

# Assessment of a new high protein – high essential fatty acid diet in dogs with chronic joint disorders

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## Overview

Osteoarthritis is a common degenerative disorder in ageing dogs, leading to a reduction of dog's mobility and quality of life. The aim of this study was to evaluate the effectiveness of a new dry dietetic pet food intended for the support of joint function in dogs.

Forty-eight dogs were analysed based on the scores of 7 mobility parameters (interaction with people, ability to rise to standing from lying down, ability to walk, lameness, ability to walk on stairs, ability to jump and ability to play).

All parameters were significantly improved after 2 months of feed, compared to Day 0. Palatability and tolerance of this diet were good and 20% dogs even recovered an optimal weight despite no diet restriction.

## Introduction

Osteoarthritis is a common painful degenerative and inflammatory disorder affecting joint and underlying bones<sup>1</sup>.

It concerns 20 % of the canine population over 1 year-old and is essentially secondary to congenital or acquired musculoskeletal disorders<sup>2</sup>.

The multimodal management of the disease includes the use of NSAIDs, Disease Modifying OsteoArthritis drugs, Essential Fatty Acid enriched diets and physical therapy<sup>1</sup>.

The aim of this open study was to evaluate the effectiveness of a new dry dietetic pet food (Veterinary™ HPM Joint & Mobility, Virbac, France) intended for the support of joint function in dogs.

1. Henrotin Y et al. Veterinary Journal, 2005; 170:113-123. 2. Comblain F et al. J Vet Pharmacol Ther. 2016; 39(1):1-15

## Materials and Methods

### Animals:

48 client-owned adult and senior dogs with mobility disorders for at least 3 months recruited and analysed  
For inclusion, at least 3 of the 7 mobility parameters had to be impaired

### Diet:

Tested diet (Veterinary™ HPM Joint & Mobility, Virbac, France) for 2 months  
Metabolisable energy (ME) 373 kcal/100g dry matter (DM); protein 35% ME, fat 38% ME, carbohydrate 27% ME;  
omega-3 3.3% DM, EPA 0.7% DM  
no medical management allowed

### Analysis and statistics:

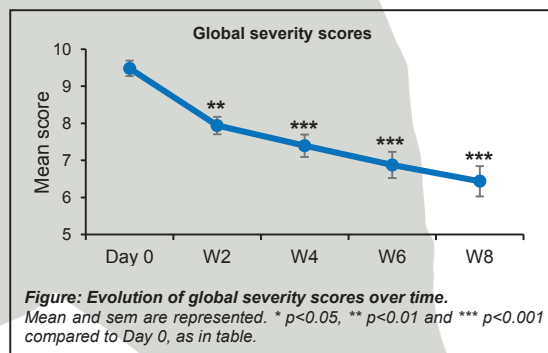
Seven mobility criteria: interaction with people, ability to rise to standing from lying down, ability to walk, lameness, ability to walk up and down stairs, ability to jump and ability to play, noted from 0 (normal) to 3 (serious alteration).  
Global severity score = sum of the scores of the 7 parameters  
Assessments (questionnaires filled in by owners) on Day 0 (baseline) and every 2 weeks (W2, W4, W6, W8)  
Other parameters evaluated: body weight (BW), body condition score (BCS), kibbles palatability, digestive tolerance and owners' satisfaction were also evaluated  
For each criteria, pairwise adjusted (Dunnnett) comparisons of time points were performed in the repeated measures ANOVA. The significant threshold was set to 5%.

## Results

Table: mean scores (± SD) of the seven mobility parameters assessed and of the global severity score

	Day 0	W2	W4	W6	W8	p (ANOVA)
Interaction with people	0,88 ± 0,57	0,60 ± 0,68*	0,54 ± 0,77**	0,52 ± 0,82**	0,40 ± 0,79***	<.0001
Ability to rise	1,44 ± 0,50	1,13 ± 0,44**	1,08 ± 0,58**	1,02 ± 0,79***	0,94 ± 0,89***	<.0001
Ability to walk	1,17 ± 0,72	0,85 ± 0,55**	0,77 ± 0,66***	0,60 ± 0,68***	0,54 ± 0,82***	<.0001
Lameness	1,46 ± 0,77	1,19 ± 0,73*	1,13 ± 0,79**	0,94 ± 0,84***	0,88 ± 0,87***	<.0001
Ability to walk up and down stairs	1,50 ± 0,78	1,37 ± 0,80	1,24 ± 0,87*	1,20 ± 0,93**	1,24 ± 1,06*	0.0060
Ability to play	1,56 ± 0,74	1,42 ± 0,68	1,33 ± 0,88*	1,27 ± 0,98**	1,25 ± 1,04***	0.0013
Ability to jump on couch, bed or car	1,68 ± 0,64	1,57 ± 0,66	1,48 ± 0,82	1,50 ± 0,93	1,36 ± 1,04**	0.0131
Global severity score	9,48 ± 3,34	7,94 ± 2,87**	7,40 ± 3,87***	6,88 ± 4,68***	6,44 ± 5,32***	<.0001

\* p<0.05, \*\* p<0.01 and \*\*\* p<0.001 compared to value at Day 0



### Other results:

- 20% overweight dogs recovered an optimal weight
- 35% owners estimated the dog's silhouette was thinner or more muscular
- Palatability: considered as normal to very good by 86 % owners
- Tolerance:
  - 92% dogs had stools with normal or dry consistency
  - 86% dogs had stools in normal or fewer quantity than with the usual diet
  - 85% dogs had no flatulence or with similar frequency as usual
- Satisfaction: 78% owners were satisfied

## Conclusion

Significant improvements of mobility and quality of life were observed in dogs fed the tested diet. An improvement of the body condition score was also observed in some dogs despite no restriction diet.

These results may be attributed to the diet containing high levels of proteins for muscle maintenance and omega-3 fatty acids known to reduce inflammation and pain.

The good tolerance and palatability of this diet should allow an optimal compliance over a long time period.

A controlled study is now required to confirm these results and an evaluation over a longer period would also be interesting.