

The Benefits of Collagen Supplements for Women's Health and Wellness



By Lauren Samot

The **benefits of collagen for women** are well-recognized, which helps explain why collagen supplements continue to grow in popularity, especially among women aged 18 to 54. Women represent the largest segment of daily or near-daily collagen users, followed by men aged 32 to 45.¹²

How popular are collagen supplements? The global collagen market was valued at \$9.9 billion in 2024 and is projected to reach \$18.7 billion by 2030, with a compound annual growth rate (CAGR) of 11.3%.³

For brand owners, this growth presents a major opportunity. If your current product line doesn't include a collagen supplement, now is the time to consider developing one. But with **multiple collagen types and formats** on the market, how do you determine the best collagen for women? This article will help guide you through that decision by exploring key benefits, sourcing considerations, and product development strategies.

Why Are Collagen Supplements Essential for Women's Health?

Collagen is the most abundant protein in the body, making up 25% to 35% of the whole-body protein content. Its helical fiber-like structure plays a vital role in forming connective tissues, which are essential components of the skin, bones, muscles, tendons, and cartilage. Collagen provides structural integrity and helps tissues remain strong and resilient under stress. Collagen is under a constant state of remodeling to satisfy the structural needs of the tissue it serves. This is just one of the main reasons a sedentary lifestyle is detrimental to your health. It negatively influences healthy collagen turnover.

As the body ages, natural collagen production declines. To compound this decline, absorption of essential components of collagen through the gut becomes less efficient with age. In fact, during menopause, women can lose up to 30% of their skin's collagen within the first five years.⁴ This decline in collagen leads to visible changes like the appearance of wrinkles, sagging skin, and a less youthful appearance. In addition to aging, factors such as excess sun exposure, smoking, alcohol consumption, lack of sleep, and physical inactivity can further accelerate collagen breakdown through the up-regulation of collagen degradation enzymes called MMPs.

With aging, collagen in the deep skin layers changes from a tightly organized network of fibers to an unorganized maze.⁵ Environmental exposures can damage collagen fibers, reducing their thickness and strength, leading to wrinkles on the skin's surface.

While lifestyle factors play a role, many individuals choose to incorporate collagen supplements as part of their daily wellness routine to support the body's natural collagen levels.

The Benefits of Collagen Supplements for Women

Collagen benefits for women go far beyond beauty and skincare. When used as a dietary supplement, collagen offers a broad range of support for overall wellness throughout different life stages. Key areas of interest for women include beauty-from-within support, weight management, joint and bone strength, digestive function, and changes related to hormonal transitions.

This section explores the top collagen benefits for women and why collagen continues to be one of the most in-demand ingredients in the supplement market.

Collagen Supplements and Beauty from Within

Human clinical research has demonstrated that supplementation with bovine-derived collagen peptides^{6,7} significantly reduced eye wrinkle volume by 20%, increased content of procollagen type I (65%), elastin (18%), and fibrillin (6%), improved skin elasticity, and positively influenced skin moisture.

Additional research^{8,9} showed that it led to a statistically significant decrease in the degree of cellulite and a reduced skin waviness on thighs (i.e., a measure of skin smoothness, or lack thereof), and significantly increased hair thickness and increased hair cell proliferation rate by 31%.

Similarly, research¹⁰ on supplementation with collagen sourced from chicken sternal cartilage was associated with improved skin hydration (76%), reduced appearance of fine lines (13.2%), and increased dermal circulation (15%).

In addition, research¹¹ has demonstrated that supplementation with marine (fish) collagen peptides decreased the skin area of UV spots 11.67% by 8 weeks after ingestion, while another study¹² found that fish collagen peptides increased hair shaft diameter (i.e., hair thickness) by 44% compared to placebo. A third study¹³ using fish collagen peptides showed a significant 200% increase (percentage difference) over placebo in facial skin moisture and a significant 114% decrease (percentage difference) over placebo in roughness.

While results may vary depending on collagen type, dosage, duration, and baseline health of the individual, these findings support the role of collagen supplementation in promoting a youthful, vibrant appearance from the inside out.

Collagen Supplements for Weight Management

Emerging clinical research suggests that collagen supplementation may support a healthy body composition when combined with physical activity (resistance training) and a balanced diet.

