**CellRenew Hydrolyzed Collagen Type II Technical Outline**

**Product Goal**

To provide a highly absorbable hydrolyzed collagen type II product derived from 100% pure sternal cartilage for individuals looking to support joint health and symptoms associated with joint discomfort.

**Suggested Use**

Take four (4) capsules first thing in the morning on an empty stomach and wait 20 minutes before eating.

* Supplement Facts Box

**Key Active Components**

CellRenew contains highly efficacious and naturally occurring levels of Hyaluronic Acid (HA-sometimes called hyaluronan), glucosamine sulfate, depolymerized chondroitin sulfate (smaller molecules which means a higher absorption rate to users), type II collagen protein, and cartilage matrix glycoprotein.

**Discussion**

Hylauronic Acid (HA) and Collagen are vital structural components of skin that decline as we age, and are responsible for the skin’s moisture, suppleness, and elasticity.

CellRenew Collagen Type II contains the only hydrolyzed 100% pure sternum derived Collagen Type II ingredient shown to be safe and effective. It provides low molecular weight compounds, which are readily and easily absorbed into the bloodstream. It has high levels of the “anti-aging” nutrient **Hyaluronic Acid**.2,3 This powerful and research proven ingredient contains key components like glucosamine and chondroitin sulfate which can help support healthy skin and joint function to combat the degenerative effects of aging.4, 5,6,7

**Key Product Highlights/Bullets**

* Hydrolyzed and denatured (enzymatically modified) to low molecular weight compounds that increase bioavailability and absorption into bloodstream after an oral dose.4 Other native or undenatured products DO NOT have this high absorption rate due to their larger molecule size.
* CellRenew is so effective that the raw material has been awarded two United States Patents (US patent #6,025,327 and #6,323,319) for the treatment of connective tissue disorder, osteoarthritis, degenerative joint disease, joint defects, vascular disease, and cartilage injuries and for making type II collagen.1,4,8,9,10,11,12
* Supports healthy joint function by strengthening cartilage and the joint structure13
* May help promote joint cushioning
* May help support proper inflammatory function due to its chondroitin sulfate content.14
* Supports healthy skin function by increasing skin hydration.15
* May boost skin elasticity and reduce the appearance of wrinkles by promoting skin repair and support.15
* May possibly support proper wound healing due to its potent hyaluronic acid content16
* May help improve the appearance of skin, hair, and nails because it naturally contains key “beauty” amino acids like hydroxyproline.4, 17, 18

**History/Background**
CellRenew has been on the market since 1997 and has been effectively used by thousands of people since then. Even though research exists on hydrolyzed collagen, **Applied Health Solutions has initiated a double blind placebo controlled study** to confirm the proven effects of this ingredient. Dr. Ramon Gustilo and the doctors on his staff have been providing a CellRenew product to their patients since  1999. **Dr. Gustilo is a world-renowned orthopedic surgeon and scientist. He is the inventor of the Gustilo Classification System which is part of the standard curriculum of medical schools worldwide.** Dr. Gustilo is also the co-inventor and patent holder of hip and knee replacement joint systems. **He is unquestionably a world-leading authority on orthopedics and joint health, and we are proud of his confidence in our CellRenew product.** We share his confidence, and we know that you will too. We back up our confidence with our **Guaranteed Results Policy** which provides for a 100% money back guarantee if a customer does not realize results to match their expectations.

In the village of Yuzurihara, Japan (also know as “village of long life”), there seems to exist a population that has the longest age span in the world. [Featured on ABC television](http://www.moosegrease.com/cellrenew-collagen-type-ii/hyaluronic-acid-abc-news/), this village had one common thread – maintenance of Hyaluronic acid (HA) levels in their bodies. The people of this village were living to old ages without wrinkles and common age-related diseases. In fact, Bill Sardi, author of the new book, “HA: How to Live 100 Years Without Growing Old” (available from Here and Now books), discusses this very phenomenon.

HA has been studied by scientists for over 40 years. It is a key component to many normal bodily functions and has hundreds of research studies showing its value in skin and joint health.

