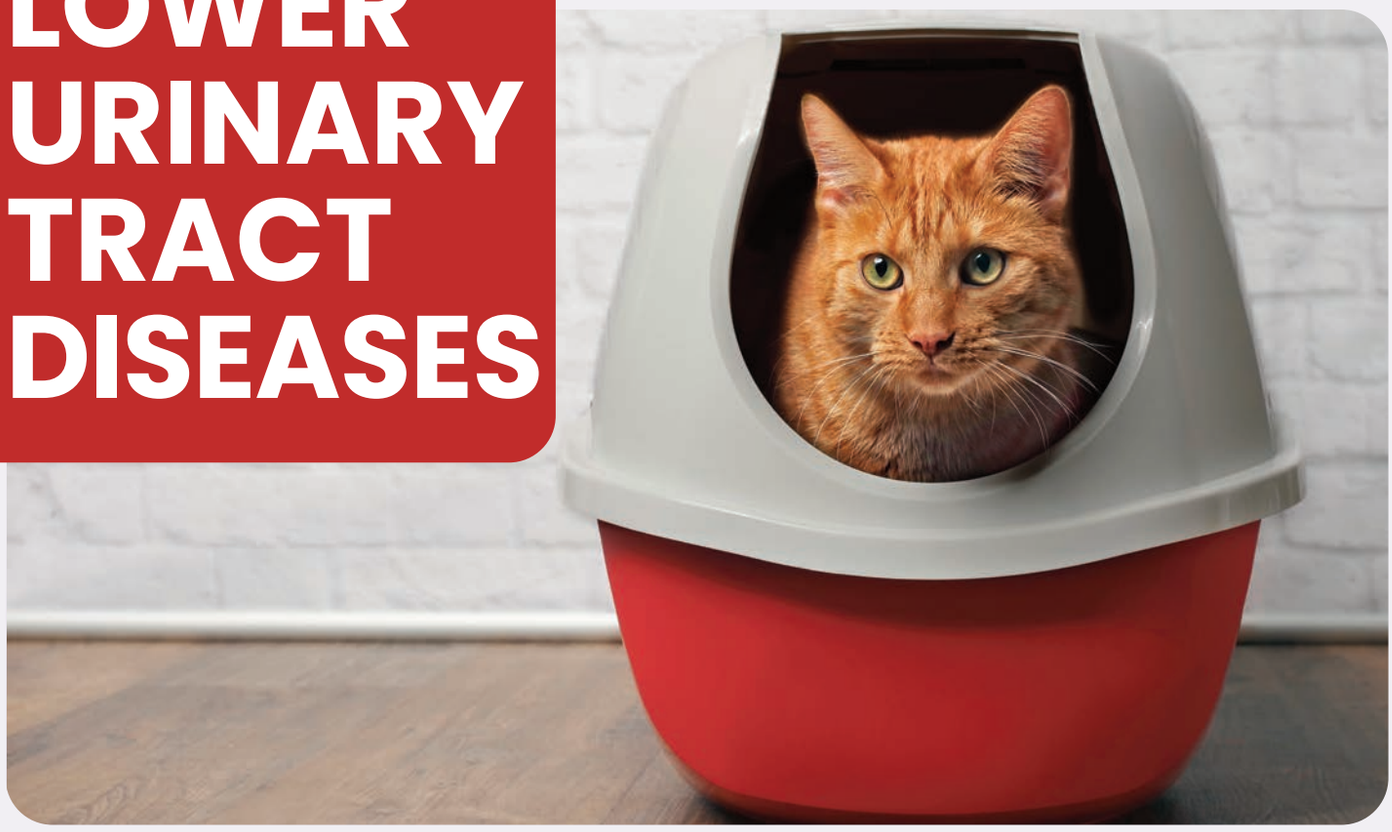
LOWER URINARY TRACT DISEASES



Understanding urinary tract diseases and how to help cats at home: a guide for caregivers

Lower urinary tract diseases are common in cats. In addition to veterinary treatment, changes in the cat's home environment to reduce stress can assist recovery when combined with diet changes and measures to increase water intake.

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Introduction: what caregivers may notice

Cats commonly have problems with their lower urinary tract (bladder and urethra; Figure 1). These problems can vary from mild to life-threatening, and management may involve not only treatment from the veterinarian but also changes to the cat's home environment. As such, caregivers can make a big difference in terms of the success of treatment.

Cats with lower urinary tract problems can show signs such as:

- **Blood in the urine** (haematuria, Figure 2);
- **Straining to pass urine,** and sometimes meowing/crying with distress;
- **Passing small amounts of urine more often than normal** – commonly there is lots of digging in the litter, and the cat is seen frequently going in and out of the litter tray/box;
- **Soiling in the house** (ie, passing urine outside the litter tray).

