



## Major Foodborne Illnesses Caused by Seafood Toxins

Most Important Prevention Measure		Controlling time and temperature	Preventing cross-contamination	Practicing personal hygiene	Purchasing from approved, reputable suppliers				
Illness					Scombroid poisoning	Ciguatera fish poisoning	Paralytic shellfish poisoning (PSP)	Neurotoxic shellfish poisoning (NSP)	Amnesic shellfish poisoning (ASP)
<b>Seafood Toxin Characteristics</b>	Commonly Linked Food	Fish			•	•			
		Shellfish					•	•	•
<b>Most Common Symptoms</b>	Diarrhea				•		•	•	•
	Abdominal pain/cramps								•
	Nausea					•	•		
	Vomiting				•	•	•	•	•
	Fever								
	Headache				•				
	Neurological symptoms				•	•	•	•	•
<b>Prevention Measures</b>	Handwashing								
	Cooking								
	Holding				•				
	Cooling								
	Reheating								
	Approved suppliers				•	•	•	•	•
	Excluding foodhandlers								
Preventing cross-contamination									

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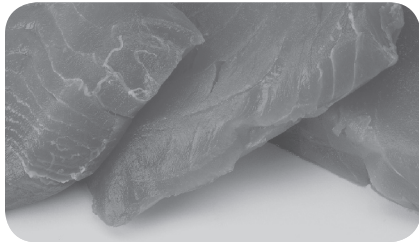
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Most Important Prevention Measure: Purchasing from approved, reputable suppliers

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**Illness**    **Scombroid poisoning** (*SKOM-broyd*)  
**Toxin**      **Histamine** (*HISS-ta-meen*)

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Scombroid poisoning is also known as histamine poisoning. It is an illness caused by eating high levels of histamine in scombroid and other species of fish. When the fish are time-temperature abused, bacteria on the fish make the toxin. It cannot be destroyed by freezing, cooking, smoking, or curing.

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**Food Commonly Linked with the Toxin**

- Tuna
- Bonito
- Mackerel
- Mahi mahi

**Most Common Symptoms**

Initially

- Reddening of the face and neck
- Sweating
- Headache
- Burning or tingling sensation in the mouth or throat

Possibly later

- Diarrhea
- Vomiting

**Other Prevention Measures**

- Prevent time-temperature abuse during storage and preparation.
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Most Important Prevention Measure: Purchasing from approved, reputable suppliers

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**Illness**    **Ciguatera fish poisoning** (*SIG-wa-TAIR-uh*)  
**Toxin**      **Ciguatoxin** (*SIG-wa-TOX-in*)

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Ciguatoxin is found in certain marine algae. The toxin builds up in certain fish when they eat smaller fish that have eaten the toxic algae. Ciguatoxin cannot be detected by smell or taste. Cooking or freezing the fish will not eliminate it. Symptoms may last months or years depending on how severe the illness is.

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**Food Commonly Linked with the Toxin**

Predatory tropical reef fish from the Pacific Ocean, the western part of the Indian Ocean, and the Caribbean Sea, including:

- Barracuda
- Grouper
- Jacks
- Snapper

**Most Common Symptoms**

- Reversal of hot and cold sensations
- Nausea
- Vomiting
- Tingling in fingers, lips, or toes
- Joint and muscle pain

**Other Prevention Measures**

- Purchase predatory tropical reef fish from approved, reputable suppliers.



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Most Important Prevention Measure: Purchasing from approved, reputable suppliers

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**Illness**    **Paralytic shellfish poisoning (PSP)** (*PAIR-ah-LIT-ik*)  
**Toxin**      **Saxitoxin** (*SAX-ih-TOX-in*)

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Some types of shellfish can become contaminated as they filter toxic algae from the water. People get sick with paralytic shellfish poisoning (PSP) when they eat these shellfish. Saxitoxin cannot be smelled or tasted. It is not destroyed by cooking or freezing. Death from paralysis may result if high levels of the toxin are eaten.

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**Food Commonly Linked with the Toxin**

Shellfish found in colder waters, such as those of the Pacific and New England coasts, including:

- Clams
- Mussels
- Oysters
- Scallops

**Most Common Symptoms**

- Numbness
- Tingling of the mouth, face, arms, and legs
- Dizziness
- Nausea
- Vomiting
- Diarrhea

**Other Prevention Measures**

- Purchase shellfish from approved, reputable suppliers.

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Most Important Prevention Measure: Purchasing from approved, reputable suppliers

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**Illness**    **Neurotoxic shellfish poisoning (NSP)** (*NUR-o-TOX-ik*)  
**Toxin**      **Brevetoxin** (*BREV-ih-TOX-in*)

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Some types of shellfish can become contaminated as they filter toxic algae from the water. People get sick with neurotoxic shellfish poisoning (NSP) when they eat these shellfish. Brevetoxin cannot be smelled or tasted. It is not destroyed by cooking or freezing.

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**Food Commonly Linked with the Toxin**

Shellfish found in the warmer waters of the west coast of Florida, the Gulf of Mexico, and the Caribbean Sea, including:

- Clams
- Mussels
- Oysters

**Most Common Symptoms**

- Tingling and numbness of the lips, tongue, and throat
- Dizziness
- Reversal of hot and cold sensations
- Vomiting
- Diarrhea

**Other Prevention Measures**

- Purchase shellfish from approved, reputable suppliers.
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Most Important Prevention Measure: Purchasing from approved, reputable suppliers

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**Illness**     **Amnesic shellfish poisoning (ASP)** (*am-NEE-zik*)  
**Toxin**       **Domoic acid** (*duh-MO-ik*)

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Some types of shellfish can become contaminated as they filter toxic algae from the water. People get sick with amnesic shellfish poisoning (ASP) when they eat these shellfish. The severity of symptoms depends on the amount of toxin eaten and the health of the person. Domoic acid cannot be smelled or tasted. It is not destroyed by cooking or freezing.

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**Food Commonly Linked with the Toxin**

Shellfish found in the coastal waters of the Pacific Northwest and the east coast of Canada, including:

- Clams
- Mussels
- Oysters
- Scallops

**Most Common Symptoms**

Initially

- Vomiting
- Diarrhea
- Abdominal pain

Possibly later

- Confusion
- Memory loss
- Disorientation
- Seizure
- Coma

**Other Prevention Measures**

- Purchase shellfish from approved, reputable suppliers.