

kale

highlights

| | |
|-------------------|-------------------------------|
| AVAILABILITY: | Year-round |
| REFRIGERATE: | Yes |
| SHELF LIFE: | 5 days refrigerated |
| PREPARATION: | Cut and let sit for 5 minutes |
| BEST WAY TO COOK: | "Quick Steam" in 5 minutes |

Kale is the new shining superstar of the produce section and exceptionally popular. Kale can be found as chips, a key ingredient in healthy salads, a topping on pizza, and even as in dessert form, such as gelato. In this chapter you will not only find out about its health-promoting properties, but discover the secrets of the Nutrient-Rich Way to Cook Kale to preserve nutrients and make this wonderful vegetable taste spectacular in only 5 minutes!

reasons to include kale in your world's healthiest foods way of eating

Scientific studies now show that cruciferous vegetables, like Kale, are included among the vegetables that contain the largest concentrations of health-promoting sulfur-containing phytonutrients that increase the liver's ability to produce enzymes that neutralize potentially toxic substances. Kale is also rich in the powerful phytonutrient antioxidants lutein and zeaxanthin, carotenoids that protect the lens of the eye. Kale is an ideal food to add to your World's Healthiest Foods Way of Eating not only because it is high in nutrients, but also because it is low in calories; one cup of cooked Kale contains only 36 calories, making it a great choice for weight control. [For more on the *Health-Promoting Benefits of Kale* and a profile of its content of over 60 nutrients, see page 329.]

how much kale should you add to your world's healthiest foods way of eating

If you enjoy Kale you'll want to include it as one of the cruciferous vegetables you eat on a regular basis in order to receive the fantastic health benefits provided by the cruciferous vegetable family. At a minimum, include cruciferous vegetables as part of your diet 2-3 times per week, and make the serving size at least 1-1/2 cups. Even



better from a health standpoint, enjoy Kale and other vegetables from the cruciferous vegetable group 4-5 times per week, and increase your serving size to 2 cups.

about kale

Like other cruciferous vegetables (including broccoli, cabbage, cauliflower, mustard greens, bok choy, and Brussels sprouts), Kale is a descendent of the wild cabbage, a plant thought to have originated in Asia Minor and to have been brought to Europe around 600 BC by groups of Celtic wanderers. Both the ancient Greeks and Romans are known to have grown Kale. Although most varieties of Kale have been grown for thousands of years, there are newer varieties, such as Lacinato Kale, with even more robust flavor. Proper preparation is the key to enjoying the best flavor and nutritional benefits from Kale. That is why I want to share with you the secret of the Nutrient-Rich Way of Cooking Kale *al denté*. In just 3 minutes, you will be able to transform Kale into a flavorful vegetable while maximizing its nutritional value.

types of kale

Kale is a member of the cruciferous family of vegetables, which also includes broccoli, cauliflower, cabbage, collard greens, mustard greens, bok choy, and Brussels sprouts. Its botanical name is *Brassica oleracea* L. var. *acephala* (the term *acephala* reflects that this member of the *Brassica* family of vegetables does not form a head, like its cousins broccoli and cauliflower). At the market, the following types of Kale may be available:

CURLY KALE

This is the variety most widely found in your local market. The frilly edged leaves and long stems come in a wide variety of colors (including green, deep blue, Russian red, and black) and are sold in bunches. It has a lively bitter flavor with delicious, peppery qualities. Curly Kale grown in the cold winter months is sweeter and more tender.

LACINATO

Lacinato Kale is also known as Tuscan Kale, Cavalo Nero, Nero di Toscana, and Dinosaur Kale. Developed in Italy, it features very dark green-blue leaves with an embossed, crinkly texture. It has a slightly sweeter and more delicate flavor than Curly Kale, although it does feature a somewhat peppery undertone.

ORNAMENTAL KALE

Originally a decorative garden plant, this variety was first cultivated commercially in the 1980s in California and is oftentimes referred to as Salad Savoy. Its leaves can be green, white, or purple, and its stalks coalesce to form