Cats with lower urinary tract problems may also seem quieter than usual, show less interest in food and playing, and may react differently to being handled (eg, hissing or scratching).

They may overgroom their genital region, abdomen or hindlegs; in severe cases, persistent licking may make these areas bald (Figure 3). Straining to pass urine and frequent visits to the litter tray can potentially be mistaken for constipation (difficulty passing faeces). Less commonly, a sign of lower urinary tract problems is urinary incontinence, which may be observed as leaking or dripping of urine outside the litter tray (eg, on a bed).

Importantly, a veterinarian is unlikely to be able to diagnose the cause of urinary tract problems based on the signs alone. Further tests are usually needed.

Signs of urinary tract disease can be worrying and frustrating for those living with affected cats. If signs are noticed, caregivers should contact the veterinary clinic. Cats with urethral obstruction (see box 'Blocked cats'), in particular, may become very unwell.

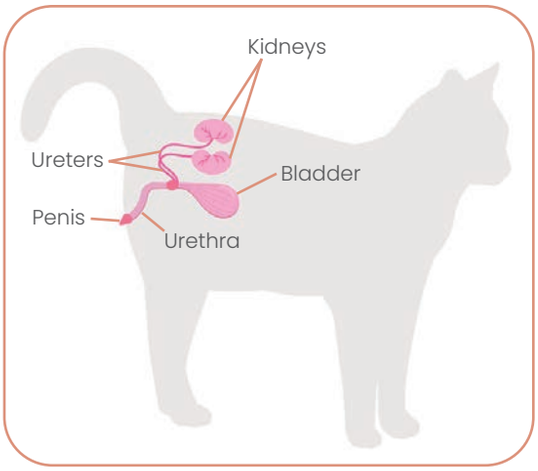
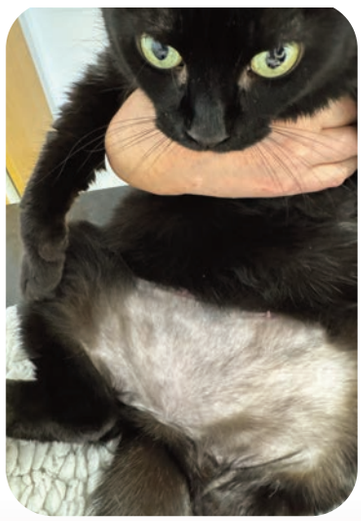


Figure 1: A cat's urinary tract consists of the kidneys, ureters, bladder and urethra. The 'lower urinary tract' refers to the bladder and urethra (ie, the tube through which urine leaves the body, as illustrated in this male cat). Source: iCatCare

Figure 2: Blood in the urine (haematuria) is a sign of a lower urinary tract problem that requires veterinary attention. Source: Rachel Korman (main image) and Sam Taylor (inset)

Figure 3: Overgrooming of the abdomen, hindlegs or genital region can be a sign of bladder/urinary pain. Source: Sam Taylor



‘Blocked cats’: urethral obstruction, a life-threatening emergency

A condition that can cause severe illness in cats is urethral obstruction. This tends to be described as a ‘blocked bladder’, or the cat referred to as a ‘blocked cat’. In these patients the narrow urethra from the bladder to the outside (via the penis in male cats) may be obstructed with stones or a mixture of urine crystals and blood (‘urethral plug’). Sometimes the obstruction may be due to scarring from prior episodes of urinary tract disease or some other trauma, or the urethra narrows (urethral spasm) as a response to pain. Urethral obstruction almost exclusively affects male cats, as their urethra is narrower than that of female cats.

Affected cats will strain to pass urine, visit the litter tray frequently, may meow with distress, produce only a little urine (which may be bloody), or no urine at all, and can become lethargic and very unwell with vomiting, a reduced appetite or refusal to eat altogether. They may lick at or around the genital area. Veterinary treatment should be sought urgently for male cats with problems urinating as they can rapidly deteriorate with damage to the kidneys.

If left untreated, a urethral obstruction can be fatal.

Treatment of urethral obstruction at the clinic includes:

- Pain relief, since obstruction is a very painful condition, and pain may in itself contribute to the blockage via urethral spasm;
- Placement of a urinary catheter (narrow tube) into the urethra to remove the blockage and allow urine to pass. This is performed under sedation or anaesthesia;
- Fluid therapy, whereby rehydration fluids are administered into the cat’s veins.