In a randomized, double-blind, placebo-controlled study¹⁴ researchers examined the effect of collagen peptide supplementation compared to placebo for 12 weeks on body fat control in 74 older adults at a daily physical activity level. The results of this study were as follows:

- The collagen group showed a significant reduction in total body fat mass compared with the placebo group.
- Body fat mass and percent body fat of the whole body and trunk were reduced only in the collagen group.
- Collagen peptide supplementation had a beneficial effect on body fat reduction in older adults aged ≥ 50 years with daily physical activity levels.

Another randomized control trial¹⁵ in 64 overweight subjects also examined the effect of collagen vs. placebo. Results demonstrated that collagen significantly reduced body weight and body mass index (BMI), and increased fat-free mass when compared with the control group. Collagen also reduced the sensation of hunger and increased fullness and satisfaction. This last finding is important because it helps overweight individuals regulate their dietary intake habits, which is crucial for maintaining a healthy weight.

While additional studies are needed to confirm these findings across larger populations, the results indicate that collagen may play a supportive role in maintaining a healthy body composition when used as part of a comprehensive lifestyle approach.

Collagen Supplements Bone and Joint Health

In a randomized, placebo-controlled double-blinded study,¹⁶ 102 postmenopausal women supplemented with collagen peptides or placebo daily for 12 months resulted in the collagen group having significantly more bone mineral density compared to the placebo group.

Additional research¹⁷ has demonstrated that supplementation with collagen extract from chicken sternal cartilage was effective at supporting healthy joints compared to a placebo. This also led to a significant effect in promoting joint comfort as well as a significant improvement in physical activity. Likewise, an egg membrane source of collagen, which also has an additional hyaluronic acid component, promotes joint comfort, mobility, and functionality.^{18 19}

These findings support collagen-based supplementation use as part of a comprehensive approach to maintaining skeletal and joint health, especially for women navigating age-related changes.

Impact on Women's Hormonal Changes

Hormonal fluctuations, particularly the decline of estrogen during menopause, can significantly impact collagen levels and overall skin health. Estrogen plays a key role in supporting skin hydration, elasticity, and thickness by influencing natural collagen and hyaluronic acid production. As estrogen levels drop, women often experience visible changes in their skin, including dryness and a reduction in firmness. This correlation underscores the value of collagen supplementation during the menopausal transition.

For brand owners developing a women's health supplement, including collagen in a menopause-support formula can provide added value to consumers looking to maintain skin quality and overall wellness during this life stage.

Collagen Supplements for Gut Health

Collagen and collagen-associated peptides may also support digestive wellness.^{20,21} Emerging research suggests that collagen supplementation supports gut basement membrane health by aiding in the repair and strengthening of the intestinal lining, reducing inflammation, supporting tight junctions, fostering a balanced gut microbiome, and facilitating digestion and nutrient absorption.²²

In one 8-week study, daily supplementation with collagen peptides was associated with reduced bloating and improved mild digestive discomfort in healthy adult women.²³ Additionally, collagen may contribute structural proteins that help support the integrity of the intestinal lining.²⁴

These findings highlight collagen's ability to support gut comfort and microbiome balance, positioning it as a valuable ingredient in women's health supplements, especially for brands focused on delivering comprehensive wellness solutions.

How to Choose the Best Collagen Supplement for Women

Clearly, collagen supplementation offers a wide range of benefits for women across life stages. But what are the best collagen supplements for women? More specifically, what is the best type of collagen for women to include in your next product launch?

As you might expect, the answer depends on the product's intended benefit, whether it's skin appearance, joint support, gut health or overall wellness. The intended use will influence key formulation decisions such as collagen type as there are many (I, II, III, or a blend are the most popular), recommended daily dosage, delivery format (**powder**, **capsule**, **tablet**, etc.), sourcing (marine, bovine, poultry, or by fermentation), and the inclusion of complementary ingredients like hyaluronic acid, biotin, or vitamin C to name just a few.

Why Understanding Collagen Types is Essential for Women

The human body contains at least 28 collagen types, but the vast majority relevant to health and wellness fall under types I, II, and III.²⁵ These three types play distinct roles in promoting healthy skin, bones and joints, and connective tissues, making them especially important when formulating supplements for women.

