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# 2026

Hill's Pet Nutrition

## World of the Kitten Report

**Lisa Restine,**  
DVM, DABVP (Feline)



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## About the author

# Lisa Restine | DVM, DABVP (Feline)

Dr. Lisa Restine grew up in New Jersey and earned her Bachelor of Science in Animal Science from Rutgers University. She received her DVM degree from Western University of Health Sciences in Southern California in 2014. Dr. Restine began practicing feline medicine right after graduation at a cat-only practice in San Antonio, Texas, and achieved board certification with the American Board of Veterinary Practitioners in feline medicine in 2020.

During her career, she has dedicated many hours to lecturing other veterinarians on both national and international levels as well as being a co-editor of the 6th edition of “The Feline Patient.” She has a special interest in fostering kittens and currently has fostered numerous litters of kittens and placed them in loving homes (including her own!).

Dr. Restine has been part of Hill’s Pet Nutrition since October 2023 as the feline specialist on staff where she continues to work with veterinary healthcare team members and pet parents on a global scale to educate and improve upon the health and well-being of cats. In her spare time, Dr. Restine enjoys running and hiking with her husband and caring for her five adopted cats (only two of which are “foster fails”).



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## Introduction

We love kittens – they are cute, fluffy, playful, and, if provided with all of the essentials, grow up to be amazing cats. But what do those essentials entail? As cats and kittens become more popular all over the world, sharing our best practices is key to ensuring that all kittens are given the best chance at a long, healthy, and fulfilling life. This report aims to offer valuable insights into kittens, including general information about essential aspects of kitten development and proper husbandry, nutrition, and veterinary care. Additionally, it will highlight the implications of “kitten-season” and overpopulation, shelter operations, and fostering processes.



**Note:** This report is intended for veterinary staff, kitten caregivers, and anyone who is interested in learning more about kittens. However, there are some technical components mentioned that may not apply to everyone. If there is a stethoscope graphic pictured near a chart/table, this information is more technical and is intended for the veterinary healthcare team.

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# Kitten Growth and Development

## What is a Kitten?

To begin, we must first define what constitutes a "kitten." According to [life stage guidelines](#) published by the American Animal Hospital Association (AAHA) and the Feline Veterinary Medical Association (FelineVMA) in 2021, the "kitten" stage is defined as the period from birth up to one year of age.<sup>1</sup>

By formally designating the entire first year as a distinct pediatric period, the guidelines encourage a focus beyond the initial vaccination series, which is typically completed by four to five months of age. Instead, the full twelve months are viewed as a continuous and critical window of development for kittens. This establishes that kittens are not just "small adults," but have unique developmental physical and emotional needs. Even so, a kitten's requirements for proper nutrition, environment, and medical needs all change greatly within the first year of life due to their rapid growth and development.



## Developmental Milestones

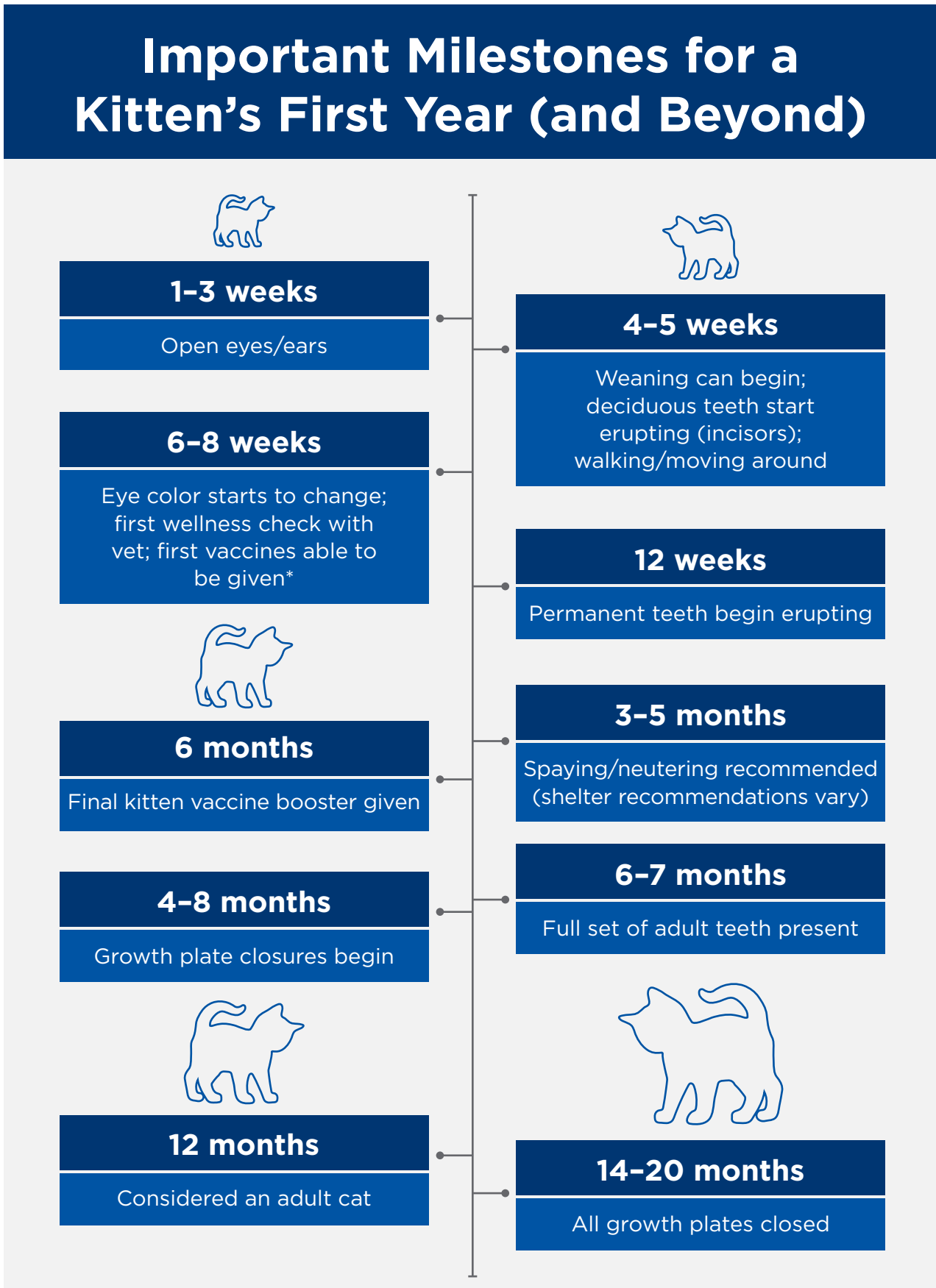
Because kittens grow so quickly, there is a big difference between a neonatal kitten (under four weeks of age) and a kitten that is eight weeks old. For example, neonatal kittens require much more care from mom (or from us if mom isn't around) compared to an eight week old kitten, which is much more independent. Kittens under six months of age are also more vulnerable to infectious diseases.<sup>6,7</sup> It is important to recognize these differences in order to provide the best care for each kitten. There are developmental milestones that can help us identify the age of orphaned kittens and provide a better understanding of how a kitten will interact with the environment (Figure 1 and Tables 1 and 2).<sup>8</sup>

During the first week of life, a kitten's eyes and ear canals are closed, meaning they are not able to see or hear. A kitten's eyes will start to open around one week of age, and both the eyes and ear canals should be fully open by two weeks of age. By eight weeks of age, the kitten should be able to be fully independent from mom and fostered kittens are ready to be placed in a new home if they weigh at least 2 pounds (0.9 kg).<sup>9</sup> From this point, kittens will continue to grow and develop, but are much more independent (and much more mischievous!).



**For more information on kitten growth milestones, check out [this resource](#) from The Kitten Lady.**

Figure 1



\*Vaccine protocol varies based on individual kitten.

Please refer to [kittenlady.org/age](http://kittenlady.org/age) for more detailed information regarding neonates.

Table 1:


## Developmental Milestones in Kittens<sup>8</sup>

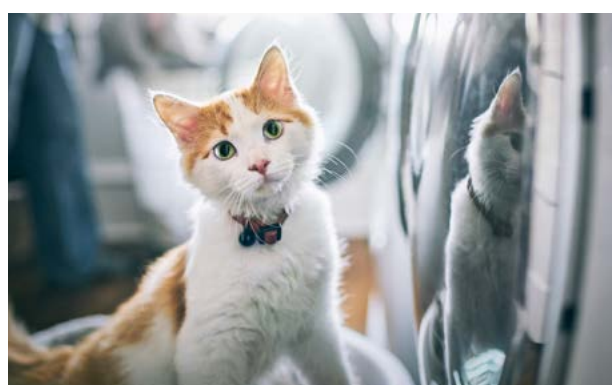
This table outlines key growth milestones that kittens experience during the first two months of life.

Milestone	Age
Umbilical cord falls off	3 days
Eyelids open	7-10 days
Ear canals open	9 days
Crawling	1-2 weeks
Walking	2-3 weeks
Voluntary urination and defecation	3 weeks
Deciduous incisors eruption	3-4 weeks
Normal vision	4 weeks
Functional hearing	4-6 weeks
Deciduous premolar eruption	5-6 weeks
Adult eye color	6-7 weeks



Table 2

 <b>Average Time for Growth Plate Closures in Cats</b>		
Growth Plate	Earliest Age for Closure (days)	Latest Age for Closure (days)
Ischiopubic	59	63
Iliopubic	150	211
Ilioischial	150	211
Proximal femoral	208	301
Distal femoral	359	462
Greater trochanter	237	312
Proximal tibial	490	601
Proximal fibular	215	399



This table shows the average time in days for growth plate closures in Domestic Shorthair cats.