nutrient-richness chart

Total Nutrient-Richness: 40 **GI: very low***

1.00 cup (130.00 grams) of cooked Kale contains 36 calories

| NUTRIENT | AMOUNT | %DRI/ DV | DEN- SITY | QUALITY |
|---------------------|------------------|--|--------------|-----------|
| Vitamin K | 1062.10 mcg | 1180.15 | 83.6 | excellent |
| Vitamin A | 885.36 mcg [RAE] | 98.4 | 48.6 | excellent |
| Vitamin C | 53.30 mg | 71.1 | 35.1 | excellent |
| Manganese | 0.54 mg | 27.0 | 13.4 | excellent |
| Copper | 200.00 mcg | 22.2 | 11.0 | excellent |
| Vitamin B6 | 0.18 mg | 10.6 | 5.2 | very good |
| Dietary Fiber | 2.60 g | 10.4 | 5.1 | very good |
| Calcium | 93.60 mg | 9.4 | 4.6 | very good |
| Potassium | 296.40 mg | 8.5 | 4.2 | very good |
| Vitamin E | 1.11 mg [ATE] | 7.4 | 3.7 | very good |
| Vitamin B2 | 0.09 mg | 6.9 | 3.4 | very good |
| Iron | 1.17 mg | 6.5 | 3.2 | good |
| Magnesium | 23.40 mg | 5.8 | 2.9 | good |
| Vitamin B1 | 0.07 mg | 5.8 | 2.9 | good |
| Omega-3 Fatty Acids | 0.13g | 5.4 | 2.7 | good |
| Phosphorus | 36.40 mg | 5.2 | 2.6 | good |
| Protein | 2.47 g | 4.9 | 2.4 | good |
| Folate | 16.90 mcg | 4.2 | 2.1 | good |
| Vitamin B3 | 0.65 mg | 4.1 | 2.0 | good |
| CAROTENOIDS | | For more on Total Nutrient-Richness, %DRI/DV, Density and The World's Healthiest Foods Quality Rating System, see page 1004. | | |
| Beta-Carotene | 10624.90 mcg | * For more on GI, see page 1009. | | |
| Lutein & Zeaxanthin | 23719.80 mcg | | | |

a loosely knit head. It has a more mellow flavor, and its texture is more tender than Curly Kale.

BABY KALE

While not a variety per se, Baby Kale—Kale that is harvested before maturity—is becoming more and more

popular. Its small leaves and tender texture make it a great addition to salads and smoothies. Usually you can find mixes that feature a medley of Baby Kale from different varieties of this plant.

the peak season

Kale is available throughout the year but at its peak flavor during the colder months; it seems to me that the morning frost must help it develop its sweet and succulent flavor. These are also the months when its concentration of nutrients are at its highest, and its cost is usually at its lowest.

possible concerns about kale

Kale is a concentrated source of oxalates, which may be of concern to certain individuals. [For more on

Oxalates, see page 47.] Kale is sometimes referred to as a “goitrogenic” food. Yet, contrary to popular belief, according to the latest studies, foods themselves—Kale included—are not “goitrogenic” in the sense of causing goiter whenever they are consumed, or even when they are consumed in excess. For more on this subject, see page 48. According to the Environmental Working Group [EWG] in their 2014 report *Shopper's Guide to Pesticides in Produce*, conventionally grown kale is contaminated with concentrations of organophosphate insecticides, which are considered to be highly toxic to the nervous system. As such, I encourage you to purchase organically grown Kale. [For more on Pesticide Residues, see page 39.]

4 steps for the best tasting and most nutritious kale

Turning Kale into a flavorful dish with the most nutrients is simple if you just follow my 4 easy steps:

1. The Best Way to Select
2. The Best Way to Store
3. The Best Way to Prepare
4. The Best Way to Cook

1. the best way to select kale

The Nutrient-Rich Way to Select the freshest Kale with the best taste is by looking for varieties that have firm, bright, deeply colored green leaves and moist hardy stems. I have found that smaller leaves are more tender and have a milder flavor than larger leaves. By selecting the best tasting Kale, you will also enjoy Kale with the highest

nutritional value. As with all vegetables, I recommend selecting organically grown varieties whenever possible. [For more on Organic Foods, see page 35.]

Avoid Kale that is wilted, shows signs of browning or yellowing, or has small holes.

2. the best way to store kale

For best flavor and nutrition, I encourage you to enjoy your Kale soon after purchasing it. The longer you keep it the more nutrients you lose. The Nutrient-Rich way to Store Kale helps prevent it from becoming limp, turning yellow, becoming bitter, and losing its sweet flavor and nutritional value. To help preserve its flavor, I don't recommend storing Kale for longer than 5 days.

