

TRURO VETERINARY HOSPITAL

165 Arthur Street
Truro, N.S. B2N 1Y3
www.trurovet.com

Dr. Gwen Mowbray-Cashen
Phone: (902) 893-2341

Dr. Adva Barkai-Ronayne
Fax: (902) 893-2343

Dr. Julia Gilkerson
trurovet@tru.eastlink.ca

BREEDING and QUEENING CATS

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 or queen comes into "heat" or *estrus* many times each year. The heat period lasts about several days. If she is not bred, she will return to heat in one to two 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 estrus?

The signs of "heat" are different in cats as compared to dogs. Cats have minimal vaginal bleeding, usually unseen by owners. Their change in behavior is the most notable sign. Cats become very affectionate, 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 intact male cats. Tomcats that have never been seen will appear and attempt to enter the house to mate with the female.



What should I do to be sure that breeding is successful?

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 female can be bred at any time during her active phase of estrus because cats are *induced ovulators*. This means that the act of breeding stimulates the ovaries to release eggs. Therefore, the female's eggs will be released from the ovaries when the sperm are deposited in the reproductive tract at breeding. Most female cats require three to four matings within a twenty-four 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; most cats deliver kittens or *queen* between days 63 and 65. The breeding date(s) should be recorded so that the delivery date can be predicted. The mother should be examined three to four weeks after breeding to confirm her pregnancy.

A pregnant cat should be fed a pregnant cat or 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.

During pregnancy the mother's food consumption will often reach 50% more than her level before pregnancy. By the end of the nursing period, it may be more than double the pre-pregnancy amount. Do not withhold food; increasing the number of feedings per day is helpful in allowing her to eat enough to meet her needs and those of the kittens.

What should I do to prepare for the kittens' birth?

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 vomiting or "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 or birthing 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 you can reach inside to give assistance, if needed. The bottom of the box should be lined with several layers of newspapers or other disposable absorbent material. 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 twenty-four hours before labor. She will also usually have a drop in rectal temperature, to less than 100°F (37.8°C). The temperature drop may occur intermittently for several days prior to delivery, but it will usually be constantly low for the last twenty-four hours.

Delivery times will vary. Shorthaired 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 stop labor for as long as twenty-four hours before the remainder of the litter is born. 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 often 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* or afterbirth. The remainder of the placentas usually pass after the kittens are born. However, any that do not pass will disintegrate and pass within twenty-four to forty-eight 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 use her tongue to tear open the sac and expose the kitten's mouth and nose., which she will lick clean of fluids. . She will then proceed to wash its body and toss it about. This vigorous washing stimulates circulation, causing the kitten to cry and begin breathing; it also dries the newborn's haircoat. The mother 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. Immediate veterinary care is needed.

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, which you will notice by a raspy noise during breathing. 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, swing the hands rapidly downward, a motion that should make the kitten gasp. Gravity will help the fluid and mucus to flow out of the lungs. This process may be repeated several times until the lungs sound clear. The color of the tongue is a reliable indicator of success. 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 lowest setting and covered with a towel to prevent overheating. A hot water bottle should be covered with a towel. Remember that the newborn kittens may be unable to move away from the heat source. Likewise, caution should be exercised when using a heat lamp.

Once delivery is completed, the soiled newspapers should be removed from the 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 twenty-four hours after the delivery is completed. This visit is to ensure that there are no undelivered kittens, and to check over the mother and 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 three to seven days following delivery. If it continues for longer than one week, she should be examined by a veterinarian for possible problems.

What happens if my cat has trouble delivering her kittens?

Although most cats deliver without need for assistance, problems may arise which require a veterinarian. Professional assistance should be

sought if any of the following occur:

- 1) Twenty minutes of intense labor contractions occur 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 ten minutes.

Difficulty delivering called *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 prematurely. 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 stays 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 carefully 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.

*This client information sheet is based on material written by Ernest Ward, DVM
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