

The 6 P's of Successful Breeding Outcomes

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1. **Progesterone Test** starting early enough and repeating the testing often and long enough to see ovulation and beyond. This is important not only to pinpoint the ideal time to breed but to also allow for accurately timing whelping and scheduling a C-section if indicated.

Failure to complete the ovulation. Did the progesterone testing continue past 5 ng/dl? If not, she may have not had a complete ovulatory cycle.

Timing the breeding with progesterone testing, vaginal cytology, and male and female interest is essential in maximal fertility outcomes. Using frozen semen requires very specific timing with progesterone testing. This discussion is covered in Canine Reproduction and Neonatology and in our other materials on breeding.

Vaginal cytology – is an old but useful tool. Vaginal cytologies will not replace progesterone testing for sophisticated breedings using fresh chilled or frozen semen. Nor is this tool accurate enough to time a scheduled c-section. However, if the breeder is struggling with timing, not getting females pregnant, or spending too much money on progesterone testing, this is a step toward better understanding the phase of a heat cycle.

Progesterone –the one female hormone used to accurately time when to breed and to time when the pregnancy should end.

Quantitative progesterone tests can be run in-house or sent to reference labs. Semi-quantitative tests – run in wells with visual color changes are not accurate enough to time bitches for frozen semen breedings or to time them for c-sections. There are at least 6 machines that can be used to run quantitative tests in-house – that is a test that provides a specific number, not an estimate based on a visual color change.

Progesterone starts low – less than 1.0 ng/dl when a bitch comes into heat. It will rise, sometimes with a wobble, as her heat progresses. Ovulation occurs when the progesterone rises to 4 ng/dl to 8 ng/dl. As her heat cycle progresses, progesterone will rise to as high as the mid 40s and stay high during the pregnancy. As whelping approaches, the progesterone will slowly drop.

For timed breedings, fresh semen or natural breedings should occur two (2) days after the progesterone reached 4 to 8 ng/dl. For frozen semen breedings, the breedings, whether done by TCI (transcervical insemination) or surgical breeding, should be done three (3) days after the progesterone reaches 4 to 8 ng/dl followed by a rapid rise if it is over 15 ng/dl. (May differ on different machines).

A bitch should whelp 63 days after ovulation (progesterone between 4 and 8 ng/dl) plus or minus 48 hours. For timed c-sections, it is safe to deliver the pups 62 days after ovulation. For timed c-sections on brachycephalic breeds (English Bulldogs, Pugs, French Bulldogs, and so on), it is safe to deliver the pups 61 days after ovulation (progesterone of 4 to 8 ng/dl). For exceptionally large litters or litters at high risk, a scheduled c-section from a well-timed breeding is usually safe on day 61 post-ovulation.

If adequate timing was not done at the time of ovulation and/or breeding, it is safe to deliver the pups when the progesterone drops below 2 ng/dl IF she does not have pre-term progesterone decline (premature delivery). Confirmation of fetal maturity by seeing good intestinal motility in the pup(s) and good renal papillae development on ultrasound suggests it is safe to proceed to c-section.

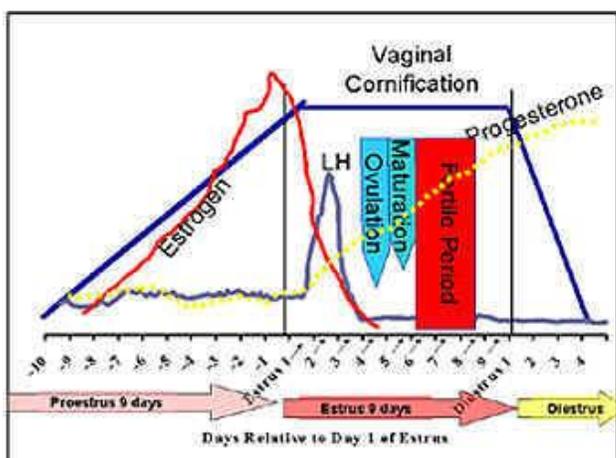
Timing of semen delivery is based more on the type of semen being used (fresh versus frozen) than on type of semen delivery (vaginal, TCI or surgical). Relying on your veterinary teams progesterone testing and experience will guide you to the ideal time for the breeding to take place.

