



Animal Welfare Institute

900 Pennsylvania Avenue, SE, Washington, DC 20003

January 18, 2022

American Veterinary Medical Association
1931 North Meacham Rd., Suite 100
Schaumburg, IL 60173-4360

Re: Animal Welfare Institute's Comment on AVMA Policy for Castration and Dehorning of Cattle

Dear American Veterinary Medical Association:

Thank you for the opportunity to comment on the American Veterinary Medical Association's (AVMA) Policy on Castration and Dehorning of Cattle ("Policy"). I am submitting these comments as a long-standing AVMA member, a practicing veterinarian, and veterinary advisor for the Animal Welfare Institute (AWI) Farm Animal Program.

AWI was established in 1951 to reduce the suffering caused by humans to all animals, including those raised for meat, milk, and egg products. In furtherance of its mission, AWI seeks to improve conditions for animals while on the farm, including advancing policies and practices to minimize pain due to physical alterations.

We would like to commend the AVMA for preparing a policy that acknowledges the pain associated with castration and dehorning and addresses its management. Not only do AVMA policies influence the practices of individual veterinarians, they also are often relied upon by governmental bodies charged with promulgating regulations.¹ AWI offers the following information for consideration in reviewing and updating the Policy.

Animal pain is a central concern for our veterinary profession. In its Animal Welfare Principles, the AVMA recognizes the moral duty of veterinarians to prevent and manage animal pain, asserting that "Animals should be cared for in ways that minimize fear, pain, stress, and suffering."² Organizations such as the American Animal Hospital Association (AAHA) recommend that pain be assessed in every evaluation and that a pain score be considered the "fourth vital sign," after temperature, pulse, and respiratory rate.³ The American College of Veterinary Anesthesia and Analgesia (ACVAA) promotes "prevention and alleviation of animal pain and suffering as an important and tenable therapeutic goal" and stresses that "every attempt should be made to prevent or alleviate pain in animals unless there are compelling reasons to withhold treatment."⁴

Given these stated value commitments, we find it very concerning that, according to a recent study, less than 25% of veterinarian report that they "always use" analgesia for surgical castration,

¹ For example: Ohio Rev. Code. §904.03 (A) (7). (2010). <https://codes.ohio.gov/ohio-revised-code/section-904.03>

² American Veterinary Medical Association. (n.d.) AVMA animal welfare principles. Available at: www.avma.org/resources-tools/avma-policies/avma-animal-welfare-principles.

³ Epstein, M., Rodan, I., Griffenhagen, G., Kadrik, J., Petty, M., Robertson, S., & Simpson, W. (2015). AAHA/AAFP Pain Management Guidelines for Dogs and Cats. Available at: https://www.aaha.org/globalassets/02-guidelines/pain-management/2015_aaha_aafp_pain_management_guidelines_for_dogs_and_cats.pdf

⁴ ACVAA. (2006). American College of Veterinary Anesthesiologists' position paper on the treatment of pain in animals. Available at: <https://acvaa.org/wp-content/uploads/2019/05/Treatment-of-Pain-in-Animals.pdf>

with the percentage falling to 15.2% when the patient is a calf under two months of age.⁵ Similarly, fewer than half of veterinarians report that they “always use” analgesia for dehorning – even for cattle greater than one year of age; only about one-third of veterinarians use analgesia for dehorning calves under two months of age. In revising its policy on dehorning and castration, the AVMA has the potential to bring current practice more in line with the principles it endorses.

As currently written, the Policy is significantly weaker than those of several other veterinary organizations. For example, the American Association of Bovine Practitioners (AABP) recommends that “pain management be considered the standard of care during all dehorning and disbudding procedures.”⁶ The American Association of Small Ruminant Practitioners (AASRP) has a similar position on disbudding.⁷ The AABP also recommends the use of local anesthetics and sedatives for surgical castration, and systemic analgesia such as NSAIDs for post-procedural pain.⁸ We encourage AVMA to adopt a similar position, stating unequivocally that the use of sedatives, local anesthetics, and post-procedure analgesia is the standard of care when performing painful procedures such as dehorning/disbudding or castration.

