

Montefiore Medical Center
Medications Recommended for Astat® or Aprn® Sedation¹

Medication	Recommended Dose for Children ^{2,3}	Recommended Dose for Adults ^{2,3}	Pharmacology	Monitoring
Benzodiazepines Diazepam (L)	(Rarely used) <u>IV/PO</u> : 0.05-0.25 mg/kg	<u>IV/ IM/ PO</u> : 2-10 mg (up to 20 mg may be used for procedures after careful patient assessment)	Anxiolysis, sedation, and amnesia; no analgesia Problems: Rapid IV may cause hypotension; Excessive sedation and apnea can occur suddenly; may cause disinhibition with increased agitation ⁴ in some patients; Lorazepam has the slowest onset and longest duration among all 3 agents	Mental alertness, Airway patency, BP, Pulse, Respiratory rate, Tissue oxygenation (with pulse oximetry) For high risk patients ⁶ , consider: EKG monitoring, End tidal CO ₂ monitoring (with capnometry)
Lorazepam (l)	(Rarely used) <u>IV</u> : 0.05-0.1 mg/kg; mainly in status epilepticus <u>PO</u> : 0.05 mg/kg	<u>IV/IM</u> : 0.01-0.05 mg/kg (Max. 4 mg) <u>PO</u> : 0.5-5 mg		
Midazolam(S)* - for ICU use and certain procedures	<u>IV/IM</u> : 0.025-0.08 mg/kg over 2 mins (max. 2.5 mg) <u>PO</u> : 0.25-0.75 mg/kg (Max. 20 mg)	<u>IV</u> : 0.5-2 mg over 2 mins, repeat q 2-3 mins until desired effect, or, by continuous IV in ICU setting <u>IM</u> : 0.02-0.1mg/kg (1-7.5 mg) <u>PO</u> : 0.5-0.8 mg/kg (Max. 50 mg)		
Opioids Fentanyl(l-L)* - for ICU use and certain procedures	<u>IV</u> : 1-3 µg/kg as 10 µg/ml solution in increments of 0.5-1 µg/kg until desired effect <u>PO (transmucosal)</u> : 5-15 µg/kg (Max. 400 µg)	<u>IV/IM</u> : 0.5-2 µg/kg (25-100 µg), repeat q 5 mins-2 hrs as indicated, or by continuous IV (20 µg/ml) in ICU setting <u>PO (transmucosal)</u> : 5 µg/kg (Max. 400 µg)	Analgesia and sedation Problems: Rapid IV may cause hypotension, especially with morphine; Excessive sedation and apnea can occur suddenly; Meperidine has the shortest duration, also, its toxic metabolite may accumulate in renal patients after repeated dosing and cause CNS problems (seizures)	
Meperidine(S)	<u>IV/IM</u> : 1-3 mg/kg (Max. 4-5 mg/kg)	<u>IV/IM</u> : 1-3 mg/kg (50-150 mg)		
Morphine(S)	<u>IV/IM</u> : 0.05-0.3 mg/kg	<u>IV</u> : 0.05-0.1 mg/kg (2-15 mg), repeat q 15 mins-4 hrs as indicated; or by continuous IV (1 mg/ml) in ICU setting <u>IM</u> : 2-20 mg		
Miscellaneous Diphenhydramine	not recommended for children	<u>PO/IV/IM</u> : 25-50 mg (as an <u>adjunct only</u>)	May cause disinhibition with increased agitation in some patients	
Chloral Hydrate (single dose, single use)	<u>PO</u> : 25-100 mg/kg; may repeat with 25-50 mg/kg after 30 mins (Max. 2 g or 100 mg/kg)	not recommended for adults	Sedation and anxiolysis; no analgesia May cause paradoxical excitement	
Barbiturates Pentobarbital	<u>PO</u> : 3-5 mg/kg (max. 200 mg)	not recommended for adults	Excessive sedation and apnea can occur suddenly	
Antidotes⁵ Flumazenil	<u>IV</u> : 0.003 mg/kg (max. 0.2 mg) over 30 secs, the dose may be repeated after 30 secs (Max. 2 mg)	<u>IV</u> : 0.2 mg over 30 secs, the dose may be repeated after 30 secs (Max. 2 mg)	Reverse the effect of benzodiazepines	Continuous IV infusion is required to reverse serious overdose; May precipitate withdrawal in some patients.
Naloxone	<u>IV/IM/SC</u> : 0.005-0.01 mg/kg q 2-3 mins prn (Max. 1mg)	<u>IV/IM/SC</u> : 0.1-0.2 mg q 2-3 mins prn (Max. 1mg)	Reverse the effect of opioids	

Preferred Agent

Note: S = Short acting; I = intermediate acting; L = Long acting