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BREEDING CATS AND RAISING KITTENS

Breeding cats and raising kittens can be an extremely rewarding experience or it may produce frustration and failure. The following information is provided in order to increase your chances of success.

How often does a female cat come into heat?

The female cat (queen) comes into heat (estrus) many times each year. The heat period lasts about 2-3 weeks. If she is not bred, she will return to heat in 1-2 weeks. This cycle will continue for several heat cycles or until she is bred. The period of time that she is out of heat will vary depending on geographic and environmental factors, such as temperature and the number of daylight hours.

What are the signs of heat?

The signs of heat are different in cats as compared to dogs. Cats have minimal vaginal bleeding, usually not even enough to be detected. Their behavior is the most notable sign. Cats become very affectionate. They rub against their owners and furniture and constantly want attention. They roll on the floor. When stroked over the back, they raise their rear quarters into the air and tread with the back legs. They also become very vocal. These behavior changes often become obnoxious to owners and may be interpreted as some unusual illness. In addition, queens in heat attract unneutered male cats. Tom cats that have never been seen will appear and attempt to enter the house to get to the female.

What should I do to be sure that a breeding is accomplished successfully?

Male cats are more successful breeders in familiar surroundings. Therefore, it is preferable to take the female to the male's home for breeding. The timing for breeding cats is not highly critical or complicated because cats are induced ovulators. This means that the act of breeding stimulates the ovaries to release eggs. Therefore, the female's eggs should be released from the ovaries when the sperm are deposited in the reproductive tract at breeding. Most female cats require 3-4 breedings within a 24 hour period for ovulation to occur. Once ovulation has occurred, the female cat will go out of heat within a day or two.

What should I expect during pregnancy?

Pregnancy, also called the gestation period, ranges from 60 to 67 days and averages 63 days; most cats deliver (queen) between days 63 and 65. The only way to accurately determine the stage of pregnancy is to count days from the time of breeding. If possible, the breeding date(s) should be recorded. The mother should be examined three weeks after breeding to confirm her pregnancy.

A pregnant cat should be fed a kitten formulation of a premium brand of cat food for the duration of the pregnancy and through the nursing period. These diets are generally available through veterinary hospitals or pet stores. Kitten diets provide all the extra nutrition needed for the mother and her litter. If the mother is eating one of these diets, no calcium, vitamin, or mineral supplements are needed. (The kitten formulation is necessary to provide the extra nutrients for pregnancy and nursing.)

During pregnancy the mother's food consumption will often reach 1.5 times her level before pregnancy. By the end of the nursing period, it may exceed two times the pre-pregnancy amount. Do not withhold food; increasing the number of feedings per day is helpful in allowing her to eat enough for her needs and those of the kittens.



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What should I do to prepare for queening?

From the time of breeding, many cats show behavioral changes. Most develop an unusually sweet and loving disposition and demand more affection and attention. However, some may become uncharacteristically irritable. Some experience a few days of vomition ("morning sickness") followed by the development of a ravenous appetite which persists throughout the pregnancy.

During the latter stages of pregnancy, the expectant mother begins to look for a secure place for delivery. Many become uncomfortable being alone and will cling closely to their owner. At the onset of labor, many nervously seek a place to make the "nest" or birthing place. If the cat is attached to her owner, she will not want to be left alone at the time of delivery. If left alone, she may delay delivery until the owner returns.

Prior to the time of delivery, a queening box should be selected and placed in a secluded place, such as a closet or a dark corner. The box should be large enough for the cat to move around freely, but have low enough sides so that she can see out and so you can reach inside to give assistance, if needed. The bottom of the box should be lined with several layers of newspapers. These provide a private hiding place for the expectant and delivering mother and will absorb the birthing fluids. The upper, soiled layers may be removed with minimal interruption to the mother and her newborn kittens.

What happens during labor and delivery?

Most cats experience delivery without complications; however, first-time mothers should be attended by their owners until at least one or two kittens are born. If these are born quickly and without assistance, further attendance may not be necessary, although it is desirable. If the owner elects to leave, care should be taken so that the cat does not try to follow and leave the queening box.

The signs of impending labor generally include nervousness and panting. The cat will often quit eating during the last 24 hours before labor. She will also usually have a drop in rectal temperature below 100°F (37.8°C). The temperature drop may occur intermittently for several days prior to delivery, but it will usually be constant for the last 24 hours.

