April 20, 2011

Hookworm Infection Fact Sheet

1. **What is hookworm infection? -** Hookworm infection is a disease caused by several species of roundworm parasites. Hookworm is an intestinal parasite of humans and animals that usually causes mild diarrhea or cramps. Heavy infection with hookworm can create serious health problems for newborns, the young, malnourished individuals and pregnant women. Human hookworm infections occur mostly in tropical and subtropical climates and are estimated to infect about one billion people -- about one-fifth of the world's population.

2. **How do I get human hookworm infection? -** You can become infected by direct contact with contaminated soil, generally through walking barefoot, or accidentally swallowing contaminated soil. Hookworms have a complex life cycle that begins and ends in the small intestine. Hookworm eggs require warm, moist, shaded soil to hatch into larvae.

   a. These barely visible larvae penetrate the skin (often through bare feet), are carried to the lungs, go through the respiratory tract to the mouth, are swallowed, and eventually reach the small intestine. This journey takes about a week.

   b. In the small intestine, the larvae develop into half-inch-long worms, attach themselves to the intestinal wall, and suck blood. The adult worms produce thousands of eggs. These eggs are passed in the feces (stool). If the eggs contaminate soil and conditions are right, they will hatch, molt, and develop into infective larvae again after 5 to 10 days.

3. **What are the symptoms of human hookworm infection? -** The most serious results of human hookworm infection are the development of anemia and protein deficiency caused by blood loss. When children are continuously infected by many worms, the loss of iron and protein can retard growth and mental development, sometimes irreversibly. Hookworm infection can also cause tiredness, difficulty breathing, enlargement of the heart, and irregular heartbeat. Sometimes hookworm infection is fatal, especially among infants.

4. **Can animals transmit hookworm infection to me? -** Yes, but not directly. Puppies and kittens are especially likely to have hookworm infections. Animals that are infected pass hookworm eggs in their stools. The eggs hatch into larvae, and both eggs and larvae may be found in dirt where they have defecated. Eggs or larvae get into your body when you accidentally eat or have direct skin contact with contaminated dirt; e.g. while walking barefoot in a contaminated area.

5. **What are the symptoms of animal hookworm infection? -** Most animal hookworm infections result in Cutaneous Larva Migrans (CLM) a localized skin reaction that is red and itchy. Raised, red tracks actually appear in the skin where the larvae are tunneling. The itching and pain can last several weeks before the larvae die and the body's allergic reaction to the larvae resolves. Persons who think they have CLM should consult their health care provider for diagnosis. In rare cases, certain types of animal hookworm may reach the intestine and cause abdominal pain, discomfort, and diarrhea.

6. **How is hookworm infection diagnosed? -** Infection is diagnosed by identifying hookworm eggs in a stool sample. There is no blood test for hookworm infection.

7. **Can human hookworm infection be treated? -** In countries where hookworm is common and re-infection is likely, light infections are often not treated. In the United States, human hookworm infections are generally treated for 1 to 3 days with medication prescribed by your health care provider. The drugs are effective and appear to have few side effects. For children under two years of age, the decision to treat should be made by their health care provider. Another stool exam should be repeated 1 to 2 weeks after therapy. If the infection is still present, treatment will be given again. Iron supplements will be ordered if you have anemia.

8. **How do I reduce my risk of getting a hookworm infection?**

   a. Do not walk barefoot or contact the soil with bare hands in areas where hookworm is common or there is likely to be feces (stool) in the soil or sand.

   b. Pet dogs and cats should be annually checked for parasites by a veterinarian.

9. **For more information about Hookworm Infection**:
   http://www.cdc.gov/parasites/zoonotichookworm/

   This fact sheet provides general information. Please contact your physician and/or veterinarian for specific clinical information related to you or your animal.