



Veterinary Staff Information Sheet **Delicate Care™ – Mobility Dog Food**

Background:

Osteoarthritis (OA) is recognized as a significant health problem that affects domestic dogs worldwide. Osteoarthritis has been estimated to affect 20% of adult dogs (Johnston 1997). Moreover, obesity may be a risk factor for the development of OA in the dog and this relationship is most convincing for hip OA secondary to dysplasia (Smith et al. 2006). The relationship between obesity and OA in humans and in dogs potentially involves mechanical, metabolic and biochemical factors. According to meta-analysis of research in obese humans, obese people with knee OA enjoy significantly improved mobility following a body weight reduction of just 5.1% (Christensen et al. 2007). Recent research has shown that weight loss should be presented as an important treatment modality to owners of obese dogs with OA and that noticeable improvement may be seen after modest weight loss in the region of 6.10 – 8.85% body weight [William et al. 2010].

In response to these significant joint problems affecting dogs, we have developed Delicate Care™ Mobility Dog Food which is a highly palatable, balanced diet that is suitable for dogs with mobility concerns and can also deal with problems of weight control. This food is formulated using a hypoallergenic base of ingredients containing the novel proteins, duck and kangaroo and low GI grain, sorghum. Most importantly, Delicate Care™ Mobility dog food has incorporated the latest nutritional thinking into an innovative combination of ingredients to assist with joint mobility. We have included glucosamine which in its N-acetylated form, N-acetylglucosamine, is a natural constituent of glycosaminoglycans (GAGs) such as hyaluronic acid keratin sulphate found in the proteoglycans of articular cartilage, intervertebral disc and synovial fluid. While glucosamine was first thought to provide only the building blocks for the biosynthesis of cartilage extracellular matrix, further studies have found anti-inflammatory and anti-catabolic mechanisms of action (Henrotin, Mobasher and Marty 2012). Treatment of OA with glucosamine in humans is controversial. On the other hand, animal studies have unequivocally shown anti-inflammatory and disease modifying effects for glucosamine (Ali Aghazadeh and Fakhreddin Jamali 2011).

Thus Delicate Care™ Mobility Dog Food assists with joint mobility in dogs in at least three ways: **firstly optimizing the supply of building blocks** such as glucosamine sulphate and N-acetyl-glucosamine that are essential for synthesis of lubricant proteins such as the N-linked glycoprotein chondroitin as well chondroitin itself, **secondly providing key amino acids** such as proline and hydroxyproline **for structural proteins** such as collagen, and **thirdly natural ingredients** such as green-lipped mussel extract to assist **with freedom of movement**. Delicate Care™ dog foods are also boosted with the Omega Magic™ Essential Oil Blend (in an optimized ratio of Omega 6 & 3 essential fatty acids), vitamins, chelated minerals and prebiotics.



Manufactured in Australia for
NB PETFOODS PTY LTD T/A Delicate Care
PO BOX 875, FREMANTLE WA 6959
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Key Points:

Recommended for dogs of all life stages with mobility issues in a hypo-allergenic base that provides the natural balance of energy and essential fatty acids for optimum nutrition.

The 6 key ingredients used in Delicate Care™ Mobility to support joint function are:

1. **Green-Lipped Mussel (GLM) extract:** green-lipped mussel extract has been included on the basis of demonstrated benefits for pain relief and consequently enhances joint mobility.
2. **Glucosamine sulphate and N-acetyl glucosamine:** Glucosamine sulphate and N-acetyl-glucosamine are the starting sugars from which, all of the novel N-linked glycoproteins [sugar + protein] in joints are synthesised. The chondroitin group of glycoproteins are the principal lubricant proteins in the joint that are essential to freedom of movement. Moreover, glucosamine and N-acetyl-glucosamine have been shown to have anti-inflammatory and anti-catabolic effects in osteoarthritis.
3. **Chondroitin** from shark cartilage is an N-linked glycoprotein that ensures the supply of these key lubricant proteins and their precursor amino acids in the appropriate proportions for lubricant protein synthesis in joints.
4. **Hydrolysed gelatin** (non-bovine) ensures the supply of the amino acid proline that can be converted to the unique amino acid, hydroxyproline which is essential to the synthesis of the major structural protein, collagen for joints and bones.
5. **Omega Magic™:** contains balanced omega-6: omega-3 fatty acids in a ratio close to 5:1 to enhance the balance of the less inflammatory eicosanoids.
6. **Celery seed extract:** has been used in Indian herbal medicine to reduce the impact of arthritis and gout possibly through its anti-oxidant and anti-inflammatory properties.

