

A successful new approach to cellulite treatment

Orally administered collagen peptides have a positive impact on skin health and show beneficial effects on cellulite morphology.

Collagen plays an essential role in skin health. Produced with elastin and proteoglycans in the deeper layer of the skin, the dermis, these molecules are essential for skin elasticity and resistance. Collagen, in particular, is what gives the skin its firm structure. Many consumers are already aware of the temporary wrinkle reduction benefits associated with topical beauty products containing collagen. Now, however, research has shown that there's a proven way to achieve a long-lasting rejuvenated appearance.

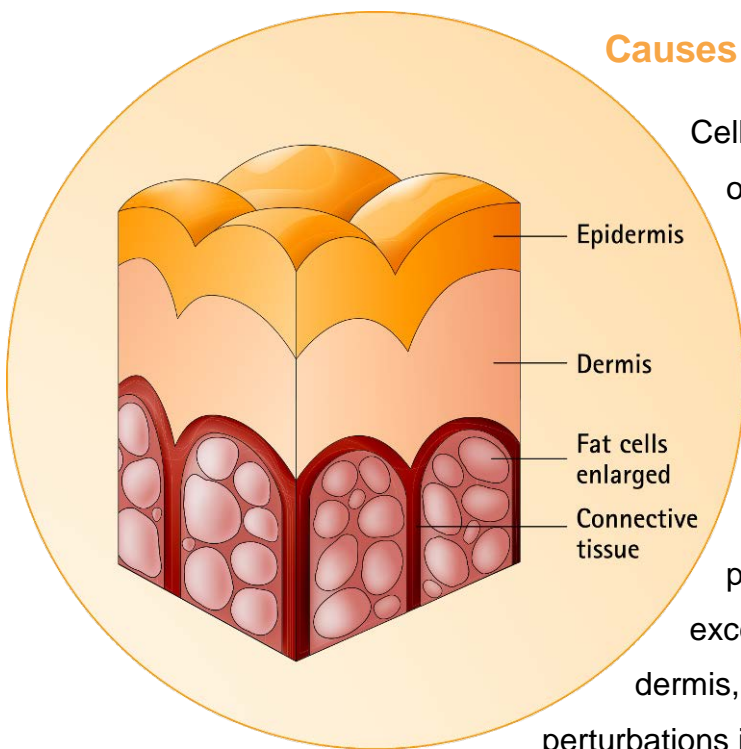
GELITA's innovative VERISOL[®] ingredient comprises natural collagen peptides that have been specifically developed to provide the highest possible efficacy in human skin. With their special amino acid composition, they influence the skin's collagen metabolism directly from the inside. Various studies have proven the effectiveness of oral collagen peptide supplementation: consumed via supplements or food and drink



applications, these specific collagen peptides enter the bloodstream and reach the fibroblasts in the dermis. In a completely natural process, collagen peptides affect collagen metabolism and help to strengthen the skin's connective tissue. This means fewer wrinkles, improved elasticity and a younger and healthy looking appearance.

Although these positive effects on skin health have primarily been documented for human facial skin, a new study has now investigated the potential of GELITA's specific collagen peptides to treat cellulite. The results outline VERISOL[®]'s ability to improve the skin morphology of cellulite-affected areas of the body.

Causes and prevalence of cellulite

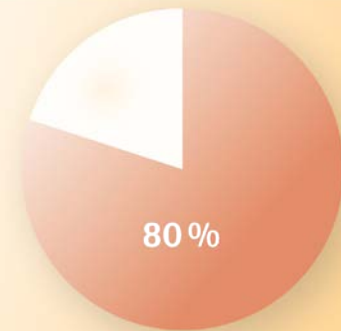


Cellulite is a complex problem that affects 85% of women over the age of 20. It occurs mainly on the thighs, buttocks and abdomen, and is characterized by an orange peel or cottage cheese appearance. Cellulite involves multifactorial aetiologies, including genetic predisposition, gender differences, age, ethnicity, diet, sedentary lifestyle and pregnancy. It is caused by the presence of excess subcutaneous fat that bulges into the dermis, blood and lymphatic disorders, and perturbations in the dermal extracellular matrix.

Although cellulite is often present in healthy, non-obese patients, being overweight exacerbates the condition. Clinical incidences of cellulite are positively correlated with body mass index (BMI). It is common knowledge that affected individuals with higher BMIs have a weaker, less dense connective tissue structure, leading to the increased extrusion of adipose tissue lobules into the dermis.

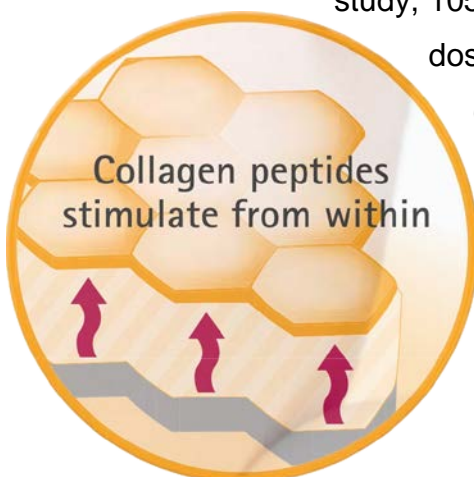
A variety of therapies have been proposed for the treatment of cellulite, including weight loss, exercise, massage, and various topical agents, as well as oral supplements and functional foods. However, there are few scientifically reported studies examining the extent to which they improve the condition. The successful treatment of cellulite will ultimately depend on an improved understanding of the pathophysiology of cellulite adipose tissue. It is generally accepted that dermal and subcutaneous connective tissue, which has been weakened by an altered and/or disordered extracellular matrix, plays a key role in the development of cellulite and contributes to the irregular and dimpled appearance of cellulite-affected skin. Consequently, therapies that aim to restore the normal structure of the dermis and subcutaneous tissue offer a meaningful approach to improving the condition.

