Airway and RSI

Assessment, adjuncts, RSI drugs, failed airway, tube checks, DOPE, pediatric tubes

ASSESS THE AIRWAY

MNEMONIC	PREDICTS	LETTERS
LEMON	Hard laryngoscopy	Look, 3-3-2, Mallampati, Obstruction/obesity, Neck
MOANS	Hard bag-mask	Mask seal, Obesity/obstruction, Age >55, No teeth, Stiff lungs/snoring

3-3-2 (fingers): mouth opening 3, chin to hyoid 3, hyoid to thyroid notch 2. Correct hypoxemia, hypotension and acidosis before induction.

EXAM TIP Exams test the match: LEMON for intubation, MOANS for bag-mask.

ADJUNCTS, BAG-MASK, SGAS

DEVICE	SIZING	AVOID IF
OPA	Incisors to jaw angle, or mouth corner to ear	Gag or cough reflex
NPA	Nose tip to earlobe	Basal skull fracture, midface trauma, severe coagulopathy
i-gel	3 = 30–60 kg, 4 = 50–90 kg, 5 = 90+ kg	Intact gag, limited mouth opening

- NPA suits semiconscious patients; OPA only with no gag reflex.
- Bag-mask: two people, two-hand seal with jaw thrust (AHA 2025).
- Just enough for chest rise, over 1 s; 1 breath every 6 s with a pulse.
- No routine cricoid pressure in arrest or in children (AHA 2025).

SAFETY An SGA is not definitive: it does not fully protect against aspiration.

RSI: THE 7 PS

1. Preparation: roles, backup devices, suction, IV, drugs.
2. Preoxygenation: 3 min tidal or 8 vital-capacity breaths; NIV if hypoxemic; nasal cannula for apneic oxygenation.
3. Pretreatment: fix hypotension and hypoxemia first.
4. Paralysis with induction: induction agent, then paralytic at once.
5. Positioning: head up, sniffing or ramped.
6. Placement with proof: waveform capnography.
7. Post-intubation care: secure, x-ray, sedation, ventilator.

SAFETY Failed airway: limit attempts (2–3) and oxygenate with an SGA or bag-mask. Can't intubate, can't oxygenate: cricothyrotomy per protocol.

RSI DRUGS

Typical adult IV doses for exam study; follow your agency's or institution's protocols.

DRUG	DOSE	ONSET	WATCH FOR
Etomidate	0.3 mg/kg	Under 1 min	Myoclonus; cortisol suppressed 6–8 h
Ketamine	1–2 mg/kg	About 30 s	Raises HR, BP; bronchodilates; emergence
Propofol	2–2.5 mg/kg; 1–1.5 if frail	About 40 s	Hypotension, apnea
Midazolam	0.15–0.35 mg/kg	1.5–2.5 min	Slow onset; hypotension

Etomidate: no mortality difference, no routine steroids (SCCM 2023). Ketamine: similar mortality, more cardiovascular collapse (RSI trial 2025). In shock, lower doses; have vasopressors ready.

FEATURE	SUCCINYLCHOLINE	ROCURONIUM
RSI dose	1–1.5 mg/kg	1–1.2 mg/kg
Onset	About 1 min	About 1 min (under 2)
Duration	Under 10 min (peak 2, recovery 4–6)	About 60–70 min; can exceed 2 h

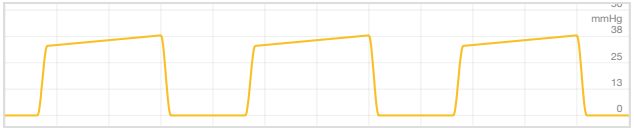
- Avoid succinylcholine with hyperkalemia, malignant hyperthermia risk, myopathy, or burns, crush, stroke or cord injury past the acute phase (risk peaks 7–10 days).
- Children: boxed warning for hyperkalemic arrest from undiagnosed myopathy; reserve for emergency intubation. Bradycardia, worse with repeat doses.
- Low pseudocholinesterase prolongs paralysis.

Sugammadex reverses rocuronium or vecuronium; 16 mg/kg reverses rocuronium immediately. Watch for anaphylaxis, bradycardia; backup contraception for 7 days.

EXAM TIP Exams pick rocuronium for burns or crush days old, stroke or cord injury, neuromuscular disease, or high potassium (missed dialysis).

CONFIRM THE TUBE

- Waveform capnography plus clinical assessment: most reliable (AHA 2025, Class 1 in arrest).
- Sustained CO_2: a waveform every breath, peaks over 7.5 mm Hg, steady or rising (not fading), for at least 7 breaths.
- Breath sounds can't rule out the esophagus; x-ray checks depth, not placement.
- Depth at the incisors: about 20–21 cm women, 22–23 cm men.

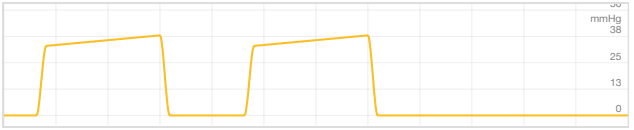


Tracheal tube: zero baseline, steep upstroke, plateau to about 38 mm Hg, every breath.

SAFETY No trace = wrong place. Without sustained CO_2, the default is to remove the tube.

DETERIORATION AND SEDATION

DOPE	CLUES	ACT
Displacement	CO_2 lost, depth changed, one-sided sounds	Check depth, reposition
Obstruction	High pressures; suction catheter won't pass	Suction, unkink, bite block
Pneumothorax	One-sided sounds, high pressures, low BP	Decompress per protocol
Equipment	Disconnection, O_2 supply, vent fault	Bag by hand



Breaths, then flat at zero: dislodged tube or disconnection until proven otherwise.

SAFETY Sudden distress on the ventilator: disconnect and bag with oxygen while working through DOPE.

- Analgesia first (usually an opioid), then sedation to a target.
- Rocuronium outlasts induction agents: sedate promptly to prevent awareness with paralysis.

PEDIATRIC TUBES

ITEM	RULE
Uncuffed, age 2+	Age/4 + 4 mm
Cuffed, age 2+	Age/4 + 3.5 mm
Depth (cm)	3 × tube size; or age/2 + 12 (age 2+)
Cuff pressure	Under 20–25 cm H_2O; recheck at altitude

- Cuffed over uncuffed is reasonable (AHA/AAP 2025). Up to 35 kg, a length-based tape beats age formulas; have half sizes up and down ready.
- Atropine to prevent bradycardia may be considered before emergency intubation: 0.02 mg/kg, no minimum dose (AHA/AAP 2025).

EXAM TIP Four-year-old: cuffed 4.5 mm (4/4 + 3.5) at about 13.5 cm (3 × 4.5).

Sources (35) are listed with links at icubasics.com/sheets/rsi-airway.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. ICU Basics is an independent study aid not affiliated with any certifying body.