Oysters from Zeeland – Delicious, but Be Aware of These Risks

Oysters from the Oosterschelde and Grevelingenmeer — such as the Japanese and European flat oyster — are popular, including when eaten raw. However, raw oysters can contain bacteria, viruses and chemical substances. Those from certified beds are generally safe, especially when cooked, although the risk can increase seasonally.

Risks Throughout the Year

Maand	Norovirus	Vibrio	Biotoxinen	PFAS
Jan	Hoog	Laag	Laag	Const.
Feb	Hoog	Laag	Laag	Const.
Mrt	Middel	Laag	Laag	Const.
Apr	Laag	Laag	Laag	Const.
Mei	Laag	Middel	Middel	Const.
Jun	Laag	Middel	Middel	Const.
Jul	Laag	Hoog	Hoog	Const.
Aug	Laag	Hoog	Hoog	Const.
Sep	Laag	Middel	Hoog	Const.
Okt	Laag	Middel	Middel	Const.
Nov	Middel	Laag	Laag	Const.
Dec	Hoog	Laag	Laag	Const.

What's Inside the Oyster?

🦠 *Viruses*

- **Norovirus** – the leading cause of gastroenteritis from raw oysters. Extremely contagious, especially in autumn/winter and after heavy rainfall.
- **Hepatitis A** – rare in the Netherlands but can cause liver inflammation. Killed by heating above 70°C.

🧫 *Bacteria*

- **Vibrio parahaemolyticus** – causes diarrhoea and stomach cramps in warm water (> 18°C).
- **Vibrio vulnificus** – rare but dangerous, especially for people with liver problems or weakened immune systems.
- **E. coli, Salmonella** – indicators of contamination; usually low in regulated beds.
- **Listeria monocytogenes** – uncommon, but a risk for vulnerable groups.

🧪 *Chemical Substances*

- **Heavy metals** (lead, cadmium, mercury) – usually below EU limits but can accumulate with frequent consumption.
- **PFAS** – low levels in the Oosterschelde, present in the Grevelingenmeer; cumulative risk if eaten often.
- **Dioxins/PCBs** – historical pollutants, monitored regularly.

⚠ *Biotoxins*

- **DSP, PSP, ASP** – algae-produced toxins that cause diarrhoea or neurological symptoms; peak in summer/autumn.
- **Tetrodotoxin (TTX)** – rare but potent neurotoxin; occasionally leads to closure of oyster beds.

🐚 *Parasites and Fungi*

- **Bonamia ostreae** – affects flat oysters; no human health risk.
- **Ostracoblabe implexa** – shell fungus, more common in the Grevelingenmeer; reduces quality.

🤧 *Allergies*

- Cause: the protein **tropomyosin**.
- Symptoms: from skin rash to anaphylaxis (life-threatening).
- Cross-reactions possible with other shellfish and crustaceans.

When and for Whom is it Risky?

Seasonal Effect

- **Norovirus**: peaks in autumn/winter.
- **Vibrio**: peaks in warm summer months.
- **Biotoxins**: mainly in summer/autumn during algal blooms.
- **PFAS**: constant year-round.

At-Risk Groups

Avoid raw oysters if you:

- Are pregnant
- Have a child under 5
- Are over 65
- Have liver disease
- Have a weakened immune system

How to Eat Safely

Buying

- Only buy from **certified suppliers** under NVWA (Dutch Food Safety Authority) inspection.
- Check origin and harvest date.

Preparing

- Heat to at least **70°C** (for example, brief boiling or gratinating).
- Keep raw and ready-to-eat foods separate to prevent cross-contamination.

Limit Consumption

- Eat oysters from higher-risk areas no more than a few times a month.
- Choose outside peak-risk months if you want to eat raw.

Oosterschelde vs. Grevelingenmeer

Feature	Oosterschelde	Grevelingenmeer
Water exchange	Open connection with the North Sea	Enclosed saltwater lake
PFAS	Low	Low–medium
Parasites/fungi	Present, less frequent	Higher due to stagnant water
Oyster herpes virus	Yes (no human health risk)	Yes (no human health risk)
Risk profile	Well monitored, low pollution	Local pollutant build-up, quality issues

Key message:
Oysters from the Oosterschelde and Grevelingenmeer are generally safe if bought from certified beds and cooked. Eating raw is riskier in summer (Vibrio, biotoxins) and winter (norovirus). Vulnerable groups are best advised to eat oysters cooked at all times.