

## Disrupted Enteric Flora

Enteric samples include feces and intestines. Normal or healthy enteric samples contain a variety of bacterial flora that help aid digestion and absorption of nutrients while preventing the growth of harmful bacteria. Normal enteric flora can include *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter sp.*, *Proteus mirabilis*, *Enterococcus sp.*, *Bacteroides sp.*, a variety of streptococci, and many other organisms. When bacteria that are consistent with a healthy enteric system are absent from a culture, pathogens can flourish, or toxins can be released by organisms like *Clostridium perfringens* or specific strains of *E. coli*. To reflect the lack of normal flora, the following comment is added to the results:

**“Mixed bacterial growth consistent with disruption of normal enteric flora. Disruption of normal enteric flora may be caused by use of antimicrobials, stress, or prolonged diarrhea. No probable pathogens identified.”**

As the comment indicates, this scenario can be caused by a few different things. Animals that have been on antibiotic therapy may have their normal flora balance altered. While it is the job of an antibiotic to kill a pathogen, a side-effect is that other bacteria can be harmed in the process. Sometimes, even though healthy enteric flora has been inhibited, other non-enteric bacteria found on the skin may persist. This is why an enteric culture with disrupted normal flora can also be reported as “mixed bacterial growth.” The longer the antibiotic regimen, the greater the effect on normal flora.

Stress in animals is a well-known contributor to a weakened immune system. Environmental stressors include temperature changes or crowding are notable causes of stress. Changes in nutrient content and quality of feed are often implicated as well. Stress can impact the release of digestion enzymes and cause altered rates of peristalsis, impacting the length of time for an organism to establish itself within the intestines.

If an animal has an imbalance of normal flora, antibiotics are not usually the solution. Instead, the focus can be on removing or easing the stressor to the animal. Discontinuing antibiotics as soon as possible or improving nutrition can be a significant step toward improving the intestinal balance of flora.