

Shifting the cat neutering narrative: the veterinary nurse's role supporting pre-pubertal neutering

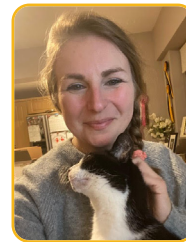
Cat overpopulation remains a significant welfare challenge. Delayed neutering contributes to unplanned litters and ongoing pressure on rehoming and unowned cat populations. Although evidence supports pre-pubertal neutering from 4 months of age as a safe and effective preventive intervention, barriers remain. This article explores common misconceptions surrounding pre-pubertal neutering, and examines how human behaviour change models can be used to understand and address barriers to implementation. It highlights the unique role of veterinary nurses in translating evidence into practice, supporting behaviour change, and promoting timely neutering as part of a wider strategy to improve feline welfare and population management.

Cat population crisis

Cat overpopulation is increasingly recognised as a welfare challenge that extends beyond shelters and unowned cats into everyday companion animal practice. Of the estimated one billion cats globally, a large proportion are unowned stray and feral cats (Figure 1). It is therefore more important than ever to support efforts to reduce cat overpopulation.



Figure 1: Community of unowned street cats



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Laura qualified as a veterinary nurse in 2018 and has 16 years of nursing experience in small animal first-opinion clinics. Laura has a passion for feline welfare, which inspired her to complete the International Society for Feline Medicine Advanced Certificate in Feline Behaviour and Diploma in Feline Nursing to provide species-specific care, develop her feline nursing and support cat caregivers with first aid behaviour advice in the veterinary clinic. In 2022, Laura joined International Cat Care as the cat welfare coordinator working on the Cat Friendly Clinic programme, creating content, and delivering webinars and lectures.

International Cat Care describes cat populations as interconnected; owned cats, free-roaming unowned cats and cats entering rehoming pathways influencing one another, meaning that population pressures in one group affect the wider system. Delayed neutering of owned cats, unplanned litters and movement of cats into unowned populations all contribute to continued population growth. Veterinary clinics therefore play an important collaborative role in supporting positive change in the cat population management crisis through preventative reproductive care (Figure 2).

