



# Breed specific breeding strategy for **White Swiss Shepherd dog**



**2023 - 2027**



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## Summary

The White Swiss Shepherd consists of a small population both numerically and genetically. During the work with *RAS (Swedish abbreviation for breed-specific breeding strategy)*, a mapping of our breed's genetic composition has been done and it has emerged that we have little genetic variation and high genetic inbreeding. The breed has relatively good joint health and a good exterior. It is used as an all-round dog in most sports and is otherwise a dear family member. The problems that crystallized during the survey are that there are mainly skin problems and problems with the gastrointestinal tract, possibly due to a weakened immune system. There are also problems linked to the skeleton and locomotor apparatus, however, it is unclear whether these are mainly hereditary defects or whether it is caused by injuries.

The White Swiss Shepherd Club shall promote the breeding of healthy White Swiss Shepherds by enabling the entry of new genetic material in collaboration with SBK/SKK, increasing the number of individuals used in breeding, reducing the overuse of individual breeding animals, increasing knowledge of genetic variation and reducing pedigree-calculated inbreeding.

White Swiss Shepherd club must work to ensure that social, playful and fearless individuals are used in breeding, that a greater number of dogs go through the mentality test called MH and that the exterior is maintained. The White Swiss Shepherd Club shall, as part of the breed-specific strategy, strive for international cooperation.

The White Swiss Shepherd club must give puppy referrals via the website to the litters that follow RAS and whose breeders are members of the White Swiss Shepherd club. An updated list that promotes the use of unused male must be available on the club's website. The White Swiss Shepherd Club must keep up-to-date on new research and follow developments regarding breeding in closed populations, and information must be shared with members in dedicated forums. Otherwise, the White Swiss Shepherd club shall promote international cooperation for sustainable and long-term breeding.



## Checklist for breeders and puppy buyers - does the litter follow RAS?<sup>1</sup>

- **What pedigree calculated inbreeding does the litter have?**  
If it is 0.4% or lower, the litter follows RAS and can receive a puppy referral. *Note that the genetic inbreeding rate for the breed is already on average 27-28%, so aim for as low inbreeding as possible.*
- **How old are the parent animals when the litter is born?**  
If they are older than 24 months, the litter follows RAS and can receive a puppy referral.
- **How many offspring have the intended parent animals already had?**  
If there are less than 18 Swedish-born offspring per parent, the litter follows RAS and can receive a puppy referral if the combination has not been done before. *Note that the appropriate number of offspring after a dog is 8-9 offspring, this to preserve the population in the long term.*
- **Does the parent animal have over 100 in preliminary litter index or HD A,B,C?**  
Then the litter follows the RAS and can receive a puppy referral. *Please note that HD C may only be mated with HD A or HD B or in a combination that results in over 100 in the preliminary litter index to receive a puppy referral and that the offspring should be carefully evaluated regardless of the combination.*
- **Does the parent animal have over 100 in preliminary litter index alternatively ED 0-ED 1?**  
Then the litter follows the RAS and can receive a puppy referral. *Please note that ED1 may only be mated with ED 0 or in a combination that results in over 100 in preliminary litter index to obtain puppy referral and that the offspring should be carefully evaluated regardless of the combination.*
- **Does the parent animal have a known mental status without a 5 on shots?**  
Then the litter follows the RAS and can receive a puppy referral. *Note that social unavailability/residual fear just like gunshot fear has a high heritability, so aim for socially available and secure individuals in your breeding and evaluate the offspring carefully after each combination.*
- **Has at least one of the parent animals been exhibited at an official show with the lowest rating Sufficient or alternatively has an approved exterior description/judgment?**  
Then the litter follows the RAS and can receive a puppy referral <sup>2</sup>.

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<sup>1</sup>In addition to the recommendations made by RAS, every dog owner who entrusts their dog to breeding must follow the regulations of the Swedish Kennel Club and the Swedish Board of Agriculture for breeding dogs.

<sup>2</sup>Please note that male dogs that have not been exhibited at an official show or do not have an approved exterior description/judgment must attach a testicle certificate to receive a puppy reference and to be registered with SKK. Evaluate the offspring's exterior through either exhibition or exterior description/judgment.

## Introduction

At the Swedish Kennel Club's (SKK) Kennel Council in 2001, the decision was made that there should be a breed-specific breeding strategy, RAS, for each dog breed. RAS is an action plan for breeding within a specific breed. SKK's breeding policy states the goals together with the breed standard and the strategy describes the path towards the goal. The strategy is written based on the breed's current state <sup>3</sup>and is forward-looking. It should be kept alive through regular evaluation and updating as new research and new knowledge is obtained.

