

SOLUGEL[®]
collagen peptides



Active aging:

SOLUGEL[®] reduces joint pain in active middle-aged adults

Clinical study

FLORIDA STATE UNIVERSITY
ISSM



PB LEINER
The Clear Solution

Clinical study

Staying active with SOLUGEL®

In a unique study commissioned by PB Leiner, Florida State University found that SOLUGEL® collagen peptides have the ability to help the growing number of healthy and active middle-aged people struggling with joint pain.

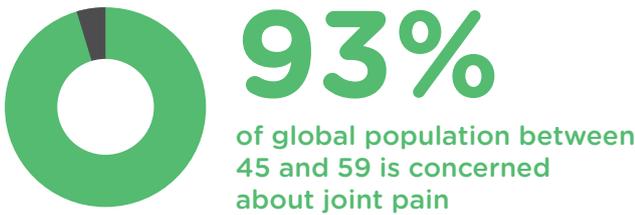
JOINT PAIN, A GROWING CONCERN

Joint pain is a remarkably widespread issue among middle-aged people throughout the world. In fact, research indicates that 93% of those aged between 45 and 59 globally have concerns about joint and muscle pain, with two-thirds saying it has a moderate to severe impact on their health.¹

Of course, the sheer scale of the numbers shows the problem goes far beyond those suffering with conditions such as osteoarthritis or injuries. Nor is it limited to those with sedentary lifestyles. Today, middle-aged

people are more physically active than ever before, with a 2021 survey finding that 30% exercise almost daily – up from 25% two years earlier.²

Joint pain can cause significant discomfort during exercise and can even limit the ability to carry out everyday activities. While this is often seen as an inevitable part of the aging process, collagen is an on-trend ingredient with the potential to improve joint health and reduce pain.



UNIQUE RESEARCH

Studies have shown that collagen can reduce joint pain among those suffering with conditions such as osteoarthritis as well as joint stability problems, injured joints, or exercise-induced issues. However, no previous research had proven its long-term impact on both joint pain and everyday activities in the healthy and active middle-aged population.

Recognizing the vast number of people in this demographic, PB Leiner commissioned Florida State University (FSU) to carry out a study to determine whether SOLUGEL® collagen peptides could improve their experiences with joint pain and discomfort.

The study participants were all aged between 45 and 65, exercised at least three hours per week, and were not suffering from osteoarthritis or joint injuries. Over the course of six months, each consumed either a placebo or SOLUGEL® collagen peptides every day and

their progress was assessed according to the Knee Injury and Osteoarthritis Outcome Score. Higher scores indicate reductions in pain and improvements in the ability to carry out everyday activities

 Healthy middle-aged (no osteoarthritis or injury)	 Respect daily routine (no exercise-induced intervention)
 Physically active Min. 3h of exercise/week (males and females)	 Long-term follow-up (6 months)

SOLUGEL® COLLAGEN PEPTIDES REDUCE JOINT PAIN AND SUPPORT EVERYDAY ACTIVITIES

The research showed significant improvements with SOLUGEL®. Those consuming 10g per day of SOLUGEL® collagen peptides saw an improvement according to the Knee Injury and Osteoarthritis Outcome Score, indicating significant reductions in pain and improvements in knee functionality.

The study also found that collagen peptides may improve the ability to carry out everyday tasks such as commuting, cleaning, and shopping. A third of those consuming 10g of SOLUGEL® each day saw meaningful improvements in their scores while undertaking such activities. None of the participants in the placebo group saw any improvement.

As a result of this unique study, **there is now clinical evidence proving collagen’s ability to help reduce joint pain in among healthy and active middle-aged people over the long term.**

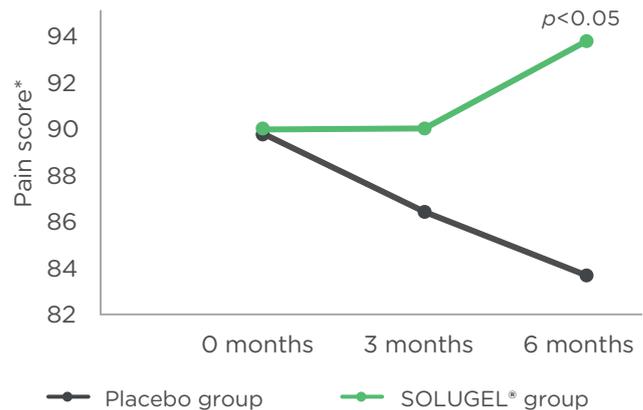
MARKET POTENTIAL

Joint and muscle pain is the second biggest health concern from 45 to 59 years old worldwide.³ Two in three people also link joint and bone health to good overall health, while 60% say they are interested in joint and bone health products even if they’re not suffering from specific problems.⁴

With the middle-aged population expected to grow from 1.6 billion to 2.6 billion by 2100⁵, demand for preventative solutions is set to increase significantly in the years ahead.

