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Manatū Ahu Matua

Canine Tail Docking

Independent Report

Prepared for the Ministry for Primary Industries
by Dr E. G. Patterson-Kane

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Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
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Telephone: 0800 00 83 33
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About This Document

Context

Following amendments to the Animal Welfare Act 1995 in 2015, MPI began developing a range of regulations under the Act. A discussion paper Proposed Animal Welfare Regulations (MPI DP No: 2016/12), was released in April 2016. These regulations are designed to make the Act more enforceable.

In most cases, the proposed regulations are closely derived from existing Codes of Welfare under the Act, meaning there is little or no change in the requirements for how people treat their animals. In some areas, new animal welfare measures are being proposed.

One proposed new regulation would prohibit the docking of dogs' tails other than for therapeutic purposes. Public meetings and submissions showed that tail docking of dogs was one of the most contentious proposals, with strongly expressed views both for and against the change.

In light of this, MPI wished to make sure it's in-house assessment of submissions was robust and reflected the available evidence. MPI therefore contracted an overseas-based animal welfare specialist to independently review the proposed regulation and all the submissions received by MPI, as well as to look at the scientific literature cited in submissions. MPI posed a series of questions to Dr Patterson-Kane[1], an independent specialist, which are shown in the following section of the report.

Questions for reviewer

Dr Patterson-Kane was asked to provide a report answering the following questions:

1. *Does tail docking have the potential to cause significant pain or distress in the case of:*
    a. *puppies under 4 days old (including tail banding); and*
    b. *dogs of all other ages?*

2. *Does tail docking have the potential to cause serious or lasting harm, or loss of function, if not carried out by a veterinarian in accordance with recognised professional standards?*

3. *What are different methods by which dogs' tails may be docked? For each method of tail docking, does it involve:*
    a. *a surgical or operative procedure below the surface of the skin?*
    b. *physical interference with sensitive soft tissue or bone structure?*
    c. *significant loss of tissue or loss of significant tissue?*

4. *For what therapeutic and non-therapeutic purposes are dogs' tails docked? What evidence is there to support each of those purposes?*
    For each of the purposes that you identify, please:
    a. *summarise the evidence that both supports and does not support the purpose; and*
    b. *note whether, in your opinion, the evidence overall justifies docking of dogs' tails for that purpose.*

[1] Dr E. G. Patterson-Kane, PhD, is a US based behavioural psychologist and animal welfare scientist

5. *Are there any other matters that you consider relevant to the question about whether tail docking (therapeutic or non-therapeutic) should be regulated or prohibited? Other matters may include, but are not limited to, international practice, the ability of dogs to perform their normal behaviours, whether the procedure is justified by scientific evidence.*

This report is intended to help inform MPI's decision making around whether and how the regulatory proposal will be progressed.

Questions to be addressed

Question One: Does tail docking have the potential to cause significant pain or distress in the case of:

a. puppies under 4 days old (including tail banding); and
b. dogs of all other ages?

Tail Docking: Under 4 Days of Age

There is a limited amount of research specifically addressing the welfare implications of tail docking in dogs. However, information can be drawn from a range of sources to develop a scientifically-based understanding of what dogs typically experience during tail docking.

This begins with the anatomy of the canine tail which includes the distal end of the spine as well as vascularised and innervated muscles. These structures are a direct continuation of the spine and muscles of the body. Nerves follow the vertebrae for the length of the tail. Nociceptors (pain receptors) that signal disruption to tissues through spinal nerves to the brain are present in the skin and muscle of the tail (see: Evans & De Lahunta, 2013). The severing of these nerves without anaesthesia also causes nociceptive signals to be sent (a.k.a. an "injury discharge", Seltzer et al, 1991).

It was once assumed that because the nerves of neonatal puppies are not myelinated they may not effectively transmit nociceptive signals to the brain, or the brain was not sufficiently developed to consciously interpret these signals as painful (Ellington & Rose, 1970). As such, procedures were performed on neonates of many species without providing analgesia, including surgeries on human infants.

