

# CRYPTOSPORIDIUM SPP AND GIARDIA LAMBLIA

Enhanced sensitivity and rapid detection  
using enzyme immunoassay (EIA)



## *Cryptosporidium* spp and *Giardia lamblia* are the **most common pathogenic gastrointestinal parasites** in the United States for patients with no history of foreign travel.<sup>1</sup>

*Cryptosporidium* and *Giardia* are parasitic causes of diarrheal illness and account for, respectively, an estimated 748,000 and 1.2 million cases annually in the US.<sup>1-3</sup> These organisms are geographically widespread, infect persons of all age groups, and in the case of *Cryptosporidium* frequently occur in outbreaks.<sup>2</sup> The incidence of *Cryptosporidium* and *Giardia* infections in the US underscores the need for efficient and timely diagnosis.<sup>2,3</sup>

### O&P: Lack of detection

Diarrheal illness is one of the most common reasons for patients to seek medical care in the US and microscopic examination of stool samples for ova and parasites (O&P) is commonly performed on patients presenting with such symptoms.<sup>1</sup> However, O&P examination for *Cryptosporidium* and *Giardia* is insensitive.<sup>1</sup> *Cryptosporidium* is rarely detected without the use of a special stain, a supplemental test that is not part of the routine exam.<sup>4</sup> *Giardia* is inconsistently shed during infection<sup>5</sup>, meaning some specimens may be negative for organisms although the patient is still actively infected. As a result, O&P exams often have low yield for *Giardia* and virtually no yield for *Cryptosporidium* (see figure 1).

### EIA: A superior alternative

EIA offers enhanced sensitivity and rapid detection for *Giardia* and enables all patients to be evaluated for *Cryptosporidium* without a supplemental stain, making it a more clinically-relevant method for detecting gastrointestinal parasites in US patients with no history of foreign travel.<sup>1,6</sup> Numerous publications have documented the increased sensitivity of EIA methods for detection of *Cryptosporidium* and *Giardia* compared to O&P exams.<sup>1,5</sup> In a large, retrospective study evaluating yield of pathogenic parasites in more than 100,000 episodes between 1997-2007, EIA methods clearly outperformed O&P exams (see figure 1).<sup>1</sup>

### Test composition comparisons

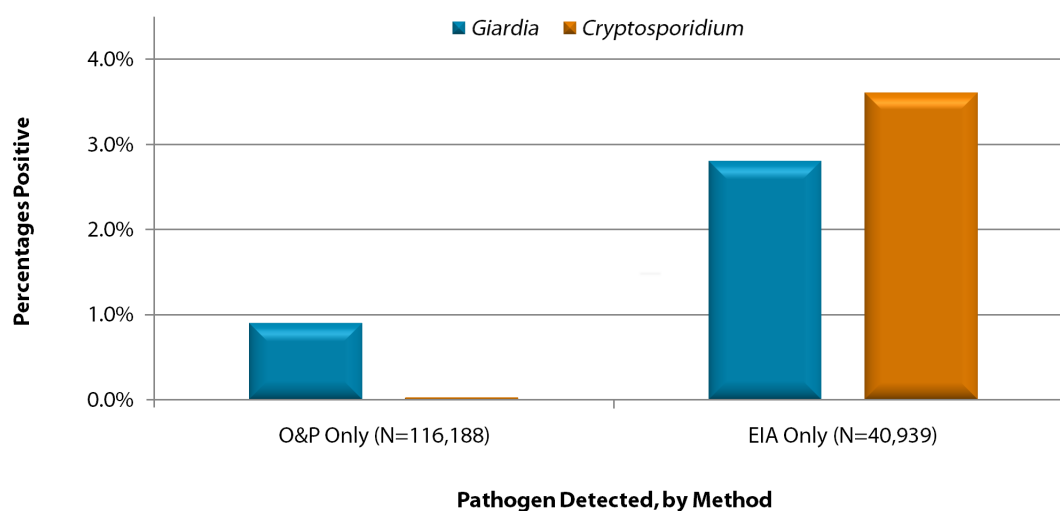
#### O&P Exam

- *Giardia* sensitivity: 66%-79%<sup>1</sup>
- *Cryptosporidium* virtually undetectable without special stain (sensitivity < 5%)<sup>1</sup>
- CDC recommends 3 or more stool samples on separate days<sup>7</sup>

#### EIA

- *Giardia* sensitivity: 94%-99%<sup>1</sup>
- *Cryptosporidium* sensitivity: 93%-100%<sup>1</sup>
- Collection protocol requires only 1 stool sample

Figure 1: Study Comparison of Positivity Rates (1997-2007), O&P vs EIA<sup>1</sup>



## Convenient and Appropriate Test Options

LabCorp's new profile for *Giardia/Cryptosporidium* EIA offers reliable and smart testing for parasites prevalent in the US.

	Test Description	Test Number	Method	Notes
New Offering	<i>Giardia lamblia</i> , Direct Detection EIA and <i>Cryptosporidium</i> , Direct Detection EIA	183558	EIA	Fecal specimens for parasitic examination should be collected before initiation of anti-diarrheal therapy or antiparasitic therapy.
Other Options	<i>Giardia lamblia</i> , Direct Detection EIA	182204	EIA	Fecal specimens for parasitic examination should be collected before initiation of anti-diarrheal therapy or antiparasitic therapy. Submit one or two specimens per diarrheal illness immediately.
	<i>Cryptosporidium</i> , Direct Detection EIA	183020	EIA	Fecal specimens for parasitic examination should be collected before initiation of anti-diarrheal therapy or antiparasitic therapy. Submit one or two specimens per diarrheal illness immediately.

Visit the online Test Menu at [www.LabCorp.com](http://www.LabCorp.com) for full test information, including CPT codes and specimen collection requirements.

### References

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