

# Breathing restored within 10 minutes for 80% of overdose patients using nasal spray

April 7 2022

---



NTNU has been working to develop a nasal spray to reverse overdose for ten years. Friend overdose rescue is very important. The nasal spray has now been tested on 201 real overdose patients. Photo: Kai Eide / Oslo University Hospital. Credit: Kai Eide / Oslo University Hospital

A single dose of a nasal spray invented at the Norwegian University of Science and Technology (NTNU) restored breathing within ten minutes for 80% of overdose patients. More than 300 ambulance personnel in Trondheim and Oslo have administered the spray on suspicion of

overdose to investigate its effectiveness and compare the nasal spray with syringes.

## **Heroin can numb the breathing center**

The respiratory center in the brain is anesthetized when there is too much [heroin](#) in the body. The drug user dies quickly if no respiratory aid or antidote is given.

The trial included 201 patients who were unconscious, who were asked upon reviving if they were willing to participate in the trial.

"This is the world's first trial of a commercially available and medically approved nasal naloxone spray in real cases of heroin overdose," says Arne Skulberg, a postdoctoral fellow at NTNU and anesthesiologist at Oslo University Hospital.

## **Friend overdose rescue is key**

The main finding of the study is that the [nasal spray](#) provides enough antidote for the patient to breathe on their own while the risk of triggering abstinence is low.

Between 250 and 270 people die each year from heroin or [opioid overdoses](#) in Norway. In the EU, several thousand die.

"It's really encouraging that as little as a single dose of the nasal spray can restore breathing in 80% of overdoses. Nasal sprays can be given by anyone as first aid, even before the emergency services arrive. Friend overdose rescue is critical," says Skulberg.

He adds that in real life, for example in friend [overdose](#) rescue

situations, a second dose of naloxone should be given two to three minutes after the first dose if breathing has not normalized, not after ten minutes as in the study.



Users have been involved in the design of the nasal spray so that it is easy to carry, recognize and use. Credit: dne pharma

**Approved for use in 12 countries**

Studying [new drugs](#) in patients with heroin overdoses is rare. All other

approved naloxone sprays available have been studied only in healthy volunteers.

Representatives of drug user organizations have participated in all stages of the study.



Studying new drugs in patients with heroin overdoses is rare. Arne Kristian Skulberg is a postdoctoral fellow at the Norwegian University of Science and Technology and a medical doctor. He headed the study, which is now complete. Credit: Karl Jørgen Marthinsen / NTNU

It has been ten years since the project was initiated and led by Professor Ola Dale at NTNU. The nasal spray is approved for use in twelve

European countries.

The research was published in *Addiction*.

**More information:** Arne Kristian Skulberg et al, Comparison of intranasal and intramuscular naloxone in opioid overdoses managed by ambulance staff: a double-dummy, randomised, controlled trial, *Addiction* (2022). [DOI: 10.1111/add.15806](https://doi.org/10.1111/add.15806)

Provided by Norwegian University of Science and Technology

Citation: Breathing restored within 10 minutes for 80% of overdose patients using nasal spray (2022, April 7) retrieved 27 April 2024 from <https://medicalxpress.com/news/2022-04-minutes-overdose-patients-nasal.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.