



# Literature review on the welfare implications of **Canine devocalization**

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## **WHAT IT IS**

Ventriculocordectomy or devocalization (also termed debarking, devoicing or bark softening) is a surgical procedure performed under general anesthesia to resect varying amounts of the vocal folds or cords.

## **THE ISSUE**

Devocalization may be performed on dogs to decrease the volume, pitch and intensity of the dog's bark. The procedure has variable success and is associated with surgical risks that are supported by published case studies. Ventriculocordectomy is described in small animal surgery texts primarily for therapeutic purposes, such as laryngeal paralysis and to remove vocal fold masses.<sup>1</sup> Removal of most of the vocal cord has been recommended if the procedure is to be used to address barking, as resumption of a near normal bark may occur within months if only the vocal fold margin is removed.<sup>1</sup>

Between 3.2 and 7% of dogs seen by veterinary behavioral practices are evaluated for excessive barking,<sup>2,3</sup> but these numbers may underestimate the prevalence of this problem. Owner directed surveys report between 11-13% of owners identified this as a concern.<sup>3,4,5</sup> While excessive barking is a common problem, the limited available information suggests that the number of dogs for which resolution is accomplished by ventriculocordectomy is small. Most often other approaches, discussed under techniques for managing barking (below), are used to address the issue.

## **REASONS GIVEN FOR THE PRACTICE**

**Animal benefits**—If behavioral and management interventions have failed to reduce barking, performing the procedure may prevent relinquishment or euthanasia.

**Human benefits**—Reduced noise pollution and damage to human hearing in large kennel facilities, less annoyance from dogs that bark excessively, fewer complaints regarding barking dogs, and increased compliance with stringent noise ordinances in some communities (which if violated could lead to eviction or legal action) have all been cited as reasons for devocalizing dogs.

## **WELFARE CONCERNS**

Barking is a normal canine behavior.<sup>6,7</sup> Auditory cues supplement visual and postural cues as a means of communication, especially if visual cues are obscured. Dogs may bark in play, as a greeting, as a warning, to gain attention, and while working (e.g., driving cattle).<sup>2,6,8</sup> When barking is considered excessive and becomes a problem is highly variable among owners and influenced by many factors.

Excessive barking is commonly associated with an underlying welfare issue with the dog.<sup>5</sup> Reasons for excessive barking may include poor training, boredom, social isolation, response to external stimuli, territorial protection, and behavioral problems, including anxiety, compulsive disorder and separation anxiety.<sup>2,5,9</sup> Devocalization reduces the noise associated with barking, but not the motivation or behavior. This could result in the impression that the issue has been resolved when the dog's needs are still not being met.

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## RISKS ASSOCIATED WITH DEVOCALIZATION

**General anesthesia**—Devocalization is carried out under general anesthesia, which itself has inherent risks and associated mortality.<sup>10</sup>

**Post-operative discomfort**—As for any surgical procedure, pain and discomfort can occur during healing.

**Potential complications**—Bleeding, acute airway swelling, infection, coughing, gagging and aspiration pneumonia can occur after vocal cord surgery. There is a substantial risk for development of scar tissue and glottis stenosis (narrowing of the throat) after laryngeal surgery.<sup>1,11,12,13,14,15</sup> One study cited that 14% of dogs experienced scarring following oral ventriculodectomy, performed for therapeutic reasons.<sup>1</sup> Clinical signs resulting from scar formation (laryngeal webbing) include exercise intolerance, dyspnea (respiratory distress), stridor (noisy breathing), collapse and heat intolerance;<sup>11</sup> affected dogs require further surgical intervention to ameliorate the problem. In a retrospective study of dogs that underwent therapeutic bilateral ventriculocordectomy for laryngeal paralysis, 24% required revision surgery.<sup>15</sup> In this same study, it was mentioned that the ventral laryngotomy approach reduced the frequency of scarring, however this approach is also more invasive and costly than the transoral method.<sup>15</sup> Resumption of a near normal bark can also occur within months.<sup>1</sup>

## TECHNIQUES FOR DECREASING BARKING

Identification of the underlying cause of excessive barking is essential so that targeted therapies can be used and requires a carefully taken behavioral history.<sup>2,9,16,17</sup> A study assessing the patterns and frequency of dogs investigated in nuisance barking complaints found that 84% were confined to the backyard in the absence of their owners, and nearly every instance was suggestive of reactive barking due to a recurring environmental stimulus.<sup>5</sup> In addition to reactivity, unwanted barking could be normal for the dog but inappropriate for the housing situation or associated with a pathology such as separation anxiety, fear, compulsive behavior, or cognitive decline.<sup>17</sup> Corrective techniques should be dependent on the underlying cause of barking and may include environmental management, behavioral modification, medication or combinations of these therapies.<sup>2,9,16,17</sup> There have been positive correlations cited between positive reinforcement and other reward-based obedience training tools and decreases in excessive barking behaviors.<sup>5</sup> Training with remote delivery of food contingent on intervals of not barking during the owner's absence has shown promise.<sup>18</sup>

