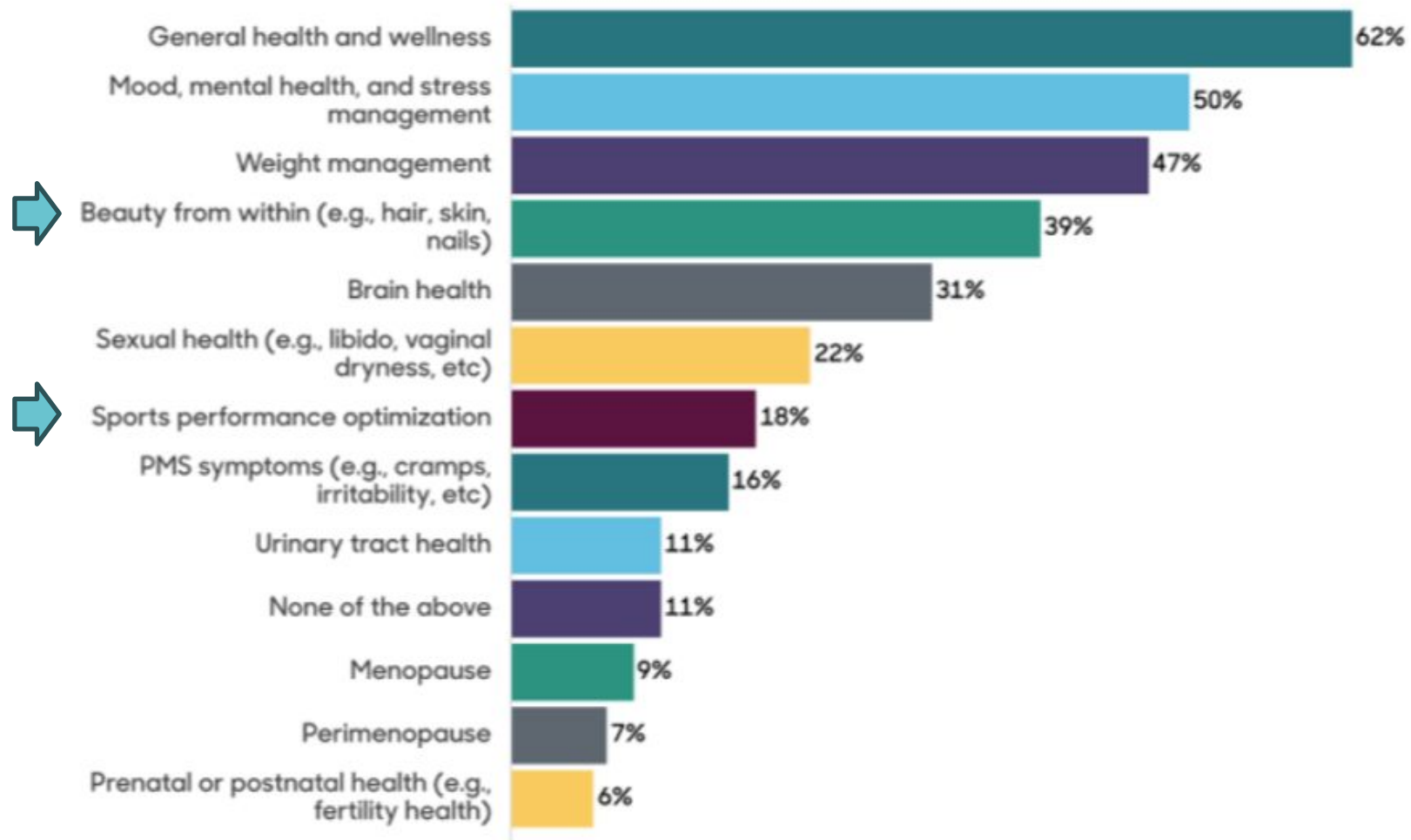




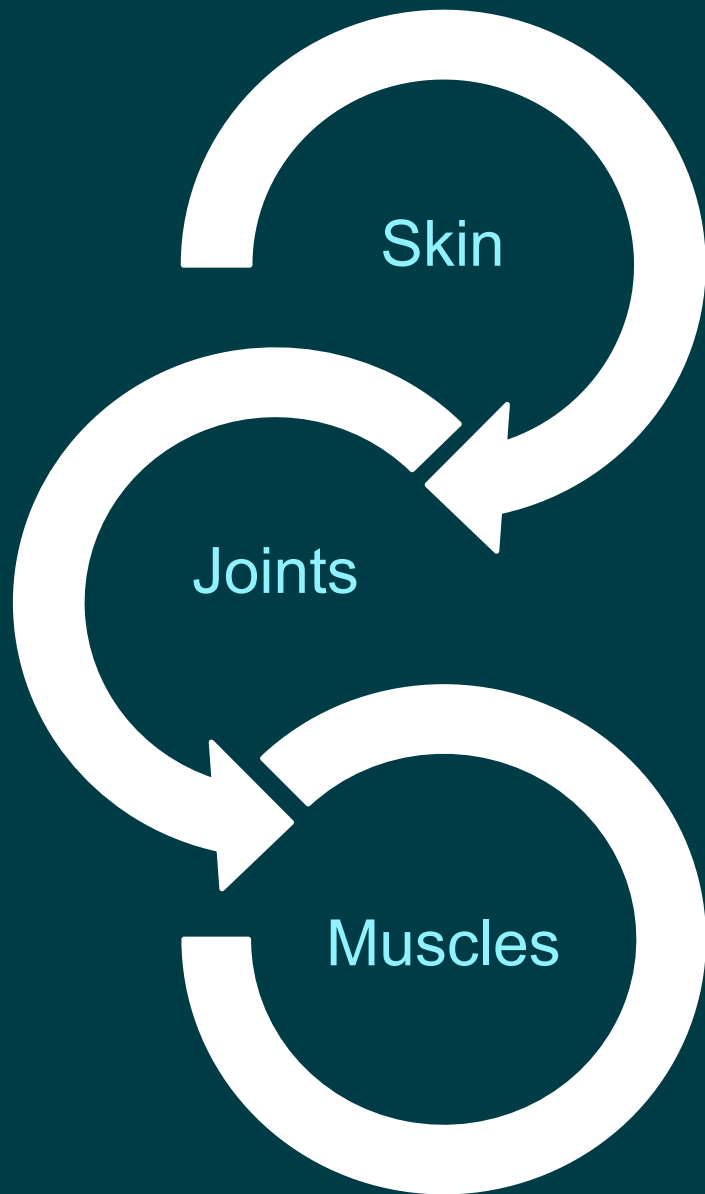
From science to solutions:

The next generation of
ingredients shaking up
women's health

Balancing act: The top health concerns women are actively managing



Source: *Nutrition Business Journal. Women's Health Special Report 2023*



Three key pillars for supporting women's health

One powerful solution.



Hyaluronic acid (HA) matrix

Harnessing the power of
three for women's health
needs

What is an HA matrix ingredient?

A **unique** and **patented composition** containing three key, naturally-occurring components:



Hyaluronic acid (HA) (>60%)

Collagen

Polysaccharides

Two novel HA matrix ingredients for women's health



Mobilee®
Mobility & Muscle

Dermial®

Skin & Beauty





Mobilee[®]

Hyaluronic acid matrix ingredient

Addressing women's joint and muscle health needs

Mobilee® for Women's Health

- **Backed by science**

- 13 Scientific studies (7 pre-clinical, 5 clinical)

- **Joint Health**

- Positive impact on synovial fluid
 - Supports mobility
 - Decreases joint discomfort
 - Decreases prostaglandin E2 production (inflammation)

- **Muscle Health**

- Supports muscle strength (17%)





Dermial[®]

Hyaluronic acid matrix ingredient

Women's skin health support

The effects of Dermial®

Scientific data demonstrates that intake of **Dermial®**:

- Increases **hydration**, activates **facial glow** and reduces **wrinkles** and **dryness**
- Promotes **HA, collagen type I & III elastin production**, as well as cell proliferation and migration
- Has a **superior effect** compared to HA produced via **fermentation**

Galvez-Martin, P. et al. Journal of Investigative Dermatology, 2024. In press.
Galvez-Martin P, et al. Int J Mol Sci. 2023 Mar 1;24(5):4774.
Galvez-Martin et al. The FASEB Journal 36:51 (2022).



