



Clermont Animal Hospital Inc.

PARTURITION

Parturition, or whelping, refers to the birthing process. While complications may occur at any time during the pregnancy, most of the life-threatening complications occur during parturition. For this reason, it is important that your dog is closely monitored throughout the whelping process.

How do I know when **my** bitch will whelp?

The following changes in your bitch will help predict when whelping will occur. It is important to note, however, that not all dogs will fit the pattern exactly. For this reason, these changes can only give an estimate, not an exact date.

If your bitch is showing signs that she is ready to whelp but does not go into labor, it is important to contact one of the veterinarians at Clermont Animal Hospital, Inc. Some bitches never go into active labor and require veterinary assistance.

Calendar Method: Canine gestation (pregnancy) is typically 63 days, but can range from 59-68 days. Record the dates of all successful breedings on a calendar. For bitches bred over more than several days, choose the middle date to count from. If successful breedings span more than a week, this method is not reliable and must be combined with other methods. At 56-57 days after breeding, start monitoring your bitch closely for other signs of labor. If your bitch has not whelped by 65 days, an X-ray is recommended to determine the expected date of whelping and make sure there are no problems with the pregnancy.

Milk Production: Usually the milk production begins 1-3 days prior to parturition, but it may occur as early as 7 days before whelping. Some bitches will not have milk evident until after they are in labor. While some bitches may leak milk, gently squeezing the nipple to check for milk will be necessary in most bitches.

Temperature Shift: The temperature of almost all bitches will drop below 100°F approximately 24 hours before parturition. In many cases, the temperature will drop even lower (below 99°F) within 12 hours of whelping. Owners should start taking their bitch's temperature two to three times a day beginning on day 57 of pregnancy. If a temperature below 100°F is noted, regular (every 4-6 hours) temperature monitoring is recommended. If the temperature is consistently below 100°F for more than 24 hours without signs of parturition, please call and speak to one of our veterinarians.

Refusal to Eat: Most bitches will refuse to eat for four to 24 hours before they go into labor. This is normal and expected. Do not try to force your dog to eat. However, if the anorexia does not correspond with other signs of impending parturition or if your dog goes for more than 48 hours without eating, please contact our hospital.

Stage I Labor: Stage I labor usually begins about 12 hours before active labor. Refer to the signs of stage one labor on the next page. Once signs of Stage I labor begin, it is important that your dog not be left unattended.

X-ray Evidence: As discussed in the section on Pregnancy Determination, X-rays can help determine the expected whelping date by staging the fetal development. This is especially important in dogs who have passed their expected due date without any signs of active labor.

What happens during parturition?

Parturition can be divided into three stages.

Stage I: The cervix relaxes and dilates. The uterine contractions are very weak and are therefore not visible externally. However, the bitch may become very nervous and may pant, pace, shiver, or refuse to eat. Some bitches seek seclusion, but most pet bitches prefer the presence of the owner. Many bitches will exhibit "nesting" behavior as they prepare a spot to give birth to their pups. Stage I usually lasts approximately 12 hours.

Stage II: This stage is characterized by visible and forceful straining. The muscles of the belly wall will squeeze in very much like they do when your dog is having a bowel movement. The initial contractions are approximately 15 minutes apart with intervening periods of rest. The frequency and force of contractions increase as the pup enters the birth canal. The water breaks as each pup passes into the pelvic canal. However, the membrane covering the pup is usually ruptured by the bitch. The bitch then thoroughly licks the pup, which not only cleans and dries the newborn but also stimulates circulation and respiration.

Stage III: During this stage the fetal membranes pass. This usually occurs within 15 minutes after each pup. However, more pups may be delivered before the membranes are expelled. The bitch may try to eat the fetal membranes. Because this may lead to upset stomach and vomiting, it is recommended that the fetal membranes be removed before they can be eaten.

The second and third stages are then repeated, but the interval between deliveries is extremely variable. The bitch may deliver the first few pups within minutes and then rest an hour or two before resuming contractions. The total whelping time can vary from four to 24 hours depending on the litter size.

