

Care of the Pregnant Bitch and her Litter Through the First 8 Weeks of Life, Part 1

Linda Aronson, DVM

This two part article is written in response to a number of queries. It is merely a guideline and not meant to be an exhaustive treatise. Nor is it intended to examine the wisdom of breeding a particular bitch, how to achieve this or the thought and planning that should have got us to this point. Suffice it to say that many times puppies will not survive to eight weeks, whole litters may be lost, and in some cases the bitch may die too. Breeding is not for the squeamish or faint of heart. We will assume, however, that our bitch has been bred successfully and at the right time. Perhaps surprisingly, mistiming is still the #1 reason bitches fail to become pregnant.

Pregnancy: It's always a good idea to confirm that your bitch is pregnant. This gives you time to let people know puppies are expected, and you can begin interviewing prospective owners while all is quiet on the home front. There are four ways to confirm pregnancy. The earliest method is ultrasound which can be performed any time after the 24th day after ovulation. It is 100% accurate, and can give you a rough estimate of the number of puppies to expect. It is the best technique for picking up fetal viability, fetal stress and resorption. Abdominal palpation is best done about 28 – 30 days after ovulation. Accuracy very much depends upon who is doing the palpation. Some mistake fecal balls for fetuses. You may get a rough estimate of the number of puppies expected, but many can be tucked up under the rib cage. About the same time the Relaxin test performed with a few drops of blood serum is most accurate. It will merely give a yes-no answer as to whether the bitch is pregnant and offers no information on litter size or viability. Some owners prefer this to imaging or palpation, which they feel may potentially harm the fetuses. Rough palpation is certainly potentially hazardous, but ultrasound appears to be safe. X-rays are also commonly thought to be safe, although I choose not to do them, figuring that if they are not safe for human fetuses why would they be for puppies? Radiology is of no use until mineralization of the bones begins around the 45th day. In the last week, some breeders choose to take an X-ray to determine the number of puppies they are expecting. With large litters, overlapping bones may make it hard to get an exact count.

You will hear a lot of breeders say that they “know” their bitch is pregnant because she immediately goes out of season after being bred, her nipples enlarge, or some other acid test – in general these are unreliable. Bitches maintain an elevated progesterone level post ovulation whether or not they are bred. Hormones dictate most of the changes breeders cite, and can as easily mark normal diestrus (approximately 9 week period post ovulation) in an open as in a pregnant bitch, or in a bitch with pseudocyesis (false pregnancy). Another useful piece of information is due date. In the past it was commonly stated that pregnancy could last anywhere from 58 to 71 days. It is now known that almost all pregnancies last 63 days +/- 1 day from the day of ovulation. Of course, if you are not measuring progesterone and or Luteinizing Hormone (LH) that isn't much good, because you won't know when the bitch ovulated!

While we are dispelling common myths, puppies of different sizes within the litter are not due to their being conceived at different breedings. All the eggs are released over about 24 hours, and then float free in the uterus for about 17 days during which insemination occurs and they start to develop. At that point the embryos implant in the uterine wall and form a placenta. Poor placentation is the reason some puppies are smaller than their littermates at birth.

Once pregnancy has been confirmed, it is advisable to keep your bitch at home for the duration of the pregnancy to avoid exposing her to unnecessary stress or sick animals. By home though, I imply normal routines, not that she can no longer take her normal exercise or go on the normal family outings. Many bitches do like to nest and prefer the familiar when pregnant.

Feeding the pregnant bitch is also a matter of much debate. Some authors recommend putting the bitch on a puppy diet when she is expected to come into season, and maintaining her on this for about a year – it has been estimated that it takes 8 months for a bitch to rebuild the nutritional stores she had prior to pregnancy. Then again some people recommend breeding a bitch every season, and as I don't advocate that, and because obese bitches have more problems getting pregnant, maintaining pregnancy and whelping, I advocate for keeping them on their normal food and amounts of food for the first 4.5 to 6 weeks of the pregnancy. They will generally tell you when they need more food, and that is when they need it. If your bitch always acts like she is starving and yet is in good weight, start to gradually increase ration size around week 5. If on the other hand she always treats food like it's poisoned you may need to get more creative in tempting her palate in the latter half of pregnancy.