Many factors affect the shelf life of Kale. Respiration rate is one of them. Like all plants, Kale continues to respire [break down stored sugars and release carbon dioxide] even after it has been harvested. You can help reduce the

respiration rate and help extend the shelf life of many vegetables by reducing the storage temperatures. According the Postharvest Technology Center at the University of California at Davis, refrigeration can potentially slow the breakdown of sugars and the release of carbon dioxide to as low as one-tenth of its respiration rate at room temperature! Slowing down the respiration rate with proper storage is one way to help extend its flavor and nutritional benefits. [For more on the Respiration Rates for different vegetables, see page 115.]

kale will remain fresh for up to 5 days when properly stored

1. Store Kale in the refrigerator. The colder temperature will slow the respiration rate, helping to preserve its nutrients and keeping Kale fresh for a longer period of time.

2. Place Kale in a plastic storage bag before refrigerating. I have found that it is best to wrap the bag tightly around the Kale, squeezing out as much of the air from the bag as possible.
3. Do not wash Kale before refrigeration.

3. the best way to prepare kale

The Nutrient-Rich Way to Prepare Kale is to properly clean and cut it to help ensure it will have the best flavor.

cleaning kale

Discard damaged and discolored leaves. Rinse Kale under cold running water before cutting. To preserve nutrients, do not soak Kale or its water-soluble nutrients will leach into the water. [For more on Washing Vegetables, see page 116.]

cutting kale

Kale's juicy, succulent inner ribs that run through the middle section of each leaf are rich in fiber and enjoyable to eat, which is why I offer you tips on how to prepare both the leaves and the inner ribs. Stack the leaves, cutting the leafy portion into 1/8-inch slices or as thin as possible. Save the stems after the leafy portion ends for soup. Thinly slicing Kale will help it to cook more quickly. After cutting, let sit for 5 minutes before cooking.

4. the best way to cook kale

Note: For your convenience much of the information about the Nutrient-Rich Way of Cooking vegetables is repeated in many of the vegetable chapters to allow each chapter to stand on its own.

Kale is a hearty vegetable, which I like to cook just long enough to soften its fibers for better digestion and overall greater enjoyment. I found that traditional methods of cooking Kale not only resulted in mushy, overcooked Kale, but also in the loss of its fresh flavor.

Because Kale is such a valuable food that can make a fantastic contribution to our health, I looked for ways to cook Kale that would change it as little as possible from its natural state. Scientific studies show that improper cooking can easily destroy many nutrients found in Kale—too much heat and long cooking times can make Kale's health value plummet.

perfectly cooked kale is kale cooked the nutrient-rich way

In my search to find a better way to cook Kale I tested numerous means of cooking—boiling, steaming, baking, roasting, and others—many times until I made the breakthrough discovery that for optimal results the most nutritious way to cook Kale was to “Quick Steam” it for only

5 minutes so it is cooked just long enough to tenderize and soften its cellulose and hemicellulose fibers. It's the only method I can recommend because it a gentle way of cooking Kale, which gives it great flavor and texture; I call this the **Nutrient-Rich Way of Cooking Kale**.

Nutrient-Rich Cooking combines very low cooking temperatures with very short cooking times to ensure the preservation of Kale's natural flavor and guarantees that the Kale never gets overcooked or mushy. With Nutrient-Rich Cooking I show you a new and better way of cooking Kale to help retain most of its nutrients. I believe you will love “Quick Steamed” Kale s as much as I do.

precision is the key to nutrient-rich cooking

You will notice that Nutrient-Rich Cooking requires precision in order to help prevent damage to the flavor of the Kale. I accomplish this by:

- Using the correct cooking method—“Quick Steaming”
- Using exact cooking times, which you can keep track with the use of a timer—5 minutes
- Using high heat to get water to a rapid boil and full steam



Nutrient-Rich Cooking gives you the best tasting Kale. The recipe for cooking perfect Kale can be found later in this chapter. I believe you will find it's the best recipe ever to bring out its great taste.

The nutrient-rich way of "Quick Steaming" Kale at 212°F/100°C for 5 minutes is the foolproof method of cooking Kale that guarantees success. (I think you will find a timer essential in order to follow the cooking directions precisely; I use one all the time.) It delivers perfectly cooked Kale, which has great taste, bright color, and makes your meal a celebration. Although 5 minutes may seem like a very short time to steam Kale, I have found that this is all the time required to cook it to perfection. "Quick Steaming" can make a great contribution to the World's Healthiest Foods Way of Eating because it transforms Kale into something special.

be sure to enjoy the inner ribs of kale

The inner ribs of Kale, which runs through the middle section of each leaf, are great for adding more fiber to your World's Healthiest Foods Way of Eating. They contain more fiber than the leaves, while still providing the other nutrients found in the leaves, but in smaller quantities. The nutrient content of the inner ribs fluctuates dramatically and is closely related to the age and growth status of the plant since the flow of nutrients through the inner ribs depends upon the plant's tasks at any given moment [including growth].

