CANINE SEMEN COLLECTION AND EVALUATION
KATIE LIU, SENIOR VETERINARY STUDENT

Semen may be collected for a planned artificial insemination, cryopreservation (frozen in liquid nitrogen and stored for future use) or simply to evaluate the quality and quantity of sperm being produced. A single semen sample may not be representative of a male’s semen quality and we recommend collecting multiple samples several days to weeks apart to evaluate any abnormalities.

Collection:
Prior to collecting the male, we attempt to reduce the stress associated with being at the veterinary clinic by minimizing aversive stimulation (taking rectal temperatures or performing rectal exams, drawing blood). We may use pheromones from a bitch in heat or, if available, allow the male to interact with a bitch in heat to aid in stimulating the male, but this is not necessary.

We place a latex artificial vagina (AV) over the male’s penis and manually stimulate him. A test tube is attached to the end of the AV to collect the semen. There are three parts to a normal male dog’s ejaculate; the first and third portions are prostatic fluid and aid in transport of the second sperm-rich portion through the female’s reproductive tract. However, in a test tube the prostatic fluid is detrimental to the sperm and must be collected in separate tubes, therefore the tubes are switched during the stages of the male’s ejaculation (fractionation).

Evaluation:
The sperm-rich fraction of the ejaculate is evaluated both immediately in the exam room and later in the laboratory. The semen is evaluated for volume and color, most dogs produce between 0.5 and 1.5 mL of the sperm-rich fraction of semen, and it should be white to opalescent. Even in the absence of prostatic fluid, sperm do not live long in a test tube; therefore, the semen sample is evaluated in the exam room for the percentage of sperm that are moving (motility) and the percentage of sperm that are moving in one direction (progressive motility). An initial estimation of sperm morphology is done. Later, in the laboratory the quantity of sperm in the sample (concentration or sperm count) and what, if any, morphologic abnormalities are present are evaluated. It is important to classify the types of abnormalities, as some changes occur during sperm formation in the testes and others occur during transit/maturation in the epididymi. Some morphologic changes are iatrogenic (caused during collection or processing). Finally, the semen is evaluated for other cell types, particularly bacteria or blood cells that may indicate infection or inflammation in the male reproductive tract.

Normal sperm values:
Concentration = 200-400+ x 10⁶ sperm per ejaculate
Progressive motility >70%
Normal morphology >70%