

The Complete Scoop On Ferret Poop

Look at your ferret's feces for some clues to its health.

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The Small Intestine — Where The Magic Happens

In terms of digestion, the small intestine carries the majority of the load. The work of the small intestine is divided into digestion and absorption — and problems can occur in one or both segments.

As there is so much work to be done, the small intestine is designed to maximize the area that comes in contact with the food. The lining of the intestine is composed of billions of fingerlike folds called villi, which give a thousand-fold larger area than just a hollow tube with a smooth surface. The cells that line these villi, enterocytes, are the only portal for the absorption of most nutrients into the body. In addition, they have some important digestive enzymes (although in truth, most of the enzymes for digestion in the small intestine come from the liver and pancreas).

Any disease that results in loss of villi decreases the intestine's ability to absorb food (and to digest it a bit too.) But the loss of absorptive surface is really what results in changes in the ferret's poop.

Epizootic catarrhal enteritis (ECE), caused by a ferret coronavirus, wipes out up to 90 percent of villi in affected animals, which causes severe greenish, fluid diarrhea. The large amount of undigested and unabsorbed material results in the influx of huge amounts of water into the bowel (also known as osmotic diarrhea) and a rush toward the outside of the body. The characteristic greenish color of this material reflects the rapid passage of feces through the G.I. tract (hastened by the amount of water as well as the irritability of an inflamed bowel) and the lack of digestion of certain fecal substances (such as worn-out red blood cells) that give feces a normal light brown color.

A small intestinal disease might wipe out some villi, but not a tremendous amount. Often this is seen in diseases like inflammatory bowel disease (in which the body's immune system attacks its own villi) or in the healing stages of ECE. In such cases, the amount of undigested, unabsorbed fats and proteins is not enough to draw water into the lumen and cause an osmotic imbalance, but they still pass into the large intestine in undigested form, as little balls of fat and protein. The presence of this material gives the feces a "birdseed-like" appearance, and the excess undigested materials causes an overall increase in fecal amount. Thus, the appearance of "birdseed" stools is indicative of maldigestion/malabsorption, and points to a problem with the small intestine.

The Large Intestine & Beyond

The large intestine, or colon, has a relatively simple function — the extraction of the remainder of water from the ingesta, and storage prior to excretion from the body. A few vitamins and salts, such as Vitamin K, are absorbed here as well, but that process has no affect on fecal composition.

Any significant disease of the colon results in watery feces. But two other changes can alert ferret owners to the presence of colonic disease.

First, the colon is lined with mucus-producing cells, whose product generally mixes with the contents and helps to prevent overabsorption of water that causes dry, hard feces. If only a small amount of feces get expelled, or the animal defecates frequently due to colon irritability, the feces may have a grossly visible mucus content or coating.

Second, hemorrhage within the large intestine passes blood into the feces largely unchanged and is bright red (also known as "frank" blood). This is the quite different from the black feces seen when hemorrhage occurs in the stomach or small intestine. Ferrets affected with proliferative colitis, a condition caused by infection by a bacterium known as *Lawsonia intracellulare*, often pass frequent small stools largely composed of mucus and fresh blood.

The rectum is the distal part of the colon and is simply a tube for storing feces immediately prior to excretion. It would manifest fecal changes similar to the large intestine, but rectal disease is very uncommon in ferrets.

Finally diseases of the anus are also fairly rare in ferrets and limited to some rare tumors and anal sac inflammation (often the result of a bacterial infection or a poor job of de-scenting). Such ailments have little affect on feces, except for pain

and straining on passage.

Clueless Bad Poop

A few other stool changes exist that point to gastrointestinal disease, but don't really point to a specific anatomic region. Veterinarians use these with other information to try to figure out the problem.

We mentioned green stools earlier in the article. Although they were at one time associated with ECE, once called "green slime," green stools are a non-specific finding that can be seen with a number of diseases.

In addition to ingesta, the feces are the preferred method of excretion of a number of other products of the body, including worn-out red blood cells. Red blood cells contain hemoglobin, the molecule that helps carry oxygen around the body. During the digestion process, this molecule is degraded to biliverdin, a greenish compound (derived from the Old French word *verd* meaning green). Further digestion converts it to stercobilin, which is brown and imparts the characteristic brown color to feces.

Any condition that causes intestinal hypermotility, or the feces to move faster than the normal four-hour transit time for ferrets, results in incomplete digestion of biliverdin, and green feces. Now combine those green feces with a bird-seed appearance and, you guessed it, the ferret is suffering hyperactivity of the small intestine and impaired digestion/absorption of nutrients.

In rare cases, feces may be a deep gray rather than brown. If we know that worn-out red blood cells are a large source of the brown color of feces, a severely anemic animal would have pale feces. In rare cases, obstruction of the bile ducts in ferrets may result in grayish feces, as bile is also high in biliverdin. However, we rarely see biliary obstruction in ferrets (it is much more common in dogs), so this cause largely remains a distant ruleout in the mind of most good ferret vets.

One of the worst ferret poops that you can see is the one composed almost entirely of blood. As opposed to the drips and drops of frank blood we see with colonic disease, rarely vets see massive GI hemorrhage in very sick, often moribund animals. In ferrets in shock, the blood tends to pool in the intestine, and moves out of the capillary beds into the intestinal lumen. If this animal defecates (as they so often do right before expiring), it passes a large bolus of blood. It's not something you want to see, and many of these animals do not survive. It isn't true GI disease, but a sign that something is really, really wrong.

Diminished stools generally mean diminished food intake, as long as they are a good color and tubular shape. However, gastrointestinal blockages can result in diminished output. "Pencil-lead thin" stools may be seen in animals with partial blockages – blockages composed of cloth or plastic bags, which disrupt the flow of ingesta but do let some feces pass.

The total absence of feces in an animal that is still eating, coupled with signs of abdominal pain — like grinding teeth, walking hunched, and laying flat out with occasionally nipping at the abdomen — are signs of total blockage and a veterinary emergency.

Putting Poop In Its Place

I hope now you have a better idea about what bad ferret poops might indicate, but I have to, once again, give that old caveat — "Don't be a stool-gazer." If you overscrutinize, you might find that your ferret has small intestinal disease, large intestinal disease, and even foreign bodies — all in a single day! Monitoring poop occasionally is a good part of keeping tabs on your pet's health, or monitoring response to therapy for ferrets with some GI problems (very common issues in the older ferret). Just don't overdo it — a little ferret poop gazing goes a long way.

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