

# Researcher investigates medication for children before anesthesia and surgery

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"Don't wake the bear that sleeps" is one of the central conclusions of a dissertation on medication for children before anesthesia and surgery. The effect of anti-anxiety, calming and sleep-inducing drugs can quickly

wear off if the child is unintentionally woken up during the anesthesia preparation.

In addition to making anesthesia more difficult, preoperative anxiety can lead to a prolongation of the child's recovery from anesthesia and cause behavioral changes several weeks after surgery. Essentially, three drugs are used that aim to alleviate preoperative anxiety in [younger children](#); midazolam (benzodiazepine) and clonidine and dexmedetomidine (two alpha-2 agonists). A recent dissertation involving a drug trial has attempted to answer the question of which is the most ideal.

On Friday 14 June, Åsa Bromfalk, Department of Diagnostics and Intervention at Umeå University, will defend her thesis, titled "Intervention for prevention: Alleviation of children's preoperative anxiety." The opponent is Associate Professor Elisabeth Eriksson, Örebro University.

## Phased testing

The administration was double-blinded; that is, no one knew which of the drugs participating children had been given.

"I studied the children's sleep depth, breathing and pulse, as well as signs of anxiety, signs of delirium, nausea and pain with the help of observation instruments," says the author of the thesis, Bromfalk.

The drug trial generated data for four studies in the phases before, during and after the operation, as well as a follow-up at home two weeks after the operation. To highlight clinical aspects, focus group interviews were conducted about the perioperative staff's experiences of premedication to [preschool children](#).

## A matter of time and peace

The main difference between the drugs concerned their ability to reduce anxiety and provide sleep. Short-acting midazolam had a calming effect on the children during the anesthesia preparations. The children were cooperative and distracted before the operation, and woke up very early after the operation, which could result in [anxiety](#) and pain, as well as temporary but unmanageable oblique ignition. The modern long-acting alpha-2 agonists provided sleep, even after surgery. When the children slept for a long time, the awakening and recovery were peaceful, and the discharge time ultimately did not differ between the groups.

One challenge described by the staff was to establish trust and to synchronize the premedication with the child's state of mind over time for the desired [drug](#) effect. The importance of time was consistently described as central.

"The care, regardless of premedication, must be done with skillful handling. It must be done carefully, and it must be allowed to take time," says Bromfalk.

High doses of the tested drugs may have a negative impact on breathing and/or circulation. According to the staff, there was thus a high level of safety thinking with close monitoring. No adverse events occurred during the study. Breathing and circulation remained unchanged after midazolam, and the alpha-2 agonists produced only a slight decrease in [heart rate](#), and it is likely that the drugs in question, in the doses used in the study, are safe to use on healthy children prior to anesthesia and surgery.

Provided by Umea University

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