

## **Aquatic Animal Medicine: Introduction to aquatic animal medicine and how veterinary principles are applied to fish health.**

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Aquatic animal medicine is a broad section of veterinary medicine that encompasses species found in numerous settings including: public aquaria and zoos, aquaculture, private practice as companion animals, wildlife and conservation medicine, and research. The same principles, and several of the same techniques, that are used with terrestrial animals can be used with aquatic species, with some adaptations needed to account for their unique physiology and environment.

The primary focus will be on fish medicine, with some examples demonstrating the range of aquatic animal medicine. Preventive care is an important part of fish health, utilizing both individualized care and herd health concepts. In addition to good husbandry and diet, water quality and quarantine are extremely important facets of maintaining a robust population, due to the frequent use of closed, recirculating systems for housing fish. Conditions associated with derangements in water quality parameters will be reviewed and important considerations for developing quarantine protocols will be highlighted. A review of how sick fish often present will provide greater familiarity with clinical signs, allowing for early disease detection. Different techniques and equipment can be utilized to facilitate performance of thorough physical exams, sample collection, diagnostics and anesthesia. Several diagnostic techniques will be illustrated in detail, with indications for specific disease detection. Reportable and zoonotic diseases will be discussed for recognition and risk assessment. Common and important bacterial, viral and fungal diseases will be summarized, listing various treatment options. Parasitic diseases, especially those with direct-life cycles, can be very detrimental to fish populations, so additional focus will be given to these diseases, along with specific treatment and management strategies for parasites. In conclusion, brief points on health certificates, fish sources and sustainable practices will be presented for consideration.