

Diphyllobothrium spp.

1. Name of the Organism:

Diphyllobothrium spp.

Diphyllobothrium latum and other members of the genus are broad fish tapeworms reported from humans. They are parasitic flatworms.

2. Name of the Acute Disease:

Diphyllobothriasis is the name of the disease caused by broad fish tapeworm infections.

3. Nature of the Acute Disease:

Diphyllobothriasis is characterized by abdominal distention, flatulence, intermittent abdominal cramping, and diarrhea with onset about 10 days after consumption of raw or insufficiently cooked fish. The larva that infects people, a "plerocercoid," is frequently encountered in the viscera of freshwater and marine fishes. *D. latum* is sometimes encountered in the flesh of freshwater fish or fish that are anadromous (migrating from salt water to fresh water for breeding). Bears and humans are the final or definitive hosts for this parasite. *D. latum* is a broad, long tapeworm, often growing to lengths between 1 and 2 meters (3-7 feet) and potentially capable of attaining 10 meters (32 feet); the closely related *D. pacificum* normally matures in seals or other marine mammals and reaches only about half the length of *D. latum*. Treatment consists of administration of the drug, niclosamide, which is available to physicians through the Centers for Disease Control's Parasitic Disease Drug Service.

4. Diagnosis of Human Illness:

The disease is diagnosed by finding operculate eggs (eggs with a lid) in the patient's feces on microscopical examination. These eggs may be concentrated by sedimentation but not by flotation. They are difficult to distinguish from the eggs of [*Nanophyetus spp.*](#).

5. Associated Foods:

The larvae of these parasites are sometimes found in the flesh of fish.

6. Relative Frequency of Disease:

Diphyllobothriasis is rare in the United States, although it was formerly common around the Great Lakes and known as "Jewish or Scandinavian housewife's disease" because the preparers of gefillte fish or fish balls tended to taste these dishes before they were fully cooked. The parasite is now supposedly absent from Great Lakes fish. Recently, cases have been reported from the West Coast.

7. Usual Course of the Disease and Complications:

In persons that are genetically susceptible, usually persons of Scandinavian heritage, a severe anemia may develop as the result of infection with broad fish tapeworms. The anemia results from the tapeworm's great requirement for and absorption of Vitamin B12.

8. Target Populations:

Consumers of raw and underprocessed fish are the target population for diphyllobothriasis.

9. Analysis of Foods:

Foods are not routinely analyzed for larvae of *D. latum*, but microscopic inspection of thin slices of fish, or digestion, can be used to detect this parasite in fish flesh.

10. Selected Outbreaks:

An outbreak involving four Los Angeles physicians occurred in 1980. These physicians all consumed sushi (a raw fish dish) made of tuna, red snapper, and salmon. Others who did not consume the

sushi made with salmon did not contract diphyllbothriasis. At the time of this outbreak there was also a general increase in requests for niclosamide from CDC; interviews of 39 patients indicated that 32 recalled consuming salmon prior to their illness.

For more information on recent outbreaks see the [Morbidity and Mortality Weekly Reports](#) from CDC.

11. FDA Activity and Regulations:

FDA is determining whether the freezing recommendations ([see chapter 25](#)) for raw or semiraw seafood with anisakid nematodes will also prevent infections with the broad fish tapeworms.

CDC/MMWR

The CDC/MMWR link will provide a list of Morbidity and Mortality Weekly Reports at CDC relating to this organism or toxin. The date shown is the date the item was posted on the Web, not the date of the MMWR. The summary statement shown are the initial words of the overall document. The specific article of interest may be just one article or item within the overall report.

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