Consumer Health & Nutrition

Lonza

UC-II®

For Joint Health

40 mg Once a Day

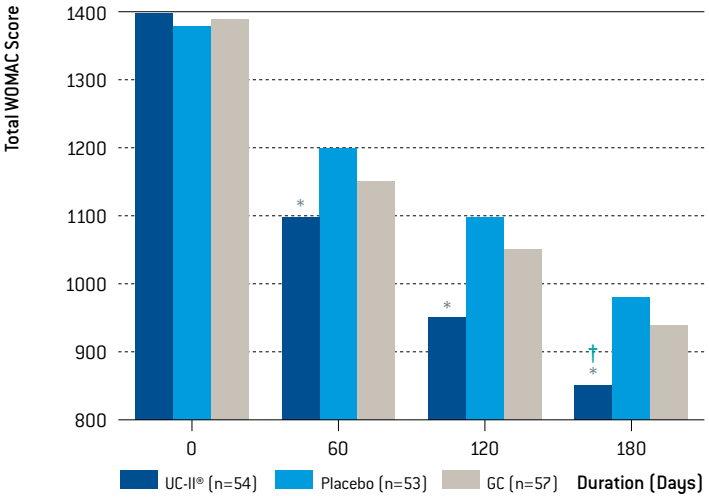
UC-II® is the brand name for cartilage containing undenatured (native) Type II - collagen in powder form for use as a dietary supplement.

* WOMAC (Western Ontario and McMaster Universities Osteoarthritis Index)

English/US

Statistically significantly more effective than Glucosamine plus Chondroitin as Measured by WOMAC*

Total WOMAC Score in Subjects with Osteoarthritis

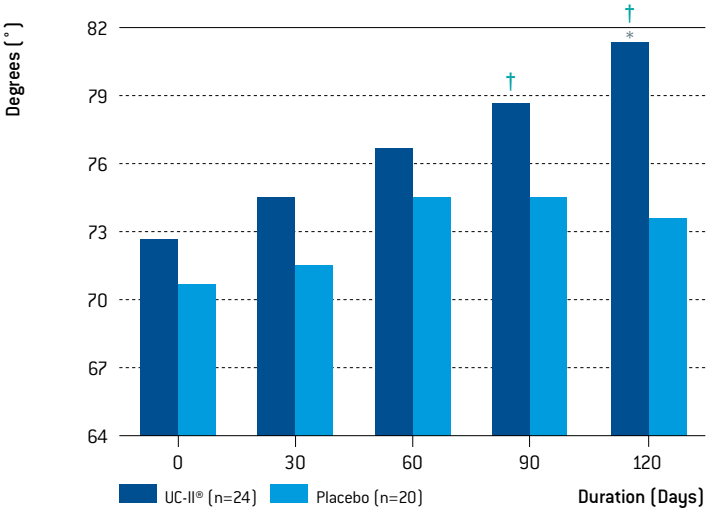


* p<0.05 vs. Placebo † p<0.05 vs.GC

Lugo JP, Saiyed ZM, Lane NE. Efficacy and tolerability of an undenatured type II collagen supplement in modulating knee osteoarthritis symptoms: A multicenter randomized, double-blind, placebo-controlled study. *Nutr J.* 2016;15:14.

Clinically Studied in Healthy, Active Adults

Average Knee Extension in Healthy Subjects



* p<0.05 vs. Placebo † p<0.05 vs.Baseline

Lugo JP, et al. Undenatured type II collagen (UC-II®) for joint support: a randomized, double-blind, placebo-controlled study in healthy volunteers. *J Int Soc Sports Nutr.* 2013;10:48.

1. Statistically Significantly Better than Glucosamine Plus Chondroitin as measured by WOMAC

Lugo JP, et al. Efficacy and tolerability of an undenatured type II collagen supplement in modulating knee osteoarthritis symptoms: a multicenter randomized, double-blind, placebo-controlled study. *Nutr J.* 2016;15:14.

2. Clinically Studied in Healthy, Active Adults

Lugo JP, et al. Undenatured type II collagen (UC-II®) for joint support: a randomized, double-blind, placebo-controlled study in healthy volunteers. *J Int Soc Sports Nutr.* 2013;10:48.

3. Improves Joint Comfort, Mobility and Flexibility

Lugo JP, et al. Efficacy and tolerability of an undenatured type II collagen supplement in modulating knee osteoarthritis symptoms: a multicenter randomized, double-blind, placebo-controlled study. *Nutr J.* 2016;15:14.