Other medication and treatment will depend on the individual cat. Many will need to be hospitalised at the veterinary clinic for a short period; occasionally they can go straight home with medications. Strategies to prevent recurrence of the obstruction may include increasing the cat’s water intake, diet changes and measures to reduce stress (see later). Occasionally, a cat’s urethra is damaged and surgery is needed to remove the narrowed part. This technique is called perineal urethrostomy.

Causes of urinary tract diseases

Several different conditions can affect the lower urinary tract, and they all tend to cause similar signs in the cat, as described above. The most common is a condition called ‘feline idiopathic cystitis’ (FIC), but urinary stones (otherwise known as calculi or uroliths) are another cause and can form in any part of the urinary tract (Figure 4). Other conditions, such as infection (a common cause of urinary problems in humans), are less common in cats (see box ‘Do cats get urinary tract infections and need antibiotics?’). Occasionally, types of cancer or congenital diseases (abnormalities the cat is born with) can cause problems.

Figure 4: Stones can form anywhere in a cat’s urinary tract and may need to be removed surgically. Source: Sam Taylor

Do cats get urinary tract infections and need antibiotics?

Humans with bladder problems tend to be treated with antibiotics as the problem often has a bacterial cause. However, bacterial infection is rarely the cause of urinary problems in otherwise healthy cats. Therefore, treatment with antibiotics is not needed, and at worst can cause harm. There is also concern that overuse of antibiotics in animals could cause problems for humans in the future by making these medications less effective (eg, through antibiotic resistance). Cats with FIC, and most cats with urinary stones, do not need antibiotics. Urinary problems caused by bacteria, which may warrant antibiotic treatment, are more common in cats with diabetes mellitus (sugar diabetes), chronic kidney disease or other health problems, as well as in older cats.

Feline idiopathic cystitis

FIC, the most common cause of lower urinary tract problems in cats, is also the most common reason for a cat becoming 'blocked'. It is a painful condition of the bladder, affecting both male and female cats of all ages, but most often starts in young adult cats. Although FIC is a widely used name for this condition, it is not altogether appropriate. The term 'idiopathic' means the cause is not known, and 'cystitis' refers to inflammation of the bladder. In reality, this is a complex disease involving the cat's nervous system that can cause bladder pain similar to 'bladder pain syndrome' or 'interstitial cystitis' in humans. Affected cats may have other health issues; for example, skin or gastrointestinal problems.

It is recognised that certain cats are more likely to be affected by virtue of their temperament (character/personality). Those who are nervous and more sensitive to stress can develop FIC when living in a home environment that (unintentionally) causes them fear or upset.

Factors that can contribute to the painful condition of FIC are summarised in Figure 5. They include, but are not limited to, the following:

- **Cat factors:** for example, obesity, nervous disposition, genetic influences (passed down from the parent cats) and frightening experiences as a kitten;
- **Lifestyle factors:** for example, no access to outside spaces, lack of exercise, living with other cats and frequent diet changes;
- **Environmental (home) factors:** for example, household instability (eg, new cats or people, moving house), lack of elevated resting places and vantage points to view the home/garden, and disliked or poorly managed litter tray facilities (eg, non-clumping litter, insufficient cleaning, shared with other cats).

Note that many cats live indoors and never develop FIC; it is a *combination* of factors that can contribute to the condition. Treating FIC and preventing repeated episodes requires medical care from the veterinary clinic and changes in the cat's lifestyle and home environment (both inside and outside) to reduce stress, where possible (see 'What caregivers can do at home').

Investigation of urinary tract diseases

As there are different conditions that cause similar signs in cats, the veterinarian will need to do some tests to diagnose the specific urinary tract disease. First, they will examine the cat and may take blood and urine samples (see box 'Collecting a urine sample'). Often, they will need to perform X-ray (Figure 6) and ultrasound examinations to look for stones and other problems. Other procedures, such as CT scanning or cystoscopy (a camera study of the

