

meatup FORUM

For the latest in red meat R&D

Pain management in sheep and cattle

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“Whatever you do,
do well”



Animal welfare is important

- Increasingly so.... to the
 - Consumer
 - Markets
 - Producer
 - Social onlookers

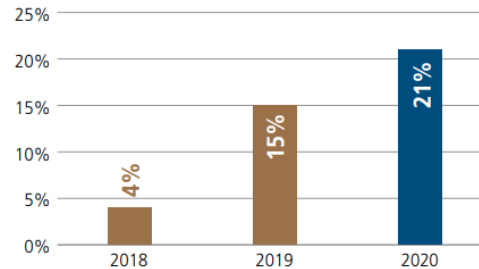


Cattle:

The Australian beef industry: supports the use of pain relief in unavoidable procedures, and aspires to 100% use of pain relief for these procedures by 2030

The percentage of industry regularly using pain relief when undertaking aversive husbandry practices

Indicator 1.3b: The percentage of industry regularly using pain relief when undertaking aversive husbandry practices



2021: 35% and trending up

Sheep:

On-farm adoption of these analgesic and anaesthetic options has been rapid

- 92% of Merino producers who mulse lambs use pain relief.
- 60% of Merino producers use pain management at tail docking across all methods.
 - fewer (25%) Merino producers use pain management for rings
 - 55% used pain management for cold knife
 - whereas 80% used pain relief for hot knife and
 - 83% for shears