To compile this RAS, the White Swiss Shepherd Club has used information from SKK's Breeding Data, Koiranet Breeding Data, Agria Breeders Profile , Embark as well as a health questionnaire <sup>4</sup>produced by the Swedish Working Dog Club (SBK) and answered by owners of White Swiss Shepherds in Sweden <sup>5</sup>.

### *Anchoring process in the breed club*

The White Swiss Shepherd's first RAS was written in 2006. There has since been an evaluation of the RAS annually up to and including 2019. The revision of the RAS began in 2020 and was anchored with the members during the end of 2021 and the first half of 2022 through five meetings (online) and continuous information via the website and mailings to members.



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<sup>3</sup>Unless otherwise stated in the document, the statistics regarding the current state of the breed have been obtained from SKK's breeding database.

<sup>4</sup>Health survey 2021. Available on the website of The White Swiss Shepherd club.

<sup>5</sup>The cover photo's photographer is Stefan Hallberg.

## History, background and development of the breed

The history of the White Swiss Shepherd is that of the German Shepherd until 1933, when the white color was banned in Germany. After the ban, they largely disappeared from Europe, except in England, the USA and Canada. The first white shepherds were imported to Switzerland in the early 1970s. The breed has been registered as its own breed since 1991 and now occurs frequently all over Europe. In Sweden, the breed was recognized by the Swedish Kennel Club (SKK) in 2000.

Since 2010, the White Swiss Shepherd has been included among the breeds for which the Swedish Working Dog Club (SBK) has overall breeding responsibility - a breeding effort that strives to produce healthy and functional dogs<sup>6</sup>. The White Swiss Shepherd is a very sporty dog that appreciates activity and is suitable for most working- and dog sports. It is also used today as a social service dog and assistance dog. The breed is intelligent and versatile which requires a committed handler. It is easy to learn, responsive, reacts quickly and is cooperative. The breed can be neutral towards strangers and even guard when someone approaches the home.<sup>7</sup>

## Overall breeding goals for the breed

White Swiss Shepherd club works in accordance with the Swedish Kennel Club's breeding policy and the Swedish Working Dog Club's statutes for breed clubs. The breed club shall arouse interest and promote the breeding of healthy White Swiss Shepherds as well as develop and preserve its working qualities. The White Swiss Shepherd is considered a relatively healthy breed and that is something the White Swiss Shepherd club, in cooperation with the breeders<sup>8</sup> and dog owners, wants to continue to preserve.

The breed standard was established by the Fédération Cynologique Internationale (FCI) General Committee 2011 (FCI number 347) and is the standard that the White Swiss Shepherd Club works to preserve. The points below constitute the order of priority for the basic guidelines in the breeding work:

### 1. Health

### 2. Mentality

### 3. Work characteristics

### 4. Exterior

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<sup>6</sup><https://www.brukshundklubben.se/hundar/brukshundraser/vit-herdehund/>