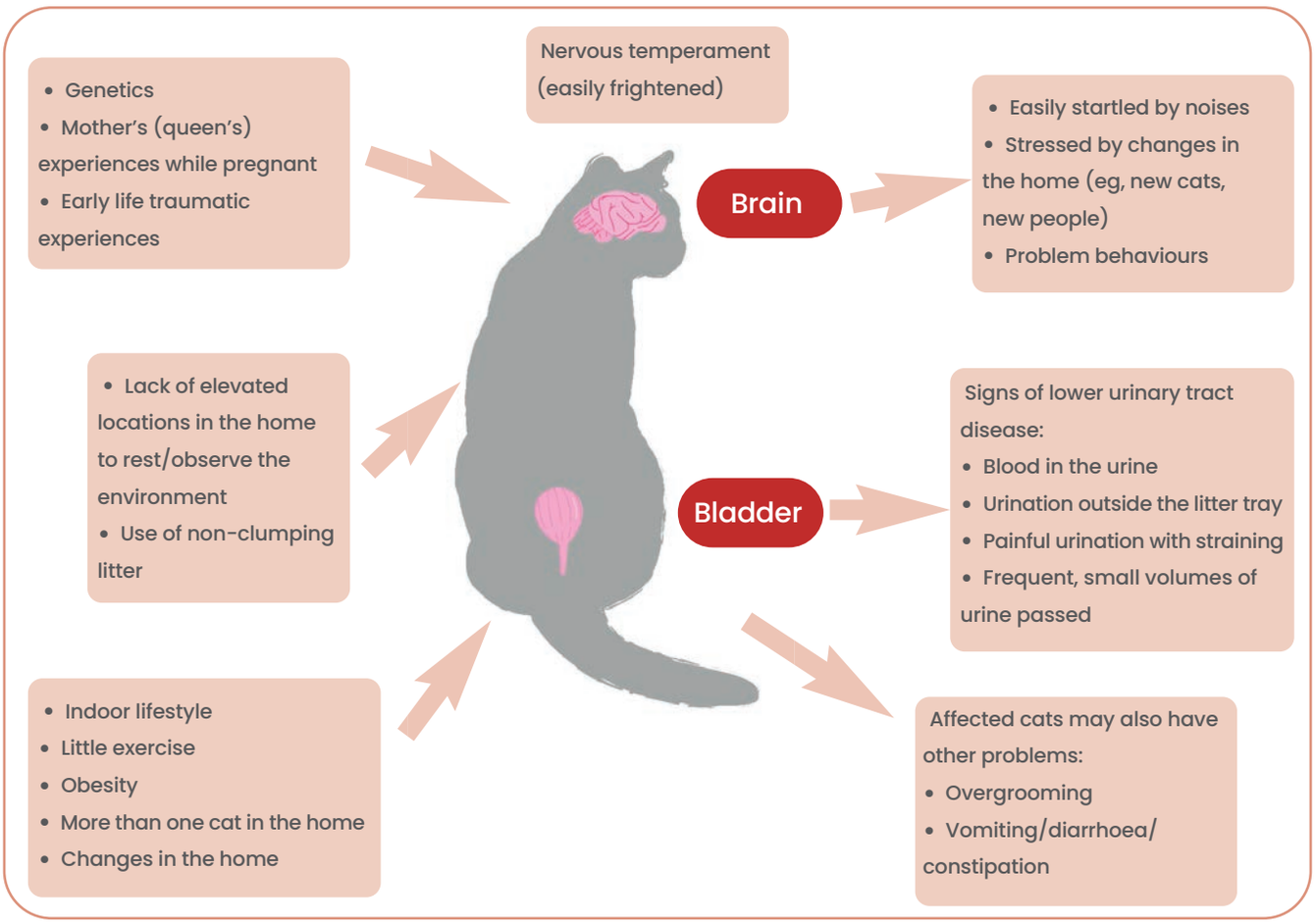


Figure 5: Feline idiopathic cystitis is a complex condition involving the brain as well as the bladder. Source: iCatCare

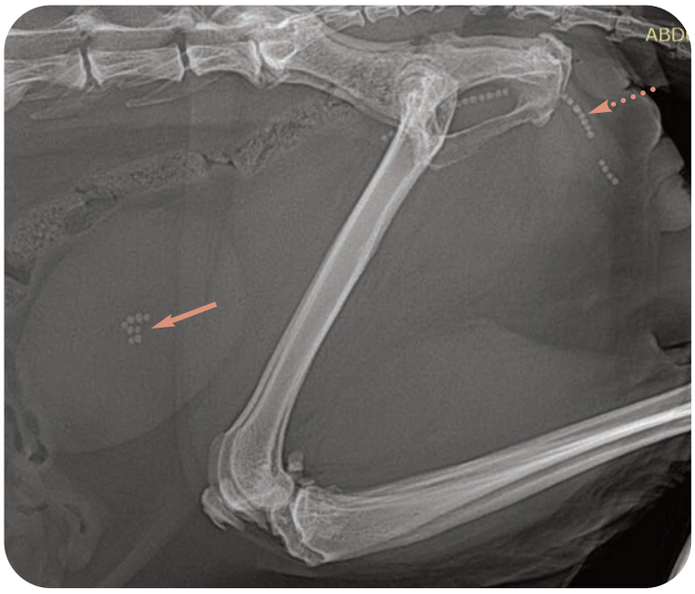


Figure 6: To investigate urinary tract disease, a veterinarian may perform an X-ray examination. This image shows stones (uroliths) in both the bladder (solid arrow) and urethra (dotted arrow) of a cat. Source: Rachel Korman

urinary tract), will depend on the individual cat's needs. If stones are removed surgically, they will be sent away to a laboratory to confirm their composition and, thus, how to prevent a recurrence.

