

# Methoxyflurane

## Classification

Inhaled anesthetic

## Indications

■ PCP: Moderate to severe pain associated with trauma or interventional medical procedures in adults

## Contraindications

- Children < 18 years of age
- Inadequate patient understanding or lack of cooperation
- Decreased level of consciousness
- History of clinically significant renal impairment
- History of liver dysfunction following previous exposure to halogenated anesthetics
- Current use of tetracycline antibiotics
- Personal or familial history of malignant hyperthermia
- Muscular dystrophy
- Pregnancy, intended pregnancy, or current breast-feeding

## Adult dosages

■ PCP: Moderate to severe pain associated with trauma or interventional medical procedures in adults

- 3 mL via inhaler. May provide additional 3 mL volume after 20 minutes. Maximum total volume 6 mL.

Patients must self-administer as needed under direct paramedic supervision.

## Pediatric Considerations And Dosing

Not authorized for patients under 18 years of age

## Mechanism Of Action

The specific mechanism of action of halogenated anesthetics is not well understood. Methoxyflurane is the only volatile anesthetic agent with significant analgesic properties at low, sub-anesthetic doses.

## Pharmacokinetics

Inhaled:

- Onset: 1-3 minutes
- Duration: 1 hour

## Adverse Effects

- Altered level of consciousness (chiefly drowsiness)
- Cough
- Hypotension and bradycardia (rare)

## **Overdose**

Doses of methoxyflurane that exceed therapeutic doses have been shown to produce serious, irreversible nephrotoxicity. Follow dosing guidelines and do not exceed recommended amounts.

Although unlikely in prehospital settings, patients should not receive more than 6 mL in any 48 hour period, and no more than 15 mL over one week.

## **Warning And Precautions**

Methoxyflurane carries unique risks for paramedics, particularly given chronic exposure. As such, limit administration of methoxyflurane inside ambulances to a single 3 mL dose; where possible, ensure adequate ventilation through the use of exhaust fans, and set ambulance heater or AC to any position but "Max AC" (as this is a recirculating mode).

Ensure that patients exhale through the carbon filter.

No single employee should administer more than three doses of methoxyflurane per shift.