Many bitches develop “morning sickness” somewhere between weeks 3 and 5. She turns her nose up at food, especially breakfast, and may even vomit. While some breeders go to extraordinary lengths to get food into their bitches, I generally feel it is better to let her have her way. You can feed more at the evening meal if she is consuming that one with more gusto. Around week 5 her body shape starts to change. This is the right time to increase caloric intake. This should be done gradually. In general, feeding her more of what she normally eats is the best idea. You can add chicken broth, cottage cheese or yogurt, but basically her body's needs are the same – a good source of protein, essential fatty acids, minerals and vitamins – just more of it. It is preferable to increase the number of meals rather than give one or two huge ones. I do not supplement my bitches with herbs during pregnancy. If I were to I would probably choose nettle tea. Often red raspberry leaf is used as it supposedly decreases the pain of uterine contractions and acts as a smooth muscle relaxant. However, it is a uterine stimulant, and should not be given before the last week of gestation to prevent the risk of abortion. This also goes for mugwort, tansy, scotch broom, goldenseal, juniper berry, pennyroyal oil, rue, mistletoe and chaste berry. Black and blue cohosh are also supposed to stimulate labor when given close to the due date, but have been associated with heart failure and shock in human neonates.

Exercise is very important for the pregnant bitch and will help ensure a smooth labor and delivery. Walking and swimming are great, but especially in the last 3 weeks of gestation avoid herding, agility, fly ball etc, as getting over heated, a fall or knock – particularly by an obstreperous sheep – could result in fetal loss.

If your bitch refuses all food for several days, has increased thirst and urination, weakness, wobbly gait or appears disoriented, and has any vulvar discharge that is not white to colorless seek veterinary advice. The most common problems in a pregnant bitch are diabetes mellitus – because progesterone maintained at high levels during pregnancy can alter the uptake and effect of insulin on body cells – and toxemia – associated mostly with large litters late in pregnancy where compression of the stomach prevents the bitch consuming enough food to maintain herself

and her litter. These are not common conditions.

Whelping: As her due date approaches the bitch may find it harder to move around. She may also start nesting. Some bitches are more determined than others. Most of mine like to dig outside under bushes. Other dogs seek out closets or other confined spaces; I had one who thought behind the boiler looked like a great place for a December litter. Some bitches like a favorite chair, or their owner's or even their own bed. Sometimes we can have arguments over the location of the birth, but mostly they accept the whelping box once whelping is under way. I like a whelping box about 4' square so I can get in with my bitch and be involved in the whelping process. Whelping is a very messy business, you can line the box with torn up paper (preferably butt ends from printers as opposed to newsprint which bleeds ink all over you, the bitch and the puppies) or old towels. I prefer the towels. The box should have solid sides about 2' high, with a "door" or lower area to allow the bitch easy access. For the first two weeks or so a "pig rail" to help prevent the bitch crushing puppies in the corners and edges of the box when she lies down is useful.

About a week before your bitch is due trim down the hair around her vulva and over her belly so that it doesn't wrap around her nipples and cut off the milk supply or interfere with birthing. It's a good time to give her a bath and a thorough groom, not forgetting to make sure that her nails are trimmed short. Some breeders will wrap a bitch's tail in Vetwrap for the birth to try and keep the hair clean and out of the way. I haven't found this particularly helpful. Others use bands to tie long hair up with the same intent. Most bitches lose their coat after whelping, and most will end up with a rat tail, which is the last thing to grow back. Some people begin obsessively taking the bitch's rectal temperature four times a day up to 3 weeks before their due date, I usually start once a day about a week before she is due, increasing to twice a day about 3 days before the due date. However, I also know when my bitches ovulated, if you don't it's a good idea to start further out. In most bitches the rectal temperature drops below 98 degrees about 8 to 24 hours before whelping, it then rises again as she enters labor. She will also likely go off her food at this time.

As well as having the whelping box set up and introducing your bitch to it, it's time to assemble your other supplies. The technologically minded breeder, and those who are anticipating possible difficulties because the bitch or her dam experienced dystocia or needed a C-section before (I won't get into a discussion of this here, but personally I would like our breed to be free-whelping and would discourage breeding bitches with anticipated problems) may want to rent an external fetal monitor. Two companies that provide this service are WhelpWise 1-888-281-4867 or www.whelpwise.com and WhelpWatch 1-888-200-8044. I've never used a monitor; others wouldn't have a birth without one.

Things I like to have on hand include: Lots of clean towels (birth is a very wet and messy business), a stethoscope, sterilized scissors, a bulb syringe, Karo Syrup, a bowl of water, an acupuncture needle or 25 gauge hypodermic needle, dental floss (I have used it once); a pad and pen to jot down notes about the delivery, time, presentation of the placenta, markings, sex and weight of the puppy (I have a baby scale, you can use any small scale); a good book (this can be a long process) and a ready box – I use an old cooler chest without the lid, lined with clean towels and a heating pad. While it is expensive I also like to have a frozen supply of

hyperimmune plasma and feeding tubes and syringes in case I have a puppy that fails to thrive or perhaps did not receive adequate colostrum (first antibody rich milk). There will be more on this in part two. Some breeders use a dilute iodine solution on the umbilical cords, I don't.