**Studies and Mechanisms of action**

**Joint Health** – There are 14 different types of collagen found in the body but only type II is the most abundant in the joint matrix. CellRenew and its components can have a powerful impact on joints and conditions associated with abnormal joint function. One study19 published in 2000 entitled “Role of collagen hydrolysate in bone and joint disease”, reviews how **collagen can be a powerful tool in helping with osteoarthritis and even osteoporosis.** The researchers of this study state “Its high level of safety (hydrolyzed collagen) makes it attractive as an agent for long-term use in these chronic disorders.”

*Mechanism of action*: The components of CellRenew including chondroitin sulfate, Hyaluronic Acid, and glucosamine sulfate can support proteoglycans and glycosaminoglycans (GAG’s) in the joint matrix thereby increasing synovial (joint) fluid and supporting cartilage synthesis in the joints. This can enhance a joint’s shock absorption capabilities as well as lower the chance for deterioration.

**Hyaluronic Acid specifically is a key nutrient in joint health.** In a review by Moskowitz15 from Case Western Reserve University entitled “Hyaluronic acid supplementation” and published in 2000, he states that **“Hyaluronan preparations have been shown to decrease pain and increase function in patients with osteoarthritis of the knee.”**
*Mechanism of action*: Hyaluronic Acid seems to work through several mechanisms of action including restoration of more normal synovial fluid with improved viscoelasticity, effects on cartilage biosynthesis and degradation, **anti-inflammatory effects**, and direct analgesic effects.18
**Skin Health** – Collagen is one of the most important substances required for the proper functioning of skin. It provides structural support to the skin thereby increasing elasticity and skin tone. Hyaluronic acid is also present in skin tissue including both the dermis (interior) and epidermis (exterior). It supports healthy skin function. In one study published in the Journal of Cellular Physiology in 1998, Hyaluronic Acid was shown to help proliferate healthy skin cells in a collagen matrix.17

*Mechanism of action*: Hyaluronic Acid enhances skin moisture (hydration) and functions as a lubricant between the collagen matrix of the skin. Since it is a component of the skin structure and declines with age, supplementation can insure adequate levels remain in the skin to support its healthy appearance and function.

**Wound Healing** – Hyaluronic acid has been shown to support wound healing, mainly as a topical application. In a study entitled “The properties of hyaluronan and its role in wound healing” published in 2001, Hyaluronic Acid is discussed as having wound healing properties. It seems to work through its water retaining properties.16

**Nutrient Safety**
Shown to be very safe with no adverse effects. A very detailed acute oral toxicity study conducted by Covance laboratories confirms its safety.20

**Nutrient Interaction/Contraindication**
Based on the mechanism of action of this nutrient and its proven safety in research studies,10, 13 NO interactions or contraindications are known at this time.

**FDA Information** – No claims can be made regarding CellRenew’s direct effects on treatment of Osteoarthritis or other joint diseases. No claims can be made regarding this ingredient and any other diseases it may heal or help treat. A structure function claim with hyaluronic acid stating that it “Promotes skin health” has been filed with the FDA. This ingredient was filed with the FDA without comment as a new ingredient in 2000.

**FTC information** – NONE – After conducting an extensive review of the FTC web site, NO filings or actions involving this ingredient were found.

**Therapeutic Equivalents** – Undenatured or “native” collagen is another “me too/wanna be” type product but it does not have the same powerful effects of CellRenew. In fact, it is poorly absorbed due to its higher molecular weight. It also does not have the same available hyaluronic acid content as CellRenew does. The doses of undenatured collagen Type II are very low and are not nearly as efficacious as the dosages of CellRenew.

**Patents**
The ingredient in CellRenew is patent protected by US patent number # 6,025,327. Hydrolyzed collagen type II and use thereof

**Abstract**
Hydrolyzed collagen type II powder compositions, method of preparing the compositions and use of the compositions in treating cartilage defects. The compositions are orally administered to an individual in need of cartilage augmentation in a daily dosage of between about 2,000 and 3,000 mg per day.