Ovulation can be established using several approaches including female receptivity, vaginoscopy, vaginal cytology, LH testing, progesterone testing, and/or stud dog interest. Progesterone testing is most commonly used, as it is reliable and repeatable as well as quantitative. However, each veterinary practice has its preferences, so become a veterinary professional with expertise and successful outcomes.

Progesterone levels of 4 to 8 ng/dl, followed by a rapid rise, are generally indicative of ovulation. In general, fresh semen breedings are done 48 hours post ovulation, and frozen semen breedings are done 72 hours post ovulation. This may vary based on the progesterone equipment used, the type of semen and breeding planned, the experience of the veterinary team and availability of stud dog, semen, and veterinary staff.

Timing ovulation using progesterone testing serves three (3) purposes – first to assure she ovulated, second to know when to breed here, (especially important for compromised semen) and third to know when to get her “unpregnant”.

There are semi-quantitative and quantitative tests. Semi-quantitative tests use a color change such as a dot to approximate progesterone levels. Quotative tests produce a number, not an approximation on color change.



Should you own equipment to run your own quantitative progesterone tests, you should periodically compare your results with those of your veterinarians in-house or reference lab to be certain your results are reliable. This is particularly important if you are using frozen semen or timing c-sections prior to the onset of labor.

Verify the timing of the breeding, based on progesterone levels (bred 2 to 3 days post-ovulation depending on semen type used), was just right. Most veterinarians recommend

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breeding 2 days after ovulation with fresh and fresh chilled shipped semen and 3 days with frozen semen. Ovulation is assumed to occur when the progesterone reaches 5 ng/dl (different units are used in other countries) with a range of 4 to 10 ng/dl. LH testing is also done in some clinics. LH, Luteinizing hormone, directly indicates ovulation, while progesterone is an estimation of ovulation. Progesterone is easier to measure and test as it can be done every few days, using human technology. LH requires daily testing and is canine specific.

2. **Prenatal Care** is as important for our dogs as for people. This includes ideal body condition, diet and supplements, preventive care including vaccines, heartworm testing and preventive, flea and tick preventive, hygiene, and Brucella testing.

Excellent Nutrition is essential. Purina Sport 30/20 is an all life stage diet that provides superior nutrition for breeding, pregnant, lactating bitches and their pups at weaning. HT42d made by Royal Canin is the only pregnancy diet on the market. This should be fed from the expected start of the heat cycle until the 42nd day of pregnancy. At day 43, a change to [Royal Canin Starter Mousse Mother and Baby food](#) is recommended.

The importance of appropriate nutrition cannot be overstated.

You can't expect to have great fertility if you are not feeding an optimal diet to the "machine" that produces the sperm. This is not the place to scrimp on dog food. Royal Canin and Purina have diets with great track records of having the micronutrients necessary for top fertility outcomes, for the males and females. If a client is struggling with fertility, the first 4 questions I ask are: what do you feed, what else do you feed, what supplements do you include and how long have you been feeding this diet.

Macronutrients are the fats, carbohydrates, proteins and fiber in the food. Micronutrients are the vitamins and minerals in the diet. These are much more difficult to assess by reading the outside of the dog food package. Raw meat and home-made diets should be avoided. Raw meat diets put our dogs at risk of nutrients present in too large a quantity, in a deficient quantity, and can expose the dog and humans in the household to bacteria and parasites.

Additionally, dog food should be stored where it is clean and dry. The food should always be stored in the bag or package it came from the manufacturer in, so don't empty it out into a storage container.

3. **Puppy Count X-rays** should be scheduled for all dogs who are not planning a timed C-section. This will help assess the need for C-section intervention and assure you have completed her whelping. Use doctors and a team skilled at careful X-ray technique to maximize the use of this essential tool in planning.