Source: Miranda FG, Souza IP, Viegas FM, et al. Radiographic study of the development of the pelvis and hip and the femorotibial joints in domestic cats. *J Fel Med Surg.* 2019;22(6):476-483.

## Early Socialization and Behavior

Just like humans, no two kittens are the same. While it is believed that a kitten's personality is primarily shaped by the father and is considered genetic rather than learned or observed,<sup>1,2</sup> we still want to be sure we do what we can to bring out the best in our cats. In fact, kittens learn a variety of behaviors from their mother, including dietary preferences, proper toileting, and developing a fear response towards other species, including humans and dogs.<sup>1,3</sup> So despite the genetic predisposition for personality development, kittens still become unique individuals based on their interactions with their mother and the environment around them.

Kittens ideally remain with their mother for the initial 10-14 weeks of life (or even as young as 8 weeks in certain cases), during which they are learning important aspects of being a cat. A sensitive socialization period occurs from 2-9 weeks of age which influences lifelong behaviors.<sup>4</sup> During this period, kittens who do not receive positive and consistent human interaction may develop a lifelong fear of people, perceiving them as a threat rather than friendly. We want kittens to grow up to be great cats so it is important to socialize them appropriately during this time (and beyond). However, the FelineVMA does not recommend socialization of feral kittens that are over four months old as it may be harmful to their emotional health.<sup>10</sup> Instead, the FelineVMA recommends that these are spayed/neutered, vaccinated, and returned outside when appropriate.<sup>10</sup>

Proper socialization and interactions start young, but should be practiced throughout the cat's entire life. Positive reinforcement is encouraged while punishment should be avoided.<sup>1</sup> Negative interactions (such as yelling) can damage a kitten's trust. We do not want to associate human contact with anything harmful or scary as this can contribute to a kitten growing up to be unsocialized. Keep in mind that each kitten is unique and therefore successful socialization can look slightly different depending on the individual.

International Cat Care (iCatCare) has created a [free course](#) that explores the full lifestyle spectrum of domestic cats, acknowledging their distinct characteristics and demonstrating how to implement cat-friendly solutions to enhance their overall well-being.<sup>11</sup> The course also covers the essential skills in managing a cat's physical and mental health, interpreting feline behavior, and achieving positive results for individual cats. It is a great resource for anyone interested in making sure their new cat has the best opportunity for a happy and fulfilled life.

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# Important Training and Socialization Techniques



One of the most important parts of proper socialization is providing gentle, gradual, and positive acclimation to the various stimuli the kitten will encounter throughout its life.<sup>1</sup> This includes exposure to different types of people, including children, other friendly, vaccinated animals, common household noises, and experiences like car transport and veterinary visits. There are specific techniques that can be utilized to provide safe and effective acclimation to new humans, other animals, and a new environment.

## Introducing a Kitten to Other Animals in the Home

Domestic cats are viewed as "non-obligate" social animals, having originally evolved from an asocial species.<sup>12,13</sup> This means that while they can coexist with other animals, many cats typically prefer to be alone. However, each individual cat is unique and these preferences are largely based on their genetics, previous life experiences, and how secure they feel in the current situation.<sup>12</sup> A new kitten can be especially stressful for an older cat with established routines and preferences. The key to a successful introduction is PATIENCE. Taking your time and allowing for a gradual adjustment is paramount to achieving a stress-free coexistence.

When introducing a new kitten into a home with other animals, there are a few steps that can be taken in order to maximize the chance of a successful introduction.<sup>14</sup> First, it is vital to have a veterinarian examine the new kitten and the resident cat(s) to ensure that all cats are healthy. The home should be prepped to create a safe and comfortable environment for the new kitten and the resident cat(s) (refer to Box 1 and *A Kitten-Friendly Environment*). This includes a separate "transition room" where the new kitten should first be kept which is separate from the resident cat(s).<sup>14</sup>

## What You Need to Make Your Home “Kitten-Ready”

### Litter box

Litter boxes come in a variety of sizes and shapes; cats tend to prefer open boxes with a clumping, clay litter. Each cat is different, so choose the litter box that is best for your cat and your environment. Be sure to clean it daily!



### A cozy bed

Cats feel safer higher up, so consider placing beds on shelves, cupboards or wardrobes. Different types of beds are available; your cat’s favorite might be your bed!

### Food and water bowls

Avoid double feeders; cats often prefer to drink away from their food. Wide and shallow glass or ceramic bowls are preferred.



### Safe places

Cats need high places for a safe, quiet nap or to escape household activity/visitors. They also love cozy, warm beds they can hide in, especially nervous cats. Owners should respect the cat’s need for privacy and not disturb them when hidden.

## Box 1 (continued)



### Cat carrier

Essential for trips to the vet and for bringing a new cat home. Choose one that is secure and easy to get your cat in and out of.

### Toys

Cats love to play. It's a great way to interact and give them an outlet for energy and instincts.



### Scratching posts

Cats need to scratch to maintain claws, exercise, stretch, and mark territory. Some cats prefer to scratch on horizontal surfaces versus vertical scratchers, so be sure to offer multiple scratching orientation/substrate options to suit the individual kitten's preferences. Providing posts offers a safe place for this natural behavior. Cardboard, rope and carpet are some materials that cats like to scratch. It is important to provide multiple options in various locations to prevent your cat from scratching unwanted items (like furniture).



Source: International Cat Care. Preparing for Your New Cat or Kitten. September 26, 2025.  
<https://icatcare.org/articles/preparing-for-your-new-cat-or-kitten>

Once the kitten is well-adjusted to its transition room, you can begin to introduce the cats to each other's scents.<sup>14</sup> This is done by swapping bedding, toys, and other items between the rooms. Monitor for any signs of stress (hissing, pacing, abnormal behaviors, etc.) during this time. After a few days (once all cats are comfortable with the new scents), you can begin the scent transfer. To do this, you rub soft items with scents from the new kitten on the resident cat's cheeks, chin, and near the ears.<sup>14</sup>

When all cats are comfortable with the new scents, it is now play time! At this stage, play time should still be separate, but can occur on either side of a closed door.<sup>14</sup> To achieve this, tie two cat toys together and let each cat play with a toy on their own side of the door without being able to see the other cat. These interactions should range from 5-20 minutes. If any signs of stress occur, stop the interaction and create a barrier or neutral space in front of the door. Do not punish the cat for any negative reactions to the new kitten.<sup>14</sup>

The next step is to allow the kitten to explore your home.<sup>14</sup> The existing cat(s) should be confined to a favorite room with toys and treats to ensure the experience is positive for them. Let the kitten explore their new environment over a few days, slowly increasing the amount of exploration time. After they are done exploring, the kitten should be returned to their safe transition space and the resident cat(s) are allowed back into the main areas of the home.<sup>14</sup>

As long as no cats are showing signs of stress, they are now ready to see one another! Start with short visual sessions through a screen door, cat gate, glass door, or other see-through barrier.<sup>14</sup> If neither the cat(s) or kitten are stressed, you can allow short play sessions through/under the barrier. Stop these interactions if any cat appears stressed and go back to non-visual interactions until the cats are comfortable again.<sup>14</sup>

After the cat(s) and kitten are comfortable with visual contact across the barrier, you can move on to physical interactions.<sup>14</sup> This can be done with either the cat/kitten on a leash and harness if they are harness trained or with the kitten in a partially covered carrier. Monitor their interactions for any hissing, tail flicking/wagging, or other signs of stress and break up any negative interactions with a physical barrier (blanket, pillow, piece of cardboard, etc.). Never physically get between the cat and kitten if they are growling or hissing as they may redirect their behavior towards you. Monitor their interactions closely, encouraging positive associations through the use of toys and treats. If these brief, positive interactions continue, gradually extend the period that the cats spend together until they can be in the same space without any signs of stress.<sup>14</sup> For more information on introducing cats and kittens, check out this [step-by-step guide](#) from the FelineVMA.

Introducing a new kitten to a dog follows much of the same advice. A key difference is to keep the dog on a leash during introductions instead of utilizing the carrier for the kitten. Dogs are often more open to meeting new housemates, but it is still important to be gradual and careful with introductions in order to make sure all animals feel comfortable and safe. For more details on this plus other helpful information about caring for a new kitten, check out [this guide](#) from iCatCare.

## Introducing Kittens and Children

Introducing a new kitten to children should be more focused on teaching the children how to behave around cats than teaching the kitten how to behave around children. One of the best ways to facilitate this is to be a good role model and lead by example. Teaching children to understand how cats communicate will help them identify when a cat is stressed or needs time alone.<sup>15</sup> Explain boundaries, personal space, and appropriate gentle physical interactions if the child is old enough to understand what these mean.

When looking for a new kitten, look for a kitten that is more amenable to a family situation. A kitten that is well-socialized with both adults and children, is comfortable in loud environments, and enjoys handling and attention is a good candidate.<sup>15</sup> Shy or nervous kittens may not thrive in environments with children due to the potential for loud, chaotic conditions.



Before adopting the kitten, establish rules for the kitten's care and interactions.<sup>15</sup> Discuss who will be responsible for feeding, cleaning, and other chores. Specify which areas of the home are "cat-only" so the kitten will have a safe place to go when it does not want to be disturbed. If the children are very young, be cautious about where the food, water, and litter boxes are located; the children should not have easy access to these areas. Letting the child interact positively with the kitten using wand toys and giving treats reinforces positive interactions for both the child and the kitten.

## Creating Good Routines and Behaviors

It is also important to habituate a kitten to routine handling procedures, such as nail trims, grooming, and even mock pilling (using a small reward), to prepare them for a lifetime of cooperative care. A small empty capsule can be used for training a kitten to take pills. These can be hidden in tasty treats or food or given by mouth. iCatCare offers [helpful tips](#) for training your kitten to take medications. Always follow up with a form of positive reinforcement to encourage good behavior!