2021 AWI MERINO HUSBANDRY PRACTICES SURVEY



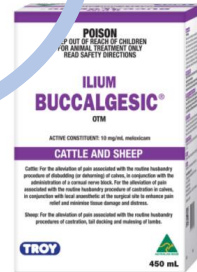
numnuts®

Anaesthesia

Quicker acting, shorter lasting

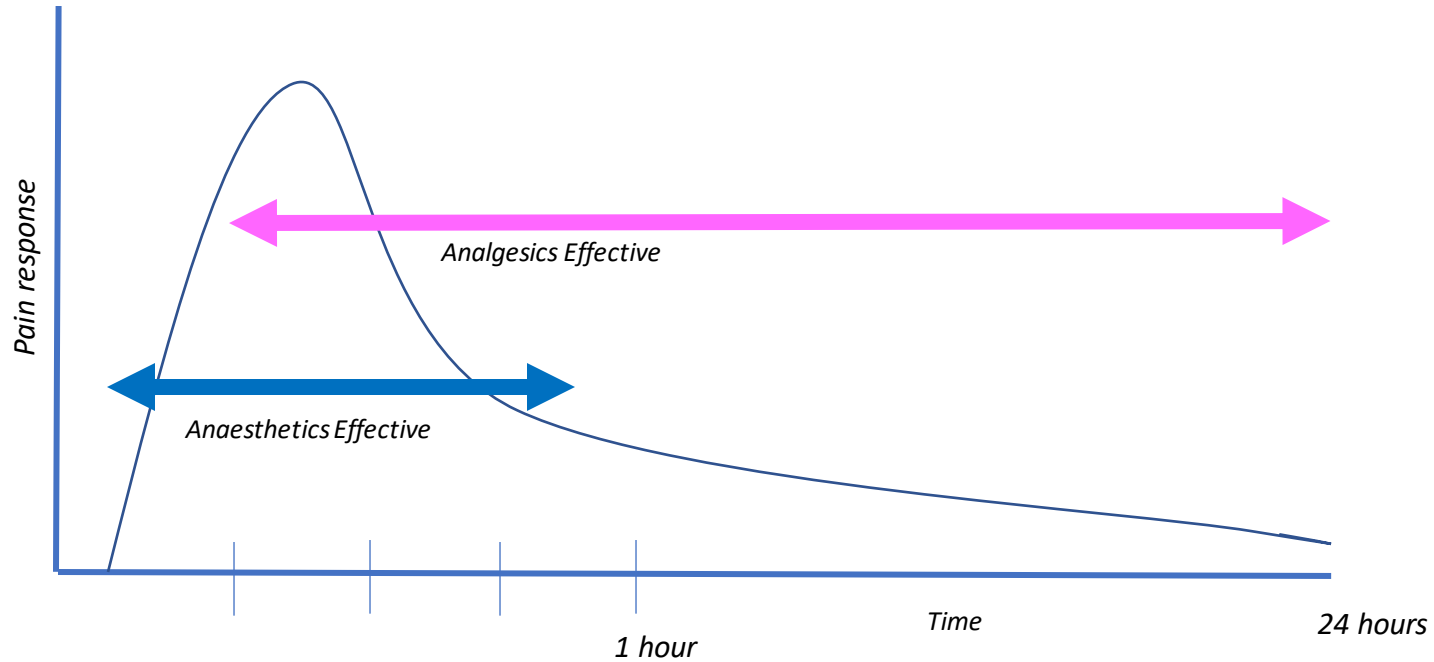


Analgesia
(NSAID)

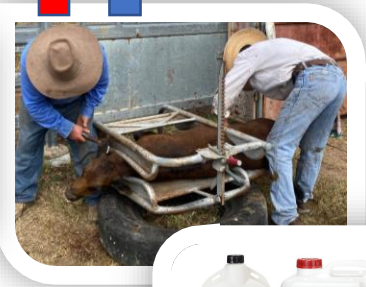
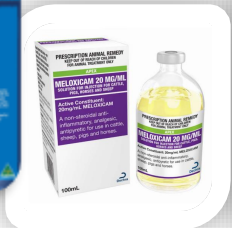
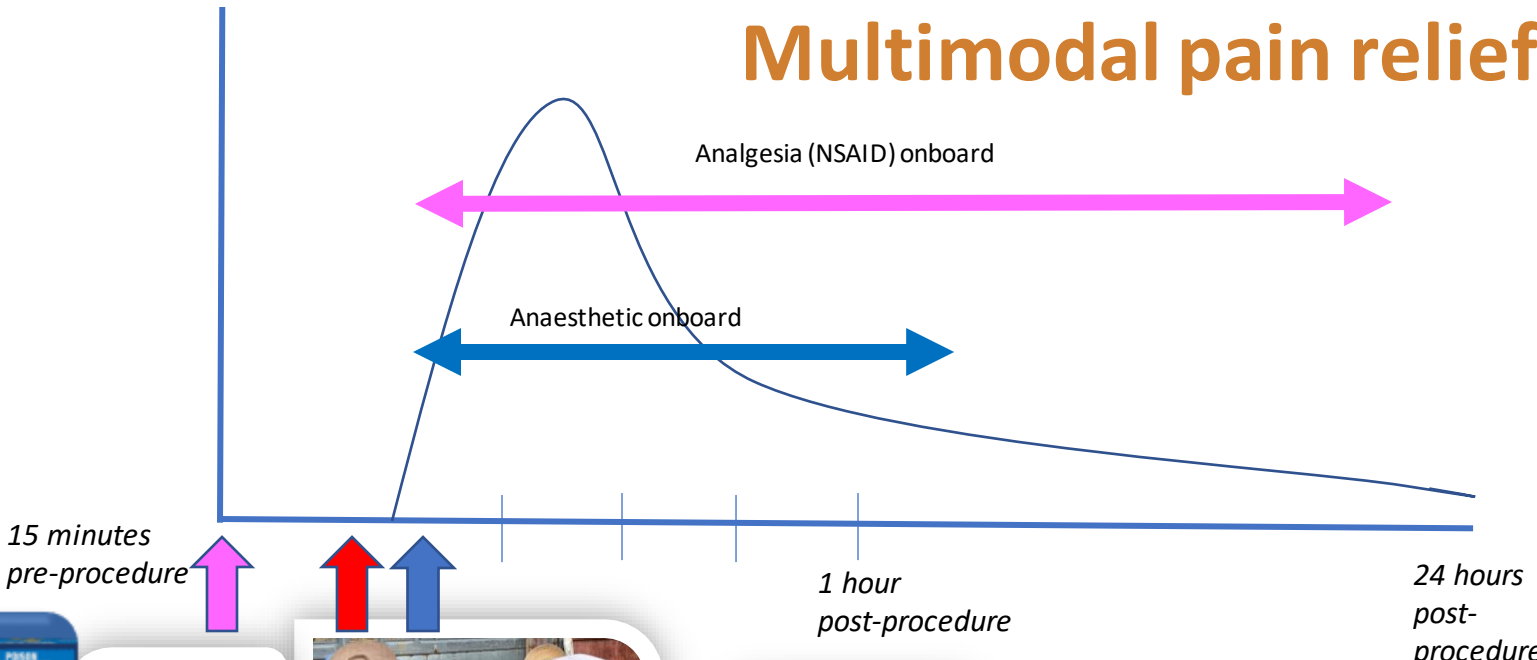