The current Policy recommends that disbudding and castration be performed at the youngest age practicable. As this tends to cause less tissue damage, it is generally preferable to performing painful procedures later in life. However, research has laid to rest any doubt that neonatal ruminants feel considerable pain with these procedures.^{9, 10} For example, disbudding performed with a hot iron – typically heated to 445-489°C (844-912 °F) – results in third-degree burns that take up to nine weeks to fully heal and remain sensitive throughout this period.¹¹⁻¹² Moreover, recent research suggests that experiencing neonatal pain, especially if it is unmitigated, predisposes animals to heightened pain sensitivity throughout their lives, and may lead to increased levels of fear and anxiety, as well as impaired cognitive abilities, in adulthood.^{13, 14, 15} Given the current state of

⁵ Johnstone, E., Coetzee, J. F., Pinedo, P. J., & Edwards-Callaway, L. (2021). Current attitudes of veterinarians and producers regarding the use of local and systemic analgesia in beef and dairy cattle in the United States. *Journal of the American Veterinary Medical Association*, 258(2), 197–209. <https://doi.org/10.2460/javma.258.2.197>.

⁶ American Association of Bovine Practitioners. (2019), Dehorning Guidelines. Available at: https://www.aabp.org/Resources/AABP_Guidelines/Dehorning-2019.pdf

⁷ American Association of Small Ruminant Practitioners (2020). Goat Kid Disbudding. Available at: <http://www.aasrp.org/about/guidelines/debudding2020.pdf>

⁸ American Association of Bovine Practitioners. (2019), Castration Guidelines. Available at: www.aabp.org/Resources/AABP_Guidelines/Castration_Guidelines-2019.pdf

⁹ Bergamasco, L., Edwards-Callaway, L. N., Bello, N. M., Mijares, S. H., Cull, C. A., Rugan, S., Mosher, R. A., Gehring, R., & Coetzee, J. F. (2021). Unmitigated Surgical Castration in Calves of Different Ages: Cortisol Concentrations, Heart Rate Variability, and Infrared Thermography Findings. *Animals: an open access journal from MDPI*, 11(9), 2719. <https://doi.org/10.3390/ani11092719>

¹⁰ Bergamasco, L., Edwards-Callaway, L. N., Bello, N. M., Mijares, S., Cull, C. A., Mosher, R. A., & Coetzee, J. F. (2021). Unmitigated Surgical Castration in Calves of Different Ages: Electroencephalographic and Neurohormonal Findings. *Animals: an open access journal from MDPI*, 11(6), 1791. <https://doi.org/10.3390/ani11061791>

¹¹ Adcock, S., & Tucker, C. B. (2018). The effect of disbudding age on healing and pain sensitivity in dairy calves. *Journal of dairy science*, 101(11), 10361–10373. <https://doi.org/10.3168/jds.2018-14987>

¹² Adcock. (2021). Early Life Painful Procedures: Long-Term Consequences and Implications for Farm Animal Welfare. *Frontiers in Animal Science*, 2. <https://doi.org/10.3389/fanim.2021.759522>

¹³ Adcock. (2021). Early Life Painful Procedures: Long-Term Consequences and Implications for Farm Animal Welfare. *Frontiers in Animal Science*, 2. <https://doi.org/10.3389/fanim.2021.759522>

¹⁴ Adcock, S., & Tucker, C. B. (2018). The effect of disbudding age on healing and pain sensitivity in dairy calves. *Journal of dairy science*, 101(11), 10361–10373. <https://doi.org/10.3168/jds.2018-14987>

¹⁵ Adcock, S., & Tucker, C. B. (2020). The effect of early burn injury on sensitivity to future painful stimuli in dairy heifers. *PloS one*, 15(6), e0233711. <https://doi.org/10.1371/journal.pone.0233711>

knowledge about the acute and chronic pain that results from disbudding, it is urgent that the AVMA update its policy to remove the suggestion that analgesia is not necessary for disbudding.

