci*. 2019 Mar 15;20(6):1305. doi: 10.3390/ijms20061305.
- Seo DY, Lee SR, Heo JW, No MH, Rhee BD, Ko KS, Kwak HB, Han J. Ursolic acid in health and disease. *Korean J Physiol Pharmacol*. 2018 May;22(3):235-248. doi: 10.4196/kjpp.2018.22.3.235. Epub 2018 Apr 25.
- Sim M, Lewis JR, Prince RL, Levinger I, Brennan-Speranza TC, Palmer C, Bondonno CP, Bondonno NP, Devine A, Ward NC, Byrnes E, Schultz CJ, Woodman R, Croft K, Hodgson JM, Blekkenhorst LC. The effects of vitamin K-rich green leafy vegetables on bone metabolism: A 4-week randomised controlled trial in middle-aged and older individuals. *Bone Rep*. 2020 Apr 26;12:100274. doi: 10.1016/j.bonr.2020.100274.
- Singh AK, Rehal J, Kaur A, Jyot G. Enhancement of attributes of cereals by germination and fermentation: a review. *Crit Rev Food Sci Nutr*. 2015;55(11):1575-89. doi: 10.1080/10408398.2012.706661.
- Uddin MK, Juraimi AS, Hossain MS, Nahar MA, Ali ME, Rahman MM. Purslane weed (*Portulaca oleracea*): a prospective plant source of nutrition, omega-3 fatty acid, and antioxidant attributes. *ScientificWorldJournal*. 2014 Feb 10;2014:951019. doi: 10.1155/2014/951019.
- Vanduchova A, Anzenbacher P, Anzenbacherova E. Isothiocyanate from Broccoli, Sulforaphane, and Its Properties. *J Med Food*. 2019 Feb;22(2):121-126. doi: 10.1089/jmf.2018.0024.
- Veeranki OL, Bhattacharya A, Tang L, Marshall JR, Zhang Y. Cruciferous vegetables, isothiocyanates, and prevention of bladder cancer. *Curr Pharmacol Rep*. 2015 Aug;1(4):272-282. doi: 10.1007/s40495-015-0024-z.
- Vieira AJ, Beserra FP, Souza MC, Totti BM, Rozza AL. Limonene: Aroma of innovation in health and disease.

Chem Biol Interact. 2018 Mar 1;283:97-106. doi: 10.1016/j.cbi.2018.02.007.

Wen Lee H, Bi X, Jeyakumar Henry C. Carotenoids, tocopherols and phyloquinone content of 26 green leafy vegetables commonly consumed in Southeast Asia. Food Chem. 2022 Aug 15;385:132729. doi: 10.1016/j.foodchem.2022.132729

Wesołowska A, Nikiforuk A, Michalska K, Kisiel W, Chojnacka-Wójcik E. Analgesic and sedative activities of lactucin and some lactucin-like guaianolides in mice. J Ethnopharmacol. 2006 Sep 19;107(2):254-8. doi: 10.1016/j.jep.2006.03.003.

Williams DE, Wareham NJ, Cox BD, Byrne CD, Hales CN, Day NE. Frequent salad vegetable consumption is associated with a reduction in the risk of diabetes mellitus. J Clin Epidemiol. 1999 Apr;52(4):329-35. doi: 10.1016/s0895-4356(99)00006-2.

Wojdyło A, Nowicka P, Tkacz K, Turkiewicz IP. Sprouts vs. Microgreens as Novel Functional Foods: Variation of Nutritional and Phytochemical Profiles and Their In Vitro Bioactive Properties. Molecules. 2020 Oct 12;25(20):4648. doi: 10.3390/molecules25204648.

Yang Y, Huang CY, Peng SS, Li J. Carotenoid analysis of several dark-green leafy vegetables associated with a lower risk of cancers. Biomed Environ Sci. 1996 Dec;9(4):386-92.