



# Jackson Hole Fire/EMS Operations Manual

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Title: **Medication Protocol:  
Ketamine**

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## **Ketamine Hydrochloride (Ketalar)** (Medication Protocol)

### PARAMEDIC PROVIDERS

#### **STANDING ORDER**

**CLASS:** Anesthetic (*high dose*); analgesic (*low dose*)

**PHARMACOLOGY/  
ACTIONS:** Blocks impulses of pain perception; suppresses spinal cord activity; affects CNS transmitter systems; provides anesthesia with profound analgesia and minimal respiratory depression and minimal skeletal muscle relaxation.

**ONSET/DURATION:** Onset: 30 seconds (IV/IO), 3-4 minutes (IN/IM)  
Duration: 5-10 minutes (IV/IO), 12-25 minutes (IN/IM)

**USE IN FIELD/  
INDICATIONS:**

- Excited Delirium/ Behavioral Emergencies – Sedation Dosing
- Procedural Sedation (Cardioversion) – Sedation Dosing
- Analgesia (severe pain) for isolated extremity injuries – Sub-dissociative Pain Dosing

\*\*\* Contact Medical Control before being used in head injury or multi-system trauma, or other medical settings (ROSC, advanced airway/ventilator sedation, etc.) due to mental status concerns.

**CONTRAINDICATIONS:** Hypersensitivity to Ketamine

**RELATIVE  
CONTRAINDICATIONS:** Pregnancy; hypothyroidism; cardiovascular disease; gastroesophageal reflux; hepatic dysfunction; history of alcohol abuse.

**SIDE EFFECTS:** Hallucinations; hypertension; increased cardiac output; tachycardia; hypotension; bradycardia; increased oral secretion; nausea and vomiting.

**DRUG INTERACTIONS:** Use with barbiturates or opioid analgesics may result in prolonged recovery time. Concurrent administration with benzodiazepine may decrease incidence of emergence reaction.

**ROUTE:** IV / IO / IM / IN

## Sedation Dosing for Excited Delirium/Behavioral Emergencies

**Contact Medical Control before being used in head injury or multi-system trauma, or other medical settings (ROSC, advanced airway/ventilator sedation, etc.) due to mental status concerns.**

	ADULT	PEDIATRIC (<45 kg)
<b>SEDATION DOSAGE:</b>	IV/IO: 1-2 mg/kg every 5 minutes to a maximum of 3 doses.  IM/IN: 2-4 mg/kg every 10 minutes to a maximum of 3 doses.	For Combative Pts. >10 Yrs. old (must be a danger to self or others)  IV/IO: 1-2 mg/kg every 5 minutes to a maximum of 3 doses.  IM/IN: 2-4 mg/kg every 10 minutes to a maximum of 3 doses.

## Analgesia Dosing for Severe Pain

**Contact Medical Control before being used in head injury or multi-system trauma, or other medical settings (ROSC, advanced airway/ventilator sedation, etc.) due to mental status concerns.**

	ADULT	PEDIATRIC (<45 kg)
<b>SEVERE PAIN DOSAGE:</b> <b>(Sub-Dissociative)</b>	IV/IO: Initial dose of 10 mg to determine effect, additional dosing can be increased to 0.1-0.3 mg/kg every 5-15 minutes.  <b>Titrate to Pain and Nystagmus</b>  IM/IN: 0.5-1 mg/kg every 10 minutes.	IV/IO: Initial dose of 0.1 mg/kg (max 10 mg) to determine effect, additional dosing can be increased to 0.1-0.3 mg/kg every 5-15 minutes.  <b>Titrate to Pain and Nystagmus</b>  IM/IN: 0.5-1 mg/kg every 10 minutes.

**PREGNANCY SAFETY:** Category N- Not Classified

**COMMENTS:** **SCHEDULE III NARCOTIC:**  
**Security protocol is the responsibility of Jackson Hole Fire/EMS.**

DEA Schedule III drug with potential for abuse.

Assess level of consciousness frequently- patient will experience a dissociative state and may emerge from this agitated, anxious and/or hallucinating.

Consider using Ketamine as an adjunct in combination with other pain control agents (e.g. fentanyl/Dilaudid).