With the development of further research, however, it was determined that neonates do generate effective nociceptive signals as a result of tissue damage (Fitzgerald & McIntosh, 1989; Wansbrough, 1996). It is less clear whether neonatal puppies consciously experience pain. Mammals develop the general capacity for wakeful consciousness shortly after birth, and based on EEG readings, the capacity to consciously experience pain is broadly estimated to arise in puppies beginning on the third day of life, however the exact time frame and individual variability is unclear (Mellor & Stafford, 2004; Mellor et al, 2010).

Both the conscious and unconscious forms of nociception resulting from tissue damage are harmful unless anaesthesia is provided (Matthews et al, 2014). Unconscious nociception increases sensitivity to pain and anxiety, increasing the distress experienced throughout the animal's lifespan (Matthews, 2005). The use of pharmaceuticals to prevent this outcome

presents a risk to the neonatal puppy; however, the use of modern veterinary drugs and protocols reduces this risk to an acceptable and manageable level—when the procedure being performed is necessary. In summary, it is must be concluded that puppies are harmed by tissue damage that occurs during the first four days of life, and they may experience pain (Matthews, 2005).

Public submissions received in response to *MPI proposal 62 relating to dogs' tails* during public consultation made comparisons between puppies and other animal species that are tail docked, such as farm animals. Research relating to agricultural animals is more plentiful than that relating to dogs, and is relevant to this report in that responses to tail amputation have similarities between mammalian species. In each case there is similar tail anatomy and the procedure involves severing nerves, activation of the sympathetic nervous system, hypothalamic-pituitary-adrenal axis activation, and voluntary and involuntary behavioural responses to tissue damage. The most direct comparison being with piglets as they are also docked within the first few days of life (Bennett & Perini, 2003, Noonan et al., 1994).

This cross-species data supports the conclusion that tail docking causes the accepted indicators of pain and distress such as physiological stress responses, vocalizations, and altered postures and behaviours (Sutherland et al, 2008). A review of this literature reveals that tail docking of piglets, lambs and calves are all currently recognised as being painful procedures (Sutherland & Tucker, 2011). As such, it is recognised that tail docking across all of these species should be performed when there is a probable overall benefit to the welfare of the animal or to the average animal in the herd (Sneddon and Gentle, 2001) and otherwise discontinued (as with cattle: Stull et al. 2002). In the case of piglets, the transition to not tail dock is impeded as it will require changes in genetics and housing to prevent tail biting, and in the case of lambs docking is still seen as beneficial in preventing fly strike, but there is a move away from removing almost all of the tail towards leaving a longer tail (Kerslake et al., 2015).

When docking is accomplished with a constricting band or ring rather than a scalpel the immediate response by the animal may be less intense, but evidence suggests that this method produces a similar, or sometimes greater, overall level of pain during the process of establishing a ligature and the necrosis and sloughing of the tail (e.g. Stafford et al., 2002; see Bennett & Perini, 2003). On this basis when tail docking is performed, analgesia should be provided that covers the entire time period when pain is likely to be experienced (Schoen & Sweet, 2009).

Most veterinarians consider tail docking to be painful, while breeders of traditionally docked breeds often consider the procedure to be painless (Noonan et al., 1996). Some submitters who are breeders noted that they had observed puppies undergoing tail docking, and that the puppies did not demonstrate marked behavioural disturbances. While breeders are experts who have considerable experience with puppies, there is precedence for expert owners having mistaken beliefs about procedures, for example some farmers believing that there are production benefits to tail docking cows (Ruegg, 2003). To understand how behavioural responses to pain may be misleading, two phenomena need to be appreciated:

Firstly, sometimes responses like vocalizations and struggling may be shown in response to handling alone. These responses are more vehement in animals not used to human handling or that are from species that are naturally demonstrative, for example, piglets often squeal when handled as this is an innate response to alert the sow that she may be trampling the piglet. Nevertheless, it has been shown that the intensity of response is higher when a painful procedure occurs rather than handling alone or a sham procedure (e.g. Taylor & Weary, 2000).

Secondly, some species, including dogs (Hellyer et al, 2007), tend to be stoic even when they experience considerable pain. While we tend to think of active pain-related behaviours as emotionally expressive, their evolutionary purpose is to alert the dam to their offspring's distress and/or to escape the source of the aversive stimulus (Newman, 2007). As stated in the *Animal Hospital Association/American Association of Feline Practitioners pain management guidelines for dogs and cats* "Neonates have intact neural pathways for pain transmission, but both neonates and senior animals may not express their pain as plainly as other animals" (pg. 472, Hellyer et al., 2007). Therefore, passive coping should not be mistaken for the absence of pain given the potential anatomical basis for welfare being compromised, and the demonstration of active pain-related behaviours by some docked puppies (Noonan et al, 1996).

