



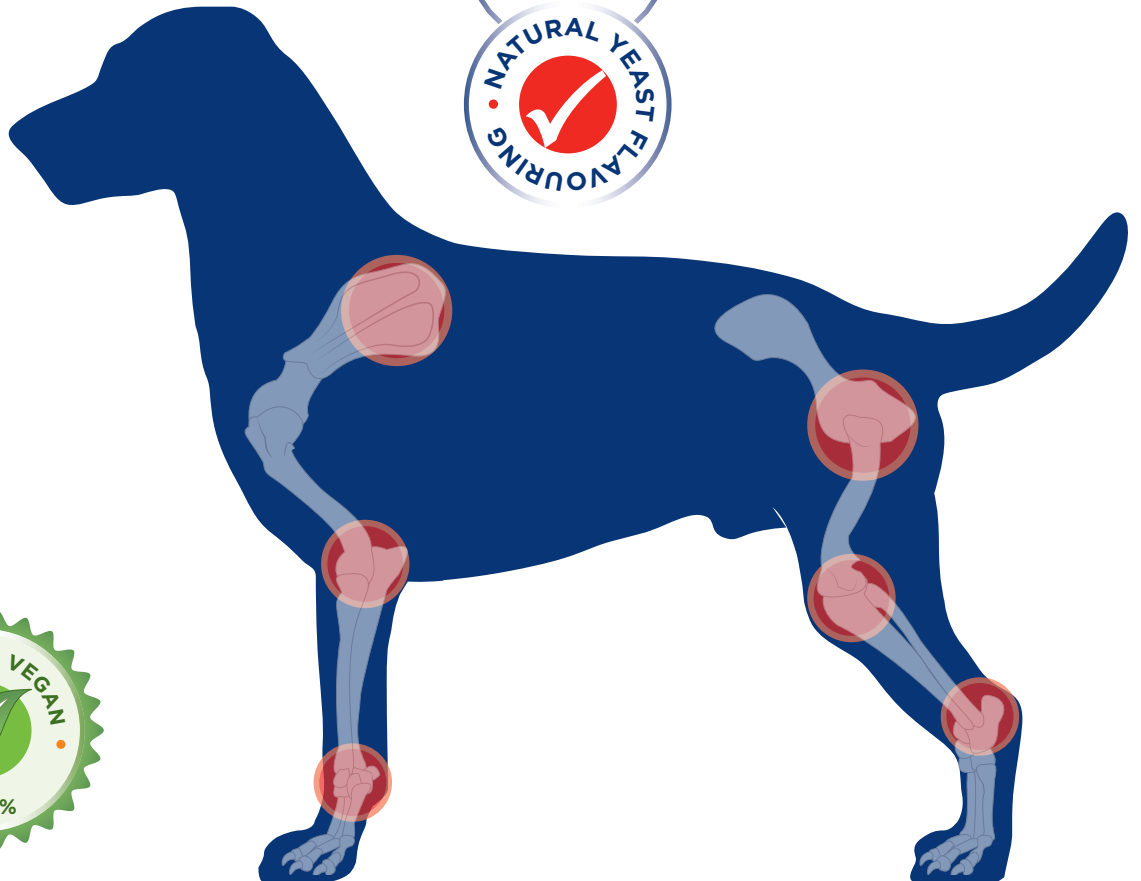
EXCELLENCE IN PET NUTRITION

STRIDE
PLUS

STRIDE

PLUS

Nutritional Maintenance of
Healthy Cartilage and Joints in Dogs.