Three to 5 days prior to anticipated whelping: Puppy count X-rays. If correctly and well done, you can get an accurate assessment of the number of pups she is pregnant with.

Tips to taking accurate X-rays include:

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- a. Use a veterinary clinic who has digital X-rays and is willing to work with you to get accurate puppy count X-rays. Work with your veterinary team to help them learn to give you an accurate count. This means showing this information to them and being supportive of them working with breeders. Be nice to ALL of the veterinary team. A plate of cookies or a pie helps them want to work with you and other breeders. Ask them to use a “grid” or increase the X-ray exposure by 10% if the first X-rays are not clear enough to be diagnostic.
- b. Schedule the X-ray appointment between days 55 and 59 of pregnancy, based on ovulation date.
- c. Make an appointment for an X-ray in the morning, and bring her fasting, with no breakfast so there is no food in her stomach, which obscures puppy skeletons. A morning appointment will make her happier so she is not hungry too long. Take her breakfast along for her to eat once the X-rays are completed.
- d. Arrive early enough to have a relaxed time to walk her. Be sure she has had a chance to urinate and have a stool before the X-rays. If she is reluctant to have a stool with walking, you can use an unlit match (yes, really) and/or a glycerin suppository to aid in encouraging this. Feces in the large intestine (colon) obscure puppy skeletons. If she has too much fecal material in her colon, insert 2 paper matches in her rectum, and walk her until she has a stool. Then repeat the X-rays.
- e. Ask them to take 2 X-rays in succession, a right and a left lateral in either order. This means the bitch will lay on the X-ray table with her right, then her left side down, or vice versa. Stretching her out a bit helps. They need to get the last rib to her thigh on the exposure. If they miss, try again. It is surprising how the shift from one side to the other will slip one pup past another that was superimposed, giving a different count on one side.

X-rays with her on her back are not particularly useful for counting. The entire skeleton of the pup could be superimposed on the spine of the bitch, meaning you would not see all the pups. Only take X-rays with her on her right AND left sides.

- f. This amount of X-rays exposure will NOT put the bitch or pups at risk of radiation exposure. Studies showing damage were done in the 1960s before we had rare earth film or digital X-rays. By the end of the pregnancy, the fetal development is complete so this is safe.
- g. Don't post your X-ray on social media, asking your friends for their opinion on the count. This is not a guessing game to play with your friends. The X-rays your vet reads are in Dicom but social media degrades the images into jpeg or worse, making the image resolution lower. Trust your veterinary professionals to learn to read and give you an accurate count. Once you are at or above 12 pups, the scatter of the X-ray beam makes accurate counting difficult. Since you will likely need a c-section at this number of pups, just schedule a c-section for day 60 and let your veterinary professional team help you deliver your litter by c-section.

- h. Once you are at or above 10 pups, the scatter of the X-ray beam makes accurate counting difficult. Since she will likely need a c-section at this number of pups, schedule a c-section.
- i. DO NOT post these X-rays on Facebook or other social media sites. With some practice, your veterinary team is your best and most highly trained source for accuracy in counting.

4. **Preparing** you for an effective whelping with a complete kit with essential c-section and drugs along with instructions on safe and appropriate use is key to a successful whelping.

[Revival Animal Health](#) offers a comprehensive Whelping Kit to ensure you have all the essential supplies on hand, along with a clear explanation of each item’s purpose.

Get prepared—[try the Whelping Kit today.](#)



I recommend getting your whelping supplies from [Revival Animal Health](#) to ensure you have everything you need on hand when the time comes.

These Chlorhexidine surgical scrub diluted to 0.5% - to treat the umbilicus at birth, 2 and 8 hours post-partum – available from your suppliers as Nolvasan solution, diluted 1:10.