A clear understanding of these collagen types is critical when it comes to **collagen supplement manufacturing**. Choosing the right collagen type based on your product's target benefits, such as beauty-from-within, joint comfort, or general wellness, will help ensure your finished formulation aligns with consumer needs and market expectations.

Type I Collagen: Best for Skin Health

This is the most common type, making up 90% of the body's collagen. It assembles into fibers that form the structural and mechanical scaffold (matrix) of bone, skin, tendons, cornea, blood vessel walls, and other connective tissues. It provides structural support for these body parts, contributing to their strength and elasticity.²⁶ Most of the collagen peptide materials used in products for skin health are made and based upon research from type I collagen from bovine and fish sources.

Type II Collagen: Best for Joint Health

This type is predominantly found in cartilage, which cushions and supports joints. It is crucial for joint health and flexibility. It is the primary component of hyaline cartilage, which provides cushioning and reduces friction between bones in joints. Type II collagen is found in the developing skeleton, joints, and at the end of the long bones of the arms and legs, as well as being part of the discs between the bones of the spine (vertebrae).²⁷ Some, but not all, of the collagen materials used in products for joint health are made and based upon research from type II collagen from chicken sternal cartilage.

Type III Collagen: Best for Muscle Mass Preservation

This type is only found alongside type I collagen in skin, muscles, and blood vessels. It's a major component of the extracellular matrix, working alongside Type I collagen to provide structural support and maintain the elasticity of these tissues. It also helps anchor vascular smooth muscle cells and provides signaling input to them. Type III collagen appears to provide a limited amount of support, but also to allow some motility and the easy diffusion and exchange of metabolites.²⁸ Type II collagen will generally be found in tandem with type I collagen from bovine and fish sources.^{29 30}

Why Supplement Form Matters for Women?

When developing a collagen supplement for women, the delivery format plays a significant role in both compliance and consumer experience. This is also an important consideration when evaluating potential manufacturers of collagen supplements. Below is a breakdown of the most common and practical delivery forms for collagen supplements targeted toward women:

- **Powder** – Powders are the most common delivery form for Type I collagen peptides derived from bovine or **marine sources**. This is primarily due to the dosing requirements—most Type I collagen supplements recommend 2.5g, 5g, or even 10g daily. Delivering such doses in capsules or tablets is impractical, as a 5g dose could require up to 10 capsules. Fortunately, high-quality collagen peptide powders are virtually tasteless and mix easily into coffee, smoothies, or other beverages, making them an ideal option for everyday use.
- **Capsules** – For Type II collagen sourced from chicken sternal cartilage, capsules are typically preferred. The standard dose is approximately 1 gram per day, which can be delivered efficiently in just two capsules. Additionally, because this type of collagen has a more distinct taste, encapsulation improves the consumer experience. The same holds true for collagen derived from eggshell membrane, which typically requires only a 400 mg daily dose, which can be easily achieved with a single capsule.
- **Tablets** – Tablets offer similar advantages to capsules and can sometimes deliver higher doses in fewer units. For individuals who experience pill fatigue, the convenience of taking just one tablet to meet their daily collagen needs can significantly improve compliance. This format is especially suitable for formulas where space is limited, and taste is not a concern.

Why Sourcing and Quality Are Key Considerations

Sourcing and quality are critical factors in the success of any supplement, but they're especially important when it comes to collagen. Whether you're developing a powder, capsule, or tablet formulation, the quality of the raw material directly impacts consumer experience and brand credibility.

When selecting a collagen powder manufacturer, make sure to evaluate your options carefully. Some collagen peptides on the market do not dissolve well, may produce a cloudy or muddy appearance when mixed, and often have an unpleasant taste or odor. These issues can lead to poor customer reviews and low repeat purchase rates.

Instead, choose a high-quality collagen peptide that dissolves quickly, mixes clearly, and is virtually tasteless. It's also essential to select ingredients backed by scientific research to support structure/function claims that comply with FDA regulations.

Even when working with collagen supplement manufacturers for capsule or tablet formulations, ingredient quality still matters. Choosing clinically studied materials reinforces product integrity and supports effective marketing without crossing into non-compliant health or disease claims.

