



# ARBOR FARMS MARKET

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## Our September 2019 Newsletter for Healthy Living

### Collagen and Your Skin

Collagen is the most common and abundant of your body's proteins, which makes sense when you consider one of its primary purposes is to provide structural scaffolding for your various tissues to allow them to stretch while still maintaining tissue integrity. Collagen makes up anywhere from 25% to 30% of the total proteins in your body, and as much as 70% to 80% of the protein in your skin (dry weight). It's found specifically in the connective tissues throughout your body, from your muscles, bones and tendons to your blood vessels and digestive system.

The body produces collagen naturally, but production starts to decline at about age 25, continuing to decrease even more in women after menopause. Historically, traditional diets provided ample collagen in the form of broth made from boiled chicken feet or beef bones. Today, few remember and value homemade bone broth as a key staple, which has led to an entire industry of collagen supplements. While many different types of collagen have been scientifically identified, 80% to 90% of the collagen in your body fall into the following three categories:

Type I — The most abundant type, found in skin/hide, tendon, connective tissue and bone of all vertebrates. In supplements, Type I collagen may be derived from cows, pigs, chicken and/or fish. Type II — A primary component of cartilage. Type II collagen supplements are typically de-

rived from poultry. Type III — Fibrous protein found in bone, tendon, cartilage and connective tissues. Supplements containing Type III may be derived from cows, pigs, chicken and/or fish.

Collagen supplements can be either unhydrolyzed (undenatured) or hydrolyzed (denatured). Hydrolyzation refers to a processing technique that breaks the molecules down into smaller

amino acids. This means you'll also get a more balanced ratio of complementary amino acids, and not just the isolated peptides you get with the hydrolyzed product.

There's been some debate as to whether collagen is able to survive digestion. Like collagen, many other foods contain amino acids, and if collagen is simply broken down into separate amino

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*“The body produces collagen naturally, but production starts to decline at about age 25.”*

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fragments, thereby enhancing intestinal absorption. Since unhydrolyzed, natural collagen molecules are poorly absorbed due to their large size, most collagen products, whether topical or ingestible, are hydrolyzed. An argument can be made for unhydrolyzed products, as they will typically contain a wider spectrum of preserved amino acids, or peptides.

On the other hand, hydrolyzed collagen is described as having greater bioavailability mainly because it has isolated, or broken-down, peptides. But unhydrolyzed collagen has these isolated peptides too — which can make it even more confusing if you're new to these terms. To make it simpler, think of it this way: you need a good balance of amino acids like methionine and glycine — and when you isolate peptides, this balance is disrupted. Since your body breaks down the different collagen types through its own enzymatic hydrolysis, it's helpful to know that unhydrolyzed collagen contains a wider range of

acids as it goes through the digestive process, why would it be specifically beneficial for ligaments, joints and skin, more so than any other amino acid-rich food? As it turns out, hydrolyzed collagen does allow certain peptides to enter your bloodstream intact, before they're broken down into their component parts. Specifically, a peptide known as prolyl-hydroxyproline (Pro-Hyp), which plays a role in skin health and repair, has been shown to remain intact. As noted in a 2017 study published in the Journal of Agricultural and Food Chemistry:

*“Previous studies have shown that the oral ingestion of collagen hydrolysate leads to elevated levels of collagen-derived peptides in the blood, but whether these peptides reach the skin remains unclear. Here, we analyzed the plasma concentration of collagen-derived peptides after ingestion of high tripeptide containing collagen hydrolysate in humans. We identified 17 types of*

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## Grape Seed Extract

**G**rape seed extract is a substance derived from seeds of the common grape, *Vitis vinifera*. Commonly sold as a supplement, this extract is available in different forms, such as liquid, tablets or capsules. Grape seed extract is quickly becoming well-known due to recently published research. Evidence suggests that grape seed extract

According to Alternative Medicine Review, OPCs are not just antioxidants, but also possess the following properties: antibacterial; antiviral; anticarcinogenic; anti-inflammatory; anti-allergic, and vasodilatory. One of the notable benefits associated with grape seed extract is its ability to help curb high blood pressure.