Management of urinary tract diseases

A combination of medical treatment from the veterinary clinic, changes to the cat's diet (see box 'Feeding a cat with a urinary tract disease'), measures to increase water intake and, importantly, improvements to the home environment to reduce stress has the best results for cats with urinary tract diseases, whatever the cause. Surgery may be required in some situations, such as when stones are

Collecting a urine sample

Testing the urine is a vital part of investigating urinary tract diseases in cats. The veterinary team will determine how concentrated the sample is and whether there are crystals, blood, protein or signs of infection. The sample may be sent away to a specialist laboratory for further tests.

Urine can be obtained directly from the cat's bladder in the clinic with a small needle and syringe (a technique known as cystocentesis). This is ideal for testing for bacteria, for example. Alternatively, caregivers can collect a sample at home as follows:

- Use a clean litter tray, which has first been disinfected, rinsed with hot water and allowed to dry;
- Fill with a layer of litter that does not absorb urine. This may be obtained from the veterinary clinic or can be purchased online or in pet shops. Finer textures are preferred;
- Place the litter tray in the cat's favourite location. For homes with more than one cat, it may be necessary to separate and confine the affected cat (eg, in one room overnight) to collect a sample;
- With a pipette or syringe (provided with the non-absorbent litter or obtained from the veterinary clinic), transfer a sample of urine from the tray (Figure 7) into a clean, dry container, ideally one obtained from the clinic.

Figure 7: Special non-absorbent litter can be used to collect a urine sample from a clean litter tray. Source: Sam Taylor

present. The veterinary clinic may prescribe medicines, including pain relief medications (analgesics), which are important as bladder and urethral conditions are likely to be painful. 'Blocked' cats will need emergency treatment and likely hospitalisation at the clinic so that the blockage can be cleared from the urethra and any kidney damage can be managed. As discussed, antibiotics are rarely required for cats with stones or FIC.

Increasing a cat's water intake is likely to be beneficial for all types of urinary tract diseases. Detailed information on how to achieve this is provided in International Cat Care's Cat Carer Guide to 'Encouraging your cat to drink', available at **icatcare.org/cat-advice/cat-carer-guides**.

Some practical tips include:

- Offering water in several different bowls, outside (if the cat has outdoor access) and inside, with water available on each floor of the house;
- Trialling different ways to offer water – for example, using a tall water glass (secured to avoid being knocked over), a wide-brimmed ceramic bowl or a water fountain;
- Feeding a wet diet (tinned or pouches/sachets), if accepted by the cat;
- Offering the water from tinned tuna (without salt) or cooking water from boiled chicken (without stock or salt).

What caregivers can do at home

A cat's home environment can have a big impact on the management of urinary tract diseases. Whatever the cause of urinary problems, ensuring litter trays are located in the cat's preferred places to urinate will benefit caregivers as well as the cats themselves. Urination outside the litter tray, which as mentioned is one of the signs of a lower urinary tract disease, can be a severe

Feeding a cat with a urinary tract disease

A change in diet may be needed to manage lower urinary tract problems. 'Prescription' urinary diets designed for cats with urinary tract diseases are available. These foods tend to have reduced minerals to prevent stones from forming and may incorporate compounds that are designed to reduce stress. However, not every cat will benefit from these diets, and there are some key points to consider (see below) when making dietary changes.

Importantly, any changes to a cat's diet must always be implemented carefully, as this itself can cause stress. Moreover, feeding a urinary diet may not be required for life, and the diet choice should be regularly reviewed with the veterinary team.

Considerations when changing a cat's diet

- Dietary changes should not be made when a cat is unwell (eg, during an episode of FIC or immediately after discharge from treatment for a blocked bladder), as they may not feel like eating and refuse the diet in the longer term.
- The diet should be changed gradually by offering a little of the new food alongside the existing diet. The volume of the old diet can be reduced slowly and the new diet increased, provided the cat is eating enough of the new diet.
- Generally, wet diets (tinned or pouches/sachets) are preferred for cats with urinary tract problems to help with water intake, but the cat's preferences should be considered.
- If a cat refuses a new diet, the old diet should be offered to avoid periods without food, as these can cause illness. Note that starving a cat into accepting a new diet is *never* recommended. Alternatives should be discussed with the veterinary clinic, as other brands/textures of urinary diet may be more acceptable to the cat.
- Offering multiple different foods should be avoided, as this can be overwhelming and lead to refusal to eat the desired diet.
- If a cat continues to refuse a urinary treatment diet, feeding a wet diet of another type may be an acceptable compromise and should be discussed with the veterinarian.

annoyance for caregivers. Soiled areas (eg, furnishings) should be cleaned with biological washing powder or products designed for this purpose (eg, carpet shampoos) and allowed to dry before the cat is given access again. Further information on house-soiling can be found at **icatcare.org/articles/soiling-indoors**.

