

Facts about *Vibrio vulnificus*, *Vibrio parahaemolyticus*, and Shellfish

关于创伤弧菌、副血溶性弧菌和贝类

What is *Vibrio*?

Flesh-eating bacterial infections recently reported in the press (August 2023) are associated with exposure to *Vibrio* bacteria. *Vibrio* infections are an important public health issue. Most *Vibrio* species are benign, but some can cause serious illness in people, particularly if they are predisposed to infection from other health risks. Depending on the bacterial species and an individual's risk factors, *Vibrio* infections can be deadly. Other *Vibrio* species are less lethal, but can still cause serious illness.

什么是弧菌？

近期新闻报道（2023 年 8 月）提到的食肉细菌感染与接触弧菌细菌有关。弧菌感染是重要的公共卫生问题。大多数弧菌物种是良性的，但有些物种可能会在人体内引起严重疾病，特别是由其他健康风险导致感染的易感人群。由细菌物种和个体风险因素决定，弧菌感染有可能是致命的。其他弧菌物种的致命性较低，但仍可能引发严重疾病。

Is *Vibrio* on the rise?

It's hard to say. More *Vibrio* cases have been reported in recent years. Several factors contribute to the observed increase in *Vibrio* infections, including increased surveillance, more sensitive diagnostic tools, and better reporting by state health agencies. Other factors may also be playing a role, including increased water-based recreation, shifting demographics and diet patterns, and rising sea temperatures from climate change.

弧菌是否在增加？

答案是：不一定。近年来有关弧菌病例的报告增加了，这种弧菌感染增加的趋势是由多种因素造成的，包括加强监测、使用敏感度更高的诊断工具以及州卫生机构提供更好的报告。除此之外，还有其他的因素，包括水上娱乐活动项目的增加、人口结构和饮食模式的变化，以及气候变化导致海水温度上升。

Where is *Vibrio* found?

Vibrio are naturally occurring bacteria that exist in warm, saltwater and brackish environments around the world. Brackish environments are places where freshwater mixes with ocean water and include bays and estuaries. They are most abundant between May and October. *Vibrio* are often associated with shellfish since many species break-down the shells of crustaceans (e.g., crabs, shrimp, lobster). Since *Vibrio* float freely in seawater, they can become concentrated inside filter-feeding shellfish, like oysters.

弧菌分布在哪里？

弧菌存在于全球范围内温暖、咸水和半咸水环境中，它们是自然界中的细菌。半咸水环境是淡水与海水混合的地方，包括海湾和河口。弧菌在 5 月至 10 月之间数量最多。弧菌通常与贝类有关，因为许多物种可以分解甲壳类动物（例如螃蟹、虾、龙虾）的壳。由于弧菌可以在海水中自由漂浮，它们可以在像牡蛎这样的滤食性贝类内积聚。

How is *Vibrio* controlled?

Eating raw or undercooked shellfish can cause *Vibrio* infections. However, seafood consumers should know that shellfish harvests are very carefully regulated by state, interstate, and federal agencies to protect public health. Since all bacteria can multiply in shellfish after they are harvested from the water, proper post-harvest handling is absolutely critical. Regulations are in place to ensure shellfish are properly handled by harvesters, distributors, wholesalers, and retailers.

如何控制弧菌？

食用生贝类或未煮熟的贝类可能会导致弧菌感染。然而，海鲜消费者应该知道，贝类的采收受到州、州际和联邦机构的严格监管，以保护公共健康。由于贝类从水中采收后，各类细菌都可能繁殖，因此适当的采后处理非常关键。确保采摘者、分销商、批发商和零售商正确处理贝类的相关规定已经出台。

Vibrio vulnificus

Vibrio vulnificus infections are very rare, but very serious. Annually, less than 200 cases are reported in the US each year, fewer than the number of Americans who are struck by lightning. When *Vibrio vulnificus* cases do occur, they typically arise when an open wound comes in direct contact with water that contains the bacteria (60% of cases). Only about 16% of cases are associated with consumption of raw or undercooked seafood. According to the Centers for Disease Control and Prevention (CDC), about one in five people who contract a *Vibrio vulnificus* infection die.

