

Tetrodotoxin



PLAY PICMONIC

Source

Pufferfish

[Pufferfish](#)

Tetrodotoxin is a potent neurotoxin found in pufferfish. It is known as one example of marine toxins in food poisoning and is commonly served at fugu restaurants.

Mechanism

Blocks Voltage-Gated Na⁺ Channels

[Block-guy-blocking Electric-gate Salt-shaker Channel](#)

Tetrodotoxin blocks voltage-gated Na⁺ channels that are used for nerve impulses. This blockage prevents depolarization, causing weakness, paralysis, paresthesia, and reflex loss.

Prevents Depolarization

[Prevent D-polar-bear](#)

Prevention of depolarization will cause inhibition of nerve conduction. Patients will experience nerve problems such as weakness, paralysis, paresthesia, and reflex loss.

Signs and Symptoms

Weakness

[Weak-drooping-muscle](#)

Weakness is one of the early manifestations of tetrodotoxin poisoning. It is caused by the toxin's blockade of sodium channels on the nerve cell membrane.

Dizziness

[Dizzy-eyes](#)

Paresthesia can either precede or occur simultaneously with headache, weakness, or dizziness.

Paresthesia

[Paris-t-shirt with Pins-and-needles](#)

Paresthesia of the face and extremities, described as tingling, can be experienced by patients.

Nausea

[Vomiting](#)

Patients affected by tetrodotoxin can experience clinical manifestations within 30 minutes of consumption. Nausea and vomiting can occur due to the action of toxins directly at or near the chemoreceptor trigger zone.

Diarrhea

[Toilet](#)

Diarrhea can occur as a gastrointestinal symptom of tetrodotoxin. Another potential symptom is abdominal pain.

Loss of Reflexes

[Loss of Reflex-hammer](#)

Symptoms of tetrodotoxin poisoning can progress to a loss of reflexes.

Paralysis

[Wheelchair](#)

Patients can experience skeletal muscle paralysis, which can affect the respiratory tract. As a result, the effects of this toxin can lead to respiratory arrest and death.

Management

Supportive

[Supportive IV-bags](#)

Tetrodotoxin treatment is supportive, based on the patient's clinical features. These may include symptomatic therapies, mechanical ventilation, intravenous fluids, and vasopressors.