1. 25 gauge hypodermic needles – used to perform acupuncture for pups that do not breath spontaneously at birth - available through your veterinary suppliers.
2. [Dopram injections](#) pre-drawn into syringes 1 per puppy anticipated (controversial but better than losing a pup) – to administer to pups that cannot be resuscitated by clearing airways and with mechanical stimulation - available through your veterinary suppliers.
3. [Pyrantel Pamoate](#) – to worm the bitch and pups at 2, 4, 6, and 8 weeks post-partum as recommended by CAPC.
4. [Stethoscope](#) – to assess newborns for a heartbeat - available through your veterinary suppliers or on line.
5. Fetal Doppler – to monitor fetal heart rates during late pregnancy and whelping - available online at Whelpwise or some clients have their own.

<i>Product (click product name to buy)</i>	<i>Expert Tip Preparation and Supplies:</i>
MagnaBox Whelping Box X-small #25140-11 Small #25140-12	A whelping box should be a safe, sturdy and secure structure that can be disinfected. The whelping box may be her place for up to eight weeks. Puppies become escape artists very quickly and a sturdy box will keep them secure and safe. Between litters, the box can be taken apart and stored flat for easy storage.

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<p>Medium #25140-13</p> <p>Large #25140-14</p> <p>X-Large #25140-15</p>	
<p>Breeder's Edge® NurseMaid™ Wipes</p> <p>#63543-475</p>	<p>It's important to keep mom clean and maintain a hygienic area for nursing puppies and kittens. Newborn skin is thin and translucent, allowing chemicals to be readily absorbed through the skin while nursing. Help prevent newborn illness or loss due to chemical exposure by using gentle cleaners on mom. In addition, keeping mom clean, especially around her tail area, helps reduce the newborns exposure to parasites.</p>
<p>Breeder's Edge® Repeat Washable Whelping Pads</p> <p>36"x36" #63520-518</p> <p>48" x 48" #63520-596</p>	<p>Puppies need a surface that they can get a good grip to be able to move around and help them nurse. The white surface of the pad also is a quick way to make sure you know the puppy is urinating and is hydrated. If there are issues of dehydration the urine will be dark yellow and show right away against the white surface. The four layers keep the wet away from momma and babies to help keep everyone clean. In addition, the white surface allows you to monitor the color and the amount of dam's discharge. Layering the whelping pads in the box can help you change the pads without causing too much disruption. As the pad gets soiled, roll it up, slide momma and her puppies to the new pad and remove the soiled pad.</p>
<p>Lectro-Kennel Heat Pad</p> <p>Large #70325-14</p>	<p>Be sure to do the draft test in the area that you have your whelping box. Use a tissue or a candle placed in a six foot radius around the box. If the tissue or flame moves check the air vents windows and door to reduce the draft and then add the Heat pad to the area. Make sure the puppies have space to crawl away from the heat pad if they get too warm.</p>
<p>Hygro-Thermometer</p> <p>#25129-795</p>	<p>Always monitor and manage the temperature and humidity of the room and the surface where the pups will be. Correct temperature is essential to the puppies wellbeing.</p>
<p>Chlorhexidine</p> <p>1 gallon #27180-801</p>	<p>Chlorhexidine is effective to keep your area and supplies clean. Using chlorhexidine diluted according to label directions in a spray bottle helps make it easier to keep the area clean. Make sure to have paper towels and a trash can next to the whelping box.</p>
<p>Snap Y Fit Water/Feed Bowl</p>	<p>Most mommas do not eat during whelping but keeping a bowl of fresh water available is best.</p>