Factors that increase the likelihood of passive responding include prior experience of gentle handling (Muns et al, 2015) and being rapidly returned to the dam where they are able to suckle (Blass et al., 1995; Johnston et al, 2008). Essentially, a puppy returned quickly to the dam is not motivated to escape or alert the dam to their distress, and they have access to anti-inflammatory environment including heat and nursing. Research that better characterises how neonatal puppies experience and express nociception and pain, and factors influencing these outcomes, would be informative. It is likely that careful and expert breeders minimise the disturbance to the puppies and the potential distress caused by tail docking, but it is not plausible that the procedure is rendered completely safe and reliably harmless.

Taken in its totality, this information supports the conclusion that neonatal puppies experience and are harmed by nociception and potentially experience pain.

Tail Docking: Older Dogs

There is a broad consensus that tail docking without analgesia is painful in older animals as it involves amputation by the severing of innervated tissue in an animal that is sentient and conscious. While specific evidence relating to the docking of the tails in older dogs is scant, the procedure is similar across a range of mammalian species that provide a plethora of evidence for the procedure being painful (Sutherland & Tucker, 2011). The degree of pain of discomfort caused by the procedure could be significant but this would depend upon the method used, analgesia provided, and whether any adverse events occurred.

It is often suggested that docking is more risky for older animals as a greater effort is required in restraining the animal in accomplishing the amputation. As such, when tail docking is considered necessary in animals such as sheep and pigs, it is generally advised that it be carried out at the youngest practicable age (Schoen & Sweet, 2009). However, this recommendation is open to challenge as some risks from the docking procedure are higher in puppies because of their small size, such as the consequences of blood loss when a surgical method is used, and the potential for infection to challenge their developing immune systems. And already mentioned, surgeries performed early in life without analgesia make animals more pain-sensitive and anxious (Matthews, 2005). For this reason the best age for performing a tail dock, when the procedure is appropriate, is a decision that should be made on a case-by-case basis.

Question Two: Does tail docking have the potential to cause serious or lasting harm, or loss of function, if not carried out by a veterinarian in accordance with recognised professional standards?

Immediate Complications

Therapeutic docking of older dogs may lead to complications such as scarring, dehiscence, fistula recurrence, self-mutilation, and anal sphincter or rectal trauma, but, if performed correctly, the procedure can have a satisfactory outcome (Simons et al, 2014). Complications from routine docking of neonatal puppies include infection, necrosis, changes in behaviour, self-mutilation, and in extreme cases, death (Eyarefe & Oguntoye, 2016; Fadeyemi, 2014; Bartolomeo, 2001). The rate of complications from docking is not well documented and is likely to vary greatly based on the proficiency of the docker, and the speed with which veterinary treatment is sought in the event of adverse outcomes (Bennett & Perini, 2003). For this reason docking performed by a non-veterinarian does have the potential to cause serious or lasting harm.

As a surgery, tail docking of a range of species of animal should generally be considered within the scope of veterinary medicine as it requires the provision of analgesics, anatomical knowledge, skill, continuing education, and the capacity to respond appropriately to adverse events. As both surgery and pain management present some risk to the animal the performance of this procedure, when necessary, is subject to ongoing improvements and regularly revised professional standards. There are many examples where docking and other treatments have been entrusted to other trained personnel such as farm workers and laboratory technicians for reasons of convenience, specialized skills, and availability. However these practical considerations are not relevant to a determination of the impact on the animal and the most ethical course of action in relation to promoting animal welfare.

Complications may occur even when tail docking is performed under ideal circumstances and by a veterinarian, due to unforeseeable circumstances such as congenital malformation or mutilation by the dam. However deviation from best practice should be assumed to increase the risk of preventable adverse outcomes.

