Although a natural breeding is the gold star method, artificial insemination (AI) has become a valuable tool in responsible dog breeding. It allows breeders to carefully manage genetics, preserve valuable bloodlines, and facilitate international breeding without the stress of travel for dogs. There are three primary methods of artificial insemination: vaginal insemination, trans cervical insemination (TCI), and surgical insemination.

Here's a breakdown of the differences:

1. Vaginal Insemination (AI)

- **Method:** Semen is placed into the vagina, and the female's hindquarters are kept elevated for 10-15 minutes to aid natural fertilization. If a ballooned AI catheter is used, the female does not need to be elevated, but the catheter does need to stay in place for 10 minutes.
- **Invasiveness:** Least invasive.
- **Anesthesia:** No anesthesia is required.
- **Best for:** Generally used with fresh or chilled semen. This is not recommended for frozen semen.

2. Transcervical Insemination (TCI)

- **Method:** A special endoscope is used to visualize the cervix and deposit semen directly into the uterus.
- **Invasiveness:** Minimally invasive. The owner is present with their dog the entire time, decreasing anxiety for both owner and dog. No surgery is required.
- **Anesthesia:** Does not require anesthesia.
- **Best for:** Used with fresh, chilled or frozen semen

3. Surgical Insemination

- **Method:** An incision is made in the abdomen to place semen directly into the uterus.
- **Invasiveness:** Most invasive.
- **Anesthesia:** Performed under general anesthesia.
- **Best for:** Precise placement of frozen or poor-quality semen. The procedure is relatively quick, however, the use of anesthesia carries higher risks and complications. A TCI is often preferred.

Key Differentiating Factors

- **Invasiveness & Risk:**

  Surgical AI is the most invasive and carries the highest risk.

- **Anesthesia:**

  TCI is preferred for avoiding the stress and risks of anesthesia, which are required for surgical insemination.

- **Semen Type:**

  TCI and surgical insemination are necessary for using frozen semen to achieve good success rates.

- **Success Rates:**

  While surgical AI allows for direct placement in both uterine horns, studies show TCI often has equal pregnancy and litter size rates.

- **Recovery:**
  TCI is easier on the dog than surgical insemination.