



# REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

**midazolam**



**Effective Date:** Dec 2011

**Revised Date:** June 2024

CLASSIFICATION

**Sedative  
Anesthetic**

OTHER NAMES

**Versed**

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### ADMINISTRATION POLICY:

- IV bolus – **May be administered by a nurse experienced in ED/OR/CARDIAC ROOM/ICU/PACU**
- IM injection – **May be administered by a nurse experienced in ED/OR/CARDIAC ROOM/ICU/PACU**
- IV infusion – **May be administered by a nurse experienced in ED/OR/CARDIAC ROOM/ICU/PACU**
- Intranasal – **May be administered by a nurse experienced in ED/OR/CARDIAC ROOM/ICU/PACU**

### RECONSTITUTION/DILUTION/ADMINISTRATION:

**Available as:** 1 mg/mL and 5 mg/mL vials

**IV Bolus:** Administer undiluted OR diluted in convenient volume of normal saline over 2 to 5 minutes

**IM injection:** Administer with needle of appropriate length and gauge

**Intranasal:** Choose 5 mg/mL concentration. Administer half of total dose in each nostril to a maximum volume of 1 mL per nostril. Administer using a MAD device.

### IV Infusion: Pump Library:

Drug Library	Dose Rate	Short Name	Care Unit
Yes	mg/kg/h	midaz1.	Pediatric
Drug	Diluent	Final Volume (VTBI)	Final Concentration
125 mg (25 mL of 5mg/mL)	100 mL	125 mL	1 mg/mL
Clinical Advisory: High Alert			
Soft Low Dose Limit: 0.05 mg/kg/h		Soft High Dose Limit: 0.36 mg/kg/h	

### DOSAGE:

#### Sedation during mechanical ventilation:

**IV bolus:** 0.05 to 0.2 mg/kg/dose x 1 dose

**IV infusion:** Maintenance: 0.05 mg/kg/hour to 0.12 mg/kg/hour titrate to the desired effect

#### Sedation for procedures:

**IV bolus:** 0.05 to 0.1 mg/kg/dose every 5 minutes PRN

Max total dose 6 mg (5 year old or less) and 10 mg (6 year old or greater)

**IM injection:** 0.05 to 0.15 mg/kg/dose x 1 dose, given 15 to 30 minutes prior to surgery (max 10 mg per dose)

**Intranasal:** 0.1 mg to 0.2 mg/kg/dose may repeat x 1 dose in 10 to 15 minutes (max 10 mg per dose)

#### Seizures:

**IV bolus:** Initial: 0.1 to 0.2 mg/kg/dose. May repeat x 1 in 5 to 10 minutes

**IV infusion:** Maintenance: 0.05 to 0.2 mg/kg/hour

Range: 0.03 to 2 mg/kg/hour

**Intranasal:** 0.2 to 0.3 mg/kg/dose divided between two nares (maximum 10 mg/dose)

May repeat x 1 to maximum total dose of 0.6 mg/kg



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**Maximum concentration:** IV bolus, infusion, nasal: 5 mg/mL

### STABILITY/COMPATIBILITY:

**Stability of Final Admixture:** 24 hours at room temperature

**Compatibility:** Compatible with normal saline, D5W

### PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:

- CV: Tachycardia, arrhythmia, cardiac arrest are uncommon. Hypotension risk is reduced by adequate pre-hydration.
- GI: Nausea and vomiting, altered taste
- Neuro: Paradoxical excitation, additive with other CNS depressants, headache, residual drowsiness
- Resp: Hiccough, cough, laryngospasm, wheeze, apnea, respiratory depression, respiratory and/or cardiac arrest
- Local: Pain at injection site, burning, rash or feeling of warmth
- Other: Chills, toothache, sensation of blockage of ears
- Caution: Rapid administration associated with high risk of apnea and hypotension (vasodilation)
- Patients with obstructive lung disease, renal failure or congestive heart failure – risk of drug accumulation and increased risk of respiratory and CV adverse effects
- Contraindicated with hypersensitivity to midazolam or other benzodiazepines
- Due to risk of respiratory depression in children under 1 year of age, start dose at lower end of range and titrate relative to need

### ADDITIONAL NOTES:

- Sedative action: Twice as potent as diazepam
- Peak action: IM: 30 minutes, IV: 1 – 5 minutes IN solution: 3 – 8 minutes
- Duration of action: IV: 2 hours
- Metabolized in liver, excreted in urine
- **Required monitoring**
  - Continuous cardiorespiratory and O2 sat monitoring preferred or O2 saturation, heart rate, respiratory rate, blood pressure, sedation score q5min until patient awake, then 15min for 30 min or until vital signs return to baseline. Patient should be continuously observed during the procedural sedation. For acutely agitated patients, if unable to do above monitoring, document visual check and respiratory rate at 5, 15, 30 minutes post-dose.
    - Level of consciousness
    - Equipment to support respiration must be available in patient care area