Chronic Complications

In some cases there is evidence that tail docking, even when not acutely painful, may lead to chronic health conditions (LaPrarie et al, 2010). Some dogs may begin to self-mutilate after tail docking, and this behaviour is related to the presence of neuromas (Gross & Carr, 1990). Neuromas are nerve formations that may develop after nerves are severed, and they are associated with increased sensitivity to pain and chronic pain. Neuromas have been observed, and their relation to pain established, in both human medicine and in relation to other veterinary amputations such as tail docking in lambs (French & Morgan, 1992) and beak trimming in poultry (Breward & Gentle, 1985).

Recent evidence also suggests that the loss of the tail in dogs is an impairment *per. se*, in that the tail has a functional purpose in balance (Wada et al, 1993) and communication (Leaver & Reimchen, 2008). This loss of function occurs regardless of how the procedure is performed. As many submissions noted, docked dogs do not seem to be grossly impaired by the lack of tail and so this disadvantage is not demonstrably severe for the average docked dog.

It has also been suggested that tail docking may be associated with impaired balance, hernia and incontinence (Canfield, 1986; Holt & Thrusfield, 1993), but this has not be conclusively demonstrated.

Question Three: What are different methods by which dogs' tails may be docked? For each method of tail docking, does it involve:

a. a surgical or operative procedure below the surface of the skin?
b. physical interference with sensitive soft tissue or bone structure?
c. significant loss of tissue or loss of significant tissue?

The techniques employed fall into two main categories:

1) Immediate severing, such as by a scalpel or clippers, with suturing as required (Newton, 1985; Noonan et al., 1996; Schoen & Sweet, 2009). This method is typically employed by veterinarians (Noonan et al., 1996), or
2) Ligature with subsequent necrosis and tissue sloughing, such as with an elasticized band, which is typically employed by breeders.

Both techniques are often performed without the provision of anaesthesia or analgesics (Noonan et al. 1996), however the opportunities for providing effective multi-modal pain relief safe for a neonatal animal are higher when the procedure is performed by a veterinarian.

Regardless of how it is performed, tail docking involves amputation of part or all of the tail. This cannot be accomplished without severing the skin, severing sensitive tissue, and interference with the distal portion of the spinal cord, qualifying it as a surgical or operative procedure below the surface of the skin that results in physical interference with sensitive soft tissue and bone structure. A portion of the tail is lost, typically between one third and all of the tail, based on what is traditional for the breed. This should be considered a significant amount of tissue and tissue with some, albeit not critical, significance for the function of the animal. In the neonatal puppy the amount removed is small, but this must be considered in proportion to the size of the puppy. As such, tail docking appears to meet the requirements to be considered a significant surgical procedure as defined by the Animal Welfare Act 1999 regardless of how it is accomplished.

For the aforementioned reasons, tail docking is a surgical or operative procedure, does interfere with sensitive tissue or bone structure, and does result in the loss of significant tissue.

Question Four: For what therapeutic and non-therapeutic purposes are dogs' tails docked? What evidence is there to support each of those purposes. For each of the purposes that you identify, please:

a. summarise the evidence that both supports and does not support the purpose; and
b. note whether, in your opinion, the evidence overall justifies docking of dogs' tails for that purpose.

Therapeutic

Valid therapeutic reasons for the removal of part or all of the tail include any action that contributes, with certainty or a balance of probability, to the well-being of the individual animal. This includes in the event of a serious injury to the tail, neoplasia (Mills et al, 2016), infection, or a congenital defects such as ingrown tail (Knight et al. 2013). Because

therapeutic tail docking is performed as treatment for a specific disease process or injury, the benefit to the individual animal outweighs the risks of the surgery.

Non-Therapeutic

Argument #1: Routine docking prevents spontaneous injury and/or disorders

Traumatic Injury: It may be argued that the routine early docking of tails prevents potentially painful tail injuries later in the dog's life. Most studies find that docked dogs have a reduced risk of tail injury (Diesel et al., 2010; Lederer et al., 2014; Cameron et al, 2014, Wells, 2013; c.f. Darke et al., 1985). This impact must be interpreted against a general life-time incidence of tail trauma that is less than 1%, see Table 1.

The reduction in risk of injury that is attributable to docking can be used to calculate the number of dogs that would need to be docked to avoid one spontaneous injury (a.k.a. the number needed to treat or NNT). That is, theoretically if one dog in one hundred experiences a tail trauma, on average 100 dogs would need to docked to avoid the occurrence of that injury—an NNT of 100.

