

Raspberries :The Value Treasure

World around us are full of god's gifts...

Some we enjoying them,

And many others are in front of our eyes but we didn't

discover yet.

Look around you and discover those value treasures



• Raspberry •

The raspberry (/ˈræz,bri/) is the edible fruit of a multitude of plant species in the genus *Rubus* of the rose family, most of which are in the subgenus *Idaeobatus*; the name also applies to these plants themselves.



Description

Raspberries belong to the rose (Rosaceae) family of plants, which houses some of the world's most beloved fruits including apples, apricots, blackberries, cherries, loquats, peaches, pears, plums, and strawberries. Almonds also belong to this diverse family of plants. Among U.S. consumers, raspberries are the third most popular berry and follow strawberries and blueberries.

There are over 200 species of raspberries, all belonging to the scientific genus called *Rubus*. Fortunately, however, many of the raspberry species that are grown commercially can be placed into one of three basic groups: red raspberries, black raspberries, and purple raspberries.

As their name implies, mature red raspberries can typically be identified by the shade of red in their color, although this red may veer toward the pinkish side. Among all commercially cultivated raspberries, *Rubus idaeus* or European red raspberry is among the most common.

Black raspberries may actually be dark enough to be indistinguishable from blackberries in terms of color. Here one of the most common commercially grown species is *Rubu-*



soccidentalis, also sometimes referred to as thimbleberry, scotch cap, or black cap.

The third category of raspberry—purple raspberry—is a category in which reds and blacks have been hybridized (naturally combined). Over time, when red raspberries or black raspberries underwent naturally genetic mutations, yellow raspberries also developed. Even though naturally yellow or golden in color, yellow raspberries are actually special forms of red or black raspberries.

In science terms, raspberries are referred to as “aggregate fruits.” Aggregate fruits are actually composed of many small individual fruits that come from multiple ovaries in a single flower. In the case of a raspberry, those small individual fruits are the little juicy spheres that make up the structure of the raspberry. They are also called drupelets, and each one has its own seed.

The word “bramble” refers to the prickly or thorny nature of a plant, and raspberry growers as “brambles” sometimes refer to raspberries (even though some species do not have thorns). The bramble nature of the raspberry plant comes into play on a regular basis for raspberry growers. Although the root system of raspberry plants can last for many years, the canes themselves are typically pruned twice a year to allow for spring and fall fruiting.





History

Scientists are not entirely sure about the origins of raspberries. Wild raspberries appear on at least five continents, and there is enormous species diversity for this fruit. Some arctic species of raspberry are native to Alaska, the Aleutian Islands, and northern Asia; other species are native to eastern Asia and the Hawaiian islands; still others are native to Europe or to North America. In terms of their first cultivation, we have evidence dating back about 2,000 years in Europe, making raspberries one of the earliest berry crops. Natural trading and traveling may have been important in the spread of raspberries, for example, into North America from eastern Asia across the Bering Strait.

Interestingly, when cultivated raspberries are compared with wild raspberries, they turn out to be quite similar in terms of total phenols and total anthocyanin content. This similarity is especially true when the cultivated raspberries have also been organically grown. Although we might tend to think about a “wild” food as being more rich in nutrients than a cultivated food, this distinction does not hold true for raspberries when it comes to their phenol and anthocyanin antioxidants.

Today, raspberries rank high on the list of the world's most popular berries. Among the 400,000 metric tons of raspberries produced worldwide, Russia, the United States, Serbia, Poland, and Chile rank among the top producers. In the United States, the West Coast is most active in raspberry production, although commercial producers can be found across the country. Interestingly, well over 500 organic farms



in the U.S. are now certified for organic raspberry production, and raspberries rank as the third most popular fresh-use berry in the U.S. following strawberries and blueberries. The U.S. also imports about 15,000 metric tons of raspberries from Mexico to meet consumer demand for this fruit.



New and Beneficial About Raspberries



One of the most fascinating new areas of raspberry research involves the potential for raspberries to improve management of obesity. Although this research is in its early stages, scientists now know that metabolism in our fat cells can be increased by phytonutrients found in raspberries, especially rheosmin (also called raspberry ketone). By increasing enzyme activity, oxygen consumption, and heat production in certain types of fat cells, raspberry phytonutrients like rheosmin may be able to decrease risk of obesity as well as risk of fatty liver. In addition to these benefits, rheosmin can decrease activity of a fat-digesting enzyme released by our pancreas called pancreatic lipase.



This decrease in enzyme activity may result in less digestion and absorption of fat.

Recent research on organic raspberries has now shown organic raspberries to be significantly higher in total antioxidant capacity than non-organic raspberries. Raspberries in the study were grown on farms in Maryland that had been previously certified as organic by the U.S. Department of Agriculture. A series of tests involving free radical scavenging all provided the same results: organic raspberries outperformed their non-organic counterparts in terms of their antioxidant activity. This greater antioxidant capacity was associated with the greater levels of total phenols and total anthocyanins found in organic versus non-organic raspberries. While there are many good reasons to purchase organic versus non-organic foods of all kinds, this study makes it clear that these reasons specifically hold true for raspberries in a profound way.

You will get significantly more antioxidant support by purchasing raspberries that are fully ripe. Recent studies have measured the total phenolic content, total flavonoid content, and anthocyanin content of raspberries harvested at varying stages of ripeness (from 50% to 100% maturity) and greatest overall antioxidant benefits were associated with full ripeness of the berries. Although it's possible for raspberries to ripen after harvest, this fruit can be highly perishable and can mold quite easily at room temperature. So your most risk-free approach for getting optimal antioxidant benefits from raspberries is to purchase them at full maturity, keep them refrigerated at all times at temperatures between 35-39°F (2°-4°C), and consume them very quickly



(within 1 to 2 days after purchase).

