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Take Control of Your Health

The Best Foods for Your Skin

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STORY AT-A-GLANCE

- According to recent research, eating 2.25 cups of grape powder per day for two weeks, equal to 60 grapes a day, can help protect your skin against sunburn. After two weeks, one-third of study participants showed increased resistance to UV-induced skin erythema (reddening of the skin)
- Grape skins are rich in polyphenols, which are one of the primary components responsible for improving the resilience of your skin against UV damage
- Other polyphenol-rich foods include herbs like cloves, Mexican oregano, rosemary, spearmint and peppermint, elderberry, black olives, dark chocolate and cocoa powder
- Another powerful skin protector is astaxanthin, a carotenoid antioxidant derived from Haematococcus microalgae. Research has shown 16 weeks of astaxanthin supplementation can improve wrinkles, skin moisture and elasticity. Astaxanthin-rich foods include wild-caught Alaskan salmon, trout, krill (or krill oil), shrimp and crayfish
- Omega-3 fat is also important for skin health, while high omega-6 linoleic acid (LA) intake is a significant contributor to sunburn. To improve your skin and reduce your sunburn risk, strictly limit seed oils in your diet and eat more omega-3-rich fatty fish such as wild-caught Alaskan salmon, verified wild-caught sockeye salmon, sardines, anchovies, mackerel and herring. A krill oil supplement will provide you with both astaxanthin and omega-3

According to recent research,[1,2] eating what amounts to a little over 60 grapes a day for two weeks can help protect your skin against sunburn. In the study, 29 volunteers were

fed 70 grams of grape powder a day for two weeks, or the equivalent of three,126-gram servings of fresh grapes a day, with a three-fourth cup, or about 24 grapes, considered as one serving.[3]

After the two-week study period, one-third of study subjects (9 of 29) showed increased resistance to ultraviolet (UV)-induced skin erythema (reddening of the skin).

One in 10 retained this benefit for four weeks after they stopped eating the grape powder. Grape skins are rich in polyphenols, which are one of the primary components in grapes responsible for improving the resilience of your skin against UV damage.[4] Polyphenols are also anti-inflammatory with antioxidant effects, and play a role in DNA repair mechanisms.[5] As noted in a 2010 paper:[6]

> *"Chemoprevention refers to the use of agents that can inhibit, reverse, or retard the process of these harmful events in the UV-exposed skin. A wide variety of polyphenols or phytochemicals … have been reported to possess substantial skin photoprotective effects.*
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> *This review article summarizes the photoprotective effects of some selected polyphenols, such as green tea polyphenols, grape seed proanthocyanidins, resveratrol, silymarin and genistein, on UV-induced skin inflammation, oxidative stress, and DNA damage …*
>
> *It is suggested that polyphenols may favorably supplement sunscreens protection, and may be useful for skin diseases associated with solar UV radiation-induced inflammation, oxidative stress and DNA damage."*

Polyphenols 101

Polyphenols are phytochemicals found in natural plant foods. More than 8,000 polyphenols have been identified in foods such as tea, wine, chocolate, fruits and vegetables. Antioxidants such as polyphenols help protect the cells in your body from free radical damage, thereby controlling the rate at which you age, and that includes your skin, where aging becomes quite visible.

If your body does not get adequate protection, free radicals can become rampant, causing impaired cell function that not only can lead to tissue degradation, but also put you at risk of chronic diseases.

Polyphenols are what give fruits, berries and vegetables their vibrant colors, and contribute to the bitterness, astringency, flavor, aroma and oxidative stability of the food. In the plant, they protect against ultraviolet radiation, pathogens, oxidative damage and harsh climatic conditions. In the human body, polyphenols have been shown to have a diverse array of biological properties,[7,8] including the following:

- Protecting your skin against ultraviolet radiation, as demonstrated in the featured study[9,10]
- Fighting cancer cells and inhibiting angiogenesis[11] (the growth of blood vessels that feed a tumor) — Several studies have demonstrated the usefulness of polyphenols in the prevention of cancer.[12,13,14,15] Researchers believe the antioxidant effects of polyphenols help protect DNA from free radical damage, which can trigger cancer development. Polyphenols also reverse epigenetic markers in the DNA believed to reduce tumor growth
- Promoting brain health and protecting against dementia[16,17,18]
- Fighting free radicals and reducing the appearance of aging
- Reducing inflammation
- Protecting your cardiovascular system,[19] in part by inhibiting vascular endothelial growth factor (VEGF), which can cause complications with atherosclerotic plaques[20]
- Supporting normal blood sugar levels[21]
- Promoting normal blood pressure

Reducing your risk of osteoporosis, thanks to its positive effect on bone metabolism[22,23]

Improving your gut health — Polyphenols appear to have a prebiotic effect, improving the beneficial bacteria living in your gut. Much of the research has been done on green tea, which plays an important role on balancing your gut flora by increasing good bacteria and reducing the number of bad bacteria.[24,25,26,27] Researchers have also found improvements in gut flora with moderate consumption of red wine and chocolate[28,29]

