

## Tramadol

Tramadol is a unique, centrally acting medication that works on multiple neurotransmitters. It is typically prescribed to treat chronic pain, which is moderate-to-severe. It has a wide scope of analgesic uses, ranging from rheumatoid arthritis to fibromyalgia. This drug is a racemic mixture of two tramadol enantiomers; one works to inhibit serotonin reuptake and enhance its release, while the other enantiomer inhibits NE reuptake. Tramadol also acts as a weak opioid and has agonist activity at  $\mu$  receptors. It is a combination of its opioid actions, various neurotransmitter effects, and influence at NMDA, muscarinic and nicotinic receptors that lead to its analgesic effects. A side effect of this medication is a dose-independent increased risk of seizure, as this drug decreases seizure threshold in patients.



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### Indications

#### Chronic Pain

[Crone with Pain-bolts](#)

Chronic pain is the main indication for tramadol use. It is used for moderate to severe pain, and also can be administered to treat rheumatoid arthritis and fibromyalgia.

### Mechanism of Action

#### Weak Opioid

[Weak Poppy-droid](#)

This drug has a weak affinity for  $\mu$ opioid receptors, producing its analgesic effects. Tramadol has synergistic effects with numerous other receptors, as it also affects nicotinic, muscarinic and NMDA receptors.

#### Inhibit Serotonin and NE reuptake

[Inhibiting-chains on Silver-tonic and North-epi-pen Reuptake-tube](#)

There are two enantiomers of tramadol, which are combined to make a racemic mixture. One enantiomer inhibits 5-HT (serotonin) reuptake and enhances its release. The other enantiomer inhibits NE reuptake. It is the modulation of these various receptors and neurotransmitters in combination that help tramadol exhibit its effects.

### Side Effect

#### Increased Risk of Seizure

[Up-arrow Risk with climbing Caesar](#)

Tramadol has been shown to increase the risk of seizure by lowering the threshold in patients. This is a dose-independent side effect.