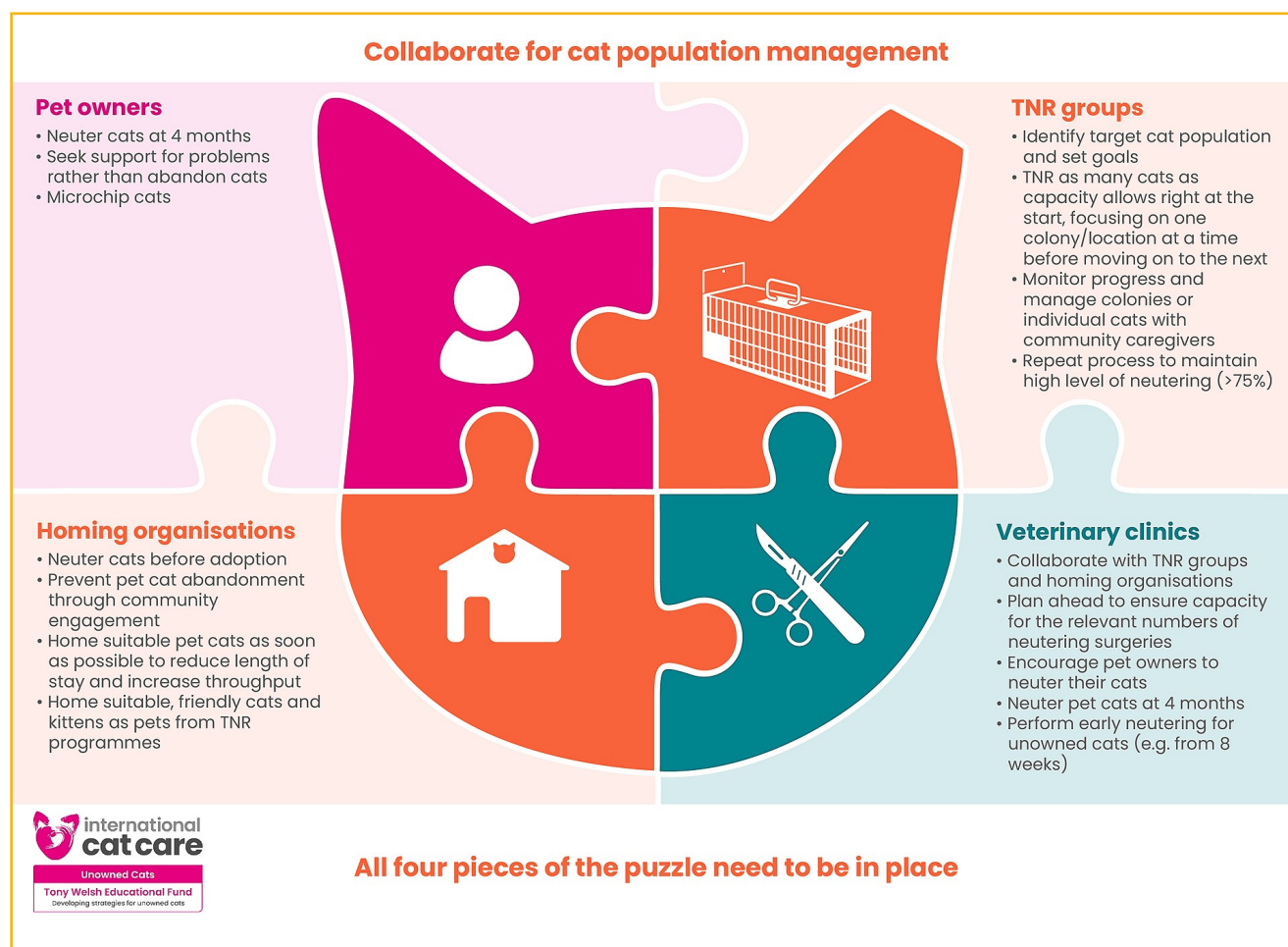


Figure 2: Infographic showing how veterinary clinics can collaborate to support cat population management

As one of the first points of contact for kittens and young cats, veterinary nurses and the wider team are well placed to discuss reproductive maturity. Queens reach sexual maturity from around 4 months of age, meaning unintended pregnancy can occur before perceived traditional neutering ages. Veterinary nurses can therefore support caregivers in making informed decisions, debunk neutering myths and promote timely pre-pubertal neutering to reduce unwanted litters.

Framing pet cat neutering as a wider welfare population management intervention, rather than solely as an individual clinical procedure for the health of an individual cat, highlights how routine veterinary care can contribute to reducing future

pressure on shelters and limiting the growth of unowned cat populations.

Myth busting

A 2011 paper discussed the traditional approach of clinics neutering cats between 5–8 months of age, and the common concerns reported by veterinary professionals with pre-pubertal neutering.¹ The current evidence is summarised in Table 1.

As can be seen from the current evidence, pre-pubertal neutering is not associated with adverse effects on growth, development, behaviour or long-term health outcomes. Advances in surgical techniques, anaesthetic protocols, monitoring equipment and perioperative patient care have also improved the safety of

Table 1: Summary of pre-pubertal neutering concerns and evidence

Pre-pubertal neutering concern	Current evidence
Feline lower urinary tract disease (FLUTD): increased risk of urinary tract disease.	No association has been found between age at neutering and FLUTD risk; some studies report a lower incidence in pre-pubertally neutered males.
Reduced genital development: retain more juvenile external genital appearance.	These changes are cosmetic and have not been shown to cause clinically significant health problems.
Obesity and weight gain: increased body weight and reduced metabolic rate.	Obesity risk appears multifactorial and is not linked to neutering age alone. Diet, lifestyle and caregiver education remain key factors.
Delayed skeletal maturation: neutering before puberty delays growth plate closure.	Delayed physal closure has been documented but with no demonstrated effect on final adult size or clinical outcome.
Diabetes mellitus risk: neutered cats may have a higher reported risk of diabetes.	No evidence that timing of neutering influences diabetes risk; breed, sex and age are more important factors.
Anaesthetic and surgical safety: younger kittens are at greater perioperative risk.	Studies show no increased anaesthetic or surgical risk with pre-pubertal neutering when appropriate protocols are used.
Postoperative complications: younger patients recover less effectively.	Pre-pubertal neutering is associated with shorter surgery times, smaller incisions, low complication rates and rapid recovery.
Long-term health outcomes: negatively affects overall health.	Early spaying (<6 months) has been associated with a substantially reduced risk of mammary carcinoma.

anaesthesia in younger patients, making pre-pubertal neutering a safe and practical option in modern veterinary practice (Figure 3). As with any preventive intervention, patient selection, clinical judgement and appropriate perioperative protocols remain important considerations.