Exploring the science



Mobilee[®]

Hyaluronic acid matrix ingredient

Addressing women's joint and muscle health needs

Mobilee®: Uncovering the mechanisms of action

Increases the endogenous synthesis of **hyaluronic acid**.

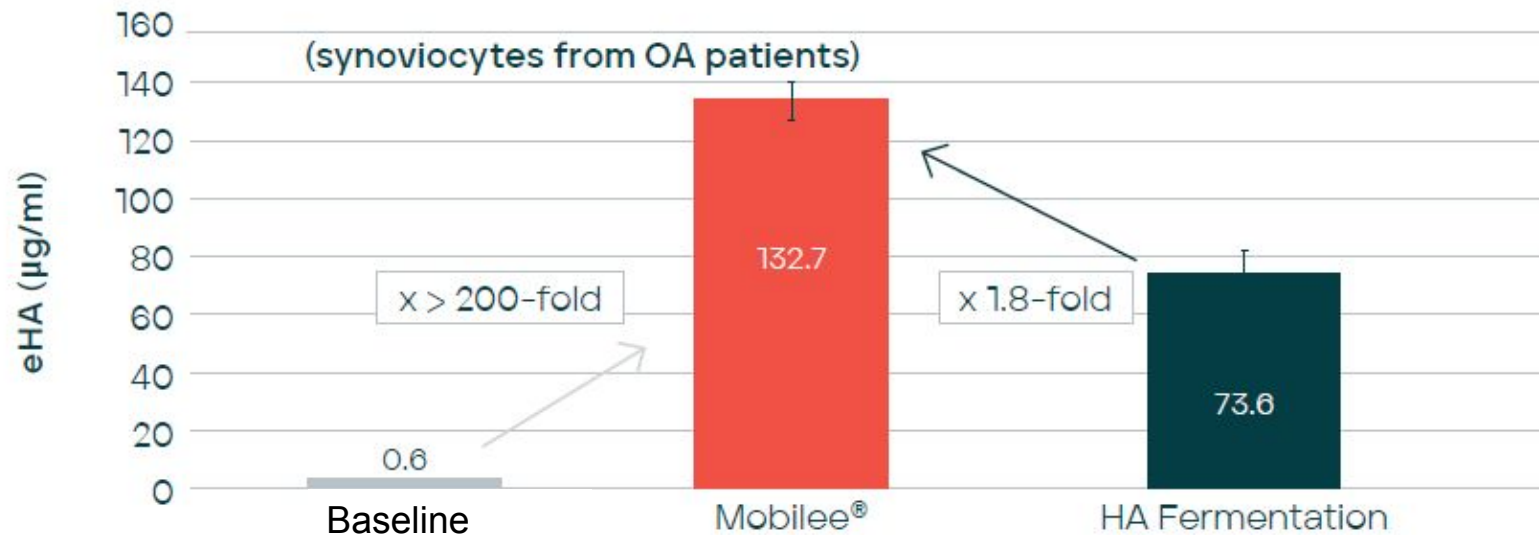


Fig 1.

Effect of Mobilee® on endogenous synthesis of HA in human osteoarthritic synoviocytes after 24h.

Mobilee® also increases endogenous **HA** secretion by **more than 200-fold** vs baseline and **1.8-fold vs fermentation HA**.

Torrent, A. et al. Osteoarthritis and Cartilage, 2009;17:S278-279.

Mobilee®: Uncovering the mechanisms of action

Reduces synovial effusion and joint **discomfort**.

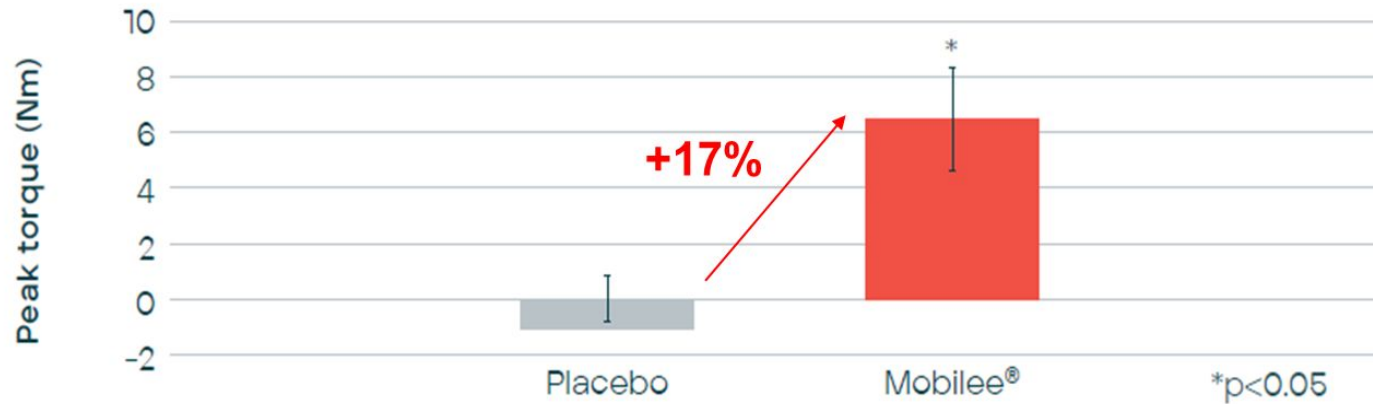


Daily consumption of a yoghurt containing 80mg of **Mobilee®** significantly **reduced joint discomfort** from the **second month** of treatment, compared to the placebo group.

Sánchez, J. et al. Genes Nutr, 2014;9:417. n = 77

Mobilee®: Muscle health support

Supports **muscle strength**



Increase in maximum peak torque compared to baseline values (Nm) for knee extension at 240°/s.

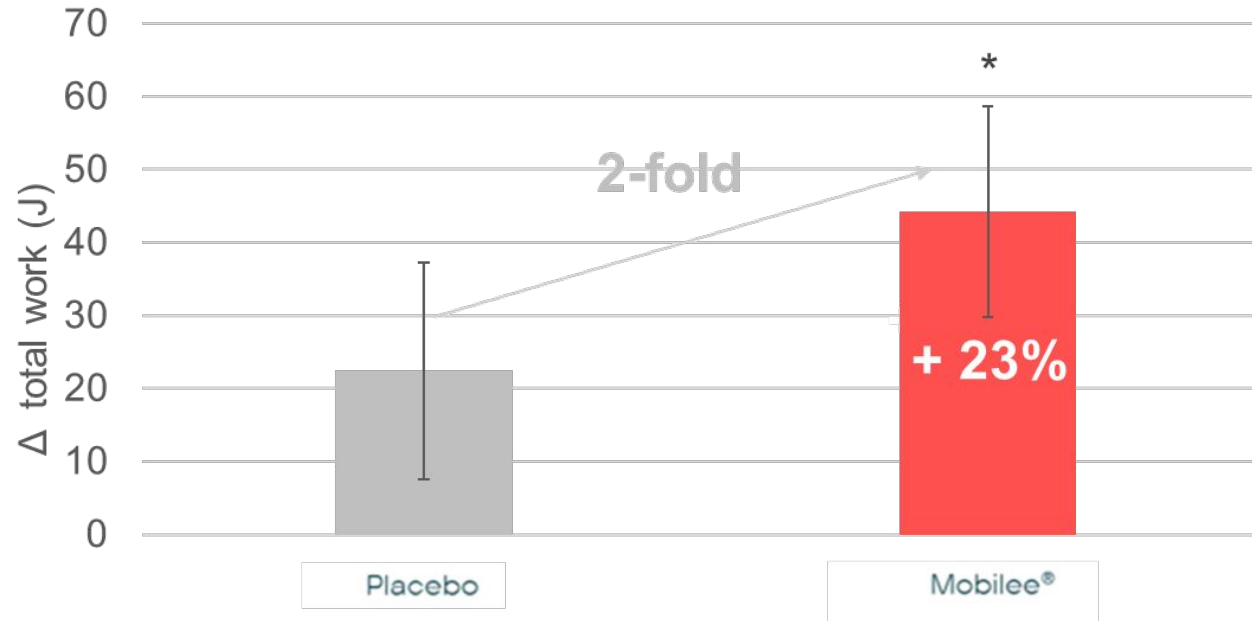
Martínez-Puig et al. Mediterr J Nutr Metab, 2013; 6:63-68.