When should I seek veterinary assistance?

While most bitches will give birth without needing medical assistance, it is important to know when to call for help. The following is a list of situations that require timely veterinary care in order to ensure the survival of both the bitch and her pups.

1. Signs of impending labor are present (temperature drop, refusal to eat, and/or signs of Stage I labor) without any active labor for more than 24 hours.
2. Forceful labor lasts longer than 15-30 minutes without producing a pup. A puppy retained in the birth canal seldom survives longer than two hours.
3. Weak, infrequent labor fails to be productive within three hours.
4. More than three hours passes in between pups without further signs of forceful labor.

How should I care for the pups during the whelping process?

Bitches require a calm, quiet environment during the whelping process. While it is important to monitor your dog, it is also important to give her as much privacy as possible. Many dogs will resist active labor if there is too much commotion or too many people staring at her. Designate one person to be responsible for monitoring and caring for the bitch during the whelping. All other people should be encouraged to stay out of the whelping area.

Experienced bitches know what to expect during the birthing process, but first time mothers may be anxious or frightened. If this seems to be the case, use soothing words to calm your dog and encourage her to relax. You can also pet her or gently massage her belly. Take caution, however,

because some dogs may try to bite out of fear or confusion, even if this is not their normal temperament.

Most bitches are attentive to their puppies and require little assistance during whelping. However, if the mother ignores her pups you must care for them until she is ready to accept them. First remove the fetal membrane (if present) and clear their mouth and nose of fluid and mucus. Then briskly rub their sides with clean, dry towels to stimulate breathing. After the pup appears to be stable, the umbilical cord can be tied off with thread or dental floss 1-1.2 inches from its body. Trim off the excess cord with a sharp scissors and dab with povidone-iodine. Chilled or weak pups should be warmed and supplemented with a mixture of warm water and karo syrup or honey.

Encourage puppies to nurse as soon as possible. This stimulates oxytocin release, which increases uterine contractions and expedites the birthing process. Be sure to take the pups away during active labor. When a bitch is in hard labor, she may accidentally step on or injure a pup, or the puppies may become chilled without the mother's body for warmth. It is extremely important to keep the pups warm and dry (See "Temperature Maintenance" section under Puppy Management). Occasionally the bitch will not accept the pups until whelping is complete. These puppies will need to be cared for until the mother will accept them.

What should I do for postpartum care?

Cleaning the bitch and pups:

After the bitch has given birth to the last puppy, cleaned all of the puppies, and had an opportunity to nurse, the bitch can be cleaned. Use a warm, wet rag to gently clean her vulva and rear legs. Be sure to dry her thoroughly with a warm, soft towel so that she does not become chilled. All bitches have a dark-green watery discharge for approximately two weeks postpartum. However, a bright red or foul-smelling discharge is abnormal. Be sure to check and clean the bitch once or twice daily.

Most bitches will keep the puppies clean and dry by licking them. If a bitch does not do this, it will be necessary to wipe the puppies with a warm, damp (not wet) rag to remove the birth fluid and later the feces. Be sure all puppies are thoroughly dry so that they do not become chilled.

Ensuring colostrum intake:

It is essential that all puppies in the litter nurse as soon as possible. The first milk produced after birth is called colostrum. It is rich in antibodies essential for a healthy immune system. Puppies that do not nurse during the first 12 hours of life are often sickly. Many do not survive for more than a month or two. Most bitches will readily nurse the puppies without any intervention, but new mothers or bitches with a poor maternal instinct may refuse to nurse the pups. If this is the case, it may be necessary to hold the bitch down once an hour for the first 12 hours in order to ensure that the puppies receive adequate colostrum. After the first 12-24 hours, it is possible to switch to bottle feeding without endangering the pups.

