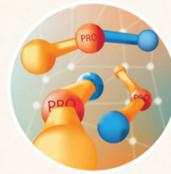




## Moving FORWARD

*Moving health foods forward with  
 low molecular weight collagen peptides*



CLINICAL STUDY  
 DEMONSTRATES  
 EFFICACY OF  
 COLLINSTANT<sup>®</sup> LMW  
 IN SKIN IMPROVEMENT

## WHITE PAPER

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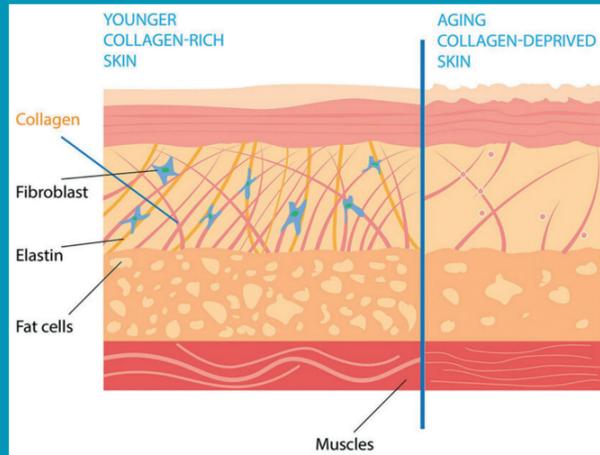
## WHITE PAPER

### SUMMARY

- The effect of COLLInstant<sup>®</sup> LMW as food supplement on skin appearance was tested on 80 middle-aged women in a single-centre, randomized, double-blind, placebo-controlled study
- The results clearly demonstrate a significant effect of a daily oral administration of 2.5 g COLLInstant<sup>®</sup> LMW on wrinkle reduction during a six week treatment period
- COLLInstant<sup>®</sup> LMW supplementation also significantly increased skin hydration, in particular around the eyes, and mildly improved skin elasticity
- The survey attested a high degree of satisfaction with the treatment results and the quick onset among volunteers and physicians alike
- COLLInstant<sup>®</sup> LMW with a low molecular weight  $\leq 1000$  Da and a high content of bioactive peptides is a fast acting, highly efficient cosmeceutical of the next generation

COLLAGEN AS COSMECEUTICAL

Collagen is an essential structural component of the skin that supports its flexibility, firmness and elasticity.<sup>1</sup> Aging processes that include collagen loss in the dermis lead to a deterioration of skin health and appearance, often aggravated by environmental conditions or dermatological disorders.<sup>2</sup>



Clinical studies have shown that collagen food supplements can improve skin hydration and elasticity, reduce wrinkles, and overall slow the effects of aging.<sup>2,3,4</sup> Small bioactive di- or tripeptides play a central role in mediating these beneficial effects.<sup>5</sup> With COLLinstant<sup>®</sup> LMW, Viscofan has developed a low molecular weight (LMW) collagen hydrolysate with a high concentration of these characteristic peptides that feature a quick and efficient uptake, high bioavailability, as well as enhanced stability and efficacy, especially in the skin.<sup>6,7,8</sup>

STUDY OBJECTIVES

The main objective of this study was to evaluate the anti-wrinkle, moisturizing and skin elasticity efficacy of COLLinstant<sup>®</sup> LMW administered orally in a single-centre, randomized, double-blind, placebo-controlled clinical trial for six weeks. A specific objective was to compare skin improvement, satisfaction with the product, and adverse events among the middle-aged female volunteers.

KEYWORDS

Cosmeceutical, collagen food supplement, bioactive peptides, low molecular weight collagen, skin elasticity, anti-wrinkle



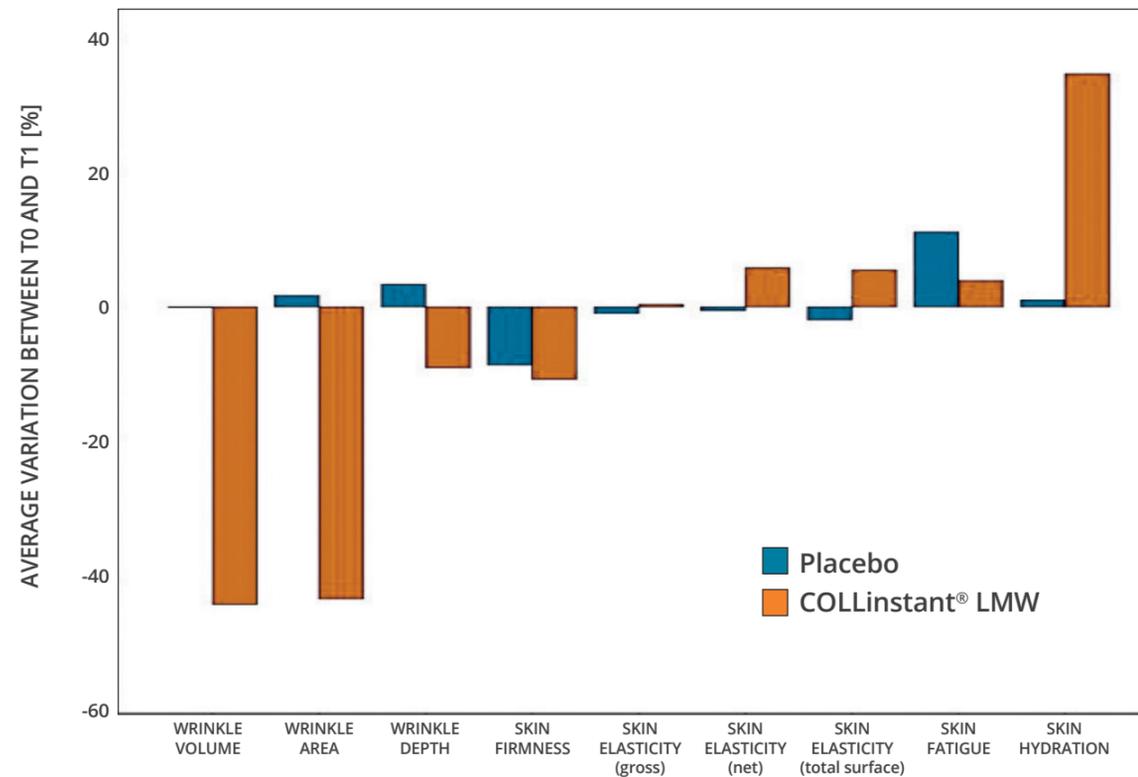
CLINICAL STUDY DEMONSTRATES EFFICACY OF COLLinstant<sup>®</sup> LMW IN SKIN IMPROVEMENT