Three months of oral administration with a yoghurt product containing **Mobilee®** in healthy individuals who previously reported knee discomfort provided improvements in **muscle strength**.

Pilot study. n=40 (20 individuals per group)

Mobilee®: Muscle health

Supports **muscle function**



Increase in total work in flexión compared to baseline values (J) for knee

Moriña et al. Food & Function, 2018;9:3224-3253.

* $P < 0,05$

* $P < 0,05$

Increase in isokinetic parameters at 180°/s compared to baseline values.

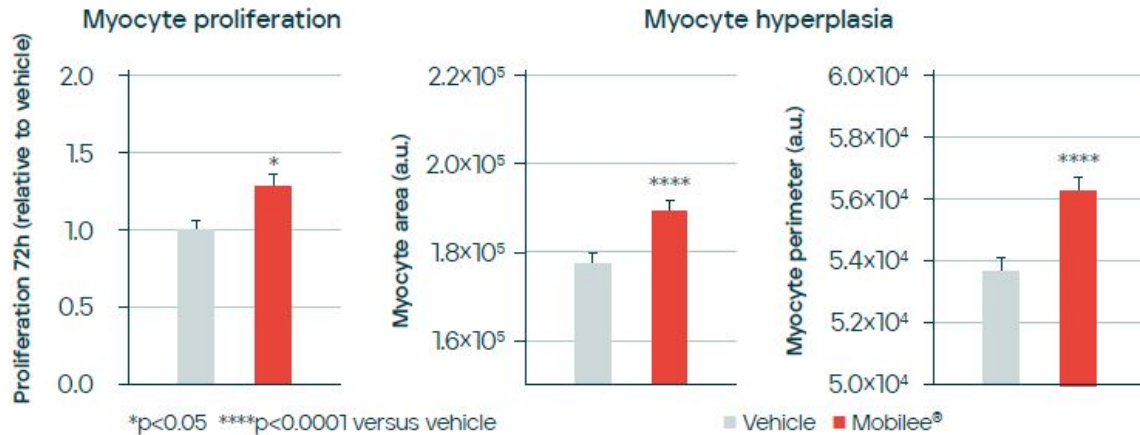
Moriña et al. Food & Function, 2018;9:3224-3253.

Mobilee® supports **muscle strength, work and power** in healthy **individuals** with knee joint discomfort.

Meta-analysis. $n=148$ (74 individuals per group)

Mobilee[®]: Scientific evidence for muscle health

Supports **muscle health**

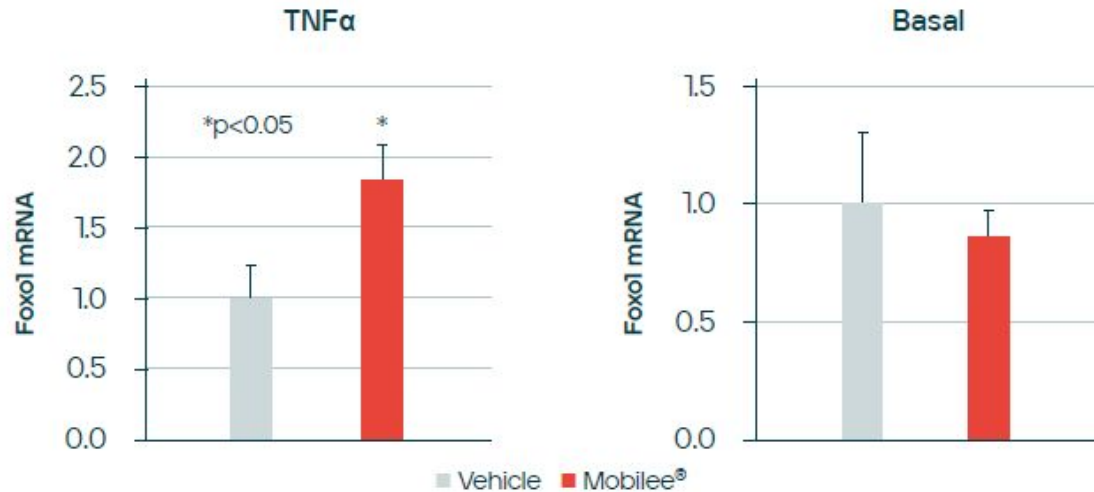


Mobilee[®] promoted a **7% increase in myocyte hyperplasia** (muscle cell size) and **27% increase in myocyte proliferation**.

Tobajas, Y. et al. Aging Clin Exp Res, 2023;35:S314.

Mobilee[®]: Scientific evidence for muscle health

Supports **muscle health**

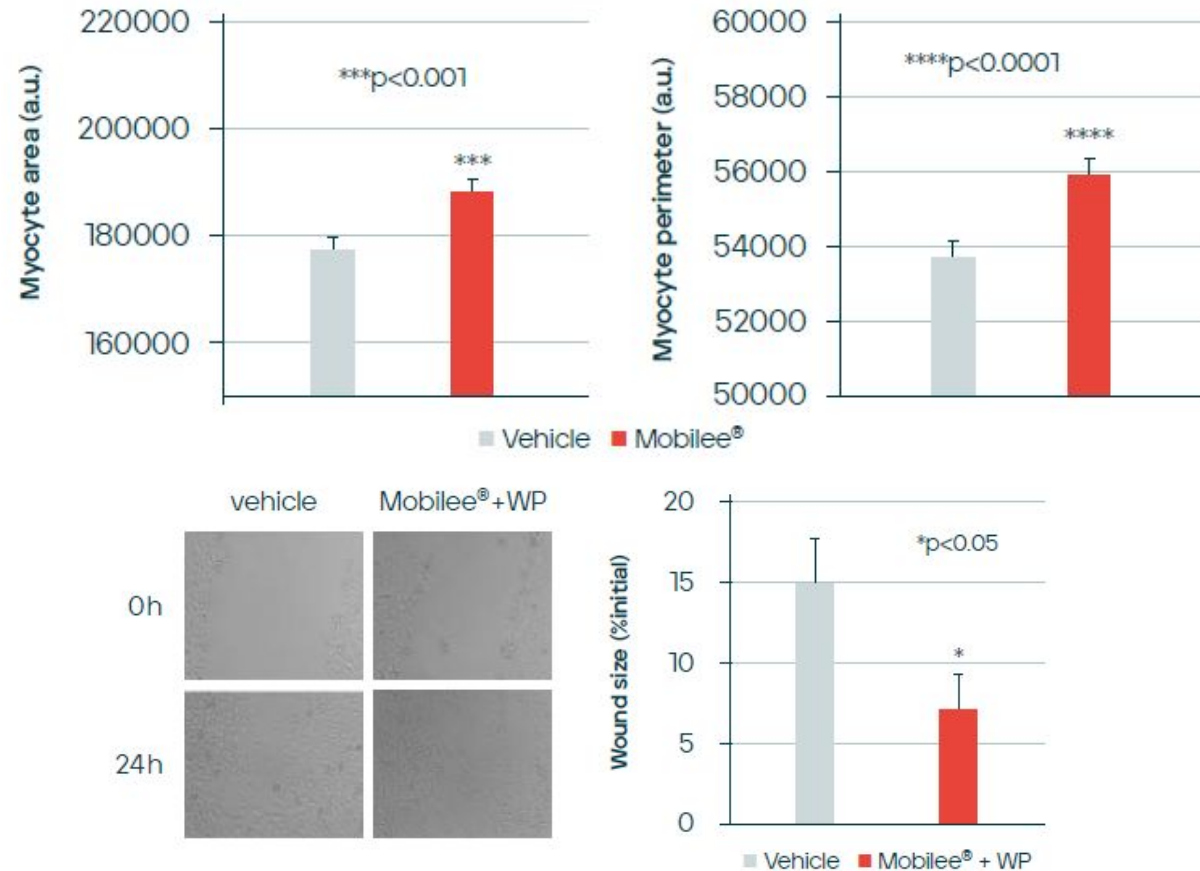


In the **sarcopenia model**, there was an **increase in myogenic differentiation** (Foxo1 gene expression upregulated 80%), as well as an **effect against muscle atrophy, damage and cell death**.