The actual numbers calculated in relation to specific research reports are between of 111 and 500 (Wells, 2013; Diesel et al, 2010), which seems disproportionate to the risk presented by tail trauma. This evidence is sufficient to suggest that tail injury is not a serious risk to the average dog or dogs employed as companion animals. This would include traditionally docked breeds that are not working dogs such as Rottweilers.

Table 1: Risk of spontaneous tail trauma (all breeds)

Sample Size	Percent of Dog Population Experiencing a Tail Injury	Location	Reference
138,212	0.23%	United Kingdom	Diesel et al., 2010
99,368	0.59%	Scotland	Cameron et al, 2014
68,653	0.9%	New Zealand	Wells, 2013
12,129	0.39%	United Kingdom	Darke et al., 1985

The Council of Docked Breeds makes an interesting and plausible argument that this risk of spontaneous injury would be higher in traditionally docked breeds. This might be because the conformation of these breeds pre-disposes them to tail injury. For example due to having a narrow tail, long hair on the tail, or an inherited tendency to have a vigorous tail action (i.e. “happy tail”). Alternatively, it might be because these dogs take part in work that tends to cause tail injury in dogs (e.g. hunting, herding). Table 2 shows the same data for two subsets of dogs with these potential sources of increased risk.

Table 2: Incidence of spontaneous tail trauma (higher risk categories)

Working Dogs

Sample Size	Dog Type	Percent of Dog Population Experiencing a	Location	Reference

		Tail Injury (Difference from Population Average)		
30,869	Working dogs	0.90 (+0.31)	Scotland	Cameron et al., 2014
10,974	Working dogs	0.29 (+0.06)	United Kingdom	Diesel et al., 2010
2,357	Working dogs	*13.5** (N/A)	Scotland	Lederer et al., 2014

Spaniels

Sample Size	Dog Type	Percent of Dog Population Experiencing a Tail Injury (Difference from Population Average)	Location	Reference
10,366	English Springer Spaniel	0.45 (+0.22)	United Kingdom	Diesel et al., 2010
7,511	Spaniels	1.20 (+0.61)	Scotland	Cameron et al., 2014
3,179	Cocker Spaniel	0.37 (+0.14)	United Kingdom	Diesel et al., 2010
1,339	Spaniels	*54.7* (N/A)*	Scotland	Lederer et al., 2014
768	Cocker spaniel	0.52 (-0.38)	New Zealand	Wells, 2013
489	Springer spaniel	0.82 (-0.08)	New Zealand	Wells, 2014

These studies suggest that some traditionally docked breeds are at an increased risk of tail injury. However, the association is not a straightforward one. For example, Cameron found dogs had an overall incidence of 0.56% and breeds with a higher than average risk included the traditionally docked breeds of spaniels (1.20%), and the traditionally undocked breeds of retrievers (0.92%). While Diesel at al. (2010) found an average rate of 0.23% and elevated risk in traditional docked breeds (spaniels 0.37-0.45), but the greatest risk was associated with traditionally undocked group of lurchers, greyhounds and whippets (1.22%). In New Zealand, Wells (2013) found that spaniels were at a less than average risk (0.52-0.82), and Labrador Retrievers the highest risk (1.39%).

** Cameron et. al. (2014) and Lederer et al. (2014) are a pair of studies derived from the thesis work of Rose Lederer (2014). They provide an interesting contrast between the estimates produced by the more typical method of reviewing veterinary treatment records,*

and the results of soliciting self-report data from hunters who use dogs. Veterinary treatment reports will lack accounts of injuries by owners who have a veterinarian, but may not consult them for minor injuries, and so may be a conservative estimate. Survey data can employ a convenience sample, with participants gathered by asking gun dog owners to respond to published notices. This method is open to sampling error, possibly including an over-estimate of effects if owners whose dogs did experience injuries were more inclined to report than those who did not. Also as the notices were placed in venues of interest to gun dog owners a non-working control is not available.

