



Ringworm

Guidance for cat carers



This guidance is intended for use when caring for cats in Cats Protection care. For owned cats, we advise consulting your veterinary surgeon.

Terminology

Ringworm: dermatophyte infection

Dermatophyte: a type of fungus that requires keratin (found in hair, nails, horns) to grow

Lesional: skin disease is visible

Non-lesional: no skin disease is visible

In-contact: where a cat has been housed with a cat who has, or is suspicious of, ringworm infection

Culture: growing a microorganism within a laboratory

Support

Cats Protection Veterinary team, including your Regional Vet, can be contacted by emailing veterinary@cats.org.uk

Cats Protection Behaviour team can be contacted by emailing behaviour@cats.org.uk

Ringworm

Ringworm is not a worm, but is a term used to describe a fungal infection of the skin and hair. The disease is also known as dermatophytosis. There are different species of dermatophyte that can cause ringworm in cats. The most common is called *Microsporum canis*. A rarer form is called *Trichophyton mentagrophytes*.

The infective form of the disease is a spore, which can survive up to two years in the environment, and is resistant to many disinfectants. Most commonly, infections arise due to contact with another infected cat or animal.

Ringworm is zoonotic, meaning it can spread from an infected animal to a human. In people, it causes a skin infection, most often with spreading circular scaling areas. It can also spread from people to cats. If you think you may have symptoms of ringworm, please contact your GP and inform your Cat Welfare Advisor or Centre Manager and the Veterinary team.

Healthy cats with healthy skin can carry ringworm on their coat but not become infected. This can complicate testing.

Cats in care

Ringworm is significant in cats in care for several reasons:

- the increased stress of cats in care can make ringworm more likely to occur and be less easy to treat
- spores of ringworm are difficult to kill, and therefore moving cats through pens and rooms could increase the chance of other cats being exposed to ringworm
- we need to look after our people where we have a zoonotic disease and avoid failed adoptions where cats are homed and go onto develop signs of ringworm

However, ringworm can result in high levels of caregiver burden and cause cats to spend long periods in care, especially kittens who are most susceptible to ringworm and most in need of socialisation. It is also, most often, in both cats and people a 'self-limiting' disease, meaning unless there is a weakened immune system, an individual will recover eventually.

At-risk cats

Any cat can develop ringworm, but some cats are more susceptible. These include:

- kittens and young cats
- persian cats
- long-haired cats
- sick or immunosuppressed cats
- cats with skin wounds

Signs of disease

The most common signs include hair loss and scaling, especially of the face and ears. The legs, paws, pads and nails are also commonly affected, especially as the disease progresses. Infection can be itchy, but more often is not. Skin disease is very common in cats and can have many causes, but it is good to always consider ringworm when a cat has skin disease, as it can have varying appearances.

It is important to carefully inspect each cat coming into care for any signs of hair loss, scaling or crusting, especially of the face, ears and paws.

Testing

Dermatophyte culture

All cats suspected of having skin disease caused by ringworm should have a dermatophyte culture performed. Samples should be sent to an external laboratory. Finn is our preferred laboratory. Some vets may offer using an in-house testing kit, but laboratory analysis is more reliable.

Sampling will be performed by your vet. The method we advise is to use a sterile toothbrush to collect the hair samples. Please share our Ringworm: guidance for vets document with them, which contains further advice on sampling.

FeLV/FIV testing

Prior to starting treatment, cats should be tested for FeLV and FIV. [Please refer to our flowcharts for testing.](#)

Results

The lab checks the fungal culture on each working day and will inform your vets of a positive result as soon as it is seen. It can take up to 14 days for a positive result to appear, or you will then receive a negative result.

Other tests such as a Wood's Lamp and PCR testing are available. PCR is not advised for general use for cats in Cats Protection care. We no longer advise using Wood's Lamps to screen healthy cats with no skin lesions due to the risk of false positive results.

There may be a place for these tests in certain scenarios, including an outbreak situation. Using a Wood's Lamp can be helpful as part of the initial health check in a cat with suspicious skin lesions, although we would still want a culture performed regardless of lesion fluorescence.

Please contact your Regional Vet for advice about specific circumstances.

Sick cats

A cat who is diagnosed with ringworm and has significant other health problems is more likely to develop a severe infection, and less likely to respond to treatment. In some cats, ringworm infection is the first sign of serious underlying health problems. Consideration of each cat, their overall health, and any behavioural concerns is important prior to undertaking treatment for ringworm. Please contact your Regional Vet for further support with these cases.