While kittens may enjoy a treat as a reward, treats should be used in moderation in order to decrease risks of nutritional imbalances or undesirable weight gain. Many kittens may prefer human interactions, brushing, or a specific type of play time as a reward instead of a treat. If treats are the preferred reward, consider using a kibble that is still nutritionally appropriate for your kitten, but a different type or flavor from their daily food as this can help reduce excess calories. Treats should be just that – a treat!

Kittens love to play! Providing kittens with appropriate toys to encourage natural play is essential for fostering positive behavior development. Play is a vital activity that kittens enjoy. Cats have different preferences for what type of toy they choose to play with.<sup>16</sup> Things like texture, shape, noise, type of movement, and level of human/cat interaction can all influence the kitten's decision to play with a toy. Interactive play is a key component of bonding, so choosing a wand toy with a feather or other item attached to the end is a great option for this type of play. Small fur toys, balls, and simple cardboard boxes are all great options for more solitary play time.<sup>16</sup> It is important to note that kittens under six months typically do not respond to catnip, so do not worry if your kitten doesn't seem to react to catnip at first!

Just as you wouldn't give a toddler a toy with many small parts for safety reasons, the types of toys you provide for a kitten are equally important. Avoid toys with strings, yarns, ribbons, and other small pieces that could be eaten. Laser pointers are not recommended for play as they can damage a kitten's eye or cause frustration since the kitten cannot "catch" their prey.<sup>17,18</sup> This may lead to the development of compulsive behaviors when they are older.<sup>17</sup> Using the hands or feet as toys during play is also strongly discouraged, as this can inadvertently teach the kitten that biting and scratching people is an acceptable form of interaction, leading to play aggression problems later on.<sup>1</sup>

# A Kitten-Friendly Environment

A healthy feline environment is supported by **five essential pillars** (Figure 2).<sup>19</sup> These include things like avoiding strong smells or constant loud noises, meeting the environmental needs of kittens by providing enough food, water, areas for toileting, scratching, play and resting/sleeping, and making sure the kitten has plenty of opportunities to exhibit play and predatory behaviors (Figure 3). All of these enhance a kitten's wellbeing and provide positive experiences from which kittens can learn. (Box 1)<sup>12,19</sup>

Figure 2

Five Pillars of A Healthy Feline Environment	
1	A safe place
2	Multiple and separated key resources
3	Opportunity for play and predatory behavior
4	Positive, consistent, and predictable human-cat social interaction
5	An environment that respects the cat's sense of smell and other senses



## Toileting Areas

Most kittens learn to use the litter box from their mom when they are young, so they will naturally use a litter box in a new home once they know where it is.<sup>18</sup> Regular cleaning of the litter box is essential for proper hygiene, encouraging good bathroom habits, and minimizing the risk of disease spread. If using a clumping litter, it should be scooped daily and cleaned thoroughly at least once a week.<sup>18</sup> Avoid using strong chemicals and disinfectants that could be toxic to cats since they lick their paws (and the rest of their bodies!) after using the litter box.



Figure 3

## Five Items for a Secure Environment for Your Cat



Food



Water



Toilet



Safe place to rest and sleep



Familiar territory and elevated spaces

Source: Feline Veterinary Medical Association. What Your Cat Needs to Feel Secure. 2025. <https://catfriendly.com/cat-friendly-homes/what-your-cat-needs-to-feel-secure>

The type of litter box and litter used matters for kittens. Since kittens are still small, a box with low sides is preferable, but it should be large enough for the kitten to move around. An ideal size is 1.5x the length of the kitten from nose to tail.<sup>18</sup> Kittens typically prefer unscented litter, but you may want to start with the litter the kitten was using previously at first. The litter should be around 3 cm (1.2 inches) deep,<sup>18</sup> and liners and automated trays should be avoided as the movement and noise from an automatic box can frighten a cat of any age, discourage proper toileting habits, and be dangerous for kittens, as many are weighted for cats over 5 lbs. However, as with everything, each kitten has their own individual preferences, so it may take some trial and error until you find the litter box “sweet spot.” Additionally, as the kitten grows, a larger box or different litter may be needed.

Location, location, location! Where the litter box is kept matters! Giving your kitten a choice by providing more than one litter box is important.<sup>18</sup> The boxes should be separate, but kept in places that are easy for the kitten to find. Do not keep the litter boxes near food and water areas, in high traffic areas of the home, near loud appliances, or where dogs/children can interfere with them.<sup>18</sup>



New kitten owners may worry about acquiring a disease called toxoplasmosis from their new kittens when scooping the litter box – but this is not as big of a concern as many people believe! The risk of catching toxoplasmosis from a cat is quite low.<sup>20</sup> In fact, people are much more likely to acquire toxoplasmosis from gardening or eating undercooked meat. Studies have shown that owning a cat or coming into contact with cats does not increase the risk of toxoplasmosis infection in humans.<sup>20</sup> The best ways to further lower the risk of getting toxoplasmosis is to practice good hygiene when scooping the litter box, do not feed raw food to your kitten, wash all produce meant for human consumption prior to eating, and consulting a human doctor if pregnant to learn about any recommended restrictions.<sup>20</sup>

## Creating a Safe Space

It can be a scary adjustment when a kitten is brought into a new home where everything is unfamiliar. Creating a space where the kitten can feel safe will help them settle into its new environment. Choosing a quiet room that is separated from the rest of the home will allow the kitten to gradually adjust to their new environment.<sup>18</sup> This room should contain everything the kitten will need and be kept free from hazardous items and other animals. Once the kitten is adjusted, you can move their food, water, and litter box gradually if you don't intend for this room to be the final location for these items.

Even beyond kittenhood, there are certain things that will create a safe and comfortable environment for kittens and cats. A bed with high sides that is easily accessible will help the kitten feel more secure. Providing hiding spaces for climbing like cat shelves and cat trees encourage natural climbing behaviors and gives the cat somewhere to go when they want some alone time. Access to windows so they can watch the birds outdoors is a great source of entertainment. For some cats, an enclosed catio is a great way to safely enjoy the outdoors. However, it is important to keep your kitten/cat on parasite prevention since mosquitos, fleas, and other parasites will not be deterred by a catio fence!

To prevent undesired scratching later in life, placing a variety of scratching surfaces (such as posts covered in sisal rope, cardboard scratchers, or carpeted surfaces) in prominent locations, particularly near the kitten's preferred resting areas and along high-traffic pathways, provides acceptable outlets for scratching. Making sure these are available from the moment the kitten enters the home is the most effective strategy for preventing the development of destructive scratching on furniture, a common behavioral complaint.<sup>1</sup>



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# Nutrition

## Weaning

Nutrition and feeding routines also change as a kitten ages. A newborn kitten needs to eat every two hours, which decreases to every 3-4 hours by two weeks of age, and every 4-5 hours by three weeks of age.<sup>9</sup> Weaning can start around 4-5 weeks of age, and how you wean can make a lifelong difference for the kitten.<sup>21</sup> The key is to make sure the kitten is ready to wean and able to eat on its own; this timeline can vary based on health issues, body weight, or preferences.<sup>21</sup> It is important to monitor the kitten closely by checking the weight daily; a healthy kitten should gain around 10 grams each day.<sup>21</sup>

There are different thoughts on the best way to properly wean a kitten. The first foods given to kittens should be in a form of properly formulated complete and balanced kitten food and/or a high quality kitten milk replacer. Some kittens prefer dry kibble while others may prefer a pâté canned food mixed with kitten milk replacer to start.<sup>21,22</sup>

Kittens may make a mess with the food during the first few feedings, but this should not last more than a few days.<sup>22</sup> Once the kitten is consistently eating solid food, the milk replacer can be discontinued. During the weaning process, supplemental bottle feeding is recommended for orphaned kittens to ensure they are still getting enough calories.<sup>21</sup> For more information on weaning, check out [this article](#) from the National Kitten Coalition. For recommendations on kitten lead weaning from the Kitten Lady, please refer to Box 2.



When a kitten is starting to eat solid food, it is important to offer a variety of kitten food flavors, forms and textures as taste preferences develop young and are hard to change once established. In general, a kitten's food preferences are largely shaped by its mother and the types of food it is offered when it is young.<sup>1,23</sup> Offering different flavors, textures, and types of kitten food is a key component to developing "food flexibility" which means they are more open to trying new foods when they are older. The more variety offered during this stage, the easier it will be to change diets later in life.

# Kitten Lead Weaning

## Recommendations from the Kitten Lady

Nutrition and feeding routines also change as a kitten ages. A newborn kitten needs to eat every two hours, which decreases to every 3-4 hours by two weeks of age, and every 4-5 hours by three weeks of age. Weaning can start around 4-5 weeks of age, and how you wean can make a lifelong difference for the kitten. The key is to make sure the kitten is ready to wean and able to eat on its own; this timeline can vary based on health issues, body weight, development of motor skills, or individual preferences. It is important to monitor the kitten closely by checking weight daily; a healthy kitten should gain a minimum of 7 grams each day.



The first foods given to kittens should be a properly formulated, complete and balanced kitten food and/or a high-quality kitten milk replacer. As premolars emerge, kittens can be introduced to small amounts of wet pâté and kibble. Kittens may struggle with the new method of eating at first; caregivers are advised to actively support kittens with handfeeding or spoon-feeding as needed, and to closely monitor the kitten to ensure that they are not simply **nursing the food**. Supplemental nursing or bottle feeding should continue after each meal until the kitten is able to successfully meet their caloric needs with solid food. The process of kitten-led weaning can take up to one week, and caregivers are advised to wean gradually for best outcomes. For more information, visit **[Kitten Lady's weaning resources](#)**.

## Kitten Nutritional Requirements

Once properly weaned, it is imperative to choose a food that will meet all of the needs of that kitten. The understanding of kitten nutrition has evolved far beyond simply providing sufficient calories for growth. Modern feline pediatric nutrition is a sophisticated science focused on providing a precise blend of macronutrients and micronutrients that serve as the fundamental building blocks for healthy development.