Delivery times will vary. Shorthair cats and cats having slim heads, such as Siamese, may complete delivery in one to two hours. Domestic body type cats (having large, round heads) generally require longer delivery times. Persian and other domestic body type kittens tend to be very large and have sizable heads that make delivery more difficult. It is not unusual for Persians to rest an hour or more between each kitten. Rarely, a cat may deliver one or two kittens then have labor stop for as long as twenty-four hours before the remainder of the litter is borne. However, if labor does not resume within a few hours after the delivery of the first kittens, examination by a veterinarian is advised. If labor is interrupted for twenty-four hours or more, veterinary assistance should definitely be obtained.

Kittens are usually born head first; however, breech presentations, in which the kitten is delivered tail-end first, occur about 40% of the time and are also considered normal. Each kitten is enclosed in a sac that is part of the placenta ("afterbirth"). The placentas usually pass after the kittens are born. However, any that do not pass will disintegrate and pass within 24-48 hours after delivery. It is normal for the mother to eat the placentas.

If the delivery proceeds normally, a few contractions will discharge the kitten; it should exit the birth canal within ten minutes of being visible. Following delivery, the mother should lick the newborn's face. She will then proceed to wash it and toss it about. Her tongue is used to tear the sac and expose the mouth and nose. This vigorous washing stimulates circulation, causing the kitten to cry and begin breathing; it also dries the newborn's haircoat. The mother



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will sever the umbilical cord by chewing it about 3/4 to 1 inch (1.9 to 2.5 cm) from the body. Next, she will eat the placenta.

If the kitten or a fluid-filled bubble is partially visible from the vagina, the owner should assist delivery. A dampened gauze or thin wash cloth can be used to break the bubble and grasp the head or feet. When a contraction occurs, firm traction should be applied in a downward (i.e., toward her rear feet) direction. If reasonable traction is applied without being able to remove the kitten, or if the queen cries intensely during this process, the kitten is probably lodged. A veterinarian's assistance should be sought without delay.

It is normal for the female to remove the placental sac and clean the kittens; however, first-time mothers may be bewildered by the experience and hesitate to do so. If the sac is not removed within a few minutes after delivery, the kitten will suffocate, so you should be prepared to intervene. The kitten's face should be wiped with a damp wash cloth or gauze to remove the sac and allow breathing. Vigorous rubbing with a soft, warm towel will stimulate circulation and dry the hair. The umbilical cord should be tied with cord (i.e., sewing thread, dental floss) and cut with clean scissors. The cord should be tied snugly and cut about 1/2 inch (1.3 cm) from the body so it is unlikely to be pulled off as the kitten moves around the queening box.

Newborn kittens may aspirate fluid into the lungs, as evidenced by a raspy noise during respiration. This fluid can be removed by the following procedure. First, the kitten should be held in the palm of your hand. The kitten's face should be cradled between the first two fingers. The head should be held firmly with this hand, and the body should be held firmly with the other. Next, a downward swing motion with the hands should make the kitten gasp. Gravity will help the fluid and mucus to flow out of the lungs. This process may be tried several times until the lungs sound clear. The tongue is a reliable indicator of successful respiration. If the kitten is getting adequate oxygen, it will appear pink to red. A bluish colored tongue indicates insufficient oxygen to the lungs, signaling that the swinging procedure should be repeated.

It may be helpful to have a smaller, clean, dry box lined with a warm towel for the newborn kittens. (A towel can be warmed in a microwave oven.) After the kitten is stable and the cord has been tied, it should be placed in the incubator box while the mother is completing delivery. Warmth is essential so a heating pad or hot water bottle may be placed in the box, or a heat lamp may be placed nearby. If a heating pad is used, it should be placed on the low setting and covered with a towel to prevent overheating. A hot water bottle should be covered with a towel. Remember, the newborn kittens may be unable to move away from the heat source. Likewise, caution should also be exercised when using a heat lamp.

Once delivery is completed, the soiled newspapers should be removed from the whelping or queening box. The box should be lined with soft bedding prior to the kittens' return. The mother should accept the kittens readily and recline for nursing.

The mother and her litter should be examined by a veterinarian within 24 hours after the delivery is completed. This visit is to check the mother for complete delivery and to check the newborn kittens. The mother may receive an injection to contract the uterus and stimulate milk production.

The mother will have a bloody vaginal discharge for 3-7 days following delivery. If it continues for longer than one week, she should be examined by a veterinarian for possible problems.



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What happens if my cat has trouble delivering her kittens?

Although most cats deliver without need for assistance, problems do arise which require the attention of a veterinarian. Professional assistance should be sought if any of the following occur:

- 1) Twenty minutes of intense labor occurs without a kitten being delivered.
- 2) Ten minutes of intense labor occurs when a kitten or a fluid-filled bubble is visible in the birth canal.
- 3) The mother experiences sudden depression or marked lethargy.
- 4) The mother's body temperature exceeds 103°F (39.4°C) (via a rectal thermometer).
- 5) Fresh blood discharges from the vagina for more than 10 minutes.