Tobajas, Y. et al. Aging Clin Exp Res, 2023;35:S314.

Mobilee[®]: Scientific evidence for muscle health

Supports **muscle regeneration** when combined with whey protein.



The combination of **Mobilee[®]** and whey protein **promoted myocyte hyperplasia** (an increase in muscle cell size) and **cell regeneration**.

Escoté et al. *Clinical Nutrition ESPEN* 58, 508 (2023)..

The effects of Mobilee®



Increases the endogenous synthesis of hyaluronic acid by synovial cells more than 200-fold



Lowers Prostaglandin E2, which is linked to inflammation



Reduces synovial effusion and joint discomfort after three months



Increases muscle cells proliferation



Supports muscle strength

x1.8 MORE POTENT COMPARED WITH HA FROM FERMENTATION

ANTI-INFLAMMATION

REDUCES SYNOVIAL EFFUSION & JOINT DISCOMFORT

SUPPORTS MUSCLES



Dermial[®]

Hyaluronic acid matrix ingredient

Women's skin health support

The Science behind Dermial®: Women-only study

Hydrates the skin

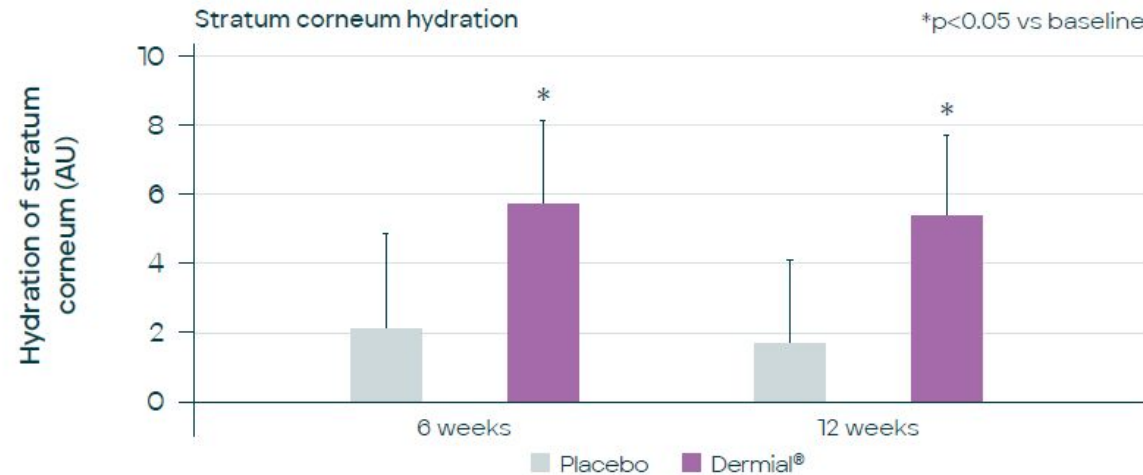


Figure 2. Change in hydration of the stratum corneum (right periocular area) following Dermial® supplementation.

A randomized, double-blind placebo-controlled clinical study.

The Results: Dermial® significantly increased hydration at six (13.1%) and twelve (12.1%) weeks versus baseline.

Galvez-Martin, P. et al. Journal of Investigative Dermatology, 2024. In press.

The Science behind Dermial®: Women-only study

Reduces wrinkles

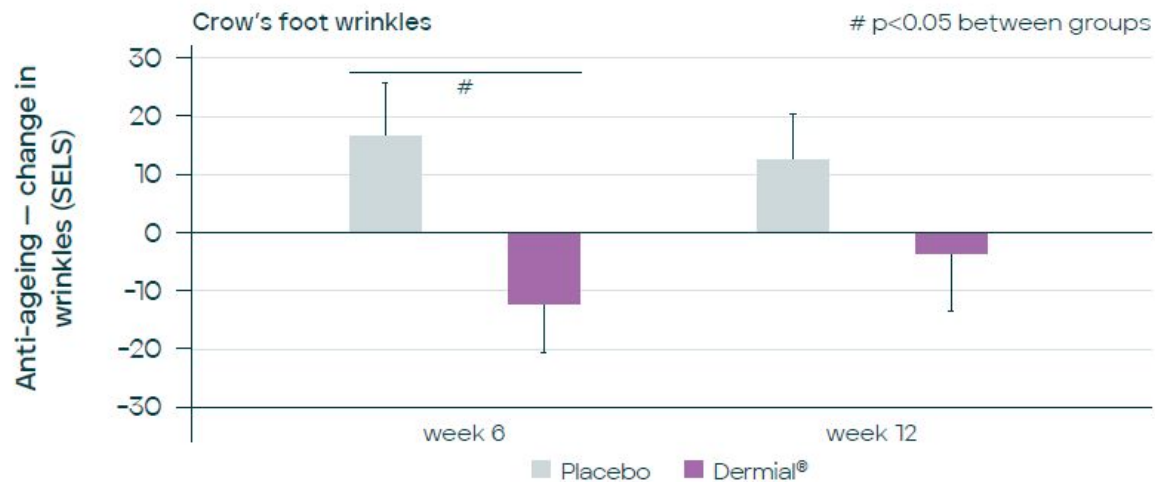


Figure 3. Assessment of crow's foot wrinkle (on right side) periorcular area.

The Results: Statistically significant differences in wrinkle evolution between the Dermial® group and the placebo group were observed at 6 weeks.

Galvez-Martin, P. et al. Journal of Investigative Dermatology, 2024. In press.

The Science behind Dermial®: Women-only study

Activates facial glow

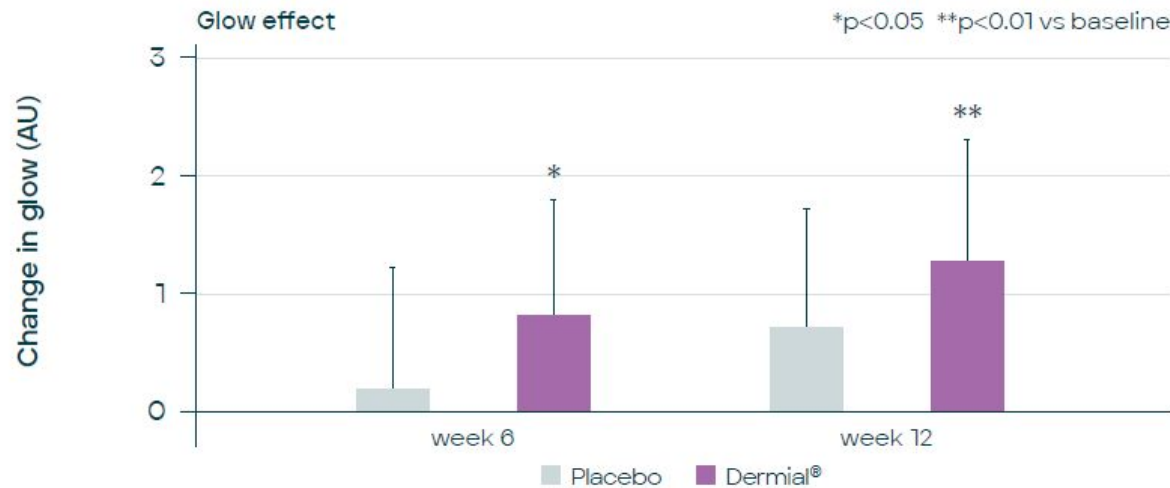


Figure 4. Increase in skin 'glow' following Dermial® supplementation.

The Results: Dermial® significantly increased the 'glow' – or brightness – of skin by 20% at 6 weeks and 33.4% at 12 weeks compared to baseline.

Galvez-Martin, P. et al. Journal of Investigative Dermatology, 2024. In press.

