



numnuts[®]

**All-in-one ring application
and targeted pain relief.**

Introducing Numnuts

Providing pain relief is a better choice

Providing pain relief to your livestock during animal husbandry procedures demonstrates your commitment to animal welfare and meeting the expectations of your customers and your industry. Australian Animal Welfare Standards and key industry organisations, including the Sheep Sustainability Framework, Meat & Livestock Australia, Australian Wool Innovation, Sheep Producers of Australia, Wool Producers of Australia and Animal Health Australia, all advocate the provision of pain relief during mulesing, tail docking and castration.¹⁻⁵

Most Australian sheep and wool producers provide pain relief to lambs during mulesing.⁶ However, the provision of pain relief during tail docking or castration is considerably lower.⁶ This is because, until recently, there was no practical or cost-effective method of providing relief from acute pain following tail docking and/or castration with rubber rings.

All-in-one rubber ring application and pain relief

Numnuts is the world's first rubber ring applicator that incorporates a targeted pain relief delivery mechanism. It was developed specifically to address the acute pain experienced by lambs following tail docking or castration using rubber rings. The Numnuts device applies a standard Elastrator® rubber ring and then safely injects a calibrated dose of NumOcaine® (lignocaine). Lignocaine is a rapid-acting local anaesthetic that numbs the site within 60 seconds and blocks acute pain for 60 minutes.

This patented technology makes it easy to administer pain relief to lambs after tail docking and castration using rubber rings. Numnuts, NumOcaine and replacement parts can be purchased from your rural supplier or veterinarian without a prescription.

PRODUCERS WHO PROVIDE PAIN RELIEF DURING ⁶ :	MERINO	NON-MERINO
Mulesing	88%	83%
Tail docking (hot knife)	78%	39%
Tail docking (ring)	11%	10%
Castration	12%	11%

Developed in collaboration with



Numnuts provides fast relief from acute pain

The application of rubber rings for tail docking and/or castration causes intense acute pain due to the restriction of blood supply (ischemia). Peak pain levels typically occur about 15 to 45 minutes after ring application. During this time, lambs display a range of pain-related behaviours, such as kicking, foot stamping, hunching, hopping, lying down and rolling.⁷ After 60 minutes, the rubber ring has largely disabled the nerve function and the level of acute pain decreases and the slower, chronic pain associated with injury and healing begins.⁷

Australian trials involving more than 15,000 lambs have shown that the administration of NumOcaine using the Numnuts device significantly reduces pain following tail docking and/or castration using rubber rings.^{7,8} In one trial, the injection of 1.5 mL of NumOcaine into the scrotum or tail of 2–4 week old lambs reduced the incidence of pain-related behaviours by 68% in the first 60 minutes after ring application.⁷ Reduced pain behaviours were observed for up to three hours after ring application and lambs ‘mothered up’ sooner.⁷

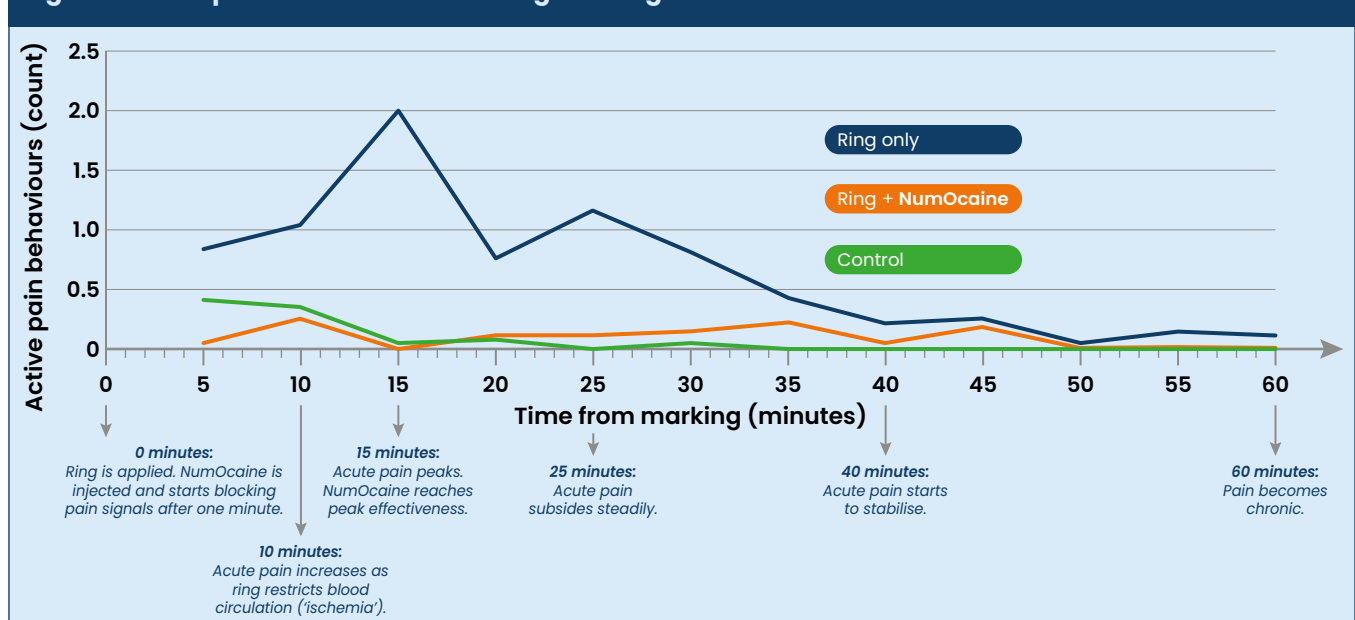
Tried and tested under Australian conditions