**Patent Claims**

1. Chicken sternal cartilage-derived material comprising hydrolyzed collagen type II, said hydrolyzed collagen type II having an average molecular weight of between about 1,500 and 2,500 daltons.
2. A method for treating an individual with a connective tissue disorder, comprising orally administering to said individual an effective daily amount of chicken sternal cartilage-derived material comprising hydrolyzed collagen type II having an average molecular weight of between about 1,500 and 2,500 daltons.
3. The method of claim 2, wherein said connective tissue disorder is selected from the group consisting of degenerative joint diseases, joint defects, osteoarthritis, polychondritis, vascular disease, cartilage injuries, progressive myopia and Menier’s disease.
4. A method for treating an individual with a connective tissue disorder, comprising orally administering to said individual an effective daily amount of chicken sternal cartilage-derived material comprising hydrolyzed collagen type II, wherein said effective daily amount is between about 500 and 5,000 mg.
5. The method of claim 4, wherein said effective daily amount is between about 2,000 and 4,000 mg.
6. The method of claim 5, wherein said effective daily amount is between about 2,000 and 3,000 mg.
7. A method of providing collagen type II as a nutritional supplement, comprising orally administering to an individual a daily dosage of chicken sternal cartilage-derived material comprising hydrolyzed collagen type II having an average molecular weight of between about 1,500 and 2,500 daltons.



$37.95 for 120 capsules(Typically enough for one month, depending on personal needs.)

**References supporting CellRenew and its components**

1. Alkayali, A. Biocell Technology, LLC. “Hydrolyzed collagen type II and use thereof,” US Patent # 6,025, 327. February 15, 2000.

2. Knauper et al. “Biochemical characterization of human collagenase-3,” J. Biol. Chem. 271:1544-1550 (1996).

3. Bedi et al. “Purification and characterization of a collagen-degrading protease from Porphyromonas ginivalis,” J. Biol. Chem. 269:599-606 (1994).

4. Alkayali, A. Biocell Technology, LLC. “Method of making hydrolyzed collagen type II,” US Patent # 6,323,319. February 15, 2000.

5. M. Barinaga, “Treating Arthritis With Tolerance,” Science 261:1669-1670 (1993).

6. M.A. Cremer, et al., “Collagen-Induced Arthritis In Rats: Antigen-Specific Suppression of Arthritis and Immunity By Intravenously Injected Native Type II Collagen,” The Journal of Immun. 131(6): 2995-3000 (1983).

7. M.E. Englert, et al., “Suppression of Type II Collagen-Induced Arthritis by the Intravenous Administration of Type II Collagen or Its Constituent Peptide .alpha..sub.1 (II) CB.sub.10, ” Cellular Immunology 87:357-365 (1984).

8. L. Stryer, “Collagen Has An Unusual Amino Acid Composition And Sequence,” Biochemistry, Third Edition, W.H. Freeman and Co., New York, p. 262 (1988).

9. D.E. Trentham, et al., “Autoimmunity to Type II Collagen: An Experimental Model of Arthritis,” The Journal of Experimental Medicine 146:857-868 (1977).

10. D.E. Trentham, et al., “Effects of Oral Administration of Type II Collagen on Rheumatoid Arthritis,” Science 261:1727-1730 (1993).

11. Brucknet et al. `p-HMW-Collagen, a minor collgen obtained form chick embryo cartilage without proteolytic treatment of the tissue`, Eur. J. Biochem. 136 : 333-339 (1983).

12. Trentham et al. `Autoimmunity of Type II Collagen: An Experimental Model of Arthritis`, J. of Exp. Medicine. 146 : 857-868 (1977).

13. Barnett, ML, et al., “Treatment of rheumatoid arthritis with oral type II collagen. Results of a multicenter, double-blind, placebo controlled trial,” Arthritis Rheum 41 (2) : 290-297 (1998).

14. Ronca F, et al., “Anti-inflammatory activity of chondroitin sulfate,” Osteoarthritis Cartilage suppl. 6 (A) : 14-21 (1998).

15. Moskowitz RW. “Hyaluronic acid supplementation,” Curr Rheumatol Rep 2(6):466-71 (2000).

16. Anderson I. “The properties of hyaluronan and its role in wound healing,” Prof Nurse 17(4):232-5 (2001).

17. Greco RM, et al., “Hyaluronic acid stimulates human fibroblast proliferation within a collagen matrix,” J Cell Physiol 177(3):465-73 (1998).

18. Ghersetich I., et al, “Hyaluronic acid in cutaneous intrinsic aging,” Int J Dermatology 33 (2): 119-122 (1994).

19. Moskowitz RW. “Role of collagen hydrolysate in bone and joint disease,” Semin Arthritis Rheum 30(2):87- 99,(2000)

20. Glaza, SM, “Acute oral toxicity study of BioCell collagen II™ in rats,” Covance Laboratories. November 16, 2001.



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