Our 6 key ingredients provide the unique combination of the precursor ingredients for both lubricant proteins and structural proteins of joints. Moreover, these lubricant and structural proteins are supported by an enhanced anti-inflammatory and anti-oxidant environment provided by Omega Magic™ and celery seed extract. Importantly, GLM extract underpins all these actions by providing a reduced pain environment in support of these ingredients for joint mobility.

The key weight control features of Delicate Care™ Mobility to provide assist with relieving stress on joints.

1. **L-Carnitine** facilitates the conversion of dietary fat into energy. This helps to maintain lean muscle tissue in adult and senior dogs with less dietary fats being converted and stored as body fat.
2. **Super Oat Bran:** The primary fibre source is super oat bran, which offers a good balance between soluble and insoluble fibre and is also a rich source of **β-glucans**, which are classified as soluble fibre, that form viscous solutions associated with many beneficial effects such as easy passing of stools. Super oat bran has been shown to aid glycemic control, which is important in older and dogs with weight issues.
3. **Feeding Guide** is appropriate for the majority of mobility issue dogs. If the feeding guide is adhered to strictly then gentle weight loss is to be expected.

Since Delicate Care™ Mobility Dog Food is formulated on our Delicate Care™ foundation, this food has the following attributes:

Hypoallergenic: Novel proteins from Australian Kangaroo and Australian Duck.



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Novel grain; Australian Sorghum (Low Glycaemic Index [GI])

Low GI: Sorghum with its very low glycaemic index (GI) assists in slowing the entry of glucose into the bloodstream enabling improved clearance and control of blood glucose.

Natural: Naturox (Kemin) is incorporated into the whole supply chain of ingredients for this dog food so no artificial preservatives are used in the sourcing or manufacturing of ingredients for Delicate Care.

No artificial colouring (leads to some natural colour variation), no artificial flavour.

Balanced: Meets or safely exceeds AAFCO nutrient specifications.

Protein: Energy ratio (balanced for sustained and steady growth for large breed puppies).

Calcium: Phosphorus ratio (to optimize skeletal development).

Omega Fatty Acids: Delicate Care contains the essential fatty acids that must be supplied in the diet of dogs through Omega Magic™.

Omega-6 essential fatty acids are sourced from sunflower oil (not corn oil) to ensure supply of AAFCO specified linoleic acid (C18:2 n-6).

Omega-3 essential fatty acids are sourced from

- Canola oil (local, GMO free) for linolenic acid (C18:3 n-3)
- Fish oil from deep sea sources provide very long chain omega-3 fatty acids: eicosapentaenoic acid (EPA; C20:5 n-3) and docosahexaenoic acid (DHA; C22:6 n-3).

Prebiotics: To support the immune system

FOS: promote 'friendly' *Bifidobacteria* in lower gut [Hussein et al. (1999) J.Nutr. 129: 1454S-1456S]

MOS: anti-allergenic effect, attributed to activation of cellular immunity [Ozaki et al. (2007) J Health Sci 53: 766-770]

β-glucans support gut flora which aids immune function and weight control.

Chelated Trace Minerals: Addition of chelated minerals (eg. Zinc and Copper) to ensure efficient absorption and delivery of micronutrients for optimum tissue metabolism.