Slower acting, longer lasting

PAIN: acute and chronic



Multimodal pain relief



TRI-SOLFEN®

Anaesthesia

- Sheep and cattle
- Spray on viscous liquid
- Works locally (site of wound)
- ➔ • Needs an open wound (needs exposed nerve endings to work)
- ➔ • Immediately dims pain signals from the wound
- ➔ • Reduces bleeding
- Controls infection
- Acts fast (within 1 minute)
- Lasts hours (contains two types of local anaesthetic)
- 90 day WHP/ESI



NUMNUTS®

- Sheep castration & tail docking
- Puts ring and administers anaesthetic at same time
- Dispenses NumOcaine anaesthetic
- Takes effect in 1-5mins
- Not long-lasting
- Desensitizes specific area (locally)
- Blocks pain and sensory function is lost
- 100ml bottles
- Quick change cartridge
- No withholding period

Anaesthesia



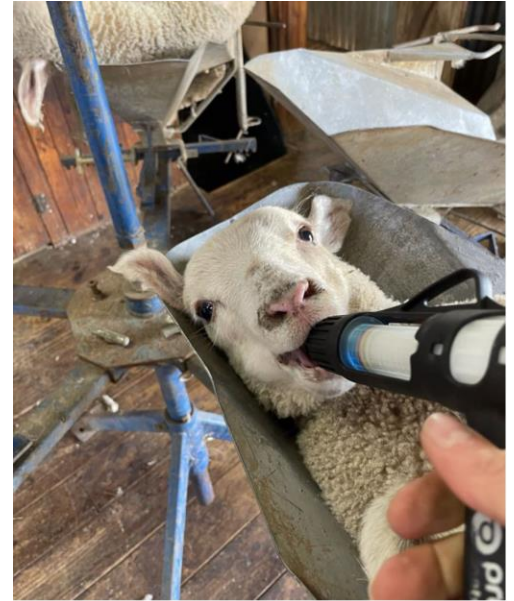
numnuts

BUTEC/BUCCALGESIC

- Meloxicam read-to-use gel
- Blue gel – so you identify which calves have received a dose
- Oral application in cheek of lamb
- Gets absorbed into blood stream
- Takes 10-15min to work
- Viscous gel (thick)
- Works systematically
- Use with high flow draw off tube, and correct gun
- 14 day WHP cattle

Analgesia
(NSAID)





MELOXICAM

Analgesia
(NSAID)

- Injectable product
- Works systemically (whole body)
- Under the skin
- 18G, ¼ inch needle
- Takes 10-15 minutes to work
- Reduces pain for 72 hours duration
- Can be used in any condition or procedure that causes pain
- Vet only
- 11 day WHP/ESI



So which way is best?

- Depends on many factors!

Cattle AWS&G:

- “Calves less than two weeks old should be castrated by the **rubber-ring** method in preference to the cutting method”.
- “Calves more than two weeks old should be castrated by the **cutting method** in preference to the rubber-ring and tension-band methods”
- “Surgical procedures should be done with pain relief. Operators should seek advice on current pain minimisation strategies”.