The Numnuts system was developed by the Moredun Foundation, a Scottish research and development organisation that is focused on livestock health and welfare; and Scottish product design engineers, 4C Design. The Numnuts system has been extensively evaluated for use in Australia using funding from Meat & Livestock Australia and Australian Wool Innovation. Numnuts is distributed by Dechra in Australia and New Zealand.

At a glance

- All-in-one ring application and pain relief
- Rapid relief from intense acute pain
- Evaluated in Australia
- Easy to use and maintain
- Available from your rural supplier or veterinarian

Figure 1: Lamb pain behaviours following docking with and without NumOcaine® local anaesthetic⁸



How Numnuts works

The Numnuts device combines five key elements that work together to deliver targeted pain relief during tail docking and castration.

NumOcaine bottle

The 100 mL NumOcaine bottle fits straight into the device. There is no cumbersome tubing that can get in the way or become entangled with other equipment or livestock. The tamper-resistant Quick Change Cartridge allows the quick, safe and hassle-free replacement of bottles.

Fluid junction and O-ring seal

The fluid junction and O-ring seal ensure hygienic and effective delivery of the local anaesthetic. The clear window allows the operator to confirm the device is primed and when bottles need to be replaced. The fluid junction should be replaced after every 2,000 procedures or at the end of each season.