The methodological differences between these two studies are likely to underlie the different number-needed-to-dock estimates from Cameron (2014) of 232 for working dogs and 135 for spaniel breeds, and by Lederer et al. (2014) of 5 for all working dogs and 2 for spaniel breeds. On balance, Lederer et al. (2014) is an outlier and limited weight can be placed upon it at this time. However, this approach—also seen in non-peer-reviewed reports such as Jones, 2009—does open the door to future controlled research potentially establishing a narrower range of animals whose type and/or planned activities may justify prophylactic tail docking. However, such a study might still be open to critique. For example, in that risks of that magnitude could still be addressed by other means, such as hunting in different terrain or breeding for a different conformation.

It is also of note that the majority of the tail traumas examined in these studies (75-80%) were seen by a veterinarian, but required no treatment, or treatment with pharmaceuticals and/or dressings alone, and there was typically no recurrence of the injury (Wells, 2013; Lederer et al., 2014). Therefore, the preventive action of amputation is being viewed relative to chance of an accidental trauma most commonly in the form of a minor laceration without the need for surgical intervention (e.g. stitches or amputation).

Thus, by most estimates, dogs in potential categories of increased risk would still require an estimated number of over 100 dockings to avoid an injury that is most likely to require little or no treatment. On this basis it is not probable that an undocked dog will experience a net welfare benefit from the procedure.

Other Conditions: Evidence suggests that relevant health conditions other than tail trauma are even less common. For example, “limber tail”, which is a rare condition where a dog’s tail becomes limp or flaccid after strenuous activity, especially in cold and wet conditions, and when the dog is transported long distances in a cage or crate. Limber tail appears to be painful for the dog and so is significant in terms of the dog’s welfare. Limber tail is not well studied but is understood to be caused by exhaustion and damage to coccygeal muscles leading to compartment syndrome (Steiss et al, 1998, Steiss, 2002). This is consistent with limber tail occurring more often at the beginning of training and with young dogs. Limber tail typically resolves after a few days and recovery may be accelerated with the use of anti-inflammatories. The condition occurs more often in pointers, which are traditionally docked, and Labrador Retrievers, which are not—as well as being seen in German Shepherds, Beagles and Dalmatians (Abbas et al., 2015) and there may be a genetic component to susceptibility (Pugh et al., 2016). The condition is considered very rare, and may be further avoided by not excessively exercising unconditioned or unfit dogs, and breaking journeys with caged dogs at least every four hours. This and other conditions that affect the tail are rare to the point that a risk is difficult to estimate, and either self-correct or are amenable to treatment. As such, they are less strong arguments than the argument for tail trauma already discussed, and not greatly additive to it.

Argument #2: Routine docking is for cosmetic purposes, but these traditions justify performing the procedure.

Given that a therapeutic benefit for routine docking is not supported, what remains is the conclusion that docking is a non-therapeutic procedure. That is, it is carried out in order to conform their appearance of the dog to a preferred appearance for the breed. Or, in the case of some working dogs, as a preferred strategy for addressing issues that are not deemed to justify docking in relation to other breeds with equivalent conformation and utility. That is, the risk of injury faced by non-docked breed such as English pointers and retrievers are equivalent to the risks faced by traditionally docked breeds. However, these non-docking breed groups opt for preventive strategies such as trimming of the tail hairs or not hunting in extremely dense cover, or treating injuries anywhere on the body as and when they occur. The difference in the culture of owners of traditionally docked breeds may not always be based explicitly on aesthetic preferences, but as they opt to make changes to the dog that are not obviously therapeutic this is still considered within the non-therapeutic or "cosmetic" category.

The breed appearances of traditionally docked dogs have a very long history and are connected to historical reasons for docking, some now obviously fallacies such as to prevent rabies. Others may have had some relevance in a time where "utility surgery" (Rutgers & Heeger, 1999) of animals was commonplace. Utility surgeries are modifications made primarily for reasons of human preference, convenience, or efficiency (to improve ease of use and reduce the need for costly care and treatment). Ethically, utility surgery can be questioned even if it does not cause suffering, in that it fails to respect the integrity of the animal. However, the more common basis for objection is that the owners of individual companion or working animals are expected to avoid foreseeable significant causes of risk to animals by means that do not themselves impair welfare (except when there is a "veterinary-medical necessity" for the procedure). In this context animal working injuries that used to be common are now rare; think, for example, of harness sores and "poll evil" in horses. And a range of surgical modifications made to house pets for our convenience are also becoming obsolete, such as declawing of cats and devocalization or tooth removal in dogs. These same expectations are rapidly expanding to agricultural animals and even wildlife as animals are increasingly brought within the human moral circle.

