

BELL & BONE DENTAL STICKS

Fight dental disease with chews your dog will LOVE!

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Bell & Bone Dental Sticks - A scientific formulation using intentional ingredients.

PERIODONTAL disease (PD) is one of the most common diseases seen in veterinary medicine in cats and dogs, with a prevalence that approaches 80%.

Evidence suggests that the regular feeding of specialist dental chews or prescription dental diets will contribute to the control of plaque and tartar, without the difficulties associated with manual tooth brushing. Ideally, some kind of daily dental home care program should be a key part of every dog owner's routine.

Owner compliance is one of the biggest obstacles for maintaining dental health in animal patients. Dental chews can provide an easy solution that requires minimal effort for the owner, once implemented into a daily routine.

However, not all dental chews are made equal!

The majority of dental chews work solely through mechanical action, which will assist to some degree. However, a truly effective chew will provide both mechanical AND chemical modes of action against dental disease.

Bell and Bone dental sticks are Australian owned and made in Melbourne, using local Australian high-quality ingredients. There are three different flavours for owners to choose from, based on high quality protein. Every Bell and Bone Dental Stick is formulated with the active ingredients of sodium tripolyphosphate and zinc sulphate, moulded into a shape specifically designed to encourage gnawing behaviour to increase mechanical action.

Bell & Bone dental sticks make oral health easy!

Polyphosphates constitute a wide variety of compounds that have beneficial effects on oral health, the most effective of these being hexametaphosphates, tripolyphosphates and pyrophosphates. The efficacy of sodium tripolyphosphates in curbing the development of calculus is well known and clinically validated. Calcium (Ca²⁺) cations in the saliva are required for the mineralisation step by which plaque is converted into calculus, and polyphosphates work to interfere with this step. [1][2]

Step by step:

- Polyphosphates bind directly to the enamel, as well as the mineralised sections of the teeth, where it monopolises the binding sites where calcium would otherwise attach.
- These polyphosphates interact with calcium already bonded to enamel, to prevent it from being able to form crystals. [3]
- Polyphosphates are released in the oral cavity to naturally trap or "chelate" the calcium in the saliva in its ionic form, limiting its integration in the dental calculus matrix. The calcium is then released normally in the digestive tract for digestion and excretion.

Zinc compounds, have been clinically proven to help prevent plaque accumulation due to its antimicrobial activity.[4]

Zinc salts inhibit bacterial growth by binding to sulphur, which assists in the control of plaque formation, as well as reducing unpleasant oral odours. [5]

Ingredients with purpose!

In conjunction with the chemical action of sodium tripolyphosphate and zinc sulphate, Bell & Bone chews contain a variety of beneficial super foods which additionally support not just your pet's oral hygiene, but their overall wellbeing.

Turmeric has proven properties like anti-inflammatory, antioxidant, antimicrobial, hepatoprotective, immunostimulant, antiseptic, and antimutagenic. [6] These properties are useful to dentistry as well general health. In a 2011 study, comparing chlorhexidine gluconate mouthwash with a turmeric mouthwash, it was found that turmeric performed as well as chlorhexidine gluconate for mean gingival index and total microbial count! [7]

Manuka Honey has anti-inflammatory action that can help ease pain and inflammation. It has several beneficial chemical compounds. Hydrogen peroxide gives most honey its antibiotic quality. One of the major antibacterial components of Manuka honey is a compound called methylglyoxal (MGO). Research has shown that manuka honey has superior antimicrobial properties, and that this high antibacterial activity is likely to be non-cariogenic. Studies suggest there may be a potential therapeutic role for manuka honey confectionery in the treatment of gingivitis and periodontal disease. [8] In a 2010 study, Manuka honey performed as well as chlorhexidine mouthwash, significantly reducing plaque formation. [9]

Seaweed *Ascophyllum nodosum* has been clinically proven to improve dental hygiene. In a 2018 study, it was found that the consumption by dogs of edible treats containing *Ascophyllum nodosum* efficiently decreased plaque and calculus accumulation. The dogs treated with *Ascophyllum nodosum* also exhibited significantly better oral health status than those in the placebo-control group. [10]

Cinnamon is known to have anti-inflammatory, cardioprotective, antioxidative, and antimicrobial properties [11]. These properties indicate that cinnamon shows promise as an antimicrobial agent in dentistry. Cinnamon shows significant antimicrobial activities against oral pathogens and could be beneficial in dental disease prevention. [12]

Mint & Parsley are included to fight halitosis for fresh breath! The addition of mint in each dental stick, although not specifically beneficial to plaque reduction, is designed to assist odour control.

Charcoal is a natural tooth whitener! Charcoal can attach to tooth enamel and absorbing stains from the tooth surface and can help tooth whitening through tooth abrasion. [13]

Chia has more calcium than whole milk! Chia is also filled with antioxidants and omega 3 essential fatty acids, which help control inflammation. Bell & Bone includes chia flour in all dental formulations.

Appealing to a wider clientele

Sodium tripolyphosphate and zinc sulphate active ingredients are often used in prescription dry food for dogs, however, with the growing popularity of the natural diet sector, owners are often reluctant to use prescription dry foods.

Thus, Bell and Bone provides these active ingredients in a convenient dental chew, which will complement a wide variety of diets fed by owners.

Bell & Bone are the highest meat content dental chew on the market. Using natural, uncompromised, top-quality ingredients with purpose, these chews will appeal to a wider clientele than traditional dental chews. They are proudly Australian owned and manufactured!