prevent overcooking after removing kale from heat

One thing we often don't consider is that vegetables, such as Kale, can continue to cook for an additional minute or two if they are left to sit in the pot after the heat is turned off. Therefore, to minimize the continuation of cooking, and prevent Kale from becoming overcooked, I immediately remove it from the pot and place it in a thin layer on a serving dish.

benefits of the nutrient-rich way of cooking kale

nutrient-rich cooking delivers great tasting kale

The Nutrient-Rich Way of Cooking Kale creates *al denté* Kale—tender on the outside and slightly crisp on the inside. This is how Kale should look and taste. If your Kale is still crisp inside and has a bright green color it is guaranteed not to be overcooked.

Al denté Kale cooked using the Nutrient-Rich Cooking method may, at first, seem undercooked if Kale cooked

HOW TO BRING OUT THE HIDDEN FLAVORS OF KALE

Cutting Kale into small pieces before cooking and letting it sit for 5-10 minutes helps bring out its hidden flavors and makes it more enjoyable. You can start to smell the complex rich aroma of the nutrients formed after you cut it. This is similar to the reactions that occur that causes the pungent smell when onions and garlic are cut, although the smell is not quite as intense [see page 298].

the more traditional way has become your norm. What I have found is that once introduced to the Nutrient-Rich Way of Cooking Kale, and after trying it a few times, people begin to enjoy its crunchy texture and rich flavor. They actually come to prefer it to the soggy, overcooked Kale to which they have become accustomed.

I highly recommend you learn to enjoy Kale with a crisp texture. If you initially find Nutrient-Rich Cooked Kale too crisp, you can try cooking for a minute or two longer to start with and then decrease the cooking time to 5 minutes.

the science behind nutrient-rich way of cooking kale

nutrient-rich cooking preserves vitamins and minerals

Kale is a rich source of vitamins and minerals. The Nutrient-Rich Way of Cooking Kale was designed to minimize excessive loss of nutrients by using the correct cooking method and exact cooking times to prevent overcooking. Although I haven't seen research to show how this range applies specifically to Kale, some studies show that up to 50-80% of certain vitamins and minerals can be lost when some vegetables are overcooked for much longer periods of time.

nutrient-rich cooking preserves chlorophyll

The Nutrient-Rich Way of Cooking Kale helps preserve chlorophyll. Chlorophyll is a pigment that makes Kale green. We don't have enough information to group chlorophyll together with flavonoids and carotenoids

as a fellow phytonutrient, but research studies have shown that chlorophyll can function as an antioxidant and can help protect fat molecules from oxygen damage. Chlorophyll may also help prevent toxic damage at a genetic level [see page 43].

From a scientific perspective, when Kale is overcooked chlorophyll *a* and *b* change to pheophytin *a* and *b*, and the color turns from its beautiful bright green to the too familiar olive-gray color of overcooked Kale. You can see this loss of chlorophyll occur right before your eyes. This change in color also reflects the loss of magnesium present in Kale and the beginning of it acquiring a more acidic taste. This may be a reason children do not like overcooked Kale.

nutrient-rich cooking prevents the rotten egg smell

Nutrient-Rich Cooking is also the secret to why I never experience the familiar rotten egg smell that can arise when cooking Kale. The reason for the sulfur smell is overcooking. Cutting Kale into thin slices and then cooking it for just 5 minutes using the Nutrient-Rich Cooking methods ensures it is never overcooked so you will never have to experience the strong rotten egg smell in your kitchen.

You will find that after cooking for just a few minutes more than recommended, the texture of Kale begins to change. It starts to become increasingly soft and mushy as chemical reactions start to take place. This is also when Kale starts to form and release hydrogen sulfide, the cause of the “rotten egg smell.” After 7 minutes of cooking, the amount of strong smelling hydrogen sulfide doubles in quantity and Kale starts to develop a more intensely unappealing flavor. Because the Nutrient-Rich Way of Cooking Kale for 5 minutes not only avoids the development of the smelly sulfur compounds and the bitter flavor often associated with overcooked Kale, it can help the 30% of the population who don't like the bitter taste of vegetables enjoy the wonderful natural taste of Kale.

nutrient-rich cooking helps preserve the complex flavor of kale

Like with fine wine, science has revealed that literally *hundreds* of different compounds play an important role in the flavor of Kale! This is the reason why Kale has a wonderfully unique complex flavor unlike any other food in the world—it features tastes that go beyond sweet, sour, salty, and bitter. That's why no other food tastes like Kale. Some of these flavor components involve Kale's complicated mixture of sulfur compounds such