Anti-cancer benefits of raspberries have long been attributed to their antioxidant and anti-inflammatory phytonutrients. In animal studies involving breast, cervical, colon, esophageal, and prostate cancers, raspberry phytonutrients have been shown to play an important role in lowering oxidative stress, reducing inflammation, and thereby altering the development or reproduction of cancer cells. But new research in this area has shown that the anti-cancer benefits of raspberries may extend beyond their basic antioxidant and anti-inflammatory aspects. Phytonutrients in raspberries may also be able to change the signals that are sent to potential or existing cancer cells. In the case of existing cancer cells, phytonutrients like ellagitannins in raspberries may be able to decrease cancer cell numbers by sending signals that encourage the cancer cells to being a cycle of programmed cell death (apoptosis). In the case of potentially but not cancerous cells, phytonutrients in raspberries may be able to trigger signals that encourage the non-cancerous cells to remain non-cancerous.



Antioxidant and Anti-Inflammatory Benefits

The diversity of antioxidant and anti-inflammatory phytonutrients in raspberries is truly remarkable, and few commonly eaten fruits are able to provide us with greater diversity. From a research perspective, here is a partial list of phytonutrients in raspberries that provide us antioxidant and anti-inflammatory benefits:

- anthocyanins



- cyanidins
- pelargonidins
- delphinidins
- malvidins
- flavonols
- quercetin
- kaempferol
- flavanols
- catechins
- epicatechins
- flavonoid glycosides
- tiliroside
- tannins
- ellagitannins
- gallotannins
- proanthocyanidins
- hydroxybenzoic acids
- ellagic acid
- lambertianin
- sanguin
- vanillic acid
- gallic acid
- chlorogenic acid
- hydroxycinnamic acids
- caffeic acid
- coumaric acid
- ferulic acid
- stilbenoids
- resveratrol



The vast majority of these phytonutrients are not only provided by raspberries, but provided in amounts that are significant in terms of protecting us against the dangers of oxidative stress and the dangers of excessive inflammation. By helping to scavenge free radical molecules, and by helping to regulate the activity of enzymes that could trigger unwanted inflammation, the phytonutrients in raspberries help lower our risk of chronic diseases that are associated with chronic oxidative stress and chronic inflammation. These chronic diseases include obesity, type 2 diabetes, hypertension, and atherosclerosis.

The ellagic acid found in raspberries deserves special mention as an anti-inflammatory compound. This phytonutrient has been shown to help prevent overactivity of certain pro-inflammatory enzymes (including cyclo-oxygenase 2, or COX-2) as well as their overproduction. In animal studies, intake of ellagic acid has been shown to reduce numerous aspects of unwanted and excessive inflammation, including aspects associated with Crohn's disease.



Obesity and Blood Sugar Benefits

Perhaps the most fascinating new areas of research on raspberries involve management of obesity and type 2 diabetes. In the case of obesity, two compounds in raspberries have received special focus: raspberry ketone (also called rheosmin) and a type of flavonoid called tiliroside.

Raspberry ketone is a compound that naturally occurs in raspberries, but unlike its name suggests, it is by no means exclusive to this fruit. Raspberry ketone is contained in a



wide variety of plants, although not usually in such sizable amounts as are found in raspberries. Turkish rhubarb is one such plant. Larch, yew, maple, and pine are trees that contain amounts of raspberry ketone, and in some studies, pine needles have been used as a source of this compound for experimental purposes.

The chemical name for raspberry ketone is 4-(4-hydroxyphenyl) butan-2-one. Researchers are equally familiar with raspberry ketone under the name of rheosmin, and since 1965, it's been included on the Food and Drug Administration's (FDA's) Generally Recognized As Safe (GRAS) list as an approved food additive. The primary use of rheosmin as a food additive has been for flavor and aroma.

The rheosmin found in raspberries can increase metabolism in our fat cells by increasing enzyme activity, oxygen consumption, and heat production in certain types of fat cells. By boosting fat metabolism in this way, we may be less likely to deposit fat in our fat cells, and we may be able to use up some of the fat that is stored there. By improving our fat cell metabolism, we may also be able to reduce the number of pro-inflammatory messaging molecules that are produced by our fat cells. As a result, we may be less likely to experience some of the inflammation-based problems that typically accompany obesity.

In addition to these benefits, rheosmin found in raspberries can also decrease activity of a fat-digesting enzyme called pancreatic lipase that is produced by our pancreas. By decreasing the activity of this enzyme, we may digest and absorb less fat another potential plus when trying to



deal with the consequences obesity.

In addition to the rheosmin found in raspberries, scientists have also focused on the obesity-related benefits of a second compound called tiliroside. Tiliroside is a type of flavonoid (called a glycosidic flavonoid) that is found in many plants of the rose family, including rose hips, strawberries, and raspberries. In preliminary studies, tiliroside has been shown to activate a special hormone called adiponectin that is produced by our fat cells. (The “adipo” part of this word means “fat,” which is also why our fat cells are also called “adipocytes.”)

In obese persons with type 2 diabetes, adiponectin is not produced in sufficient amounts or, if adequately produced, remains too inactive. This inadequacy of adiponectin in obese persons with type 2 diabetes is a key problem for regulation of their blood sugar and blood fats. By activating adiponectin, the tiliroside in raspberries can help improve insulin balance, blood sugar balance, and blood fat balance in obese persons with type 2 diabetes. In studies to date, there is no indication that raspberry tiliroside will stop weight gain or prevent fat accumulation. But it may be able to help prevent unwanted consequences of too much body fat and compromised regulation of blood sugar, blood insulin, and blood fats.