Management where ringworm infection is suspected

If a cat in volunteer foster care or a pen has skin disease and ringworm is suspected:

- arrange an appointment with your vet so a sample can be collected for culture
- contact your Regional Vet, Cat Welfare Advisor and Branch Development Manager
- wear full PPE, as described below, when entering the room or pen and clearly label the pen so all staff and volunteers are aware
- photograph the cat's skin disease (this can be useful to track the progress)
- if the culture is positive, the cat should be moved to an isolation facility within a cat centre
- if the culture is negative, additional PPE will no longer need to be used. Follow the vet's advice as to next steps

If a cat in a centre has skin disease and ringworm is suspected:

- move the cat to isolation if possible
- once a sample for culture has been collected, cats should be bathed with Imaverol twice weekly. This is the best way to reduce environmental contamination. Please refer to the guidance below under 'treatment', including when not to use
- if the dermatophyte culture result comes back as negative, cats can be moved out of isolation

Do not groom ringworm-infected cats or those suspected of having ringworm.

Treatment

Where ringworm is strongly suspected, your vet may also prescribe Itrafungol treatment to start while awaiting culture results. This should be reserved only for cats where ringworm is highly likely based on their clinical signs.



Confirmed infected cats

Cats with skin disease and a positive dermatophyte culture should be managed as follows.

Treatment

Treatment will be prescribed under the direction of a veterinary surgeon and based on their instructions.

Our recommended treatment protocol is:

- bathe the cat twice weekly with Imaverol, starting from taking the first culture sample
- treat orally with Itrafungol. This is given once a day, on a one week on, one week off programme, for five weeks. Oral treatment should start as soon as possible after a positive result is confirmed

Week	Itrafungol (by mouth)	Imaverol (wash)	Testing
1	Once daily	Twice weekly	
2	Week off	Twice weekly	
3	Once daily	Twice weekly	
4	Week off	Twice weekly	
5	Once daily	Twice weekly	Test at the end of week 5/beginning of week 6 after bathing. Submit fungal culture to Finn
6	Treatment stopped	Treatment stopped	
7-8	Treatment stopped	Treatment stopped	If result negative: can be FTH if otherwise well and the minimum vet standards are completed. If result positive: contact Regional Vet

Imaverol (enilconazole)

This product is not currently licensed for use in cats. However, it can be used 'off licence'. It should not be used as the only treatment for cats with a positive culture, but it is an important part of treatment as it reduces spread within the environment and improves the response to overall treatment.

It can be used in pregnant and lactating animals, see below for further guidance. Unweaned kittens should not be treated with Imaverol.

How to use Imaverol

- Wear suitable protective clothing including gloves and goggles
- Prepare in an adequately ventilated area
- Dilute one part Imaverol with 50 parts warm water (to make a 2mg/ml emulsion). For example, mix 4ml of Imaverol with 200ml of warm water. The diluted solution can be made up directly into a spray bottle. Once made up the solution will last six weeks

Tips for bathing a cat

Bathing is a stressful experience for many cats. To best try to reduce stress, we recommend the following method:

- two people are generally needed
- wear full PPE including goggles and non-permeable gloves
- use a container such as a litter tray with sides, this will help the cat feel more secure and catch some of the water
- place a towel in the base of the tray to give the cat a surface to grip
- fill a jug with the Imaverol solution at the correct dilution rate
- ensure the temperature is tepid (that of body temperature)
- gently restrain the cat within the litter tray, treats can be offered for food-orientated cats, such as Lick-e-Lix
- apply the diluted Imaverol solution either by
 - using a soaking wet sponge (many cats will find this less stressful) in a stroking action while squeezing the liquid onto the coat
 - gently and slowly pouring the mixture over the cat's coat
- the cat needs to be wet enough that the solution reaches the skin
- wipe the solution using a soaked cloth over the cat's face and ears (do not pour water over their face)
- the cat can be gently dried with a towel if the cat accepts this. Towel drying may be more beneficial for kittens or underweight cats
- allow the cat somewhere warm to hide and recover, a cardboard box placed on its side in the pen can be useful for this
- towels and cloths should be disposed of after use

If a cat is not coping with bathing, signs could include:

- showing signs of fear or shut down during bathing
- prolonged hiding after bathing
- being fearful of anyone entering the pen
- repelling behaviours such as growling, hissing, clawing or biting

In this case, or if you have any other concerns, please stop bathing the cat, allow them somewhere warm and hidden to retreat to, and contact veterinary@cats.org.uk for further support.