A current summary of evidence can be found on the [Cat-Kind kitten neutering database](#) website, alongside resources to provide support for clinics that are already performing pre-pubertal neutering and those that would like to make the change and join the database, allowing caregivers to search for



Figure 3: Current surgical techniques, anaesthesia protocols and monitoring reduce the risks of pre-pubertal neutering

clinics that routinely offer this service. Increasing visibility of participating clinics may help improve access, reinforce consistent messaging and support wider uptake of evidence-based pre-pubertal neutering.

Driving change

While evidence increasingly supports pre-pubertal neutering, evidence alone does not necessarily change practice. Recent research highlights that successful cat population management depends not only on veterinary interventions, but also on understanding the attitudes, behaviours and barriers experienced by both caregivers and professionals, recognising that human behaviour is central to achieving sustainable change.²

There are multifactorial barriers to neutering which include:

- knowledge;
- perceptions;
- affordability;
- accessibility; and
- service availability.

This highlights that education alone is unlikely to be sufficient.

If we want a specific behaviour to occur, such as pre-pubertal neutering, an individual must have the necessary capability, opportunity and motivation, as defined by the Capability, Opportunity, Motivation–Behaviour (COM-B) model.³ This model forms the hub of the Behaviour Change Wheel (Figure 4) and provides a framework for understanding and changing behaviour.⁴

The COM-B model can be utilised to help understand pre-pubertal neutering barriers, allowing interventions to be designed that target the identified barriers to performing pre-pubertal neutering:

- **Capability:** for example, improving knowledge and skill.

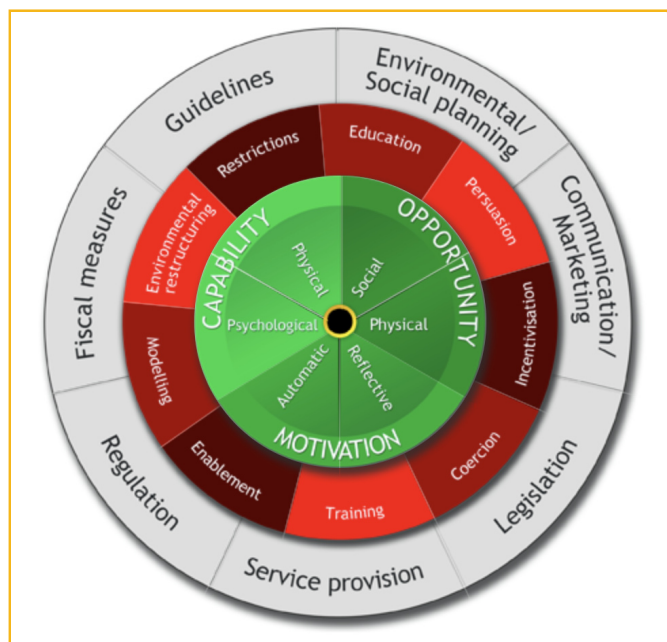


Figure 4: The Behaviour Change Wheel provides a systematic way of identifying relevant intervention functions and policy categories based on what is understood about the target behaviour

- **Opportunity:** for example, creating a supportive in-clinic culture for pre-pubertal neutering and the clinical pathways to do so.
- **Motivation:** for example, ensuring caregivers and vet professionals believe it is the right thing to do and plan for it.

Veterinary nurses can help to translate evidence into routine preventive practice.

Taking action

While support for pre-pubertal neutering is growing, translating recommendations into routine practice requires behaviour change among both caregivers and veterinary professionals, and veterinary nurses can be crucial to help influence and support this behaviour shift.

Capability: do people have the knowledge and skills?

For caregivers, capability includes understanding when cats reach sexual maturity, recognising the risk

of unplanned breeding, and knowing that pre-pubertal neutering is safe and evidence based. Therefore, addressing misconceptions, such as ‘cats should have a first litter’ or concerns about growth and health effects during nurse clinics, can help support uptake.

