





- Bioactive Collagen Peptides® proven to stimulate joint cartilage metabolism in pets
- A pure non-allergenic collagen protein for clean label products





Osteoarthritis – A threat for staying agile!



Osteoarthritis affects more than 20% of dogs older than one year. (1)



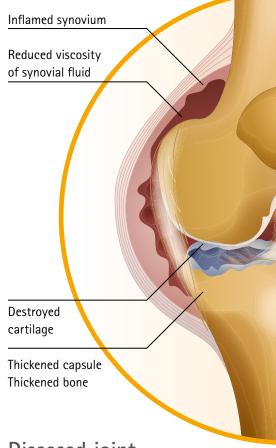
90% of cats older than 7 years showed x-ray evidence of joint degeneration. The number of arthritic cats is more difficult to assess as they exhibit more subtle signs of the disease. (2)



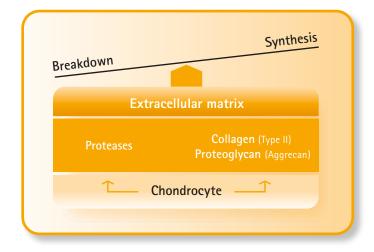
More than 60% of equine lameness stems from Osteoarthritis. (3)

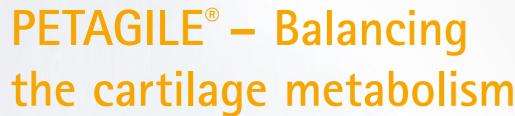
Osteoarthritis (OA) is a degenerative joint disease characterized by the progressive destruction of articular cartilage caused by a disbalance between synthesis and breakdown processes. (4) Chondrocytes fail to produce sufficient extracellular matrix (ECM), and progressive cartilage destruction starts. Increased shear stress of chondrocytes results in higher level of cytokines and proteases which further destroy the structure. (5) Therefore, chondrocytes play a central role in maintaining balance. (4;7)

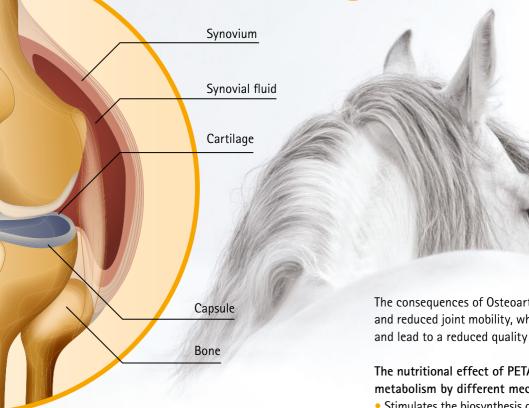
- <sup>1</sup> Todhunter & Johnston, 2003
- <sup>2</sup> Kerwin, 2010
- <sup>3</sup> Caron & Genovese, 2003
- <sup>4</sup> Martinek, 2003
- <sup>5</sup> Kapoor, M. et al., 2011
- <sup>7</sup>Schunck , Louton & Oesser, 2017



Diseased joint







Healthy joint

The consequences of Osteoarthritis for affected pets are pain and reduced joint mobility, which result in lameness or stiffness and lead to a reduced quality of life.

The nutritional effect of PETAGILE® leads to balancing cartilage metabolism by different mechanisms  $^{(6;7)}$ 

- Stimulates the biosynthesis of extracellular matrix molecules (ECM)
- Supplies of typical collagen amino acids as valuable building blocks
- Slows down the progression of cartilage degeneration by reduction of catalytic proteases and inflammatory cytokines



## PETAGILE® – Reduces pain and lameness

### Benefits for dogs

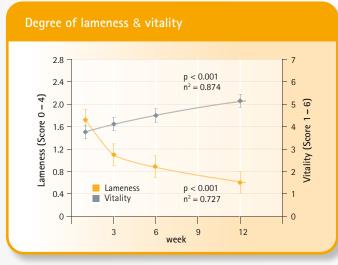
Preclinical studies on canine chondrocytes and clinical studies on arthritic dogs have demonstrated the efficacy of PETAGILE® treatment in the management of OA. The Bioactive Collagen Peptides® break the vicious cycle of joint degeneration by addressing the root cause of the disease. *In vitro* studies demonstrated that the biosynthesis of cartilage matrix molecules increased significantly after exposure of PETAGILE® to canine chondrocytes. Moreover, a significant down regulation of inflammatory cytokines and degenerative matrix metalloproteases indicated that the cartilage metabolism of the canine chondrocytes are directly influenced by PETAGILE®. (7)