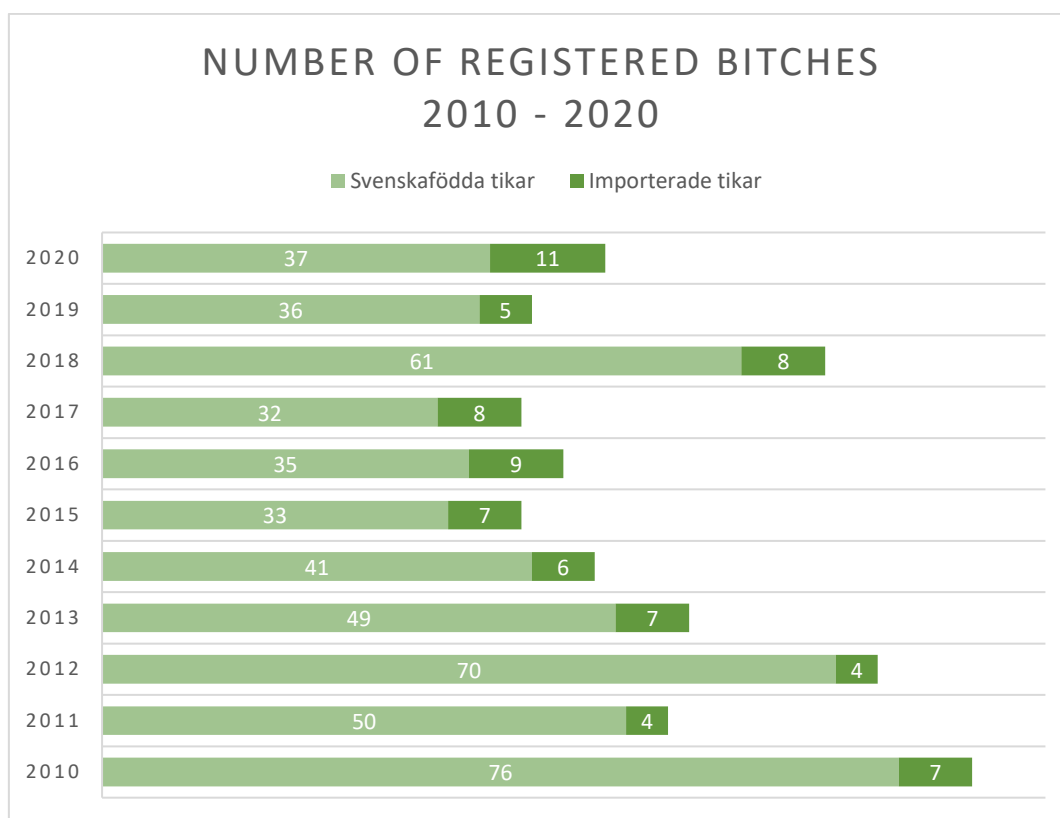
<sup>7</sup>Ibid.

<sup>8</sup>By breeder is meant every person who offers their dog for breeding, both registered breeders and male dog owners. SKK's basic rule §2 regarding breeding ethics: "Each member who entrusts his dog to breeding must be well acquainted with SKK's breeding policy as well as with the breed's standard, test regulations, registration regulations and breed-specific breeding strategy."

## Situation of the population 2010–2020

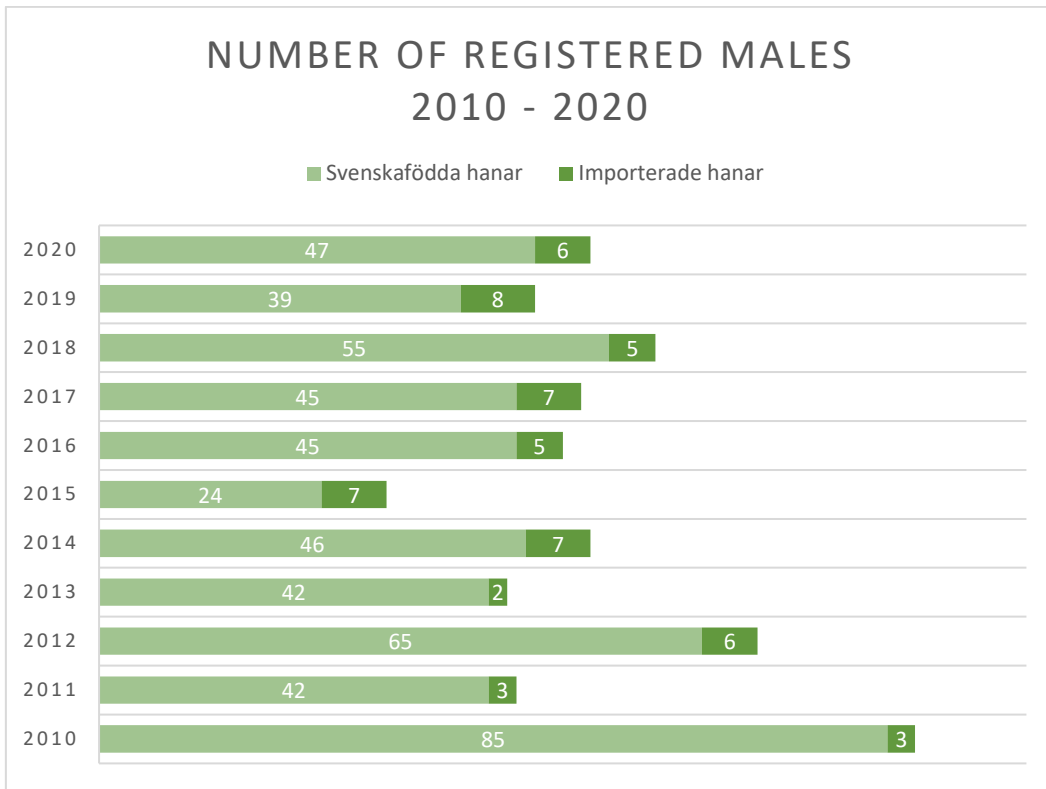
The population of White Swiss Shepherds in Sweden is small. An average of 108 dogs per year have been registered during the period 2010–2020, of which 11% have been imported from other European countries<sup>9</sup>, as well as one from Russia and one from the USA. Of the dogs that have been bred, 52% are foreign-born males and 23% foreign-born bitches. Breeders of the breed have thus tried to import unrelated dogs to maintain the genetic variation, which is positive. The disadvantage is that all dogs are likely to have been closely related regardless of which country they came from, but this is not visible in the pedigree-calculated inbreeding increase. Another difficulty with imports is that from a number of countries there is no breeding data in the same way as in Sweden, and it is therefore more difficult for the breeders to form an idea of the health status of the dog they buy.

