



## A NEW WAY TO YOUR DREAM DOG



An Introduction to  
Artificial Insemination





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## What does artificial insemination mean?

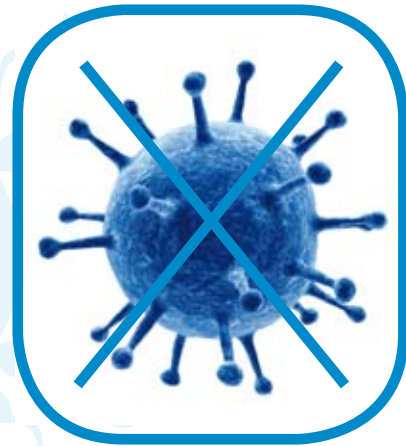
The artificial insemination of dogs is not a new concept. The first reported insemination of a bitch is dated back to 1780.

Artificial insemination (AI) is the instrumental transfer of semen from a male dog to the vagina or uterus of a bitch. In contrast to the natural mating process, semen from the male dog is collected manually and then deposited into the vagina or uterus of the bitch with the use of specialized instruments. There is no further interference with the fertilization process, such as the sperm penetration of the ovum.



## Advantages of artificial insemination

Reduces the risk of infection which can occur with natural mating. Also the risk of infections such as Canine Flu during transport is eliminated.



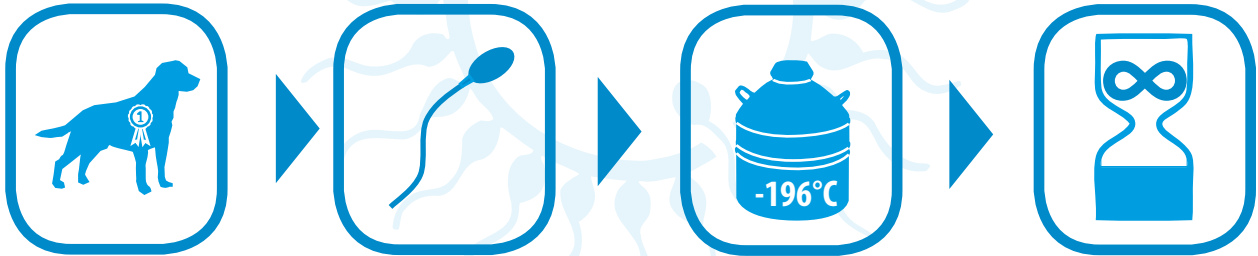
## Advantages of artificial insemination

Allows for selective breeding with dogs that have especially desirable traits, as well as the ability to breed dogs that live at great distances from each other, due to the ability to transport and preserve semen.



## Advantages of artificial insemination

Semen of a valuable dog can be cryo-preserved and stored for an unlimited time – even after death.



## Advantages of artificial insemination

High success rate due to the use of semen evaluated for fertility and improved by addition of extenders, and because of the accurate timing of insemination.



## Advantages of artificial insemination

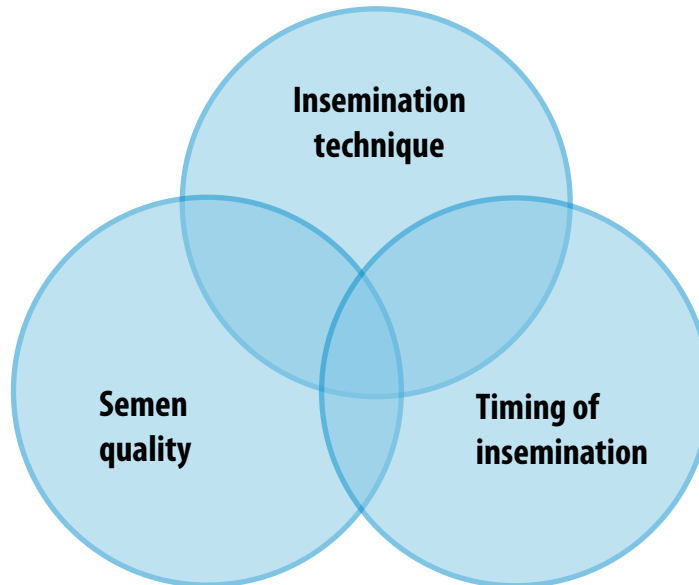
### And furthermore:

- ⊕ No need for stud or female dog transport and stressful displacements.
- ⊕ Fertilization can take place even when the male or the female dog have physical disorders (vaginal stricture, septum, vaginitis or injured limb) or psychological or cognitive disorders (inexperience, low sexual drive, hierarchy, trauma, fear, etc.) that makes natural breeding not possible.
- ⊕ Repeated breeding is possible without risking exhaustion of the dog. One ejaculate can be split into multiple semen doses for AI. The breeding business becomes more attractive!



