
NICOTINE NASAL SPRAY (Nicotrol NS) Fact Sheet

Bottom Line:

The idea of nasal administration of nicotine is appealing in that it more closely approximates the time course of plasma nicotine levels observed after cigarette smoking than other dosage forms; however, the high cost and unpleasant side effects make this difficult to recommend as a first-line treatment, especially since no one form of nicotine replacement therapy has been shown to be more effective than another.

FDA Indications:

Smoking cessation.

Dosage Forms:

10 mL bottle: 10 mg/mL delivering 0.5 mg/spray in 200 sprays (prescription required).

Dosage Guidance:

- Use one or two sprays/hour as needed; do not exceed more than five doses (10 sprays) per hour. Max dose is 40 doses/day (80 sprays). Each dose (two sprays) contains 1 mg of nicotine.
- After initial eight weeks of treatment, taper dose gradually over four to six weeks.
- Patients should be advised to completely stop smoking upon initiation of therapy.

Monitoring: No routine monitoring recommended unless clinical picture warrants.

Cost: \$\$\$\$

Side Effects:

- Most common: Headache, dyspepsia, rhinitis, nasal irritation, sneezing, coughing.
- Pregnancy/breastfeeding: Limited data suggest relative safety in pregnancy and breastfeeding.

Mechanism, Pharmacokinetics, and Drug Interactions:

- Nicotinic-cholinergic receptor agonist.
- Metabolized primarily through liver as well as kidneys and lungs; $t_{1/2}$: 1–2 hours.
- Minimal risk for drug interactions. Successful cessation of smoking may increase serum levels of medications metabolized by CYP1A2 (eg, clozapine, olanzapine, theophylline), which is induced by hydrocarbons in smoke; nicotine itself has no effect.

Clinical Pearls:

- Prime pump prior to first use. Blow nose gently prior to use. Tilt head back slightly, breathe through mouth, and spray once in each nostril. Do not sniff, swallow, or inhale through nose.
- Moderate to severe nasal irritation in 94% of patients in the first two days of use; severity decreases over time. Nasal congestion and transient changes in sense of smell and taste also reported. Avoid in patients with chronic nasal disorders (eg, allergy, rhinitis, nasal polyps, and sinusitis). Exacerbations of bronchospasm reported in patients with asthma.
- Heavy smokers may well use the maximum amount of 80 sprays/day, meaning they would need a new bottle every two to three days. This can be tremendously and prohibitively expensive.
- Potential for abuse and dependence appears to be greater than with other nicotine replacement therapies.

Fun Fact:

In a published case report (Myrick H et al, *Am J Psychiatry* 2001;158(3):498), a 54-year-old man who could no longer afford his Nicotrol NS prescription found a commercial source for nicotine on the internet (sold as an insecticide). He purchased 25 g in a 1 g/mL solution for \$30, diluted the nicotine solution with distilled water to 10 mg/mL, and then placed the solution into empty spray bottles.