2 OUT OF 3
consumers link joint and bone health to good overall health

“10g per day SOLUGEL® intake for 6 months resulted in 36% of participants with a clinically meaningful improvement in pain scores.”



SOLUGEL® reduces joint pain.
Double-blind, randomized and placebo controlled human study.

*Pain Score from Knee Injury and Osteoarthritis Outcome Score (KOOS) - the higher the score, the less pain experienced.

SOLUGEL® can provide a clinically proven solution across a wide range of applications for this target population. Obtained from natural animal sources, it is a highly digestible pure protein composed of high-quality collagen peptides.

PB Leiner’s knowledgeable and approachable team is ready to help you develop on-trend products tailored to your requirements. To find out more about the possibilities with SOLUGEL®, get in touch with your customer contact or visit www.pbleiner.com

The study was accepted by a scientific committee and presented at the 18th International Sports Nutrition Society Meeting. It is due to be published in 2021 in Journal of the International Society of Sports Nutrition Supplement.

1. Euromonitor Global Health & Wellness Survey 2021
2. Euromonitor Global Health & Wellness Survey 2019-2021
3. Euromonitor Global Health & Wellness Survey 2021
4. FMCG Gurus 'Joint and Bone Health Global Report' (2021)
5. United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019

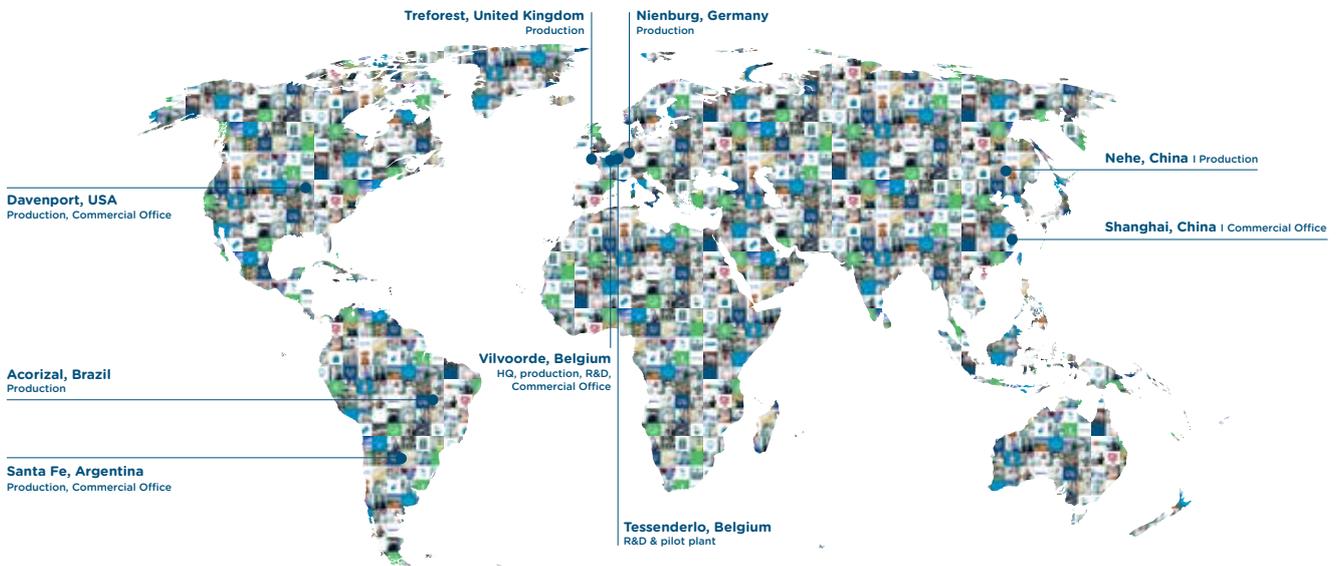
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PB Leiner

PB Leiner is one of the world's leading gelatin and collagen producers with production sites in Asia, Europe, North America, and South America. PB Leiner's SOLUGEL® is composed of high-quality collagen peptides obtained from natural animal sources, which include halal, kosher, pasture-raised, and certified grass-fed products. As a highly digestible pure protein free of sugar, fat, cholesterol and carbohydrates with a range of potential health benefits, SOLUGEL® is the clear ingredient choice for food and beverage products and supplements.

Florida State University (FSU), Institute of Sport Sciences and Medicine (ISSM)

The Institute of Sports Sciences and Medicine (ISSM) is a state-of-the-art research laboratory dedicated to optimizing health, body composition, and human performance. Since its establishment in 2010, ISSM has conducted studies on populations ranging from elite athletes to clinical populations. Their vision is to produce high-quality and ethical research in sport nutrition and exercise performance. Secondly, the ISSM aims to be the authority in sport science and medicine locally, nationally, and internationally.



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