

**Naloxone HCl nasal spray (Narcan®)
FDA approved nasal spray device**

Indications: Naloxone nasal spray is indicated for the emergency treatment of known or suspected opioid overdose, as manifested by respiratory and/or CNS depression

Mechanism of action

- Opioid antagonist that antagonizes opioid effects by competing for the same receptor sites
- Works predominantly at μ -opioid receptors and less so at kappa- and delta opioid receptors
- Reverses the effects of opioids, including respiratory depression, sedation, and hypotension

Strength	4 mg/0.1ml	Total volume of 2-unit package: 8 mg/0.2ml each Rx order contains 2 dose units of naloxone
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Administration Spray 0.1ml into one nostril; repeat with second device into other nostril after 2-3 minutes if no or minimal response^B
Additional doses may be required until medical assistance available
Do not prime or test the device prior to administration

Usability	90.5% successful use without training ^A
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Dosing Modifications due to Partial Agonists or Mixed Agonist/Antagonists

- Reversal of respiratory depression by partial agonists or mixed agonist/antagonists (eg. buprenorphine & pentazocine) may be incomplete
- May require higher naloxone doses or repeated administration

Contraindications

- Contraindications^F can include nasal septal abnormalities, nasal trauma, epistaxis, excessive nasal mucus, and intranasal damage caused by the use of cocaine and other substances
- Relative contraindications: Severe hypotension and the recent use of vasoconstrictors^G

Adverse Reactions

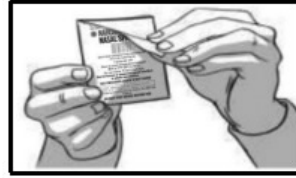
Most common ^D	Increased blood pressure, musculoskeletal pain, headache, nasal dryness, nasal edema, nasal congestion, and nasal inflammation
Precipitation of severe opioid withdrawal	Abrupt reversal of opioid effects in persons who were physically dependent on opioids has precipitated an acute withdrawal syndrome Signs/symptoms: body aches, fever, sweating, runny nose, sneezing, piloerection, yawning, weakness, shivering or trembling, nervousness, restlessness or irritability, diarrhea, N/V, abdominal cramps, increased BP, tachycardia

Pharmacokinetics^E	4 mg, 1 nasal spray (in 1 nostril)	8 mg, 2 nasal sprays (1in each nostril)	0.4mg IM injection
T_{1/2} (hours)	2.08	2.10	1.24
T_{max} (hours)	0.50	0.33	0.38
Bioavailability^C	46.7%	43.9%	100%

Instructions for use

Step 1. Lay the person on their back to receive a dose of NARCAN Nasal Spray.

Step 2. Remove NARCAN Nasal Spray from the box. Peel back the tab with the circle to open the NARCAN Nasal Spray.



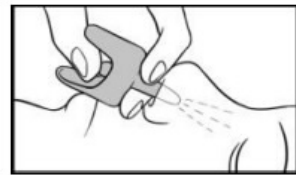
Step 3. Hold the NARCAN Nasal Spray with your thumb on the bottom of the plunger and your first and middle fingers on either side of the nozzle.



Step 4. Tilt the person's head back and provide support under the neck with your hand. Gently insert the tip of the nozzle into **one nostril** until your fingers on either side of the nozzle are against the bottom of the person's nose.



Step 5. Press the plunger firmly to give the dose of NARCAN Nasal Spray.

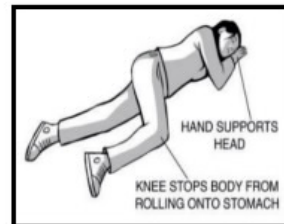


Step 6. Remove the NARCAN Nasal Spray from the nostril after giving the dose.

What to do after NARCAN Nasal Spray has been used:

Step 7. Get emergency medical help right away.

- Move the person on their side (recovery position) after giving NARCAN Nasal Spray.
- Watch the person closely.
- If the person does not respond by waking up, to voice or touch, or breathing normally another dose may be given. NARCAN Nasal Spray may be dosed every 2 to 3 minutes, if available.
- Repeat **Steps 2 through 6** using a new NARCAN Nasal Spray to give another dose in the other nostril. If additional NARCAN Nasal Sprays are available, Steps 2 through 6 may be repeated every 2 to 3 minutes until the person responds or emergency medical help is received.



Step 8. Put the used NARCAN Nasal Spray back into its box.

Step 9. Throw away (dispose of) the used NARCAN Nasal Spray in a place that is away from children.

Formulary status: On formulary

Please contact BHRS Pharmacy Services for additional information

A - Successful use involves correct performance of two critical tasks 1) insertion of the nozzle of the spray applicator into the nostril and 2) correct use of the plunger to release dose of naloxone into the nose

B - Response: return of spontaneous respirations to rate ≥ 10 breaths/min

C - Relative bioavailability listed for IN naloxone is relative to IM-administered product

D - Pharmacokinetic study of 30 healthy adult volunteers exposed to one spray of Narcan[®] Nasal Spray in one nostril or two sprays one in each nostril

E - In a pharmacokinetic study in 30 healthy adult subjects, the relative bioavailability of one nasal spray in one nostril (4 mg total dose) and two nasal sprays administered as one nasal spray in each nostril (8 mg total dose) was compared to a single dose of 0.4 mg naloxone HCl IM injection. For IN administration, the subjects were instructed not to breathe through the nose during administration of the nasal spray, and remained fully supine for approximately one hour post-dose. For IM administration, naloxone was administered as a single injection in the gluteus maximus muscle

F - Contraindications per package insert: Hypersensitivity to Naloxone hydrochloride

G - May prevent adequate absorption

References available upon request