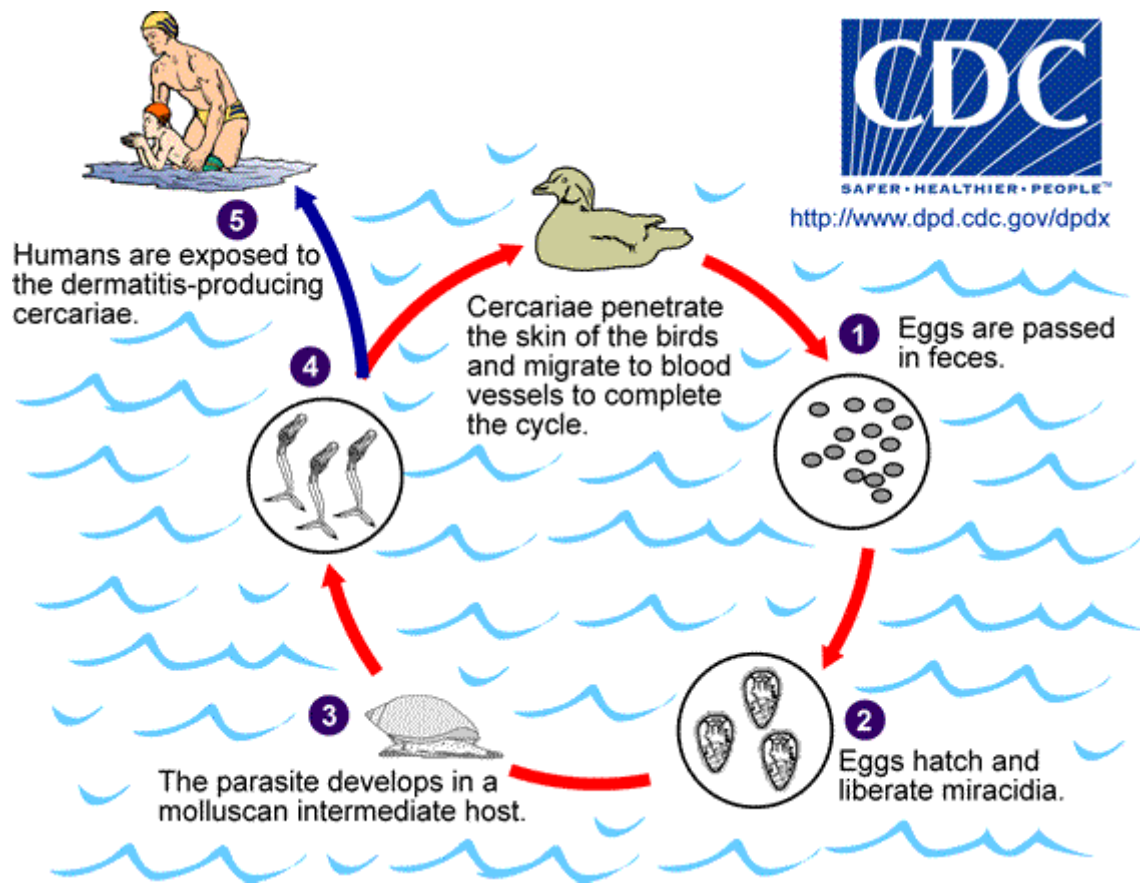


Cercarial dermatitis

Causal Agent:

Cercarial dermatitis is caused by the cercariae of certain species of schistosomes whose normal hosts are birds and mammals other than humans. These cercariae seem to have a chemotrophic reaction to secretions from the skin and are not as host-specific as other types of schistosomes. They attempt to, and, sometimes may actually, enter human skin. The penetration causes a dermatitis which is usually accompanied with intense itching, but the cercariae do not mature into adults in the human body. Cases of cercarial dermatitis can occur in both fresh and brackish water environments. One species of schistosome often implicated in cases of cercarial dermatitis is *Austrobilharzia variglandis*, whose normal hosts are ducks. The snail, *Nassarius obsoletus*, is the intermediate host for this species and can be found at marine beaches in temperate climates. Cercarial dermatitis should not be confused with seabather's eruption, which is caused by the larval stage of cnidarians (e.g., jellyfish). The areas of skin affected by seabather's eruption is generally under the garments worn by bathers and swimmers where the organisms are trapped after the person leaves the water. Cercarial dermatitis occurs on the exposed skin outside of close-fitting garments.

Life Cycle:



Typically, hosts of avian schistosomes are migratory water birds, including shorebirds, ducks, and geese. Adult worms are found in the blood vessels and produce eggs that are swallowed and passed in the feces ❶. On exposure to water, the eggs hatch and liberate a ciliated miracidium that infects a suitable molluscan intermediate host ❷. The parasite develops in the intermediate host, usually a certain species of snail ❸, to produce free-swimming cercariae that are released under appropriate conditions and penetrate the skin of the birds to complete the cycle ❹. Humans are inadvertent and inappropriate hosts; cercariae may penetrate the skin but do not develop further ❺. A number of species of dermatitis-producing cercariae have been described from both freshwater and saltwater environments, and exposure to either type of cercariae will sensitize persons to both.

Geographic Distribution:

Cercarial dermatitis occurs worldwide with cases reported from every continent except Antarctica. In the United States, cases are commonly reported from the Great Lakes region.

Clinical Features:

Cercarial dermatitis (swimmer's itch) is a cutaneous inflammatory response usually associated with penetration of the skin by cercariae of bird schistosomes. Symptoms include reddening and itching of exposed skin in the water or immediately after emerging. This is an indication of initial penetration of the cercariae. After a period of approximately 12 hours, pruritic papules may become vesicular. Scratching the affected areas may result in secondary bacterial infections. An interesting note is that previous contact with cercariae can lead to a more immediate and intense immune response.

Laboratory Diagnosis:

Specific snails that would be suitable hosts for these particular avian schistosomes (such as *Nassarius obsoletus*, the intermediate host for the duck schistosome *Austrobilharzia variglandis*) need to be collected from the area where cases of cercarial dermatitis have been reported. The snails need to be checked to verify if they are shedding cercariae by standard methodology. Sunlight may be preferred over using artificial light to stimulate shedding. Another method is to crush the snails and examine the body for parasite sporocysts and/or cercariae. The cercariae then must be identified as being a type that can cause cercarial dermatitis by using appropriate reference material.

Diagnostic findings

- Microscopy

Treatment:

Most cases do not require medical attention. Topical use of corticosteroid cream may be used for relief. In addition, cool compresses, bathing with baking soda, applying baking soda paste to the rash, and anti-itch lotion may also be tried. Scratching the affected area may cause the rash to become infected.

Reference:

CDC. MMWR 1992 April 10; 41 (14):225-228.