Within this context of obesity and blood sugar regulation, another aspect of raspberry phytonutrients has captured the attention of researchers involving the ability of raspberry extracts to block activity of an enzyme called alpha-glucosidase. Alpha-glucosidase is a starch-digesting enzyme, and



when it becomes active in the digestive tract, it increases the breakdown of starches into sugars. These sugars get absorbed up into the bloodstream and can cause excessively high levels of blood sugar following a meal. (This process is called postprandial hyperglycemia.) By blocking activity of alpha-glucosidase, raspberry extracts may make it possible for persons with type 2 diabetes (or obese persons experiencing problems with blood sugar regulation) to better manage their blood sugar levels.

We have been asked about the exact glycemic index (GI) value for raspberries, and unfortunately, have not been able to find food research substantiation for any exact value. We have seen estimates for many berries that fall into the 40-50 GI range, and for most researchers, that would place them in the low GI category. Since one cup of fresh raspberries provides about 15 grams of total carbohydrates and only 5-6 grams of sugar (compared with 8 grams of dietary fiber), a modest serving of fresh raspberries (for example, 1/2 cup) is likely to be a very good fit in most diets, even diets focused on stabilization of blood sugar.



RASPBERRY SIDE EFFECTS & SAFETY

Red raspberry fruit is **LIKELY SAFE** for most people when eaten in food amounts and **POSSIBLY SAFE** when taken in larger amounts as medicine.

No side effects from taking red raspberry have been reported.



Special Precautions & Warnings:

Pregnancy and breast-feeding: It's LIKELY SAFE to eat red raspberry in food amounts during pregnancy. Red raspberry leaf is POSSIBLY SAFE for use in medicinal amounts during late pregnancy, but only under the direct supervision of a healthcare provider. Red raspberry leaf is commonly used by nurse midwives to ease delivery. Don't take it on your own. The concern is that red raspberry might act like the hormone estrogen, and this might harm the pregnancy.

Not enough is known about the safety of taking red raspberry during breast-feeding. It's best to stay on the safe side and avoid use.

Hormone-sensitive conditions such as breast cancer, uterine cancer, ovarian cancer, endometriosis, or uterine fibroids: Red raspberry might act like estrogen. If you have any condition that might be made worse by exposure to estrogen, don't use red raspberry.



RED RASPBERRY DOSING

The appropriate dose of red raspberry depends on several factors such as the user's age, health, and several other conditions. At this time there is not enough scientific information to determine an appropriate range of doses for red raspberry. Keep in mind that natural products are not always necessarily safe and dosages can be important. Be sure to follow relevant directions on product labels and consult your pharmacist or physician or other healthcare professional before using.





Raspberry Leaves

Raspberry leaves can be used fresh or dried in herbal teas, providing an astringent flavor. In herbal and traditional medicine, raspberry leaves are used for some remedies, there is no scientifically valid evidence to support their medicinal use.

Red raspberry is a plant that is the source of a widely eaten, tasty, sweet berry. However, red raspberry fruit and leaf have also been used as medicine for centuries. The therapeutic use of raspberry leaf was first described in 1597 in a book called "The Herbal," or "A General History of Plants." Today, red raspberry leaf and fruit are still used as medicine.

Red raspberry leaf is used for gastrointestinal (GI) tract disorders, including diarrhea; for respiratory system disorders, including flu and swine flu; and for heart problems, fever, diabetes, and vitamin deficiency. It is also used to promote sweating, urination, and bile production. Some people use it for general "purification of skin and blood."

Some women use raspberry leaf for painful periods, heavy periods, and morning sickness associated with pregnancy, preventing miscarriage, and easing labor and delivery.

Red raspberry leaf is applied directly to the skin for sore throat and skin rash.

In foods, red raspberry fruit is eaten and processed into jams and other foods. Red raspberry leaf in small quantities is a source of natural flavoring in Europe.



How does it work?

The chemicals in red raspberry might have antioxidant effects and help relax blood vessels. They might also cause muscles to contract or relax, depending on the dose and the muscle involved. This is the theory behind red raspberry's use in easing labor and delivery.

Active Ingredients

Polyphenols like tannins and flavonoids are the two primary constituents of raspberry leaves, according to the European Medicines Agency. Polyphenols act as antioxidants, which may help slow aging and diseases such as cancer. A study from the Medical University of Bialystok, in Poland, found that the flavonoids quercetin and kaempferol predominated in raspberry leaves. In addition, raspberry leaves contain phenolic acids, minerals, vitamin C and plant alcohols.

How to Take

Raspberry leaves are typically available as capsules, tablets or dried leaves. The leaves are used to make tea. Raspberry Leaf tea is very popular as a refreshing beverage. Doses vary according to the medical condition.

Health Benefits

The National Plant Data Center of the US Department of Agriculture reports that raspberry leaves were used to treat diarrhea and to aid in childbirth. Raspberry leaf tea is thought to help menstrual cramps. The leaves have also been used as a gargle to treat tonsillitis and mouth inflammations, or



as a poultice or irrigation for sores, minor wounds, burns and varicose vein ulcers. WebMD reports the leaf of the red raspberry has been used in respiratory infections such as influenza, to promote sweating in cases of fever, for heavy periods, morning sickness, to prevent miscarriage and to ease labor and delivery.

Most scientific research on raspberry leaf uses the red raspberry leaf. Other kinds of raspberry leaf may or may not have the same effects. In one of the few studies that used another kind of raspberry leaf, Chinese researchers studied *Rubus chingii* Hu fruit and leaf. The researchers compared the antioxidant, anti-inflammatory and anticancer properties against breast and liver cancer cells. The results indicated the raspberry leaf extract was more effective than the raspberry fruit extract.