Veterinary Care:

Bitches and pups should undergo a routine post-whelping examination by a veterinarian the next business day after whelping. This exam is **VERY IMPORTANT** to ensure the health and survivability of the pups and to ensure that the whelping has not had any adverse affects on the bitch. The bitch needs to be palpated to ensure all pups have been delivered. The mammary glands also need to be examined for hot, painful swelling or foul odor, which indicate infection. The pups should be examined for any health problems or birth defects. Tails and dewclaws are removed between 2-3 days (if desired) according to breed characteristics.

Puppy Management

Congratulations! Your bitch is a proud new mother, but just because puppies are born healthy does not mean they will stay healthy. Death is common in newborn puppies, especially during the first five days. For the first four weeks, it is essential that you closely monitor the puppies' growth and health. Make sure that the mother is taking good care of her pups and not ignoring or injuring them.

Temperature Maintenance

Puppies under four weeks of age are incapable of adequately controlling their body temperature. The most common cause of puppy mortality (death) during the first five days of life is low body temperature. Therefore, a source of heat should be placed so that it partially covers the whelping box. A heating pad set on low and covered with 1-2 layers of towels is sufficient. If a heating pad is not available, hot water bottles or a heat lamp can be substituted. It is very important that the puppies are also able to move away from the heat source to avoid overheating. If the temperature is too high, the puppies will lie still and be listless, but if it is too low, they may whine. If puppies become too cold, they will become inactive, stop eating, and eventually may die.

The best way to monitor the temperature of the whelping box area is to place a container of water in the area. Allow the water to sit for several hours and take the temperature by placing a thermometer in the water. For the first week, keep the temperature at 90-95°F. Slowly decrease the temperature each week, until the area is room temperature (70°F) when the puppies are five weeks old. Be sure that the puppies are able to get away from the heat source so that they don't overheat.

Puppy Facts

1. Puppies cannot maintain their body temperature. Low body temperature is the most common cause of death in young puppies (see above).
2. Pups normally gain 5-10% of their body weight daily. If a puppy is not gaining weight, it is not feeding properly. The second most common cause of death in young puppies is undernourishment due to problems with nursing or inadequate milk let-down in the bitch. (See "Milk Supplementation" below.)
3. Pups less than three weeks of age sleep 90% of the time.
4. Pups should not whine or be restless for more than 1-2 minutes at a time.
5. Pups are stimulated to urinate and defecate by the mother licking the abdomen and perineal area. At 16 days of age, the pups are capable of defecating and urinating on their own.
6. Pups open their eyes at 10-15 days of age.
7. Pups open their ears at 10-20 days of age.

Routine Medical Care

Parasite Control: Approximately 80% of all puppies are born with round worms or other intestinal parasites. Puppies also can be exposed to parasites through their mother's milk. For this reason, every puppy should be wormed with a general wormer (pyrantel pamoate) every two weeks for the first two months and then monthly through five months of age. This product is available through Clermont

Animal Hospital, Inc. In addition to worming the puppies, hygiene is of utmost importance in minimizing parasitic exposure. Because intestinal parasites spread through the feces, puppies can re-infect themselves and each other if fecal material is not promptly removed from the puppy pen.

A fecal flotation test should be performed when the puppies are four to six weeks old to evaluate the effectiveness of parasite control and to screen for parasites such as coccidia that do not respond to the general wormer. To run this test we will need a small sample of puppy stool. It is best to combine stool from multiple puppies into one sample. It is not necessary to test puppies individually. This test should be repeated two weeks later and with each visit for puppy vaccinations.

Puppy Health Screening: For healthy litters, routine veterinary examination is recommended immediately after birth and again at six weeks old (generally at the time that the first vaccinations are given). One regular office call charge will cover examination of the entire litter. A separate office call will be charged separately for the bitch if she is also examined at this time.

Vaccinations: It is conventionally expected that breeders will provide the first set of vaccinations for all puppies under their care. A DHP-P combination vaccination is generally given at 5 ½ - 6 weeks of age. If the bitch is due for any vaccinations, these should also be given at this time. Each vaccination given is charged individually. Individual health records will be provided for each puppy.