### Registration numbers

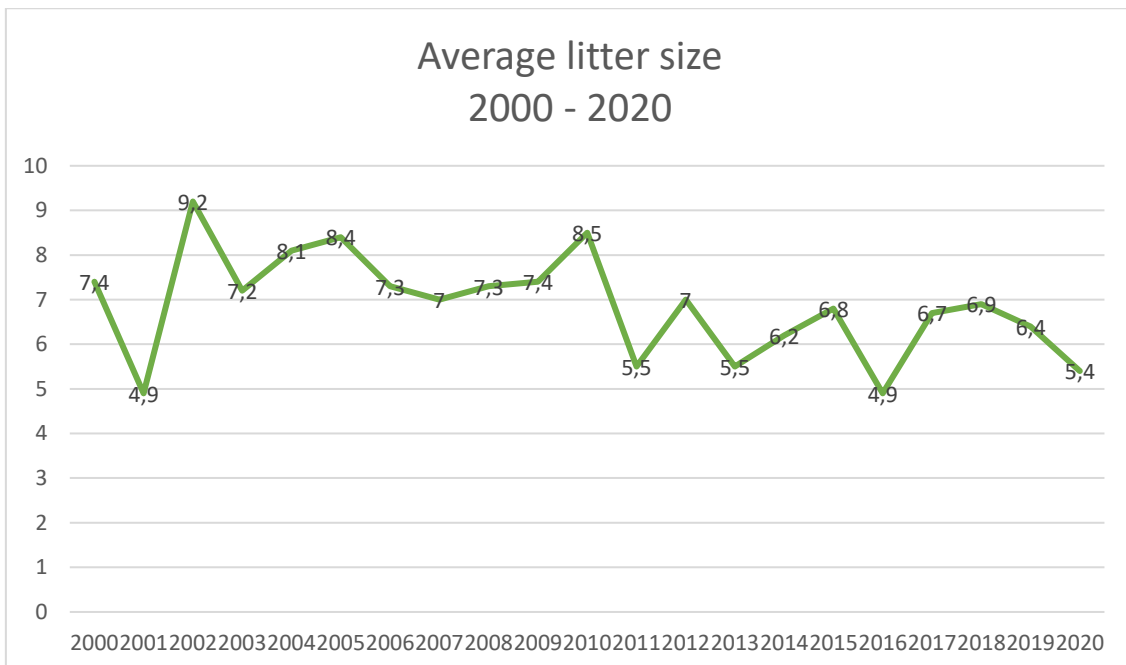


<sup>9</sup>Bosnia-Herzegovina 1, Denmark 14, Estonia 4, Finland 7, France 5, Italy 3, Latvia 1, Netherlands 12, Norway 21, Poland 8, Serbia 2, Spain 5, Germany 6, Hungary 2, Austria 3.