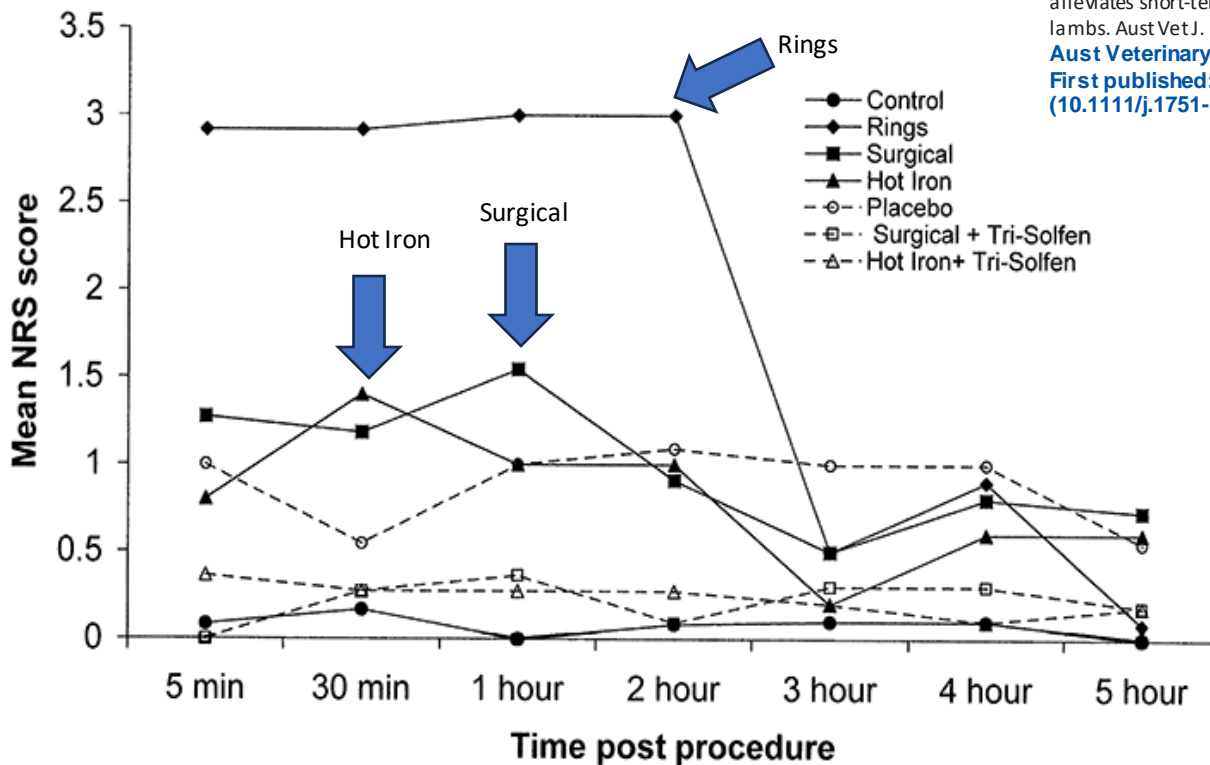
So which way is best?

Sheep AWS&G:

- “Tail docking and castration should be accompanied by pain relief when practical and cost-effective methods become available. Operators should seek advice on current pain minimisation strategies”.
- “Lambs should be tail docked by the **hot knife** or **rubber ring** methods, in preference to the sharp knife method or other cutting methods, except for larger tails. The hot knife method is generally preferable for tail docking done with mulesing. Recommendations may change with future research and development”.
- “A person should use the most appropriate tools and least painful method to castrate sheep that is applicable to the production system”.

Topical anaesthesia alleviates short-term pain of castration and tail docking in lambs

Lomax S, Dickson H, Sheil M, Windsor PA. Topical anaesthesia alleviates short-term pain of castration and tail docking in lambs. *Aust Vet J.* 2010 Mar;88(3):67-74.
[Aust Veterinary J, Volume: 88, Issue: 3, Pages: 67-74, First published: 16 February 2010, DOI: \(10.1111/j.1751-0813.2009.00546.x\)](#)



Effects of Topical Anaesthetic and Buccal Meloxicam Treatments on Concurrent Castration and Dehorning of Beef Calves

Dominique Van der Saag, Peter White, Lachlan Ingram, Jaime Manning, Peter Windsor, Peter Thomson, and Sabrina Lomax. University of Sydney, 2018.

Results showed that a combination of topical anaesthetic and buccal meloxicam appeared to reduce pain following castration and dehorning, with improved weight gain and increased lying activity in the first few days following the procedures.