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20 oz #18380-357 1 quart #18380-137	
<u>Whelping Nest</u> #25131-795	This easily cleaned heated surface made of medical grade Kydex has an adjustable thermostat to allow for ideal temperature for pups as they develop. Internal temperature limit prevents overheating.
EquiShield® CK Shampoo 16 oz #9005-09-00 Gallon #9005-09-01	Having that time to give her a relaxing spa treatment three to four days before she is due can help her feel better, give you a chance to make sure she is pest free, inspect her nipples and most importantly protect her newborns from any bacteria that she could have picked up at the vet clinic or outside.
Poly Braided Leads 12 ct #28101-215	During labor sometimes it is necessary to take her outside and walk her around to get things moving. Sometimes she needs to urinate as well. Never take her out without being on a leash as she may try to run off or hide the next puppy. This is critical especially at night. A flashlight helps after dark to see what she is doing. Take along a towel, just in case. Even on a leash a puppy or discharge can come out.
Digital Thermometer #22714-350	Start taking her temperature once a day three to four days before her due date. On the day before her due date, increase to two times daily. Consistent temperatures with a sudden drop means she should labor in 12 to 24 hours. The same thermometer can be used to monitor pup's rectal temperature. Their temperature should be between 96° and 99°F.
<u>Priority Care OB Lube</u> #25120-620	Using a lube when taking temperatures on momma and babies is easier. This is a non-spermicidal gel that can also be used on exam gloves to lubricate the birth canal during whelping.
Co-Flex Bandage Blue #22830-558-501	Wrapping her ears, tail or legs before labor will help keep the wet mess under control. Check the bandages often to make sure there is no swelling.
Breeder's Edge® Oral Cal Plus™ Gel #63215-493	Once her temperature drops she is now in labor. Calcium gel supports consistent, productive contractions. Moving through the labor process quickly will leave her with more energy to take care of her new babies.
OB Forceps #25160-795	Stainless steel obstetrical forceps, allow for grasping and delivering puppies during difficult deliveries. Pups can be grasped around the head or hips, by opening sideways to prevent trauma to the vaginal lining.

<p>Sprague Rappaport Stethoscope</p> <p>#22726-795</p>	<p>A stethoscope is a useful tool to assess fetal heart beats after the pups are born. If you hear a heartbeat and the pup is not breathing, continue resuscitation techniques.</p>
<p><u>Doc Roy's® Forti Cal Liquid</u></p> <p>#60319-504-364</p>	<p>Give her a boost of energy to take care of the newborns and provide her with extra calories when she is feeding a large litter. Forti Cal is a highly palatable liquid calorie supplement, used when pups or bitches are reluctant to heat. Can be mixed with most medications to make for easier administration. Supplies 210 calories of highly digestible fats, carbs and proteins per ounce.</p>
<p>Breeder's Edge® Oxy Momma™</p> <p>Sm dog/cat #63377-1237 Med/lg dog #63377-1238</p>	<p>Support her healthy recovery and milk let down. Avoid adding too many supplements and human foods. Oxy Momma is the right blend of vitamins, minerals, amino acids and herbs to support recovery and lactation.</p>
<p>Breeder's Edge® Clean Cut™ Umbilical Scissors</p> <p>#63540-795</p>	<p>Making sure the umbilical cord has been cut clean will help stop the bleeding. Using umbilical scissors helps make that cut cleanly without chopping at the cord.</p>
<p>DeLee Mucus Trap</p>	<p>A DeLee Mucus trap is an invaluable tool in suctioning fluid from the airway of the pups, helping them to start breathing. It works best when used alternatively with a bulb syringe.</p>
<p><u>Bulb Syringe</u></p> <p>1 oz #22740-127 3 oz #22740-437</p>	<p>Some people prefer to use a bulb syringe instead of a DeLee Mucus Trap to remove mucus. It is most effective to alternate between the DeLee and bulb syringe if the pups have congestion.</p>
<p><u>Breeder's Edge® Clean Cut™ Umbilical Forceps</u></p> <p>#63539-795</p>	<p>Umbilical forceps are an important tool to stop excessive cord bleeding after cutting. Used to stop short term bleeding.</p>
<p><u>Breeder's Edge® Clean Cut™ Umbilical Cord Clamp</u></p>	<p>For persistent bleeding cords, an umbilical clamp should be used to clamp off the cut cord and the clamp can stay on for as long as needed.</p>