Lugo JP, et al. Undenatured type II collagen (UC-II®) for joint support: a randomized, double-blind, placebo-controlled study in healthy volunteers. *J Int Soc Sports Nutr.* 2013;10:48.

Crowley DC, et al. Safety and efficacy of undenatured type II collagen in the treatment of osteoarthritis of the knee: a clinical trial. *Int J Med Sci.* 2009;6:312-321.

4. Small, Once a Day Dosage

Lugo JP, et al. Undenatured type II collagen (UC-II®) for joint support: a randomized, double-blind, placebo-controlled study in healthy volunteers. *J Int Soc Sports Nutr.* 2013;10:48.

5. Unique Mechanism of Action

Lugo JP, et al. Efficacy and tolerability of an undenatured type II collagen supplement in modulating knee osteoarthritis symptoms: a multicenter randomized, double-blind, placebo-controlled study. *Nutr J.* 2016;15:14.

Lugo JP, et al. Undenatured type II collagen (UC-II®) for joint support: a randomized, double-blind, placebo-controlled study in healthy volunteers. *J Int Soc Sports Nutr.* 2013;10:48.

Bagi C.M. Osteoarthritis - Opportunities for nonsurgical therapies. Presented at *8th International Conference of Orthopedic Surgeons and Rheumatology*, March 22-23, 2017 Rome, Italy.

6. Sourced & Manufactured in the USA

UC-II® production site (Arkansas) holds a NSF facility GMP certificate.

7. Patents

US Patents 9,066,926, 7,846,487 and 7,083,820; EP Patent EP 1 435 906; Canadian Patent CA 2459981C; and Japanese Patent JP 4800574 B2 and other granted patents and pending patent applications.

8. Safety Profile

Marone PA, et al. Safety and toxicological evaluation of undenatured type II collagen. *Toxicol Mech Meth*. 2010;20:175-189.

9. Self-affirmed GRAS since 2009 FDA New Dietary Ingredient (NDI) notified and published.

Completed Safety Tests			
Human & Animal Studies	✓	90 Day Toxicity Study	✓
Acute Oral Toxicity	✓	Mouse Lymphoma Assay	✓
Primary Eye Irritation	✓	Ames Bacterial Assay	✓
Primary Skin Irritation	✓	Acute Dermal Toxicity	✓

For more information, contact:
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+1 707 751 2800

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UC-II™

For Healthy Joint Mobility

Capsugel® | Lonza

Naturally safe, proven effective

50%

Of MLM consumers would be willing to pay 30-50% more for a supplement with all natural ingredients*

Father's mission

Developed out of a father's mission to improve the joint health of his daughter

80%

Of MLM consumers would likely take a joint health supplement if scientifically proven effective*

Dare to be different.

Give consumers a solution as unique as they are.

- UC-II® ingredient can be easily incorporated into **combination** formulas, *without* increasing pill size
- **Patented** formula with a **unique** mode of action
- Differentiate your brand in a growing category with UC-II® collagen today

Small package. Big results.

A new approach to joint support.

- Supports healthy joints and promotes joint mobility and flexibility
- Patent protected composition has demonstrated its efficacy in healthy human clinical studies
- Small daily dose of 40mg

1 Small capsule containing 40mg UC-II® undenatured type II collagen

=

3 Tablets containing glucosamine and chondroitin

UC-II™ For Healthy Joint Mobility

Contacts:

For further information about the products:
Visit: www.capsugel.com
Email: solutions@lonza.com
Call: 800 845 6973
Or contact your Lonza representative