Key areas of focus in the home environment are described below and summarised in Figure 8. Another important aspect of home care is giving medication. Some 'Tips for medicating cats' are provided at the end of this caregiver guide.

Somewhere to rest and hide

Resting places where cats feel safe are important. Ideally, there should be several options available, some in raised locations (eg, hammocks, shelves, windowsills/seats or platforms on a cat tree; Figure 9). Making the cat carrier a cosy place by placing it in a quiet location in the home environment with a comfortable blanket means it not only doubles up as a resting place, but will be safe and familiar if needed for travel to the veterinary clinic.

Litter trays and other toileting opportunities

To encourage use, litter trays should be:

- Large enough to comfortably accommodate the cat (ie, one and a half times the length of the cat from nose to tail base);

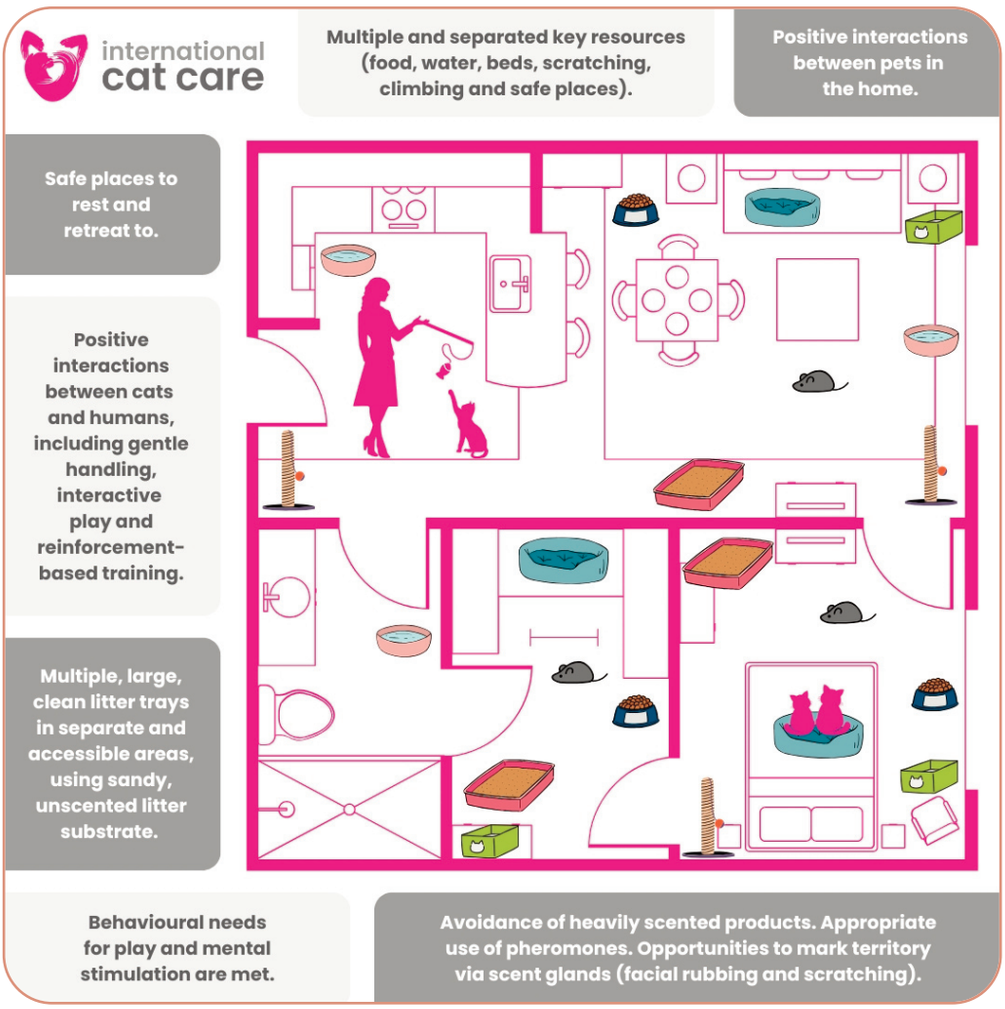


Figure 8: Diagram illustrating how to provide multiple resources in the home, as well as other important aspects of the cat's environment that can reduce stress. Source: International Cat Care. Adapted, with permission from Mikel Delgado