During their rapid growth phase, kittens have nutritional requirements that are distinct from and more demanding than those of adult cats. They require a significantly higher percentage of protein in their diet when compared to requirements in adulthood to support the development of muscles, organs, and other tissues.<sup>24</sup> Dietary fat is another crucial component, serving as a concentrated source of energy for their high activity levels and providing essential fatty acids. Specific fatty acids, particularly omega-3 fatty acids like docosahexaenoic acid (DHA), play a vital role in the proper development of the brain, nervous system, and retina. However, too much dietary fat is a risk factor for unhealthy weight gain.<sup>24</sup>

Kitten foods should provide more calcium, phosphorus, and magnesium as well as a few other micronutrients than adult cat foods.<sup>25,26</sup> However, the total amount is only part of the story. It is also important for calcium and phosphorus to be supplied in the correct ratio to ensure they are absorbed efficiently to support the development of strong bones and teeth. Other micronutrients, such as vitamin A for vision and immune function, are also required in specific amounts tailored for growth.



## Choosing a Food

Feeding commercially formulated kitten foods that carry a statement of nutritional adequacy from the [Association of American Feed Control Officials \(AAFCO\)](#) for "feline growth" or are formulated to meet [European Pet Food Industry Federation \(FEDIAF\)](#) guidelines for growing kittens is a good place to start. A cat is considered a kitten until they are one year old, and growth occurs even beyond that age (although at a much slower rate). If the kitten is changed from a kitten food to a food made for adult cats before one year of age, the food may not provide the right proportions of nutrients for proper growth. However, continuing to free-feed kitten food can result in unwanted weight gain. The best solution is to continue feeding the kitten a food designed for growth until they reach one year of age, but only feeding the recommended amount each day. A veterinarian can be consulted to determine the proper feeding routine for the individual kitten.

While pet food labels provide a lot of valuable information, it is impossible to distinguish good and poor quality products based on the pet food label assessment alone. It is recommended to choose a food made by a company that supports its claims with scientific research. The World Small Animal Veterinary Association (WSAVA) has published some great [guidelines](#) to help you choose your kitten's food. Following these guidelines and talking with your veterinarian will help ensure that you chose the best food for your kitten!


Even though it may seem that preparing food at home for your kitten could be healthy for them, homemade foods should be avoided as many published recipes are not properly formulated or balanced. A 2019 study by UC Davis looked at 114 homemade diet recipes and found that 113 had unclear preparation instructions, while 46 lacked feeding directions.<sup>27</sup> None of the recipes met the recommended allowances for all essential nutrients – even when prepared by veterinarians. In addition, many homemade diets are not appropriate for growing kittens. A board-certified veterinary nutritionist should be consulted if a homemade diet is desired.<sup>27</sup>






Freeze-dried and raw foods are especially risky for kittens. A kitten's immune system is not fully formed and they are not as capable at fighting off potential diseases as adult cats. Kittens can shed these dangerous organisms and expose their human family members to serious health conditions including *E. coli*, *Salmonella*, *Listeria*, and others.<sup>28,29</sup> Both freeze-dried and raw foods (and treats!) have a high risk of contamination and should be avoided unless they have undergone high-pressure pasteurization – and even this process does not entirely eliminate all pathogens.

BCS, Figure 4

CATS

# Body Condition Score



UNDER IDEAL		IDEAL	OVER IDEAL	
				
<p><b>1</b> Ribs very easily seen on short-haired cats. No fat pads present. Severe abdominal tuck. Lumbar vertebrae and pelvic bones easily seen and felt.</p>	<p><b>2</b> Ribs easily seen on short-haired cats. Lumbar vertebrae obvious. Pronounced abdominal tuck. No fat pads present.</p>	<p><b>5</b> Well-proportioned. Ribs felt with slight fat covering. Waist seen behind ribs, but not pronounced. Abdominal fat pad minimal.</p>	<p><b>7</b> Ribs not easily felt through moderate fat covering. Waist not easily seen. Slight rounding of abdomen may be present. Moderate abdominal fat pad.</p>	<p><b>9</b> Ribs not felt under heavy fat cover. Heavy fat deposits over lumbar area, face and limbs. Distention of abdomen with no waist. Extensive abdominal fat deposits.</p>

Bjornvad CR, et al. Evaluation of a nine-point body condition scoring system in physically inactive pet cats. AJVR 2011;72:433-437.  
Lafamme DP. Development and validation of a body condition score system for cats. A clinical tool. Feline Pract 1997;25:13-18.  
Teng XT et al. Strong associations of 9-point body condition scoring with survival and lifespan in cats. J Feline Med Surg. 2018;20(12):1110-1118. DOI: 10.1177/1098612X17752198

\*A body condition score of 6/9 may be acceptable in some cats, especially older cats.

www.wsava.org




Image courtesy of World Small Animal Veterinary Association

## How to Properly Feed a Kitten

What you feed your kitten is important, but creating a desirable and stress-free environment for mealtimes is equally as important. In order to keep your kitten happy and healthy, it is essential to satisfy the need to hunt and eat small meals (preferably without other cats around) and avoid over- or underfeeding.<sup>30</sup> Their feeding behavior involves predatory actions like stalking and pouncing. Cats also naturally prefer to eat alone in a peaceful spot, away from sudden movements, activity, or other animals that might startle them.<sup>24,31</sup> If there are multiple cats in the home, it is important to offer separate feeding stations with distance and visual separation between cats to reduce stress.<sup>30</sup> Food and water stations should be separate to prevent water contamination from the food.<sup>32</sup> Cats and kittens usually prefer bowls that are wide and shallow, which leaves room for their whiskers.<sup>32</sup> A glass or ceramic bowl is preferred over plastic or stainless steel, as plastic can cause skin irritation or acne and stainless steel can create a reflection that is frightening to some kittens.

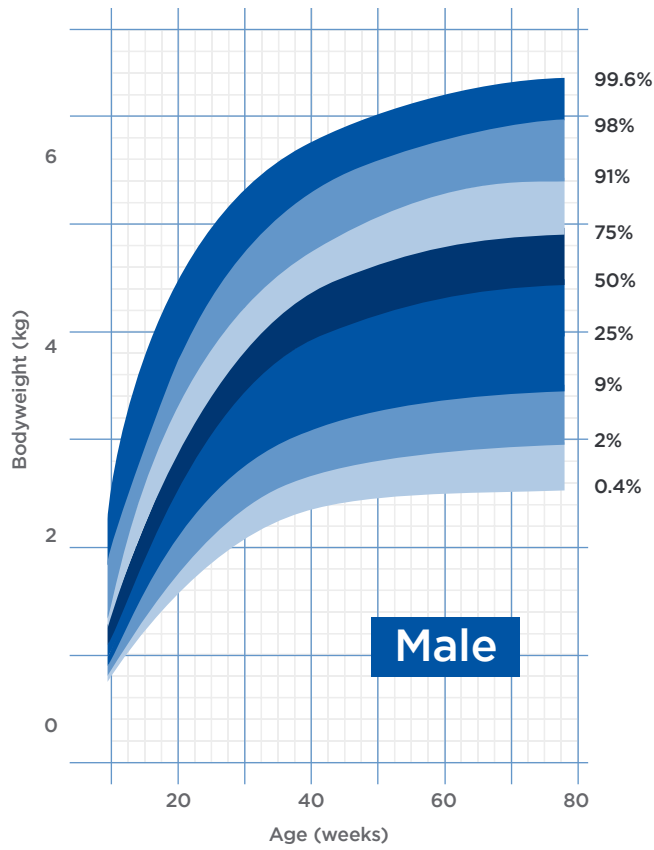
## Preventing Unhealthy Weight Gain

Preventing unhealthy weight gain starts young – it is easier to prevent unwanted weight gain than to get a cat to lose weight once they are overweight. Splitting the kitten’s daily food into several small meals over 24 hours and utilizing puzzle feeders is recommended to encourage natural feeding behaviors.<sup>30</sup> Because cats need to eat several small meals throughout the day, feeding them only one or two large meals can result in inactivity, stress, overeating, and obesity.<sup>33</sup> Automatic feeders can also be useful, although they don’t offer hunting or foraging opportunities.<sup>30</sup>

Routinely checking body condition score (BCS, Figure 4) and weight both at the veterinary clinic and at home can also help identify any unwanted trends in weight gain. Growth charts are another great way to make sure a kitten is gaining weight at a healthy pace (Figures 5 and 6). A recent study showed that cats who become overweight in kittenhood are more likely to be overweight/obese as adults.<sup>34</sup> Any cat caregiver can learn how to check their cat’s BCS at home – just ask your veterinarian for details or check out this [helpful guide](#) from the Association for Pet Obesity Prevention.