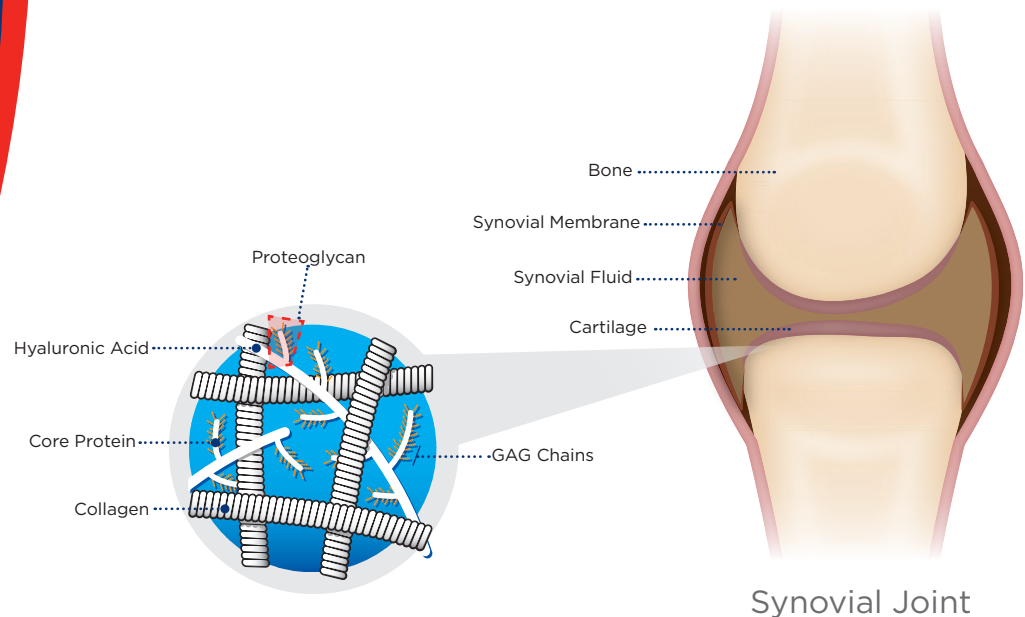


The Joint

The joint is where two or more bones meet. Each bone end is protected with a layer of cartilage; the entire joint is enclosed in the synovial capsule which is filled with synovial fluid. Bones provide a frame to support the body and protect the organs, muscles and blood vessels.

The Cartilage Matrix

The cartilage matrix is composed of collagen fibres and chondrocytes. Chondrocytes produce and maintain proteoglycans which are made up of proteins and **Glycosaminoglycan** (GAG chains).



Impaired function of skeletal joints can dramatically reduce joint flexion, movement and mobility. This seriously decreases a dog's life quality with affected animals exhibiting decreased activity levels, stiffness and inability to partake in walks or play.

Predisposing factors can be:

- **Congenital**
Certain breeds may also have a genetic predisposition towards skeletal joint diseases. Surveys have found 9.4% of Retrievers were affected by Hip Dysplasia (FCRSA Health Survey) while the cumulative hazard rate for cCHD in Boxers from 7 weeks to 8 years of age is 8.5% (Van Hagen et al.)
- **Developmental** (Osteochondrosis and Hip Dysplasia)
Developmental problems will typically occur during periods of rapid growth between 3 and 9 months of age.
- **Traumatic** (fractures and dislocations).



- **Degenerative**

Osteoarthritis by contrast occurs secondary to developmental or traumatic conditions, and is characterized by progressive, degenerative changes in the joint structure. When any articular joint is damaged inflammatory substances are released into the joint capsule, which in turn reduces the quality and quantity of Synovial fluid - the joint lubricant. Without the lubricant, the articular cartilage is in turn damaged and its protective cushion is no longer effective.

This cascade of events can contribute to a cycle of cartilage damage, inflammation and progressive loss of joint function. It is vital at this point to feed nutritional ingredients, which can support the Glycosaminoglycan (GAG) content of the cartilage, reduce the effect of the cartilage chewing enzymes and improve the viscosity of the synovial fluid.



4 KEY INGREDIENTS for the maintenance of Joint Health

1. Chondroitin Sulphate.....page 3
2. Hyaluronic Acid.....page 5
3. Methyl Sulphonyl Methane.....page 5
4. Glucosamine HCL.....page 6

- ✓ Easy to Feed Liquid Formulation for addition to Dog's Food.
- ✓ Contains no ingredients of animal origin.
- ✓ Palatable natural yeast flavouring.
- ✓ Proven in practice.
- ✓ No possibility of presence of animal prions or viruses, all ingredients from reliable and reproducible sources with highest purity.
- ✓ Chondroitin Sulphate in the formula has clinically proven bioavailability, and substantial absence of unusually sulphated and over-sulfated disaccharides – made up of more than 75% C6S.



STRIDE PLUS

1. Chondroitin Sulphate

Chondroitin Sulphate (CS) is the most abundant GAG in the cartilage matrix. It stimulates the production of proteoglycans and is capable of binding large amounts of water. This enables the joint to withstand constant compression and concussion. It also inhibits cartilage chewing enzymes that are present in damaged joints, and recent studies have shown that it can reduce the synthesis of nitric oxide in damaged cartilage tissue (Manerio, E. et al.)