The vaccination should be boosted two weeks later (at around eight weeks of age) for any puppies that remain in your care. Generally puppies are sold at eight weeks of age, and the breeder is not responsible for vaccinations beyond this. However, for puppies remaining in your care, monthly vaccinations will be necessary through five months of age. A Puppy Health and Wellness packet is available through our office and covers all routine puppy care from eight weeks and older.

Milk Supplementation

If any pup fails to gain 5-10% of its body weight daily, it should be supplemented with a milk replacement formula. A bitch's milk contains two times the calories of cow's milk so a special formula designed specifically for puppies must be used. An emergency formula can be made as follows, but it is not nutritionally complete so it should be used only temporarily until an adequate substitute is available. The formula should be refrigerated and used within 48 hours. Warm the formula to body temperature before feeding. Nurser bottles are available from our office or through most pet stores. Puppies that require milk supplementation should be examined as soon as possible by one of the veterinarians at Clermont Animal Hospital to make sure that no medical problems are present that are contributing to or caused by the decreased nursing.

Emergency Formula: 8
oz. 2% cow's milk
1 egg yolk
1 tsp. com oil
1 dropper full of liquid vitamins

Weaning Puppies

For most litters, solid food should be supplemented starting at three to four weeks of age. For large litters or in cases where the bitch is not producing adequate milk for the litter size, this can be started when the puppies are two weeks old. Initially, gruel can be made from a high-protein instant baby cereal. Mix human baby rice cereal with puppy milk replacement formula. Offer this to the puppy three to four times a day. As puppies become accustomed to solid foods, puppy formula food can be soaked in puppy milk replacement formula until soft (about 10 minutes) and then mashed with a fork.

The amount should be gradually increased until five to seven weeks of age, the time when the pups should be totally weaned over to a solid diet. As the pup's solid food intake increases, the bitch's food should decrease to gradually reduce milk production. At weaning, the bitch should be fed half of her maintenance (pre-pregnancy) diet and water should be limited to encourage her milk to dry up. Once her mammary glands have returned to normal size, gradually transition her back to her normal food and water intake.

Orphaned & Ignored Puppies

If the mother dies before the pups are weaned, or if she ignores them or attempts to injure them, it may become necessary to hand-raise the litter. If this is the case, it will be necessary for you to take over all of the care that the mother normally provides, including temperature maintenance, feeding, stimulating eliminations, and cleaning the pups.

Temperature:

Once again preventing chilling is of prime importance. (See section above on Temperature Maintenance.) Without a mother's warm body to snuggle up against, orphaned puppies often become chilled. Remember that pups under 28 days of age can only raise their body temperature 10 degrees above the room temperature, so a source of heat must be provided. The recommended temperatures are listed on the chart below:

Week 1	90°-95°
Week 2-3	80°
Week 4	75°
Week 5+	Room Temperature (70°)

Feeding:

Strong, healthy puppies under three weeks old should be fed every four to six hours. Older puppies should be fed every eight hours. Before feeding, each pup should be massaged until stimulated and then fed body temperature formula through a nurser bottle. Heat the formula in a hot water bath (NOT a microwave) and be sure to test the temperature before feeding. This is very important because formula fed too hot may cause serious burns and cold formula will chill the pup. Most pups will regulate their own intake by nursing until full and then dozing off to sleep. At three to four weeks, begin introducing solid foods (see Weaning section above). It is very important to monitor weight gain to ensure that orphans are nursing properly. Normal puppies should gain 5-10% of their body weight daily. A kitchen scale or gram scale is essential for accurate weight monitoring.

Weak or chilled pups or pups that do not nurse normally or fail to gain weight should be examined and treated by a veterinarian immediately. Smaller, more frequent feedings may be recommended for these pups. These puppies may also need to be tube fed. Our doctors or technicians can teach you how to do this and provide you with necessary supplies. In some cases, these pups will also need supplemental fluid injections, antibiotics, or other medical treatment.

At each feeding, urinations and defecations should be stimulated by rubbing the abdomen and rectal area with a warm, moist cotton ball. This is very important because newborn puppies cannot eliminate wastes without stimulation. This should be done both before and after each feeding.

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