Researchers associated with the Amway Corporation evaluated various botanical extracts that they thought might counteract the effect of an enzyme that raises triglycerides. Of the more than 20 extracts studied, they found the most effective were apple peel extract, grape extract, red raspberry leaf extract and apricot/nectarine extract. Norwegian researchers conducted an extensive review of 12 studies on the use of raspberry leaf in pregnancy. One study in the review indicated possible increased risks for the unborn child, but none of the others documented risks. The researchers noted that although raspberry leaf has been used traditionally and is still being used by midwives, the available research does not support its safety or effectiveness.

A study by nurse midwives in New South Wales evalu-



ated the safety and effectiveness of raspberry leaf supplements on 192 pregnant women. The results showed no effect on the first stage of labor. However, the duration of the second stage of labor was shortened by an average of 10 minutes compared to the control group. Women who took the supplements had a lower rate of forceps deliveries.

A Croatian study from the University of Zagreb evaluated the effect of red raspberry leaves against throat and colon cancer. The study confirmed that red raspberry leaves have anti-cancer activity but their effectiveness depends on the type of cancer cells.



Raspberry Fruits Compared to Raspberry Leaf

In this Individual Concerns section, we would like to make one additional note about the difference between raspberry fruit and raspberry leaf. Raspberry leaf has a long history of use in botanical medicine and is widely available in the U.S. and other countries in tea form. While raspberry leaf has been used to support function in various body systems (including the digestive tract), its best-known use has been in conjunction with pregnancy and childbirth. While these medically related uses of raspberry leaf may be well worth discussing with your healthcare practitioner, it is important to treat them as separate and distinct from the benefits of raspberry fruit as ordinarily consumed in whole food form.





Red raspberry seed oil



Raspberry seed oil is one of those luxurious, sweet and attractive sounding oils that connotes images of luscious fresh raspberries on a summer day. The botanical or INCI name is Rubusidaeus, and the oil offers moisturizing, occlusive, anti-inflammatory and antioxidant benefits for skin. Furthermore, raspberry seed oil offers anti-aging benefits of improving skin elasticity, suppleness and flexibility, while softening and smoothing the look of wrinkles, fine lines and sagging skin.

Often used in cosmetic products for its hydrating, anti-oxidant and lipid-barrier forming characteristics, raspberry seed oil makes a lovely addition to facial formulations such as serums, face oils, lotions and creams for dry, dehydrated, sensitive and mature or aging skin types. Raspberry seed oil also serves as a luxurious addition to lip balms and lip products, as it forms an occlusive barrier to prevent moisture loss and protect skin from damaging elements.



Raspberry seed oil is rich in EFAs (essential fatty acids), primarily linoleic and linolenic acids. It contains a very high level of tocopherols (Vitamin E) which act as antioxidants and carotenoides (vitamins A).

Because of its composition, raspberry seed oil possesses superior anti-inflammatory qualities, and has reported sunscreen qualities, according to the Oomah study (2000), which makes it a nice addition to face, lip and sunscreen products.

*Please note, its reported sunscreen-like characteristics need to be further studied and concluded before relying upon.

Uses and Benefits

Red raspberry seed oil is often used in cosmetic preparations as an addition to face creams, lotions, balms, serums and oils. Well known for its potent anti-inflammatory benefits, some have found relief from skin issues such as eczema with continued, topical use of the oil, due to its potent essential fatty acid complex which is rich in omegas.

Raspberry seed oil makes a nice addition to sunscreen products, due to its reported sunscreen qualities, along with its anti-inflammatory, antioxidant and hydrating benefits. It is also a popular addition to anti-aging products.

Extraordinarily high in omega-3 and omega-6 fatty acids, Red Raspberry Seed Oil is a superb anti-oxidant. It contains 83% essential fatty acids. Much research is available online showing the healthcare benefits of internal use of Red Rasp-



berry Seed oil. Its high level of vitamin E is known to be give it an important role in skin repair and conditioning. Although this Red Raspberry Seed Oil is certainly produced for internal use, we are not licensed to produce or sell food supplements, so we recommend it for skin care and cosmetic applications.)

Red Raspberry Oil is known especially for its prevention of gingivitis, rashes, eczema, and other skin lesions. It is useful in skin creams, bath oils, and toothpaste. Raspberry seed oil is emollient, lubricating, and conditioning, creates a lipid barrier providing protection to the skin and provides moisture retention for the skin. Its anti-inflammatory properties are greater than those of better known oils such as virgin Avocado Oil, Grapeseed Oil, Hazelnut Oil and Wheatgerm Oil. (Oomah, et al 2000)

Red Raspberry Seed Oil may act as a broad-spectrum UV-A and UV-B shield. Some reports show that it has an SPF of between 28 and 50, however more recent information indicates that the higher SPF values are against the UV A rays, mostly absorbed by the ozone layer. For the UV B rays, (from which we need most protection) it probably had an SPF of up to 8. (I thank Gabriel Mojay for correcting earlier misinformation.) It has a long shelf life because of its high phospholipid content, and may increase the stability of other carrier oils when blended with them.

Sourced and Processed

Raspberry seed oil is cold-pressed and obtained from the seeds, and it may come in refined or unrefined forms. The



oil can often be sourced locally, depending on your local climate and whether raspberries are native.

After processing, the oil's color is anywhere from clear to a bright-dark yellow with green-tint, and the natural scent is often described as earthy, fresh, light and almost cucumber-like. Some may find the natural scent of raspberry seed oil unattractive, so you may choose to use it in dilution rather than as a base ingredient.

How to work with Raspberry Seed Oil ?

Raspberry seed oil is absorbed into skin at a medium-average rate, and is a light, dry, thin and long oil, which may leave a slightly oily, silky feel to the skin. Because of its slight oily-residue, it is best to use as a dilution in your formula, rather than a base ingredient.