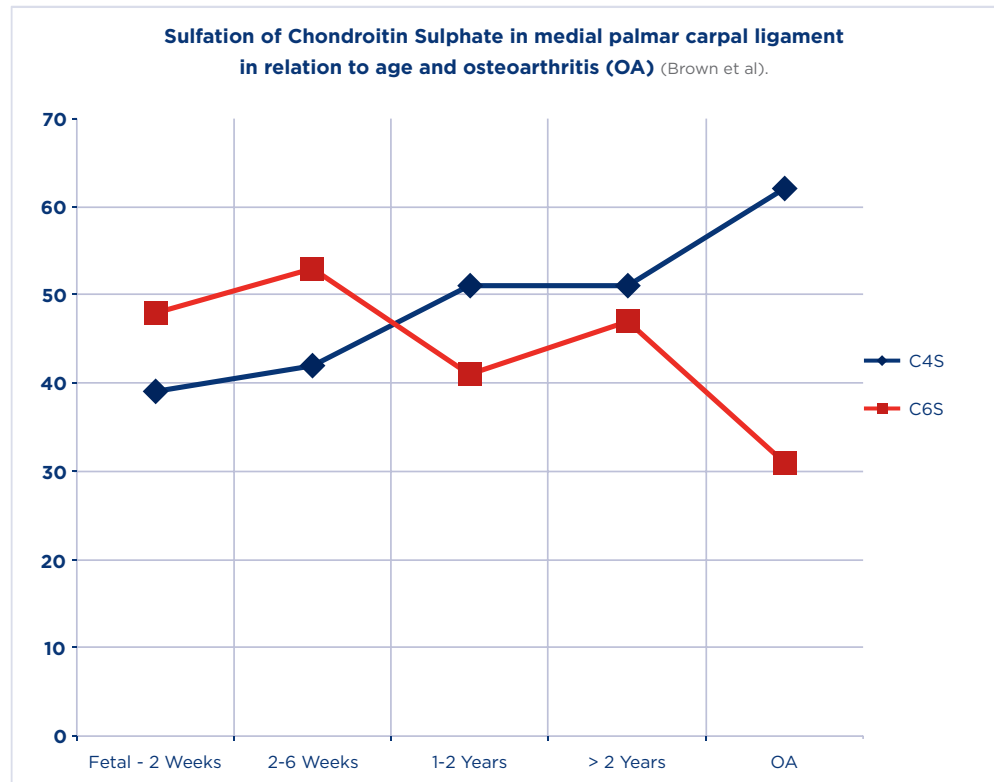
Most CS supplied to the market is extracted from cartilaginous feedstocks using organic solvents, with purification processes that may cause chemical degradation/desulfation and loss of activity along with an uncontrolled and unreliable supply chain of CS raw materials. This poses serious concerns about the quality and the safety of the ingredient.

STRIDE PLUS contains a non-animal CS characterized by high purity and obtained through a fermentation-derived manufacturing process. It promises to resolve the long-standing acknowledged problem of poor quality and potential safety issues of animal-derived CS.

