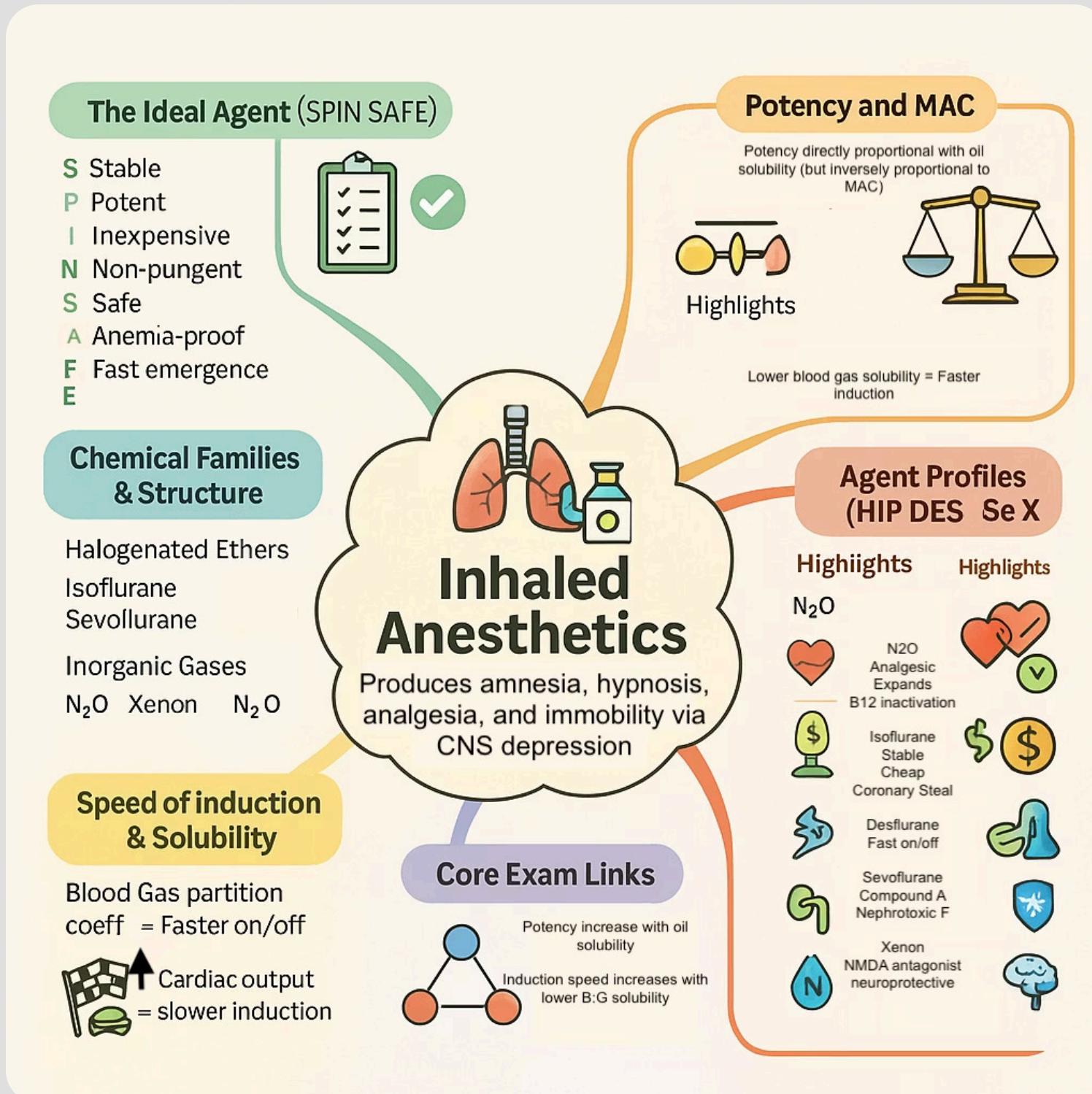


🧠 Concept Map: Inhaled Anesthetics



1. The Ideal Agent (SPIN SAFE)



Mnemonic: **SPIN SAFE** → Stable Potent Inexpensive Non-pungent Safe Anemia-proof Fast emergence Eco-friendly

- Key NCE Reminder:** No one gas fully meet all criteria → compare real agents vs ideal.



