

## Memantine

Memantine is an NMDA receptor antagonist drug, which helps prevent excitotoxicity in patients with Alzheimer's disease. It is a glutamergic antagonist at NMDA receptors. This medication works by halting an influx of  $Ca^{2+}$ , preventing excitotoxicity to neurons. Neuronal excitotoxicity is mediated by  $Ca^{2+}$ , which activates intracellular enzymes, leading to cell destruction. Thus, by halting this influx, memantine shows symptomatic improvement in patients. This drug has been shown to have a modest effect on moderate and severe Alzheimer's cases, while having little benefit in mild cases of Alzheimer's disease. Though rare, patients taking memantine can experience the side effects of confusion and hallucinations.



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### Indications

#### Alzheimer's Disease

##### Old-timer

Memantine is an NMDA receptor antagonist drug which helps prevent excitotoxicity in patients with Alzheimer's.

### Mechanism of Action

#### NMDA Receptor Antagonist

##### NMDA Receptor Ant-toga

Memantine is a glutamatergic antagonist at NMDA receptors. This action allows to impede an influx of  $Ca^{2+}$ , halting excitotoxicity to neurons. This drug is low affinity and short-acting with a modest effect.

#### Prevents Excitotoxicity

##### Blocking Excited-X-toxic nerves

By antagonizing NMDA receptors, excitotoxicity is prevented in neurons. Excitotoxicity is mediated by  $Ca^{2+}$  which activates intracellular enzymes, leading to cell destruction.

### Side Effects

#### Confusion

##### Confucius

An adverse effect of treatment with memantine is confusion in patients.

#### Hallucinations

##### Halloween-hallucination

Patients taking memantine can suffer from hallucinations.