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# Mucocutaneous manifestations of helminth infections

## Trematodes and cestodes

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### Learning objectives

After completing this learning activity, participants should be able to describe the cutaneous manifestations of infections by trematodes and cestodes and identify appropriate therapy.

### Disclosures

#### Editors

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In the 21st century, despite increased international travel for vacation, work, and medical missions and immigration into the United States, there is little published in the dermatology literature regarding the cutaneous manifestations of helminth infections. It has been estimated that 20% to 70% of international travelers suffer from some travel-related health problem. Approximately 17% of travelers seek medical care because of cutaneous disorders, many related to infectious etiologies. This review will focus on cutaneous diseases caused by helminth infections. Part I of the review focused on nematode infections; part II will focus on trematode and cestode infections. Nematodes are roundworms that cause diseases with cutaneous manifestations, such as cutaneous larval migrans, onchocerciasis, filariasis, gnathostomiasis, loiasis, dracunculiasis, strongyloidiasis, ascariasis, streptocerciasis, dirofilariasis, and trichinosis. Trematodes, also known as flukes, cause schistosomiasis, paragonimiasis, and fascioliasis. Cestodes (tapeworms) are flat, hermaphroditic parasites that cause diseases such as sparganosis, cysticercosis, and echinococcus. (*J Am Acad Dermatol* 2015;73:947-57.)

**Key words:** cysticercosis; echinococcus; fascioliasis; helminth; paragonimiasis; parasite; schistosomiasis; travel.

## TREMATODE INFECTIONS

### Key points

- Trematode infections are important causes of morbidity and mortality worldwide
- Several trematode infections have distinguishing dermatologic signs with which dermatologists should be familiar

- Praziquantel is the drug of choice for all trematode infections except fascioliasis, for which triclabendazole is the drug of choice

Trematodes, also known as flukes, cause infection worldwide. Trematodes have complex life cycles that involve snails as intermediate hosts. Most

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**Table I.** Treatment of trematode and cestode infections

Disease	Treatment	Dosage	Comment
Schistosomiasis			
Cercarial dermatitis	Symptomatic therapy	Triamcinolone topical cream Hydroxyzine	0.5% cream apply to affected area BID ×1 week 25 mg PO Q6H PRN for pruritus ×1 week
Acute schistosomiasis syndrome (Katayama fever) <sup>1</sup>	Praziquantel Prednisolone <sup>2</sup>		20 mg/kg PO BID ×3 days 40 mg PO QD ×3 days
Late cutaneous schistosomiasis	Praziquantel		60 mg/kg PO ×2 or ×3 doses at least 3 hours apart
Paragonimiasis	Praziquantel <sup>3</sup> Thiabendazole		25 mg/kg/day PO divided Q8H ×3 days 10 mg/kg PO ×1 or ×2 doses
Fascioliasis	Triclabendazole		10 mg/kg PO QD ×1 or ×2 days Anticonvulsant therapy is warranted in patients with cerebral paragonimiasis Acceptable second-line therapy for patients who cannot tolerate praziquantel; this drug is only available through the CDC
Sparganosis	Surgical excision		Unlike the majority of fluke infections, fascioliasis has a poor response to praziquantel <sup>3</sup> ; 1 study reported a cure rate of >90% after treatment with triclabendazole <sup>4</sup> There is usually only 1 tapeworm and it cannot reproduce within the individual; there is no current drug therapy effective against <i>S proliferum</i> —the most effective treatment is to remove the entire larva from the tissues <sup>5</sup>
Subcutaneous cysticercosis	Surgical excision		All patients with subcutaneous or intramuscular cysticercosis should undergo radiographic imaging to evaluate for neurocysticercosis <sup>6</sup>
Subcutaneous echinococcosis	Surgical excision		Care during surgery is advised to avoid possible anaphylactic reaction or spillage of protoscolexes <sup>7</sup>

BID, Twice daily; CDC, Centers for Disease Control and Prevention; PO, per os; PRN, as required; QD, daily.

trematodes are hermaphrodites and are able to self-reproduce. They have emerged as important tropical infections, causing disease in hundreds of millions of individuals globally. Here we review the important mucocutaneous manifestations and treatment (Table I) of trematode infections.

## SCHISTOSOMIASIS

### Key points

- Schistosomiasis is the most prevalent trematode infection, with >200 million individuals infected
- Infection can cause “swimmer’s itch,” a pruriginous and urticarial erythematous papular

eruption typically found on the lower legs or feet

- Cutaneous disease can be treated with topical triamcinolone; late or advanced cutaneous disease warrants the use of oral praziquantel

Schistosomiasis, also known as bilharziasis in some endemic areas, is considered the second most important tropical disease after malaria in terms of public health importance. The disease is endemic in >60 countries globally—usually in tropical and subtropical regions—and affects >200 million people.<sup>8</sup> In a global surveillance study conducted

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