How to Optimize the Polyphenol Content of Your Diet

Aside from grapes — where the polyphenols are found in the skin — many other foods also contain high amounts. In 2010, the European Journal of Clinical Nutrition published a list[30] of the 100 richest dietary sources of polyphenols based on milligrams (mg) per 100 grams. Foods topping that list include:

Cloves	Peppermint	Star anise
Cocoa powder	Mexican oregano	Celery seed
Dark chocolate	Flaxseed meal	Black elderberry
Chestnut seeds	Dried sage	Rosemary
Spearmint	Thyme	Blueberries
Blackcurrant	Capers	Black olives
Hazel nuts	Pecans	

You can further optimize the health benefits of these foods by eating them with a little bit of fat, as polyphenols are fat soluble.[31] How the plant is grown can also influence its healing potential. As noted in 2004 paper,[32] agricultural practices and industrial processes can reduce the health effects of the polyphenols in the food.

Research[33] has shown organically grown foods contain statistically higher levels of polyphenols compared to conventionally grown varieties. Also, freeze-drying preserves higher phenol content than air-drying does.

Astaxanthin Also Protects Your Skin From UV Damage

Another powerful skin protector is astaxanthin, a carotenoid antioxidant derived from Haematococcus microalgae. The alga produces astaxanthin as a protective mechanism to shield itself from harsh UVs and other environmental stressors, and research has shown astaxanthin provides similar benefits in humans when consumed.[34,35,36]

As reported by Liver Doctor,[37] research[38] published in the Journal of Clinical Biochemistry and Nutrition in 2017 showed 16 weeks of astaxanthin supplementation protected against wrinkles and loss of skin moisture, and improved skin elasticity. It also helps lighten age spots by preventing the accumulation of too much melanin.[39]

> *"Additional studies have shown that astaxanthin inhibits the production of inflammatory chemicals by skin cells when they are exposed to UV radiation,"* LiverDoctor.com writes.[40]
>
> *"The inflammatory chemicals break down collagen and elastin fibers, and increase the risk of pigmentation changes to the skin. The lead author of the study has stated that 'Long term astaxanthin supplementation may prophylactically inhibit skin deterioration induced over time by environmental damage and consequently retard the skin aging process via its anti-inflammatory effect.'"*

When it comes to UV radiation protection, astaxanthin specifically helps protect against UV-induced cell death. Unlike topical sun block, astaxanthin does not actually block UV

rays, so it doesn't prevent UVB from converting into vitamin D in your skin; it simply protects your skin against damage.

This protective effect is so potent studies even show it helps protect against total body irradiation,[41] primarily by scavenging intracellular reactive oxygen species (ROS) and reducing cell apoptosis (programmed cell death), and burn-wound progression, by reducing oxidative stress-induced inflammation and mitochondrial-related apoptosis.[42] You can learn more about astaxanthin's skin benefits in "**7 Nutrients to Boost Your Skin's Natural SPF**."

Astaxanthin-Rich Foods

Foods that contain generous amounts of astaxanthin are restricted to seafoods that consume the microalgae, such as:

- Wild-caught Alaskan salmon
- Trout
- Krill (or krill oil)
- Shrimp
- Crayfish

If you rarely eat these foods, an astaxanthin supplement can be used. Just make sure it's made from the Haematococcus pluvialis microalgae and not petrochemicals. While taking too many antioxidant supplements can be problematic, astaxanthin is far safer in this regard — in fact, it's safe even in extremely high dosages — thanks to several unique features.

Unique Features of Astaxanthin

Astaxanthin is related to beta-carotene and lutein, but its unique molecular structure makes it both more potent and more widely usable than other carotenoids.

Importantly, while it donates electrons to neutralize free radicals, astaxanthin is not depleted by this electron donation. It has a massive surplus that allows it to remain active far longer — at least one order of magnitude longer than most other antioxidants.

The astaxanthin also remains intact, meaning there are no chemical reactions to break it down, which is what occurs in most other antioxidants. Another major difference is in the number of free radicals it can handle. Most antioxidants, such as vitamins C, E can typically handle only one free radical at a time.

Astaxanthin can address multiple free radicals simultaneously by forming an electron cloud around the molecule. This is known as the electron dislocation resonance. When free radicals try to steal electrons from the astaxanthin molecule, they're simply absorbed into and neutralized by this electron cloud, all at once.

Astaxanthin also has the unique ability to protect both water- and fat-soluble parts of the cell. Carotenoids are typically divided into water-soluble or fat-soluble, but astaxanthin belongs to an in-between group that can interface between both water and fat.

This means the astaxanthin molecule can affect and expand the biolipid membrane of all cells. It's not simply floating around in your bloodstream; it actually integrates into the cellular membrane. It also has the ability to cross the blood-brain barrier, which is part of its neuroprotective effects.

Another key feature is that it cannot function as a pro-oxidant. Many antioxidants will act as pro-oxidants (meaning they cause rather than combat oxidation) when present in sufficient concentrations. Astaxanthin, on the other hand, does not function as a pro-oxidant, even when present in high amounts, which makes it both safer and more beneficial. Lastly, it acts on at least five different inflammation pathways, making it a very potent anti-inflammatory.