## Factors for success of the artificial insemination of dogs

The success of artificial insemination depends primarily on three factors:



Therefore, artificial insemination, particularly instrumental semen transfer, should always be performed by your veterinarian!



## What does the instrumental transfer of semen consist of?

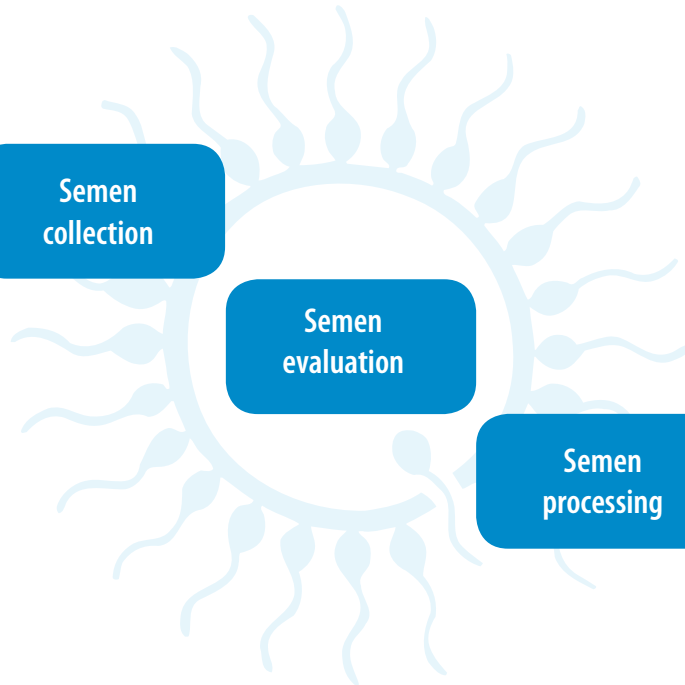
Identification  
of timing of  
insemination

Semen  
collection

Semen  
evaluation

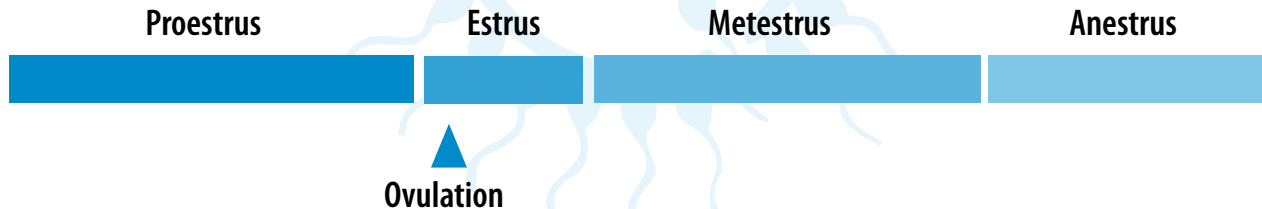
Semen  
processing

Insemination



## 1. Timing of insemination

The timing of insemination is the first thing that needs to be determined for the bitch that is to be bred. The timing depends on physiological factors related to ovulation and conception. The optimal timing for AI or mating varies dramatically from breed to breed, dog to dog or cycle to cycle within the same dog. In an average dog, the fertile period is somewhere in the interval between ovulation and the following few days. However, huge variations are observed. For optimal results after artificial insemination, ovulation and the fertile period should be assessed by a veterinarian.



## 2. Semen collection

After the male dog has been evaluated and determined healthy, the semen is collected. The examination should take place in a separate room and the number of people present should be limited to the minimum required so that there are no disruptions during the examination and semen collection. Natural mating conditions are simulated with the presence of a bitch that is in heat. However, vaginal swabs from a female in estrus can be used when no females are available. A manual stimulation of the male dog will allow collection of the ejaculate. The sperm-rich portion of the semen is separated from the watery portions which contain few sperms but a lot of non desirable contaminants by collecting the semen with semen collection funnels.

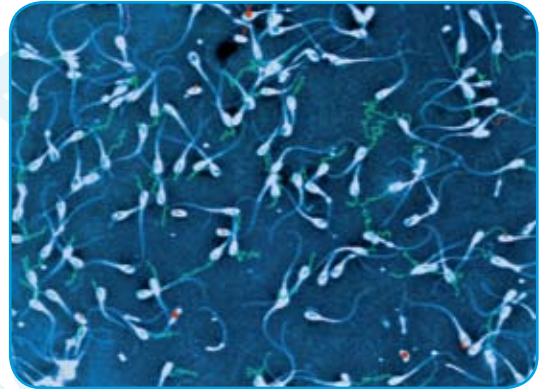
The presence of the owner, or of a person familiar with the dog, may be beneficial in some instances standing at the head of the male dog so that it can either be calmed or motivated according to what the temperament requires. Normally a muzzle is not necessary and can even invoke defensive behaviors that can complicate the collection process.