AN EASY WAY TO PREPARE KALE, STEP-BY-STEP



Sliced Kale

- ① Stack Kale leaves, so you can cut all the leaves at the same time.
- ② Cut leaves (and inner ribs) widthwise into 1/8-inch slices starting from the tip until you reach the stems.
- ③ Save the thick stems that go beyond the leaf for soup.

as 3-butenyl isothiocyanate. Others involve volatile compounds that food sciences are only beginning to understand. With the Nutrient-Rich Way of Cooking Kale you are less likely to damage this rich mix of compounds than by using higher heats and longer cooking times and are therefore helping to preserve Kale's naturally complex flavor. That's why the way I cook my Kale gives it such great flavor.

dressing kale properly adds to its nutrient richness

I always want to make Kale as nutritious as possible. Adding great tasting dressing to Kale is no exception.

Nutrient-Rich Cooking includes dressing your Kale with ingredients that can further enhance its rich flavor and nutritional value. For example, dressing with extra virgin olive oil not only brings out the flavor of Kale; it can also help in the absorption and assimilation of some of its fat-soluble nutrients such as carotenoids and vitamins E and K. This is a way to get the most out of your Kale.

Kale is also a good source of iron; however, like all plant foods, Kale supplies iron in a form that depends on many other factors for absorption. One of these factors is vitamin C, and one of the World's Healthiest Foods that is an excellent source of vitamin C is lemon. Adding a little bit of lemon juice to Kale may potentially help to increase your absorption of the iron found in Kale. Lemon also brightens the taste of Kale.

Garlic, as well as salt and pepper, highlight the fresh flavor of Kale, making it more appealing, which can inspire you to eat it more often. Garlic not only enhances flavor but it is a heart-healthy food that contains anti-inflammatory and anti-viral properties.

In the 8 Great Ways to Enjoy Kale section [see page 331] you will find ways you can surprise your family with the wonderfully unique flavors that come from adding ingredients that best complement the Kale recipe. I recommend trying the Mediterranean Kale recipe for its great flavor and extra nutrition.

cooking methods not recommended

Nutrient-Rich Cooking avoids high cooking temperatures, long cooking times, and the possible formation of toxic compounds. Below I describe the many different ways that Kale can be cooked and provide the reasons why they are not the methods I recommend.

boiling kale

If you are used to soggy and mushy Kale, it is probably

because it has been boiled—the most traditional way of preparing Kale. Boiling [even for a very short time] results in Kale absorbing greater amounts of water, which not only dilutes its flavor but results in unnecessary nutrient loss.

sautéing and stir-frying in oil

To get more flavor, cooks have traditionally used high heat methods such as stir-frying and sautéing. Stir-frying and sautéing Kale are similar methods in that they use oil heated to high temperatures [over 350°-400°F/177°-204°C] with stir-frying potentially reaching even higher temperatures. While these methods have become very popular ways to enjoy Kale, I avoid cooking any foods in oil due to risk of nutrient damage caused by the high heat. These high temperatures not only damage the nutrients in the Kale but also damage the oil and can create unhealthy compounds. This unwanted result is especially true when cooking with extra virgin olive oil, which has a very low smoke point [200°-250°F/93°-121°C] and can be easily damaged by excessive heat [see page 94].

baking and roasting

High temperatures and long cooking times can result in greater nutrient loss. Baking and roasting not only feature high heat of 450°F/232°C [compared to “Quick Steaming” at 212°F/100°C] but also longer cooking times. And while roasting can add a nice smoky flavor to your food, I don't recommend it because, as with stir-fry and sauté, the high temperatures can damage the oil often used to moisten the Kale to prevent it from drying out and shriveling. This increases the potential for the creation of unwanted potentially toxic compounds [found in the blackened or charred portions of Kale] as well as from the damaged oil.

microwaving

Most people use microwaves to save time but since “Quick Steaming” only takes 5 minutes to cook Kale there is little benefit when it comes to speed of cooking. [For more on The Problems With Microwaving, see 84.]

health-promoting benefits of kale

promotes optimal health

As a *Brassica* vegetable, Kale stands out as a food that may protect against cancer. Its organosulfur phytonutrient compounds, including the glucosinolates and the methyl cysteine sulfoxides, have been the main subject of *Brassica* vegetable research. Exactly how Kale's sulfur-containing

phytonutrients prevent cancer is not clear, but several researchers point to the ability of these compounds to activate detoxifying enzymes on a genetic level in the liver that help neutralize potentially carcinogenic substances. For example, scientists have found that sulforaphane, a potent glucosinolate phytonutrient found in Kale and other

