Nitrous Oxide Review: key points from Anthony S. Carroccia, DDS, MAGD, ABGD

Properties

- Minimum Alveolar Concentration is 104%, the weakest of the inhalants
- Blood: gas coefficient is 0.47 is low for a rapid onset
- Specific gravity of air is 1, nitrous oxide is 1.530
- Sweet smelling
- Colorless, non-irritating inorganic compound
- Does not combine with hemoglobin, insoluble
- Nonflammable, but supports combustion

Benefits

- Analgesia
- Amnesia
- Protective reflexes
- CNS, cardiac depression
- Hypnotic
- Maintain blood pressure
- Euphoria, floating
- Insoluble gas
- Titration
- Ease of use
- Safety index
- Acceptance

Indications

- Anxiolysis
- ASA IV or less
- Obstreperous children
- Gag reflexes
- Adjunct to locals
- Lengthy procedures
- “halal” for Muslims
- Liver disease

Contraindications

- Pregnancy?
- Claustrophobia
- Cystic fibrosis
- Chronic obstructive pulmonary diseases: emphysema, chronic bronchitis
- Upper respiratory infection
- Recent eye surgery
- Blocked Eustachian tubes
- 24 hours, SCUBA
- Opioid abuse
- Pneumoencephalography
- Bleomycin sulfate
- Methylene tetrahydrofolate reductase deficiency
- Hyperhomocysteinemia
- Methotrexate, cyanocobalmin, etc.

Risks

- Nausea
- Oversedation
- Anti-psychotic medications
- Autism
- Abuse
- Sexual fantasy
- Reproductive toxicity
- Waste anesthetic gas

Oversedation

- Nausea
- Loss of consciousness
- Persistent closing of the mouth
- Spontaneous mouth breathing
- Sexual fantasies/hallucinations
- Uncooperative
- Uncoordinated
- Uncomfortable
- Uncontrollable laughing
- Visual disturbances
- Restlessness
- Possible lacrimation

Complications

- Vomiting
- Contact lenses
- Mean drunk
- Shivering
- Sinusitis, sinus infection
- Middle ear infections, vertigo, motion sickness
- TOXICITY
    - Vitamin B12 issues
    - Blood issues and neuropathies

Delivery Systems

- Nasal cannula
- Nasal hoods
    - Porter
        - Brown-style
        - DynoMite
        - Matrx
    - Accutron
        - Axess
        - ClearView
        - PIP+
- Combination hood and cannula
    - Safe Sedate
    - Porter Silhouette