Veterinary nurses can direct caregivers to credible resources, such as the iCatCare webpages below, with the purpose of helping to expand knowledge, as well as share information on clinic webpages, social media channels and waiting room displays:

- [Neutering your cat](#)
- [Why do I need to neuter my cat?](#)

For veterinary professionals, capability relates to discussing pre-pubertal neutering with caregivers, familiarity with current recommendations and competence in perioperative management of younger patients. Therefore, sharing continuing professional development resources, such as the Cat-Kind resources, anaesthetic protocols, kitten neutering training videos and anaesthetic dosage apps, and the AAFP feline anesthesia guidelines,⁵ as well as providing consistent team messaging through clinical team meetings and updated clinical protocols, can help support this. Utilising training opportunities provided by pharmaceutical representatives and veterinary specialists can also help to support staff confidence and competence.

Opportunity: does the environment support the behaviour?

Caregivers may face barriers including appointment availability, cost, transport or simply missing the ideal neutering window. Veterinary clinics can create opportunities by embedding neutering discussions into kitten vaccination appointments and nursing clinics, using reminder

Tips

- Embed neutering discussions into kitten vaccination appointments and nursing clinics.
- Offer pre-booked neutering appointments.
- Direct clients to local reliable pet transport.
- Give information on travelling with your cat.
- Provide transparent, itemised estimates in advance to help clients understand and plan for the costs involved.



systems, offering pre-booked neutering appointments, directing clients to local reliable pet transport services and ensuring the whole clinical team promotes a consistent message to help create the social norm that kittens should and are neutered at this age.

Appointment availability can be proactively managed by pre-booking neutering appointments at the kitten's second vaccination appointment, which are commonly performed by veterinary nurses, providing the caregiver with more flexibility, with appointment availability and planning around future commitments.

Financial considerations can present a significant barrier, particularly within the context of the ongoing global cost of living crisis, and costs being close together for caregivers of kittens, such as vaccinations, parasite treatments, resources and neutering. Conversations about affordability may feel uncomfortable for both veterinary professionals and caregivers; however, creating a supportive, non-judgemental environment can help caregivers

feel able to discuss concerns openly and make informed decisions.

Veterinary nurses and teams can increase opportunities for behaviour change by providing transparent, itemised estimates in advance at kitten vaccination appointments, so caregivers understand what to expect and can plan accordingly. Signposting to neutering assistance schemes, discussing pet health plans that include discounted neutering offers, or allowing instalment payments in the lead-up to surgery may also help reduce financial pressure and improve compliance with pre-pubertal neutering recommendations.

Another commonly overlooked barrier to pre-pubertal neutering is caregiver concern around transporting their cat to the clinic. As a naturally territorial species, travel, unfamiliar environments with novel stressors (sights/sounds/smells) and veterinary visits can trigger protective emotions (fear, frustration and anxiety) in some cats, which may discourage caregivers from booking or attending appointments.

Veterinary nurses can help create opportunities for behaviour change by addressing these concerns proactively during kitten nurse clinics. Practical advice to make travel less stressful should be provided (Figure 5), including advice on:

- appropriate carrier selection;
- gradual carrier habituation and training;
- the need to provide familiar and comfortable bedding;
- advice on covering the carrier during transport; and
- general travel tips.

Sharing simple travel preparation strategies and resources can help improve both caregiver confidence and feline welfare, such as in kitten information handouts, on the clinic's website and social media channels, and in waiting room displays.

Signposting caregivers to trusted, evidence-based resources, such as International Cat Care's guidance on cat-friendly travel (Figure 6) and carrier training and advice (see below) may further support attendance at neutering appointments and encourage positive lifelong