Other Uses for Astaxanthin

In addition to its skin benefits, astaxanthin can also benefit your eye, brain, lung[43] and heart health, and help prevent conditions such as cancer, metabolic syndrome, Type 2 diabetes, diabetic nephropathy, gastrointestinal disease, liver diseases, male infertility and $HgCl_2$-induced acute renal failure.[44]

Its potent anti-inflammatory effects also make it useful for inflammatory conditions and joint problems such as rheumatoid arthritis, carpal tunnel syndrome and tennis elbow. It's also been shown to improve athletic performance, in part by ameliorating exercise-induced fatigue.

Omega-3 Versus Omega-6 for Skin Health

The third dietary factor for optimal skin health that I'll cover in this article involves fat. Omega-3 fat is important for healthy skin. If your skin is rough, dry and wrinkly, you probably need more omega-3, as it helps regulate oil production in your skin, balance hydration, reduce inflammation and minimize the effects of sun damage and aging in general.[45]

> **“ High omega-3 intake will help protect your skin against UV damage, whereas high LA intake will INCREASE your risk of sunburn, as LA is highly perishable and readily oxidizes.”**

On the other side of this coin is omega-6 linoleic acid (LA). Like omega-3, LA gets integrated into your cell membranes, but unlike omega-3, LA impairs rather than optimizes cellular function. With regard to sun exposure, high omega-3 intake will help protect your skin against UV damage, whereas high LA intake will INCREASE your risk of sunburn, as LA is highly perishable and readily oxidizes.

So, to protect and improve your skin, you'll want to eliminate as much LA from your diet as possible, and increase your omega-3 intake. This means you'll need to:

- **Avoid all seed oils**, found in most processed foods, restaurant foods, condiments, pastries, conventional chicken and pork. Do not cook your food with seed oils; use butter, ghee, beef tallow or coconut oil instead.

- **Eat more omega-3-rich fatty fish** such as wild-caught Alaskan salmon, verified wild-caught sockeye salmon, sardines, anchovies, mackerel and herring. All of these are high in omega-3 while being low in contaminants. Canned Alaskan salmon is a less expensive than salmon steaks. As a general recommendation, try to get two servings of fatty fish per week.[46]

  Avoid farm-raised salmon. Not only is farmed salmon one of the most contaminated foods on the market, but most are also loaded with harmful LA thanks to being fed genetically engineered (GE) corn and soy. Others are fed fishmeal, which is known to accumulate industrial chemicals like PCBs and dioxins.

  Farmed salmon contain only half the omega-3 of wild salmon[47,48,49] and one-fourth the vitamin D,[50] while having more than 5.5 times the amount of omega-6.[51,52] Farmed salmon are also routinely exposed to antibiotics and pesticides.

  Alaska does not permit aquaculture, so all Alaskan fish are wild-caught. They also have some of the cleanest water and some of the best maintained and most sustainable fisheries. To verify authenticity, look for the state of Alaska's "Wild Alaska Pure" logo. Sockeye salmon is now being farmed in certain areas of North America,[53] so if you opt for sockeye, make sure it's wild-caught.

Other Health Benefits of Omega-3 Fats

Beyond taking care of your skin, other health benefits of omega-3s include but are not limited to:

- **Reducing inflammation**, which can be helpful for those suffering with rheumatoid arthritis by reducing stiffness and pain.[54] Women who suffer from menstrual pain may also experience milder pain[55,56]

- **Optimizing muscle building and bone strength —** Omega-3 fats help your body build healthy muscle mass, including people suffering from cancer who may experience cachexia.[57] Omega-3 fats can also help improve your bone strength by improving the utilization of calcium in your body. This may lead to a reduction in the development of osteoporosis[58]

- **Improving metabolic syndrome[59] and insulin resistance[60]**

- **Improving mental health and behavior —** Demonstrated benefits have been shown for children with attention deficit hyperactivity disorder (ADHD), including reduced aggression, hyperactivity,[61] impulsivity,[62] oppositional behavior[63] and restlessness.[64]

  Omega-3 is associated with lowered risk for other neurological/cognitive dysfunction as well, including: memory loss, brain aging, learning disorders and ADHD,[65] autism and dyslexia[66]

- **Protecting your vision —** DHA is a major structural element in your eye and brain.[67] Low levels of DHA may increase your risk for age related macular degeneration[68]

Summary

So, to summarize what we've reviewed here, foods that will nourish your skin and provide natural protection against sunburn include polyphenol-rich foods such as grapes, dark chocolate, cocoa, olives, green tea and certain herbs; astaxanthin from wild-caught Alaskan salmon, trout, shrimp and crayfish; and omega-3 fat from fatty fish.

A krill oil supplement will give you both astaxanthin and omega-3. At the same time, you also want to limit omega-6 LA as much as possible, which is done by avoiding the foodstuffs listed above.

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