In a 2016 study published in the

diagnosis and mucosal infection. **Cognitive function** — According to a 2011 study, grape seed extract was found to help lower oxidative stress in the brain, thanks to its proanthocyanidin content. **Anti-platelet aggregation** — The polyphenols found in grape seed extract have been found to help reduce platelet aggregation.

While published data suggest that supplementation of grape seed extract may benefit your health, some people may opt for a natural route by consuming grapes. However, to obtain these benefits, you would need to eat a lot of grapes. As an alternative, you can just consume the seeds, but be advised that they have a very bitter taste due to the various antioxidants present in them. If you do not like the taste of the seeds, you may opt for a high-quality grape seed extract supplement instead.



Reference: National Center for Complementary and Integrative Health. "Grape Seed Extract". *Antioxidants*. 2017 Sep; 8(3): 71. *Alternative Medicine Review*. 2000 Apr; 5(2): 144-51. *The British Journal of Nutrition*. 2016 Jan 28; 115(2): 226-38. *Medical News Today*. "What Are the Benefits of Grape Seed Extract?". BioMed Research International. 2014; 127021. *Experimental Gerontology*. 2011 Nov; 46(11): 958-64. *Journal of the Science of Food and Agriculture*. 2013 Feb; 93(3): 457-62. Milton S. Hershey Medical Center, "Grape Seed".

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*“One of the notable benefits associated with grape seed extract is its ability to help curb high blood pressure.”*

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contains antioxidants and other compounds that may optimize your health.

Grapes are one of the most popular fruits in the U.S. In 2016 alone, statistics indicate that consumption was 8.2 pounds per capita. Consumed raw, grapes have a sweet, yet slightly tart flavor that many people enjoy. But most people discard the seeds when they eat grapes, not knowing that these discarded remains may actually be one of the healthiest parts of the plant.

Researchers have discovered that grape seed extract contains powerful antioxidants that may be beneficial to your health, particularly oligomeric proanthocyanidin complexes (OPCs).

British Journal of Nutrition, researchers noted that those who consumed 300 milligrams of grape seed extract twice daily for six weeks had significantly reduced systolic blood pressure and diastolic blood pressure. In addition, fasting insulin and insulin sensitivity improved.

Additional research has shown that grape seed extract may help in the following capacities: **Bone strength** —

A study has found that a mixture of calcium and grape seed extract had a beneficial effect on bone formation and strength. **Yeast control** — Research indicates that grape seed extract can help control *Candida albicans*, a yeast strain commonly associated with vaginal can-

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## The Power of Curcumin

**S**pices are one of the most important aspects of cooking, as they have the ability to improve the flavor and aroma of any food. In many countries, spices are a big part of their cuisine and are deeply ingrained in their culture. One such example is turmeric, which has been largely associated with Indian culture for thousands of years. Today, turmeric is utilized in cuisines all over the world, from South Asian and Middle Eastern dishes to popular recipes in American cooking.

Through advancements in technology, modern medicine has discovered that turmeric contains curcumin, a natural antioxidant that is the source of turmeric's various health benefits. Due to the purported health benefits of turmeric over the centuries, many researchers have investigated this spice to discover the truth to these claims. Some of their findings about turmeric's capabilities include:

**Anti-inflammatory effects** —

Curcuminoids found in turmeric may inhibit the activity and synthesis of

cyclooxygenase and 5-lipoxygenase (5-LOX), which are enzymes related to inflammation.

**Supports recovery after surgery** —

Those who have just undergone surgery may experience pain and tenderness at the site of operation, a problem that curcumin may help with. In one study, patients who received 400 milligrams of curcumin three times a day for six days, as part of their postoperative treatments, experienced an 84.2% decrease in pain intensity.

**Keeps your brain sharp** — Recent research explored the potential neuroprotective benefits of curcumin. One such study suggested that curcumin may be effective against Parkinson's disease, a neurodegenerative disease that causes your brain to gradually produce lower levels of dopamine, negatively affecting movement over time. Another study notes that curcumin may help with cognitive impairment.