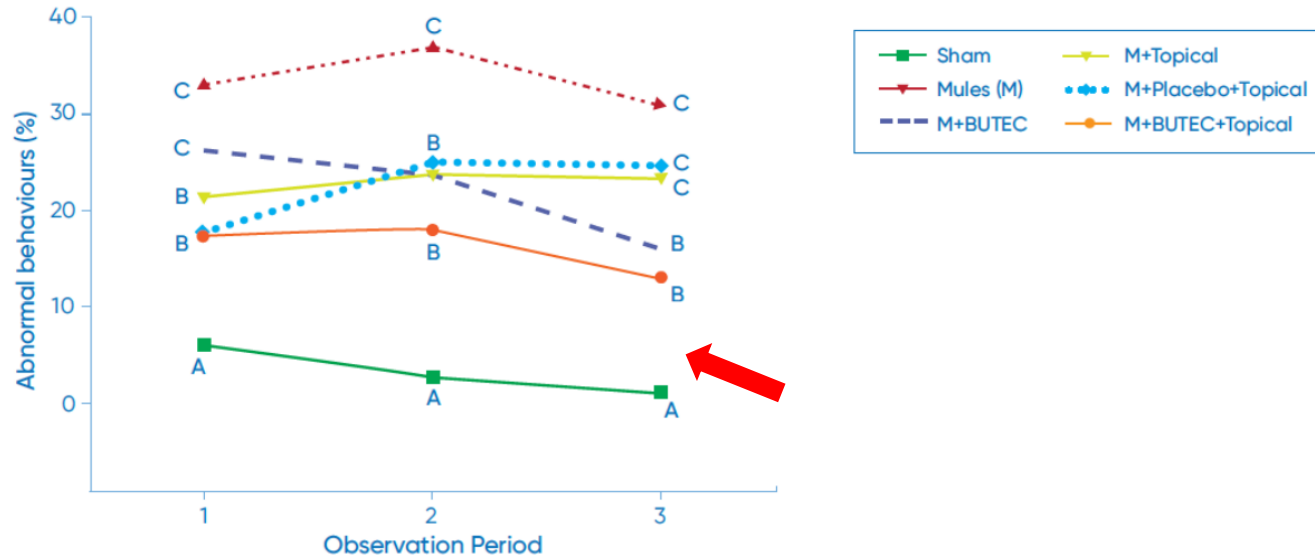
Table 2. Mean weight gain of calves in each treatment group over 6 days.

Treatment	Mean Weight Gain (kg) \pm s.e.m.
CONP (n = 50)	-3.69 ^a \pm 0.77
CONN (n = 50)	-8.30 ^c \pm 0.77
BM (n = 50)	-6.62 ^{bc} \pm 0.76
TA (n = 50)	-6.59 ^{bc} \pm 0.76
BMTA (n = 50)	-5.40 ^{ab} \pm 0.79

CONP = no castration and dehorning/positive control; CONN = castration and dehorning/negative control; BM = castration and dehorning with pre-operative buccal meloxicam; TA = castration and dehorning with intra-operative topical anaesthetic; and BMTA = castration and dehorning with pre-operative buccal meloxicam and intra-operative topical anaesthetic. ^a, ^b, ^c Values with different superscripts differ significantly at $p \leq 0.05$. Descriptive statistics are based on predicted means (\pm s.e.m.). A significant effect was found ($p < 0.001$).

A randomised field study evaluating the effectiveness of buccal meloxicam and topical local anaesthetic formulations administered singly or in combination at improving welfare of female Merino lambs undergoing surgical mulesing and hot knife tail docking

Small AH, Marini D, Dyall T, Paul D, Lee, C. Research in Veterinary Science, 2018.



