

Infectious Disease Protocol: Ringworm (Dermatophytosis)

Basic Disease Information:

- **ZOONOTIC**

- Ringworm is a fungal infection affecting the skin, hair and occasionally nails of animals (and people)
- *Microsporum canis* is the most common species of concern to shelters
- Cats are at a greater risk than dogs (esp. long-haired cats). Young (<1yr.) and geriatric are at the highest risk
- Most common location of lesions is the face, ears, paws and tail, but can be found anywhere on the body
- Most often spread by spores, either through direct contact or a contaminated environment
- Very durable and can remain in the environment for months and even up to a year, therefore the **mechanical removal of spores from the environment is the most important step**
- **Incubation Period:** 1 – 3 weeks
- **Shedding Period:** Several weeks post-recovery with spores
- No true carrier state, but the animal can act as a mechanical carrier by carrying spores around (like dust) on their coat from the environment
- No vaccination
- Every animal should be examined using a Wood's Lamp upon intake

Remember: True infection only occurs when skin microtrauma allows spores to invade the skin and hair to establish growth.

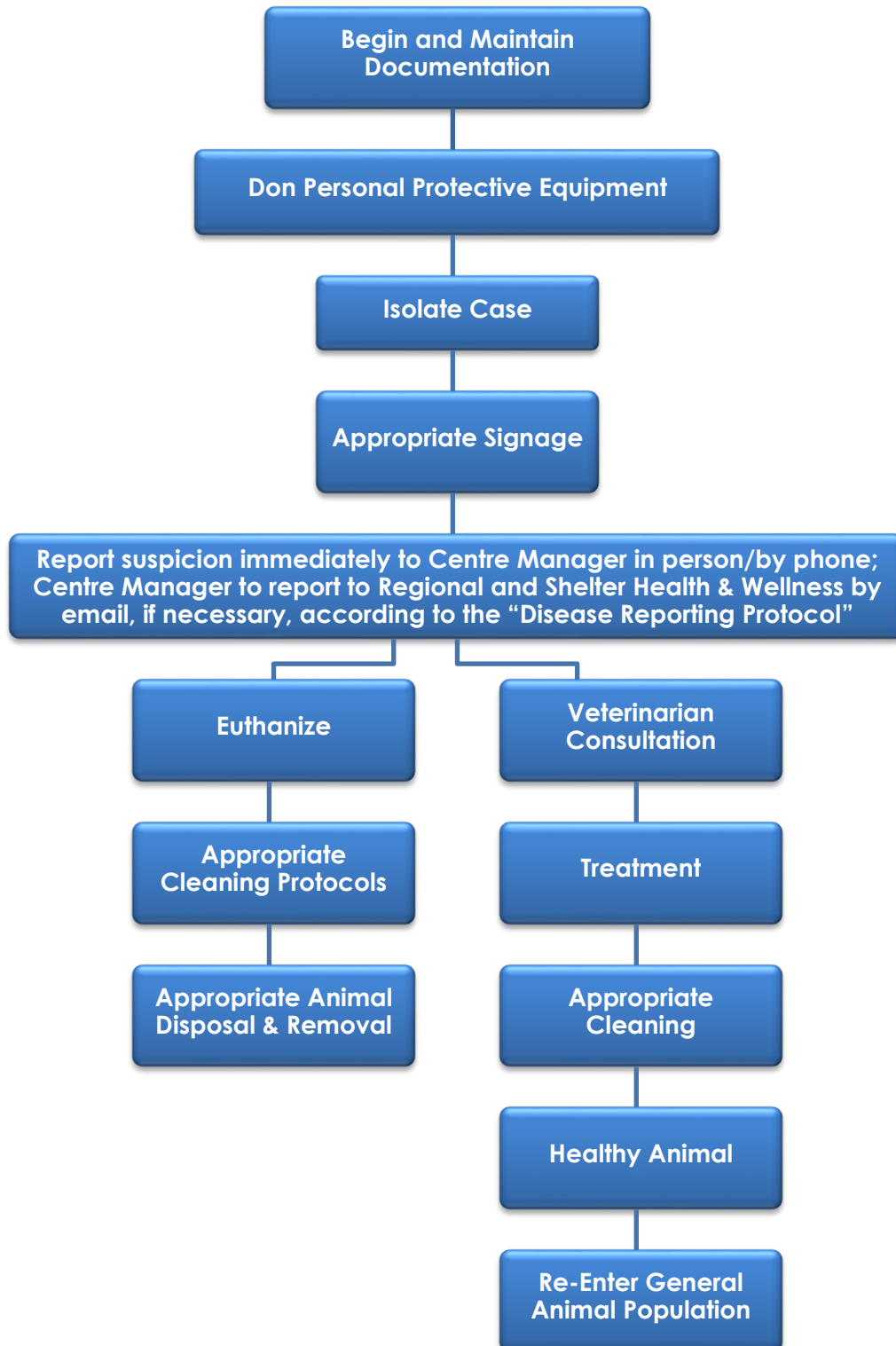
General Policy:

Treatment of Ringworm infected animals should only be undertaken in an animal centre if sufficient facilities exist to isolate the patient such that the rest of the population is not put at risk, and staffing resources (time, skill level) are adequate to ensure humane and appropriate care. These animals must be examined by a Veterinarian and have their treatment plan prescribed by the Veterinarian.

If you see or suspect any of the following signs:

- Wood's Lamp Positive (Refer to **Shelter Health Pro** website for proper procedures)
- Suspect skin lesions

Follow these next steps:



Diagnosis:

When to test: When you get a positive Wood's Lamp reading AND/OR have identified suspicious looking skin lesions.

Who performs the test: Collection method performed by trained animal centre staff or veterinary staff. Send sample(s) out to a diagnostic lab - Antech (fungal culture, still considered the Gold Standard of testing)/ Idexx (PCR testing) ****Be sure to add both the animals name AND Shelter Buddy # when filling out submission form under 'animal ID'**

How to test: PCR testing can be useful if performed early in the occurrence of the disease. A positive PCR test initially is valid **with the presence of a lesion** and continued testing would use the DTM Fungal culture to monitor the progress (success) of treatment. Subsequent PCR tests may not be of value as they may only be detecting residual genetic material and not the current state of fungal growth. Progress of the disease and success of treatment should only be done with consecutive DTM Fungal culture performed every 7 days. Each sample is cultured for a **total of 14 days** and any growth after 14 days is not valid. (e.g.- Day 1 = First sample (harvest sample before treatment), Day 8 = Second Sample (before treatment if that is a treatment day)).

Collect spores for DTM Fungal culture using the "toothbrush-collection" method –

1. Brush animal thoroughly with a new toothbrush; brushing any lesions LAST. Make sure to follow all the steps contained in: **Refer to "Collecting a Ringworm Sample: Tip Sheet"**
2. Place toothbrush in a double sealed Ziploc® bag with animals ID and send off to Antech

Where Housed:

- **Isolate** all positive cases in a separate room used only for this purpose (ie. Not in a bathroom)
If no isolation room is available, isolate separately at a Vet Hospital
- **Quarantine** exposed animals for 21 days. Animals that have been exposed, should have a culture collected at Day 1, and treated on the same schedule as the suspect animal(s).
- Additional quarantine may be needed to achieve 2 consecutive negative cultures for suspected cases
- **If neither isolation, quarantine, nor transfer to a Vet facility are an option, the only other humane alternative is euthanasia**
- **Work with a Veterinarian knowledgeable in shelter medicine to develop a plan for other animals in the facility**

How cleaned:

1. **Don proper PPE** for ANYONE coming in contact with a suspected animal and for entering any isolation or quarantine rooms – Disposable gloves, disposable gown, impermeable shoe covers and a **surgical hair cap**. **In addition, any employee with long hair must have it tied back. Wipe any exposed area of scrubs not protected by gown, gloves or impermeable shoe covers with Prevail® wipe or paper towel with Prevail® applied before leaving area**
2. Before cleaning duties begin and after full PPE have been donned, isolation and quarantine floors must be Swiffered as you are entering the room (ie. so you are only walking in on “swiffered” areas). After the floor has been completely Swiffered, use a Swiffer “mitt”/cloth (Dollarstore brand is acceptable to use) to wipe any shelving, table top or window ledge
3. Continue with your Animal Centre’s cleaning protocol as approved by the Department of Shelter Health & Wellness. **For cats**, spot cleaning is always preferred unless the cage is heavily soiled. A full clean and disinfection is required **twice a week** (on the same day as topical treatment is applied) using Prevail® - with a **10 min. wet contact time**
4. **3 CONSECUTIVE FULL CLEANS (with Prevail® and a clean cloth each time) followed by ONE FULL DISINFECTION (10 min. wet contact time) of a kennel/cage is required before reusing it between animals**
5. At the end of quarantine, change all air filters from affected rooms