While some breed groups have a long history and culture of docking, there is an equally long history of objecting to the procedure as unnecessary—most prominently from veterinarians. Veterinarians have long supported keeping animals intact, and reserving surgical interventions for therapeutic applications (e.g. Youatt, 1855). On a similar basis veterinarians in New Zealand are expected to refrain from performing cosmetic surgeries, including tail docking (NZVA, 2011). The evidence reviewed in this report supports that position. It also does not support creating a class of service providers, no matter how competent, to replace the veterinarians as providers of non-therapeutic tail docking, especially when these providers do not have access to the state-of-the art pain-management products.

Genuinely prophylactic docking remains within the discretion of a veterinarian, subject to professional oversight. Within the context of a valid veterinarian-client-patient relationship, this judgement should be made according to an individual dog's situation. Such an assessment should consider risk factors such as congenital abnormality, repeated previous injuries, attempts to self-mutilate, inaccessibility of treatment, or other factors that would support a veterinarian in concluding that docking would be to the net welfare benefit of that animal. It has been suggested that a dock of 1/3 the length of the tail should be sufficient where docking is indicated (Lederer, 2014). This discretionary docking based on individual circumstances should not create a pattern of docking entire litters, or of many or all of the puppies presented

by an owner. In these cases, the need to dock should result in corrective actions by the breeder or owner according to the causal factors identified.

Other conformation requirements for pedigree and working dogs have been met through a process of selective breeding. Therefore, the main alternative to docking is introducing and selecting for bobtail genetics. It is currently the case that many breeds do not carry a suitable bobtail gene at an appreciable level and introducing it would be contrary to the breed standard and impractical given the closed gene pool of pedigree dogs. While acknowledging the extreme difficulty of this situation, it has been undertaken by some breeders (Cattanach, 1998).

In conclusion, the proposed benefits to the dog of docking are not objectively supported, and the available evidence does not support non-therapeutic tail docking.

Question Five: What is good practice for the non-therapeutic docking of dogs' tails?

Routine docking is not to the benefit of the individual animal, and is to the detriment of the animal. In most cases the negative impact on the animal should not be considered severe; however, adverse events or painful complications may occur.

The circumstances of specific individual animals under some unusual circumstances justify docking based on a determination by the owner and their veterinarian that the individual dog's tail is malformed or affected by a condition likely to cause harm to the animal if it is left intact. This type of docking should be considered therapeutic in that it avoids a probable health or welfare outcome more severe than tail amputation, as determined by valid scientific and veterinary medical assessments.

Careful consideration should be given to any future evidence that indicates that a specific breed, type, or work category of dog can be objectively demonstrated to be subject to a risk that justifies preventative docking. However no existing data demonstrates that this is the case, and the absence of this evidence should be seen as supporting the null hypothesis. As docking is detrimental to animal welfare, the absence of convincing proof of its benefits is sufficient to recommend against the procedure.

A careful consideration of the existing evidence does not demonstrate that the risks experienced by any existing dog population are of a level that justifies routine docking. As such, the proposed benefits to the animal from tail docking are unsupported, or disproportionately rare and not severe, the best practice is to not perform the routine non-therapeutic tail docking of any dog.

Question Six: Are there any other matters that you consider relevant to the question about whether tail docking (therapeutic or non-therapeutic) should be regulated or prohibited? Other matters may include, but are not limited to, international practice, the ability of dogs to perform their normal behaviours, whether the procedure is justified by scientific evidence.

Unintended Consequences

Consideration should be given to whether withholding docking might have negative consequences for animals. For example, by causing increased docking by non-competent persons, or undocked dogs being unable to find homes. There is no compelling evidence of

these consequences from jurisdictions where docking was banned or severely restricted (e.g. Norway, 1987; Sweden, 1989; Poland, 1997; Australia, 2004; Austria, 2005; Belgium, 2006; United Kingdom, 2007; South Africa, 2008), but they remain theoretically possible.

