

### Signs of disease

Important: animals with disease may show one or more of the signs below, but disease may still be present in the absence of any signs.

#### Clinical signs of disease in an infected animal

- low activity, loss of appetite, thin shell, edge turndown and decreased growth rate

#### Gross signs of disease in an infected animal

- excess secretion of mucus, contracted feet and mantle, black and hardened foot
- dead abalone present swollen liver and intestines and adhere to the bottom of the pond
- high mortality (100% in 3–9 days).

### Disease agent

Abalone viral mortality is caused by a number of spherical viruses. Four spherical virus types have been implicated: type I is the least virulent, resulting in poor conditioning and reduced growth rates; types II, III and IV are highly virulent, resulting in mass mortalities.

### Host range

Molluscs known to be susceptible to abalone viral mortality

abalone*	( <i>Haliotis hannai</i> )
abalone*	( <i>Haliotis diversicolor</i> )
turban shell*	( <i>Turbo</i> sp)
mussel*	( <i>Mytilus edulis</i> )

### Presence in Asia–Pacific

Abalone viral mortality disease is not officially reported from any country in the region, but is known to be present in some parts of the region.

### Epidemiology

- Abalone viral mortality encompasses crack-shell disease of *Haliotis hannai* and viral disease of *H. diversicolor*, two syndromes that further research could show to be distinct diseases.
- *Vibrio alginolyticus* and *V. parahaemolyticus* may co-infect abalone that has been infected with virus and could be co-factors for *H. diversicolor* diseases.
- Four types of spherical viruses are thought to be associated with abalone viral mortalities.

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\* naturally susceptible (other species have been shown to be experimentally susceptible)



## Abalone viral mortality continued

- The samples of virus types 2, 3 and 4 are from the same region (Dongshan Fujian province) in China.
- Transmission appears to be both horizontal and vertical.
- Temperature and salinity appear to be associated with increased mortalities.
- The disease is believed to be spreading in the region through the movement of broodstock.

### Similar diseases

No similar diseases are known in abalone.

### Differential diagnosis

The differential diagnostic table and the list of similar diseases appearing at the bottom of each disease page refer only to the diseases covered by this field guide. Gross signs observed might well be representative of a wider range of diseases not included here. Therefore, these diagnostic aids should not be read as a guide to a definitive diagnosis, but rather as a tool to help identify the listed diseases that most closely account for the gross signs.

### Sample collection

Because of uncertainty in differentiating diseases using only gross signs, and because some aquatic animal disease agents might pose a risk to humans, you should not try to collect samples unless you have been trained. Instead, you should phone your national hotline number and report your observations. If samples have to be collected, the agency taking the call will advise you on what you need to do. Local or district fisheries/veterinary authorities could advise you on sampling.

### Emergency disease hotline

For your national emergency disease hotline number, see Whom to contact if you suspect a disease.

### Further reading

The currently accepted procedures for a conclusive diagnosis of abalone viral mortality are summarised at [http://www.oie.int/aac/eng/cards/en\\_diseasecard.htm](http://www.oie.int/aac/eng/cards/en_diseasecard.htm)

These hyperlinks were correct and functioning at the time of publication.