The Science behind Dermial®: Women-only study

Higher consumer satisfaction

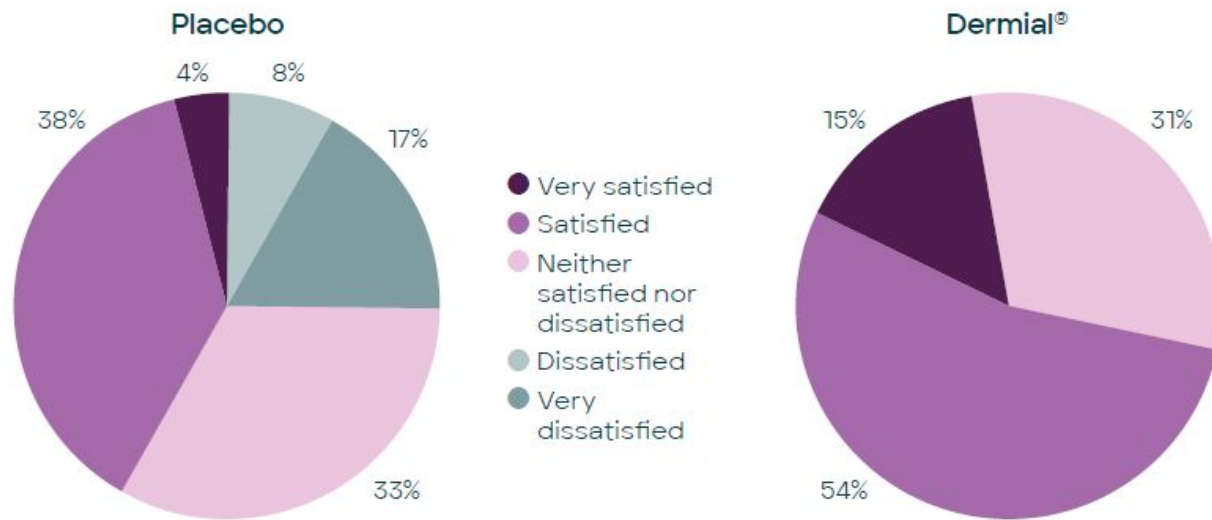


Figure 5. Global satisfaction evaluation following Dermial® or placebo intervention.

Galvez-Martin, P. et al. Journal of Investigative Dermatology, 2024. In press.

Dermial® group reported significantly higher satisfaction vs placebo (PBO)

69% of Dermial® consumers were satisfied or very satisfied

Only 42% of PBO consumers were satisfied or very satisfied

25% of PBO consumers were dissatisfied or very dissatisfied

None of the Dermial® consumers were dissatisfied or very dissatisfied



Why Dermial[®] ?

Seize the opportunity in the **nutricosmetic market** with:

1

A unique **hyaluronic acid matrix ingredient** with a superior effect compared with fermentation origin HA

2

An ingredient that **hydrates, increases glow and reduces wrinkles and dryness**

3

A **low daily dose** of **60 mg**

4

Efficacy supported by science



Collavant_{n2}
Native type II collagen

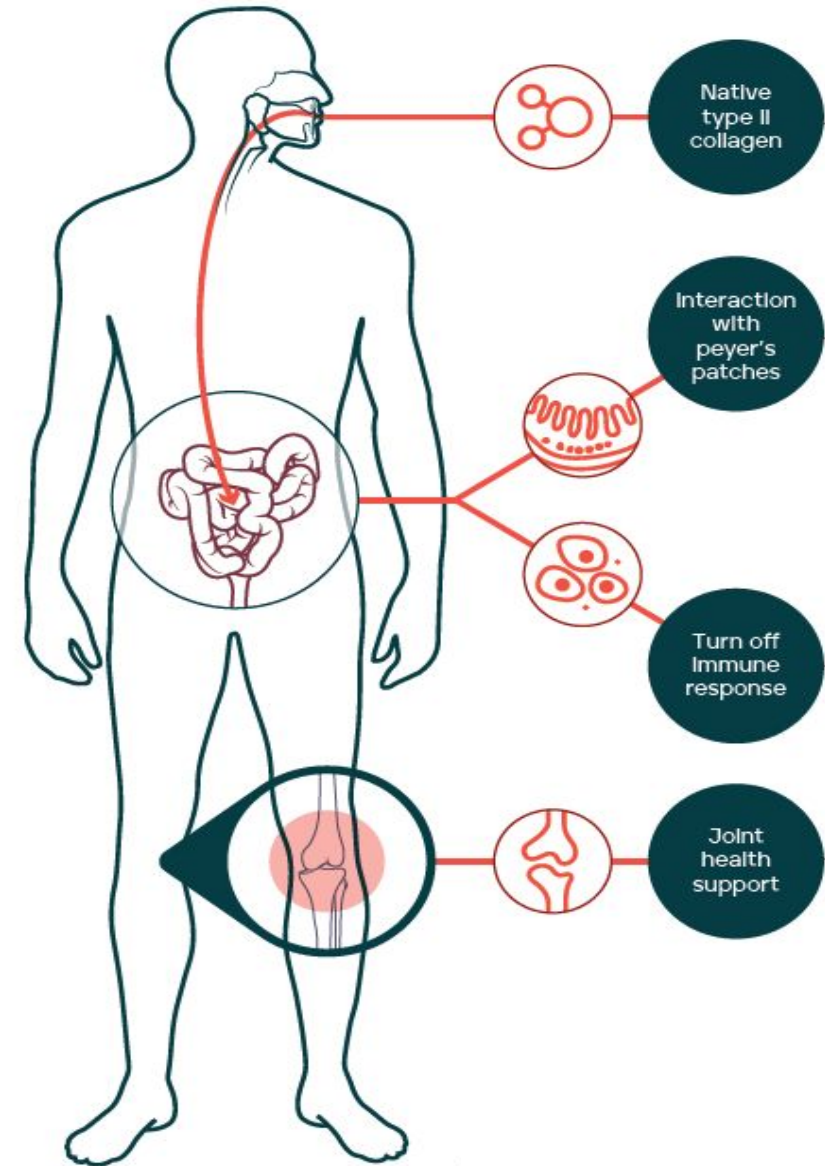
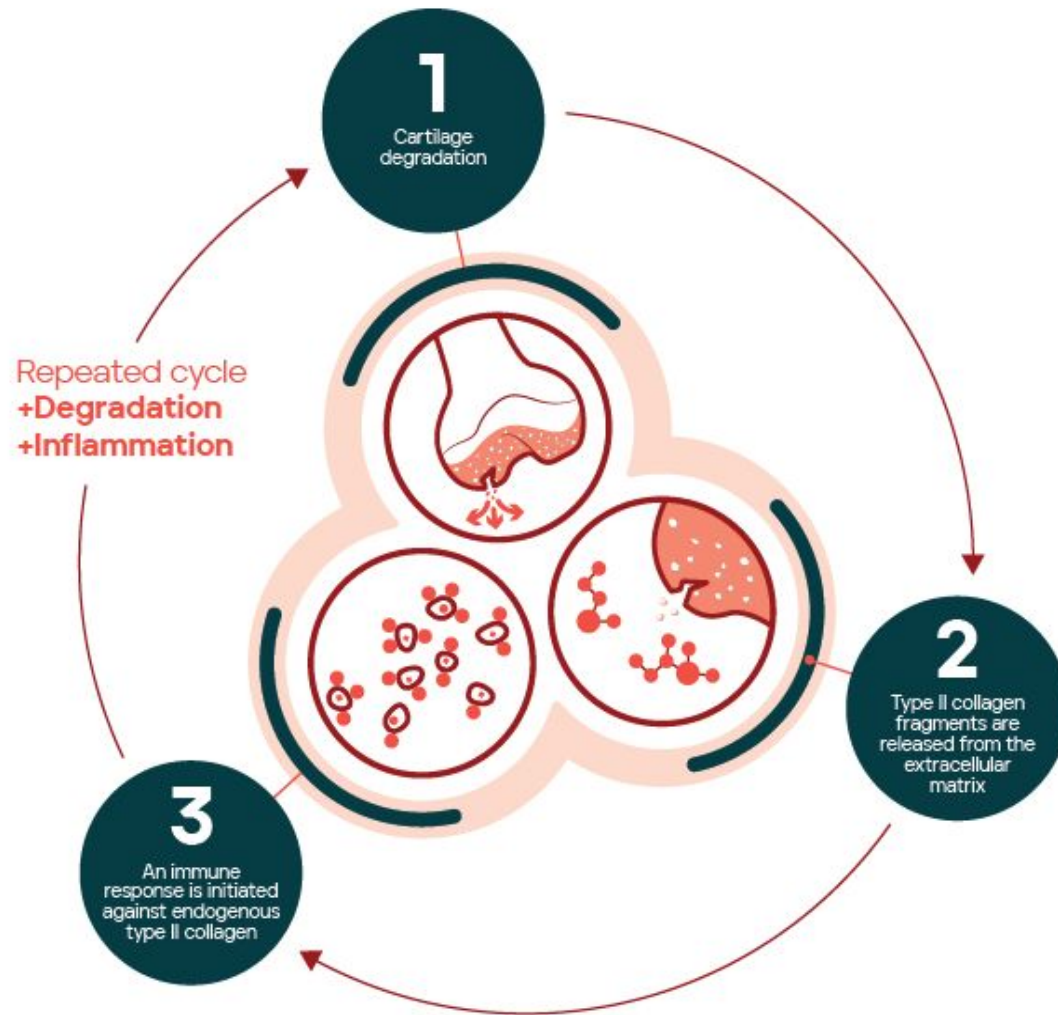
**Stay one step ahead in
women's health**