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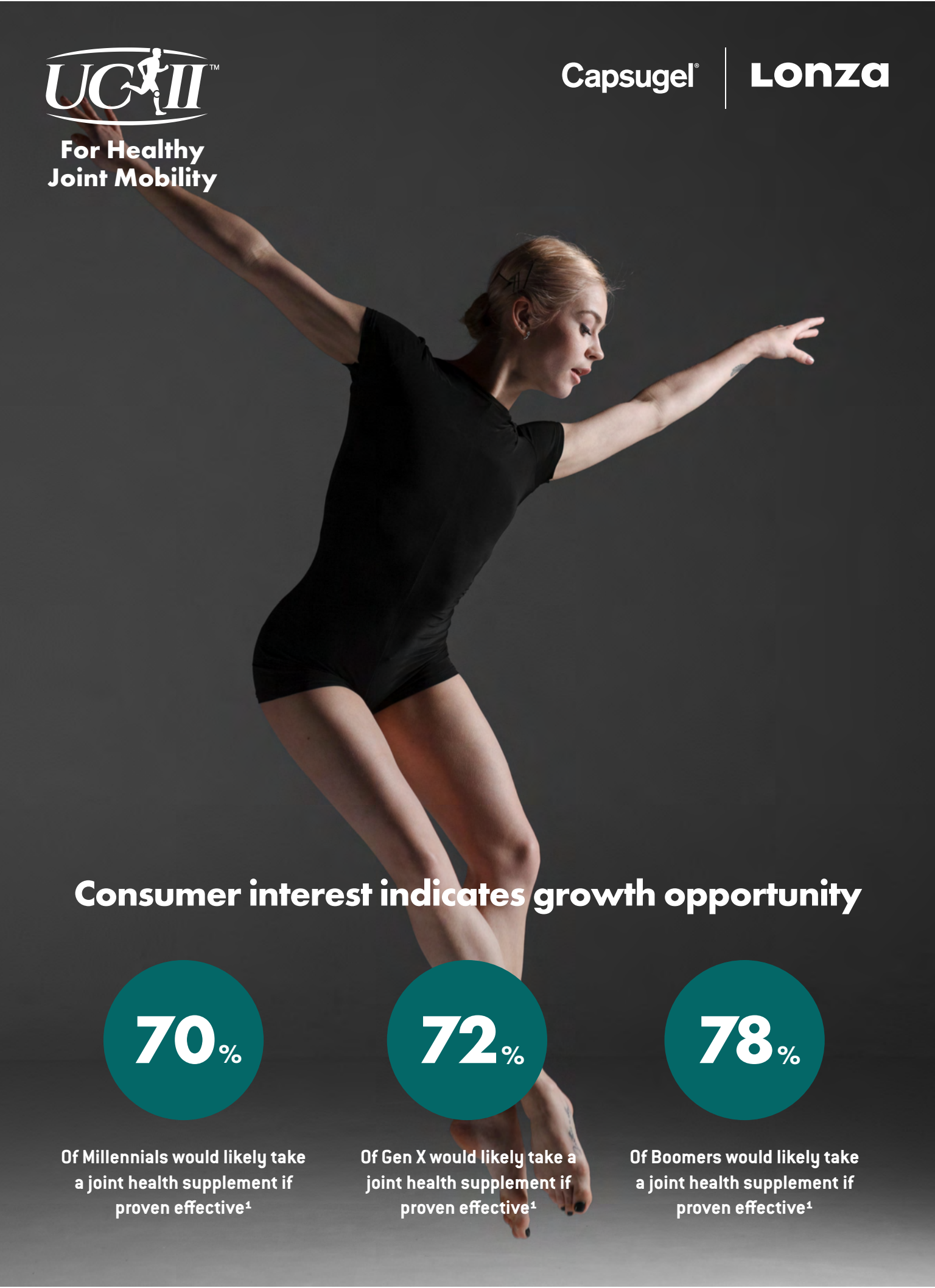
Capsugel® | Lonza



Consumer interest indicates growth opportunity

70%

Of Millennials would likely take a joint health supplement if proven effective[1]

72%

Of Gen X would likely take a joint health supplement if proven effective[1]

78%

Of Boomers would likely take a joint health supplement if proven effective[1]

Joint health market trends

- Total Joint Health Category totaled $3.9 Billion in 2019
- The total category experienced a 9% CAGR over the past 5 years
- North American Joint Health Sales - $835.7 Million in 2019

Science-backed

Randomized, double-blind, placebo-controlled clinical studies show the joint health benefits of UC-II® undenatured type II collagen:

- Significantly increased knee extension in healty adults compared to placebo[2]
- Significantly increased joint comfort and function compared to pacebo and glucosamine + chondroitin in people with osteoarthritis[3]

Market need: UC-II®

- Consumers across all age ranges are recognising that our ability to move freely requires healthy joints, which funcion smoothly and recover well after exercise
- An aging population and a rising demand for efficacious products opens up exciting possibilities for innovative joint health supplements
- UC-II® is backed by 3 published well designed clinical studies on healthy subjects for joint support

UC-II® ingredient work in the immune system to support joint health in one, 40 mg dose.