Breeder's Edge® Clean Cut™ Povidone-Iodine Solution	Dipping the umbilical cord in Povidone-Iodine at birth, two hours and every eight hours until the cord is dry and drops off will reduce the risk of the puppy developing a fatal umbilical infection.
Multipurpose Digital Scale #63539-795	Assessing the puppy's weights twice daily is an essential tool to monitor their well-being. Pups should be weighed at birth, and their weights recorded. Pups should be weighed twice daily, at the same time each day, to monitor for continuous and steady weight gain. If weight loss occurs or weight gain slows, intervention with feeding and veterinary care is important.
Breeder's Edge® ID Me™ Collars 12 pk #63545-215	Track and ID each puppy with a soft wraparound puppy ID collar that won't scratch or injure delicate newborn skin. For tracking, these collar colors can follow that puppy all the way to their new home.
Breeder's Edge® Nurture Mate™ #63212-493	A colostrum supplement is great when larger litters are expected and labor is longer than 12 hours. Putting puppies on momma first and then giving them a colostrum supplement provides the puppy with more energy and promotes aggressive nursing.
Breeder's Edge® Nurture Flora #63420-493	Promote a healthy immune system with a puppy probiotic specifically formulated for newborns. Helps minimize the potential for newborn loose stool.
Breeder's Edge® Foster Care™ Canine 12 oz #63263-209 4.5 lb #63263-570 18 lb # 63263-296	Provide a high-quality milk replacer formula to ensure superior nutrition. Foster Care™ contains Bio-Mos®, a pre-biotic to support good gut flora, psyllium husk to reduce the risk of diarrhea, and IgY to support the pup's immune system.
Sterile Feeding Tubes 5FR #25220-107 8FR #25220-109	Feeding tubes are an essential supply, as there is no safe substitute for feeding pups if they are too weak to nurse or be bottle fed.
Miracle Nipple w/Syringe 2 ct Mini #25212-1268	Help newborn pups successfully take formula from a syringe. The syringe allows you to monitor and measure formula intake.

<p>2 ct Original #25212-1269</p> <p>2 ct Small #25212-1219</p> <p>2 ct Large #25212-1257</p>	
<p>Breeder's Edge® Puppy Lyte</p> <p>#63270-498</p>	<p>A well-balanced electrolyte formula will help protect against dehydration during weaning, in situations of diarrhea or other illness, or for general supportive care for both dam and pups.</p>
<p>Breeder's Edge® B Strong Liquid</p> <p>32 oz #63320-504</p>	<p>B Strong helps stimulate appetite and provides an energy boost for newborns.</p>
<p>Rescue Wipes</p> <p>6"x7" #15147-1179-130</p> <p>11"x12" #15147-1179-131</p>	<p>Post-whelping, you can help clean dam and remove any discharge and blood, but don't use wipes or other cleaners to clean the puppies. Let the dam lick her newborns clean.</p>
<p>Breeder's Edge® Oral Cal Plus™ Powder</p> <p>300 gm #63321-498</p> <p>1 kg powder #63321-1232</p>	<p>Support her during lactation with the ideal combination of calcium, magnesium and vitamin D3. Make sure you monitor the rotation of the puppies to be sure all her nipples are getting used. The large power nurser puppies should be moved to the larger breasts to keep them emptying.</p>
<p>Doc Roy's® Forti Cal Liquid</p> <p>#60319-504-364</p>	<p>Gives the dam extra energy and calories during nursing and while doing her new duties.</p>
<p>Doc Roy's® GI Synbiotics</p> <p>30 ml #60365-493</p>	<p>Sometimes the dam gets a few too many placentas which can cause vomiting and diarrhea. A prebiotic and probiotic is helpful in this situation.</p>
<p>Royal Canin Starter Mousse</p> <p>#25322-1447</p>	<p>Mix with the dam's drinking water to encourage water intake or use to top-dress her food to encourage adequate caloric intake.</p>

