



Use of Nitrous Oxide for Pain Management

What is it?

At Vermont Gynecology we use the Nitronox Plus® system — a safe inhaled mixture of nitrous oxide and oxygen, delivered via a mask. This system allows for a variable concentration: **up to 70% nitrous oxide (N₂O) and at least 30% oxygen (O₂)**, depending on patient comfort and procedural needs.

Nitrous oxide is widely used (sometimes called “laughing gas”) to help reduce anxiety and discomfort during procedures. It works by slowing parts of the nervous system and promoting feelings of calm and relaxation.

How does it work?

- You will hold your own mask.
- You’ll begin inhaling the gas mixture about 30 seconds before the procedure begins, so the effect is in place when discomfort peaks.
- As you inhale, you control how much you breathe of the mixture; you remain awake and aware throughout.
- Always exhale into the mask.
- If at any point you wish to stop, you simply remove the mask.

Who administers the nitrous oxide?

You are in control: nitrous oxide is self-administered via the mask you hold. Your provider and a nurse or assistant will be present during the procedure to monitor your safety, confirm you understand how to use it, and assist as needed.

Are there any side effects?

Most people tolerate the gas well. Some possible temporary side-effects include:

- Dizziness or light-headedness
- Nausea or vomiting
- Feeling sleepy, “floaty,” or warm
- Tingling in your hands or feet
- Mild forgetfulness of the procedure afterward

Because the nitrous oxide can make you feel unsteady, you must remain seated or lying down during the procedure and not get up without assistance from our staff or a support person.

After the procedure

- The effects wear off within minutes after you stop inhaling the gas.
- You will be observed briefly for safety and comfort before you leave.
- If you feel nausea, we can offer light snacks and fluids such as juice or water.

Who should not use nitrous oxide?

This form of pain/comfort management is *not appropriate* if you:


- Cannot hold their own mask.
- Are impaired by consciousness, drugs, or alcohol.

- Have chronic opioid use (including untreated OUD, chronic pain on opioids, or currently on MAT), except those abstinent and cleared by provider.
- Received IV opioids within the last 2 hours.
- Take vitamin B12 supplementation for a documented deficiency.
- Have decreased oxygenation.
- Have conditions that create space for gas accumulation (recent pneumothorax, trauma, inner ear surgery, gastric bypass).
- Have increased intracranial or intraocular pressure.
- Have emphysema or pulmonary hypertension.
- Have had recent retinal surgery.
- Have anemia of unclear etiology
- Have extensive bowel resection (e.g., Crohn's disease).
- Severe congestive heart failure
- Severe coronary artery disease or unstable ischemic heart disease
- Uncontrolled or clinically significant cardiac arrhythmias
- Severe valvular heart disease
- History of air embolism
- History of pneumoencephalogram
- Known or suspected intracranial air
- Recent head injury or known intracranial mass lesion
- Lung cysts or bullous lung disease
- Active sinus infection or middle ear disease
- History of chemotherapy with bleomycin (at any time)
- Sickle cell disease or sickle cell anemia
- History of decompression sickness
- Elevated MCV on routine CBC without known cause
- Are in first or second trimester of pregnancy

Cost & billing information

- Use of nitrous oxide via this system is not billable to insurance at Vermont Gynecology.
- The **out-of-pocket fee is \$150.**
- Payment is due on or prior to the date of service.

Questions?

If you have questions or want to discuss whether nitrous oxide is a good option for you, please call our office at:  802-735-1252. We're happy to talk through your options and help you feel comfortable and informed.