

- **rapid onset of action**
- **produces euphoria**
- **titratable**
- **virtually no adverse effects in absence of hypoxia**
- **therapeutic sedative for many medically compromised patients**
- **generally suitable for all ages**

Important points about nitrous oxide:

- The **main** therapeutic effect of nitrous oxide is **relaxation/sedation** (*it is used in conscious sedation*). Mild analgesia is a **secondary** effect. It is **not** a respiratory depressant.
- The **first symptom** of nitrous oxide onset is **tingling of the hands**.
- Nitrous oxide has **no local anesthetic** properties. Therefore, the addition of local anesthesia is necessary in procedures in which pain is anticipated.
- Nitrous oxide **elevates** pain threshold.
- **Long term exposure** to low doses of nitrous oxide has been shown to increase the incidence of spontaneous abortions. Environmental contamination by nitrous oxide can be kept to a minimum by employing a **scavenger system**.
- **Nitrous oxide** is stored under pressure (*750 psi*) in steel cylinders (*in a liquid state*) painted **blue**. **Oxygen** is stored in **green tanks**.
- **Nitrous oxide delivery machines come pre-equipped with a fail-safe mechanism that will not allow less than 20% oxygen to be delivered to the patient.**
- It is a **nonirritating, colorless** gas with a slightly sweet odor and **tasteless**. It is very **stable** and **inert** chemically at room temperatures.
- It has a **rapid** onset (*blood:gas solubility coefficient = 0.47*) and termination.
- It is 1.5 times **heavier** than air.
- Nitrous oxide **will diffuse** into air-containing cavities within the body faster than nitrogen diffuses out. This results in a **temporary increase** in either the pressure and/or volume of the cavity depending upon the distensibility of its walls. This is most noticeable in the bowel.
- Nitrous oxide interacts with vitamin B₁₂ synthesis in the human body by interfering with the enzyme **methionine synthase**, depleting the body of vitamin B₁₂. When nitrous oxide is used heavily and over an extended period of time, vitamin B₁₂ depletion will probably become a major problem, as it can cause brain and nerve damage.