Figure 9: Cats should have opportunities to rest quietly away from other pets and people, if preferred. Resting places that offer a view of the home from an elevated location (eg, a cat tree) are often preferred. Source: Mikel Delgado

Figure 10: A large plastic container adapted for use as a litter tray, with a lowered entrance. Source: Mikel Delgado

- Easy to enter – for example, with lowered sides (Figure 10) for older cats or those with mobility challenges;
- Adequate in number for the cats in the home (one per cat plus one), placed in separate, quiet locations;
- Filled with unscented, sandy, clumping litter to around 3–5 cm (1–2 inches) in depth. Deeper litter is preferred by some cats;
- Scooped once or twice daily for solids and thoroughly cleaned every 1–2 weeks, depending on use. Use hot water and washing-up liquid or cat-safe detergent, before rinsing thoroughly and allowing to dry before refilling;
- Free of litter tray liners, scented litter or litter deodorisers as smells that are pleasant for humans may not be for cats.

Figure 11: This outdoor 'toilet', comprising a layer of gravel for drainage, covered with a layer of sand, is in a quiet location in the caregiver's garden.
Source: Alex Taylor

A cat who has suffered an episode of pain due to urinary tract disease may associate this with the litter tray. In these circumstances, offering a new litter tray that is set up in a different location with a different type of litter can be helpful.

Cats who prefer to toilet outside can be encouraged to do so by choosing a specific area that will be considered safe to use by the cat (ie, quiet and not overlooked). This may be filled with sand (Figure 11) or a mixture of sand and peat-free compost that can be scooped to remove faeces. Alternatively, an area of well turned-over soil that is surrounded by bushes for privacy may be designated as an outdoor 'toilet'.

Food and water bowls
Food bowls should be positioned in quiet locations and preferably away from the walls of the room, allowing the cat to view the environment while eating. Food can be provided in a 'puzzle feeder' (Figure 12) to promote exercise and mental stimulation, while allowing cats to express their natural hunting behaviour. For more information and advice, see **icatcare.org/articles/puzzle-feeders-for-your-cat**.

Water bowls should be separated from food bowls to avoid contamination of water and, likewise, positioned in quiet locations offering privacy. Some different means of offering water are mentioned above.

For homes with more than one cat, food and water should be provided in more than one location.