Considering Added Ingredients That Enhance Collagen Effectiveness

When developing a collagen supplement, one of the most effective ways to differentiate your product from the competition is through formulation. Strategic inclusion of complementary nutraceutical ingredients can help enhance the functional appeal of your product, particularly when aligned with your targeted health positioning.

Depending on your formula's intended focus, these clinically studied ingredients are worth considering:

- **Ceramides** – Support skin hydration by reducing transepidermal water loss and promoting skin elasticity and smoothness.
- **Astaxanthin** – A powerful antioxidant that helps protect skin barrier integrity while promoting improved elasticity and moisture retention.
- **Hyaluronic Acid** – Well known for its ability to bind water molecules, helping to maintain hydration and contribute to skin suppleness.
- **Blood Orange Extract** – Shown to support an even skin tone and reduce visible skin redness associated with environmental stressors.
- **Grapeseed Extract** – Supports healthy skin appearance and tone, particularly for those concerned with hyperpigmentation.
- **Cucumber Extract** – Offers support for joint function and comfort; some evidence suggests it may perform favorably compared to traditional joint nutrients.
- **Vitamin K2 (MK-7)** – Supports bone mineralization by helping to direct calcium into bones rather than soft tissues.

Concluding Thoughts

Collagen supplementation continues to be one of the most promising and versatile categories in women's health and wellness.

As this article has outlined, the benefits of collagen for women span skin hydration, elasticity, joint mobility, bone strength, and even digestive comfort—making it a valuable addition to any supplement product line. Choosing the best collagen for women depends on your formulation goals, whether you're targeting beauty-from-within, joint support, or total body wellness. From selecting the right collagen

type and delivery format to incorporating synergistic ingredients and sourcing high-quality raw materials, there are multiple ways to differentiate your brand and deliver effective solutions.

Whether you're launching your first collagen product or looking to expand your line, working with an experienced collagen supplement manufacturer ensures your formulation meets consumer expectations and regulatory standards. With the right strategy and manufacturing partner, your brand can tap into this growing market and offer products women trust and love.

Are you ready to capitalize on the collagen supplements for women trends covered in this article? If so, call Vitaquest at 800-526-9095 to speak with one of our knowledgeable production specialists or request a nutraceutical manufacturing price quote if you've already finalized your project requirements!

Frequently Asked Questions About Collagen Supplements for Women's Health and Wellness

How do collagen supplements improve skin hydration and elasticity from within?

Essentially, consuming collagen in supplemental form helps stimulate your body's production of collagen. In doing so, the new collagen helps to keep your skin hydrated and promotes better elasticity. This has been demonstrated in numerous studies.

What are the anti-aging benefits of topical collagen applications?

While topical collagen is popular in skincare products, research suggests it has limited ability to penetrate the skin deeply due to the size of collagen molecules. As a result, applying collagen topically is unlikely to deliver the same benefits as oral supplementation. However, some studies indicate that topical collagen may serve as a hydrating agent, helping to improve the skin's surface moisture. For more impactful results related to skin elasticity and structure, ingestible collagen (especially types I and III) remains the more effective option for supplement brands targeting beauty-from-within benefits.

What is the difference between marine and bovine collagen?

Marine collagen is collagen from fish. Typically, it is the fish skin/scales that serve as the source of collagen. Bovine collagen is derived from cattle hide. Both are sources of type I and III collagen and have similar properties for skin health, and to some extent, for joint health. Organoleptic differences exist and will impact consumer preferences depending on the format.

Is there a plant-based version of collagen?

Collagen is only found in animal sources. However, there are some so-called "vegan collagens," which are not native collagen, but rather a blend of peptides and amino acids whose profile is similar to that of collagen. Some of these blends have research supporting their effectiveness, but they are still not collagen.

Lauren Samot, RD

Commercial Innovation Leader

With almost a decade at Vitaquest, Lauren Samot's journey from Technical Services Associate to her current role as Commercial Innovation Leader exemplifies her dedication and growth. Leading the innovation team, she fuels business expansion through collaborative efforts across sales, product development, and operations. With a 15-year long career in nutraceuticals, Lauren excels in manufacturing, raw materials, and formulation. A Vitaquest Proud Champion Award recipient twice, she holds a B.S. in Nutritional Science with a minor in Public Health from Boston University and is an accomplished Registered Dietitian and member of the Academy of Nutrition and Dietetics.