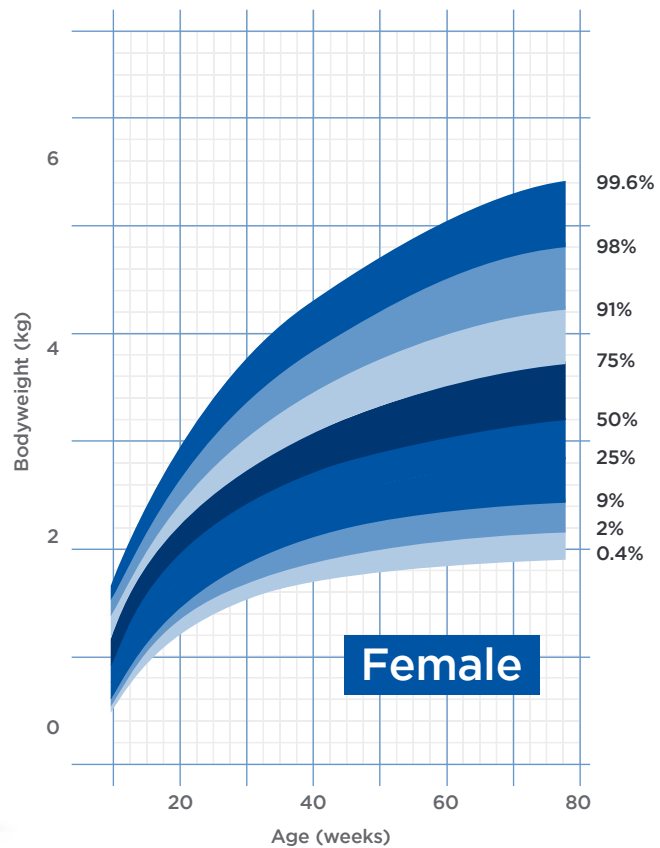
Figure 5



# Kitten Growth Charts



Figure 6



Source: Salt C, German AJ, Henzel KS, et al. Growth standard charts for monitoring bodyweight in intact domestic shorthair kittens from the USA. PLoS One. 2022;17(11):e0277531.

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# Veterinary Care

The past decade has marked a period of unprecedented transformation in the veterinary care of kittens. Veterinarians are moving away from a generalized, reactive treatment model, to a more proactive, holistic, and individualized wellness framework. This has caused us to redefine the standard of care for cats in their first year of life, with profound implications for their immediate survival, long-term health, and the human-animal bond. Refer to Box 3 for reasons why veterinary visits are so important for kittens.

## Stress Management

A major barrier to comprehensive feline veterinary care has historically been the stress experienced by the cat, the caregiver, and the veterinary team during a clinical visit.<sup>1</sup> Recognizing this, International Cat Care launched the [Cat Friendly Clinic](#), the [Cat Friendly Veterinary Professional](#), and [Cat Friendly Veterinary Receptionist](#) and the FelineVMA launched the [Cat Friendly Practice® Program\\*](#) and [Cat Friendly Certificate® Program\\*](#) and in 2012, as “a global initiative designed to elevate care for cats by reducing stress and making visits easier for cats and caregivers” and making the veterinary clinic an environment more suited to cats.<sup>35,36</sup> These programs are available for veterinary clinics, individual veterinarians, and other members of the veterinary health care team – so if you are in the veterinary field and are interested in becoming more feline friendly, there is an option available for you!

The Cat Friendly® philosophy is implemented through a series of practical, evidence-based techniques designed to reduce feline stress at every stage of the veterinary visit.<sup>35,36</sup> This begins even before the [kitten leaves home](#), by choosing the right carrier, acclimating the kitten to the carrier (Figures 7 and 8), and using calming synthetic pheromones to reduce the stress of transport. A good carrier will give the kitten a feeling of security and prevent escape.<sup>37</sup> Fabric carriers are hard to clean and may collapse, while backpack carriers can cause a bumpy ride for the kitten. A sturdy, plastic carrier with a top opening and a removable top half is ideal, as it will allow for easier removal of the kitten when at the vet or even allow the veterinarian to conduct the exam while the kitten is still in the bottom portion of the carrier.<sup>37</sup> Some soft bedding, a few favorite toys and some synthetic pheromone spray all help to create a good travel environment for the kitten.<sup>37</sup>

\*Licensed from iCatCare and based on their Cat-Friendly Clinic program

In addition to choosing a proper carrier, it is also important to acclimate the kitten to the carrier. Leaving the carrier out with a comfortable blanket inside can make it a desirable place to sleep. The carrier will become a familiar and safe place for the kitten.<sup>37</sup> If the carrier is kept away in an attic or garage and only taken out when it is time for a trip to the vet, the kitten will likely associate it with stressful travel and avoid being placed in it when it is time for travel.



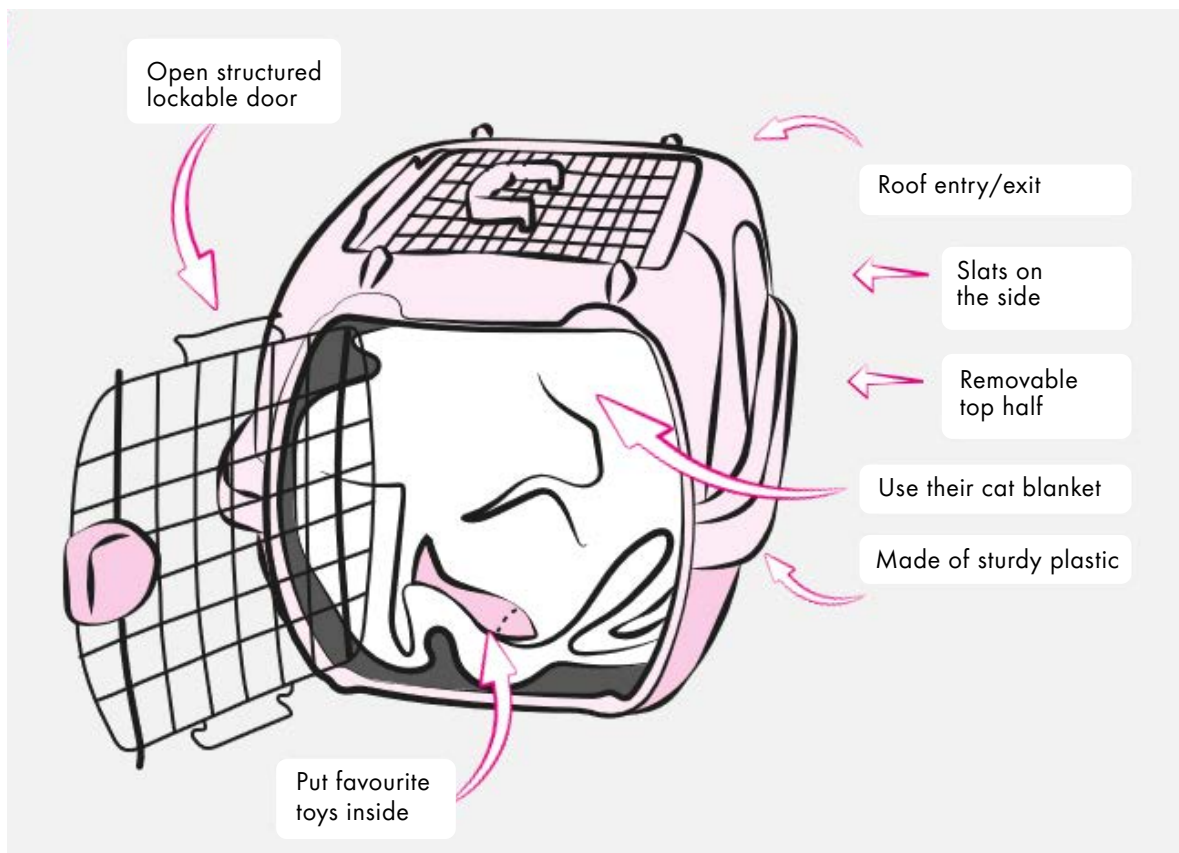
Within the clinic, Cat Friendly® principles encourage a welcoming environment, including providing warm, non-slip surfaces for examinations, avoiding loud noises or sounds that may mimic hissing, and allowing the kitten time to explore the exam room.<sup>1,36,37</sup> Cats like to be in control – and when in a new environment, they may prefer to hide.<sup>38</sup> Having areas to hide in an exam room or letting the kitten stay in the bottom of the carrier offers options to a nervous kitten. Small towels and blankets can be used to let the kitten hide while being gently restrained during an exam. Massaging a kitten’s facial glands can be used as a distraction technique while other procedures are performed.<sup>38</sup>

It is especially crucial to make these first veterinary appointments stress-free since this is the time when kittens are forming emotional associations with new experiences.<sup>38</sup> One stressful vet visit for a kitten can cause a negative association that could persist throughout the rest of its life. There are a wide variety of techniques, published by the FelineVMA and iCatCare, to make the veterinary hospital more cat- and kitten-friendly. For more information on [approach and handling techniques](#), [feline friendly veterinary environments](#), and [cat friendly principles for veterinary professionals](#) be sure to check out their publications!

Figure 7

## HOW TO MAKE THE CAT CARRIER CAT FRIENDLY

Choose a cat carrier that allows easy access, for you to feed your cat but doesn't leave them over exposed and is easy to clean.



Used with permission from International Cat Care

Figure 8

## CAT CARRIER TRAINING IN 6 SIMPLE STEPS

### Step 1

Encourage your cat to settle on a security blanket



### Step 2

Put the security blanket in the bottom of the cat carrier



### Step 3

Add the lid, and encourage your cat to settle inside



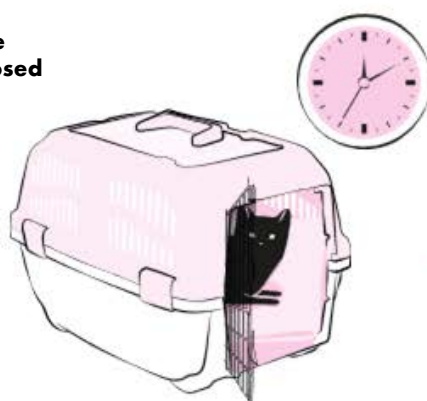
### Step 4

Encourage your cat to remain settled with the door closed



### Step 5

Increase the amount of time spent in the closed carrier



### Step 6

Travelling in a moving cat carrier



### IMPORTANT

Only carry using the handle if the bottom is also stabilised



## Why Your New Kitten Needs a Vet Visit

The initial visit serves several crucial purposes:



### Establish a Relationship:

The veterinarian wants to get acquainted with both you and your new kitten.



### Comprehensive Health Check:

A thorough physical examination will be performed to confirm your kitten is healthy and to rule out any congenital issues.