Itrafungol

Itrafungol is licensed to treat *Microsporum canis* in cats and is an effective medication that is administered orally, ideally syringed gently straight into the cat's mouth, on an empty stomach. A course of treatment lasts five weeks with dosing on alternate weeks. Itrafungol continues to work for two weeks after the last day of treatment. The shelf life of the product after opening is five weeks.

Itrafungol cannot be given to pregnant or lactating cats. Itrafungol can be used in kittens from 10 days old. Kittens will need to be weighed regularly as the dose will need to be adjusted for their changing weight (under veterinary guidance). Kittens under 500g should be dosed using a 1ml syringe for accuracy.

Itrafungol may cause short-term inappetence, vomiting, diarrhoea, or lethargy. It rarely can cause liver dysfunction. Adverse effects are more likely in cats of poor general condition or with other diseases, so monitor these cats closely and call your vet if you are worried.

Itrafungol should not be given at the same time as Convenia injections (a long-acting antibiotic injection).

Clipping

Clipping is not routinely recommended for Cats Protection cats. Occasionally, for cats with widespread disease and a long hair coat it can improve response to treatment. However, this must be balanced with the chance of damaging the skin during the clipping procedure, and the stress caused to the cat both during clipping, and then in having a changed haircoat. If clipping is recommended by your vet, it must be carried out by a veterinary professional at the veterinary practice.

Pregnant or lactating cats and kittens

A pregnant spay should be carried out for all pregnant cats diagnosed, or suspicious of ringworm. It is not necessary to wait for a confirmatory test before carrying out the spay, as this would allow the pregnancy to progress further. The queen's welfare will be compromised by the limitations of treatment if a cat is pregnant or lactating, and from the additional stress of birth and rearing kittens alongside a ringworm treatment protocol. Once born, the kittens are likely to become infected and will then need to be housed in isolation and undergo treatment. Therefore, for the welfare of all, a pregnant spay is advised and this can be carried out up to full term.

Pregnant cats

- should be spayed
- cannot be treated with Itrafungol, as it can harm the unborn kittens
- if severely affected and a pregnant spay is not possible, she can be bathed with Imaverol

Entire female cats

- your vet should check for signs of pregnancy during the clinical examination
- monitor cats for any obvious signs of pregnancy throughout the treatment course and spay if pregnant

Lactating cats

- cannot be treated with Itrafungol because it is secreted in the milk and so there is a potential risk of overdosing the kittens
- can be bathed with Imaverol if severely affected. If mildly affected, consider withholding treatment until the kittens are weaned to avoid the stress of bathing

Kittens

- should be weaned as early as possible (at around six weeks) and separated from the queen
- should be housed in pairs or small groups within an Isolation facility
- can be treated with Itrafungol if they are confirmed positive and over 10 days old but may take longer to cure because the queen cannot have oral medication and they are in contact with her
- cannot be bathed with Imaverol until they are weaned
- if not all kittens have lesions, please see below

For advice about individual circumstances, please contact your Regional Vet.

Welfare support

Our Behaviour team can advise how to support cats through this time based on the individual circumstances.

All kittens under seven weeks old must follow the Cats Protection socialisation plan. All kittens and cats must receive opportunities to play, hide and engage with people in line with their individual characteristics and needs. Provided cat carers are in the correct PPE, prevent direct contact of the cat with their skin, and are comfortable to be in contact with cats with ringworm, interactions

with cats who seek this within their pen is encouraged. Cat carers who are immunocompromised or pregnant are advised not to be in contact with ringworm cats.

Cats can have access to their outdoor run (if available) during the treatment for ringworm, provided that it can be adequately disinfected and there is no risk of contaminating adjacent pens. If you have concerns, please discuss with your Regional Vet.

Bathing cats can be stressful, alongside the medicating and cleaning regimes. Some cats may be pregnant or have young kittens which is additionally challenging. Where a cat isn't coping, or you are concerned about the welfare of any cat undergoing treatment for ringworm, please contact our Veterinary or Behaviour teams for further support.

Testing after treatment

Following the treatment course, many cats will have a good response and show clinical improvement, especially if otherwise well. In these cats:

- a repeat fungal culture should be taken by your vet at the end of, or just after, the five weeks of treatment
- ideally the sample will be taken by your vet within 24 hours after bathing the cat with Imaverol and the pen being fully cleaned (this will reduce the chance of a false positive result)
- photograph the cat's skin and coat, and if possible, send the photos, and a copy of the culture results, to your Regional Vet as we are keen to track these cases

If the fungal culture is negative and the minimum vet standards have been met, the cat can be declared fit to home. Adopters should be given a Ringworm: advice for adopters handout.

If the fungal culture is positive, please contact the Veterinary team who can assess the case, and support in deciding how best to treat the cat moving forwards.