创伤弧菌

创伤弧菌感染非常罕见，但非常严重。每年美国报告的病例不到 200 例，少于被雷击中的美国人数。创伤弧菌感染病历出现，通常是由于开放性伤口直接接触含有这种细菌的水而导致的（60%的病例）。只有约 16%的病例与食用生海鲜或未煮熟的海鲜有关。根据疾病控制与预防中心（CDC）的数据，约五分之一感染创伤弧菌的人会死亡。

Vibrio parahaemolyticus

Vibrio parahaemolyticus infections are rare, but serious. Annually, about 600 cases are reported in the US each year, and the CDC estimates that only 1% of *Vibrio parahaemolyticus* infections are lethal. Most *Vibrio* infections associated with the consumption of raw or undercooked shellfish are caused by *Vibrio parahaemolyticus*.

副血溶性弧菌

副血溶性弧菌感染罕见，但很严重。每年美国报告约 600 例病例，而疾病控制与预防中心（CDC）估计仅有 1%的副血溶性弧菌感染会致命。与食用生贝类或未煮熟贝类有关的大多数弧菌感染是由副血溶性弧菌引起的。

Symptoms, Risk Factors, & Prevention

症状、风险因素和预防

1. Shellfish should always be iced or refrigerated and maintained at a temperature below 45°F. When shellfish are handled properly, the risk of contracting *Vibrio* is very low for most people.

贝类应始终放置在冰中或冷藏，保持温度在 45°F 以下。贝类处理得当时，对大多数人而言感染弧菌的风险是非常低的。

2. *Vibrio* can cause gastroenteritis, with symptoms such as watery diarrhea, stomach cramps, nausea, vomiting, fever, and chills. Wounds infected with *Vibrio* can become red, swollen, and blistered. *Vibrio* can also cause blood poisoning (septicemia). Some species can also cause necrotizing fasciitis, which may lead to limb amputations.

弧菌可以引起胃肠炎，症状包括水样腹泻、胃部绞痛、恶心、呕吐、发热和寒战。被弧菌感染的伤口可能会变红、肿胀并出现水疱。弧菌还可以引发血液中毒（败血症）。一些物种还可能导致坏死性筋膜炎，可能进一步导致肢体截肢。

3. *Vibrio* tends to affect people with compromised immune systems or other health issues. High-risk individuals include:
 - a. People with diabetes, cancer, chronic liver and kidney disease, hepatitis, and HIV/AIDS.
 - b. People with other illnesses that weaken the immune system.
 - c. People taking medicines that lower immune system activity, such as certain types of arthritis and cancer treatments.

弧菌倾向于影响免疫系统受损或有其他健康问题的人。高风险人群包括：

- a. 患有糖尿病、癌症、慢性肝脏和肾脏疾病、肝炎和 HIV/AIDS 的人。
- b. 患有其他削弱免疫系统的疾病的人。
- c. 正在服用降低免疫系统活性的药物的人，例如某些类型的关节炎和癌症治疗药物。

4. If you have these risk factors, here's how you can reduce your exposure risk:
 - a. Avoid handling or eating raw or undercooked shellfish. Consume only cooked shellfish.
 - b. If you have an open wound (including from a recent surgery, piercing, or tattoo), avoid coming in contact with brackish water or saltwater.
 - c. If you engage in activities that might expose your wound to brackish water, saltwater, or raw/undercooked shellfish, cover the wound in a waterproof bandage.
 - d. If your wound makes contact with brackish water, saltwater, or raw/undercooked shellfish, thoroughly wash the wound with soap and water.

如果您具有这些风险因素，以下是您可以减少暴露风险的方法：

- a. 避免接触或食用生贝类或未煮熟的贝类，只食用熟贝类。
- b. 如果您有开放性伤口（包括由最近的手术、穿孔或纹身而导致的），避免与半咸水或海水接触。
- c. 如果您从事可能使伤口暴露于半咸水、海水或生/未煮熟贝类的活动，请用防水绷带覆盖伤口。
- d. 如果您的伤口与半咸水、海水或生/未煮熟贝类接触，请使用肥皂和水充分清洗伤口。

5. Individuals that develop a rapidly progressing infection 12-24 hours after exposure to brackish water, saltwater, or raw/undercooked shellfish, should seek immediate medical care. These individuals should tell medical professionals that *they have recently come in contact with saltwater and should request testing for Vibrio*.
如果个体在暴露于半咸水、海水或生/未煮熟贝类后 12-24 小时内出现迅速恶化的感染症状，应立即寻求医疗护理。这些个体应该告诉医疗专业人员他们最近与海水接触，并请求进行弧菌检测。

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