

# ASCARIASIS

## INTRODUCTION

Ascariasis, also known as roundworm, is an intestinal infection caused by the parasitic worm *Ascaris lumbricoides*, and is part of a family of parasites known as the soil-transmitted helminths. Ascariasis is most commonly found in warm tropical and sub-tropical climates in Sub-Saharan Africa and Southeast Asia, and flourishes in areas with poor sanitation or where crops are irrigated by improperly treated wastewater. More than 807 million people are infected with ascariasis worldwide, and more than 60,000 die from the disease annually. Ascariasis is the most common human worm infection.

Ascariasis is transmitted by accidental ingestion of ascaris eggs through contaminated food, water or soil. Once the eggs are swallowed, they are passed into the intestine where they hatch into larvae. The larvae migrate through the body and into the bloodstream where they can cause severe coughing and wheezing. The larvae are eventually swallowed and return to the small intestine where they mature and lay eggs-- sometimes up to 240,000 per day. Ascaris eggs are passed into the feces and incubate in the soil for a minimum of two weeks before the cycle begins again.

Adult roundworms can live in the body for one to two years, and grow as long as twelve inches and as wide as a pencil. Ascariasis can be initially asymptomatic, and is sometimes detected by observing the presence of worms in the stool. In severe cases, ascariasis can cause intestinal blockage and obstruction, particularly in children. Ascariasis cannot be transmitted from person to person.

## DISEASE OVERVIEW

### Risks

- Warm tropical or sub-tropical climates
- Rural or overcrowded living areas with poor sanitation
- Farming practices utilizing improperly treated wastewater or human feces as fertilizer
- Young children ages 3 – 8 years

### Symptoms

- Worms in stool
- Coughing, sometimes accompanied by coughing up of worms
- Wheezing
- Fever & vomiting

- Loss of appetite
- Shortness of breath
- Swelling of the abdomen & severe abdominal pain
- Intestinal blockage or bowel obstruction (in severe cases)
- Pneumonia (in rare cases)
- Malnutrition, anemia and impaired physical growth, particularly in children

## Transmission

Parasitic eggs are ingested and hatch into larvae, which travel through the body and can cause pulmonary symptoms such as coughing and wheezing. Once the larvae settle in the small intestine, they feed on food from the human host and can live for up to two years. A small number of ascaris worms may not necessarily be harmful, but large numbers of worms can be extremely damaging to the body.

## Treatment

- Anti-helminthic drugs albendazole (Albenza) or mebendazole (Vermox) on an annual basis
  - 50 million tablets of mebendazole donated per year by Johnson & Johnson,
  - Albendazole available from GlaxoSmithKline for 2¢ per pill
- In some cases, surgery may be required to repair intestinal blockages or bowel obstruction
- Currently no vaccine exists for ascariasis

## DISEASE BURDEN

### Prevalence

- 807 million people infected worldwide
- Most common in warm, tropical and sub-tropical environments
- Often found developing areas of the world where poor or substandard sanitation, crowded living conditions and poverty persist

### Disease Impact

- Ascariasis is the most common worm infection in the world
- Nearly one-eighth of the world's population is affected with ascariasis

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## EFFORTS AT CONTROL

In 2001, the World Health Organization adopted a resolution aimed at the “deworming” of 75 percent of all at-risk school-age children by 2010, the largest public health program ever attempted to date. The program is currently underway and has been able to achieve some success in reducing the severity of worm infections in some areas, particularly in Africa. Education efforts aimed at prevention through proper sanitation, hand washing and food preparation techniques are also critical to reducing incidence of the disease.

## FACTS AT A GLANCE

- Ascariasis is the world’s most common worm infection, affecting over 807 million people. A 2001 World Health Organization resolution targeted the deworming of 75 percent of all at-risk children by 2010, the largest public health program ever attempted to date.