Raspberry seed oil can sometimes be interchanged with pomegranate oil in formulations, as they are both moisturizing, occlusive, antioxidant agents, offering potent anti-inflammatory and anti-aging qualities. Both oils have similar absorption rates, being light, medium-absorption oils, and work well for dry, dehydrated, sensitive and mature/aging skin types.

The shelf life of raspberry seed oil is approximately two years, and the addition of vitamin E (as an antioxidant), along with proper storage in a cool, dry environment away from sunlight, may result in prolonged life. Suppliers recommend refrigerating the oil after opening.



6 reasons to use Raspberry seed oil:

- Absorbs UV-B and UV-C so useful as a broad spectrum sun-screen*
- Anti-inflammatory due to high content of alpha linolenic acid (the highest in any fruit seed oil) and phytosterols therefore helpful for eczema and psoriasis
- Anti-aging benefits due to content of ellegic acid (an anti-oxidant). This study show that elegiac acid "reduced the destruction of collagen and inflammatory response, both major causes of wrinkles." It also protects against ultra violet damage.
- Very high in Vitamin E – an antioxidant. Antioxidants in skin care are important to prevent oxidative damage which can lead to premature skin aging and skin cancer
- Very high levels of phytosterols that can help reduce trans epidermal water loss thereby helping to keep skin moisturised
- Phytosterols also help to repair skin damaged by environmental factors including sun damage



Raspberry Ketones

Raspberry Ketones Benefits

Rubusidaeus, more commonly known as the red raspberry, is causing a stir in the weight-loss community. Raspberry ketone occurs in a variety of fruits including raspberries, cranberries and blackberries. Red raspberries produce a chemical called ketones that give the fruit its unique flavor and fragrance. For nearly 100 years, these ketones have been used to add flavor and fragrance to our food and cosmetics. Now, however raspberry ketones are being sold as an



herbal supplement with claims that they can treat obesity, aid in weight loss, increase lean body mass and even treat hair loss. Raspberry ketone are also known as p-Hydroxybenzyl acetone; 4-(p-Hydroxyphenyl)-2-butanone; Frambinone; Oxyphenylon; Rheosmin; Rasketone.

Raspberry ketones are a natural antioxidant. In a healthy diet, antioxidants are essential. When studying animal diets, the results of some studies showed exciting results with the use of raspberry ketones. In the animal studies, scientists noted that the fat processing within the animal's body sped up. Animals also showed reduced fatty tissue, particularly around the liver. This is exciting not only from a weight loss standpoint, but for general health as well. Build-up of fat in the liver can lead to serious liver disease. In addition, scientists noted that certain hormones were altered with the use of raspberry ketones. These hormones appeared to increase the body's fat-burning ability. Japanese researchers have also found that raspberry ketones may be good for the skin and hair. In a small scale study, researchers found that some hair regrowth was noted in bald patients using raspberry ketones.

How Do Raspberry Ketones Work?

A few studies on raspberry ketones have been conducted in Japan and Korea over the last decade. Mice and rats were used in testing. While earlier studies with rats were inconclusive, later studies with mice showed that high doses of raspberry ketones changed the way the animals' bodies metabolized fat. Fat-burning increased in speed resulting in weight loss and leaner body mass, but doses were very



high. The average person consumes less than half of one percent of raspberry ketones in their daily diet. The amount of raspberry ketones given to mice and rats were over 4000 times that amount to result in a 2 percent loss of body fat. In addition, mice who were given high-fat diets showed no weight gain when high levels of raspberry ketones were administered. Raspberry ketones have also been observed breaking down fat cells in test tubes.

Raspberry Ketones Review

Raspberry ketones do show some promise, and this natural antioxidant is no doubt exciting to those wanting to lose weight or regrow hair. It is recommended, however, that consumers proceed with caution. Though levels of raspberry ketones used in cosmetics and as food additives are considered safe, with the lack of human testing it is unknown how the body will react to prolonged high doses of these ketones. Science simply does not yet know whether high doses are safe. Those being sold as an herbal supplement may claim to be the next diet miracle pill, but more research and evidence will need to be gathered before this claim can be considered conclusive. It does appear that very high doses are required for even minimal weight loss. Perhaps a better idea is to concentrate on a well balanced diet containing a variety of fruit and vegetables in their natural fresh forms.



How to Select and Store

As raspberries are highly perishable, they should only be purchased one or two days prior to use. The goal when purchasing this fruit is to choose berries that are fully ripe with-



out being overly so. Choose berries that are firm, plump, and deep in color, while avoiding those that are soft, mushy, or moldy. If you are buying berries prepackaged in a container, make sure that they are not packed too tightly, since this may cause them to become crushed and damaged, and that the container has no signs of stains or moisture, indications of possible spoilage. Within the U.S., raspberries are generally available from mid-summer through early fall.

Raspberries are a highly perishable fruit, so extra care should be taken in their storage. If you do not plan to eat your raspberries upon arrival back at home, they should be stored in your refrigerator. Before storing in the refrigerator, remove any berries that are molded or spoiled so that they will not contaminate the others. Place the unwashed berries back in their original container or spread them out inside of a glass or plastic container that has a lid and can be sealed. Raspberries will keep fresh in the refrigerator for one or two days. When taking your raspberries out of the refrigerator for consumption, try not to leave them at room temperature any longer than necessary (one to two hours), and try to avoid placing them directly in strong sunlight. These steps will help prevent spoilage.

Raspberries freeze very well. Wash them gently using the low pressure of the sink sprayer so that they will maintain their delicate shape and then pat dry with a paper towel. Arrange them in a single layer on a flat pan or cookie sheet and place them in the freezer. Once frozen, transfer the berries to a heavy plastic freezer bag or plastic freezer container that can be sealed and return them to the freezer where they will keep for up to one year.



