

# Gametogenic Hypertrophy

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## ***I. Causative Agent and Disease***

Gametogenic hypertrophy is caused by an unclassified papilloma-like or polyoma-like virus previously referred to as papovavirus. The virus is icosahedral, non-enveloped, about 40-50 nm in diameter and is likely composed of double-stranded DNA. The virus infects the nuclei of developing gametogenic cells in both male and female oysters and clams causing extreme cell enlargement (hypertrophy) first observed in female ova, hence referred to as "ovacystis". The number of hypertrophied gametocytes per animal is generally low and the condition appears to have very little pathological significance to the host animal.

## ***II. Host Species***

Ovacystis has been reported from the east, west and gulf coasts of North America, France, Germany, Korea, Australia and Spain in at least seven oyster species and two clams, the Manila and soft shell. In Alaska and the Pacific Northwest, ovacystis has been observed at very low prevalences in both male and female adult Pacific oysters.

## ***III. Clinical Signs***

There are no outward clinical signs of disease. The condition is found incidentally during routine histological examination of apparently healthy Pacific oysters.

## ***IV. Transmission***

Transmission has not been established but presumably it is horizontal from animal to animal via ambient seawater. However, vertical transmission to progeny from infected parents may also be possible.

## ***V. Diagnosis***

Occasional extreme nuclear hypertrophy of male or female gametocytes is observed by histological examination. Presence of virus particles having the typical size and morphology within the enlarged nuclei can be confirmed by transmission electron microscopy (TEM). There are no bivalve mollusc cell lines, therefore the virus has not been cultured.

## ***VI. Prognosis for Host***

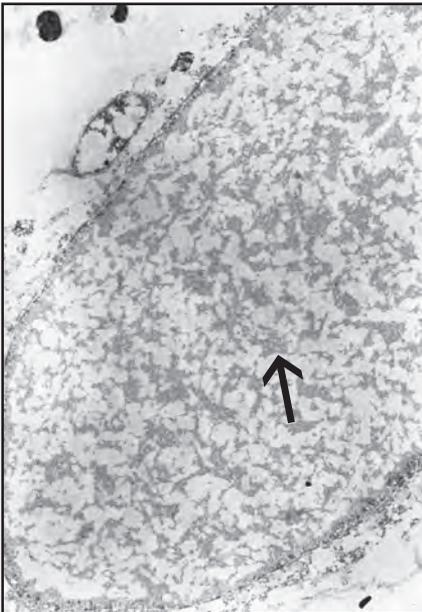
The condition caused by the virus results in no mortality or apparent harm to the host animal.

## ***VII. Human Health Significance***

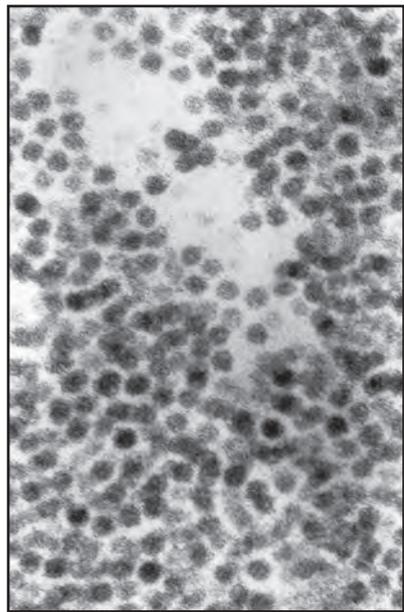
There are no zoonotic human health concerns regarding gametogenic hypertrophy in bivalve molluscs.



Histological section of enlarged gametocyte nucleus (arrow) in male Pacific oyster



Ultrastructural section of enlarged nucleus containing arrays of virus-like particles (arrow)



Higher magnification of virus particles