What is Collavant[®] n2?

- A naturally-derived ingredient supplying **native (undenatured) type II collagen**
- Supports **joint health** at a low dose of **40 mg / day**
- Delivers an immune-mediated mechanism of action



Native type II collagen: Mechanism of action





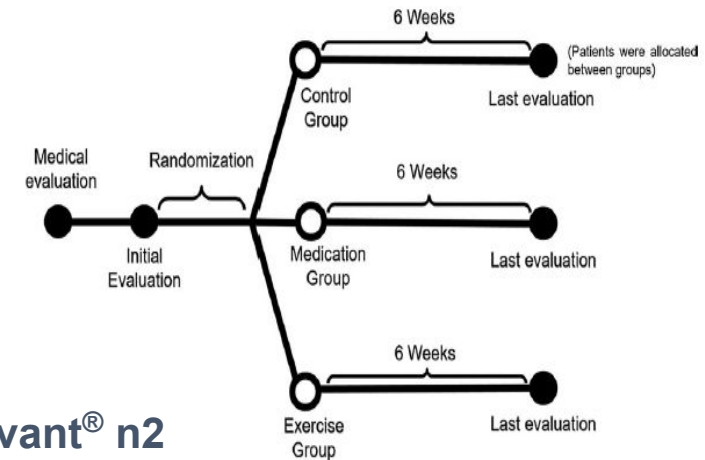
Introducing NEW clinical data for **Collavant[®] n2**



A women-only study:

Clinical trial protocol

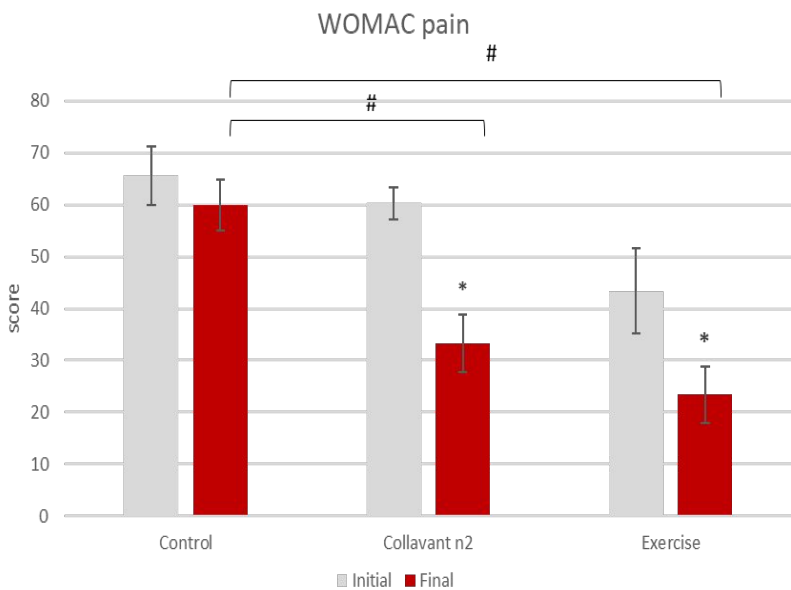
- **Study design:** Single-blinded, randomized controlled clinical trial
- **Patients:** 39 women with knee OA patients
- **Duration:** 6 weeks follow up
- **Treatment protocol:**
 - **Supplemented group:** 40 mg/d Collavant[®] n2
 - **Exercise group:** rehabilitation protocol
 - **Control group:** no intervention
- **Outcomes:**
 - WOMAC (pain, stiffness and physical function)
 - Angular range of motion (ROM)
 - Functionality: 6-minutes walk test (6MWT), Timed Up and Go test (TUG)



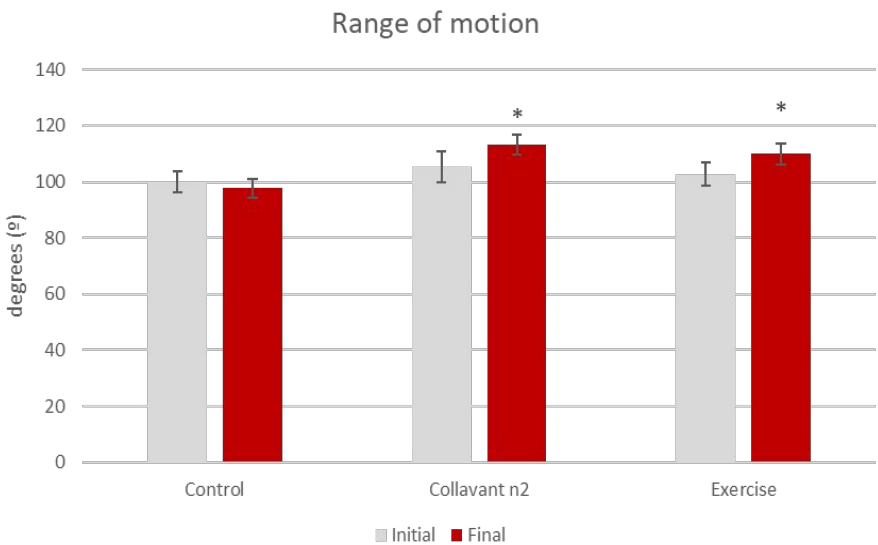
Santana et al. Wien Klin Wochenschr. 2023 135(11-12):291-300