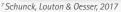
Attending veterinarians of the clinical studies noted continuously decrease of lameness of the osteoarthritic dogs in the course of the collagen peptide treatment (orange line). Also, the pet owners were convinced by the treatment. They observed an increased vitality in their dogs during the study period (blue line).<sup>(7)</sup>

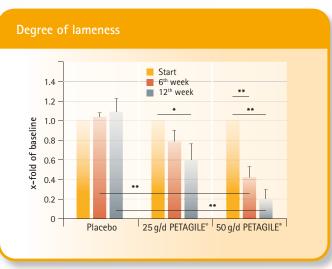
### Benefits for horses

The efficacy of orally administered PETAGILE® on horses with mild to moderate osteoarthritis has been shown in a two centered study. In the first center, 18 athletic horses received 25 g or 50 g PETAGILE® per day for 12 weeks. In the second center, 20 senior horses received either a placebo or 25 g PETAGILE® per day. Our two-center pilot study demonstrated the positive impact of PETAGILE® in treating adult and senior horses with OA. The dosage of 50 g PETAGILE® per day revealed stronger effects compare to 25 g PETAGILE® dosage and had a superior impact after 3 months.

The evaluation conducted by the veterinarian showed a statistically significant reduction in lameness after daily ingestion of 50 g PETAGILE®. The overall treatment success was also evaluated by the horse owners. Over 80 % of the owners were convinced that PETAGILE® had a beneficial effect on their horse's osteoarthritis. (8)







<sup>8</sup> Dobenecker et al., 2018

# PETAGILE® – Keeps moving for a joyful life

### Recommended daily dose for dogs and for horses

Recommended daily dose for dogs is approximately 1 gram PETAGILE® per 5 kg body weight, based on the exisiting clinical studies. (6;7)

#### **Elderly animals**

- Increases activity
- · Regains mobility and flexibility
- Improves well-being

#### Active animals

- Supports mobility and flexibility
- Optimizes joint health, function and comfort
- Increases performance

Recommended dose for horses with Osteoarthritis is approximately 50 grams PETAGILE® per day. This was tested in clinical studies with horses of different breeds, sizes, activities, and also in older animals with verifiably chronic occurrences of OA. <sup>(8)</sup>

PETAGILE® showed promising effects on the symptoms of Osteoarthritis in horses already after 3 months. (8)



#### DOGS DOSAGE

<b>Extra-small</b> 1 – 5 kg 2 – 11 lbs	≈ 1 gram
<b>Small</b> > 5 – 10 kg > 11 – 22 lbs	≈ 2 grams
<b>Medium</b> 11 – 25 kg 24 – 55 lbs	≈ 3 –5 grams
<b>Large</b> 26 – 44 kg 57 – 97 lbs	≈ 6 – 8 grams
<b>Giant</b> > 45 kg > 99 lbs	> 9 grams
	1 - 5 kg 2 - 11 lbs Small > 5 - 10 kg > 11 - 22 lbs Medium 11 - 25 kg 24 - 55 lbs Large 26 - 44 kg 57 - 97 lbs Giant > 45 kg

#### HORSES

## M

**DOSAGE** 

50 grams

<sup>&</sup>lt;sup>6</sup> Schunck, Schulze & Oesser, 2009

<sup>&</sup>lt;sup>7</sup> Schunck , Louton & Oesser, 2017

<sup>&</sup>lt;sup>8</sup> Dobenecker et al., 2018



### Technological properties

PETAGILE® is a natural protein of neutral taste and odor. Besides healthy properties, it is perfect for protein enrichment in pet food applications such as treats or complete pet foods (wet and dry). Therefore, it provides excellent solubility and delivers clear solutions without interacting with other ingredients.

PETAGILE® showed great palatability results in canine placebo controlled tests.



- clean label
- high digestibility
- no allergens
- scientific evidence





### Make innovative product ideas a reality!





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