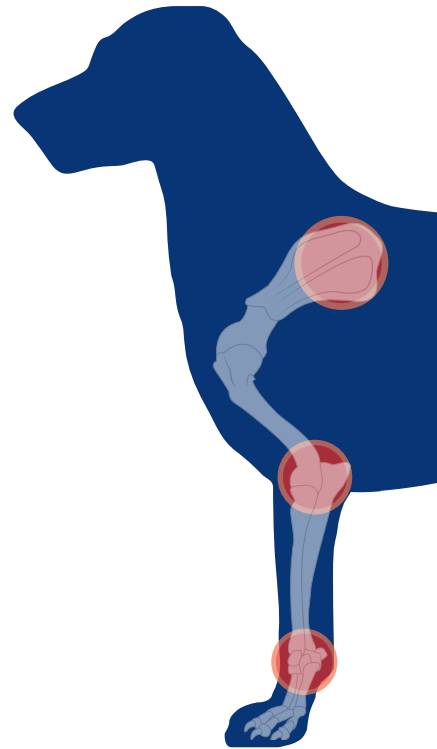
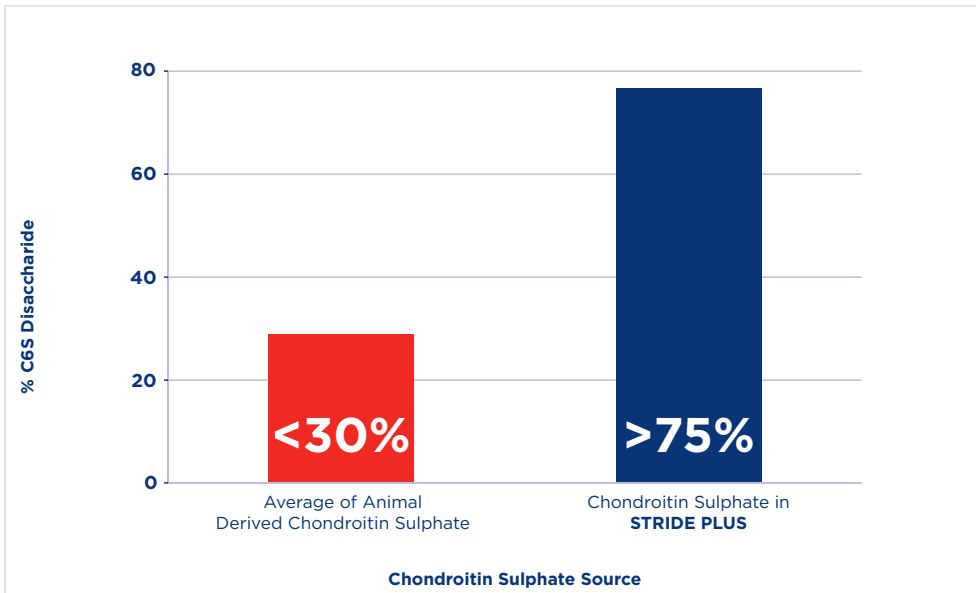


Scientific evidence reports a strong inverse correlation between age, osteoarthritis and variation in the sulfation patterns of CS in companion animals and horses.

C6S tends to decrease with age and is lower in OA joints.

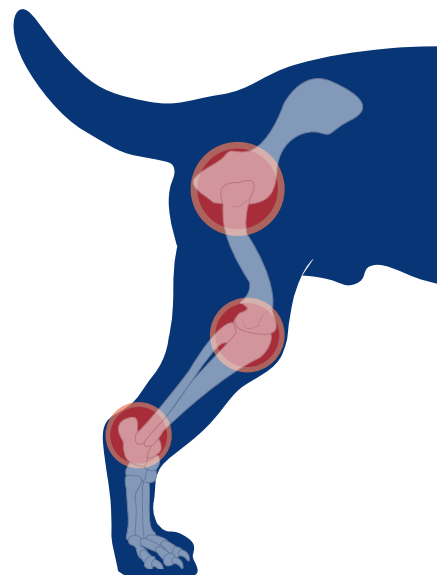
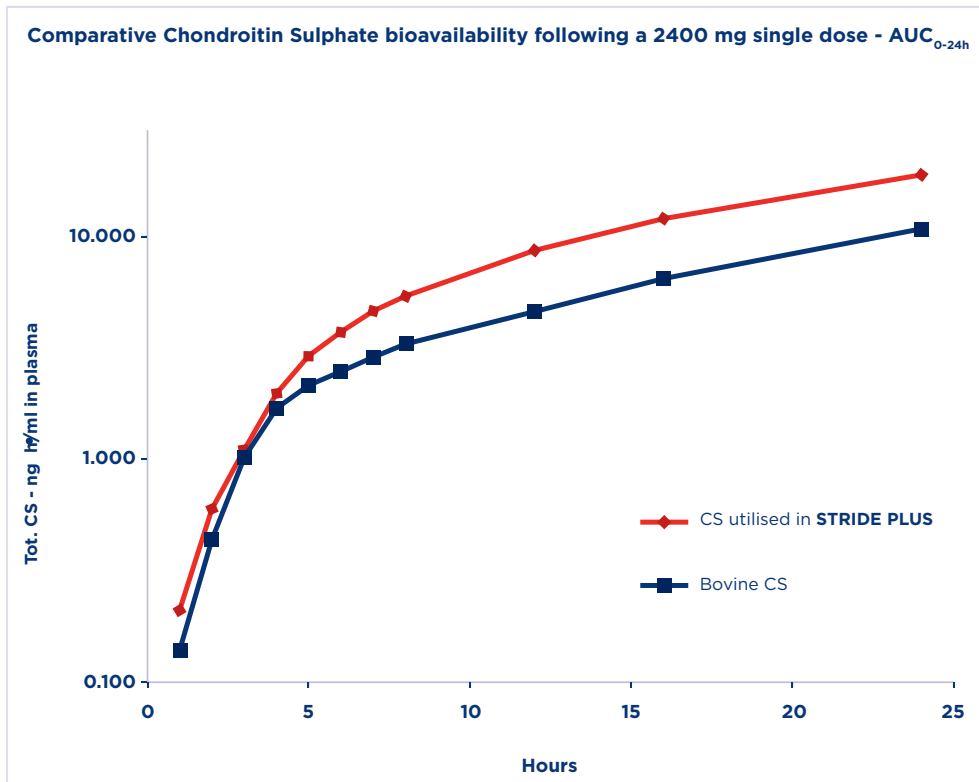


