

# ***COLLAGENS FOR SPORTS NUTRITION***

***GETTING BACK  
IN THE GAME FASTER  
AND STRONGER***



From professional athletes to health-conscious consumers, today's active buyers are looking for more ways to up their game. With Rousselot Health & Nutrition's collagen solutions, you can give them a way to accelerate recovery, support connective tissue – and reach the next performance level.

A world of health benefits

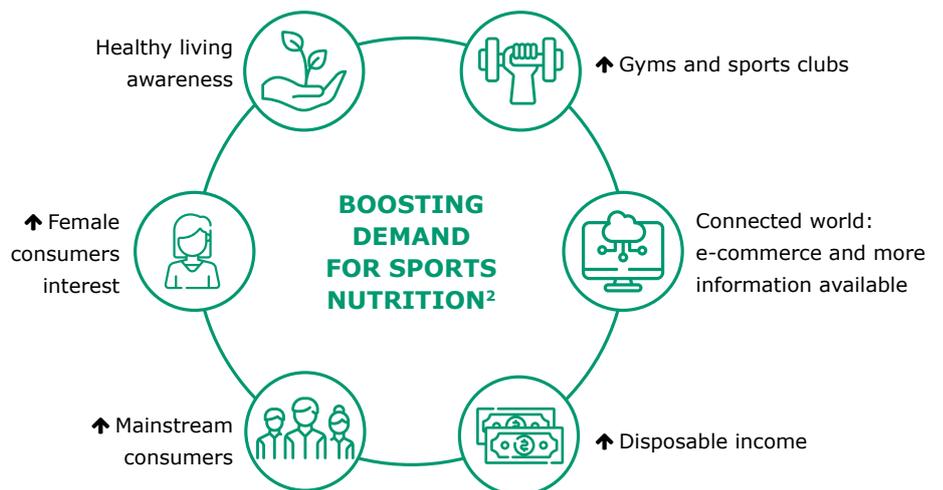
**Rousselot**  
Health & Nutrition

**DARLING**  
INGREDIENTS

# SPORTS NUTRITION IS GROWING

Global Sports Nutrition Market, 2016-2019<sup>1</sup>

**8%**  
CAGR



Recovery is becoming a key sports nutrition driver



Between 2016-2019, sports recovery grew at a CAGR of

**5,7%**



**IN ALL SPORTS, RECOVERY IS VITAL, AFFECTING MUSCLE BUILDING AND ENDURANCE**

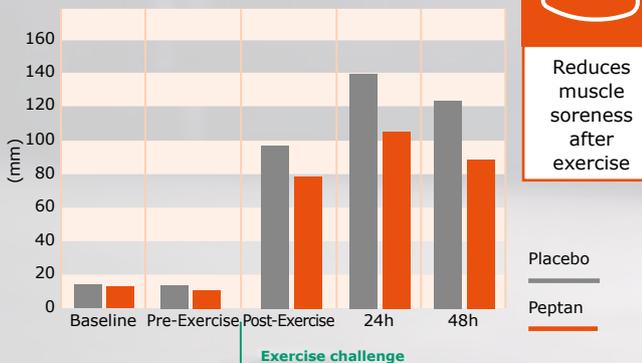
Sports recovery is a hot issue for both professional and amateur athletes

- Damage to muscle cells and extracellular matrix (ECM) during exercise causes pain, reduces strength and negatively influences athletic performance<sup>3,4</sup>
- The level of muscle damage affects recovery time – and impacts training load for pro athletes and amateurs alike

# PEPTAN® COLLAGEN PEPTIDES: A PROVEN SPORTS RECOVERY SOLUTION

- ✓ In a pioneering study, Peptan collagen peptides have been demonstrated to accelerate recovery and alleviate muscle soreness after intense exercise<sup>5/1</sup>
- ✓ The study is the first to suggest that our bioactive collagen peptides reduce recovery time after physical activity, possibly due to accelerated repair of the ECM<sup>5/1</sup>

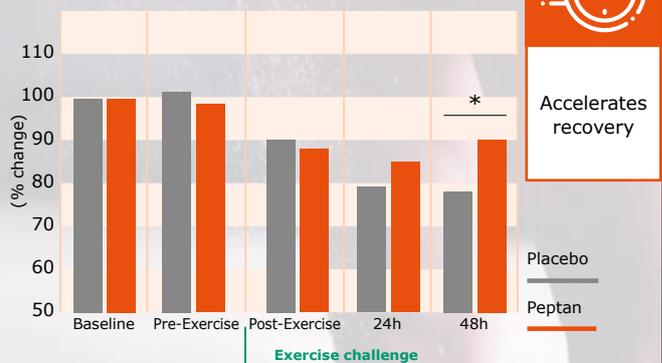
## Muscle Soreness (by VAS score)



Muscle soreness was recorded on a VAS scale for pain after the performance of a squat (90° knee flexion) before and after a session of intense exercise by 24 participants supplemented with either Peptan or a placebo.

Clifford, T, et al., 2019.

## Performance (by countermovement jump height)



Performance was measured by the height of a countermovement jump (knee flexion of 90° and jumping up as high as possible) before and after a session of intense exercise in 24 participants supplemented with either Peptan or a placebo.

Clifford, T, et al., 2019.