**Lowers cancer risk** — Curcumin may play a role in diminishing the growth of cancerous cells by affecting pathways

via "mutagenesis, oncogene expression, apoptosis, tumorigenesis and metastasis."

While adding turmeric to your foods is an easy way to obtain the benefits of curcumin, an issue with this method is that turmeric rhizomes contain only about 3% curcumin concentration. What's more, curcumin is poorly absorbed in your body. If you do add it to your foods, you're only absorbing about 1% curcumin. Should you choose a curcumin supplement, be informed. In a study conducted by ConsumerLab.com, researchers discovered that 20 percent of turmeric and curcumin supplements sold in the market today deliver less than 15% of their promised curcuminoid compounds. In light of this information, be certain your curcumin supplement is produced by a trustworthy manufacturer and is derived from turmeric containing at least 95% curcuminoids.

Reference: *Herbal Medicine: Biomolecular and Clinical Aspects*, 2<sup>nd</sup> Edition, "Turmeric: The Golden Spice". *Phytotherapy Research*. 1999 June; 13(4): 318-22. *Journal of the American Association of Pharmaceutical Scientists*. 2013 Jan; 15(1): 195-218. *Current Pharmaceutical Design*. 2012; 18(1): 91-99. *Journal of Medicinal Food*. 2014 Jun; 17(6): 641-9.

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*collagen-derived peptides transiently, with a particular enrichment in Gly-Pro-Hyp. Therefore, we infer that functional peptides can be transferred to the skin by dietary supplements of collagen.”*  
Nutraingredients.com in a

## **“Small collagen peptides... increase skin suppleness and reduce the formation of wrinkles.”**

March 2015 article explained: “When a collagen peptide preparation with optimized molecular weight and proven bioavailability is ingested, small collagen peptides are absorbed quickly into the blood stream. The presence of these peptides in skin tissue, stimulate skin cells (fibroblasts) and activate multiple biochemical pathways which in turn leads to a response which is widely accepted: that small collagen peptides are believed to act as a false signal of the destruction of collagen in the body, triggering the synthesis of new collagen fibers, which in turn increases skin suppleness and reduces the formation of wrinkles.”



*In addition, the synthesis of hyaluronic acid is stimulated which leads to an increase in skin hydration.”*

A number of studies have demonstrated collagen has beneficial effects on skin, helping mitigate age-related wrinkles, for example. Among them:

A 2014 study in the journal *Skin Pharmacology and Physiology* found older women who took Type I collagen experienced “a statistically significant increase in skin elasticity,” after eight weeks. They also observed improved skin hydration in elderly women, although those results “did not reach a level of statistical significance.”

A 2015 study in the *Journal of Medical Nutrition & Nutraceuticals* found post-menopausal women given a collagen beverage experienced improvements in the look and feel of their skin. According to the authors, “This study shows that the oral nutritional supplement consisting of hydrolyzed collagen, hyaluronic acid and essential vitamins and minerals, leads to a significant improvement in wrinkle depth. It is also able to induce noticeable improvement in elasticity and hydration of the skin.”

Recently, a systematic re-

view published in January 2019 — which analyzed 11 studies using either collagen hydrolysate or a collagen tripeptide supplement at dosages ranging between 2.5 grams and 10 grams per day for eight to 24 weeks — concluded,

“Preliminary results are promising for the short and long-term use of oral collagen supplements for wound healing and skin aging.” Specifically, oral collagen was found to “increase skin elasticity, hydration and dermal collagen density.”

Collagen has also been shown to impart other valuable health benefits, including but not limited to the following: reducing joint pain and stiffness; improving wound healing; improving blood pressure and reducing cardiovascular damage; improving glucose tolerance; strengthening bones, and improving osteoporosis.

Gelatin is a staple in paleo-based diets. The difference between collagen and gelatin is that collagen is the raw material, and gelatin is what you get when you cook the collagen. If you’ve ever made homemade bone broth, you’ll find it forms a layer of gelatin at the top when it cools. That’s the collagen from the bones and cartilage that has turned into gelatin, a formidable superfood. In fact, making your own bone broth from the bones of organic grass-fed or pastured animals is one of the best (and most inexpensive) ways to get healthy collagen into your diet.