### Disease Screening and Prevention:

- Screen for certain infectious diseases (e.g., feline leukemia virus, feline immunodeficiency virus).
- Provide necessary vaccinations to prevent serious illnesses.
- Screen for internal and external parasites.



### Discuss Kitten Care and Environment:

- Go over appropriate nutrition and feeding guidelines.
- Review aspects of creating an ideal and safe home environment for your kitten.



### Wellness Planning and Guidance:

- Develop a comprehensive wellness strategy, including vaccine boosters, spay/neuter timing, rechecks, and more.
- Discuss warning signs for common health problems, differentiate between normal and abnormal behaviors, and highlight other things to monitor.
- Address any questions or concerns you may have.

## Vaccinations

Complementing the life-stage and Cat Friendly® frameworks is a decisive shift away from one-size-fits-all vaccine protocols toward individualized healthcare planning. The [2021 Feline Life Stage Guidelines](#) and the [2020 AAHA/AAFP Feline Vaccination Guidelines](#) both champion a patient-specific approach, where medical recommendations are tailored based on a comprehensive assessment of each kitten's unique circumstances.<sup>1,6</sup> This ensures that each kitten receives the precise care it needs to thrive, maximizing protection while avoiding unnecessary interventions.

**Note:** these [recommendations](#) are for pet cats and kittens in shelters have different recommendations due to increased risks.



The 2020 AAHA/AAFP Feline Vaccination Guidelines also focus on overcoming a key immunological challenge: maternally derived antibodies.<sup>1,6</sup> While kittens absorb protective antibodies from mom's colostrum (milk) in the first 24-28 hours of life, this interferes with their ability to mount their own active immune response to vaccines.<sup>6</sup> There is significant variation in the rate of decline of maternal derived antibodies (MDA) in kittens.<sup>39</sup> Some kittens maintain high concentrations for months; this persistence of MDA is one of the most common reasons for vaccine failure.<sup>6,39</sup>

Historically, it was recommended to booster the feline viral rhinotracheitis, calicivirus, and panleukopenia (FVRCP) vaccine 1 year from the initial kitten series; however, new studies show that up to one third of kittens fail to respond to the final core vaccine at 16 weeks of age due to blocking MDA until 20 weeks of age.<sup>40-42</sup> Therefore, both the FelineVMA and [WSAVA](#) recommend that the 1 year FVRCP booster be replaced with revaccination at 6 months (26 weeks) of age,<sup>6,43</sup> although this booster can be given at any time point between 26-52 weeks of age.<sup>43</sup> The kitten should still return at 1 year of age for the feline leukemia and rabies vaccine boosters.

This 6-month booster also allows for an additional time point to examine the kitten. This allows for another weight check, and adjustments can be made to the recommended nutrition and husbandry. Many kittens will begin to gain weight following their sterilization procedures (spay/neuter). With these procedures often occurring prior to 6 months of age, an adjustment on feeding is often required to prevent unwanted weight gain.

The full schedule of recommended vaccines can be found (Figure 9). The appropriate vaccine protocol for a kitten may vary depending on its lifestyle. AAHA provides a [helpful online tool](#) to assist in determining the best vaccination schedule based on your kitten's specific needs.

Figure 9

 <b>Core Vaccine Recommendations for Pet Cats* 6</b>					
	First dose if <16 weeks of age	Boosters	If >16 weeks of age	Revaccination	Notes
<b>FPV, FHV-1, FCV combo</b>	6 weeks	Every 3-4 weeks until 16-20 weeks of age	2 doses 3-4 weeks apart	6 months, then every 3 years  *Revaccination may be warranted 7-10 days prior to boarding in cats that have not been revaccinated within 1 year	Pregnant cats and kittens <4 weeks should not be vaccinated due to risk of cerebellar hypoplasia
<b>FeLV</b>	As early as 8 weeks of age	1 booster in 3-4 weeks	2 doses 3-4 weeks apart	1 year; continue to booster annually for high-risk cats	Confirm FeLV status prior to vaccination
<b>Rabies</b>	Follow vaccine label instructions and local laws.				

Abbreviations:

FPV: feline panleukopenia virus

FHV-1: feline herpesvirus-1

FeLV: feline leukemia virus

FCV: feline calicivirus

\*Feline immunodeficiency virus, chlamydia felis, and bordetella bronchiseptica are considered non-core vaccines. Refer to the WSAVA or AAHA guidelines for information on these vaccines.

## Parasite Prevention

Intestinal worms are common in cats, with roundworms being one of the most frequent types diagnosed.<sup>18</sup> Kittens are often infected with roundworms, which can be transmitted through their mother's milk or through the placenta while the kitten is in utero. While many infected cats show no signs, a heavy worm burden can lead to weight loss, vomiting, diarrhea, anal irritation, and poor growth. Importantly, roundworms can be passed to humans, making regular deworming a necessity for your kitten.<sup>18</sup>

There are also other intestinal parasites that can infect kittens including hookworms and tapeworms. While tapeworms are usually more of a concern for older cats, if a kitten has fleas, they may require early tapeworm treatment since ingesting fleas is a common way for cats to become infected with tapeworms.<sup>18</sup> Your veterinarian will discuss the best deworming protocol for your kitten; and this is often done during the vaccination appointments.



**External parasites like fleas and ticks can also be a problem for kittens. Both fleas and ticks spread diseases, and some of these diseases can result in serious health concerns. Ear mites and skin mites can cause itching, secondary infections, and hair loss.<sup>44</sup> There are many topical products for flea and tick prevention available to cats and kittens. Be sure to talk to your veterinarian prior to applying anything to your kitten since some common medications that are used in dogs (like permethrin) are toxic to cats, and some products that are safe for adult cats should not be used in kittens.**

Heartworm disease is another important parasitic disease that affects cats and kittens. Even though we think of heartworm disease primarily affecting dogs, cats can also be infected with heartworms.<sup>44</sup> Since heartworm disease is spread by mosquitoes, any cat that has access to the outdoors is at a higher risk – but indoor-only cats can get infected, too! In fact, unlike in dogs, there isn't a safe or effective treatment for heartworm disease in cats, so prevention is incredibly important. In areas where heartworm is common, year round prevention is recommended for all cats.<sup>44</sup> Check with your veterinarian to determine which product is best for your kitten based on your location and the kitten's lifestyle.

## Retrovirus Guidelines

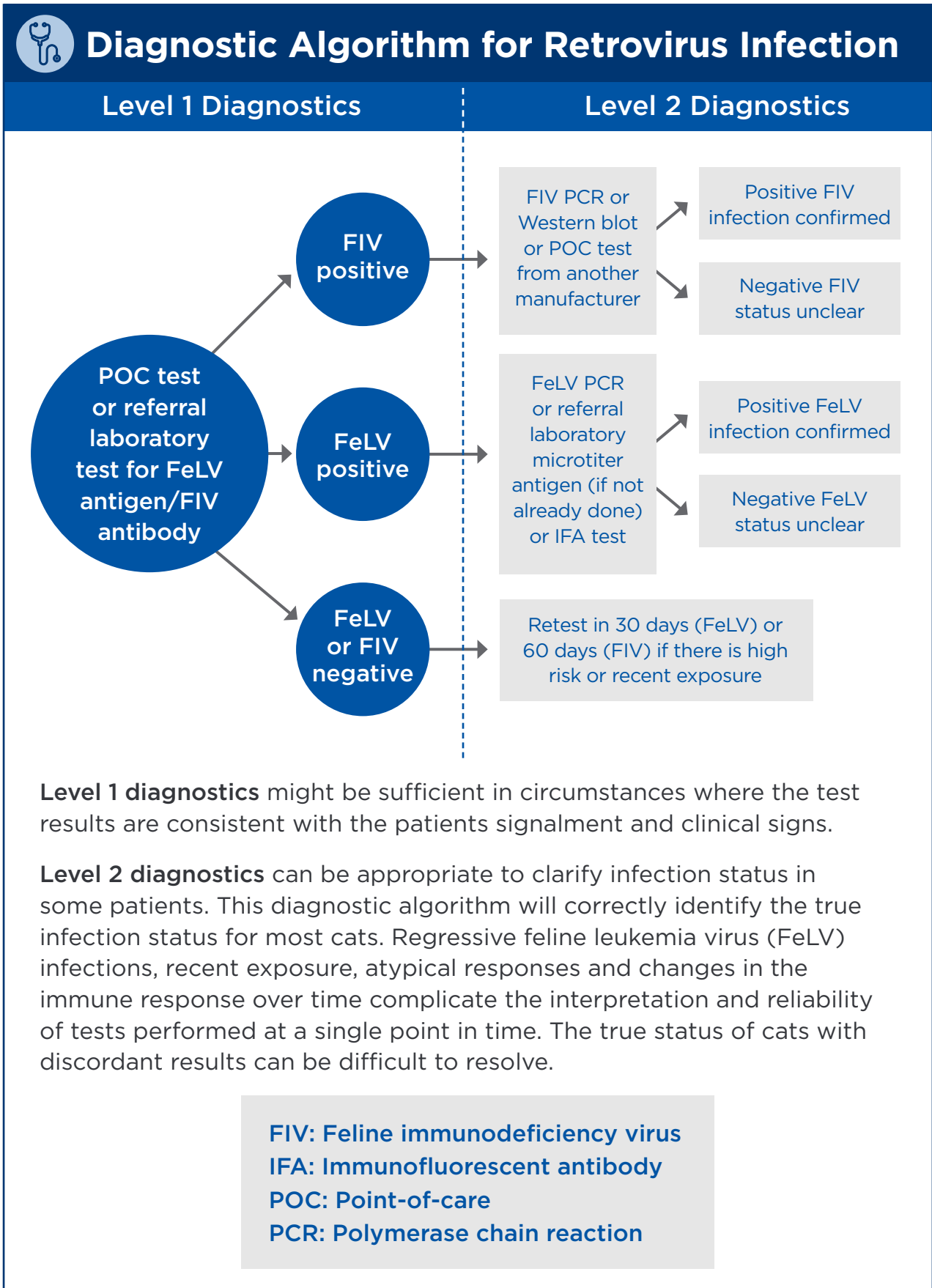
There are two common retroviruses that affect cats and kittens: feline immunodeficiency virus (FIV) and feline leukemia virus (FeLV). Both FIV and FeLV can cause serious disease in cats and kittens and can cause death in affected cats. Since there is currently no treatment for either virus, vaccination and identifying infected cats in order to keep them separated from other cats is the best way to prevent disease. Currently there is no vaccine for FIV in North America, but this vaccine is available in other countries worldwide. The FeLV vaccine is considered a core vaccine and should be given to all kittens (see vaccination protocol).<sup>40</sup>