Chemical Families & Structure

Halogenated Ethers

Isoflurane • Desflurane •
Sevoflurane (ether link O–)

Halogenated Alkane

Halothane (C–H chain)

Inorganic Gases

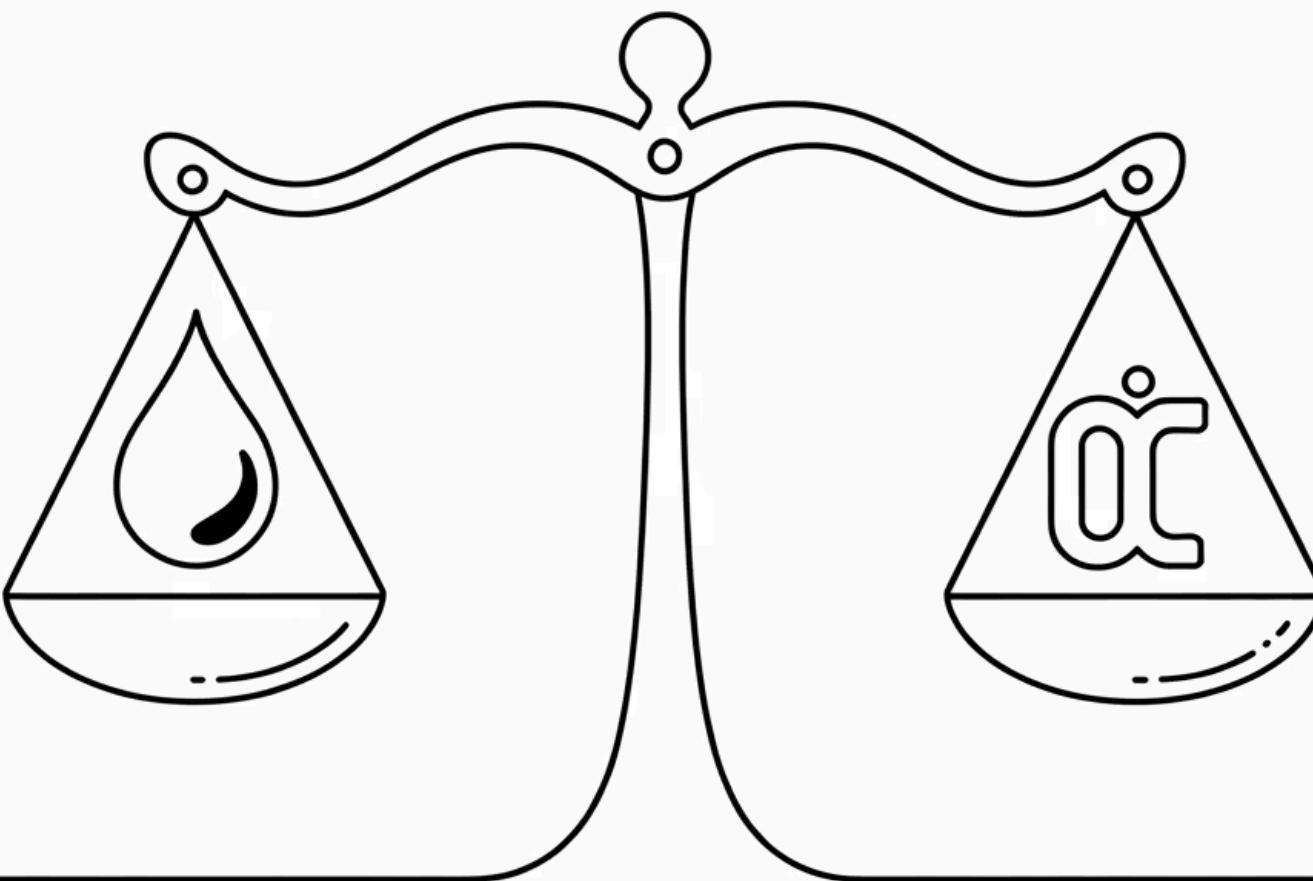
N₂O and Xenon

F (Fluorine) = stability ↑ flammability ↓

Mini-Mnemonic: "Ethers Ease Entry" → smooth induction vs Halothane "heavier hand."