Chondroitin Sulphate utilised in **STRIDE PLUS** is made up of more than 75% of 6-Sulfated Disaccharides by comparison with most animal originating Chondroitin Sulfate which is made up of different Chondroitin Sulphate - mainly C4S (~60%) and only around 30% C6S.



Oral Bioavailability of Chondroitin Sulphate

The graph below shows the Comparison of bioavailability of non-animal CS with Bovine CS. The Chondroitin Sulphate used in **STRIDE PLUS** showed enhanced bioavailability (+43%) when compared to Bovine Chondroitin Sulphate. (Volpi et al.).



STRIDE PLUS

2. Hyaluronic Acid

Hyaluronic Acid is a normal constituent of the joint. Its quantity and quality is reduced in the presence of synovitis and osteoarthritic cartilage.

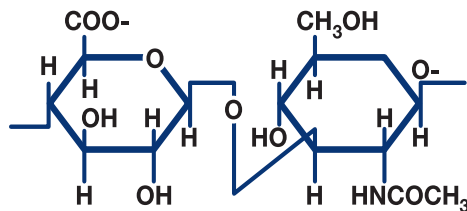
One of its most important roles is to increase the viscosity of the synovial fluid, this will reduce the friction between articular surfaces thus ensuring a correct and smooth movement of the joint.

Biomechanical studies on canine tendons have shown a reduction in resistance when soaked in a solution of Hyaluronic Acid

(Akasaka, T. et al.).



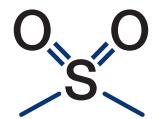
The source of Hyaluronic Acid utilised in STRIDE PLUS is fermented from corn, and **does not contain any animal originating ingredients.**



Structure of Hyaluronic Acid

3. Methylsulphonylmethane (MSM)

MSM is a source of organic sulphur, which is easily absorbed and usable in the body. Sulphur is an important nutrient for the maintenance of healthy joints, tendons and ligaments and is needed for the synthesis of connective tissue. MSM is found in various foods and is used by the body to make important enzymes, antibodies, glutathione and connective tissues.



Structure of MSM

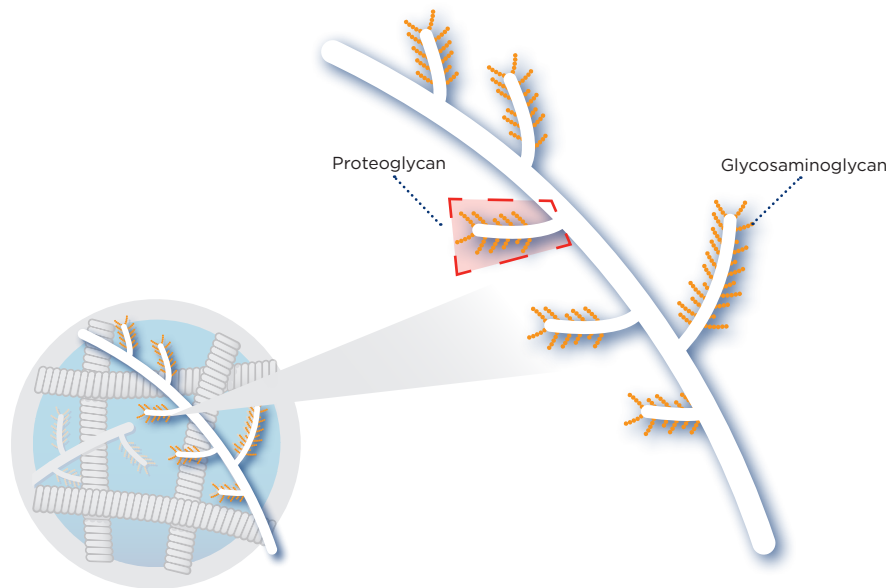
MSM is a useful nutritional adjunct in dogs with impaired joint function, and is usually combined with glucosamine as they work well together. It was reported by *Usha et al* that a combination of Glucosamine and MSM showed better efficacy than the individual agents.