UC-II® ingredient market advantage

- 3 published, well designed clinical studies on healthy subjects
- Superior benefits compared to glucosamine + chondroitin
- Self-affirmed GRAS status determined by a leading toxicological group
- Small, once-daily 40mg dose, suitable for combo formulas
- FDA notified and published new dietary ingredients (NDI)
- Sourced and manufactured in the United States

[1] *2018 NMI SORD Data*

[2] *Lugo JP, et al. J Int Soc Sports Nutr. 2013:10:48*

[3] *Lugo JP, et al. Nutr. J. 2016:15:14.*

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UC-II®

Lonza

ONCE DAILY JOINT HEALTH SUPPORT

WORKS IN THE IMMUNE SYSTEM TO SUPPORT JOINT HEALTH IN ONE, 40 MG DOSE

UC-II® MARKET ADVANTAGE

ONCE-DAILY SMALL DOSE

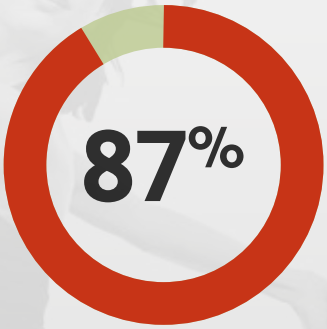
UC-II® undenatured type II collagen's small once-a-day dose helps increase consumer compliance.

DOUBLE DIGIT GROWTH

For the past 3 years, UC-II® products have enjoyed double-digit annual sales growth.*

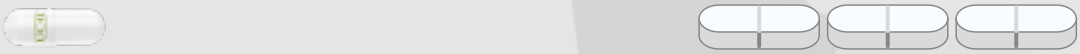
HIGHLY DIFFERENTIATED

UC-II® undenatured type II collagen's mechanism of action, small dosage size and clinical research portfolio provides unique product positioning.



Did you know?

87% of consumers consider easy to swallow important in their buying decision of dietary supplements.**



1 x SMALL CAPSULE CONTAINING 40 MG UC-II® UNDENATURED TYPE II COLLAGEN = **3** x TABLETS CONTAINING GLUCOSAMINE AND CHONDROITIN

U.S. Joint health sales - $1.8 Billion†

More consumers are recognizing that our ability to move freely, requires healthy joints, which function smoothly and recover well after exercise.

An aging population and a rising demand for efficacious products opens up exciting possibilities for innovative joint health supplements.

UC-II® is backed by 3 published well designed clinical studies for joint support.

MAINTAINING JOINT HEALTH IS A TOP CONCERN ACROSS ALL GENERATIONS**

95%

95% of consumers state that maintaining independence with age is the primary driver in taking care of their health.

76%

Millennials understand that "wear and tear" is a given and they want to preserve range of motion and agility.

86%

Seniors are concerned about maintaining their joint health. Decades of movement stresses the joints.

87% Boomers and **85% Gen X'ers** taking supplements in the US would like to use dietary supplements for joint health. Not just for older consumers – **76% Millennials** are concerned about maintaining their joint health.

*U.S. xAOC 52-week data, 2018.
**NMI U.S. SORD data, 2017.
†Euromonitor Consumer Health and Nutrition Database, 2018.

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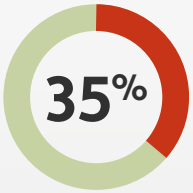
WORKS IN THE IMMUNE SYSTEM TO SUPPORT JOINT HEALTH IN ONE, 40 MG DOSE

SCIENCE BACKED

Randomized, double-blind, placebo-controlled clinical studies show the joint health benefits of UC-II® undenatured type II collagen:

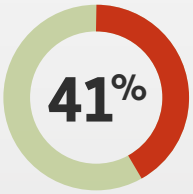
- Significantly increased knee extension in healthy adults compared to placebo.*
- Significantly increased joint comfort and function compared to placebo and glucosamine + chondroitin in people with osteoarthritis.**

UC-II® brand may work via the immune system to support joint health by a process called oral tolerance. Thereby allowing the body to rebuild new cartilage.



Superior to glucosamine + chondroitin as measured by WOMAC

35% better than glucosamine + chondroitin



41% better than placebo. As measured by WOMAC pain subscale.**

10% Improvement in knee extension in healthy, active adults.*

Significant benefits to joint comfort during and after exercise as compared to baseline

- Backed by 3 published well designed clinicals
- Small, once-daily, 40 mg dose
- Studied in healthy, active adults
- Superior benefits compared to glucosamine + chondroitin
- FDA notified and published new dietary ingredient (NDI)
- Self-affirmed GRAS status determined by a leading toxicological group
- Sourced and manufactured in the United States

WEAR & TEAR
Daily activities, exercise, or normal stress could lead to joint wear and tear.

REPAIR
New cartilage is made.

CLEAN
Old cartilage is removed.

For more information call 707-751-2800, send an email to info.benicia@lonza.com or contact your Lonza Consumer Health & Nutrition Sales representative. UC-II® is a trademark of Lonza Group Company.

*Lugo JP, et al. J Int Soc Sports Nutr. 2013;10:48.
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