Figure 5: Cat relaxing in their carrier at home

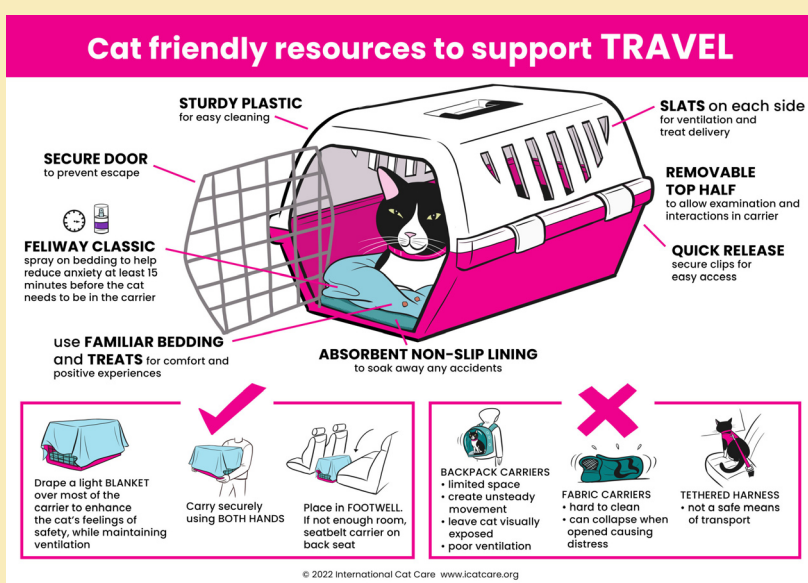


Figure 6: Cat friendly resources to support travel

veterinary experiences. Equally important is ensuring that the client care team are trained and confident in supporting caregivers and delivering this advice.

Useful resources for caregivers include:

- [Travelling with your cat](#)
- [Visiting your vet carer guide](#)
- [Taking your cat to the vet](#)

For veterinary professionals, opportunities include clinic protocols, appointment structures, team culture, and access to surgical training and equipment that supports early-age neutering.

Practical ways to support change include open discussions of cases between veterinary colleagues and having a pre-pubertal ambassador or advocate. The Royal College of Veterinary Surgeons clinical audit framework⁶ can also help clinics monitor the impact of introducing or increasing uptake of early-age neutering by collecting and reviewing data such as:

- age at neutering;
- perioperative outcomes;
- postoperative complications;
- recovery times and reports; and
- caregiver feedback.

Reviewing these findings within clinical team meetings can create opportunities for the wider veterinary team to discuss successes, identify concerns and agree adjustments to protocols, where needed. Audit outcomes may also highlight areas where additional support could be beneficial, such as refining clinic processes, improving caregiver communication or providing further staff training and surgical development, helping ensure that implementation of pre-pubertal neutering remains evidence based and supported across the whole veterinary team.

Motivation: do people want to change, and does the change feel right?

Caregiver motivation may be shaped by beliefs about responsibility, perceived risk and trust in veterinary advice. As capability and opportunity increase, motivation may also strengthen. Framing pre-pubertal neutering as proactive healthcare and a contribution to wider cat welfare may help increase engagement.

Key point

Pre-pubertal neutering should be framed as proactive healthcare and as a way of contributing to wider cat welfare to increase caregiver engagement and motivation.



Veterinary nurses are well-placed to influence caregiver motivation by creating positive, supportive conversations around pre-pubertal neutering throughout the kitten journey rather than limiting discussions to the point of surgical booking. This may include introducing neutering timelines during kitten clinics, exploring caregiver concerns using open questions, and framing neutering as a proactive health and welfare decision rather than a routine procedure.

Nurses can strengthen motivation by building trust, encouraging caregivers to commit to pre-pubertal neutering and supporting proactive planning, such as pre-booking procedures, to help translate intentions into action.

Motivational initiatives such as client educational evenings, supported with take-home resources, can strengthen motivation by increasing caregiver knowledge and confidence, such as



Figure 7: A 4-month-old cat having a positive experience in the veterinary clinic post-neutering

sharing examples of positive outcomes (Figure 7), building trust in veterinary advice and normalising 4-month neutering.

For veterinary professionals, motivation may involve confidence in the evidence, perceived professional responsibility and seeing pre-pubertal neutering as a preventive population-health intervention rather than simply an elective procedure. Collaboration between veterinary clinics and rehoming organisations can help veterinary professionals develop a broader understanding of the cat population welfare crisis beyond the consulting room. Rehoming organisations often experience the direct consequences of unintended breeding, delayed neutering and barriers to accessing preventive care, providing valuable insight into the wider welfare impact of population pressures. Building relationships through shared education initiatives and local neutering campaigns may

help veterinary teams connect individual clinical decisions with population-level outcomes and reinforce the role of pre-pubertal neutering as part of a wider preventative welfare strategy.

Conclusions

Using the COM-B model highlights that increasing pre-pubertal neutering rates is unlikely to depend on caregiver education alone. Sustainable change requires interventions that build capability, create opportunity and strengthen motivation across both caregivers and veterinary professionals. Veterinary nurses are well positioned to influence all three COM-B components while acting as a bridge between caregiver concerns and veterinary professional guidance and support.

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