Kaolin Pectin Anti-Diarrheal Liquid 1 gallon #22282-801	A Veterinary kaolin and pectin suspension, appropriate for puppies and adult dogs with diarrhea. Human KaoPectate is not interchangeable with this veterinary formulation.
Latex Exam Gloves Medium #22706-13 Large #22706-14 XL #22706-15	Exam gloves should be worn for two-way protection. They will protect the wearer from bacteria and viral exposure from dogs and protect the dogs from bacteria the wearer could spread to them during procedures such as delivering puppies.
PuppyWarmer Incubator 12x12 #22772-947 18x18 #22772-303 18x24 #22772-304	Professional grade incubator for your newborn pups to keep them warm and dry. Attaches to the PuppyWarmer Oxygen Concentrator and the nebulizer.
PuppyWarmer Oxygen Concentrator Pro Series #22774-795	Provide 95% oxygen to newborn pups from room air. Helps normal pups thrive and pups who are born at a disadvantage have better survival outcomes.
Animal Facility Disinfectant ½ gallon #15179-986 1 gallon #15178-801	Use a cleaner that that is safe to use around newborns but yet strong enough to kill many of the most common dog and cat viruses including parvovirus.
Rx Metoclopramide #80195-795-420	This prescription drug aids in helping the dams who have recently whelped bring in their milk.
Canine Reproduction and Neonatology Book	A comprehensive breeding resource written by Revival’s Director of Veterinary Services, Dr. Marty Greer. It covers all aspects of a canine breeding program, from selecting breeding stock, through breeding, pregnancy, whelping, care of the pups, and stud dog management.
Oxytocin	A prescription injectable drug useful to improve labor patterns, when used with great care and alongside calcium. Also aids in milk letdown during lactation. Can be used at the same time as metoclopramide and Breeder’s Edge Oxy Momma to improve milk production.

TB syringes with 25 g needle	This is the size needle and syringe to accurately dose oxytocin.
Injectable 10% calcium	This prescription form of injectable calcium is faster acting than even the oral gel. Used before oxytocin injectable to improve labor patterns and effective delivery of the pups.
25 g needle for acupuncture	Used in the upper lip, along the crease of a newborn pup's nose, to stimulate breathing. ONLY use if the pup has a heartbeat but is not breathing at birth.
<u>Lactated ringers</u> and venosets	This prescription item can be used as a subcutaneous infusion to treat or prevent dehydration. The Venoset allows for easy administration.
<u>Dopram (Rx)</u>	A prescription injectable drug when used conservatively to stimulate breathing in a newborn pup.
Royal Canin Probiotic	<p>probitchesclinicalstudiesdossierfinal.pdf</p> <p>Transidogclinicalstudydossierfinal.pdf</p> <p>US Clinical Studies Probiotics BITCHES & PUPPY.pdf</p>
Hemostat	
Dental floss or Suture	

5. **Planning a C-section** in advance of a crisis can often make the difference between great puppy survival outcomes and heartbreak. If your best plans to free whelp fail, we can step in and turn a bad situation around. Our skilled doctors and experienced team will help deliver and resuscitate your pups and assist you with their early neonatal care before sending you home.
 - i. Schedule the c-section & steroid administration: IF your bitch is expected to have 1 to 2 pups, more than 9, or is a breed at risk for dystocia (difficult birth such as English Bulldog, French Bulldog, Pug, Corgi, or Bernese Mountain Dog), you can schedule the c-section. With proper timing of ovulation (progesterone testing verifying when her progesterone will reach 5 ng/ml), her c-section can be scheduled 62 days from ovulation for most dogs. For brachycephalic

(short-faced) dogs, or bitches with a larger than normal litter, this can safely be scheduled for 61 days post-ovulation.

Twenty four to 1 hour prior to her C-section, administration of Solu-Medrol (methylprednisolone) IV slowly, will improve fetal lung maturation and therefore puppy survival rates.

