

# TIMING FOR MAXIMUM ANESTHETIC EFFECT OF TOPICAL CREAM DURING EARLY INFANT MALE CIRCUMCISION (EIMC) IN RAKAI, UGANDA.

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## Background



Male circumcision (MC) reduces male HIV acquisition by up to 60%. Compared to adult & adolescent MC, EIMC is:

- ✓ cheaper,
- ✓ wound healing is faster
- ✓ has no risk of early sex resumption.
- ✓ technically more accessible, and sustainable in the long-term (can be performed by non-physician health workers using devices and topical anaesthetics)

However, there are reports of incomplete pain control during EIMC especially under topical anaesthesia, which could be due to poor timing of the circumcision. In this study, we aimed **to determine the optimal timing for device-based infant circumcision under topical anaesthesia.**

## Methods

**Participants:** 200 male infants aged 1-60 days

**Study site:** Rakai health sciences program (4 facilities in south-central Uganda).

**Analgesic/anaesthesia:** Topical anaesthetic (EMLA cream.).

**Assessment of pain:** Gentle application of artery forceps every 5 minutes, starting at 10 minutes until circumcision at 60 minutes. Response scored using the Neonatal Infant Pain Scale (**NIPS**).

**Analysis:** Mean (SD) and median (IQR) NIPS scores at each time interval were used to determine the time range of maximum anaesthetic effect.

## Results

The median NIPS score dropped to zero between 25 to 55 minutes, with the narrowest IQR occurring between 35 and 45 minutes after applying topical cream. A similar trend was observed for the mean scores (Table 1).

**Table 1: NIPS scores at the different time intervals (N=200).**

| Time in minutes | 10       | 15       | 20       | 25       | 30       | 35       | 40       | 45       | 50       | 55       | 60       |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Median (IQR)    | 3.0(4.0) | 2.0(5.0) | 1.0(4.0) | 0.0(2.0) | 0.0(2.0) | 0.0(1.0) | 0.0(1.0) | 0.0(1.0) | 0.0(2.0) | 0.0(2.0) | 1.0(2.0) |
| Mean (SD)       | 3.3(2.3) | 2.7(2.4) | 1.8(2.2) | 1.2(1.7) | 1(1.6)   | 0.7(1.3) | 0.8(1.3) | 0.8(1.4) | 1(1.5)   | 1.3(1.7) | 1.6(1.9) |

## Conclusions

- The optimal timing for maximum topical analgesia occurred 35 to 45 minutes after application which is less than the recommended 60 minute waiting time.
- A shorter waiting time may be efficient for mass device-based EIMC.