Your veterinarian's number and that of an emergency clinic are good to have readily to hand. Have your breeder on speed dial, and if possible secure an experienced breeder to assist if you are new at breeding. Even if you are an old hand having some- one to talk to can be pleasant, but remember many bitches do not like a lot of people coming and going, and may try to suppress labor if there is too much activity. (My bitches seem pretty oblivious to anything happening around them.)

In a process that is not fully understood, it is the fetuses that initiate labor. This occurs in 3 stages. Several days before whelping the vulva enlarges and tail head becomes more prominent. In the first stage the cervix dilates. The bitch is restless and pants often heavily, but strong, coordinated abdominal contractions aren't present. The bitch usually refuses food; if she does eat she will often vomit. This stage lasts about 12 hours, if it continues much longer it is probably a good idea to check in with your vet. Increased stillbirths and neonatal death is associated with stage 1 lasting more than 18 hours. Letting the vet's office know labor has started may be a good idea too.

Stage 2 is marked by obvious coordinated contractions. Once the first pup's head (preferably as it is harder and more stimulating than its butt) moves into the cervix it produces a burst of oxytocin release, which increases the strength and duration of uterine contractions. Without this reflex re- lease, labor may not progress. Prolactin is also released at this time to kick in the bitch's mothering behavior and stimulate lactation. Stage 3 is marked by the delivery of the first puppy. (Stages 2 and 3 alternate until all the puppies are delivered). A lot of clear fluid precedes the arrival of the puppy. Green fluid indicates separation of a placenta, and may occur before the first puppy arrives. There may also be some bleeding associated with separation of the placenta. This is all normal, although if there is a lot of green fluid and no puppy for a couple of hours contacting your vet would be wise.

Pups may be born still tightly wrapped up in the membranous sac or this may tear free in the vaginal canal. (Some puppies may even be heard protesting violently as they come down the chute.) If the sac hasn't torn free, either you or the bitch will tear it off. Bitches generally will lick the puppy vigorously, stimulating them to breath and tearing off any membranes. I have never had a problem letting my bitches consume all the placentas. Rarely one comes back up, and is then swallowed again before I can get to it. I do keep my fist around the cord so that the bitch cannot crop it off too short. If this happens it may result in an umbilical hernia. If the puppy has fluid in its airway (raspy sound) you can clear out the back of the throat with a bulb syringe. Do not swing the puppy vigorously as recommended in some texts as this can lead to brain damage. You can hold the puppy upside down and rub its body with a terry cloth towel to stimulate the puppy to breath. If this doesn't get it started, you can blow air into its nostrils, perform CPR (simple directions can be found at [http:// www.peteducation.com/article.cfm?cls=2&cat=1651&articleid=896](http://www.peteducation.com/article.cfm?cls=2&cat=1651&articleid=896)) or insert the acupuncture needle in the tissue between the nostrils (Jen Chung site) and twist as you reach the bone.

Do not be overly concerned if you don't find a placenta with every puppy. Some come out attached, but many will detach, and often come out in a bunch, so that the bitch can slurp them down before you get a count. Puppies may also share a placenta. Retained placentas are usually broken down and passed in the normal placental discharge, although they can sometimes cause problems.

In my experience most Bearded bitches can get carried away with the washing of the puppies, and no sooner have you got them dry but they are licking away again. Some bitches will let you put the puppies in the ready box to dry and keep warm, others become distressed even if you take away one of many. If you encounter a problem of course, putting the healthy newborns somewhere safe is a must, however. On the other hand, encouraging the newborns to nurse not only ensures they get the colostrum they need to thrive, but also causes further release of oxytocin to keep labor ticking along, and after everyone is delivered helps the uterus continue to expel its unwanted contents and cause it to return to its prepregnancy dimensions (involution). Encourage all puppies to nurse, and observe whether they do so with gusto and good suck reflex, or if they fall off the nipple as soon as you attach them.

Each bitch proceeds at her own pace. Intervals between puppies can vary from a couple of minutes to a couple of hours. As long as the bitch doesn't seem distressed and/or exhausted all is probably well. Offer her a bowl of water laced with Karo syrup if she seems at all fatigued, it's a wonderful pick-me-up, although the puppies do tend to look like you put gel in their hair! Try taking the bitch out to relieve herself if labor has slowed down. Walking may stimulate labor. If it is dark be sure to take a flashlight in case she pops out another puppy, and take along a towel to wrap it up in too.

Determining when a bitch has finished whelping can also be difficult. Most bitches don't really settle down to rest unless they are all done. When palpating you can miss a puppy still up under the ribs, and the involuting uterus may be mistaken for another puppy. Radiographs are definitive. It used to be commonplace to inject a bitch with oxytocin when it was felt whelping was complete to help her uterus involute and expel any remaining puppies as well as retained placentas, and to stimulate milk let down. This practice has fallen out of favor, and if done at all far smaller doses of oxytocin are given.