Accuracy of Wood’s Lamp Exams for Diagnosing Dermatophytosis

Historically, Wood’s lamp exams have carried the reputation of having a poor sensitivity with less than 50% of samples of Microsporum canis fluorescing when screening for ringworm. However, recent studies, literature reviews and clinical experience have proved this reputation incorrect. When performed correctly, the Wood’s lamp exam is an important tool for helping to diagnose and assess resolution of M. canis infections.

Question:

Hi, in your experience, does the Wood's lamp only pick up 50% of M. canis infections in cats?

Answer:

Thank you for your question!

Before we answer this question, it is important to state that the Wood’s lamp is not a diagnostic test, and instead a tool that is used to find infected hairs for direct examination. Much of the confusion in the literature is because this tool has been called a ‘test’.

The first textbook that mentions the Wood’s lamp examination made note that 30-50% of samples fluoresced. These percentages were not taken from live animal studies but rather from retrospective data from diagnostic laboratories that spanned over 20 years. During a recent evidence based review of diagnostics and treatment of dermatophytosis, the literature was searched from 1900 to 2016 and when live animal studies were examined, the authors found quite different results (2017 Clinical Consensus Guidelines of the World Association for Veterinary Dermatology by Moriello et al-Vet Dermatol, open access).

- When data from all untreated and treated animals was
pooled, 72% of animals had positive Wood’s lamp examinations.

- Data from *untreated animals with spontaneous disease* showed that 91% of animals had positive Wood’s lamp examinations.
- Data from experimentally infected cats showed 100% of cats had positive Wood’s lamp examinations.
- Data from cats that were previously treated were positive in 39-53% of Wood’s lamp examinations.

Here are some ways that this information can be useful to us in a shelter setting:

Staff and volunteers performing Wood’s lamp exams should be trained prior to being expected to determine whether a cat is positive on Wood’s lamp exam or not.

A positive Wood’s lamp exam will show apple green fluorescence of individual hairs close to the base of the hair shaft.

Understanding how to use a Wood’s lamp effectively and recognizing the common causes of false negatives are essential to the screening process. One of the most common causes of a false negative is an improper Wood’s lamp exam. Here are the important points to know about the exam:

- Use a plug-in Wood’s lamp (not a battery operated blacklight) fitted with a filter that is opaque to all visible light rays except for bands between 320 and 400 nm.
- While the Wood’s lamp does not need time to warm up, the examiner’s eyes may take 2-3 minutes to adjust to the dark room to properly assess fluorescence.
- Using a Wood’s lamp with magnification can also help decrease the prevalence of false negatives; otherwise, the Wood’s lamp needs to be held close to the patient (2-4 cm).
- The haircoat should be parted to be able to visualize the base of hair shafts, and crusts should be removed from lesional areas to expose infected hair shafts.
- Performing these exams in teams of at least two people allows for better visualization, less stressful animal handling, and a safer process.

Another cause for a false negative Wood’s lamp exam would be a cat who cultures positive without actual dermatophyte infection. A cat who has been exposed to ringworm and carries spores on their haircoat will sometimes culture positive with a
low amount of colonies (a.k.a. low P score), even if they do not have clinical infection. These cats are often referred to as “dust mops” rather than clinically infective cats.

With this information in mind, we recommend performing Wood’s lamp examination as part of the physical exam on all new cat admissions into animal shelters. This screening process can prevent potential outbreaks and help recognize potential health considerations early in an animal’s stay. If a cat has a positive Wood’s lamp exam or a suspicious exam, we recommend performing a culture to confirm dermatophytosis infection.

More information about culture interpretation and treatment can be found in our Ringworm Guidebook.

Please let us know if you have any further questions or concerns!

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