Brassica vegetables, boosts the body's detoxification enzymes, possibly by altering gene expression, thus helping to clear potentially carcinogenic substances more quickly. Kale is also rich in antioxidant and anti-inflammatory phytonutrients, including being an incredible source of flavonoids. In addition to be rich in kaempferol and quercetin, Kale is known to feature 45 different flavonoids.

promotes heart health

Kale may provide valuable cardiovascular support in terms of its cholesterol-lowering ability. When we eat Kale, fiber-related nutrients in this cruciferous vegetable bind together with some of the bile acids in the intestine in such a way that they simply stay inside the intestine and pass out of our body in a bowel movement, rather than getting absorbed along with the fat they have emulsified. When this happens, our liver needs to replace the lost bile acids by drawing upon our existing supply of cholesterol, and, as a result, our cholesterol level drops down. While Kale provides us with this benefit whether it is raw or cooked, a recent study has shown that the cholesterol-lowering ability of raw Kale improves significantly when it is steamed.

helps support detoxification

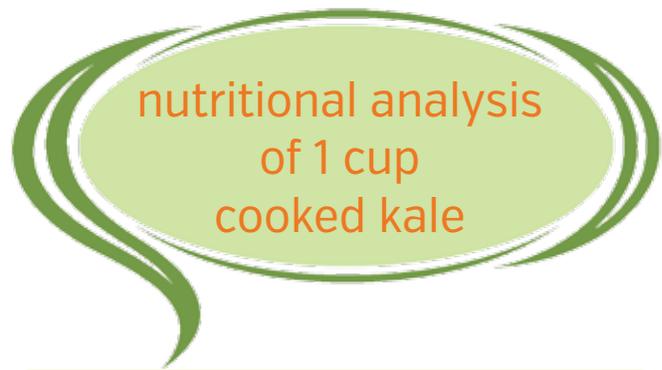
Kale has a definite role to play in support of the body's detoxification processes. The isothiocyanates (ITCs) made from Kale's glucosinolates have been shown to help regulate detox activities in our cells. By supporting both aspects of our cellular detox process (Phase I and Phase II), nutrients in Kale can give our body an "edge up" in dealing with toxic exposure, whether from our environment or from our food.

For more details on the Health-Promoting Benefits of Kale, visit www.whfoods.org.

For more on cruciferous vegetables, see page 211.

Q Does Kale have cholesterol-lowering benefits?

A Kale can provide you with some special cholesterol-lowering benefits if you will cook it by steaming. The fiber-related components in kale do a better job of binding together with bile acids in your digestive tract when they've been steamed. When this binding process takes place, it's easier for bile acids to be excreted, and the result is a lowering of your cholesterol levels. Raw kale still has cholesterol-lowering ability—just not as much.



