

## Skin biopsy of small ruminants

### Category

4. Minor surgery with recovery

### Objective

To excise a skin sample for histological examination

### Alternatives to animal use

There are no practical alternatives.

### Drugs, chemicals or biological agents

2% plain lignocaine

### Procedure

Lignocaine can be toxic and potentially fatal if injected into veins and/or if excessive doses are used. The maximum safe dose appears to be lower for goat kids than in other species. Young animals are at greater risk of overdose due to small size. Weighing of animals to determine accurate dose rate is highly desirable in young goats and sheep.

The maximum dose rate per animal should not exceed:

- Goats: no more than 7 mg/kg
- Sheep/calves: no more than 8 mg/kg

The total dose rate per animal must not exceed these rates, such that if more than one biopsy site is taken per animal on the same day, the dose per site will need to be reduced. For a small site, 0.5 ml lignocaine may be sufficient, or use of 10 mg/ml (1%) lignocaine in very small animals.

Animals should be monitored after injection for symptoms of toxicity. If toxicity is observed the dose rate should be reduced in further animals and if severe moderate to severe toxicity occurs (e.g. seizures) this should be treated with diazepam 0.1 – 0.5 mg/kg by intravenous injection.

Fleece from the site to be biopsied is removed with clippers. The appropriate dose of local anaesthetic (1 or 2% plain lignocaine) is injected, using a 27- gauge needle, around the site to be biopsied. Care should be taken to ensure that lignocaine is not injected into a blood vessel, by drawing back on the plunger prior to injection. 5 to 30 minutes later the biopsy is taken with a 1 cm biopsy punch. Subcutaneous tissue beneath the disc of skin released by the biopsy punch is cut with sharp scissors to permit removal of the biopsy.

The site is treated with topical antiseptic solution or spray to minimise the risk of infection. Use of appropriate fly repellent/preventive may be desirable in warm weather.

### Animal Care

In warm weather, monitor for signs of flystrike at biopsy sites.

### Animal Wellbeing

Wound should heal quickly with nil long-term effect.

### Pain Relief

## **Reuse and repeated use**

Repeat biopsy from the same individual should have no adverse effects provided previous biopsy sites have healed.

## **Qualification, experience or training necessary to perform procedure**

Demonstration of the technique and initial performance of procedure to be under supervision.