Collagen is the major structural component of skin, comprising about 80 % of the dry weight of skin.



New study gives hope

Now, for the first time, research published in the *Journal of Medicinal Food* has investigated the ability of GELITA's specific collagen peptides (VERISOL[®]) to treat cellulite in normal and overweight women. In the double-blind, placebo-controlled study, 105 women between 24 and 50 years of age received a daily dose of 2.5 g of VERISOL[®] collagen peptides or a placebo (maltodextrin). In both treatment groups, the subjects were classified as being normal weight or overweight participants depending on their BMI.

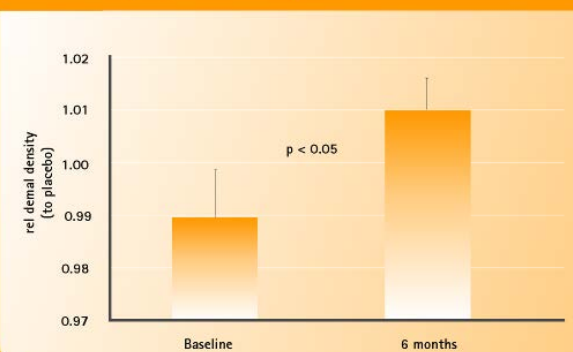


The subject's cellulite was assessed both visually and by using the so-called pinch test. In brief, the assessor pinched the skin on the outer thigh between their index finger and thumb, evaluated the visible dimpling and graded the appearance accordingly from 0 (no cellulite) to 4 (severely dimpled surface).

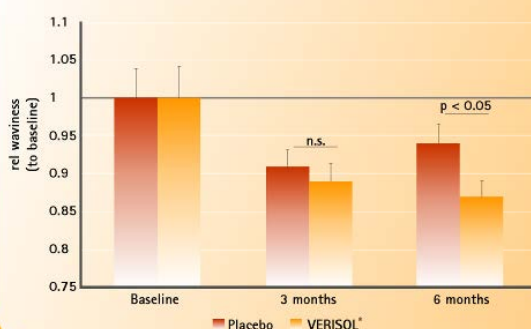
After only 3 months of treatment and compared with the baseline situation, a statistically significant cellulite score reduction was observed. At the end of the 6-month study period, a mean reduction of approximately 9% (compared with the placebo) was determined in subjects with a normal BMI. This improvement was also recorded in overweight participants with a BMI of >25, although the beneficial effect was less pronounced (4% reduction).

In terms of skin waviness, an average and statistically significant reduction of 8% was observed via 3D skin surface profile measurement after 6 months of treatment. This was even more pronounced in the normal BMI study group, with a decrease in thigh skin waviness of 11.1%. Moreover, dermal density was significantly improved compared with the placebo. After the treatment period, the skin tissue became measurably more compact, indicating a strengthening of the connective tissue. Finally, the borderline length between the dermis and the subcutis was notably shorter after collagen peptide supplementation.

Statistically significant improvement of dermal density



Statistically significant reduction of skin waviness



As the length of the borderline correlates with the degree of cellulite, this measurement also highlights cellulite reduction after 6 months.

Dr Stephan Hausmanns, Vice President, BU Health & Nutrition, commented: "Dietary supplementation with specific collagen peptides takes a new approach: by aiming to restore the normal structure of the dermal and subcutaneous tissue, it fights the cause of the condition rather than the symptoms. We are very pleased with the outcome of the study because it clearly outlines the potential of our bioactive collagen peptides to improve the skin morphology of cellulite-affected areas."

Application possibilities

VERISOL® can easily be incorporated into various types of liquid and solid functional food applications and nutricosmetics – from coated tablets, capsules and flavoured powder mixes to beverages and concentrated ready-to-consume liquid shots or even luxury foodstuffs such as chocolate and instant coffee. With their excellent solubility, neutral taste and odour, collagen peptides have no negative impact on the sensory properties of the foods they are used in.

As VERISOL® peptides are hydrolysed to a specific short peptide length, they are easily digestible as well as highly bioavailable.

Moreover, they are free from fat, cholesterol, carbohydrates and gluten, and perfectly suited for use in non-allergenic foods. Being GMO and E-number free, VERISOL® peptides are ideal for the development of clean label products and they fit well with the growing consumer interest in products that are pure, safe and naturally functional. With its proven effectiveness and natural origin, VERISOL® paves the way for the next generation of skin health products in the fast-growing nutricosmetics market.



A partner for the industry

GELITA is a provider of premium ingredients and much, much more. The company also delivers outstanding, comprehensive service in all aspects of its business – from the development of concepts, formulations and prototypes through technical application advice and process optimisation to marketing support and regulatory advice. If desired, GELITA can even take on partial or complete contract manufacturing. Thanks to their decades of experience, the company's technical experts are able to offer first class support to customers. At the same time, its research specialists are constantly opening up new and innovative application areas that help clients to enter new markets all over the world.

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