Traditionally docked breeds may have elevated levels of congenital tail deformities. If non-therapeutic docking is not available, these animals may experience more tail injuries and tail amputations as adults until these defects are addressed through selective breeding. This negative consequence would need to be carefully managed by selecting only suitable animals for working roles and undertaking preventive docking where indicated by the severity of the defect.

If, over the longer term, leaving tails intact would change overall popularity of breeds it would be one of many factors that have this effect, and this cannot be considered an animal welfare consequence *per se*. As such it is outside of the scope of the considerations of this report.

Sociological Factors and Ethical Frameworks

If docking is not permitted, it may be disturbing to some individuals to not be able to follow their preference, and seen as interfering with their property rights in relation to dogs. It likewise interferes with the authority of groups and associations that govern traditionally docked breeds and related activities. These factors are not considered inconsequential; however, within the scope of this report they are considered less important than the welfare of individual animals and the health of the dog population.

The only remaining question is whether New Zealand society would or should extend a social license to dog owners permitting non-therapeutic docking. This tacit permission might be based on accepting the value of cultural breed appearance, or the rights of people to modify their dogs for their own reasons and purposes. Available survey data does not indicate a broad cultural acceptance for non-therapeutic tail docking. The majority of New Zealanders (68%; Beston, 2005) support the banning of non-therapeutic tail docking. Similar results are found in other developed nations (Endenburg & Vorstenbosch, 1992; Johnson, 2009).

When subsets of these populations are considered, a majority of breeders (60.5%) support allowing breeders to dock tails (NZKC, 2014). International data shows that support for docking is higher amongst breeders of traditionally docked breeds (84%, Noonan et al., 1996). Veterinarians in support of docking are the minority across a range of developed nations, running from 0% to 17% (Noonan et al., 1996; RCVS, 1992; CBD, 1993; CVBC, 2016). In other survey data, there is evidence that a large proportion of members of the American public (42%) were not even aware that traditionally docked breeds are not born with short tails (Mills et al. 2016).

This report was written on the basis that New Zealand society considers that particular duties and responsibilities apply to the owners of sentient animals. Specifically that negative impacts on animal welfare, even of a mild to moderate nature, may not be inflicted without demonstrating a probable benefit to the animal or to the population of animals, or some other compelling justification. These determinations must be made according to the best available objective evidence, with reference to transparent ethical decision frameworks, and with consideration of societal expectations and standards. Having established that tail docking reduces welfare, the standard of justification employed was that docking should only be performed when there is, on a balance of probabilities, a benefit to the individual animal. This form of ethical consideration is appropriate for individually owned companion animals and working animals in the context of activities such as farming or hunting. It is within this ethical context that the veterinary profession has determined that it is not appropriate to provide non-

therapeutic tail docking as a veterinary service. The evidence summarised in this report likewise does not support non-therapeutic tail docking as a practice that is beneficial to the individual animal. Even the highest available estimates do not support the idea that tail disorders preventable by docking are probable for any dog, including working dogs and dogs from traditionally docked breeds.

A more dispassionate approach might consider the entire population of all dogs, or working dogs, or of traditionally docked breeds. In this context, while a minority of animals might benefit from docking the benefit might be sufficiently great that it justifies the imposition of docking on other dogs to avoid this injury. However the number of dogs experiencing tail-related conditions is small and also that these conditions (tail trauma, limber tail) are not typically severe in their consequences (Lederer et al. 2014; Wells, 2013). Therefore this argument for supporting non-therapeutic docking is not convincing. The rare occasions where a tail injury or disorder has severe consequences is balanced to some extent by the likelihood that tail docking itself may leads to serious complications or other adverse outcomes.

This analysis explicitly recognizes that the detrimental effects of tail docking are generally not severe, however it is not justified by a probable benefit to the dog, or to the wider population of dogs. It is on this explicit ethical basis that non-therapeutic tail docking should be considered an unjustified surgical procedure.

Summary

The available evidence, taken in its totality, supports the conclusion that neonatal puppies experience and are harmed by nociception and may experience pain—and the procedure is painful in older animals. Based upon the populations of dogs that have been studied thus far, tail docking is not justifiable as a prophylactic procedure for the prevention of tail injury or disorder. Also, as tail docking is a surgical or operative procedure it should not be performed without active pain management. For these reasons, tail docking should only be performed by a veterinarian as necessary or indicated to protect the health or welfare of an individual dog.

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