Studies have shown an improvement in physical function in subjects taking MSM (Kim et al).



4. Glucosamine HCl

Glucosamine is an amino sugar that is produced naturally in the body. It is a component of the proteoglycans (PG's) and glycosaminoglycans (GAG's) in the cartilage matrix.



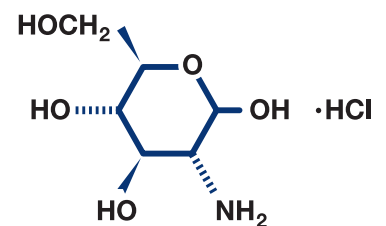
PG's are a major component of the extracellular matrix. They form large complexes, to other proteoglycans, to hyaluronan, and collagen. The majority of GAGs in the body are linked to core proteins, forming proteoglycans. GAG's are highly polar and attract water. They are therefore useful to the body as a lubricant or as a shock absorber.

The addition of Glucosamine in the diet stimulates the production of GAG's and PG's in the cartilage and helps promote cartilage health. Without adequate glucosamine, GAG synthesis would essentially cease and in turn, cause proteoglycan synthesis to cease also.

STRIDE PLUS contains Glucosamine **HCl**, which contains a significantly higher Glucosamine activity compared to the more commonly used Glucosamine Sulphate, and in vitro has been shown to increase mucopolysaccharide secretion compared to all other Glucosamine derivatives (Karzel et al.).

Pharmacokinetic studies on Glucosamine and Chondroitin in dogs indicated that 87% of an orally administered dose of radiolabeled Glucosamine and 70% of the labelled Chondroitin are absorbed (Conte et al., Setnikar et al.).

In canines, studies have shown that feeding Glucosamine in association with Chondroitin, prior to synovitis, supported an improvement in lameness scores (Canapp et al.), as well as an improvement in the quality of synovial fluid. (Johnson et al.).



Structure of Glucosamine

TRM

Supporting the Irish guide dogs for the blind.



irish guide dogs
for the blind

*We are really having huge success with **STRIDE PLUS**. We had a 12 week old puppy that was hit by a car about 2 months ago, and she had major surgery, and was on pain relief and monitored exercise after the surgery.*

*We liaised with the vets and asked if it was OK to try her on **STRIDE PLUS**. They had no problem with that and she is now making an amazing recovery. She still has a slight limp, but is in flying form.*

Julie Simpson - Kennel Supervisor
Irish Guide Dogs for the Blind



STRIDE PLUS is a complementary feed supplement for the nutritional maintenance of healthy cartilage and joints in dogs. It combines the highest quality Glucosamine HCL, Chondroitin Sulphate, Hyaluronic Acid and MSM in a convenient and palatable liquid, which is easily dispensed on the dogs feed.

STRIDE PLUS contains only ingredients from Vegan origin, and this ensures uniformity of product, and avoids any possibility of cross contamination from ingredients of animal origin.

Instructions for proper use:

Mix **STRIDE PLUS** well into the feed. Feed each dog individually.

Feeding Instructions first 14 days

Small dogs (up to 10kg): 4 ml
Medium dogs (10-25kgs): 8 ml
Large dogs (25-40kgs): 12 ml
Very large dogs (over 40kgs): 16 ml

Feeding Instructions Long Term

Small dogs (up to 10kg): 2 ml
Medium dogs (10-25kgs): 4 ml
Large dogs (25-40kgs): 6 ml
Very large dogs (over 40kgs): 8 ml

The dosing pump attached to this container dispenses 2 ml. Alternatively for large dog doses a graduated measuring cup is enclosed.

Composition

	per 100ml
Glucosamine HCl	16,675 mg
MSM	10,000 mg
Chondroitin Sulphate	3,325 mg
Sodium Hyaluronate	79,000 mcg
(Equivalent Hyaluronic Acid 74,500 mcg/100ml)	

Analytical Constituents:

Crude Protein 7.2%, Crude Oil 0.4%, Crude Fibre 0.3%, Moisture 80%, Crude Ash 1.1%.

PRESENTATION: **200ML** **500ML**