Within this context of How to Select and Store, we would like to point out the often-dramatic differences we have seen between whole raspberries and products containing processed forms of raspberries. Unless provided with information from the manufacturer, it's difficult to be sure that you are getting substantial raspberry benefits from products that contain raspberries in processed forms. Processing in this case may include drying, juicing, fermenting into wine, straining, or filtering. For example, if the seeds of the raspberries have been removed during processing, many key phytonutrients may be lost or greatly reduced. Exposures to heat during processing may also result in substantial phytonutrient loss. We have seen studies that make us cautious about the preservation of nutrient richness in most processed forms of raspberry, including wines produced in the absence of seeds, baby foods produced with the use of heat and filtering, and commercial drying of raspberry for creation of an industrially versatile powdered form. While there are ways to make wine and baby food and other raspberry-containing products that avoid great damage to raspberry phytonutrients, it can be difficult to determine how careful manufacturers have been in their food production. For this reason, we recommend that you stick with whole raspberries in fresh or frozen form when purchasing them at the grocery and incorporate them into recipes using the minimal type of processing that you would be undertaking in your own kitchen.





Raspberries are arguably one of the most popular antioxidants, which is why raspberry extract can be found in many beauty products, including cleansers to moisturizers. Antioxidants are nature's way of letting us drink from the fountain of youth; they are known to diminish wrinkles and create youthful, healthy skin. Antioxidants aren't the only thing that raspberry has to offer our skincare, according to sources at New Skin Diet, raspberries are rich in vitamin C, which reduces age spots.

Benefits of Raspberries for Skin

Antioxidant rich food:

Raspberry is loaded with antioxidants and this makes it excellent for your skin. It can delay aging of your skin and make your skin beautiful and glowing. It contains about 10 times more antioxidants than tomatoes.

Eczema fighting properties:

Raspberry seeds are rich sources of omega 3 and omega 6 fatty acids. These are very beneficial for treating various skin problems like eczema, psoriasis and so on.

Makes skin beautiful:

Red raspberries contain anthocyanins, which are very beneficial for keeping your skin young looking and providing your skin a beautiful complexion. Anthocyanins are responsible for the beautiful color of raspberries and they do



the same with your skin also. It also helps you to fight against bacteria and fungi.

Tightens skin surface:

The leaves of red raspberries have skin tightening properties, for which it is known all over the world. They also have astringent properties and help in toning your skin.

Benefits of Raspberries for Hair

Gives Hair shine:

Biotin is rich in raspberries and this is essential for the health of your hair and to give your hair a good shine. Therefore, by consuming raspberries you will get long, thick and healthy hair with a natural shine.

Maintains Healthy scalp:

Vitamin C is found in good amounts in raspberries. This vitamin is essential for keeping our scalp healthy.

Promote Hair growth:

Folic acids are found in good quantities in raspberries. These are very effective for promoting hair growth.

Stops Hair loss:

Raspberries are storehouses of B vitamins. These vitamins are essential for healthy hair. They help in reducing hair fall, promoting hair growth as well as in preventing graying of hair.





Anti-Aging Face Mask

This facemask has the skin silky smooth despite all the sun as to seem to be exposed to. You will need the following items to have an anti-aging mask that will have your skin craving raspberries all summer long:

- 6 raspberries
- 1 tablespoon of oatmeal
- 1/2 tablespoon of raw honey.
- A blender



First, blend your raspberries together, making a thick juice. Next, add oatmeal and raw honey and then blend all your ingredients together. Apply on a wet, makeup free face and neck, then rinse off after five minutes. This mask is amazing for acne-prone skin, hyper-pigmentation, and tightening loose skin. It's best used in the a.m. and can be used three to four times a week.



Raspberry Anti-Aging Serum



If it is toning you crave, this serum is going to be your hero.

Use a tablespoon of fresh, blended raspberries, one tablespoon of fresh rose water, one teaspoon of baobab oil, and about eight drops of sea buckthorn oil. After, manually blended your ingredients together, add a teaspoon of freshly squeezed lemon juice and transferred your new serum into a dark, sealable container. This serum will keep you glowing all day long and improve your complexion overall — use this serum before bedtime and rinse off with your favorite natural cleanser in the mornings.



Red Raspberry Facial Mask



Ingredients

2 tablespoons Pink Kaolin Clay or Rose Clay
2 tablespoons Raspberry Seed Powder
1 tablespoon Honey Powder
1/2 ounce Neroli Hydrosol
1/8 ounce Organic Red Raspberry Seed Oil

Directions

In a small mixing bowl, combine the Pink Kaolin Clay, Raspberry Seed Powder, and Honey Powder. Stir the ingredients together, making sure to break up any clumps. Next, add the Neroli Hydrosol and Red Raspberry Seed Oil. Stir the mixture thoroughly, forming a smooth paste.

Instructions

before applying the mask gently open your pores by dabbing your skin with a warm, damp towel. This mask can also be used on your neck, shoulders or any other problem zones. Allow the mask to dry for about ten minutes before rinsing it away. The Fruit Seed Powder makes a great exfoliant so be sure to gently massage the mask onto your skin



before rinsing. Follow the mask with the toner and moisturizer of your choice.

This mask is gentle enough to be used about twice a week. Please be aware, though, everyone's skin is different. If you experience any negative effects from this or any other recipe, discontinue use immediately.

Berries Hair Mask

Blend raspberries, blueberries, blackberries, and a little water to form a paste. Directly apply to wet hair and leave on for 10-15 minutes. The antioxidants will fight the damaging environmental effects on hair and leave hair shiny and voluminous.