### 3. Semen evaluation

Evaluate the semen for the following parameters:

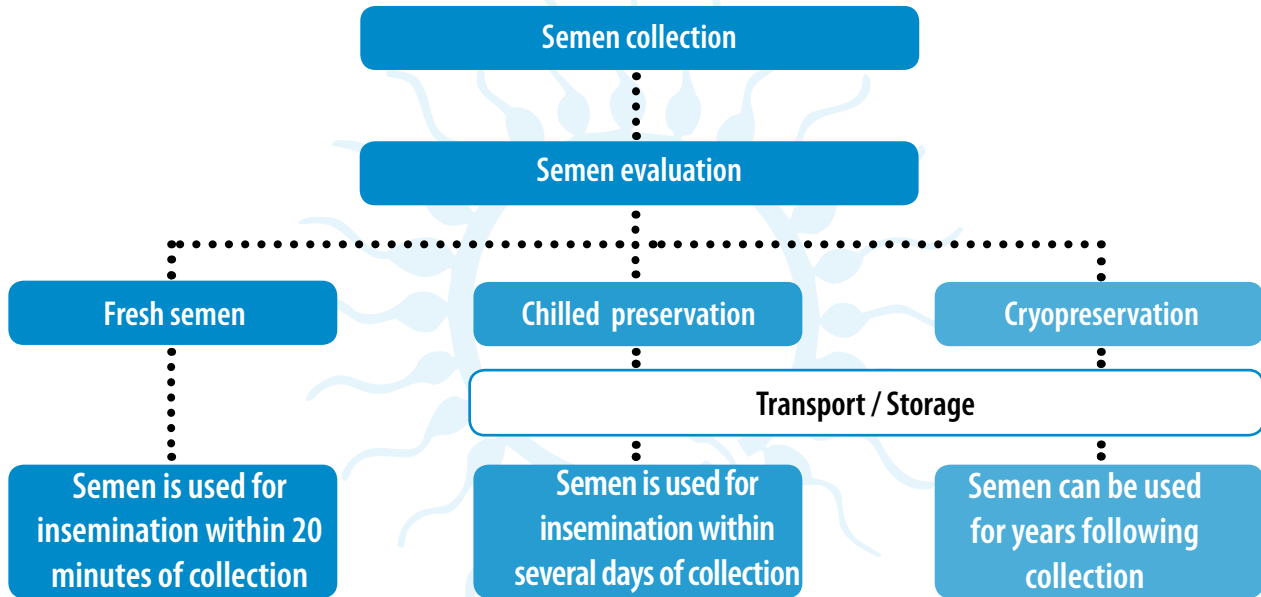
- Volume
- Appearance (consistency/colour)
- pH value
- Semen concentration
- Total sperm cell count in the ejaculate
- Motility of sperm cells
- Number of morphologically abnormal sperm cells



These parameters inform whether the semen is appropriate for artificial insemination or would be suitable for natural mating.



## 4. Semen processing



## 5. Instrumental semen transfer - Insemination technique

The technique for artificial insemination depends on the type of semen to be used:

### Fresh semen

Insemination using fresh semen normally takes place immediately after the semen is collected and the ejaculate is evaluated. Fresh semen is generally introduced into the cranial part of the vagina.

### Chilled semen

Chilled semen, which is normally semen that has been extended, chilled and eventually transported, can either be introduced into the vagina or it can be deposited into the uterus using an endoscope. Insemination using chilled semen can take place several days after collection, due to advanced preservation media that are available today. After several days (depends on the type of media used) semen quality declines.

### Cryo preserved semen

Cryo preserved semen needs to be thawed just before insemination and must be deposited directly into the uterus, in order to achieve good insemination results. If the insemination of the bitch takes place with an endoscope, the dog remains conscious with the owner present. Surgical transfer normally takes place under general anaesthesia.



## FAQs

When is AI not recommended?

Instrumental semen transfer should only be done with healthy and fertile dogs. Artificial insemination should ideally not be used to help dogs with deformities, diseases of sexual organs or fertility disorders to breed.

A few kennel organisations are sceptical about artificial insemination. To receive more detailed information on regulations for your breed, please contact your breeding association directly.

Who pays for AI?

The costs for collecting the semen and performing the insemination are customarily charged to the owner of the bitch. Costs for the insemination of the bitch are also incurred by the owner of the female dog. (FCI)



## FAQs

Can my dog's semen be used for AI?