Again, planners save puppies. Bitches with scheduled c-sections have a 5 to 6 % higher survival rate than bitches with emergency c-sections. Your veterinarian and their team will be happier with you when you are on their schedule, planned, than when you come screaming in with an emergency. Most veterinary clinics are no longer seeing emergencies during after hours, so if to prevent an unwanted trip to your emergency veterinary clinic, planning is essential.

- ii. ThunderEase or Adaptil collar: These are pheromone collars, not herbal or essential oil collars. A pheromone is a hormone that is hormone released into the environment by an animal affecting the behavior or physiology of other animals of the same species.

Specifically, these are Dog Appeasement Pheromones, from the placental fluid and mammary glands of the bitch. They take up to 72 hours to release. They create a calming influence. By putting a collar on the bitch 3 days before her expected whelping or c-section, it has been observed that she and the pups will be calmer and more likely to lactate/nurse successfully.

These are a safe and affordable tool to improve maternal skills and the ability of the pups to nurse effectively.

- iii. Bathe in chlorhexidine shampoo ([EquiShield® CK Shampoo](#)) 3 days or more prior to her expected whelping date or C-section. We want our bitches to be clean at surgery or whelping to reduce the risks of mastitis, metritis, and exposure to the pups to fecal contamination. Chlorhexidine is a good disinfectant. However, we want her bathed far enough ahead of the whelping to both allow her to be fully dry, therefore, not chilled at whelping. She should also be bathed far enough in advance that the oils on the skin of her mammary glands and nipples have been released to help the neonatal pups find their first meal.
- iv. Get plenty of sleep: Being watchful during whelping and during the first few days after the pups are born requires a lot of human energy. It is important to go into this period well-rested. Having great ovulation timing, so you know the 48 hour period she is expected to deliver will go a long way in having you at your best during this critical period.

- v. Gas up the car: You have had 60 days to plan for her whelping. Be sure you have gas in the car so if you have to make a mad dash for an emergency c-section, you are not held up at the gas station, or worse yet, to run out of gas on your way to the veterinary clinic.
 - vi. Charge your cell phone: Again, you have been planning for this day for 60 ore more days, so have a charged cell phone and a phone charger in the car in case you need to navigate to a veterinary emergency clinic you are unfamiliar with.
6. **Provider care** that is consistent! Staying with the same veterinary care provider throughout is very helpful to make following testing and timelines easier. Hopping vet to vet can make you and the veterinary team frustrated. Work with someone who is happy and available to work with you. And be kind to the veterinary team – a plate of cookies or a pizza party for the staff will go a very long way in lubricating the wheels. Be kind to the entire team, not just the doctors. And take the pie and ice cream before you have a crisis. You want to be “that person” who had the cookout for the team, not “that person” who calls at the 11th hour. They will appreciate you as much as you appreciate them!

Dog Pregnancy/Whelping Articles in the Revival Learning Center

- [Dog Pregnancy, Breeding & Whelping Plan](#)
- [Managing Pregnancy Problems in Dogs](#)
- [X-Rays for Puppy Count](#)
- [My First Litter: Dog Pregnancy Stages](#)
- [30+ Things Not to Give Pregnant Dogs](#)
- [Cat and Dog Supplements During Pregnancy](#)
- [Calcium & Food for Pregnant Dogs: FAQs](#)
- [Newborn Puppies Webinar: The First Breath and Beyond](#)
- [Puppy Enrichment Webinar- Placing Puppies in New Homes](#)
- [Normal Neonatal Puppy Development Chart](#)
- [My First Litter: Newborn Puppy Care](#)
- [★ Whelping Kit \(Free tool to help easily shop for whelping supplies\)](#)
- [Flea & Tick Finder \(Free tool for helping choose best flea & tick prevention\)](#)
- [Vaccine Finder \(Free tool for helping choose the right vaccines\)](#)



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Shop for whelping supplies with [Revival's Whelping Kit](https://www.revivalanimal.com/whelping-kit)! A customized shopping experience to help you get everything you need for whelping. Visit <https://www.revivalanimal.com/whelping-kit> or scan the red QR code.



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