If a cat is not responding to treatment, or worsening with treatment, do not take a sample for fungal culture as it is very likely to be positive. Please instead contact your vet, and your Regional Vet for further advice.

Management

General principles

If possible, have a small team delegated to deal with the ringworm cases, ideally one person, but two people may be required for medicating and bathing and to allow more engagement with the cats. The person or people within this team should not handle any other cats/kittens or if possible, not go into other areas where cats are housed.

Where team members must see multiple cats that day, cats that have ringworm should be dealt with last after all the other cats have been cared for.

Protective clothing

Protective clothing must be worn at all times while working with cats suspected or confirmed with ringworm. Ringworm is highly infectious. Protective clothing is essential in avoiding the spread of ringworm to protect other cats and their carers.

Protective clothing includes disposable:

- overalls
- apron
- gloves
- over-sleeves
- caps
- over-shoes

You should dress in protective clothing prior to entering the pen. It is important to remember protective clothing should always be worn, even while feeding affected cats. Have a waste bag ready within the pen and, as you are about to leave the pen, remove all PPE and place it in the waste bag. Use new disposable clothing for each pen and dispose of after use. Do not re-use any PPE.

Once your PPE is removed, outside of the pen use hand gel or wash your hands. We do not recommend the use of footbaths. Once you have disposed of the waste bag, clean your hands again.

Bedding and soft materials

Bedding should be disposed of after use. Bedding changes should occur during a deep clean and be disposed of when the cat has left the pen. Material scratching posts should be removed from the cat's environment and disposed of as soon as ringworm is suspected or diagnosed. Cats should still have options to scratch, so offer cardboard scratchers that can be disposed of and replaced as part of the deep clean.

Toys and play items

Soft toys should be removed from the cat's environment during the deep clean and disposed of. Plastic toys are preferable as they can usually be disinfected. Additional enrichment should be provided such as toilet roll inner tubes, which can also be used to hide food or pieces of rolled up paper to play with. Cardboard boxes are excellent play items for cats and provide additional perching and hiding opportunities and can be disposed of after use. Puppy pads can be draped over pen items to create additional hiding opportunities.

Litter trays

Disposable litter trays should be used and discarded at least once daily. If disposable litter trays are unavailable, ensure that the standard litter trays are soaked separately with 10% Anigene for 15 minutes and returned to the same cat.

Food and water bowls

Disposable food bowls should be used and discarded daily. Water bowls should be soaked separately in 10% Anigene for 15 minutes and thoroughly rinsed and dried.

Cleaning and disinfecting

Further advice can be found in the Cleaning and Disinfecting section of the Cat Information Hub.

Anigene is the recommended disinfectant at Cats Protection. To effectively kill fungal spores, it needs to be used at the higher dilution rate of 10% (for example, 100mls with 900mls of water to make one litre of solution) with a contact time of 15 minutes. It needs to be applied to clean surfaces to act as a disinfectant.

Each pen should have its own cleaning equipment.

We recommend a deep cleaning and disinfecting of pens twice weekly. This should take place on the same day the cat is treated with Imaverol, so cats get days between with fewer interventions. Further advice can be found in the cleaning and disinfecting guidelines. You may wish to treat the cat in another area while the inside of their pen is being cleaned and disinfected. After bathing the cat can then go straight back into the clean and dry pen, and then the other side be disinfected. A vacant pen system can be used, where one pen is left free and the cat can be bathed, moved to the free pen once set up ready for them, and then their first pen cleaned and disinfected. Alternatively, clean the pen after the cat is treated with Imaverol and once the cat has had time to settle and dry off.

When cleaning the pen, the aim is to avoid releasing spores into the air or spreading them further. A damp mop or sweeping brush should be used to remove debris from the pen. Try to avoid sweeping with a dry broom.

Once the pen is clean, apply Anigene diluted to 10% (for example, 100mls with 900mls of water to make one litre of solution) to all surfaces including walls, shelves, any glass/plastic sneeze barriers, cat flap, doors, door handles, any wire mesh and the ceiling of the pen or room. Leave for 15 minutes then rinse the pen with water and dry.

Cats should be kept out of the area while cleaning and until all the surfaces where disinfectant is applied have completely dried.

Where cleaning cloths are used, they should not be submerged back into the Anigene solution after being used to clean a surface. Therefore, a fresh cleaning cloth should be used for each pen surface. Paper towel can be used to dry surfaces.