References

- 1 Glanbia Nutritionals, Consumer Pulse Survey – US, March 2024. Glanbia Nutritionals. Retrieved July 11, 2025 from <https://www.glanbianutritionals.com/en/nutri-knowledge-center/insights/rising-demand-collagen-insights-marketers-and-product-developers#:~:text=Collagen%20Consumer%20Insights,5>.
- 2 Glanbia Nutritionals, Consumer Pulse Survey – US, November 2023 and March 2024. Retrieved July 11, 2025 from <https://www.glanbianutritionals.com/en/nutri-knowledge-center/insights/rising-demand-collagen-insights-marketers-and-product-developers#:~:text=Collagen%20Consumer%20Insights,5>.
- 3 Collagen Market Size, Share & Trends Analysis Report By Product (Gelatin, Hydrolyzed Collagen), By Source (Bovine, Porcine), By Application (Food & Beverages, Healthcare), By Region, And Segment Forecasts, 2025 – 2030. Grand View Research. Retrieved July 11, 2025 from <https://www.grandviewresearch.com/industry-analysis/collagen-market>.
- 4 Collagen. Cleveland Clinic. Retrieved July 11, 2025 from <https://my.clevelandclinic.org/health/articles/23089-collagen>
- 5 Rinnerhaler M, Bischof J, Streubel MK, Trost A, Richter K. Oxidative Stress in Aging Human Skin. *Biomolecules*. 2015 Apr 21;5(2):545-89.
- 6 Proksch E, Schunck M, Zague V, Segger D, Degwert J, Oesser S. Oral intake of specific bioactive collagen peptides reduces skin wrinkles and increases dermal matrix synthesis. *Skin Pharmacol Physiol*. 2014;27(3):113-9.
- 7 Proksch E, Segger D, Degwert J, Schunck M, Zague V, Oesser S. Oral supplementation of specific collagen peptides has beneficial effects on human skin physiology: a double-blind, placebo-controlled study. *Skin Pharmacol Physiol*. 2014;27(1):47-55.
- 8 Schunck M, Zague V, Oesser S, Proksch E. Dietary Supplementation with Specific Collagen Peptides Has a Body Mass Index-Dependent Beneficial Effect on Cellulite Morphology. *J Med Food*. 2015 Dec;18(12):1340-8.
- 9 Oesser S. The oral intake of specific Bioactive Collagen Peptides has a positive effect on hair thickness. *Nutrafoods* (2020) 1:134-138.
- 10 Schwartz SR, Park J. Ingestion of BioCell Collagen®, a novel hydrolyzed chicken sternal cartilage extract; enhanced blood microcirculation and reduced facial aging signs. *Clin Interv Aging*. 2012;7:267-73.
- 11 Sugihara F, Inoue N. Clinical effects of collagen hydrolysates ingestion on UV-induced pigmented spots of human skin: A preliminary study. *Health Sciences*. 2012;28(2):153-156.
- 12 Saito N, Tamura T, Morikawa R, Kurihara K, Katsuoka K. Safety of Food Containing 5000mg of Collagen Peptide and Its Effect on Hair in Health Female Subjects. *Aesthet Dermatol*. 2008;18:311-320.
- 13 Koizumi S, Inouse N, Sugihara F. The effects of collagen hydrolysates derived from tilapia scales or skin on human facial skin. *Japanese Pharmacology and Therapeutics*. 2019; 47(1):57-63
- 14 Park J, Kim M, Shin H, Ahn H, Park YK. Low-Molecular Collagen Peptide Supplementation and Body Fat Mass in Adults Aged ≥ 50 Years: A Randomized, Double-Blind, Placebo-Controlled Trial. *Clin Nutr Res*. 2023 Oct 31;12(4):245-256. doi: 10.7762/cnr.2023.12.4.245. PMID: 37969940; PMCID: PMC10641330.
- 15 López-Yoldi M, Riezu-Boj JI, Abete I, Ibero-Baraibar I, Aranaz P, González-Salazar I, Izco JM, Recalde JI, González-Navarro CJ, Milagro FI, et al. Anti-Obesity Effects of a Collagen with Low Digestibility and High Swelling Capacity: A Human Randomized Control Trial. *Nutrients*. 2024; 16(20):3550. <https://doi.org/10.3390/nu16203550>

