



BREEDING FOR PET OWNERS

Estrus and Mating

When does a female dog first come into heat?

Puberty or sexual maturity in the female dog usually occurs around six months of age. The smaller breeds tend to go into “heat” earlier and some females can have their first “heat” or estrus as early as four months of age. On the other hand, the large and giant breeds can be up to two years old before they come into heat for the first time.

How often is my female likely to come into heat?

On average this occurs about twice a year, although it varies from dog to dog. After the first heat there is often a great deal of variation in the frequency and this is normal. Some females take a year to eighteen months to develop a regular cycle.

There is no evidence that irregular heat cycles predispose the dog to false pregnancies or pyometra (uterine infection). Small breeds tend to cycle more regularly than the larger breeds. Three and occasionally four heat cycles per year can be normal in some females.



Very large breeds may only cycle once every 12-18 months. In most giant breeds (Great Danes, Irish Wolfhounds, St Bernard's) a yearly estrus is common.

How long does a “heat cycle” or estrus last?

Heat cycles vary, but average two to three weeks for most dogs. Heat should be considered to begin with the first signs of discharge and with the female paying attention to her vulva. The vulva will begin to appear swollen. It ends when all discharge ceases and the vulva has returned to its normal size.

What are the signs of heat?

The most notable sign is vaginal bleeding. Often this does not become apparent until a few days after the female has actually come into estrus. Vulvar swelling should be taken as the first sign in addition to the female paying increased attention to her rear end.

From the beginning of the heat period she will be attractive to male dogs but does not usually allow mating until about 8-13 days later. The discharge will usually become less bloodstained at this time.

Some females experience heavy vaginal bleeding during estrus. If you are concerned, please consult us.

You may also find that she is passing small quantities of urine more frequently. The urine contains both pheromones and hormones signaling to any interested males that she will be receptive soon.

Are there any tests to determine when to mate my dog?

Yes. There are two simple tests available from your veterinarian.

1. Vaginal smear test. A simple microscopic examination of vaginal cells will detect changes in cell appearance and numbers. This has been used for many years and is reasonably reliable. It is non-invasive and does not cause discomfort for the female.

2. Blood test. This determines changes in the progesterone level in the blood. This test is very sensitive and has become popular due to its accuracy.

Both tests can be performed at the veterinary practice. The blood test gives a very good indication of when your female will ovulate and when mating is most likely to be successful. It is very useful for females that have a history of unsuccessful mating or for breeding dogs that have to travel considerable distances to the stud. Using these diagnostic tests will increase the chances of a successful breeding.

What is artificial insemination?

There are 2 methods of insemination performed at Sandy Animal Clinic. They are vaginal insemination and surgical insemination. Vaginal insemination is performed using either fresh semen or fresh chilled semen and involves depositing the semen into the vagina in the area of the cervix. Surgical insemination involves fresh semen, chilled or frozen semen. With surgical insemination your pet is anesthetized and the semen is put directly into the uterus. This is where the eggs are located and increases the chance of a successful breeding.

What is the benefit of artificial insemination?

Statistically, artificial surgical insemination has 90% chance of yielding a litter of puppies, vaginal insemination is 77% effective, and natural breeding produces a litter 70% of the time. Also, when effective surgical insemination is more likely to yield at least 1 more pup as compared to natural breeding since the semen is inserted directly into the uterus where the eggs are located. However, prior to performing a surgical insemination analyzing vaginal smears and testing progesterone levels are essential to determine when ovulation is achieved.

Also, artificial insemination may be necessary depending on conformation to breed the bitch, if a vaginal stricture is present or the male is unable to penetrate. Bulldogs have been bred to the point that the male is physically unable to penetrate the female and artificial insemination is always required. With some breeding pairs the female may not be receptive of the male or the size discrepancy between the two may make it impossible for male to mate with the female. Another complication involves a male with a lower than normal sperm count that greatly reduces the success of a natural mating.

Feel free to discuss with our staff the different methods of insemination to determine what will be best for your pet.

How is the semen from the stud prepared?

The most common ways semen is prepared for artificial insemination are fresh semen, chilled, or frozen semen. When using fresh semen both the male and the female need to be on site for this procedure to be performed. If semen is being shipped to a different location then either chilled or frozen semen is used.

With any of the methods described above when the semen is collected it is evaluated immediately after collection. Depending on the quality of semen then a buffer is added to protect the sperm for the artificial insemination. Fresh semen is typically viable for 4-7 days. Fresh chilled semen is viable for 48-72 hours and frozen semen the lifespan is only 12-24 hours. Viewing the times of viability makes the optimal timing all the more important. With the different methods the window of opportunity becomes smaller.

How do I know when to bring my female in for the artificial insemination?

Due to the unpredictable nature of breeding, timing for the procedure may seem complex and confusing. We typically like to see the bitch five to seven days after she starts bleeding to perform the first vaginal smear. After this sample is collected, the Doctor will advise you on what needs to be done next in timing your female's ovulation. This typically involves bringing your dog in for subsequent vaginal smears and progesterone tests. It is essential that you are as prepared as possible once at this stage of preparation. Having a proven male lined up or having semen prepared correctly to be shipped to us is very important.

How do I know when it is the best time to mate my dog?

This can be difficult. Some females can ovulate either early or late during the heat period. Most ovulate and are receptive around the 11th day of estrus. The discharge will then be less bloody and the female will be actively looking for a male. We recommend putting the male and female together at day 9, day 11, and again at day 13.



What can I do to ensure mating is accomplished satisfactorily?

Surprisingly, male dogs appear to be more stress sensitive than females during mating. Thus successful matings are more common when the male dog is in its own environment. It is for this reason that females are usually taken to the stud dog.

The time of mating is extremely critical and it is worthwhile to have tests carried out at the practice to determine the ideal mating period. For most females, the best time for breeding is between the 9th-13th day of estrus. Some females ovulate as early as the third or fourth day or as late as the eighteenth day. Blood tests will assist in determining the best period for your dog.

It is also normal to arrange for two to three matings for your dog, often 24 or 48 hours apart. We recommend putting the male and female together at day 9, day 11, and again at day 13. Check these details with the owner of the stud when making initial enquiries.

When speaking with the stud owner, it is a good idea to find out what the stud owner offers for future matings in case the female does not become pregnant

I was told that my female had tied well with the dog and that only one service was necessary. What does this mean?

The genital anatomy of the male and female is such that during coitus part of the dog's penis (the *bulbis glandis*) enlarges and is held firmly by the muscles of the vagina which contract, thus preventing the penis from being withdrawn. This is the "tie" that is considered a desirable feature of a successful mating.

It is important to note that pregnancy can occur without a “tie”. Once “tied” the male dog will often step over the female or be turned by handlers into a position so that the animals are back to back.

I found my dog tied to a female dog during a mismating. Was there anything I could do to separate them?

There is little point in trying to separate animals that are locked in this way. Buckets of cold water, water pistols, cap guns etc. do little to speed up the process of separation and merely upset the animals. In fact, forced separation can result in serious injury to the female and should be avoided.

If a mismating has occurred, discuss it with your veterinarian as soon as possible.