Potency and MAC ('High Oil = High Power')

Potency \propto Oil:Gas solubility



Oil Solubility ↑ vs "MAC ↓

Mnemonic: "High Oil = High Power → Low MAC."

Exam Table call-outs:

Agent	MAC (%)	Relative Potency
Halothane	0.75	High
Isoflurane	1.2	Moderate
Sevo	1.8	Lower
Des	6.6	Low
N ₂ O	104	Weak



4. Speed of Induction & Solubility

Key Relationship: Blood:Gas Partition Coeff ↓ → Faster on/off.

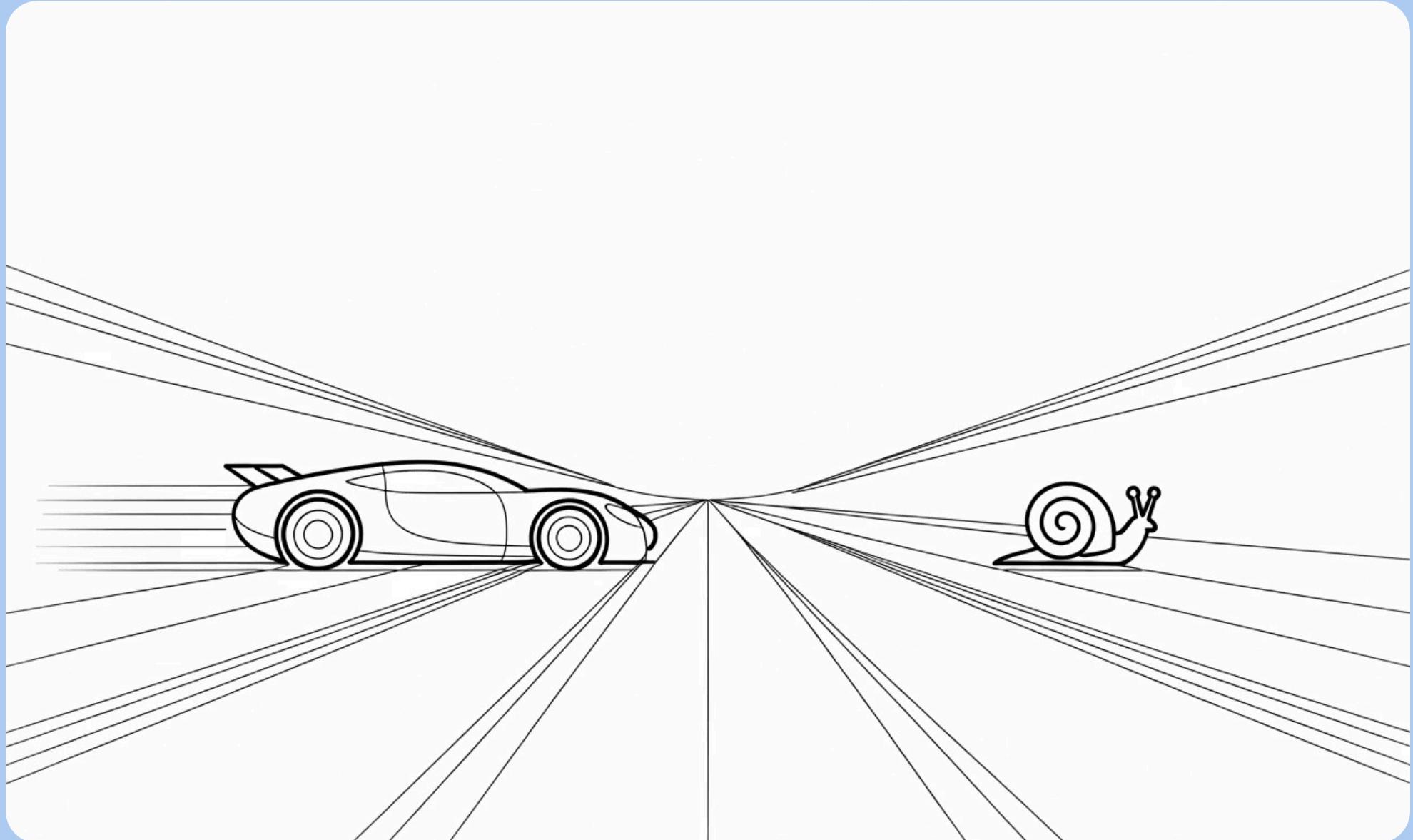


Illustration: Racing track — Desflurane (🏁) beats Sevo > Iso > Halothane (snail).