**Peptan is the only collagen in the market offering proven benefits for sports recovery.**

### Rousselot scientific studies:

- I. Clifford, T, et al., 2019. The effects of collagen peptides on muscle damage, inflammation and bone turnover following exercise: a randomized, controlled trial. *Amino Acids* 51(4):691-704. doi.org/10.1007/s00726-019-02706-5
- II. Dar, Q, et al., 2017. Daily oral consumption of hydrolyzed type 1 collagen is chondroprotective and anti-inflammatory in murine posttraumatic osteoarthritis. *PLoS ONE* 12(4):e0174705
- III. Jiang J.X. et al., 2014. Collagen peptides improve knee osteoarthritis in elderly women: A 6-month randomized, double-blind, placebo-controlled study. *Agro FOOD Industry Hi Tech*, 25:19-23
- IV. Soniwal, S. et al., 2018. Oral Hydrolyzed Type 2 Collagen Protects Against the OA of Obesity and Mitigates Obese Gut Microbiome Dysbiosis. Poster presentation at ORS 2018 and OARSI 2018
- V. Kleinnijenhuis, A.J. et al., 2020. Non-targeted and targeted analysis of collagen hydrolysates during the course of digestion and absorption. *Anal Bioanal Chem* 412(4):973-982. doi: 10.1007/s00216-019-02323-x

Scan to access details of references 1-15 on [rousselot.com](https://rousselot.com)



# BRINGING JOINT HEALTH A STEP CLOSER

## Adding an extra dimension to sports recovery by supporting joint health

- ▶ Excessive stress on joints is a challenge in sports that involves repetitive, high-impact movements such as running and cycling. Joint stress can damage cartilage, tendons and ligaments.<sup>6</sup>
- ▶ **Peptan** and **Peptan IIm** both can support joint health backed by science.<sup>7,8,9/II,III,IV</sup>

### > Multiple benefits from one single ingredient

## Peptan

As a true all round ingredient for sports nutrition, Peptan offers besides recovery also proven effects on joint health. Peptan can

- ✓ Prevent cartilage degeneration and joint inflammation as demonstrated in an *in vivo* study<sup>7/II</sup>
- ✓ Reduce joint discomfort<sup>8/III</sup>

### > For low dosage solutions Peptan IIm is an ideal ingredient

## Peptan IIm

Peptan IIm is a hydrolyzed collagen type II matrix. It includes type II collagen and GAGs (glycosaminoglycans) and has been developed to promote joint health at a low daily dosage and across a broader range of low dosage application forms. An *in vivo* study has shown that Peptan IIm can

- ✓ Protect cartilage from degeneration<sup>9/IV</sup>
- ✓ Stimulate cartilage lubrication<sup>9/IV</sup>
- ✓ Reduce and prevent joint inflammation<sup>9/IV</sup>

## RAISING THE PROTEIN BAR

### > Increasing protein intake contributes to improved sports performance

- ✓ Physically active individuals need more protein than average: from 1.4g/kg up to 2.0g/kg of body weight.<sup>10</sup>
- ✓ Peptan bioactive collagen peptides and ProTake hydrolyzed collagen have unique application characteristics that enable them to increase protein content across multiple application forms.
- ✓ Benefits of increasing total protein intake:
  - Promote muscle and strength during resistance training<sup>11,12,13</sup>
  - Preserve and maintain muscle during endurance exercise<sup>11,12,13</sup>
  - Prevent craving and help reach fitness and weight goals, collagen has been proven to produce high satiety levels in comparison to other proteins.<sup>14</sup>

# ROUSSELOT HEALTH & NUTRITION COLLAGENS FOR SPORTS NUTRITION

**Peptan**



Collagen peptides for a healthy lifestyle

**TYPE I  
COLLAGEN PEPTIDES**

**Peptan II<sup>m</sup>**



Bringing joint health a step closer

**HYDROLYZED COLLAGEN  
TYPE II MATRIX**

**ProTake**



The perfect solution for protein enrichment and application versatility

**HYDROLYZED COLLAGEN**

## Rousselot Collagens

- ✓ Fast, excellent cold-water solubility
- ✓ Neutral in taste and odor
- ✓ Highly stable
- ✓ Heat resistant
- ✓ Can be used in combination with each other, other protein sources, including whey and soy and many other ingredients
- ✓ Texture benefits at increased protein levels
- ✓ Proven health benefits:
  - ▶ Recovery
  - ▶ Joint Health
  - ▶ Protein enrichment

## Versatile in formulations

- ▶ Collagen powder drinks
- ▶ RTD (Ready-to-drink)
- ▶ Bars
- ▶ Powder blends
- ▶ Tablets, capsules
- ▶ Sports gels



## Powerful solutions for today's health-conscious consumers



Premium quality



From natural source



Clean label



Contains no WADA prohibited substance



Highly digestible and bioavailable<sup>15</sup>

*Grow your business with us*  
**ROUSSELOT HEALTH & NUTRITION  
BRINGS YOU ALL THE SUPPORT YOU NEED**  
A WORLD OF HEALTH BENEFITS

R&D

BRAND

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SUPPORT

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SUPPORT

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**About Rousselot Health & Nutrition**

At Rousselot's strategic segment dedicated to health and nutrition, we are committed to developing innovative ingredients answering today's demand for solutions offering proven efficacy, full safety, and premium quality. Our customers can rely on best-in-class products backed by trusted science, as well as on our expert support in formulation, product development, and regulatory advice. Our range of products includes Peptan, the leading collagen peptide brand worldwide, Peptan IIm, and ProTake, and offers "A world of health benefits" for a healthier tomorrow.

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