Hydrolyzed collagen and gelatin are similar but not identical. While both products contain the same amino acids, they have different chemical properties and therefore differ in how you can use them. For example: both gelatin and hydrolyzed collagen have gut-healing properties (which is why they’re a staple in the GAPS diet), aiding digestion, reducing inflammation and restoring your gut lining, although hydrolyzed collagen tends to be more easily digested. Since hydrolyzed collagen has been broken down into smaller components, it can dissolve in both cold and hot liquids, whereas gelatin will only dissolve in hot liquid. And, since hydrolyzed collagen will not gel, it cannot be used as a substitute for gelatin in dishes like puddings and sauces.

You may not even need a collagen supplement if you provide your body with the needed precursors. Here are a number of ways to boost your collagen level without having to resort to a supplement: **Making and consuming homemade bone broth**, made from organic, pasture-raised poultry or grass fed and finished bovine bones and cartilage. **Aloe vera**, taken orally, nearly doubled collagen production and in-

## **Michigan Grass-fed Beef: Humanely-raised at Lamb Farm in Manchester, MI**



## **Porterhouse & T-Bone Steaks only \$14.99/lb**

creased hyaluronic acid levels by 1.5 times in one study, significantly reducing wrinkles in women aged 40 and over. **Hyaluronic acid**, an important compound for collagen in the skin, can be found in bone broth, organ meats and root vegetables, or taken as a supplement. Hyaluronic acid has been shown to improve skin moisture and suppleness and reduce wrinkles when added to the diet. **Vitamin C**, for example, plays an important role in collagen synthesis, so, without vitamin C, your body’s natural collagen production will be impacted. Fruits and vegetables rich in vitamin C include kiwi, oranges and other citrus fruits, tomatoes, broccoli and bell peppers. **Antioxidants**, which protect against damaging free radicals, enhance the effectiveness of existing collagen. Berries such as blueberries, blackberries and raspberries are good sources. **Garlic** contains sulfur, a necessary component for collagen production, as well as lipoic acid, which helps rebuild damaged collagen fibers.

Reference: *Molecular Cell Biology*, 4<sup>th</sup> Edition, Section 22.3, Collagen: The Fibrous Proteins of the Matrix. *Journal of Agriculture and Food Chemistry* 2017; 65(11): 2315-22. Science Direct: Collagen. *Nutraingredients.com* March 19, 2015. *Journal of Medical Nutrition and Nutraceuticals* 2015; 4(1): 47-53. *Skin Pharmacology and Physiology* 2014; 27: 47-55. *Journal of Drugs and Dermatology* 2019 Jan 1; 18(1): 9-16. *Collagencomplete.com*, Hydrolyzed Collagen Studies. SF Gate Healthy Eating Updated Dec 14, 2018.



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## September Specials



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Michigan Organic Green Beans.....	\$3.99/lb
Michigan Organic Blueberries, pint pkg.....	\$3.99
Michigan Organic Sweet Corn, in the husk....	3/\$1.99
Grass-fed Top Sirloin Steaks.....	\$9.99/lb
Miller Poultry Split Breasts.....	\$3.99/lb
Coho Salmon Fillets, wild-caught, Alaska.....	\$19.99/lb

Effective through September 29th

Cadia Pasta Sauce, assorted 25 oz.....	2/\$5
Garden of Eatin Organic Corn Chips asstd 16z.	\$3.99
Santa Cruz Organic Lemonade, select 32 oz.....	2/\$4
Cadia Olive Oil, 25 oz Extra Virgin.....	\$7.99
Tandoor Chef Naan Pizzas, assorted Frozen 7-8 oz...	2/\$5
Mill Creek Hair & Body Care, entire line.	20% OFF
Carlson Fish Oils, entire line.....	20% OFF
Life Extension Supplements, entire line...	20% OFF
Garden of Life Nutrition, entire line.....	20% OFF

### Arriving in September: *Local Products from Local Growers*

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