Single protein & grain free!

Bell & Bone are one of the only dental chews using chemical active ingredients that are appropriate for animals with true grain/gluten sensitivities.

Not only are they grain free, they're packed full of high quality meat protein in a wide range of flavours! This makes them a highly palatable chew that is perfect for those fussy dogs. Single protein options in different flavours will result in better compliance for long-term use!

No artificial colours = no green poop! Green faeces are a common side effect from many popular dental chews due to the green colouring agents used. Bell & Bone dental chews do not contain artificial colours and preservatives.

Low calorie chews

Calorie control is an important part of ongoing pet maintenance. The addition of a dental chew to a pet's diet should be factored into their daily caloric intake. Therefore, a lower kcal chew is often preferred to ensure weight gain doesn't result!

Although Bell & Bone dental chews are high in meat protein, when compared to other leading competitors, they are often comparable or lower in kcal per chew!

Calorie comparison:

Brand	Size	Flavour	Kcal/ chew
Leading Competitor	S	Chicken	47.7
B&B	S	Chicken	50.7
B&B	S	Duck	50.7
B&B	S	Lamb	49
B&B	S	Salmon	47.1
B&B	S	Kangaroo	49.8

Brand	Size	Flavour	Kcal/ chew
Leading Competitor	M	Chicken	80.5
B&B	M	Chicken	73.3
B&B	M	Duck	73.3
B&B	M	Lamb	71
B&B	M	Salmon	68.1
B&B	M	Kangaroo	72

Brand	Size	Flavour	Kcal/ chew
Leading Competitor	L	Chicken	128.2
B&B	L	Chicken	93.1
B&B	L	Duck	93.1
B&B	L	Lamb	90.1
B&B	L	Salmon	86.5
B&B	L	Kangaroo	91.4

Calorie comparison:

*Assuming moisture is 14%

Brand	Flavour	Crude Fat %	Crude Fat % DMB*
Leading Competitor	Chicken	2.55%	2.97%
B&B	Chicken	2.3%	2.67%
B&B	Duck	4.5%	5.23%
B&B	Lamb	2.4%	2.79%
B&B	Salmon	2.6%	3.02%
B&B	Kangaroo	1.8%	2.09%

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The VOHC (Veterinary Oral Health Council) Seal

What is a VOHC Seal?

The Veterinary Oral Health Council (VOHC®) concept developed from informal discussions among interested individuals in the 1980s. It was recognized that there was the need to establish a credible independent review system for veterinary dental products to assist veterinarians and the general public to discern efficacious products in the plaque and calculus retardation market. The official launch of VOHC took place during 1997.

When VOHC authorises the use of its Registered Seal, this certifies that the product meets VOHC's Standards for effectiveness in retarding plaque and tartar when used as directed.

How does a product achieve this Seal?

The VOHC submission process is very extensive. A company will submit the results of clinical trials on their product to VOHC. If the data submitted demonstrates the required dental efficacy, the VOHC Seal of Acceptance is awarded to the product. A summarised explanation of this submission process is detailed below.

For each product submitted, two trials are required to ensure repeatability of results. The dogs included in one trial cannot be included in the second trial. However, the VOHC recognizes that in some cases, the two-trial protocol requirement may not be necessary for every product in a product line.

To achieve the VOHC seal for dogs of different weight ranges, the following process should be followed. If two trials are conducted with one size meeting the VOHC efficacy criteria, one additional trial may be conducted using a different size of the product. If the third trial data meets the VOHC efficacy criteria, other sizes of product will be permitted to use the Seal without further testing.

When a line of products incorporating the same dental technology has differences in ingredients, VOHC will consider a submission to award the Seal to all the products in that range based on certain criteria. The company must provide appropriate information about the differences in the formulations, and acceptable justification that the differences in ingredients will not affect the dental effectiveness of the products. If this is the case, a two-trial study as per the VOHC protocol using one "primary product" can be performed. If this "primary product" meets VOHC criteria, a single trial of each of the other products may be sufficient to achieve the Seal if their results meet the criteria. If VOHC does not accept that the differences in ingredients will not affect the dental effectiveness of the product, separate two-trial submissions would be required for each additional product.

Do the Bell and Bone Dental Sticks have the VOHC (Veterinary Oral Health Council) Seal?

Currently the Bell & Bone dental sticks do not have the VOHC seal. The veterinary formulator who developed the Bell & Bone dental chew products used the recommended amounts of active ingredients, sodium tripolyphosphate (STPP) and zinc sulphate, that have proven efficacy in trials and clinical studies in dog food and chews with VOHC Seals. These two active ingredients are already used in prescription dental diets.

Two primary areas of focus for Bell & Bone in product development were palatability and owner compliance. Having a broad range of flavours that appeals to a wide variety of dogs was important for this focus. However, Bell & Bone understand the importance of the VOHC Seal, and this is an ongoing goal for the future as the brand expands into the veterinary space.

Bell & Bone is a small Australian business owned by Arianne Sackville. Arianne is extremely passionate about oral health for Australian dogs, particularly with the increase in popularity of "oodle" ownership, which are predisposed to dental disease. However, being a small business, the large investment in the VOHC Seal for the full Dental Stick range will take some time to achieve.

Competitor dental chews on the market offer limited flavours, which makes it more streamlined and affordable to procure a VOHC seal. Bell & Bone Dental Sticks have a range of 5 flavours, which therefore makes it significantly more expensive to submit for a VOHC seal.

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