Stainless steel needle

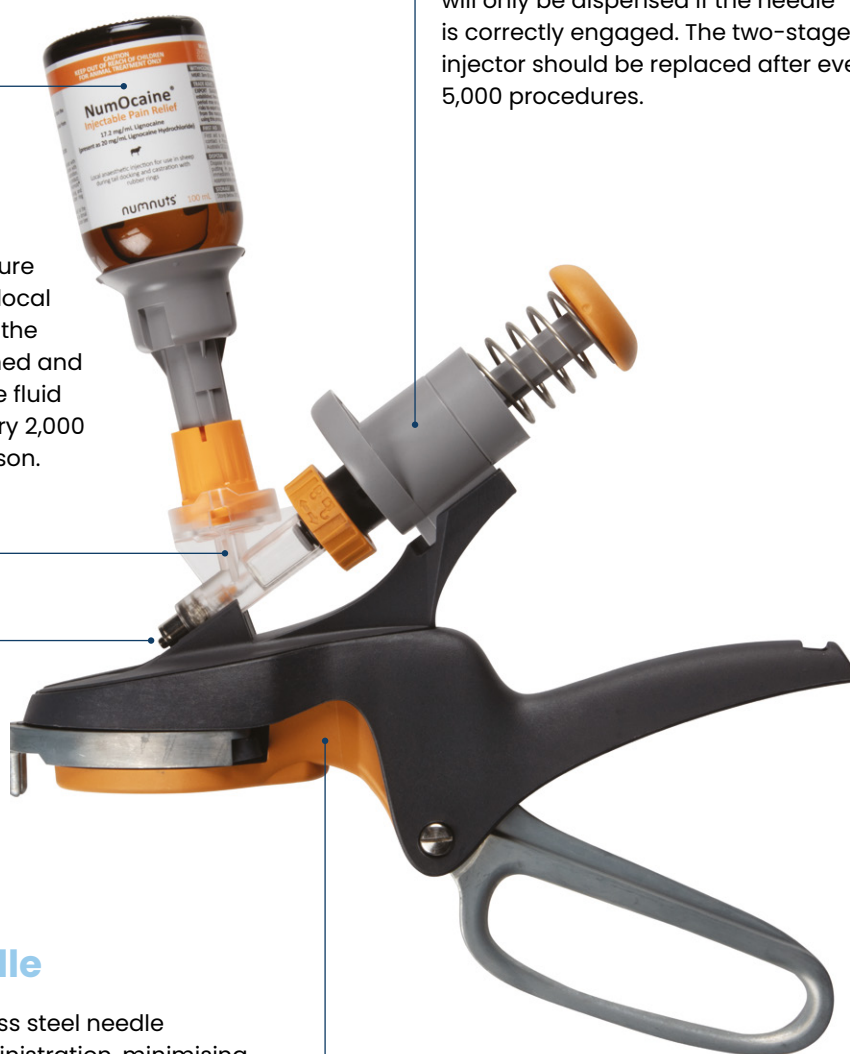
The high quality 18 gauge stainless steel needle automatically retracts after administration, minimising the risk of needle stick injury. NB: Third-party needles are unsuitable for use with the Numnuts device. The needle should be replaced every 130 procedures (i.e. two x 100 mL bottles of NumOcaine) to minimise animal discomfort and reduce the risk of infection.

Two-stage injector

The two-stage injector automatically extends and angles the needle to the correct position. The local anaesthetic will only be dispensed if the needle is correctly engaged. The two-stage injector should be replaced after every 5,000 procedures.

Ring applicator

The ergonomic Numnuts device can be easily used by all operators, regardless of hand size, strength or left/right handedness. Minimal force is required to hold the device open.



Using the Numnuts device



Step 1

Put a ring in the Numnuts device. Open the device and position the ring over the testes or tail.



Step 2

Close the ring by releasing pressure on the metal lever, which automatically aligns the tool for injection.



Step 3

Press the injector plunger firmly. The two-stage mechanism pushes the needle through the skin and delivers a calibrated 1.5 mL dose.



Step 4

Release the injector plunger and tilt down. Pull the tool up to release ring.

Images depict a demonstration unit.

What makes Numnuts different from other pain relief solutions?

- Numnuts was developed specifically to deliver pain relief following **ring castration and tail docking**. It applies standard Elastrator rings for castration and tail docking and then safely injects a calibrated dose of a local anaesthetic (NumOcaine) in one, easy procedure. By comparison, Tri-Solfen® is a spray-on gel that provides four-way pain relief and wound care on **open wounds**.
- NumOcaine provides **acute pain relief**. It starts numbing the site within 60 seconds and blocks the intense, acute pain that occurs in the first 60 minutes after ring castration or tail docking.^{2,8} By comparison, non-steroidal anti-inflammatory drugs (NSAIDs), such as meloxicam, provide **chronic pain relief**. NSAIDs start to take effect 15–30 minutes after administration and continue to provide pain relief for 6–9 hours.⁹
- The Numnuts device, NumOcaine and spare parts are available from your rural reseller or veterinarian.

Directions for use

Registered indications

NumOcaine is a local anaesthetic injection for use in sheep during castration and tail docking with rubber rings using the Numnuts device.

Active constituent

NumOcaine contains 17.2 mg/mL lignocaine (present as 20 mg/mL lignocaine hydrochloride).

Dosage

Lambs (2–10 weeks old): 1.5 mL (one injection) per ring application.