It is also important that the AVMA communicate in its updated Policy that injuries caused by dehorning and certain methods of castration cause prolonged pain, potentially lasting for several weeks. Due to sustaining third-degree burns, calves disbudded using the hot-iron method experience pain for at least three weeks afterward and have been documented to have increased sensitivity to applied pressure, potentially suggesting hypersensitization and maladaptive pain, for nine weeks.¹⁶

Among other veterinary species, such as dogs and cats, the pain associated with burns is considered severe enough that full mu agonist opioids are recommended for the first 24 hours and analgesia with NSAIDs and/or partial mu agonists are often needed for weeks afterward.¹⁷ In human medicine, analgesics, including NSAIDs +/- opioids, are typically given around the clock for even small third degree burn injuries, with a markedly decreased need for pain management noted only when wound epithelialization has occurred.¹⁸ Since hot-iron disbudding burns take 42–91 days to re-epithelialize in calves,¹⁹ a single dose of an NSAID at the time of disbudding should not be considered adequate pain management.

Similarly, castration via the band methods has been documented to cause prolonged pain for six weeks.²⁰ Since providing pain management for this length of time is unrealistic under current animal agricultural systems, the revised Policy should be unambiguous in its condemnation of band castration.

Given that disbudding, dehorning, and castration often result in chronic pain and other complications, such as infection or bleeding, the AVMA should prioritize the development and adoption of alternatives, such as immunocastration and selection for polled genetics.²¹⁻²² While there may be economic tradeoffs, for example, decreased milk production resulting from selection for polledness, the revised Policy should make clear veterinarians' ethical and professional obligation to prioritize animal welfare considerations.

As the AVMA is no doubt aware, many drugs, such as meloxicam, short- and long-acting local anesthetics, and sedatives, have extensive research confirming their efficacy and are already commonly used for castration and dehorning by livestock veterinarians. However, because they lack FDA label approval for such use, veterinarians must use them in an extralabel manner under Animal Medicine Drug Use Classification Act (AMDUCA). This creates increased risk for veterinarians, who may fear responsibility for drug residues, and discourages some from using them. Thus, the lack

¹⁶ Adcock, S., & Tucker, C. B. (2018). The effect of disbudding age on healing and pain sensitivity in dairy calves. *Journal of dairy science*, 101(11), 10361–10373. <https://doi.org/10.3168/jds.2018-14987>

¹⁷ Epstein, S. (2019). VIN/VECCS Rounds: Small Animal Fire-related Injuries. *Veterinary Information Network* (VIN). Available at: <https://www.vin.com/apputil/project/defaultadv1.aspx?id=9451020>

¹⁸ Wiktor, A. & Richards, D. (2021). Treatment of minor thermal burns. *UpToDate*. Available at: <https://www.uptodate.com/contents/treatment-of-minor-thermal-burns>

¹⁹ Adcock, S., & Tucker, C. B. (2018). The effect of disbudding age on healing and pain sensitivity in dairy calves. *Journal of dairy science*, 101(11), 10361–10373. <https://doi.org/10.3168/jds.2018-14987>

²⁰ Marti, S., Devant, M., Amatayakul-Chantler, S., Jackson, J. A., Lopez, E., Janzen, E. D., & Schwartzkopf-Genswein, K. S. (2015). Effect of anti-gonadotropin-releasing factor vaccine and band castration on indicators of welfare in beef cattle. *Journal of animal science*, 93(4), 1581–1591. <https://doi.org/10.2527/jas.2014-8346>

²¹ *Ibid.*

²² Coetzee, J. (2021). Optimizing an Immunocastration Vaccine Ear Implant to Prevent Pain Associated with Bovine Castration. *USDA Research, Education & Economics Information System*. Available at: <https://portal.nifa.usda.gov/web/crisprojectpages/1014518-optimizing-an-immunocastration-vaccine-ear-implant-to-prevent-pain-associated-with-bovine-castration.html>

of FDA-approved drugs that are labeled for surgical and procedural pain is a major obstacle to improving animal welfare of livestock.