FIV is mainly transmitted through bite wounds, as the virus spreads primarily via saliva; however, it can also be spread through sexual contact. It is most prevalent in unneutered male cats and those that fight, while being less common in kittens and neutered adult cats.<sup>45</sup> FeLV, however, spreads more easily between cohabiting cats and from mothers to kittens.<sup>46</sup> Transmission occurs mainly through saliva, particularly during grooming or when sharing food or water bowls, in addition to fighting. Once infected with either virus, most cats will carry the virus for the remainder of their lives.<sup>46</sup>



Since both of these viruses can spread from mom to kitten, it is important to screen every kitten for these viruses. An in-house blood test can be done by your veterinarian during one of the early kitten visits – and you will likely have results before you head back home. However, sometimes there are false positives on the tests. If this occurs, the veterinarian will recommend additional testing to confirm if an infection actually exists or if there was an error with the test (Figure 10).<sup>46</sup> If there are any concerns with testing, the FelineVMA published [retrovirus testing guidelines](#) that can help with complicated cases.

Figure 10



**Level 1 diagnostics** might be sufficient in circumstances where the test results are consistent with the patients signalment and clinical signs.

**Level 2 diagnostics** can be appropriate to clarify infection status in some patients. This diagnostic algorithm will correctly identify the true infection status for most cats. Regressive feline leukemia virus (FeLV) infections, recent exposure, atypical responses and changes in the immune response over time complicate the interpretation and reliability of tests performed at a single point in time. The true status of cats with discordant results can be difficult to resolve.

This figure was adopted from: Little S, Levy J, Hartmann K, Hofmann-Lehmann R, Hosie M, Olah G, Denis KS. 2020 AAEP Feline Retrovirus Testing and Management Guidelines. J Feline Med Surg. 2020 Jan;22(1):5-30. doi: 10.1177/1098612X19895940

## Spaying and Neutering

One of the most impactful changes in kitten preventative care over the past decade is the establishment of a new recommendation for the timing of spaying and neutering. In 2017, the FelineVMA, American Veterinary Medical Association (AVMA), and AAHA endorsed the recommendation of the [Veterinary Task Force on Feline Sterilization](#) stating that owned kittens should be spayed or neutered by five months of age,<sup>47,48</sup> and iCatCare recommends these procedures be done at four months of age.<sup>21</sup> Shelters often recommended spaying and neutering at eight weeks of age as long as the kitten weighs 2 lbs (0.9 kg), but in 2016, The Association of Shelter Veterinarians changed this recommendation to six weeks and 1.5 lbs (0.7 kg).<sup>49,50</sup> These are a clear departure from the older recommendations that advised waiting until six months of age or older.

One of the primary drivers for this initiative was population control. Kittens can reach sexual maturity and become pregnant as early as four months of age.<sup>51</sup> Delaying sterilization until six months or later creates a significant window for accidental and unwanted litters, which are a primary contributor to the overpopulation crisis and a major reason for intake and euthanasia in animal shelters.<sup>52</sup>

Beyond population control, the medical benefits of earlier sterilization are noteworthy. Spaying a female cat before her first heat cycle provides a protective effect against mammary gland cancer, the third most common tumor in cats.<sup>53</sup> Specifically, cats spayed prior to six months of age have a 91% reduction in their lifetime risk of developing mammary cancer compared to intact cats.<sup>53</sup> For male cats, castration prevents testicular cancer and, when performed before sexual maturity, significantly reduces the incidence of undesirable hormone-driven behaviors such as urine spraying, roaming, and fighting.<sup>52</sup>

Importantly, new research has debunked many of the concerns regarding early spaying and neutering. Modern [anesthetic protocols](#) have been proven to be safe for use in healthy kittens as young as six to eight weeks of age.<sup>54</sup> Furthermore, long-term studies have failed to show any serious negative health consequences or adverse effects on skeletal, physical, or behavioral development in cats sterilized before five months.<sup>55-57</sup>



In fact, the surgical procedures in younger kittens are often technically easier for the surgeon,

leading to shorter anesthetic times and faster, less complicated recoveries.<sup>55,58</sup> New techniques, including the ovarian pedicle tie (autoligation of the ovarian pedicle) and the flank spay were found to be safe, effective, and often faster than the traditional midline ovariohysterectomy.<sup>59,60</sup> However, due to these new techniques not leaving the traditional midline scar that is associated with a traditional midline incision spay, a linear midline tattoo is recommended in all cats being spayed to prevent unnecessary surgical procedures.<sup>61</sup>

Despite the benefits associated with early spay/neuter, there are some shortcomings associated with this recommendation. Since one of the primary drivers for early spay/neuter is population control, a pet kitten in a stable home environment that is not at risk for unintended breeding may have different risks. One of the biggest concerns for early spay/neuter is an increased risk in unhealthy weight gain, leading to obesity following the procedure.<sup>62</sup> It is important to address nutrition after spaying/neutering to help mitigate this risk.

**This conversation can occur at the six-month FVRCP vaccination booster and/or at an additional nine-month “check-in” appointment.**

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# New Research



Despite being beloved companions in millions of homes, cats are significantly underrepresented in scientific research. In fact, historically, much of feline veterinary knowledge has been adapted from studies in dogs. Luckily, this trend has been changing in recent years leading to some considerable advancements in feline research.

## The Microbiome

Recent research has highlighted the importance of the gut microbiome (community of microorganisms living within the intestinal tract) in kittens. Antibiotic usage in kittens has been associated with significant changes in their microbiome.<sup>63</sup> These changes persisted for months after the antibiotic therapy was discontinued. This is an important consideration when treating upper respiratory infections (URIs) in kittens – which are primarily viral in origin. There has been a shift in the therapeutic approach to URIs, moving away from a generalized, one-size-fits-all strategy towards a more targeted approach based on the suspected cause and the severity of symptoms.<sup>64</sup> Antibiotic therapy is now typically only recommended for cases with clear evidence of a secondary bacterial component.<sup>65</sup>

At Hill's Pet Nutrition, a recent study was conducted to assess the use of prebiotics in kitten foods and how they would affect digestive and overall health.<sup>66</sup> Prebiotics are plant fibers that act as food for beneficial microorganisms in the intestinal tract. When Hill's tested their unique prebiotic blend (ActivBiome+) in kitten food, the data indicated that feeding kittens a food with prebiotics promoted favorable gastrointestinal health by supporting good stool quality, promoting a hospitable environment for microbial fermentation, and facilitating the release of beneficial postbiotics.<sup>66</sup>

## Darwin's Ark

**Darwin's Ark**, a community science nonprofit, is working to fill this research gap. Darwin's Ark combines genomic research with survey data from pet caregivers to advance scientific understanding of pet health and behavior. In June 2024, the nonprofit launched Darwin's Cats, the world's largest community-powered research initiative dedicated exclusively to cat genetics and health.

Since its launch, more than 20,000 cats have joined the Darwin's Cats initiative. By answering surveys about their cats and sequencing their DNA, Darwin's Cats community scientists are contributing to foundational research that is exploring:



### **Genetic Diversity:**

Mapping feline ancestry and genetic variation across breeds and populations



### **Behavior and Appearance:**

Understanding how genetics influences behavior and physical traits



### **Health and Well-Being:**

Identifying the role genetics plays in health and disease

By the end of 2026, Darwin's Cats aims to enroll 100,000 cats and sequence 5,000 cats. This growing database is a powerful scientific resource to catalyze a new era in cat veterinary care, one informed by cat-specific genetic research and driven by the power of community science.

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# Kittens in the Shelter Space

## Kitten Season

The term "kitten season" evokes a benign, even charming, image. For animal welfare professionals, however, it signifies a period of overwhelming crisis – an annual, predictable surge in kitten births that floods shelters, exhausts resources, and drives non-live outcomes for the most vulnerable animals.<sup>67</sup> This intake is intensely seasonal. In the U.S., kitten admissions begin to climb in the spring, peaking dramatically between April and June.<sup>68</sup> During this time, over 50% of total feline intakes into shelters are kittens under eight weeks old.<sup>68</sup>

A particularly sobering statistic from [Shelter Animals Count](#) reveals the nature of these non-live outcomes for kittens in shelters. Of the pre-adoption age kittens (under eight weeks) who die in shelters, 56% are euthanized, but a staggering 44% die "unassisted", that is, they succumb to illness or other factors while in the shelter.<sup>68</sup> This rate of unassisted death is four times higher than that for adult cats and points directly to the immense logistical and medical challenge of caring for this fragile population.<sup>68</sup>



## Fostering

Due to their special care needs, traditional shelter environments are not designed to optimally support young kittens onsite. Their immature immune systems make them highly susceptible to illness in high-volume settings, and most shelters cannot provide the overnight, round-the-clock feeding neonates require. But this does not mean they cannot be saved – it means fostering is essential. When kittens are placed in foster homes, they experience lower disease exposure, closer monitoring, and the consistent care necessary to survive.

