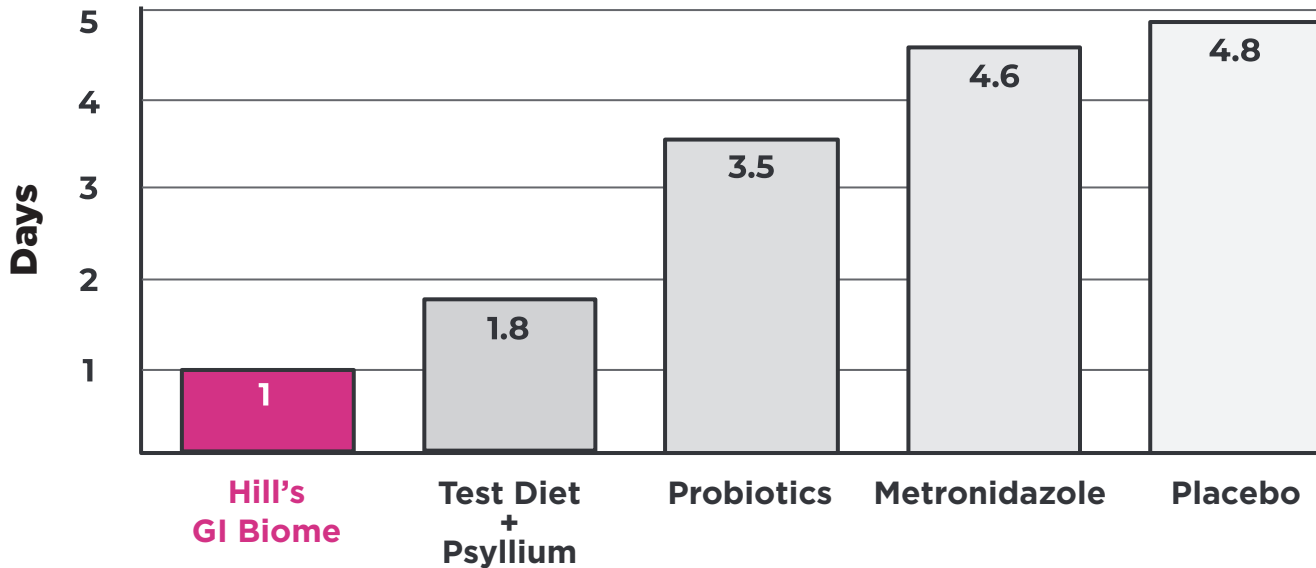




Canine Diarrhea: Battle of the 'Biotics

A review of select recent studies investigating interventions for treating diarrhea in dogs.

Average Days to Formed Stool*^{1,2,3}



Metronidazole and probiotics showed no significant difference compared to placebo, while **fiber outperformed both** in time to formed stool



Antibiotics

Significantly and negatively affected the gut microbiome and metabolism of healthy dogs, even weeks after the last dose⁵



Probiotics

Minimal Impact on acute GI disease for chronic; dietary intervention should be main focus⁴



Prebiotics

Dietary management of acute colitis with fiber was superior to metronidazole²

Hill's Prescription Diet Gastrointestinal Biome with its proprietary blend of prebiotic fibers demonstrated clinical improvement **in as little as 24 hours** in dogs with chronic diarrhea³

*Graph denotes 3 different studies looking at time to formed stool in acute and/or chronic diarrhea, where "formed stool" was determined using validated fecal scoring systems

Sources:

¹ Shmalberg J, Montalbano C, Morelli G and Buckley GJ (2019) A Randomized Double Blinded Placebo-Controlled Clinical Trial of a Probiotic or Metronidazole for Acute Canine Diarrhea. *Front. Vet. Sci.* 6:163. doi: 10.3389/fvets.2019.00163

² Rudinsky, Adam J., et al. "Randomized Controlled Trial Demonstrates Nutritional Management Is Superior to Metronidazole for Treatment of Acute Colitis in Dogs." *Journal of the American Veterinary Medical Association* 260.S3 (2022): 349-357. <https://doi.org/10.2460/javma.22.08.0349>

³ Fritsch DA, Wernimont SM, Jackson MI, et al. Food with Novel Fiber Blend Improves Clinical Outcomes and Changes Gastrointestinal Microbiome Metabolism in Dogs, in Proceedings. ACVIM Forum