The mop, bucket, sweeping brush, dustpan and brush should all be soaked in 10% Anigene dilution (for example, 100mls with 900mls of water to make one litre of solution). Leave to soak for 15 minutes. All the materials/equipment should be kept with the infected cat(s) and not taken to any other location.

All materials that will be disposed of from the pen should be placed in a plastic bag while still in the pen. Protective clothing should be placed in the bag as the pen is vacated and the bag should be sealed before removing it from the pen.

Waste disposal

Dispose of all protective clothing, bedding, soft materials and soiled litter as infectious waste (so that it will be incinerated). If disposal as infectious waste is not possible, place everything in a separate black bag and when finished tie up the bag securely. Place this into a second black bag and dispose of carefully.

After treated cats have left the pen

Once successfully treated, the cat(s) can be moved to the homing section.

Discard all contaminated bedding and toys, and dispose of carefully as infectious waste.

Clean and disinfect all surfaces where the cat has been housed, following the instructions above. This includes any exposed radiators, skirting boards and vents.

For uPVC pens with non-porous surfaces, deep clean the pen three times using a 10% dilution of Anigene (leave for a contact-time of 15 minutes). For wooden pens, contact veterinary@cats.org.uk

Wear full protective clothing when cleaning and rinsing the pen to avoid exposure both to ringworm and to the disinfectant. Dispose of all protective clothing after each round of cleaning.

If a cat has been housed in a wooden pen, or within a furnished foster room or whole house foster and is diagnosed with ringworm, please contact your Branch Co-ordinator, Cat Welfare Advisor, Branch Development Manager and Regional Vet using veterinary@cats.org.uk for further advice.

In-contact cats without lesions

Many healthy cats who are, or have been, in contact with a cat with ringworm will not go on to develop disease. Testing of non-lesional cats who have been in contact with an infected cat may only be positive due to carriage of spores on their coat, rather than because of infection. This could lead to many weeks of unnecessary treatment.

However, cats in care are under additional stress, so may be more susceptible to ringworm. Generally, if cats are going to develop disease after being in contact with an infected cat, it will appear within three weeks. During this time, cats will need to be closely monitored, and additional PPE worn by cat carers.

If adult cats are currently housed in a pair but are not showing signs of being bonded (see advice for bonded pairs below), they should be separated into **lesional cats** and **non-lesional cats**.

Lesional cats

- go to isolation, have a sample taken for fungal culture and Imaverol bathing start while waiting for results
- if positive, follow the guidance for treatment and management above

Management of non-lesional in-contact cats

Cats:

- stay in their current accommodation
- should be barrier-nursed (wearing full disposable PPE including aprons, gloves, over-sleeves and over-shoes) and fed and cleaned last within their section
- need to be checked daily for any signs of skin disease, look closely at the face and around the mouth, ears and paws
- if skin lesions develop, move the cat to an isolation facility, take a sample for culture, and follow the advice for suspected cats
- if no skin disease appears, cats should be monitored for three weeks
- if no disease becomes apparent in this three-week period, and the minimum vet standards are completed, please ask your vet to declare the cat fit to home
- rehome the cat with a Ringworm: advice for adopters handout

Kittens up to six months old:

- move the litter, and queen if present, to Isolation and take samples for culture
- kittens under six weeks stay with the queen, kittens over six weeks old should be separated from the queen
- if a litter has some kittens with lesions, and some without, please contact veterinary@cats.org.uk for further advice
- if separating kittens from the queen or from littermates would result in a kitten under 16 weeks old being housed singly, please contact veterinary@cats.org.uk

Bonded pairs of cats:

Please contact veterinary@cats.org.uk and the Regional Vet and Behaviour teams can assess the situation and provide further support.

Cleaning and disinfecting:

- if a lesional cat has been moved out of the accommodation to an isolation facility and a non-lesional cat remains, a deep clean is required after they are moved. Use Anigene at a 10% dilution for a contact time of 15 minutes
- after the deep clean, routine cleaning (as indicated in that accommodation type) can continue
- remember this pen will need additional cleaning once the cat has left (if the lesional cat is confirmed positive for ringworm)
- if the cat came into care as an in-contact cat, but was not housed with the lesional cat, carry out routine cleaning for that accommodation type

Cat carers:

- should be fully informed of the contact status and zoonotic potential of ringworm
- should use full disposable PPE including disposable gloves, aprons, over-sleeves and over-shoes

Guidance for adopters

A document has been produced for adopter information about ringworm, which can be found [here](#).

This should be given to owners adopting cats recovered from ringworm and those adopting in-contact cats, regardless of whether they develop lesions.

Guidance for vets

We have created a separate document [here](#).

This also cites evidence used in the creation of these guidelines.





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