

Faecal occult blood testing

Faecal occult blood testing can be useful when investigating the possibility of gastrointestinal bleeding in the absence of clinical melena. This may be part of an investigation when there is unexplained anaemia, especially iron-deficiency anaemia, or possibly when monitoring NSAIDs therapy.

The most commonly used faecal occult blood test relies on the oxidation of guaiac by haemoglobin's peroxidase activity.

Faecal occult blood tests can be affected by diet. Myoglobin also has peroxidase activity and therefore meat-based diets can cause false positive reactions. False positives have been seen in all samples from healthy dogs being fed canned meat-based and meat and vegetable-based diets (100%), and less often with dry corn and poultry diets (38%), dry corn, wheat and meat meal (17%), semi-moist soybean meal-based diets (8%), and canned poultry-based diets (4%) (Rice and Ihle, 1994). In cats, all diets containing red meat, rabbit, tuna, chicken livers and dry chicken and rice diets gave false positive results, while diets containing white fish did not give false positive results. Some cats (38%) fed a canned chicken and rice diet also had false-positive results (Puhl Tuffli et al, 2001).

Other diet components which can cause false positive results include fruit and vegetables with high peroxidase activity (eg. beetroot, broccoli, cauliflower, melon), but these are usually less of a concern in animal patients. Vitamin C supplements, because of the antioxidant properties, can cause false negative results.

Food products can take 2-3 days to be cleared from the digestive tract, and therefore it is advised that the animal be fed a meat-free diet for the three days prior to the test. Diets based on cottage cheese or white fish were traditionally recommended, but hypoallergenic diets based on hydrolysed proteins and gastrointestinal diets containing chicken meal also did not cause false positive reactions (Pierini et al, 2020).

References:

- Rice JE, Ihle SL. Effects of diet on fecal occult blood testing in healthy dogs. *Can J Vet Res* 58:134–137 (1994)
- Puhl Tuffli S, Gaschen F, Neiger R. Effect of dietary factors on the detection of fecal occult blood in cats. *J Vet Diagn Invest* 13:177–179 (2001)
- Pierini A, Bartoletti F, Lubas G, Gori E, Marchetti V. The guaiac-based fecal occult blood test in healthy dogs: Evaluation of the effects of diet, and the ability of the test to detect fecal occult blood. *Vet Clin Pathol* 49:71–7 (2020)

