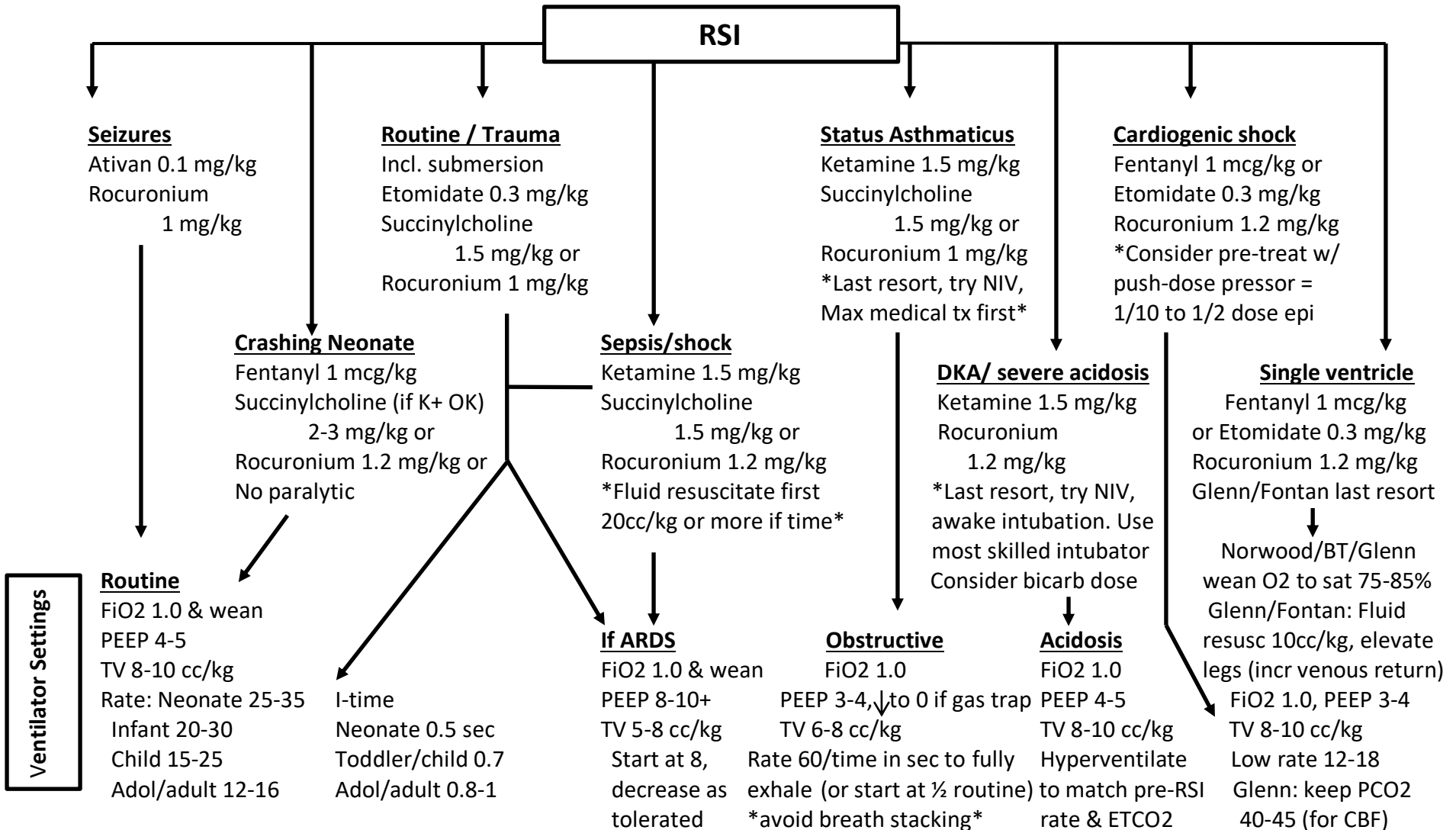


# RSI and Ventilator Settings Algorithm

Indications for intubation and mechanical ventilation:

Inadequate oxygenation, inadequate ventilation, to protect the airway, based on expected clinical course  
 ETT size age/4 + 3.5 cuffed, 1 blade neonate/infant, 2 blade starting at 2yo, 3 blade starting in 3<sup>rd</sup> grade (8yo), check light & cuff  
 All patients: prepare Suction, Oxygen for preoxygenation, Airway equipment for backup (eg video laryngoscope), ETCO2 detector  
 Perform apneic oxygenation by applying nasal canula O2 during RSI: 5 L/min infant, 10 L/min child, 15 L/min adolescent/adult



### Succinylcholine contraindications

Hyperkalemia (Succinylcholine raises serum K<sup>+</sup> by up to 0.5 mEq/L)

Neuromuscular disease involving denervation, muscular dystrophy (receptor upregulation leads to risk of hyperkalemia)

Burn, Trauma, or Stroke > 72 hours old (receptor upregulation)

Severe infection with toxin production eg botulism, tetanus (receptor upregulation)

Rhabdomyolysis (risk of hyperkalemia)

Malignant hyperthermia history or family history

\*\*\*When unsure and there is a reasonable possibility of one of the above conditions, avoid succinylcholine (eg seizure patient)

Rocuronium: Fastest intubating conditions with 1.2 mg/kg

Sugammadex is available as reversal agent (not approved for < 18 years old yet)

Emergent reversal w/in about 3 min of 1.2 mg/kg rocuronium: 16 mg/kg

Otherwise 2-4 mg/kg depending on twitch response to train of four stimulation

Etomidate: Quick onset and offset sedative with minimal hemodynamic effects, no adjustment needed for renal insufficiency

However, contraindicated in sepsis in children due to it causing transient adrenal insufficiency

### Ketamine

Increases heart rate and blood pressure, so good for situations involving hypotension

Bronchodilating, so good for obstructive airways disease

Patient maintain spontaneous respiration typically

Contraindicated in infants < 3 months of age

Fentanyl: An alternative sedative with minimal hemodynamic effects for young infants with possible sepsis (can't use etomidate) and too young for ketamine

Mechanical positive pressure ventilation will reduce venous return (preload), a potential problem in hypotension, cardiogenic shock, and single ventricle patients with Glenn or Fontan physiology (depend on passive venous return for pulmonary blood flow)

Severely acidotic patients (DKA, salicylate toxicity) are dependent on their hyperventilation to compensate; even brief periods of apnea during RSI may worsen acidosis and lead to arrest. Apneic period should be minimized and hyperventilation / ET<sub>CO2</sub> pre-intubation should be matched with post-intubation settings

Asthma patients: accept higher CO<sub>2</sub>s if improving and avoid intubation if possible, low rates may be needed to avoid breath stacking