Punishment may inhibit a behavior, but it does not change the motivation. Hitting and yelling are ineffectual and unacceptable. Several remote forms of punishment that are intended to startle a dog rather than to inflict physical pain have been used in an attempt to decrease barking. These include antibarking devices that emit loud or high-pitched sounds (collars or freestanding devices) and electric shock collars (activated by the dog or remotely by the owner). The citronella spray collar is considered a form of punishment, but is more acceptable to many people and is used where shocking devices are prohibited (e.g. Australia, Europe).<sup>2</sup> These collars release an odor that is unfamiliar to the dog and serve as a distracting stimulus that can re-direct behavior to interrupt barking and facilitate training<sup>19</sup>. In one study, the citronella spray collar was more effective than an electric shock collar at reducing barking (88.9 versus 44.4% decrease, respectively) and was perceived as more humane by owners.<sup>20</sup> To prevent habituation, intermittent use of a citronella collar has been suggested.<sup>19</sup>

Social facilitation can be a causative factor in chain reactions of barking behavior, thus higher volumes of dogs in close proximity may increase nuisance barking.<sup>5</sup> In large kennel facilities, noise levels can be successfully reduced by good building and pen design, altering husbandry techniques, and using suitable socialization and training programs.<sup>21</sup>

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## LEGISLATION AND POLICY

The American Kennel Club states that “debarking is a viable veterinary procedure that may allow a dog owner to keep a dog that barks excessively in its loving home rather than to be forced to surrender it to a shelter. Debarking should only be performed by a qualified, licensed veterinarian after other behavioral modification efforts to correct excessive barking have failed. As with other veterinary medical decisions, the decision to debark a dog is best left to individual owners and their veterinarians.”<sup>22</sup>

Other veterinary organizations, including the American Animal Hospital Association<sup>23</sup> and the Canadian Veterinary Medical Association,<sup>24</sup> oppose non-therapeutic devocalization of dogs. The position statements focus on how devocalization deprives dogs of the ability to perform a normal behavior, does not address the underlying reason for unwanted barking, and presents serious health and welfare consequences for the dog.<sup>23,24</sup> Therapeutic ventriculocordectomy could be necessary in the case of airway obstruction, laryngeal paralysis, or cancer which cannot be addressed through other surgical procedures.<sup>23,24</sup>

Under the United Kingdom’s Animal Welfare Act (2006), “carrying out of a procedure which involves interference with the sensitive tissues or bone structure of the animal, otherwise than for the purpose of its medical treatment” is an offense.<sup>25</sup> The European Convention for the Protection of Pet Animals lists devocalization under the list of surgical operations that “for the purpose of modifying the appearance of a pet animal or for other non-curative purposes shall be prohibited.”<sup>26</sup> The New Zealand Code of Welfare states that debarking must not be performed unless all suitable means of treating inappropriate barking have been attempted and failed.<sup>27</sup>

The British Veterinary Association Animal Welfare Foundation (BVA/WF)/Fund for the Replacement of Animals in Medical Experiments (FRAME)/Royal Society for the Prevention of Cruelty to Animals (RSPCA)/Universities Federation for Animal Welfare (UFAW) Joint Working Group on Refinement (dog husbandry and care) view debarking as unacceptable and describe many other ways to reduce noise in kennels.<sup>24</sup>

There are currently four states that have laws prohibiting devocalization of dogs under certain circumstances. Maryland, Massachusetts and New Jersey prohibit devocalization except in cases where it is medically necessary as determined by a licensed veterinarian. Pennsylvania prohibits devocalization of any dog for any reason unless the procedure is performed by a licensed veterinarian using anesthesia. Additionally, California and Rhode Island have adopted legislation making it unlawful to make devocalization an obligatory condition of real estate occupancy for tenants who own dogs.

## SUMMARY

Devocalization is a surgical procedure with potential for complications that does not address the underlying cause of unwanted barking or the dog’s needs. Environmental management, behavioral modification and medication are often successful for reducing barking, and identification of the underlying cause of excessive barking is important for tailoring treatment in each situation.

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