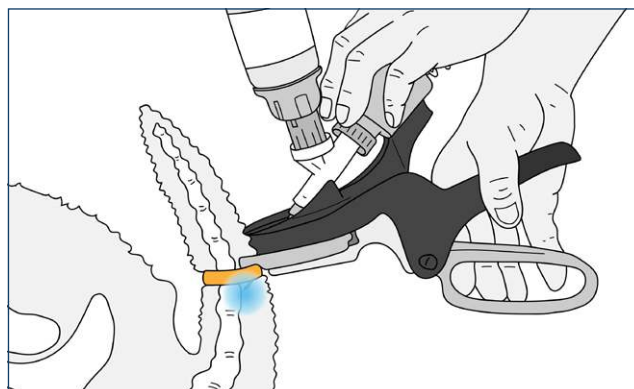
Administration

NumOcaine is administered using the Numnuts device as a sub-cutaneous (i.e. under the skin) injection at the dorsal midline of the scrotum (castration) or the dorsal midline at the third palpable joint (tail docking).

Tail docking

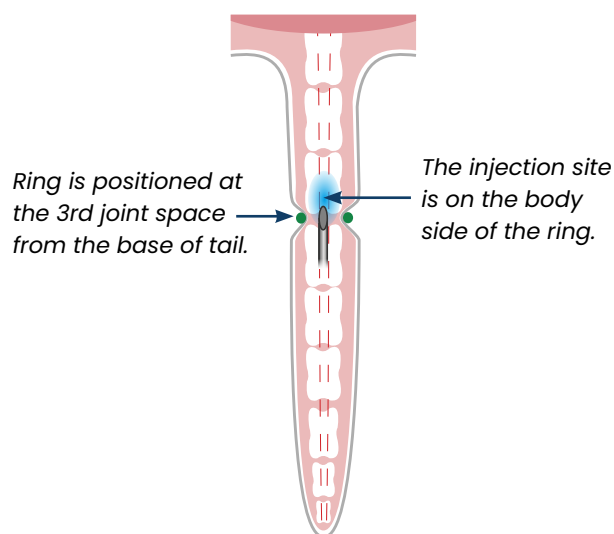
Position the lamb on its back in the cradle, with its tail nearest the operator. Apply a standard Elastrator ring using the Numnuts device. The recommended location is the third or fourth joint space from the base of the tail, felt by hand. Position the needle on the body side of the ring and press the two-stage injector to inject NumOcaine.

Always read and follow the label instructions.



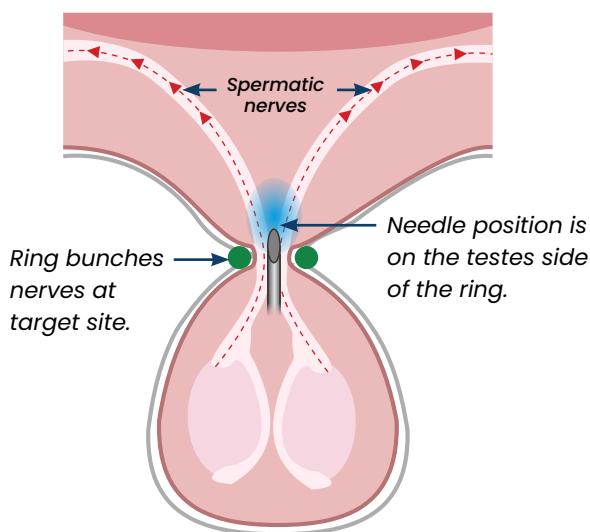
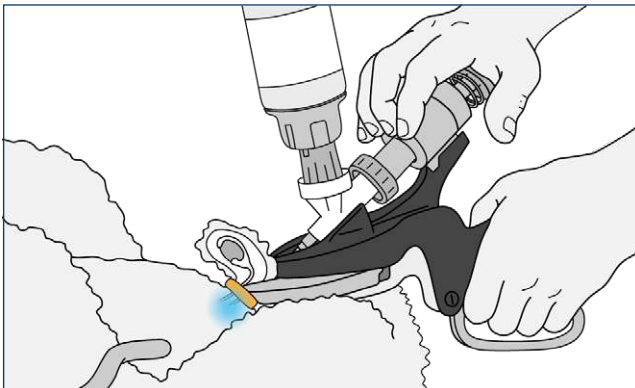
Best practice injection technique

- Maintain cleanliness at all times.
- Keep needles sharp and clean.
- Replace needles regularly.
- Use the dedicated Numnuts needles to ensure correct injection depth and operator safety.
- As far as possible, do not administer during wet weather or under dusty conditions.
- Administer as a sub-cutaneous injection (i.e. under the skin) to the scrotal neck or tail of the animal.
- Clean the Numnuts device at the end of each day.