In order to assess if the male dog is suitable for artificial insemination, he will need to be examined for health and breeding aptitude by the veterinarian.

The following criteria must exist:

General health

Healthy sexual organs

Fertility



## FAQs

Can my female dog be used for AI?

The bitch that is to be bred must also be examined for health and breeding aptitude by the veterinarian. Additionally, the heat cycle of the female needs to be assessed.

The following criteria must exist:

General health

Healthy sexual organs and teats

Heat, respectively readiness to conceive



## FAQs

Are pups bred via artificial insemination recognized by breeding associations?

Excerpt from the Breeding Regulations of the world canine organisation (FCI), §15:

*Whelps from two pure-bred dogs holding the same FCI recognised breed pedigrees are considered without objection or restriction by the national canine organisation to be pedigree whelps and are therefore entitled to be issued FCI recognised pedigrees.*

FCI = Fédération Cynologique Internationale



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## FAQs

Important aspects, related to artificial insemination that are regulated by the FCI:

AI (artificial insemination) should ideally only take place with animals that have mated naturally at least one time before. Exceptions are regulated by the national organisations.

The veterinarian performing the insemination must confirm with the organisation that keeps the stud book that the bitch has been artificially inseminated with the sperm of the correctly corresponding stud dog.

The certification provided by the veterinarian must also include location and date of insemination, name and stud book number of the bitch, as well as the name and address of the owner.



If you have any questions regarding AI, the following addresses will assist you:



University of Veterinary Medicine Hannover  
Reproductive Medicine of Clinics  
Bünteweg 15 - 30559 Hannover  
[www.tiho-hannover.de](http://www.tiho-hannover.de)



Ludwig-Maximilian University Munich  
Clinic for Veterinary Gynecology and Obstetrics  
Königinstrasse 12 - 81337 München  
[www.vetmed.uni-muenchen.de](http://www.vetmed.uni-muenchen.de)



Justus-Liebig-University Gießen  
Clinics of Obstetrics, Gynecology and Andrology  
of Large and Small Animals  
Frankfurterstr. 106 - 35392 Gießen  
[www.uni-giessen.de](http://www.uni-giessen.de)



University Leipzig  
Large Animal Clinic for Theriogenology and  
Ambulatory Services  
An den Tierkliniken 29 - 04103 Leipzig  
[www.vmf.uni-leipzig.de](http://www.vmf.uni-leipzig.de)



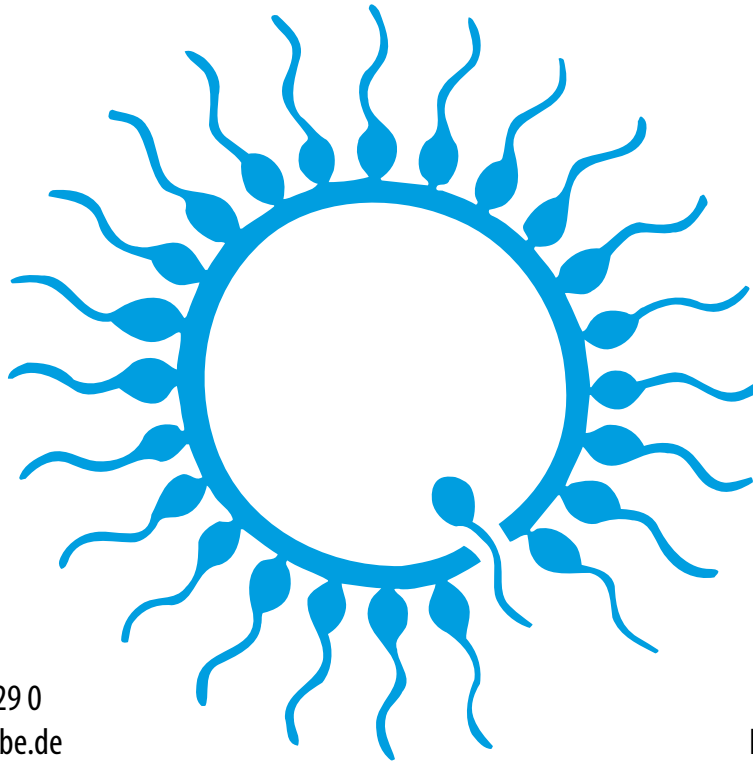
List of semen banks in Europe:  
[www.canine-semenbanks-europe.com](http://www.canine-semenbanks-europe.com)



University Berlin  
Königsweg 65, Haus 27 - 14163 Berlin  
[www.vetmed.fu-berlin.de](http://www.vetmed.fu-berlin.de)







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