A BRIEF SUMMARY OF INHALATIONAL ANAESTHETICS

**A RANGE OF SIMPLE BUT DIVERSE CHEMICAL COMPOUNDS WITH GENERAL ANAESTHETIC PROPERTIES.**

**Key:**
- CURRENTLY CLINICALLY UTILISED
- RARELY OR NO LONGER IN USE

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**NITROUS OXIDE**
- Also known as laughing gas
- Colourless gas with a slightly sweet odour and taste
- Like other inhalational anaesthetics, it also induces a degree of analgesia.
- It is a weak general anaesthetic, so is often used as a carrier gas for other, more powerful anaesthetics.

**Chloroform**
- Produced by many kinds of seaweed
- Dyed blue to avoid confusion with chloroform
- Colourless, sweet-smelling and dense liquid
- Common in the 1800s, its use was abandoned due to toxicity & fatalities.
- Contrary to popular belief, it’s hard to incapacitate someone quickly with a chloroform-soaked rag.

**Trichloroethylene**
- Colourless, non-flammable liquid, with a sweet smell
- When used as an anaesthetic it was almost always combined with nitrous oxide, which it replaced, but was itself replaced by faster acting agents.

**Halothane**
- Only inhalational anaesthetic containing a bromine atom
- Colourless liquid with a sweet odour resembling that of chloroform
- Unstable in light. A potent anaesthetic, though it is a weak analgesic. Hepatitis links resulted in a dramatic reduction in use, & replacement with newer agents.

**Enflurane**
- Rapid induction & recovery from anaesthesia
- Volatile, colourless liquid, with a sweet smell; light-sensitive
- Used increasingly in the 1970s and 80s, but no longer as common. It lowers the threshold for seizures in epilepsy sufferers, and can also be toxic to the kidneys.

**Desflurane**
- boils at room temperature; low potency
- Colourless, non-flammable liquid, with an unpleasant, pungent odour
- Highest onset and offset of action of the volatile anaesthetic drugs.
- However, it has a low potency, and its high cost prohibits its use in less developed countries.

**Diethyl Ether**
- Commonly used as a solvent
- Colourless, volatile and highly flammable liquid
- Also known simply as ‘ether’, it was commonly used with chloroform or alcohol. It was found to have undesirable side-effects, such as nausea and vomiting.

**Cyclopropane**
- Extremely reactive under normal conditions
- Colourless and highly flammable gas with a sweet, petrol-like odour
- Often combined with oxygen, and gave a rapid onset of anaesthesia. However, its high cost and explosive nature limited its use, leading to it being largely phased out.

**Fluoroxene**
- The first volatile anaesthetic containing fluorine
- Colourless liquid, with a less pungent smell than diethyl ether
- Compared to other agents available at the time, fluoroxene, whilst of use, did not provide any distinct advantages, although it did appear to minimise respiratory irritation.

**Methoxyflurane**
- Significant respiratory depressant
- A colourless liquid with a strong, fruity aroma and high boiling point
- Extremely potent, but with slow onset and offset times, and also a powerful analgesic. Abandoned in 1970s due to kidney toxicity, but still used in emergencies in Australia.

**Isoflurane**
- Structural isomer of desflurane
- Colourless, non-flammable liquid, with a sweet smell
- Always administered with oxygen; nitrous oxide can also be used. Often used to maintain anaesthesia induced with another drug. Its use is beginning to decline.

**Sevoflurane**
- Name derives from the seven fluorine atoms it contains
- Colourless, non-flammable liquid, with a mildly unpleasant sweet odour
- Most commonly used volatile anaesthetic, often administered with nitrous oxide & oxygen. Its onset & offset are slower than desflurane, but it irritates mucous membranes less.