Tips for Preparing Raspberries

As raspberries are very delicate, wash them very gently, using the light pressure of the sink sprayer if possible, and then patting them dry. They should be washed right before eating or recipe preparation so that they do not become water-soaked and are not left at room temperature for too long. Do not use any berries that are overly soft and mushy unless you will be puréeing them for a sauce or coulis.



Granola with Fresh Fruit



Prep and Cook Time : 10 minutes

Ingredients:

- 3 cups prepared granola
- 1 cup fresh blueberries
- 1 cup fresh raspberries
- 2 sliced bananas



- 2 TBS sliced almonds
- 2 cups low-fat milk or dairy-free milk alternative

Minute Raspberry Almond Parfait

The combination of raspberries and almonds makes a delicious dessert.



Prep and Cook Time : 5 minutes

Ingredients:

- 8 oz (1 cup) low-fat vanilla or soy yogurt
- 1/2 tsp almond extract
- 2 TBS honey
- 1 pint raspberries
- 1 TBS sliced almonds
- Optional: grated dark chocolate

Directions:

1. Blend yogurt, honey and almond extract in a small mixing bowl with a whisk until the honey is incorporated and the mixture is smooth.

2. Divide the yogurt mixture into two dessert dishes. Place the



raspberries in one layer on top and garnish with the sliced almonds and, if desired, dark chocolate.

Berries with Chocolate Sauce



Prep and Cook Time : 10 minutes; chilling time: 1 hour

Ingredients:

- 1 1/2 cups each fresh or frozen blueberries and raspberries
- 5 oz organic dark chocolate
- 3 TBS raw sugar
- 1/4 cup water
- 6 oz firm silken tofu

Directions:

1. Melt chocolate and sugar in a double boiler over medium heat.
2. Place tofu, water and melted chocolate in a blender and blend until smooth. Remove to a mixing bowl.
3. Place chocolate pudding in four bowls and top with a generous amount of berries. If you use frozen berries, thaw and drain well before adding. You may want to save juice as frozen berries thaw and drizzle over Berry Delight for extra flavor and nutrition.



Easy enjoy

A Few Quick Serving Ideas

- Mix fresh raspberries in with creamy millet porridge for a sweet morning breakfast treat.
- While at first glance it may seem unusual, the flavor combination created by sprinkling fresh raspberries with balsamic vinegar will send your palate to heaven.
- Plain yogurt mixed with raspberries, honey, and freshly chopped mint is delicious eaten as is or used as a topping for waffles or pancakes.
- Depending upon how much sweetener you use, homemade raspberry coulis can be used as a sauce for either savory poultry dishes or sweet desserts.





Food Rating System Chart

This system allows us to highlight the foods that are especially rich in particular nutrients. The following chart shows the nutrients for which this food is either an excellent, very good, or good source.

To read this chart accurately, you'll need to glance up in the top left corner where you will find the name of the food and the serving size we used to calculate the food's nutrient composition. This serving size will tell you how much of the food you need to eat to obtain the amount of nutrients found in the chart. Now, returning to the chart itself, you can look next to the nutrient name in order to find the nutrient amount it offers, the percent Daily Value (DV%) that this amount represents, the nutrient density that we calculated for this food and nutrient, and the rating we established in our rating system.

Raspberries, fresh				
- 1.00 cup - 123.00 grams				
- Calories: 64 - GI: low				
Nutrient	Amount	DRI/ DV (%)	Nutrient Density	World's Healthiest Foods Rating
vitamin C	32.23 mg	43	12.1	excellent
manganese	0.82 mg	41	11.5	excellent
fiber	7.99 g	32	9.0	excellent
copper	0.11 mg	12	3.4	very good
vitamin K	9.59 mcg	11	3.0	good
pantothenic acid	0.40 mg	8	2.3	good
biotin	2.34 mcg	8	2.2	good



vitamin E	1.07 mg (AT)	7	2.0	good
magnesium	27.06 mg	7	1.9	good
folate	25.83 mcg	6	1.8	good
omega-3 fats	0.15 g	6	1.8	good
potassium	185.73 mg	5	1.5	good





Nutritional Profile

Raspberries are an outstanding source of phytonutrients, and provide us with dozens of anthocyanins, flavonoids, stilbenoids, phenolic acids, tannins and lignans. They are an unusually concentrated source of ellagitannins (like ellagic acid), cyanidins, and pelargonidins. Raspberries are an excellent source of vitamin C, manganese, and dietary fiber. They are a very good source of copper and a good source of vitamin K, pantothenic acid, biotin, vitamin E, magnesium, folate, omega-3 fatty acids, and potassium.

For more detailed information about the Nutritional Profile of raspberries, watch the following table :

Raspberries, fresh		
Note: "--" indicates data unavailable		
1.00 cup (123.00 g)		
BASIC MACRONUTRIENTS AND CALORIES		
Nutrient	amount	DRI/DV %
Protein	1.48 g	3
Carbohydrates	14.69 g	7
Fat – total	0.80 g	--
Dietary Fiber	7.99 g	32
Calories	63.96	4
MACRONUTRIENT AND CALORIE DETAIL		
Nutrient	amount	DRI/DV %
Carbohydrate:		
Starch	-- g	
Total Sugars	5.44 g	



