

# Parasitic Worms

## Definition

**Parasitic Worms/Helminths:** A creature with long, slender soft bodies and no limbs, which draws nutrition from its human host.

## Diagnosis

Patients with parasitic worms/helminths are often **asymptomatic**. There are four clinical presentations where parasitic worms are considered;

1. Children with iron deficiency +/- anaemia or growth faltering.
2. Symptoms suggestive of parasitic worms.
3. Eosinophilia not explained by other conditions.
4. Immunosuppressed patients or when immunosuppressive therapy is planned.

### 1) Children with iron deficiency +/- anaemia or growth faltering

- Parasitic worms can cause iron deficiency +/- anaemia and/or growth faltering.
- See KAHPF Guidelines “Anaemia in Children” and “Growth Faltering” for more information.

### 2) Symptoms suggestive of parasitic worms

- Itchy anus or vagina with visualized worms around anus or in stool should be treated as *Enterobius Vermicularis*. Stool MCS + OCP is not essential.
- In patients with unexplainable gastrointestinal symptoms (e.g. recurrent abdominal pains, persisting diarrhea or bloating) test with stool MCS + OCP.

### 3) Eosinophilia not explained by other conditions

- Raised eosinophils (a type of white blood cell on full blood count) above  $0.5 \times 10^9/L$ , not explained by other conditions.
- Organize strongyloides serology with yellow-top tube. Can add to previous blood test within 10 days.
- Treat if serology is positive. Consider treatment if serology equivocal, seek specialist advice.
- Stool MCS + OCP (Ova, Cyst and Parasites) is recommended but not essential.

### 4) Immunosuppressed patients or when immunosuppressive therapy is planned

- Patients in this group are highly susceptible to Strongyloides Hyperinfection.
- See “*Strongyloides Infection*” section below.

## Principles of Management

- Any **acutely unwell** child or adult should be referred to the doctor immediately. This includes patients with **fever, rigors, blood in the stool or dehydration**.
- Discuss **all children under 6 months** with suspected parasite infection with the doctor.

## Investigation

### Faeces sample for Stool Microscopy, Culture and Sensitivity (MCS) + Ova, Cyst and Parasites (OCP)

- Single sample may be negative even when a parasite infection is present. Collect 2-3 samples if possible.
- Stools should be as fresh and solid as possible. If need to preserve, place in fridge. Sample can last up to 3 days.

### 2. Strongyloides Serology (IgG strongyloides ELISA test)

- Blood test for chronic strongyloides infection.
- May be falsely negative for acute or disseminated strongyloides infection.
- Will only test for strongyloides infection, not other parasitic worms or bacteria.

## Treatment

Table1: Commonly Seen Worms and Specific Treatment	
<i>Ancylostoma duodenale</i> or <i>Necator americanus</i> (Hookworm)	Albendazole 400mg ( $\leq 10kg$ :200mg) once only. Not recommended for children <6 months old.
<i>Enterobius vermicularis</i> (Threadworm or Pinworm)	Albendazole 400mg ( $\leq 10kg$ :200mg) once only. Not recommended for children <6 months old. Treat household members. Personal and household hygiene measures – cut nails short and avoid scratching buttock, daily shower or baths, wash clothing/towels/bed linen in hot water.
<i>Trichuris trichiuria</i> (Whipworm)	Albendazole 400mg ( $\leq 10kg$ :200mg) once daily for 3 days. Not recommended for children <6 months old.
<i>Hymenolepis nana</i> (Dwarf Tapeworm)	Treatment not required if asymptomatic. However, treat if malnourished or subtle symptoms such as insomnia, restlessness and behavioural problems If symptomatic, give praziquantel 25mg/kg as a single dose.
Strongyloidiasis ( <i>Strongyloides stercoralis</i> )	Ivermectin 0.2mg/kg orally for adults and children $\geq 5$ years old or $\geq 15kg$ , orally with fatty food, 2 doses one to two weeks apart. For immunosuppressed patients, seek specialist advice. Standard course is Ivermectin 0.2mg/kg orally for adults and children <5 years old or <15kg, orally with fatty food, 4 doses (days 1,2,15 and 16).
Other Parasites/Protozoa and Treatment	
<i>Giardia intestinalis</i> (Giardiasis)	Treat symptomatic patients only. Tinidazole 2g (50mg/kg up to 2g) as a single dose.
<i>Blastocystis hominis</i>	No treatment required. Seek specialist opinion if no other cause of symptoms identified.
Cryptosporidium spp.	No treatment required for immunocompetent patients. Seek specialist advice if immunosuppressed.

Refer to the Therapeutic Guidelines or talk to the microbiologist at Path West (SCGH) tel 13 7284 for other pathogens not listed.

### Consider the following

- Consider offering treatment to the household members, taking note of age, weight and pregnancy status of household members for correct medication choice.
- Consider providing “No Germs on Me” information sheet under Prevention section.



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environmental exposure to worms.

## Women of Child Bearing Age

**Albendazole is contraindicated in the first trimester, and is not routinely recommended in pregnancy.**

Use mebendazole instead if pregnant or suspected to be pregnant.

- Mebendazole 100mg orally, 12 hourly for 3 days

Threadworm/Pinworms require single dose only

Ivermectin is not recommended in pregnancy.

Discuss with doctor or seek specialist advice for strongyloides infection in pregnancy.

See “Iron deficiency and iron in pregnancy” protocol for more

information on treating possible parasitic infections in pregnancy.

**Refer/Discuss**

## Refer Discuss

Discuss with microbiologist or refer to specialist;

- Any persistent cases not responding to treatment
- All cases where patient is immunosuppressed
- When strongyloides hyperinfection is suspected
- If first line treatment is ineffective

## Resources

1. *CARPA Standard Treatment Manual 7<sup>th</sup> Edition. Chapter – Worms.* Available at URL: <https://www.crh.org.au/the-manuals/carpa-standard-treatment-manual-7th-edition>
2. eTG complete [Internet]. Therapeutic Guidelines Ltd; 2019. “Gastrointestinal helminths (worms)”, “Strongyloides setercoralis prophylaxis in immunocompromised adults without HIV infection” & “Assessing the need for antimicrobial prophylaxis in immunocompromised adults without HIV infection”
3. Practice Guideline - Management of Strongyloidiasis. World Gastroenterology. Available at URL: <http://www.worldgastroenterology.org/guidelines/global-guidelines/management-of-strongyloidiasis/management-of-strongyloidiasis-english>