| NUTRIENT | AMOUNT | %DRI/ DV | NUTRIENT | AMOUNT | %DRI/ DV |
|-----------------------------|------------------|-------------|--------------------|------------|-------------|
| Calories | 36 kcal | 2.02 | Folate | 16.90 mcg | 4.22 |
| Calories from Fat | 4.68 kcal | | Pantothenic Acid | 0.06 mg | 1.20 |
| Calories from Saturated Fat | 0.61 kcal | | Vitamin C | 53.30 mg | 71.07 |
| Protein | 2.47 g | 4.94 | Minerals | | |
| Total Carbohydrates | 7.32 g | 3.25 | Boron | - mcg | - |
| Dietary Fiber | 2.60 g | 10.40 | Calcium | 93.60 mg | 9.36 |
| Soluble Fiber | 1.17 g | | Chloride | - mg | - |
| Insoluble Fiber | 1.43 g | | Chromium | - mcg | - |
| Total Sugars | 1.62 g | | Copper | 200.00 mcg | 22.22 |
| Monosaccharides | - g | - | Fluoride | - mg | - |
| Disaccharides | - g | - | Iodine | - mcg | - |
| Total Fat | 0.52 g | | Iron | 1.17 mg | 6.50 |
| Saturated Fat | 0.07 g | | Magnesium | 23.40 mg | 5.85 |
| Monounsaturated Fat | 0.04 g | | Manganese | 0.54 mg | 27.00 |
| Polyunsaturated Fat | 0.25 g | | Molybdenum | - mcg | - |
| Omega-3 Fatty Acids | 0.13 g | 5.42 | Phosphorus | 36.40 mg | 5.20 |
| EPA | - g | - | Potassium | 296.40 mg | 8.47 |
| DHA | - g | - | Selenium | 1.17 mcg | 2.13 |
| Omega-6 Fatty Acids | 0.10 g | | Sodium | 29.90 mg | 1.99 |
| Oleic Acid (OA) | 0.04 g | | Zinc | 0.31 mg | 2.82 |
| Cholesterol | 0.00 mg | | Amino Acids | | |
| Water | 118.56 g | | Alanine | 0.12 g | |
| Ash | 1.13 g | | Arginine | 0.14 g | |
| Vitamins | | | Aspartic Acid | 0.22 g | |
| Vitamin A-IU | 17707.30 IU | 590.24 | Cystine | 0.03 g | 11.54 |
| Vitamin A-RAE | 885.36 mcg [RAE] | 98.37 | Glutamic Acid | 0.28 g | |
| Retinol RE | 0.00 mcg RE | | Glycine | 0.12 g | |
| Vitamin D-IU | 0.00 IU | 0.00 | Histidine | 0.05 g | 5.56 |
| Vitamin D-mcg | 0.00 mcg | | Isoleucine | 0.15 g | 12.00 |
| Vitamin E Alpha Equiv | 1.11 mg [ATE] | 7.40 | Leucine | 0.17 g | 6.18 |
| Vitamin E-IU | 4.02 IU | 17.87 | Lysine | 0.15 g | 5.88 |
| Vitamin E-mg | 1.11 mg | | Methionine | 0.02 g | 2.99 |
| Vitamin K | 1062.10 mcg | 1180.1 | Phenylalanine | 0.13 g | 14.61 |
| Vitamin B1 | 0.07 mg | 5.83 | Proline | 0.15 g | |
| Vitamin B2 | 0.09 mg | 6.92 | Serine | 0.10 g | |
| Vitamin B3 | 0.65 mg | 4.06 | Threonine | 0.11 g | 11.34 |
| Niacin Equiv | 1.15 mg | | Tryptophan | 0.03 g | 11.54 |
| Vitamin B6 | 0.18 mg | 10.59 | Tyrosine | 0.09 g | 12.33 |
| Vitamin B12 | 0.00 mcg | 0.00 | Valine | 0.14 g | 8.33 |
| Biotin | - mcg | - | | | |
| Choline | 0.52 mg | 0.12 | | | |

[Note: "-" indicates data are unavailable. For more information see page 1008.]



GREAT TASTING KALE WITHOUT COOKING

Lacinato Kale (which is also known as Tuscan or Dinosaur Kale) is the most tender and flavorful of the varieties and works best for raw Kale recipes.

Raw Kale Avocado Salad:

1 lb fresh Lacinato Kale, chopped finely; 1 medium avocado, diced; 1 medium tomato, diced; 1 small carrot, grated; 1/2 cup thinly sliced red cabbage; 2-3 tsp lemon juice; 1 TBS extra virgin olive oil; 1/2 tsp sea salt, dash cayenne pepper or chili flakes (optional). Combine all ingredients in a large bowl, taste, and adjust salt and lemon to your liking. Let the salad sit for up to 30 minutes before serving.

Optional: For really tender Kale, you can “massage” the Kale with the salt before adding other ingredients. With clean hands, gently massage the chopped Kale and salt for 2-3 minutes to soften the fibers.

Kale-Apple Smoothie:

In a blender combine 4 chopped Kale leaves, 1 tsp lemon juice, 2-inch piece of fresh ginger sliced thin, 2 small chopped apples or pears, and 2 cups water. Blend for 2 minutes. For maximum nutrition consume immediately. [Serves 2]

Kale Protein Smoothie:

In a blender combine 2 large spoonfuls of ripe avocado (about 1/4 cup); 1 cup fresh or frozen fruit of your choice (banana, papaya, mango, pineapple, berries or any combination); 4-6 Kale leaves, chopped; 3/4 cup water; 2 TBS hemp seeds; and 2-3 ice cubes. Blend for 1-2 minutes, adding more water if needed. For more sweetness, add a few drops of stevia or honey. For maximum nutrition, consume immediately. [Serves 1]

Kale Pesto:

Ingredients for this recipe include 1 bunch of Kale sliced into 1/2-inch strips, 1 clove garlic, sea salt to taste (start with 1/2 tsp), 1/2 cup extra virgin olive oil, 2 TBS lemon juice, and 1/4 cup walnuts. In a blender, drop the garlic through the feed hole while blender is running. Cover the hole with your hand while blending. Add the walnuts through the feed hole one at a time. Stop blender and remove lid. Add extra virgin olive oil, lemon juice, sea salt, and a small handful of Kale slices. Run blender, stopping to mix as needed. Keep adding Kale in small amounts until the purée is smooth. You will be surprised how tender Kale can become. Use as a dip, spread on crackers, sandwiches, or wraps, or even use it to top cooked vegetables.