** As a reminder where staff is responsible for cleaning multiple housing units, the sequence they should be cleaned is: **From clean to dirty**,

1. Adoptable kittens/puppies
2. Adoptable adult animals
3. Stray/Quarantine kittens/puppies
4. Stray/Quarantine adult animals
5. Isolation areas

Tips:

- Clipping is often un-necessary in short and medium haired cats, and may worsen lesions through microtrauma and mechanical spread of spores, however, clipping may be useful in long-haired cats whose coats simply become un-manageable after topical treatment. A #10 blade should be used
- Heating and cooling vents should be vacuumed and disinfected at least weekly. Furnace filters should be changed at the end of the quarantine period

- Dishes & other washable items can be run through a dishwasher provided water temperature reaches at least 43.3°C (110° F)
- **Bedding should be disposed of when soiled or on full clean/dipping (shampoo) days (twice weekly).** Bedding must be placed in sealed bags before leaving the room. Any toys (ie. Scratching posts) that cannot be washed should be discarded

Which animals to treat:

- Treatment of Ringworm infected animals should only be undertaken in an animal centre if sufficient facilities exist to isolate the patient such that the rest of the population is not put at risk, and staffing resources (time, skill level) are adequate to ensure humane and appropriate care. These animals must be examined by a Veterinarian and have their treatment plan prescribed by the Veterinarian
- Other options could include off-site veterinary clinic or transfer to another animal centre with sufficient facilities
- All animals should be treated, as long as they are a good adoption candidate, there is appropriate isolation (each isolation room should be species specific) and adequate resources to support treatment and housing

Treatment:

- Treat all animals in both Isolation and Quarantine rooms **topically** with Pure Oxygen Ultra Shampoo®
 - Pure Oxygen Ultra Shampoo® is preferred to use to treat the animal for either exposed or quarantine cases. It should be diluted with water to a concentration of 1 part shampoo to 20 parts water (1:20 dilution). The animal should be combed or gently brushed first. Be careful not to damage the skin as microtrauma predisposes the animal to skin infection. Apply to the animal's coat to the point of run off and allow to air dry. Keep very small animals or very young animals warm. **Apply twice weekly or every 4 days.** Either clean and disinfect combs and brushes in the same area using Prevail® disinfectant or transport to cleaning area in a sealed plastic bag. Use care when cleaning combs and brushes not to disperse the hair and debris on the comb/brush. The product can be used in pregnant and nursing cats and is okay to use in kittens > 2 – 3 weeks old
 - If Lime Sulfur must be used:
 - Use 8% concentration.
 - Okay to use in pregnant and nursing cats
 - Okay to use in kittens > 2 – 3 weeks old

- Consider using pesticide sprayer for application to animal, using a facecloth around its face, nose and ears.
 - Do not pre-wet the animal
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- In addition, **systemic** treatment with oral itraconazole (if approved by Veterinarian) for all animals that are positive
 - Wipe any recovered animals down with a Prevail RTU® disinfectant wipe, before going home, to remove any possible spores lingering on its coat

Monitoring:

- ACA or RVT is responsible for daily monitoring and proper documentation
- The Animal Centre Manager, RVT or Senior Animal Care member is responsible for scheduling veterinary rechecks

Recovery/Treatment Failure:

- To be determined by the supervising Veterinarian

Adoption:

- **Suspect animals can be placed back up for adoption after 2 consecutive, negative cultures.**

Documentation:

- All animal centres are required to provide pertinent information as per the Ontario SPCA Adoption Sharing and Caring Policy

References: Koret Centre, Shelter Medicine – UC Davis

<https://www.sheltermedicine.com/library/guidebooks/?r=ringworm>