Difficulty delivering (dystocia) may be managed with or without surgery. The condition of the mother, size of the litter, and size of the kittens are factors used in making that decision.

Is premature delivery a likely problem?

Occasionally, a mother will deliver a litter several days premature. The kittens may be small, thin, and have little or no hair. It is possible for them to survive, but they require an enormous amount of care, since they are subject to chilling and are frequently very weak and unable to swallow. Some may be able to nurse but are so weak that they must be held next to the mother. Kittens that do not nurse can be fed with a small syringe, bottle, or stomach tube. The equipment and instructions for these procedures are available from a veterinarian. Premature kittens must be kept warm. The mother can provide sufficient radiant heat from her body if she will stay close to them. If she refuses, heat can be provided with a heat lamp, heating pad, or hot water bottle. Excessive heat can be just as harmful as chilling, so any form of artificial heat must be controlled. The temperature in the box should be maintained at 85° to 90°F (29.4° to 32.2°C), but the box should be large enough so the kittens can move away from the heat if it becomes uncomfortable.

Is it likely that one or more kittens will be stillborn?

It is not uncommon for one or two kittens in a litter to be stillborn. Sometimes, a stillborn kitten will disrupt labor, resulting in dystocia. At other times the dead kitten will be born normally. Although there is always a cause for this occurrence, it is often not easily determined without an autopsy that includes cultures and the submission of tissues to a pathologist. This is only recommended in special circumstances.

What do I do to care for the newborn kittens?

The mother will spend most of her time with the kittens during the next few days. The kittens need to be kept warm and to nurse frequently; they should be checked every few hours to make certain that they are warm and well fed. The mother should be checked to make certain that she is producing adequate milk.

If the mother does not stay in the box, the kittens' temperature must be monitored. If the kittens are cold, supplemental heating should be provided. During the first four days of life, the newborns' box should be maintained at 85° to 90°F (29.4° to 32.2°C). The temperature may gradually be decreased to 80°F (26.7°C) by the seventh to tenth day and to 72°F (22.2°C) by the end of the fourth week. If the litter is large, the temperature need not be as high. As kittens huddle together, their body heat provides additional warmth.



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If the mother feels the kittens are in danger or if there is too much light, she may become anxious. Placing a sheet or cloth over most of the top of the box to obscure much of the light may resolve the problem. An enclosed box is also a solution. Some cats, especially first-time mothers, are more anxious than others. Such cats may attempt to hide their young, even from her owner. Moving from place to place may continue and will endanger the kittens if they are placed in a cold or drafty location. Cats with this behavior should be caged in a secluded area. This type of mother has also been known to kill her kittens as a means of "protecting" them from danger.

What are the signs that the kittens are not doing well and what do I do?

Kittens should eat or sleep 90% of the time during the first two weeks. If they are crying during or after eating, they are usually becoming ill or are not getting adequate milk. A newborn kitten is very susceptible to infections and can die within 24 hours. If excessive crying occurs, the mother and entire litter should be examined by a veterinarian promptly.

When the milk supply is inadequate, supplemental feeding one to three times per day is recommended and should be performed on any litter with five or more kittens. There are several commercial formulae available that are made to supply the needs of kittens. They require no preparation other than warming. They should be warmed to 95° to 100°F (35° to 37.8°C) before feeding. Its temperature can be tested on one's forearm; it should be about the same as one's skin. An alternative is canned goats' milk that is available in most grocery stores. The commercial products have directions concerning feeding amounts. If the kittens are still nursing from their mother, the amounts recommended will be excessive. Generally, 1/3 to 1/2 of the listed amount should be the daily goal. Supplemental feeding may be continued until the kittens are old enough to eat kitten food.

If the mother does not produce milk or her milk becomes infected, the kittens will also cry. If this occurs, the entire litter could die within 24 to 48 hours. Total replacement feeding, using the mentioned products, or adopting the kittens to another nursing mother is usually necessary. If replacement feeding is chosen, the amounts of milk listed on the product should be fed. Kittens less than two weeks of age should be fed every 3-4 hours. Kittens 2-4 weeks of age do well with feedings every 6-8 hours. Weaning, as described below, should begin at 3-4 weeks of age.

What should I expect during the kittens' first few weeks of life?

For the first month of life kittens require very little care from the owner because their mother will feed and care for them. They are born with their eyes closed, but they will open in 7 to 14 days. If swelling or bulging is noted under the eyelids, they should be opened gently. A cotton ball dampened with warm water may be used to assist opening the lids. If the swelling is due to infection, pus will exit the open eyelids and should be treated as prescribed by a veterinarian. If the eyes have not opened within 14 days of age, they should be opened by a veterinarian.