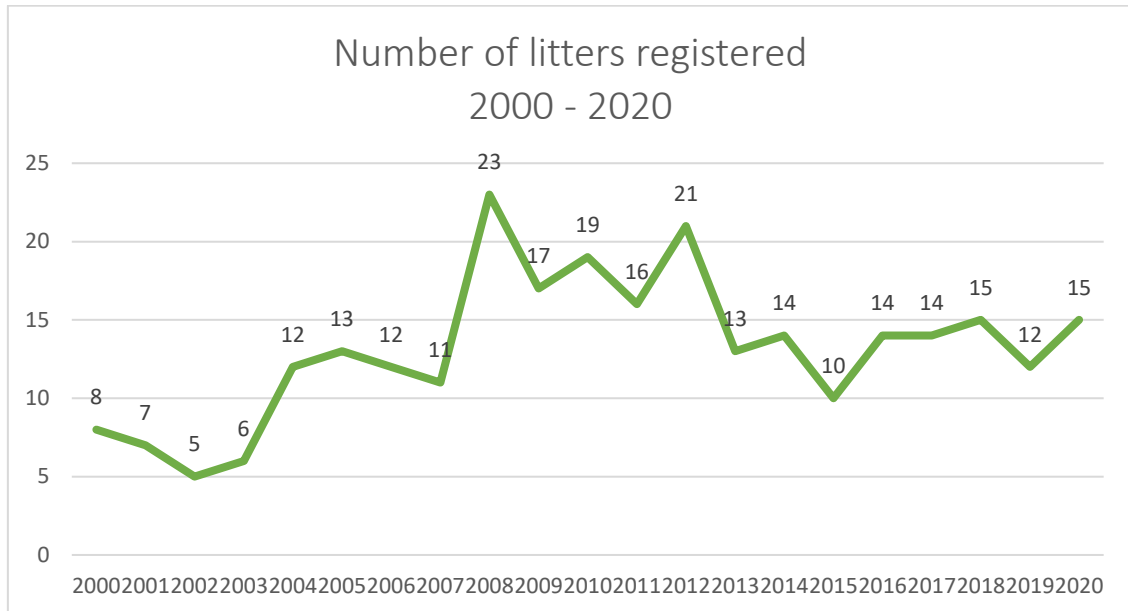


*Average litter size and number of registered litters*



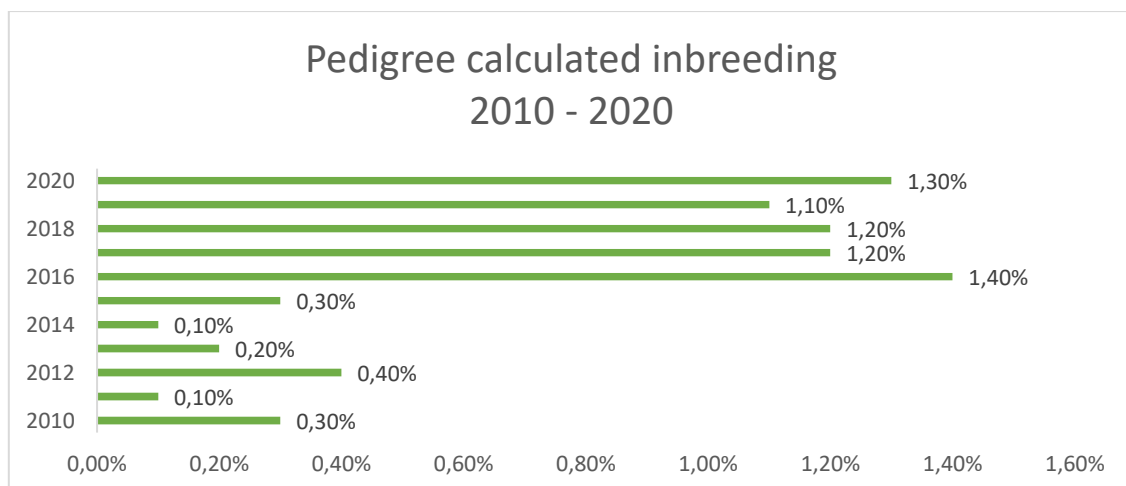
Litter size has decreased since registration began. Between the years 2000–2010 the litter size was an average of 7.1 puppies compared to the litter size in the years 2011–

2020 when the average ended up being 5.9 puppies. The development looks similar in our neighboring country Finland <sup>10</sup>, although not as significant.



