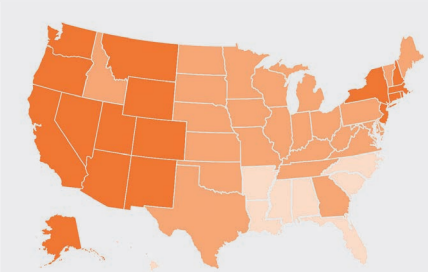
ACCURATELY DIAGNOSING *GIARDIA* USING vetscan IMAGYST™

One of the most commonly underdiagnosed and overdiagnosed gastrointestinal parasites is *Giardia duodenalis* (syn *G lamblia*, *G intestinalis*)[1]

Fecal exams are a routine part of wellness testing for dogs and cats and a standard test when they are symptomatic, but in practice, *G duodenalis* is difficult to properly diagnose. In order to overcome this challenge, the VETSCAN IMAGYST provides a simple and easy method to accurately diagnose *Giardia*.[1,2]

GIARDIA PREVALENCE



The prevalence of *G duodenalis* infection varies depending on the age, clinical status, housing and geographic region of the animal and is influenced by the detection method employed.[3-5]

WHAT TYPE OF FECAL TESTING IS NEEDED FOR MY PATIENT?[1,6]

GIARDIA SUSPECTED; SYMPTOMATIC PATIENTS

- ✓ Saline direct smear
- ✓ Sugar + $ZnSO_4$ flotations
- ✓ *Giardia* antigen test

Follow-up test

- ✓ 33% $ZnSO_4$ flotation
- ✓ +/- *Giardia* antigen test

ASYMPTOMATIC PATIENTS

Clients who want a broader range of parasitic detection performed on their dog or cat; patients with high-risk factors:

- Younger (<2 years old)
- Mostly outdoor
- Active (e.g. swimming, hunting, visiting dog parks)
- Live with other animals
- Never tested for intestinal parasites

✓ Sugar + 33% $ZnSO_4$ flotations

Patients with fewer risk factors:

- Older
- Mostly indoor
- Less active
- Only animal in household
- Have regular fecal examinations

✓ Sugar flotation

TESTING FOR *GIARDIA* USING VETSCAN IMAGYST

The VETSCAN IMAGYST was developed to provide a simple, easy and structured fecal examination, which is less influenced by different fecal preparation methods or level of experience of an examiner[2]

The VETSCAN IMAGYST system consists of 3 components:

Sample preparation[2]

The sample preparation device is used for a centrifugal flotation technique with a transfer loop for easy transfer of the sample to a microscope slide

Scanning of the sample by whole slide imaging (WSI)[2]*

Utilizes VETSCAN FUSE, a bi-directional communication system between Practice Information Management Software (PIMS) and IMAGYST, allowing easy access to patient results, updates to medical records and charge capturing

Analysis by a cloud-based, deep-learning algorithm[7]

Locates, classifies and identifies parasite eggs found on fecal microscope slides

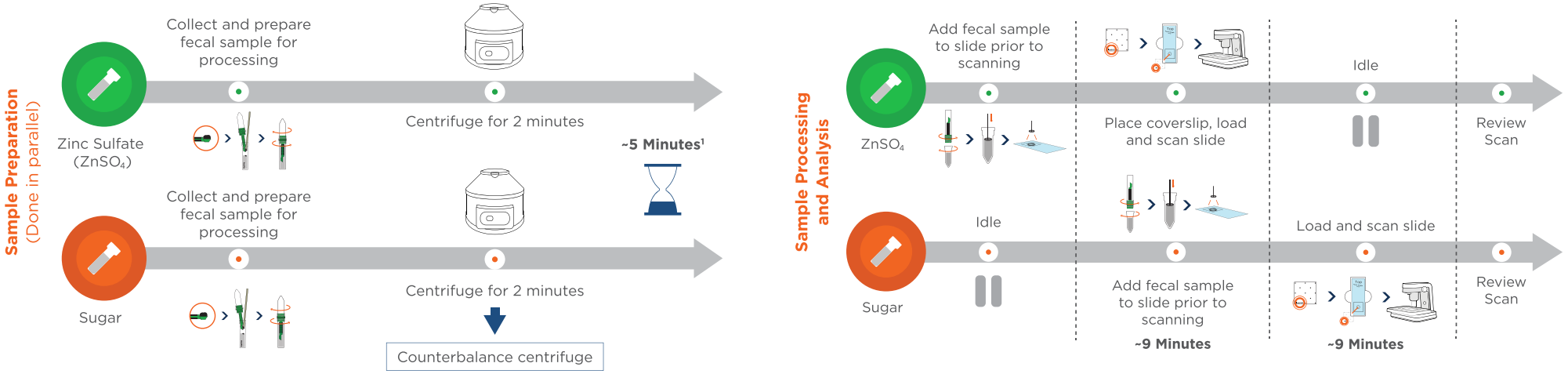
*IMAGYST is compatible with select PIMS systems. Contact your Zoetis representative for the full list.

