

# DIETARY TRIAL TO ADDRESS BLOAT AND LOOSE STOOLS IN FEMALE WESTERN LOWLAND GORILLA (*GORILLA GORILLA GORILLA*)

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## Abstract

One, 27-year-old female Western lowland gorilla (*Gorilla gorilla gorilla*) housed at Omaha's Henry Doorly Zoo & Aquarium consistently had loose stools and a visibly distended abdomen since mid-2019. She was immobilized for gastrointestinal (GI) scoping in October of 2020 with a primary finding of a massively dilated colon full of stool but little gas accumulation. Conclusions from the scope were normal upper GI tract but narrowed rectum leading to diagnoses of a distal colonic stricture. This individual has been treated intermittently with Simethicone (250 mg twice per day) to relieve bloat and routinely with Prednisone (20 mg once per day) to reduce inflammation since diagnosis without obvious improvement. It was then decided a dietary trial would be conducted to assess the impact of various diet items on bloat and fecal scores. Bloat was assessed on a three-point scale where 0 was no extreme bloating observed and 2 was extreme bloat with a tightly distended belly and visible discomfort. Fecal scores were assessed on a five-point scale with 1 being runny and watery and 5 being solid and ideal. Dietary trial manipulations are listed in Table 1, and diet was reverted back to baseline diet after each trial period. Paired *t*-tests found no significant differences between baseline bloat scores and scores during any periods throughout the trial (Table 2). Addition of Metamucil® (psyllium fiber) resulted in significantly ( $P < 0.05$ ) lower fecal scores (loose) while adding inulin to the diet resulted in significantly ( $P < 0.05$ ) higher (firm, ideal) fecal scores compared to baseline. Given this animal's colonic stricture, it is important to further assess if firmer fecal scores are contributing to fecal impaction or constipation and discomfort.

**Table 1.** Dietary changes during 2-week trial periods.

Duration (weeks)	Variable
4	Baseline
2	Cook produce
2	Eliminate apples
2	Eliminate oatmeal patty
2	Eliminate biscuits
2	Add cabbage
2	Add Citrucel
2	Add Metamucil
2	Add prebiotic (inulin)

**Table 2.** Average bloat and fecal scores and *P*-values for comparison of changes to baseline.

	<b>Bloat</b>		<b>Fecal</b>	
	<b>Score</b>	<b><i>t</i>-Test</b>	<b>Score</b>	<b><i>t</i>-Test</b>
Baseline	1.79		2.10	
Cook Produce	1.71	0.67	1.50	0.15
No Apple	1.93	0.39	1.68	0.31
No Oatmeal Patty	1.86	0.69	2.39	0.46
No Biscuits	1.97	0.24	1.75	0.39
Add Cabbage	2.00	0.19	1.64	0.28
Citrucel	2.00	0.19	1.73	0.35
Metamucil	2.00	0.17	1.04	0.004*
Prebiotic (inulin)	2.00	0.21	3.14	0.02*

\*Indicates significant difference from baseline.