Gold Standard Options Through OTC

Product	Formulation	Mode of Action	Mulesing and Tail Docking (Surgical)	Mulesing and Tail Docking (Rubber Rings)	Tail Docking and Castration (Surgical)	Tail Docking and Castration (Rubber Rings)	Disbudding/Dehorning and Castration (Surgical)	Disbudding/Dehorning and Castration (Rubber Rings)
Numnuts		Local Anaesthetic		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Tri-Solfen		Local Anaesthetic, Blood vessel constriction, Antiseptic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BUTEC BUCCALGESIC MELOXICAM		Anti-Inflammatory Pain Relief	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Multimodal pain relief

Field experiences

- Reduced pain responses
- Better mothering up
- Better wound healing
- Less haemorrhage (and therefore less deaths)
- Less infection (eg weaner anaemia?)
- Helps with all painful procedures (branding, ear marking, ear tagging)

None of my clients have ever gone back after starting using pain relief



Top tips

- Give NSAID in the race pre-procedure if using solo.
- Apply local anaesthetic (+/- NSAID) at time of/immediately after procedure
- Dose for body weight and use the correct delivery method (including the right gun).
- Have a spare gun!
- Squirt Trisolfen gun forcefully to get the viscous liquid to foam.
- Use Trisolfen first, then apply fly preventative products.
- Observe the WHP/ESIs/expiry dates.
- Talk to your vet about the best pain relief protocol for your enterprise.
- Any off-label use needs to be on the recommendation of your veterinarian.

Take home messages

- ◆ Consumers and the livestock industries are committed to pain relief being used for routine animal husbandry procedures.
- ◆ Review your castration, dehorning, tail docking and mulesing procedures in light of research and the Animal Welfare Standards & Guidelines and available pain relief products.
- ◆ Multimodal pain relief (anaesthetic + analgesic) is the gold-standard strategy.

Tools and resources

- Animal Welfare Sheep Standards & Guidelines, 2016. <https://www.animalwelfarestandards.net.au/files/2011/01/Sheep-Standards-and-Guidelines-for-Endorsed-Jan-2016-061017.pdf>
- Animal Welfare Cattle Standards & Guidelines, 2016. [Cattle-Standards-and-Guidelines-Endorsed-Jan-2016-061017_.pdf \(animalwelfarestandards.net.au\)](https://www.animalwelfarestandards.net.au/files/2011/01/Cattle-Standards-and-Guidelines-Endorsed-Jan-2016-061017.pdf)
- Australian Beef Sustainability Update, 2023. [absf-annual-update-2023-web.pdf \(sustainableaustralianbeef.com.au\)](https://www.sustainableaustralianbeef.com.au/absf-annual-update-2023-web.pdf)
- AWI Merino Husbandry Practices Survey, 2021. [221027-2021-awi-merino-husbandry-practices-survey-final-report.pdf \(wool.com\)](https://www.wool.com/221027-2021-awi-merino-husbandry-practices-survey-final-report.pdf)
- Futureeye Report. Commodity or Sentient Being, 2019. <https://www.sheepcentral.com/wp-content/uploads/2019/05/190129-Commodity-or-Sentient-Being-Australias-Shifting-Mindset-on-Farm-Animal-Welfare-v-7.0.pdf>

Further reading

- Lomax S, Dickson H, Sheil M, Windsor PA. Topical anaesthesia alleviates short-term pain of castration and tail docking in lambs. *Aust Vet J.* 88(3):67-74, 2010.
- McCracken, L.; Waran, N.; Mitchinson, S.; Johnson, C.B. Effect of age at castration on behavioural response to subsequent tail docking in lambs. *Vet. Anaesth. Analg.* 2010, 37, 375–381.
- Small, A.; Fisher, A.D.; Lee, C.; Colditz, I. Analgesia for Sheep in Commercial Production: Where to Next? *Animals*, 11, 1127, 2021.
- Small, A.H.; Marini, D.; Dyllal, T.; Paull, D.; Lee, C. A randomised field study evaluating the effectiveness of buccal meloxicam and topical local anaesthetic formulations administered singly or in combination at improving welfare of female Merino lambs undergoing surgical mulesing and hot knife tail docking. *Res. Vet. Sci.* 118, 305–311, 2018.
- Van der Saag, D.; Lomax, S.; Windsor, P.A.; Taylor, C.; Thomson, P.; Hall, E.; White, P.J. Effects of topical anaesthesia and buccal meloxicam on average daily gain, behaviour and inflammation of unweaned calves following surgical castration. *Animals*, 1, 9 2018.
- Windsor, PA. Role of Topical Anaesthesia in Pain Management of Farm Animals, a Changing Paradigm *Animals*, 12(18), 2459; 2022.
<https://doi.org/10.3390/ani12182459>