Low Smell: Natural *Yucca schidigera* extract assists in reducing body and faecal odour.

Premium Ingredients:

Whole Sorghum, Australian Kangaroo, Australian Duck, Kangaroo Digest, Oat Bran, Omega Magic™ Essential Oil Blend, Coconut Oil, "Mobility Magic" Blend(*Green Lipped Mussel (GLM) extract, Glucosamine, Chondroitin, non-bovine gelatin, Celery seed extract*), L-Carnitine, , FOS (Fructo-Oligo-Saccharides), , Yeast Extracts, *Yucca schidigera* Extract, Vitamins A D3 E K3 B1 B2 B3 B5 B6 B12, Folic Acid, Biotin, Copper (from Sulphate), Copper Chelate, Zinc (from Sulphate), Zinc Chelate, Manganese (from Oxide), Manganese Chelate, Iron (from Sulphate), Iron Chelate, Selenium, Iodine and Calcium. Product protected by natural mixed tocopherols (Vitamin E) and rosemary extract.

*No salt (sodium chloride) is added to Natural Balance™ formulations. Salt, if present in our formulations, is naturally occurring.



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Nutritional Analysis:

Protein (%min) 25
 Fat (%min) 9
 Fibre (%max) 6
 Ash (%max) 10
 Moisture (%max) 8
 Ca:P Ratio 2.0:1.0
 Metabolisable Energy 350 kcal/100gms as fed

DOES NOT CONTAIN

Common Allergens derived from Beef, Chicken, Wheat, Corn, Soy, Dairy.
 Artificial colours, flavours or preservatives
 BHT, BHA, or Ethoxyquin

Supporting References for Obesity and Mobility:

Ali Aghazadeh and Fakhreddin Jamali The Glucosamine Controversy: A Pharmacological Perspective J Pharm Pharmaceut Sci (2011) 14: 264-273

Bui LM, and Bierer TL. Influence of green lipped mussels (*Perna canaliculus*) in alleviating signs of arthritis in dogs. Vet Ther 2003;4:397-407.

Christensen R, Bartels EM, Astrup A, Bliddal H. Effect of weight reduction in obese patients diagnosed with knee osteoarthritis: a systematic review and meta-analysis. Annals of the Rheumatic Diseases. 2007;66:433-439. doi: 10.1136/ard.2006.065904.

Henrotin Y., Mobasheri, A. and M. Marty Is there any scientific evidence for the use of glucosamine in the management of human osteoarthritis? Arthritis Research and Therapy (2012) 14: 201

Johnston SA. Osteoarthritis: joint anatomy, physiology and pathobiology. Veterinary Clinics of North America Small Animal Practice. 1997; 27:699.

Smith GK, Paster ER, Powers MY, Lawler DF, Biery DN, Shofer FS, McKelvie PJ, Kealy RD. Lifelong diet restriction and radiographic evidence of osteoarthritis of the hip joint in dogs. Journal of the American Veterinary Medical Association. 2006;229:690-693. doi: 10.2460/javma.229.5.690.

Suggested Feeding Table for Delicate Care™ Mobility			
Weight (kg)	0.414 x LW ^{0.75} (MJ/day)	Amount to feed (grams / metric cups)	
2	0.70	40g	1/3
5	1.38	80g	2/3
10	2.33	135g	1
15	3.16	180g	1 1/3
20	3.92	225g	1 3/4
25	4.63	270g	2
30	5.31	310g	2 1/3
35	5.96	345g	2 2/3
40	6.58	380g	3
45	7.19	415g	3 1/4
50	7.78	450g	3 1/2
55	8.36	485g	3 3/4
60	8.93	515g	4
65	9.48	550g	4 1/4
70	10.02	580g	4 1/2
75	10.55	610g	4 3/4
80	11.07	640g	5

Proudly Australian Made and Owned

Always aiming to be at the forefront of developments in Pet Nutrition



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