Kittens should be observed for their rate of growth. They should double their birth weight in about one week.

two weeks of age, kittens should be alert and trying to stand. At three weeks, they generally try to climb out of their box. At four weeks, all of the kittens should be able to walk, run, and play.

Kittens should begin eating solid food about 3½ to 4½ weeks of age. Initially, one of the milk replacers or cow's milk diluted 50:50 with water should be placed in a flat saucer. The kittens' noses should be dipped into the milk two or three times per day until they begin to lap; this usually takes 1-3 days. Next, canned kitten food should be placed in the milk until it is soggy. As the kittens lap the milk, they will also ingest the food. The amount of milk should be decreased daily until they are eating the canned food with little or no moisture added; this should occur by four to six weeks of age.



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I have heard of milk fever. What exactly is it?

Eclampsia or milk fever is a depletion of calcium from the mother due to heavy milk production. It generally occurs when the kittens are 3-5 weeks old (just before weaning) and most often to mothers with large litters. The mother has muscle spasms resulting in rigid legs, spastic movements, and heavy panting. This can be fatal in 30-60 minutes, so a veterinarian should be consulted immediately.

Do kittens need a special diet?

Diet is extremely important for a growing kitten. There are many commercial foods specially formulated for kittens. These foods meet their unique nutritional requirements and should be fed until 12 months of age. Kitten foods are available in dry and canned formulations. Dry foods are less expensive and can be left in the bowl for the kitten to eat at will. Kittens will eat small amounts as often as 12 times during the day. Canned foods offer a change and are just as nutritious.

We recommend that you buy FOOD FORMULATED FOR KITTENS. Adult formulations are not recommended since they do not provide the nutrition required for a kitten. Advertisements tend to promote taste rather than nutrition so one should be careful that their influence on purchasing habits is not detrimental to one's cat. Generic foods should be avoided. Table food is not recommended; although often more appealing than cat food, balanced, complete nutrition is usually compromised. Dog food should not be fed to cats since it is deficient in vital nutrients and the amount of protein required by kittens and adult cats.

We recommend that you buy NAME BRAND FOOD. It is generally a good idea to avoid generic brands of food. We recommend that you only buy food which has the AAFCO (American Association of Feed Control Officials) certification. Usually, you can find this information very easily on the food label. AAFCO is an organization which oversees the entire pet food industry. It does not endorse any particular food, but it will tell you if the food has met the minimum requirements for nutrition which are set by the industry. Most of the commercial pet foods will have the AAFCO label. In Canada, look for foods approved by the Canadian Veterinary Medical Association (CVMA).

When should vaccinations begin?

Kittens are provided some immunity to feline diseases before and shortly after birth. The mother's antibodies cross the placenta and enter the kittens' circulation. Some antibodies are also provided in the mother's milk. These "maternal antibodies" protect the kittens against the diseases to which the mother is immune. This explains why it is desirable to booster the mother's vaccinations within a few months prior to breeding.

Although very protective, maternal antibodies last for only a few weeks; after this time, the kitten becomes susceptible to disease. The vaccination program should be started at about 6 to 8 weeks of age. Kittens should be vaccinated against feline enteritis (distemper), respiratory organisms (rhinotracheitis, calici, and pneumonitis), and rabies. If the kitten will be allowed to go outdoors or will be in contact with cats that go outdoors, leukemia and feline infectious peritonitis (FIP) vaccine should also be considered. Your cat's needs will be discussed at the time of the first visit for vaccinations.

Maternal antibodies are passed in the mother's milk only during the first 1-3 days after delivery. If, for any reason, the kittens do not nurse during this important period of time, their vaccinations should begin about 2 to 4 weeks of age, depending on likely disease exposure. A veterinarian can make specific recommendations for each particular situation.



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Do all kittens have worms?

Intestinal parasites ("worms") are common in kittens. Symptoms include a general poor condition, chronic soft or bloody stools, loss of appetite, a pot-bellied appearance, loss of luster of the haircoat, and weight loss. Some parasites are transmitted from the mother to her offspring and others are carried by fleas. Some are transmitted through the stool of an infected cat. Very few of these parasites are visible in the stool, so their eggs must be detected by the veterinarian with a microscope.

A microscopic examination of the feces will reveal the eggs of most of these parasites. Generally this test should be performed at the time of the first vaccinations. However, it may be performed as early as three weeks of age if a parasite problem is suspected. Treatment is based on the type of parasites found although some veterinarians elect to treat all kittens because they know that fecal tests can be falsely negative. Your veterinarian should be consulted for specific recommendations for your kittens.