- 16 König D, Oesser S, Scharla S, Zdzieblik D, Gollhofer A. Specific Collagen Peptides Improve Bone Mineral Density and Bone Markers in Postmenopausal Women—A Randomized Controlled Study. *Nutrients*. 2018; 10(1):97. <https://doi.org/10.3390/nu10010097>
- 17 Schwartz SR1, Park J. Ingestion of BioCell Collagen®, a novel hydrolyzed chicken sternal cartilage extract; enhanced blood microcirculation and reduced facial aging signs. *Clin Interv Aging*. 2012;7:267-73.
- 18 Blasco JM-I, Aguirre A, Gil-Quintana E, Fenaux M. The effect of daily administration of 300 mg of ovomet® for treatment of arthritis in elderly patients. *Int J Clin Rheumatol*. 2016; 11(5), 77-81.
- 19 Gil-Quintana E, Fenaux M, L Nuez M, et al. Short-Term Effects of Ovomet®, Eggshell Membrane, in Joint Pain: A Double-Blind and Placebo Study. *J Osteopor Phys Act*. 2018; 6(1):211.
- 20 Ren B, Yue K, Zhang Y, Fu Y. Collagen-derived peptides as prebiotics to improve gut health. *Curr Opin Food Sci*. 2024; 55: 101123. <https://doi.org/10.1016/j.cofs.2024.101123>.
- 21 Baek GH, Yoo KM, Kim SY, Lee DH, Chung H, Jung SC, Park SK, Kim JS. Collagen Peptide Exerts an Anti-Obesity Effect by Influencing the Firmicutes/Bacteroidetes Ratio in the Gut. *Nutrients*. 2023 Jun 2;15(11):2610. doi: 10.3390/nu15112610. PMID: 37299573; PMCID: PMC10255498.
- 22 Xin XY, Zhou J, Liu GG, et al. Anti-inflammatory activity of collagen peptide in vitro and its effect on improving ulcerative colitis. *npj Sci Food*. 2025; 9:1. <https://doi.org/10.1038/s41538-024-00367-7>.
- 23 Abrahams M, O'Grady R, Prawitt J. Effect of a Daily Collagen Peptide Supplement on Digestive Symptoms in Healthy Women: 2-Phase Mixed Methods Study. *JMIR Form Res* 2022;6(5):e36339. doi: 10.2196/36339
- 24 The Science Behind Collagen Powder: Does it Work? Hackensack Meridian Health. February 4, 2025. Retrieved July 11, 2025 from <https://www.hackensackmeridianhealth.org/en/healthu/2025/02/04/the-science-behind-collagen-powder-does-it-work>.
- 25 Collagen. Cleveland Clinic. Retrieved July 11, 2025 from <https://my.clevelandclinic.org/health/articles/23089-collagen>
- 26 Makareeva E, Leikin S. Chapter 7 - Collagen Structure, Folding and Function. In Shapiro JR, Byers PH, Glorieux FH, et al (eds). *Osteogenesis Imperfecta*. Academic Press; 2014: 71-84.
- 27 COL2A1 gene collagen type II alpha 1 chain. MedlinePlus, National Library of Medicine. Updated Jun 24; cited 2020 Jul 1. Retrieved July 11, 2025 from <https://medlineplus.gov/genetics/gene/col2a1/> / .
- 28 Jones ML, Bancroft JD, Gamble M. 10 – Connective Tissues and Stains. In Bancroft JD, Gamble M. *Theory and Practice of Histological Techniques* (Sixth Edition). Churchill Livingstone; 2008: 135-160. <https://doi.org/10.1016/B978-0-443-10279-0.50017-8>.
- 29 COL2A1 gene collagen type II alpha 1 chain. MedlinePlus, National Library of Medicine. Updated Jun 24; cited 2020 Jul 1. Retrieved July 11, 2025 from <https://medlineplus.gov/genetics/gene/col2a1/> / .
- 30 Jones ML, Bancroft JD, Gamble M. 10 – Connective Tissues and Stains. In Bancroft JD, Gamble M. *Theory and Practice of Histological Techniques* (Sixth Edition). Churchill Livingstone; 2008: 135-160. <https://doi.org/10.1016/B978-0-443-10279-0.50017-8>.