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Amber teething necklaces – medical marvel or maternal myth?

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BACKGROUND: Baltic amber-bead necklaces or bracelets are commonly used for managing teething symptoms in infants. The effectiveness of these beads is claimed to be from succinic acid release (a compound with analgesic and anti-inflammatory properties), which is then absorbed through the skin.

AIM: To investigate whether Baltic amber teething necklaces purchased in Australia contained succinic acid, and to quantify succinic acid release from the beads.

METHODS: Infrared spectroscopy was used to confirm that the teething necklaces were made of Baltic amber. The amount of succinic acid contained within the beads was quantified, and succinic acid release from intact beads was measured in phosphate buffered saline (PBS) pH 5.5 or octanol to simulate aqueous or oily skin environments.

RESULTS: Each necklace (33 beads in length) contained 19.17 ± 4.89 mg of succinic acid (mean \pm se). Over a 6-month period, no succinic acid was detected in PBS, while 0.13 ± 0.09 mg of succinic acid per necklace was released in octanol. Only one replicate of amber beads in octanol released succinic acid, and they had fragmented, with shards free-floating in the solvent.

DISCUSSION: It is likely succinic acid was only detected because the beads were breaking down in octanol, which does not occur when worn around the neck of a child. Furthermore, the hydrophilic properties of succinic acid would not favour its absorption across hydrophobic layers of the skin and into the bloodstream.

CONCLUSION: While the teething necklaces do contain small quantities of succinic acid, it is highly unlikely to be released from intact beads.