⁴ Jensen AP, Bjørnvad CR. Clinical effect of probiotics in prevention or treatment of gastrointestinal disease in dogs: A systematic review. *J Vet Intern Med.* 2019;33:1849-1864. <https://doi.org/10.1111/jvim.15554>

⁵ Pilla, R., Gaschen, F. P., Barr, J. W., Olson, E., Honneffer, J., Guard, B. C., ... & Suchodolski, J. S. (2020). Effects of metronidazole on the fecal microbiome and metabolome in healthy dogs. *Journal of Veterinary Internal Medicine*, 34(5), 1853-1866. <https://doi.org/10.1111/jvim.15871>



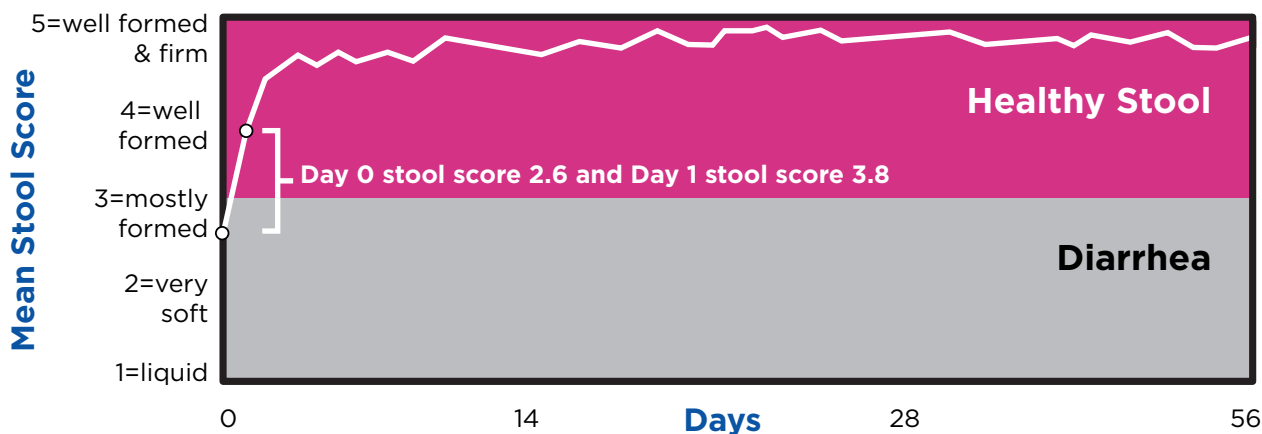
Dogs with chronic diarrhea fed Hill's Prescription Diet Gastrointestinal Biome in a multi-center, longitudinal study demonstrated clinical improvements in as little as 24 hours



Implications for Practice

These results demonstrate that Prescription Diet Gastrointestinal Biome significantly improves stool quality in dogs with chronic large bowel diarrhea in as little as 24 hours. Fecal samples from dogs included in the study demonstrated a reduction in putrefactive metabolites and fecal ammonium, and an increase in saccharolytic metabolites, consistent with a shift towards a healthier gastrointestinal microbiome as well as a significant increase in fecal antioxidant, anti-inflammatory polyphenols.

Stool Quality Rapidly Improved



These results demonstrate that Prescription Diet Gastrointestinal Biome significantly improves stool quality in dogs with chronic large bowel diarrhea in as little as 24 hours.

Additional Significant Findings When Gastrointestinal Biome was Fed to Dogs with Chronic Large Bowel Diarrhea:

- Veterinarians reported that a majority of dogs with chronic large bowel diarrhea experienced resolution of both poor stool consistency (68%) and blood and mucus in stool (59%) when fed Prescription Diet Gastrointestinal Biome Canine for 56 days.
- Gastrointestinal Biome significantly increased fecal antioxidant and anti-inflammatory polyphenols at study day 56 compared with baseline.
- Pet owners observed a significant decrease ($p < 0.05$) in the occurrence of nausea/vomiting and stooling behaviors (straining, unproductive attempts, defecation accidents) in dogs with chronic large bowel diarrhea after consuming Prescription Diet Gastrointestinal Biome Canine for 14 days.
- Pet owners also reported a significant improvement ($p = 0.003$) in quality of life when dogs with chronic large bowel diarrhea were fed Prescription Diet Gastrointestinal Biome Canine for 28 days.