The good news is that when shelters develop strong foster programs, community members are often willing to help. According to the

**[2025 Shelter Grant Report](#)** from Orphan Kitten Club, organizations that were provided with kitten-focused foster coordinators and free supplies for foster parents saw dramatic improvements in recruitment and live outcomes.<sup>69</sup> Equipped with robust foster programs, these shelters were able to maintain save rates as high as 95% for neonatal kittens. With the dedicated staff to train foster caregivers and the tangible resources that make fostering feasible, capacity expands and outcomes improve substantially.

One of the most effective foster recruitment strategies is to ask the finders themselves. Roughly 80% of shelter kittens are discovered outdoors by compassionate community members, and finder-to-foster programs (sometimes called diversion programs) can net powerful results, with roughly 30-40% agreeing to foster when provided with support and guidance.<sup>70</sup> After **[implementing a diversion program](#)** in 2024, Orphan Kitten Club’s partner shelter Riverside County Animal Care Services saw more than a 250% increase in live outcomes for kittens simply by asking finders if they would help and providing the tools to do so.<sup>67,71</sup>

Across the country, shelters are strengthening foster systems through supply distribution, dedicated coordinator roles, and kitten-focused education. Today, 85% of foster parents report receiving free supplies, significantly lowering financial barriers that often prevent participation.<sup>72</sup> These evidence-based strategies show that when shelters invest in community-centered programs, kittens can thrive.



## Organizations and Programs

For shelters with sufficient resources, establishing a dedicated kitten nursery can be a transformative and lifesaving tool. These specialized facilities are staffed by trained employees and volunteers who can provide the intensive, round-the-clock care that neonatal kittens require, including frequent bottle-feeding, temperature regulation, and medical monitoring.<sup>73</sup> **Best Friends** has been a key leader in helping to establish these nurseries in multiple locations in the U.S., including Salt Lake City, Los Angeles, and New York City, among others.<sup>73</sup>

**Humane World for Animals** employs a multifaceted approach to animal welfare. Their work includes direct intervention through large-scale spay/neuter and vaccination campaigns like the "Spayathon" for Puerto Rico, which provided care for over 60,000 animals over multiple years.<sup>74</sup> They also run programs focused on managing community cats (outdoor, unowned, free-roaming cats)<sup>75</sup>, provide mentorship and grant funding to local shelters, and engage in high-level policy and legislative advocacy to create systemic change to better the lives of community cats.

**Hill's Pet Nutrition** is passionate about ending pet homelessness and works to eliminate this through the Hill's Food, Shelter & Love Program.<sup>72</sup> Since 2002, Hill's has provided more than \$300 million worth of Hill's brand pet foods to more than 1,000 animal shelters. The program provides food to the shelters at a significant discount.<sup>76</sup> Through the Food, Shelter & Love Program, Hill's has supported over 16 million pet adoptions – and counting! The annual "**State of Shelter Pet Adoption Report**" also provides valuable data and insights to animal care professionals to help them understand barriers, perceptions, and opportunities in order to help provide the best care to the shelter animals in the U.S.<sup>72</sup>

While these organizations are instrumental for all of our companion animals, organizations like the **National Kitten Coalition (NKC)** focuses exclusively on kittens. Their mission statement "Increasing kitten survival rates and transforming their lives through the power of education" highlights their methods of working toward achieving their goal to give all kittens a chance to grow and thrive.<sup>44</sup> They accomplish this mission through various initiatives focused on educating and training animal shelter and veterinary staff, rescue groups, volunteers, and fosters to deliver high-quality, cost-effective care. Additionally, they foster cooperation and information sharing within the animal welfare community.<sup>77</sup>

Rosemarie Crawford is the Director of Educational Programs at NKC and she stresses the importance of what they do. Rosemarie states that many veterinarians have told her that they do not receive enough information about neonatal kitten care during school and do not feel well-equipped to handle these tiny patients. She also sees misconceptions about neonatal kittens from the general public - including inaccuracies about hand-raising neonates that require bottle feeding and properly identifying an abandoned kitten. To combat



this lack of information, NKC has developed a [kitten resource library](#) that is free for anyone to access. It contains a wealth of information about kittens, fostering, and other topics. NKC also offers webinars, workshops, and courses in kitten care, which are attended by people all over the world.

## National Kitten Care Library

### Kitten Care Topics

The National Kitten Coalition provides detailed information on important topics that apply to all kittens, as well as detailed information specifically bottle babies, weaning and weaned kittens, and pregnant and nursing queens.

[Preparing for Kittens](#)

[Assessing Kittens](#)

[Bottle Kittens](#)

[Weaning Kittens](#)

[Weaned Kittens](#)

[Pregnant and Nursing Queens](#)

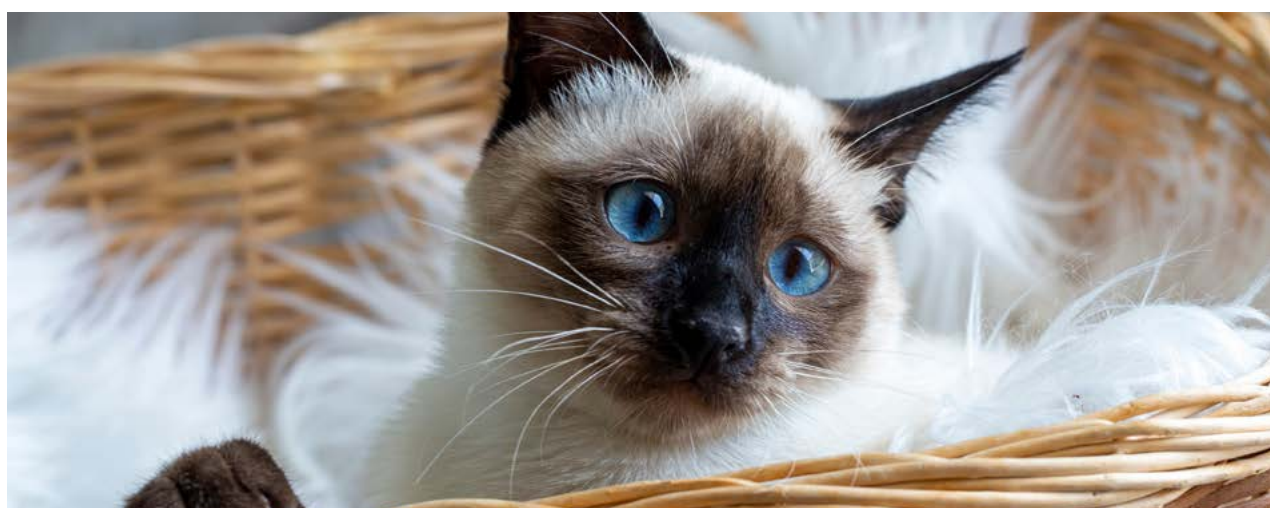
[Disease Transmission](#)

[Finding Kittens Outdoors](#)

Sometimes, a single individual can make a big difference – and [Hannah Shaw](#) (aka Kitten Lady) is a prime example of someone who has made a huge difference in the lives of neonatal kittens. Hannah, an award-winning kitten rescuer, humane educator, and *New York Times* bestselling author, founded Kitten Lady to evolve kitten care and protect vulnerable felines.<sup>78</sup> Her project offers educational media, training resources, and workshops to help individuals and shelters save kittens' lives in an engaging format. Kitten Lady has a viral social media following, which she uses as a global training resource. Hannah also founded [Orphan Kitten Club](#), a 501(c)3 nonprofit which is the nation's only grant provider for kitten programs, medical care, and research.

Orphan Kitten Club is the nation's leading charitable organization dedicated to advancing kitten welfare. Kittens under eight weeks old are the most vulnerable animals entering shelters, experiencing the highest mortality rates of any population. Orphan Kitten Club works to make kitten lifesaving the standard in every community through a strategic four-pillar approach: administering the first and only national grant program focused solely on neonatal kitten care and lifesaving; mentoring shelter leaders in implementing data-driven best practices; advancing veterinary medicine through ethical pediatric research; and running a specialized kitten nursery that provides around-the-clock expert care for neonates and kittens with complex medical needs. Since 2016, Orphan Kitten Club has invested more than \$4 million in transformative kitten-focused grants, helping save over 100,000 kittens while building sustainable systems that strengthen kitten care nationwide.

These are just some of the amazing programs, organizations, and individuals that are hard at work saving the lives of cats and kittens all over the world. Many of these charitable organizations are primarily reliant on volunteers and donations, so even if fostering is not for you, consider supporting organizations like NKC and Orphan Kitten Club through financial or material donations. Shelters can always use items like food, cat litter, toys, blankets, and cleaning supplies!



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# Conclusion

Substantial and comprehensive changes have been made to protocols for neonatal and infectious disease management leading to improved kitten survival rates. Furthermore, the modern kitten wellness protocol that encompasses early-age sterilization, proactive nutritional management, and behavioral guidance establishes a robust foundation for lifelong health. The attention and dedication to kittens – especially the incredibly vulnerable neonates – from organizations and individuals has already improved the lives of countless kittens, resulting in more adult cats and more happy cat parents!

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## **C.A.T. Members:**

- Alexandre G.T. Daniel, MV, MSc, DipABVP (Feline), FFABVP (CAPMP)
- Elaine Wexler Mitchell, DVM, DABVP (Feline)
- Ashlie Saffire, DVM, DABVP (Feline Practice)
- Julie A. Churchill, DVM, PhD, DACVIM (Nutrition)
- Erin Dresner, DVM, MS, CVMA, DABVP (Feline)
- Petra Černá, PhD, DACVIM (SAIM), Dipl. ECVIM-CA, DABVP (Feline), MANZCVS (Medicine of Cats), CertAVP (SAM - F) MRCVS AFHEA AdvCertFB
- Lisa Restine, DVM, DABVP (Feline)



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