Women-only study results

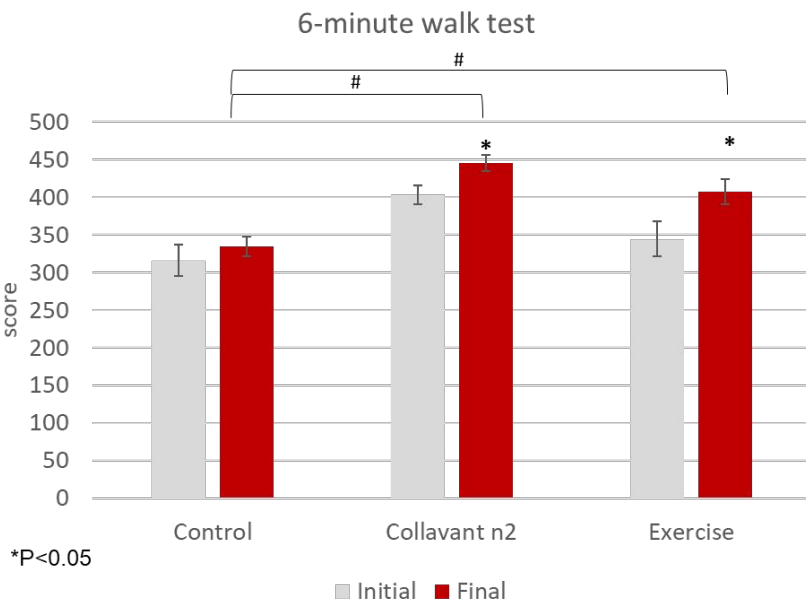
Joint function



Mobility



Functionality





Healthy subjects study

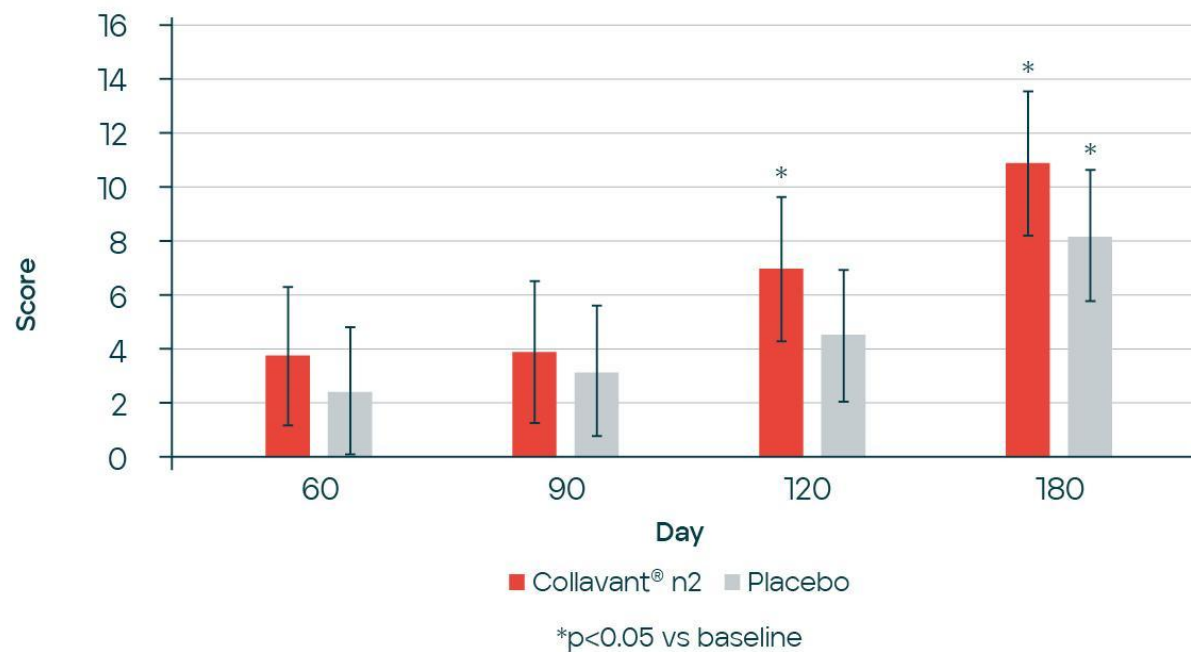
Clinical trial protocol

- **Participants:** Healthy individuals (discomfort after activity)
- **Design:** Randomized double-blind, placebo-controlled study
- **Study arms:**
 - Placebo
 - Collavant[®] n2 (40mg/day)
- **Sample size:** n= 74; 35-39/arm
- **Treatment period:** 6 months
- **Evaluated parameters:**
 - Pain after exercise; pain recovery after exercise
 - Knee Function (KOOS)
 - Pain (VAS, rescue medication intake)
 - Safety
- **Study location:** Barcelona