Low dosage oral supplementation shows effects after only 6 weeks

Improvement of wrinkles, skin hydration and elasticity

The most striking result of the study was the significant ( $p < 0.0001$ ) reduction of wrinkles in volume, area and depth in the experimental group that took 2.5 g COLLinstant LMW as daily supplement for six weeks. In comparison to the placebo group, skin hydration also improved significantly ( $p < 0.0001$ ), in particular around the eyes as measured by corneometric analysis. The food supplement did not significantly modify skin firmness or fatigue and had only slight beneficial effects on skin elasticity.

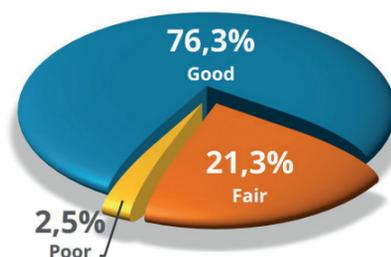
The graph below shows the percentage of variation in the analysed dermatological parameters between the basal period (T0) and after 6 weeks of treatment (T1) in the experimental group (n=40) vs. placebo (n=40).



High ratings and overall satisfaction with COLLinstant<sup>®</sup> LMW effects among volunteers

Over 90% of the volunteers in the experimental group indicated a high degree of satisfaction with the ability of the supplement to improve skin hydration or wrinkles, confirming the robust effect of the treatment. In addition, 87.5% of the volunteers in this group was highly satisfied with the brief time period it takes for the supplement to start showing its effect, underlining the significance of obtaining quick results with a collagen food supplement.

VOLUNTEER RATING OF OVERALL EFFECTIVENESS



Over two thirds of the volunteers rated the overall effectiveness of COLLinstant<sup>®</sup> LMW as good – a survey result that was matched by the ratings of the treating physicians (data not shown).

VOLUNTEER RATING OF OTHER PARAMETERS

|                               | GOOD [%] | FAIR [%] | POOR [%] |
|-------------------------------|----------|----------|----------|
| Tolerability                  | 88.8     | 10       | 1.3      |
| Acceptability of presentation | 88.8     | 10       | 1.3      |
| Taste                         | 93.8     | 4.5      | 1.3      |

The food supplement was overall rated as safe, tolerable and acceptable in use as well as in taste by volunteers and physicians alike (data not shown)



METHODS

**Volunteer inclusion:** 80 women, age 30-60 with loss of skin firmness, elasticity and hydration, apparent in distinct wrinkle appearance were included. Volunteers were randomized 1:1 and stratified by age to receive active treatment or placebo for six weeks.

**Study regime:** Volunteers in the experimental group received 2.5 g COLLinstant<sup>®</sup> LMW as daily oral food supplement, individuals in the placebo group 2.5 g oral placebo (sucralose and Stevia).

**Data collection & analysis:** Signs and symptoms associated with loss of skin elasticity, firmness and hydration were monitored at the beginning of the study (T0) and after 6 weeks of treatment (T1) as primary endpoints:

- Cutometric measurements in treatment & control area and in the facial area of the right eye (crows feet)
- Determination of the anti-wrinkle index
- Measurement of moisturizing power using VIOSFACE 1000D (wrinkles) and corneometric hydration index

Skin changes, product satisfaction and adverse events were compared between the two groups as secondary endpoints, using TSQM questionnaire, Simple Likert satisfaction scale, and questionnaires on safety assessment, treatment adherence, and previous treatments. Statistical data analysis included Kolmogorov-Smirnov test, Mann-Whitney test, and Chi-square test.

CONCLUSIONS

The authors of the study observed a significant reduction of wrinkles, a considerable increase in skin hydration as well as modest improvements in skin elasticity in volunteers that consumed 2.5 g COLLinstant<sup>®</sup> LMW as daily oral supplement for six weeks. Publications on standard molecular weight (SMW) collagen hydrolysates recommend a daily dosis of 10 g for at least three months to achieve clear beauty or health benefits.<sup>4,9</sup> A longer supplementation with COLLinstant<sup>®</sup> LMW is expected to enhance the skin improvements observed in this study. The results of the present study also support the hypothesis that LMW collagen hydrolysate with a high content of bioactive collagen tri- or dipeptides is more effective with a quicker onset than SMW products.

*With COLLinstant<sup>®</sup> LMW, Viscofan has developed a highly efficient collagen hydrolysate with a low molecular weight ≤ 1000 Da and a favorable peptide profile according to the latest scientific knowledge. Its clinically tested rapid and profound effects, the ease of use and its high acceptance rank COLLinstant<sup>®</sup> LMW as next generation cosmeceutical.*