Mnemonic: "Low Solubility = Fast In & Fast Out."



Board Pearl: ↑ Cardiac Output = Slower induction (especially in highly soluble agents).



Agent Profiles (HIP DES SeX)

Mnemonic: "HIP DES SeX" = Halothane, Iso, Propane (like Des), Des, Sevo, Xenon

Agent	Highlights
N ₂ O	Analgesic, expands closed spaces, B12 inactivation
Halothane	Cardiac depression, arrhythmias, hepatitis, MH trigger
Isoflurane	Stable, cheap, coronary steal
Desflurane	Fastest on/off, pungent, tachycardia
Sevoflurane	Smooth induction, Compound A, nephrotoxic fluoride
Xenon	NMDA antagonist, neuroprotective, expensive



Core Exam Links

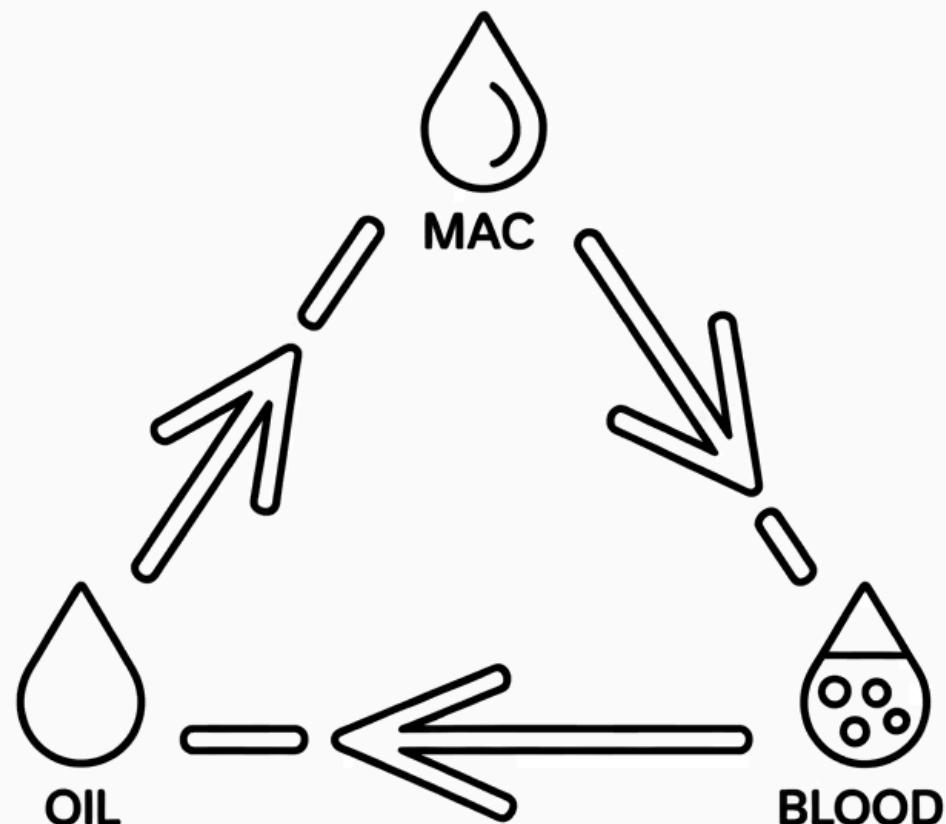
Three Relationships to Master:

1 Potency ↔ MAC ↔ Oil Solubility

2 Induction Speed ↔ Blood Solubility

3 Adverse Effects ↔ Chemical Class

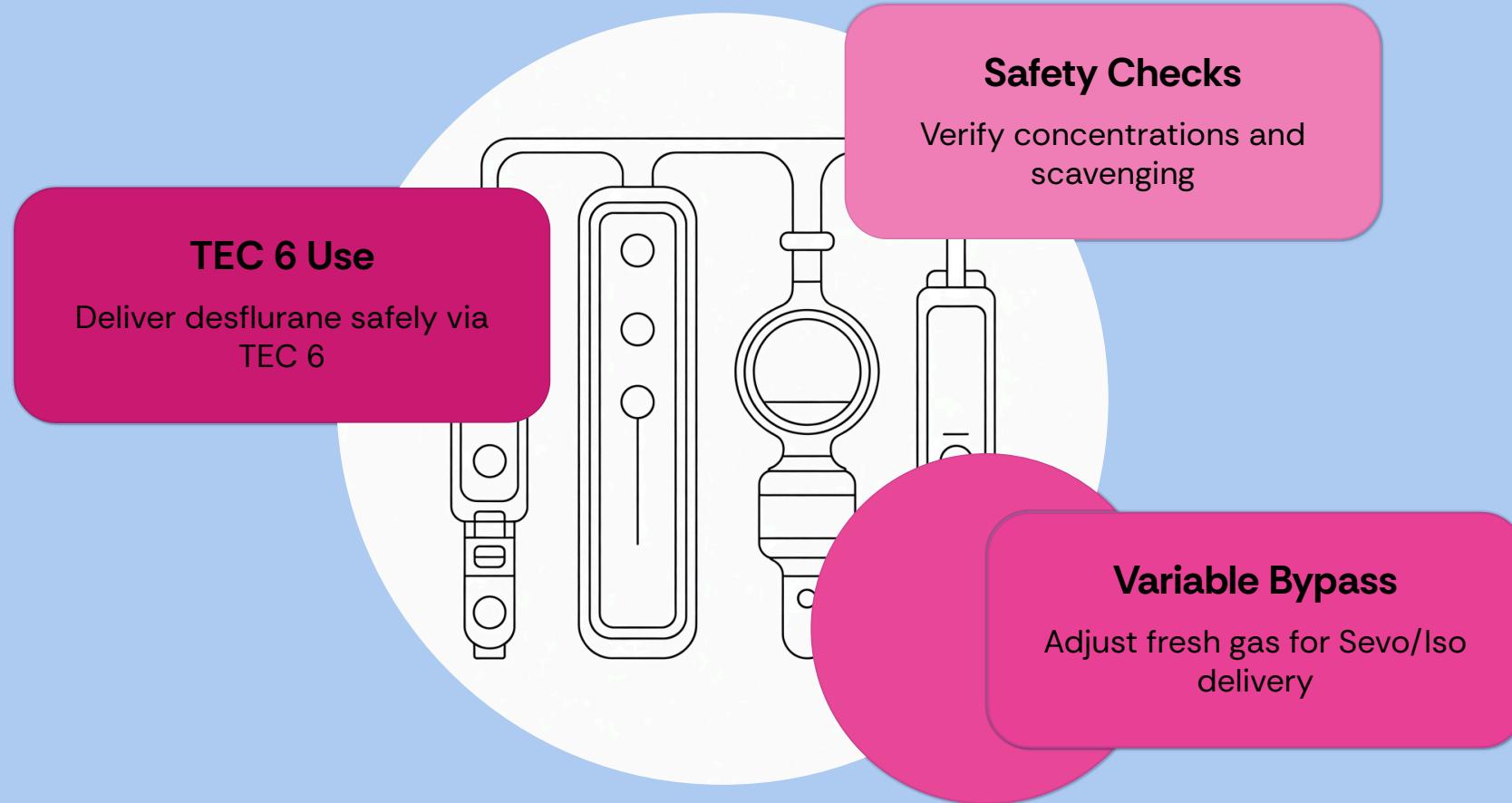
Quick Memory Hook: ✨ "MAC OIL BLOOD CLASS = Exam PASS."





Optional

- **Vaporizer Types:** TEC 6 for Des, variable-bypass for Sevo/Iso.



- **Environmental Impact:** CO₂-footprint



- **Safety Note:** All except N₂O can trigger MH