Marinated Kale:

Cut 1/2 bunch Lacinato Kale into 1/4-inch strips and cut crosswise 4-5 times. Combine with 2 TBS extra virgin olive oil, 1 TBS balsamic vinegar, 2 tsp tamari soy sauce, 1 TBS apple juice, and 1/2 tsp sea salt. Let marinate 1 hour before serving. Optional: add red bell peppers or red cabbage for color.

Kale Power Soup:

Most people don't think of soup as breakfast food, but if you are looking for a way eat more Kale but don't want a sweet smoothie, this easy soup is warming and a great way to start the day. In a blender combine 3 medium Kale leaves; 1 celery stalk, chopped; 1 tsp lemon juice; 1 TBS extra virgin olive oil; 6 basil leaves; and 1 cup warm vegetable broth or water; and salt to taste. Optional: pinch of cayenne pepper. Blend for 1 minute and serve immediately.

NUTRIENT-RICH WAY TO
COOK PERFECT KALE

5-Minute “Quick Steamed” Kale

To prepare Kale with the best flavor and maximum amount of nutrients, I recommend the “Quick Steaming” method. Be sure to cut it into small pieces after cooking for best results.

1 lb Kale

1/2 red onion

Mediterranean Dressing:

3 TBS extra virgin olive oil (or to taste)

2 tsp lemon juice

1 medium clove garlic

Sea salt and pepper to taste

1. Fill bottom of steamer with 2 inches of water.
2. While steam is building up, cut off the thick stem ends and slice Kale leaves into 1/8-inch slices (thick stems can be saved for soup). Slicing Kale thinly ensures even cooking and the best flavor. Let sliced Kale sit for 5-10 minutes before steaming.
3. Let chopped or pressed garlic and sliced onions sit for at least 5 minutes. [Why? See page 301.]
4. When water comes to a full boil place onions at the



“Quick Steamed” Kale with Winter Squash

bottom of steamer basket and Kale on top of onions. **Cover with a tight fitting lid** and steam for 5 minutes for al dente Kale. [For information on Differences in Cooking Time, see page 120.]

5. Transfer to a bowl and toss Kale with the remaining ingredients while it is still hot. [Mediterranean Dressing does not need to be made separately.] Research shows that fat-soluble vitamins and carotenoids found in foods, such as Kale, may be better absorbed when consumed with fat-containing foods like extra virgin olive oil. The dressing will also help tenderize the Kale.
6. **Important: Cutting Kale and onion into small pieces after cooking makes a BIG difference in flavor. For best flavor, use a knife and fork to cut them crosswise several times until they are in very small pieces.**

serves 2

8 Great Ways to Enjoy Kale

Add more nutrition and flavor to your 3-Minute “Quick Steamed” Kale recipe by including additional ingredients.

Naturally Sweet Ideas—These are great recipes if you find the taste of Kale too strong, these naturally sweet preparations mellow their flavor.

1. **Most Popular.** Add a few drops of tamari soy sauce to mellow the flavor of Kale. If you use soy sauce to the Kale recipe, you will want to reduce the amount of sea salt.
2. Add bottled roasted red pepper slices and grated Parmesan or crumbled feta cheese.
3. For a different flavor, replace lemon juice with balsamic vinegar in the Mediterranean dressing.
4. Combine Kale recipe with sweet potatoes [see page 430] or winter squash, such as butternut squash (pictured above), for a great flavor combination!

5. **Spiced Moroccan Kale:** Add 1/4 tsp allspice, 1/4 tsp ground coriander, 1/4 tsp cinnamon, and a pinch of ground cloves to the Kale recipe. Top with golden raisins or currants and chopped toasted almonds.

6. **Kale with Eggs:** Serve Kale recipe with two soft-boiled or poached eggs [see page 839] and shaved Parmesan cheese for a nourishing breakfast.

Spicy

7. **Garlic Kale:** Add 1-2 chopped or pressed garlic cloves to Kale for the last 2 minutes of steaming.

8. Prepare dressing with apple cider vinegar instead of lemon juice. Add a few drops of hot sauce or red chili flakes to the dressed Kale.