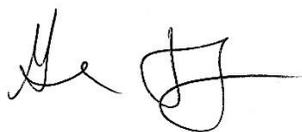
This unfortunate situation does not mean the AVMA should condone unmitigated iatrogenic pain in these species. Rather, we encourage the AVMA to adopt “FDA-Approval of Medications Labeled for Pain Management in Farm Animals” as one of its priority advocacy issues. The AVMA is ideally situated to facilitate collaboration between the FDA, researchers, pharmaceutical companies, and the veterinary profession to remedy this situation. To help bring appropriately labeled FDA-approved analgesics to market, the AVMA could also lobby for the recommendation, made by Dr. Johann Coetzee, that the Animal Drug User Fee Act (ADUFA) fees be waived for pharmaceutical companies pursuing analgesic drug approvals for livestock.²³

Until drugs FDA-labeled for procedural pain relief in livestock are available, the AVMA could help by promulgating specific guidelines on pain management for veterinarians performing dehorning and castration. By providing dosing recommendations and safe withdrawal times for drugs like such as meloxicam, lidocaine and other local anesthetics, gabapentin, xylazine, and ketamine, which are permitted for extralabel use under AMDUCA, the AVMA could encourage otherwise reluctant veterinarians to implement appropriate analgesic practices.²⁴

Finally, significant revisions to the Policy would benefit the profession more broadly. Ample research shows that concern for animal welfare has never been higher among Americans. Society expects veterinarians to be patient advocates, especially when it comes to minimizing animal pain and suffering. If the AVMA wishes to be perceived as a leader in animal welfare – rather than a reluctant follower – then its policy on dehorning and castration must reflect these values and our scientific understanding of pain and its management.

Please see the appendix below for recommended changes to the Policy. Thank you for your consideration. Please feel free to contact me at GwendyDVM@gmail.com or (305) 803-0211 should you have any questions or require access to any of the cited research.

Sincerely,



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²³ Coetzee, H. (2020). Pain Assessment and Analgesia in Livestock. *International Veterinary Academy of Pain Management 2020 Virtual Symposium*. Available at: <https://www.vetfolio.com/courses/pain-assessment-and-pain-management-in-livestock>

²⁴ Robles, I., Arruda, A. G., Nixon, E., Johnstone, E., Wagner, B., Edwards-Callaway, L., Baynes, R., Coetzee, J., & Parris-Garcia, M. (2021). Producer and Veterinarian Perspectives towards Pain Management Practices in the US Cattle Industry. *Animals: an open access journal from MDPI*, 11(1), 209. <https://doi.org/10.3390/ani11010209>

Appendix 1

Recommended Changes to Policy Statement

Castration and dehorning of cattle

The AVMA recognizes that castration and dehorning of cattle are important for human and animal safety when cattle are used for agricultural purposes. Because castration and dehorning cause **both acute and chronic pain** and discomfort, the AVMA recommends the use of procedures and practices that reduce or eliminate these effects. These include ~~genetic selection~~ **for polled genetics, even when milk production may be affected, when appropriate** and use of approved or AMDUCA-permissible clinically effective medications whenever possible. Studies indicate that preoperative use of non-steroidal anti-inflammatory agents, **sedatives**, and local anesthetics reduces pain and distress associated with castration and dehorning.

- Both dehorning and castration should be done at the earliest age practicable, **recognizing that these procedures still cause significant pain in younger animals.**
- Disbudding is the preferred method of dehorning calves. **Pain management, such as local anesthetic, sedatives, and post-procedural analgesics, such as** nonsteroidal anti-inflammatory drugs (NSAIDs), ~~should be considered~~ **used for other all** dehorning procedures, **including disbudding.**
- Elastrator rubber banding techniques have been associated with increased chronic pain and should **never be used.** ~~be discouraged. High tension banding systems may be used with appropriate veterinary supervision and/or training in those situations where surgical castration may predispose to postsurgical complications.~~
- There are a number of acceptable castration techniques utilized by the cattle industry. The castration method used should take into account the animal's age, weight, skill level of the operator/technician, environmental conditions, and facilities available, as well as human and animal safety.
- **Pain-relieving medications should be provided until post-procedural pain has abated.**

Research leading to new or improved techniques that reduce or eliminate pain and distress associated with castration and dehorning, or development of viable alternates to castration and dehorning, including immunocastration, is encouraged. **The Food and Drug Administration (FDA) and pharmaceutical companies are encouraged to prioritize bringing to market drugs labeled for prevention and management of pain associated with dehorning and castration. Until such time, veterinarians should familiarize themselves with appropriate use of and withdrawal times for AMDUCA-permissible drugs to provide multimodal analgesia (include link to guidance document here, once it is developed).**