

## Exotic disease

**Red sea bream iridoviral disease****Signs of disease**

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

**Disease signs at the farm, tank or pond level are:**

- low to high mortality
- lethargic swimming
- obvious opercular movement (indicating an increase in respiratory effort).

**Gross pathological signs are:**

- dark skin (a change in skin colour is a significant gross sign)
- petechial (pinpoint) haemorrhage of the gills
- pale gills and enlarged spleen.

**Microscopic pathological signs are:**

- enlarged cells, deeply Giemsa positive, in the spleen, heart, kidney, liver and gills of infected fish, which are characteristic of this disease
- small dark spots within fresh wet mounts of gill lamellae (melano-macrophage centres).

**Disease agent**

RSIVD is caused by a virus in the genus *Megalocytivirus*, family *Iridoviridae*.

**Host range**

Species known to be susceptible to RSIVD virus are listed below.

Common name <sup>a</sup>	Scientific name
Barramundi	<i>Lates calcarifer</i>
Black rockfish	<i>Sebastes schlegeli</i>
Black sea bream or black porgy	<i>Acanthopagrus schlegeli</i>
Brown marbled grouper	<i>Epinephelus fuscoguttatus</i>
Chicken grunt	<i>Parapristipoma trilineatum</i>
Chinese emperor	<i>Lethrinus haematopterus</i>
Chub mackerel	<i>Scomber japonicus</i>
Cobia	<i>Rachycentron canadum</i>
Crescent sweetlips	<i>Plectorhinchus cinctus</i>
Crimson sea bream	<i>Eyynnys japonica</i>
Croceine croaker	<i>Pseudosciaena crocea</i>
Estuarine rockcod	<i>Epinephelus tauvina</i>
Giant grouper	<i>Epinephelus lanceolatus</i>
Girella or rudderfish	<i>Girella punctata</i>
Greater amberjack	<i>Seriola dumerili</i>
Japanese flounder	<i>Paralichthys olivaceus</i>
Japanese horse mackerel	<i>Trachurus japonicus</i>
Japanese parrotfish	<i>Oplegnathus fasciatus</i>
Japanese seabass	<i>Lateolabrax japonicus</i>
Japanese Spanish mackerel	<i>Scomberomorus niphonius</i>
Japanese yellowtail	<i>Seriola quinqueradiata</i>
Largemouth bass	<i>Micropterus salmoides</i>
Longtooth grouper	<i>Epinephelus bruneus</i>
Malabar grouper	<i>Epinephelus malabaricus</i>
Northern bluefin tuna	<i>Thunnus thynnus</i>
Orange-spotted grouper	<i>Epinephelus coioides</i>
Red sea bream	<i>Pagrus major</i>
Red-spotted grouper or Hong Kong grouper	<i>Epinephelus akaara</i>
Samson fish	<i>Seriola hippos</i>
Seabass	<i>Lateolabrax spp.</i>
Seven-band grouper	<i>Epinephelus septemfasciatus</i>
Silver trevally	<i>Pseudocaranx dentex</i>
Six-bar grouper	<i>Epinephelus sexfasciatus</i>
Snapper	<i>Pagrus auratus</i>
Snubnose dart	<i>Trachinotus blochii</i>
Spangled emperor	<i>Lethrinus nebulosus</i>
Spotted halibut	<i>Verasper variegatus</i>
Spotted knifejaw	<i>Oplegnathus punctatus</i>
Tiger puffer	<i>Takifugu rubripes</i>
Yellow grouper	<i>Epinephelus awoara</i>
Yellowfin seabream	<i>Acanthopagrus latus</i>
Yellowtail kingfish	<i>Seriola lalandi</i>

<sup>a</sup> All species are naturally susceptible (other species have been shown to be experimentally susceptible).

## Presence in Australia

EXOTIC DISEASE—not present in Australia

### Epidemiology

- RSIVD is highly contagious.
- Juveniles are more susceptible to disease than adults.
- Mortality is highly variable (0–100%).
- Transmission is horizontal (via the water column from other infected fish). Vertical transmission has yet to be investigated.
- Outbreaks occur at water temperatures greater than 24–25 °C.
- The virus is stable within tissue to –80 °C, and can be inactivated by ether, chloroform and formalin.

### Differential diagnosis

The list of similar diseases below refers only to the diseases covered by this field guide. Gross pathological signs may be representative of a number of diseases not included in this guide, which therefore should not be used to provide a definitive diagnosis, but rather as a tool to help identify the listed diseases that most closely account for the gross signs.

### Similar diseases

Epizootic haematopoietic necrosis, grouper iridoviral disease, infection with infectious spleen and kidney necrosis virus (ISKNV)-like viruses

### Sample collection

Due to the uncertainty in differentiating diseases using only gross pathological signs, and because some aquatic animal disease agents might pose a risk to humans, only trained personnel should collect samples. You should phone your state or territory hotline number and report your observations if you are not appropriately trained. If samples have to be collected, the agency taking your call will provide advice on the appropriate course of action. Local or district fisheries or veterinary authorities may also provide advice regarding sampling.

### Emergency disease hotline

The national disease hotline number is 1800 675 888. This number will put you in contact with the appropriate state or territory agency.

### Further reading

The accepted procedures for a conclusive diagnosis of RSIVD are summarised in the World Organisation for Animal Health Manual of diagnostic tests for aquatic animals 2011, available at [www.oie.int/en/international-standard-setting/aquatic-manual/access-online](http://www.oie.int/en/international-standard-setting/aquatic-manual/access-online).

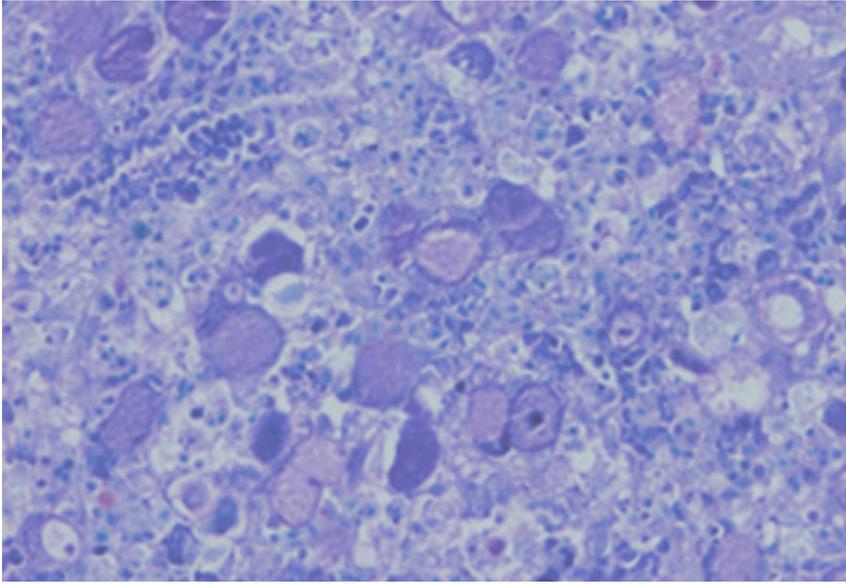
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## Further image

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Giemsa positive staining enlarged cells present within tissue section of fish infected with red sea bream iridovirus

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Source: K Nakajima