

RX

Drug Name: **Lorazepam**

Trade Name: **Ativan**

REVISED: **01MAY2018**

Class:

- Benzodiazepine
- Anticonvulsant
- Schedule IV Controlled Substance

Mechanism of Action:

- Acts at the level of the limbic, thalamic, and hypothalamic regions of the CNS through potentiation of GABA (inhibitory neurotransmitter).
- Decreases neural cell activity in all regions of the CNS. Anxiety is decreased by inhibiting cortical and limbic arousal.
- Promotes relaxation through inhibition of spinal motor reflex pathway, also depresses muscle and motor nerve function directly.
- As an anticonvulsant, augments presynaptic inhibition of neurons, limiting the spread of electrical activity. However, it does not alter the electrical activity of the seizure's focus.
- Although lorazepam has a shorter elimination half-life than diazepam, it persists in the CNS longer due to "redistribution phenomena".

Indications:

- Major motor seizures
- Status epilepticus
- Sedation prior to cardioversion
- Acute anxiety/behavioral emergencies
- Management of alcohol withdrawal symptoms
- Sedation in mechanical ventilation

Contraindications:

- Shock
- Hypersensitivity
- Closed angle glaucoma

Precautions:

- Reduce dose for geriatrics
- Hepatic dysfunction
- Renal insufficiency
- History of drug addiction
- Parkinson's disease
- Pregnancy (D)
- Myasthenia gravis
- Respiratory depression (unless ventilated)
- Current substance abuse (*relative*)

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This document is for **reference only**. Please refer to SWO's for specific indications, dosages, and applications

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Dosage:

Adults:

Status Epilepticus:

- **IV/IO:** 1-2 mg, may repeat at 10 minutes, max total dose 4 mg
- **IM:** 1-2 mg (If no vascular access)

Cardioversion/Pacing/Sedation:

- **IV/IO:** 0.5-2 mg, may repeat at 10 minutes, max total dose 2 mg
- **IM:** 2 mg (If no vascular access)

Agitation/anxiety/behavioral Emergency:

- **IV/IO:** 0.5-2 mg, may repeat at 10 minutes, max total dose 2 mg
- **IM:** 2 mg (If no vascular access)

Pediatrics:

Status Epilepticus:

- **IV/IO/IM:** 0.1 mg/kg, repeat at 5-10 min PRN, max total dose 2 mg

Cardioversion/Pacing/Sedation:

- **IV/IO:** 0.05-0.1 mg/kg, slow IV push over 2 minutes, max total dose 2 mg
- **IM:** 0.1 mg/kg, max total dose 2 mg

Sedation of mechanically ventilated patients (adults and peds):

- **IV/IO:** 0.05 mg/kg, titrate to sedation, repeat at 10 minutes PRN, max single dose 2 mg, max total dose 4 mg

Onset:

- IV--5-15 minutes
- IM--highly variable, 20-30 minutes.

Duration:

- IV--6-8 hours
- IM--24-48 hours

Side Effects:

Minor:

- CNS Depression
- Dizziness
- Drowsiness
- Lethargy
- Ataxia

Major:

- Respiratory Depression
- Apnea
- Hypotension
- Bradycardia
- Cardiac Arrest
- Paradoxical CNS stimulation (i.e. Valium Rage)

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Interactions:

- Potentiates sedative effect of other CNS depressants.

PEARLS:

- **This drug is utilized as an alternative when drug shortages prevent carrying other benzodiazepines.**
- This drug is in common use by many health care facilities.
- Inadvertent intra-arterial injection may produce arteriospasm, resulting in gangrene that may require amputation.
- **Lorazepam expires in six weeks when not refrigerated. Do not use if discolored, or if solution contains precipitate.**
- To avoid patient discomfort, lorazepam should be injected into a large muscle or large vein.
- As a dosing guideline, 2 mg of lorazepam is roughly equivalent to 5 mg of diazepam.

If unable to control seizures after max dose any single benzodiazepine, call medical control to continue with another benzodiazepine.

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