

Strongyloides Antibody Detection by ELISA

A SENSITIVE TEST TO AID IN THE DIAGNOSIS AND CONFIRMATION OF SUSPECTED STRONGYLOIDES INFECTION

Disease Overview

- Strongyloidiasis is caused by the intestinal nematode, *Strongyloides*, as it migrates from the skin to the intestines. These nematodes may exist as free-living larvae in warm, moist tropical climates, or as noninfective larvae that pass in the stool of infected individuals and become infective while in the soil of temperate environments.
- *Strongyloides* larvae enter the body by penetrating the skin and are carried through blood vessels to the lungs. The larvae travel from the lungs to the trachea and the pharynx, where they are swallowed and enter the intestines via the duodenum and upper jejunum.
- Three areas of involvement have been described in human infection:
 - Cutaneous infections occur as the larvae migrate under the skin and are observed as inflamed tracks across the skin. Migration may be only a few millimeters up to several centimeters per day. More rapid movement of the larvae has been termed “larva currens” (racing larva) to describe larva racing tracks that can progress as fast as 10 cm/hour. These lesions appear quickly and generally disappear within 12–18 hours.
 - Intestinal infections cause mucosal damage that resembles peptic ulcers, with symptoms such as enterocolitis, malabsorption, sepsis due to mucosa damage, hemorrhages, diarrhea, and abdominal pain in the right upper quadrant.
 - Hyperinfections are recognized when long-term autoinfections lead to a state where neither the parasite nor the host suffers any serious damage by the infection. However, if the host becomes immune-compromised, the nematode infection can disseminate. In this state, large numbers of larvae are produced and found in every tissue of the body, causing extensive damage to the host. Occasionally, these hyperinfections may mimic ulcerative colitis or Crohn disease.

Epidemiology

It is suggested that approximately 80 million people may be affected by *Strongyloides* infections worldwide.

Indications for Ordering

This assay should be used to aid in the diagnosis and confirmation of patients for whom a clinical suspicion of *Strongyloides* infection exists. Results for this test should not be used without correlation to clinical history or other data.

Limitations

- This assay will detect the presence of serum IgG antibodies against *Strongyloides* species. While diagnosis may be made clinically, serologic antibody testing can aid in the diagnosis of Strongyloidiasis. However, cutaneous larva migrans is observed with infections by other nematodes, such as *Ancylostoma* species, *Uncinaria stenocephala*, and *Bunostomum phlebotomum*. Additionally, antibody cross-reactions in patients with filariasis may occur.
- The enzyme immunoassay for *Strongyloides* antibody detection is recommended in place of IFA or IHA due to its sensitivity, which ranges from 84 to 92 percent. However, 8–16 percent of individuals infected with *Strongyloides* are seronegative, so false-negative results cannot be ruled out. Additionally, since this assay measures *Strongyloides*-specific IgG in patient samples, test results from single samples cannot be used to differentiate between current and past infections.

References

1. Garcia LS. 2001. *Diagnostic medical parasitology*, 4th ed. Washington, DC: ASM Press.
2. Krauss H, et al, eds. 2003. *Zoonoses: infectious diseases transmissible from animals to humans*, 3rd ed. Washington, DC: ASM Press.
3. Rose NR, Hamilton RG, and Detrick B, eds. 2002. *Manual of Clinical Laboratory Immunology*, 6th ed. Washington DC: ASM Press.

Test Information

0099564 **Strongyloides Antibody, IgG by ELISA, Serum**

For specific collection, transport, and testing information, refer to the ARUP website at www.aruplab.com.

For information on test selection, ordering, and interpretation, refer to ARUP Consult® at www.arupconsult.com.