Castration

Position the lamb on its back in the cradle, with its tail nearest the operator. Apply a standard Elastrator ring using the Numnuts device. Position the needle on the testes side of the ring and press the two-stage injector. The device automatically extends and angles the needle to the correct position, injecting NumOcaine on the body side of the ring.



Restraints

DO NOT use for any other purpose other than the registered label directions. DO NOT tamper with or remove the Quick Change Cartridge collar from the bottle. USE ONLY with the Numnuts device.

Withholding periods

Milk WHP:	Zero (0) days
Meat WHP:	Zero (0) days
ESI:	90 days

Safety

Avoid overdosing. Safety studies have only been conducted up to two times the dose in 2–10 week old lambs. An epidural effect was observed in a very small number of lambs after tail docking with rings and treatment with NumOcaine. Affected lambs exhibited temporary hind-limb paralysis lasting less than one hour. Place any affected lambs in a separate holding pen until normal hind-limb movement is regained.

Disposal

Dispose of container by wrapping with paper and putting in garbage. Discarded needles should immediately be placed in a designated and appropriately labelled 'sharps' container.

Storage

Discard any broached bottles. Unused bottles can be stored at room temperature (<30°C) without refrigeration for two years from the date of manufacture.

Always read and follow the label instructions.

Scan the QR code to find out how to use Numnuts.





Lambs experience acute (immediate) and chronic (long-term) pain during and after certain animal husbandry procedures.² Best practice guidelines recommend the provision of both acute and chronic pain relief during mulesing, tail docking and castration.¹⁻⁵

- Tri-Solfen is the first choice for **acute and lasting pain relief (up to 24 hours) following surgical procedures** (e.g. mulesing, hot/cold knife tail docking and/or hot/cold knife castration) in lambs.
- NumOcaine applied using the Numnuts device is the first choice for **acute pain relief following ring docking and/or ring castration** in lambs.
- Tri-Solfen, NumOcaine and the Numnuts device are available from your rural reseller or veterinarian.
- Non-steroidal anti-inflammatory drugs (e.g. meloxicam) provide **chronic pain relief**. Contact your rural reseller or veterinarian.

Demonstrate your commitment to delivering best-practice animal welfare standards by registering in the Better Choices program. This independently-audited program enables livestock producers to certify they implement best-practice animal welfare standards. To create or renew your registration, visit **betterchoices.com.au** or call **1300 595 250**.

numnuts.au
1300 015 825

ACUTE PAIN RELIEF		CHRONIC PAIN RELIEF
Numnuts (ring docking and/or ring castration) or Tri-Solfen (surgical castration, tail docking and/or mulesing)	+	Non-steroidal anti-inflammatory drugs (e.g. meloxicam)

Contact your Dechra territory manager, rural reseller or veterinarian about how you can deliver Gold Standard pain relief in your livestock business.

References: 1. Australian Animal Welfare Standards and Guidelines – Sheep Animal Health Australia (AHA) 2014. Publication record: Edition 1 Version: 1.0 January 2016 Endorsed. 2. Meat & Livestock Australia (2020.), Fact sheet – Pain mitigation in sheep and cattle. 3. Australian Wool Innovation Limited. (2020). Anaesthetics and Analgesics at Lamb Marking. 4. Wool Producers Australia, 2023/24 Policy document. 5. Responsible Wool Standard 2.2, 2021. 6. On-Farm Insights from the National Producer Survey (2022). Sheep Sustainability Framework. 7. Small, A., et al. (2020). Efficacy of precisely injected single local bolus of lignocaine for alleviation of behavioural responses to pain during tail docking and castration of lambs with rubber rings. *Res Vet Sci* 133:210–218. 8. Small, A. et al; (2021). Local anaesthetic delivered with a dual action ring and injection device Numnuts reduces the acute pain response of lambs during tail docking; *Animals* 11(8):2242. 9. Colditz, I. et al. (2019). Efficacy of meloxicam in a pain model in sheep; *Aust Vet J*. 97:23–32. *Tri-Solfen is a registered trademark of Animal Ethics Pty Ltd. *Registered trademarks. ©Dechra Veterinary Products (Australia) Pty Ltd, 2024. DEC24410.

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