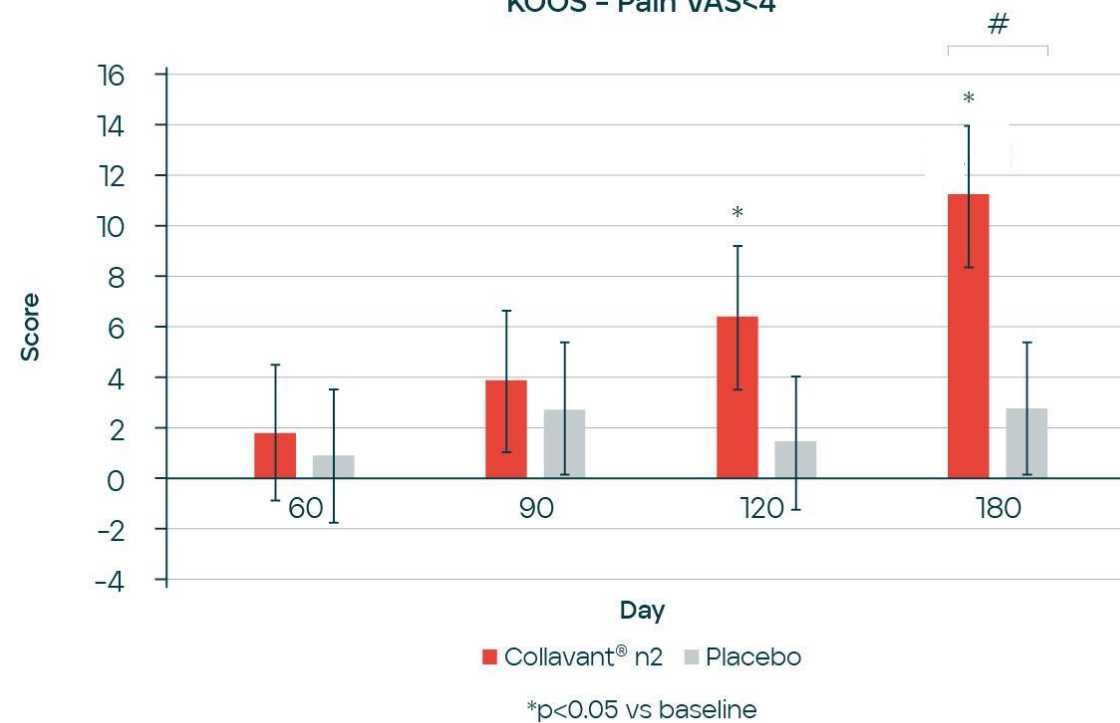
Healthy subjects study

Functional evaluation: KOOS pain

KOOS - Pain



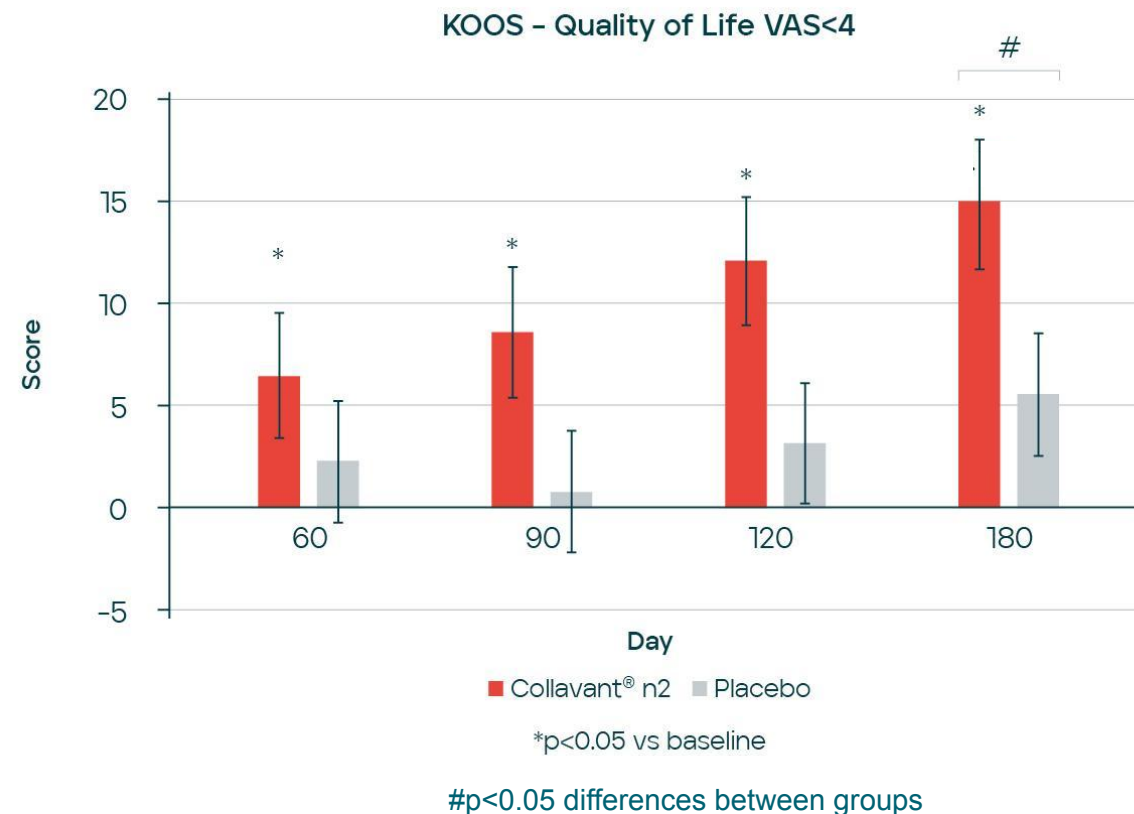
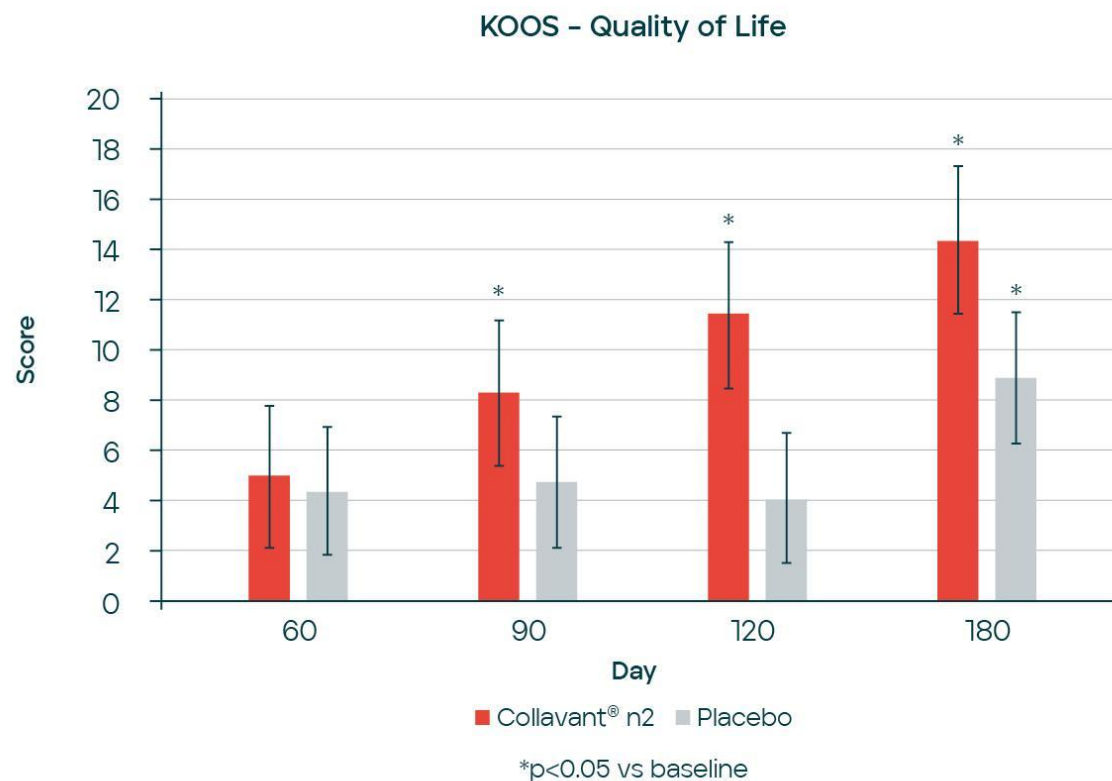
KOOS - Pain VAS<4



Results are expressed as difference vs baseline

Healthy subjects study

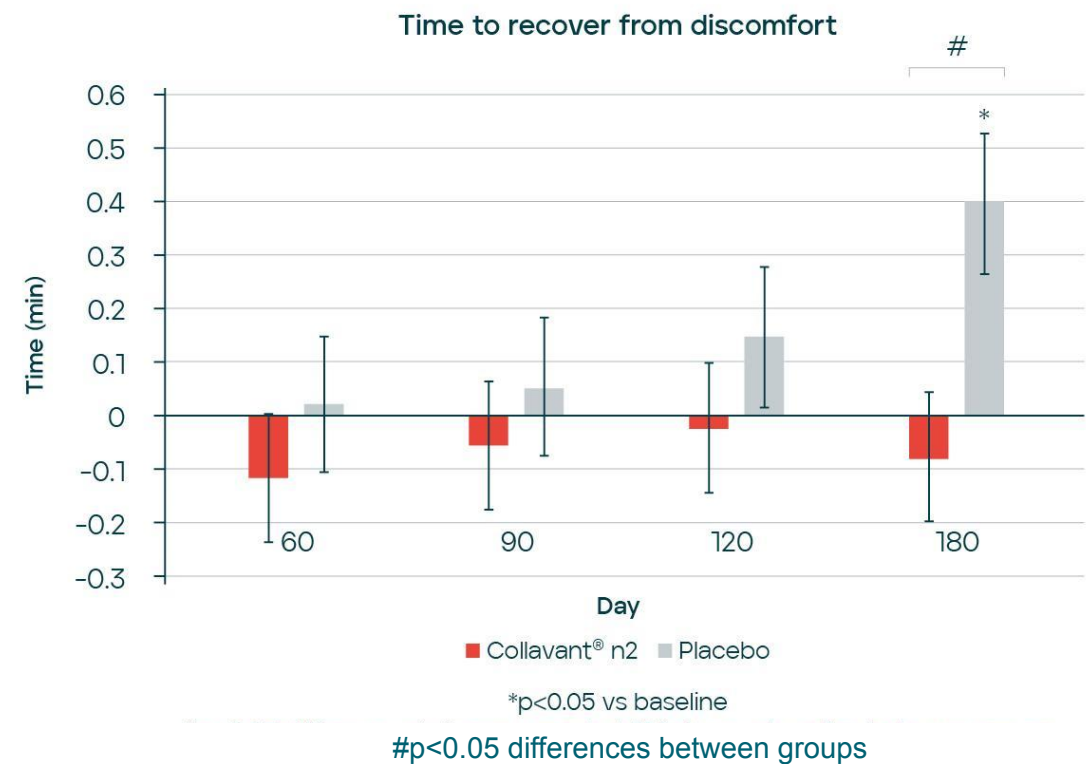
Functional evaluation: KOOS quality of life



Results are expressed as difference vs baseline

Healthy subjects study

Exercise protocol: Cycling in the air



Results are expressed as difference ratio vs baseline

Key takeaways: Distilling the science behind Collavant n2[®]

- Oral supplementation with **Collavant[®] n2** at a dose of **40mg/day**, helps to **support joint function**
- The specific mechanism of action (immune-mediated) and the low dose, make **Collavant[®] n2** an **ideal combination for other ingredients**.

Key Takeaways

Unlock opportunities
for innovation in
women's health



Mobilee® & Dermial®

Supporting women's health needs

- Supports joint, muscle, and skin health
- **Backed by science – 15 scientific studies** (x9 pre-clinical, x6 clinical)
- **Patented**
- Effective at a **very low dose (60-80 mg /day)**
- **Easy to formulate – tasteless, odourless, water soluble**
 - Suitable for dietary supplements & functional foods
- **Solid regulatory framework:**
 - **Novel food** (EU Commission)
 - **GRAS** status (FDA)
 - **ANVISA** Registration (Brazil)
- **GMO-free and halal-certified**



Collavant n2[®]

Supporting women's health needs

- **Next generation collagen**
- Specific benefits for **joint health**
- Low daily dose: only **40 mg/day**
- **Science-backed:** Efficacy demonstrated in 7 scientific studies
- **100%** sourced and manufactured in **Europe**, by **Bioiberica, S.A.U.**



- **50 years of expertise** in biologically-derived APIs & health ingredients
- **Committed to supporting women's health**
- A reliable and traceable **vertically integrated supplier**
- **Scientifically** driven
- A champion of the circular economy

Thank you

These statements have not been evaluated by competent food authorities. The product is not intended to diagnose, treat, cure, or prevent any disease. This information is only for business-to-business use and not meant to be addressed to final consumers



 **Bioiberica**