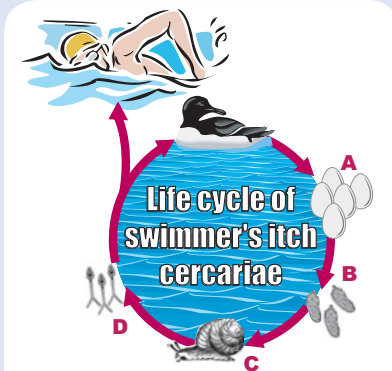


# SWIMMERS ITCH



- (A) Eggs are passed in feces
- (B) Eggs hatch and liberate \*\*\*miracidium. Immature, free swimming.
- (C) The parasite develops in a molluscan intermediate host such as a snail.
- (D) †Cercariae, flatworm search for waterfowl. It will penetrate the skin of the birds and migrate to blood vessels to complete the cycle. Humans are exposed to the dermatitis producing cercariae causing swimmer's itch.

## How can you reduce the chance of getting swimmer's itch?

- Towel off and take a long, soapy shower right after swimming
- Swim in water away from the shore
- Avoid swimming in areas where snails have accumulated
- Do not encourage birds to stay near swimming areas by feeding them

## What is this rash all over me?

**Swimmer's Itch is a rash composed of red, itchy bumps that develop on the skin after swimming in freshwater lakes and ponds.** This irritating rash is caused by a free swimming parasite that burrows into swimmers. The parasite is the cercaria, a species of \*fluke that attaches to the unfortunate swimmer. These cercaria attempt to enter the swimmer's skin by releasing \*\*enzymes but they fail and die in the process. The enzymes and dead cercaria then irritate the skin and cause the resulting red, itchy bumps.

The cleanliness of the aquatic waterway is not relevant to the severity of the problem. Natural lake conditions promote the diversity of species, including the birds and snails that are potential hosts for the causative agents of swimmer's itch. There are a number of factors that make it optimal for swimmer's itch to occur:

1. Warm water temperatures inducing reproduction and rapid growth of snails
2. Distribution and number of snail hosts
3. Distribution and number of aquatic birds
4. Time of day
5. Sensitivity of the person to swimmer's itch

The itching sensation will develop within a few hours and can last from several days to a week. Unfortunately, people do not develop an immunity to the cercaria but rather they may become more sensitive with each outbreak. While all cases do not require treatment, some relief may be sought through an antihistimatic or mild anti-itch skin creams.

Outbreaks of swimmer's itch occur more often during the summer months. As water temperatures rise, the parasites begin looking for a host. After finding a waterfowl, it burrows through the duck's skin and into the blood stream. Once there it grows and lays eggs. These eggs then move to the duck's intestine and are passed outside when the bird defecates. The eggs then hatch into free swimming ‡ larvae that can survive up to two months while searching for a suitable snail host. A chemical attraction guides the larvae to a snail wherein they grow into cercariae, a flatworm with a forked-like tail end. These worms then leave the host snail and swim to the surface in search of a waterfowl to complete its life cycle. The parasites concentrate along the downwind shorelines in shallow water where the snails reside. It is during this stage of the parasites life cycle that the fluke mistakenly tries to penetrate human skin rather than its rightful host, usually a duck (human skin is much thicker than that of waterfowl and the parasite cannot enter it).



## How to control swimmer's itch?

- Educate members about swimmer's itch
- Post appropriate signs where swimmer's itch is an annual problem
- Contact a Control Service Organization that can remove and exclude unwanted pests
- Application of certain molluscicides or specific chemicals to the lake

The life cycle of these parasites involves snails as the first host and aquatic birds or some other mammal as the second host. Any freshwater lake can be home to swimmer's itch if the parasite, the larvae of the schistosome flat worm, can find the snails and waterfowl it needs to complete its life cycle. In the life cycle of the parasites that cause swimmer's itch, there are always two hosts, a snail intermediate and vertebrate final host. Most species of schistosomes that are the causative agents for swimmer's itch use a particular species of snail and a certain species of bird to complete their life cycles. In other words, they are host-specific.

Since the stage that causes swimmer's itch comes from the snail and not directly from the host, it becomes important to consider the snail when control measures are employed. Application of copper sulfate as a molluscicide is used on some lakes to break the life cycle by killing the snail intermediate hosts. Many species of birds and some rodent species can foster the adult parasite. Some hosts include common mergansers, mallards, Canada geese, swans, red-winged blackbirds and muscovy ducks. One of the issues is in Florida's waterfowl population consisting of the domesticated, non native muscovy ducks. These birds are cross breeding with the Florida wild mallard duck populations, and as a host, propagate swimmer's itch. These ducks usually harbor heavy infections and should not be enticed to stay within the area.



- \* Fluke: any of the flatworms, ei planaria species
- \*\* Enzymes: proteins that are produced in the cells of living organisms and functions as catalysts in the chemical process of those organisms
- \*\*\* Miracidium: the primary free-swimming aquatic parasite that is snail host dependent.
- † Cercaria: the secondary free-swimming parasite that causes swimmer's itch
- ‡ Larva: the newly hatched stage of some organisms that differs notably from the adult form

SOURCES: LakeSmarts • Lake Mgmt. Handbook • Lake Home Magazine • U.S. Environmental Protection Agency • Manitoba Environment • American Osteopathic College of Dermatology