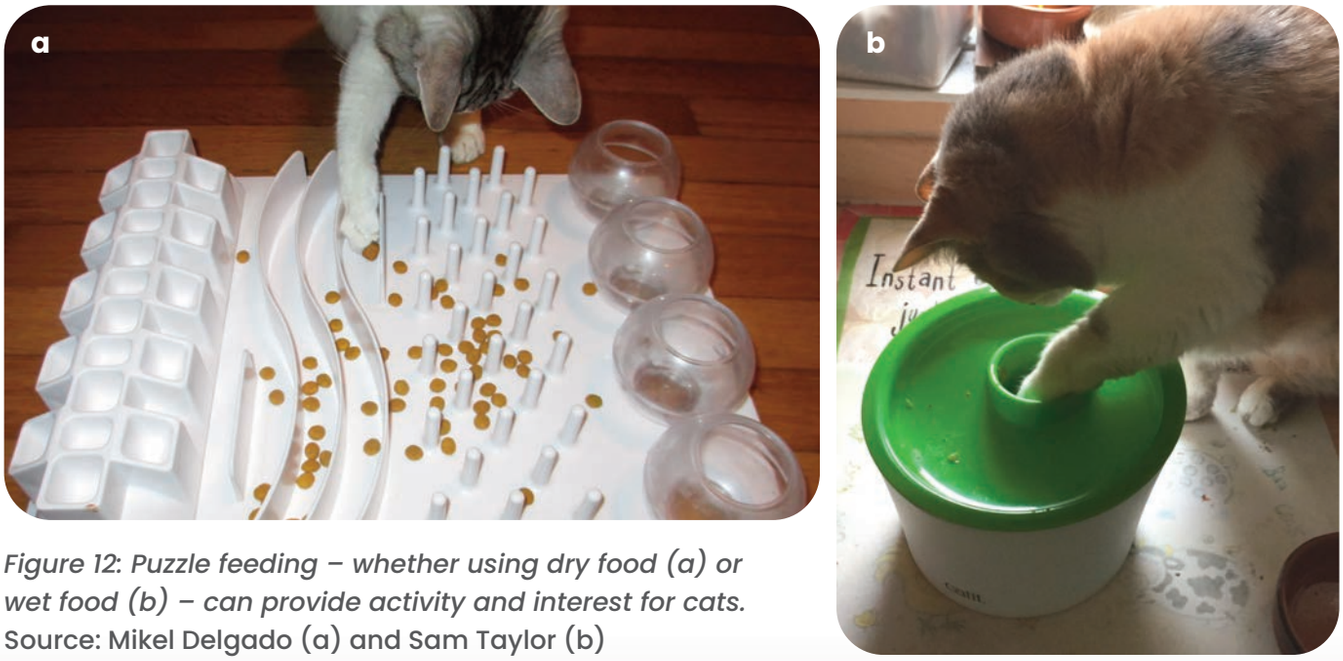


Figure 12: Puzzle feeding – whether using dry food (a) or wet food (b) – can provide activity and interest for cats.
Source: Mikel Delgado (a) and Sam Taylor (b)

Scent and pheromones
Cats are very sensitive to smells, so 'plug-in' air fresheners, incense and scented candles are best avoided, as are litter tray liners, scented litter and litter deodorisers (see above). Plug-in feline synthetic pheromone devices to reduce stress may benefit some cats and should be used according to the manufacturer's instructions (eg, placed in locations frequented by the cat and in adequate numbers for the available space).

Relationships between cats and people or other animals
Interactions between cats and people should always be conducted on the cat's terms. Cats should not simply be picked up or cuddled by a person, but allowed to approach and choose whether to be petted or to sit on a lap. If the cat moves away, they should be allowed to do so. Regularly offering a treat or a groom, if enjoyed by the cat, can create positive relationships. Cats should never be shouted at or punished (eg, for urinating outside the litter tray). Not only will this frighten the cat, it will cause more stress and worsen the problem.

Lack of predictability can cause stress. Routine times for feeding, cleaning, play and social interaction can increase 'predictability' in the cat's environment (ie, they know what will happen at given times).

In situations where there is conflict between cats and other pets in the household (eg, if dogs are chasing cats in the home), caregivers should ensure that they have adequate resources for the number of pets and that they manage interactions as needed for safety. Cats may require separate spaces if there is intercat conflict. Caregivers may choose to seek a referral to a behaviour professional, via their veterinarian, to help resolve the conflict.

Activity and play
As for humans, voluntary physical activity is essential. Overweight or obese cats are more likely to have urinary problems, and providing opportunities for active play can also help alleviate boredom. Outdoor access can be suitable for some cats, whereas others could be given access to a feline patio ('catio') or secure garden (Figure 13). Climbing opportunities inside the house are also a means of providing exercise. Some cats will enjoy interactive play with their caregiver (eg, using fishing rod-type toys); other cats may prefer toys they can interact with on a self-play basis. Cats often prefer to play with toys that mimick prey animals (eg, feather toys, furry mice, objects that move) and enjoy novelty, so toys should be rotated or replaced regularly.

Figure 13: Secure outdoor space can be provided for cats within a 'catio' structure, as pictured here, or a fenced garden.
Source: Mikel Delgado

Training cats with positive rewards (reinforcement-based training) can provide stimulation. Further information on how stress-induced behaviour can be prevented or reduced by training is available in 'The trainable cat: a practical guide to making life happier for you and your cat', by John Bradshaw and Sarah Ellis (Penguin Books, 2017).

Tips for medicating cats

Many cats with a lower urinary tract disease will need medications – for example, to help with pain. However, giving medications can cause stress for both cats and caregivers. Caregivers should discuss with their veterinary team any concerns about medicating, as the team will understand and can often adjust the type of medication, provide demonstrations on giving medication, and offer solutions.

Some general tips for medicating cats, depending on the type of medication and always in discussion with the veterinary clinic, are as follows:

- Give or hide medications in a treat (eg, in liquid treats or soft 'mouldable' treats);
- Place pills into gel capsules to hide any bitter taste;
- Crush tablets into a small amount of food. Note that some bitter-tasting tablets may not be accepted this way;
- Avoid putting medication into a main meal, as this can cause a cat to refuse food;
- Try a change of formulation (eg, liquid rather than tablet);
- Give medication in a treat when the cat is hungry (eg, in the morning before they are fed a main meal);
- Use 'cooperative care' methods to help the cat take medication voluntarily. Cooperative care involves training an animal to be an active, willing participant in handling and husbandry procedures, giving them a sense of control. Two helpful resources are:

– 'Cooperative veterinary care', by Monique Feyrecilde (Wiley Blackwell, 2024); and

– 'What is cooperative care?' (International Association of Animal Behavior Consultants Foundation, journal.iaabcfoundation.org/cooperative-care)

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