Monosaccharides	5.18 g	
Fructose	2.89 g	
Glucose	2.29 g	
Galactose	0.00 g	
Disaccharides	0.25 g	
Lactose	0.00 g	
Maltose	0.00 g	
Sucrose	0.25 g	
Soluble Fiber	-- g	
Insoluble Fiber	-- g	
Other Carbohydrates	1.25 g	
Fat:	Fat:	
Monounsaturated Fat	0.08 g	
Polyunsaturated Fat	0.46 g	
Saturated Fat	0.02 g	
Trans Fat	0.00 g	
Calories from Fat	7.20	
Calories from Saturated Fat	0.21	
Calories from Trans Fat	0.00	
Cholesterol	0.00 mg	
Water	105.47 g	
MICRONUTRIENTS		
nutrient	amount	DRI/DV %
Vitamins		
Water-Soluble Vitamins		
B-Complex Vitamins		
Vitamin B1	0.04 mg	3
Vitamin B2	0.05 mg	4
Vitamin B3	0.74 mg	5
Vitamin B3 (Niacin Equivalents)	0.74 mg	



Vitamin B6	0.07 mg	4
Vitamin B12	0.00 mcg	0
Biotin	2.34 mcg	8
Choline	15.13 mg	4
Folate	25.83 mcg	6
Folate (DFE)	25.83 mcg	
Folate (food)	25.83 mcg	8
Pantothenic Acid	0.40 mg	43
Vitamin C	32.23 mg	
Fat-Soluble Vitamins		
Vitamin A (Retinoids and Carotenoids)		
Vitamin A International Units (IU)	40.59 IU	
Vitamin A mcg Retinol Activity Equivalents (RAE)	2.03 mcg (RAE)	0
Vitamin A mcg Retinol Equivalents (RE)	4.06 mcg (RE)	
Retinol mcg Retinol Equivalents (RE)	0.00 mcg (RE)	
Carotenoid mcg Retinol Equivalents (RE)	4.06 mcg (RE)	
Alpha-Carotene	19.68 mcg	
Beta-Carotene	14.76 mcg	
Beta-Carotene Equivalents	24.60 mcg	
Cryptoxanthin	0.00 mcg	
Lutein and Zeaxanthin	167.28 mcg	
Lycopene	0.00 mcg	
Vitamin D		
Vitamin D International Units (IU)	0.00 IU	0
Vitamin D mcg	0.00 mcg	
Vitamin E		



Vitamin E mg Alpha-Tocopherol Equivalents (ATE)	1.07 mg (ATE)	7
Vitamin E International Units (IU)	1.59 IU	
Vitamin E mg	1.07 mg	
Vitamin K	9.59 mcg	
Minerals		
nutrient	amount	11
Boron	-- mcg	
Calcium	30.75 mg	DRI/DV %
Chloride	27.06 mg	
Chromium	-- mcg	3
Copper	0.11 mg	
Fluoride	-- mg	--
Iodine	-- mcg	12
Iron	0.85 mg	--
Magnesium	27.06 mg	--
Manganese	0.82 mg	5
Molybdenum	-- mcg	7
Phosphorus	35.67 mg	41
Potassium	185.73 mg	--
Selenium	0.25 mcg	5
Sodium	1.23 mg	5
Zinc	0.52 mg	0
INDIVIDUAL FATTY ACIDS		
nutrient	amount	5
Omega-3 Fatty Acids	0.15 g	
Omega-6 Fatty Acids	0.31 g	DRI/DV %
Monounsaturated Fats		6
14:1 Myristoleic	0.00 g	
15:1 Pentadecenoic	0.00 g	
16:1 Palmitol	0.00 g	



17:1 Heptadecenoic	0.00 g	
18:1 Oleic	0.07 g	
20:1 Eicosenoic	0.01 g	
22:1 Erucic	0.00 g	
24:1 Nervonic	0.00 g	
Polyunsaturated Fatty Acids		
18:2 Linoleic	0.31 g	
18:2 Conjugated Linoleic (CLA)	-- g	
18:3 Linolenic	0.15 g	
18:4 Stearidonic	0.00 g	
20:3 Eicosatrienoic	0.00 g	
20:4 Arachidonic	0.00 g	
20:5 Eicosapentaenoic (EPA)	0.00 g	
22:5 Docosapentaenoic (DPA)	0.00 g	
22:6 Docosahexaenoic (DHA)	0.00 g	
Saturated Fatty Acids		
4:0 Butyric	0.00 g	
6:0 Caproic	0.00 g	
8:0 Caprylic	0.00 g	
10:0 Capric	0.00 g	
12:0 Lauric	0.00 g	
14:0 Myristic	0.00 g	
15:0 Pentadecanoic	0.00 g	
16:0 Palmitic	0.02 g	
17:0 Margaric	0.00 g	
18:0 Stearic	0.00 g	
20:0 Arachidic	0.00 g	
22:0 Behenate	0.00 g	
24:0 Lignoceric	0.00 g	
INDIVIDUAL AMINO ACIDS		
nutrient	amount	



Alanine	-- g	
Arginine	-- g	DRI/DV %
Aspartic Acid	-- g	
Cysteine	-- g	
Glutamic Acid	-- g	
Glycine	-- g	
Histidine	-- g	
Isoleucine	-- g	
Leucine	-- g	
Lysine	-- g	
Methionine	-- g	
Phenylalanine	-- g	
Proline	-- g	
Serine	-- g	
Threonine	-- g	
Tryptophan	-- g	
Tyrosine	-- g	
Valine	-- g	
OTHER COMPONENTS		
nutrient	amount	
Ash	0.57 g	
Organic Acids (Total)	-- g	DRI/DV %
Acetic Acid	-- g	
Citric Acid	-- g	
Lactic Acid	-- g	
Malic Acid	-- g	
Taurine	-- g	
Sugar Alcohols (Total)	-- g	
Glycerol	-- g	
Inositol	-- g	
Mannitol	-- g	



Sorbitol	-- g	
Xylitol	-- g	
Artificial Sweeteners (Total)	-- mg	
Aspartame	-- mg	
Saccharin	-- mg	
Alcohol	0.00 g	
Caffeine	0.00 mg	





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