TESTING FOR *GIARDIA* WITH THE VETSCAN IMAGYST WITH DIFFERENT SOLUTIONS[8]

FLOTATION SOLUTION	SPECIFIC GRAVITY	ADVANTAGES	DISADVANTAGES
33% Zinc Sulfate ($ZnSO_4$)	1.18	Floats common helminth and protozoa eggs and cysts; preferred for *Giardia*	Less effective for flotation of common tapeworm eggs than others; does not float some fluke and some unusual tapeworm and nematode eggs
Sheather's sugar solution	1.25	Floats common helminth and protozoa eggs and cysts; causes less damage to parasite eggs and cysts than salt solutions	Less sensitive than 33% $ZnSO_4$ for *Giardia*; creates sticky surfaces

Using the VETSCAN IMAGYST, the availability of both sugar and 33% $ZnSO_4$ solutions can provide a more complete fecal diagnostic evaluation.

CENTRIFUGATION WITH THE VETSCAN IMAGYST[8,9]



PROVEN PERFORMANCE

In a performance study:

- The VETSCAN IMAGYST sample preparation system device was shown to be comparable to the performance of conventional centrifugal flotation for *Giardia* as read by an expert (clinical parasitologist) with manual microscopy[2,7]
- Good sensitivity and specificity with *Giardia* when the samples were evaluated by the algorithm vs clinical parasitologist[2,7]

Help increase compliance and ROI by testing, diagnosing and treating if necessary, all in the same visit. The VETSCAN IMAGYST's innovative approach to detecting *Giardia* cysts is a simple, easy, fast and accurate solution, aiding in the diagnosis of giardiasis.

References: 1. Companion Animal Parasite Council (CAPC) Guidelines: *Giardia*. Dog: Updated May 2019. Cat: Updated March 2018. Accessed October 22, 2019. https://capcvet.org/guidelines/giardia. **2.** Nagamori Y, Sedlak RH, DeRosa A, et al. Further evaluation and validation of the VETSCAN IMAGYST: in-clinic feline and canine fecal parasite detection system integrated with a deep learning algorithm. *Parasit Vectors*. 2021;14(1):89. doi:10.1186/s13071-021-04591-y. **3.** Companion Animal Parasite Council (CAPC). CAPC website. https://capcvet.org/maps/#2020/all/giardia/dog/united-states/. Accessed February 16, 2021. **4.** Patton S. Overview of giardiasis. *Merck Veterinary Manual*. Updated September 2013. Accessed December 7, 2020. https://www.merckvetmanual.com/digestive-system/giardiasis-giardia/overview-of-giardiasis. **5.** Saleh MN, Heptinstall JR, Johnson EM, et al. Comparison of diagnostic techniques for detection of *Giardia duodenalis* in dogs and cats. *J Vet Intern Med*. 2019;33(3):1272-1277. doi:10.1111/jvim.15491. **6.** Greene CE. Enteric protozoal infections. *Infectious Diseases of the Dog and Cat*. 4th ed. Elsevier; 2012:787. **7.** Nagamori Y, Sedlak RH, DeRosa A, et al. Evaluation of the VETSCAN IMAGYST: an in-clinic canine and feline fecal parasite detection system integrated with a deep learning algorithm. *Parasit Vectors*. 2020;13(1):346. doi:10.1186/s13071-020-04215-x. **8.** Zajac AM, Conboy GA, Greiner EC, et al. Fecal examination for the diagnosis of parasitism. In: Zajac AM, Conboy GA, eds. *Veterinary Clinical Parasitology*. 8th ed. Wiley-Blackwell; 2012:4-7. **9.** Data on file, Study Report No. D860R-US-19-078, 2019, Zoetis, Inc.

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