#### ***Inbreeding increase***

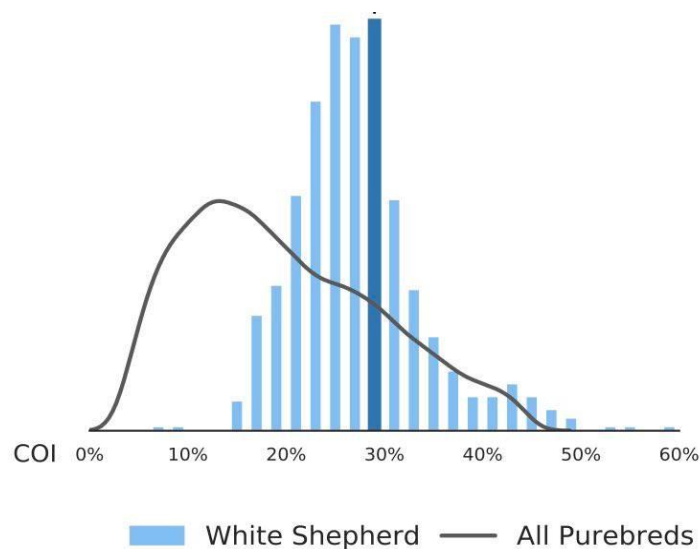
In a breed with a closed studbook, inbreeding can never decrease. It is therefore important to try to keep ***inbreeding increase*** as minimal as possible. The ***inbreeding rate*** stated in the dogs' pedigree is in fact a calculated inbreeding increase for five generations. The breed's average inbreeding calculated over five generations has increased since 2016.



<sup>10</sup>Between the years 2002-2010, 6.88 puppies were born per litter in Finland, during the later time period 2011-2020, 6.59 puppies were born per litter. The decline is thus less significant in Finland than in Sweden.

## Genetic inbreeding

Apart from calculating the degree of inbreeding over five generations, there is today DNA technology that shows the dog's genetic degree of inbreeding, or the number of homozygous alleles in each gene pair. Our dogs' genes are not only inherited for five generations, but for an infinitely longer time than that. Today's genetic inbreeding rate<sup>11</sup> in the White Swiss Shepherd is high. The White Swiss Shepherd club has, in cooperation with breeders and dog owners from all over the world, mapped out a large number of dogs' genetic inbreeding degree. Close to 50 different pedigrees show an inbreeding rate that gives an average of 28% genetic inbreeding rate<sup>12</sup>. It is higher than what a father-daughter or full-sibling pairing would yield in a pedigree-calculated inbreeding increase<sup>13</sup>.



*"Mating between related individuals not only increases the risk of recessive defect predispositions being duplicated. Several studies show that inbreeding also has a negative impact on traits associated with reproduction and survival, so-called fitness traits. The term used to describe this effect is inbreeding depression. Something that can be expressed in, among other things, reduced fertility in the parent animal or impaired growth and vitality in the offspring. Viewed as a dog breed as a whole, a consequence of certain gene variants being duplicated and becoming more common in the population is that others in turn become uncommon or are even lost. In this way, inbreeding reduces the genetic variation in the breed and undermines the possibilities for long-term sustainable development."*<sup>14</sup>

<sup>11</sup> Embark's chart of the genetic inbreeding rate of all purebred dogs is the black line, and of all with white shepherd DNA in blue (dark blue bar shows the results of one tested individual). The graph shows how it looks in November 2021. The graph may change as more dogs are tested.

<sup>12</sup> See explanation in Appendix 2.

<sup>13</sup> According to Wright's system used by SKK, a father-daughter or full-sibling pairing gives a 25% inbreeding rate in the pedigree.

<sup>14</sup> <https://www.skk.se/sv/upfodning/avel-och-upfodning/genetik-och-avel/inavel/>

### *The founder effect , the bottleneck effect and feeder breeding*

The high genetic inbreeding rate is not unique to the White Swiss Shepherd, many of our purebred dogs today have a high inbreeding rate. It is likely that the high genetic inbreeding rate of the White Swiss Shepherd was created already at the founding of the German shepherd. All now living German shepherds and thus White Swiss Shepherds are descended from four individuals, one male dog and three bitches, two of which were mother and daughter.

With closed studbooks, no new genetic material can be added and this means that the genetic inbreeding rate in a breed with a closed studbook can never decrease. What we see in our race today is what is called the "**founders effect**".<sup>15</sup>

In addition to the "founders effect", the White Swiss Shepherd has undergone several so-called "**bottlenecks**"<sup>16</sup>. Known bottlenecks that affected many breeds were the world wars, another bottleneck that affected the White Swiss Shepherd was that it was separated from the German shepherd.

**Populare sire syndrom** means that individual breeding animals are overused. The result is that the individual dog has a large influence on the population and that the breeding base is greatly underutilized. With our very limited population, this is a serious problem as the genetic variation is drained at a higher rate than necessary and thus affects the population at large and over time. For more information regarding which individuals have 25 Swedish-born puppies or more and which individuals have 40 Swedish-born grandchildren or more see Appendix 1.

### *Artificial insemination and double mating*

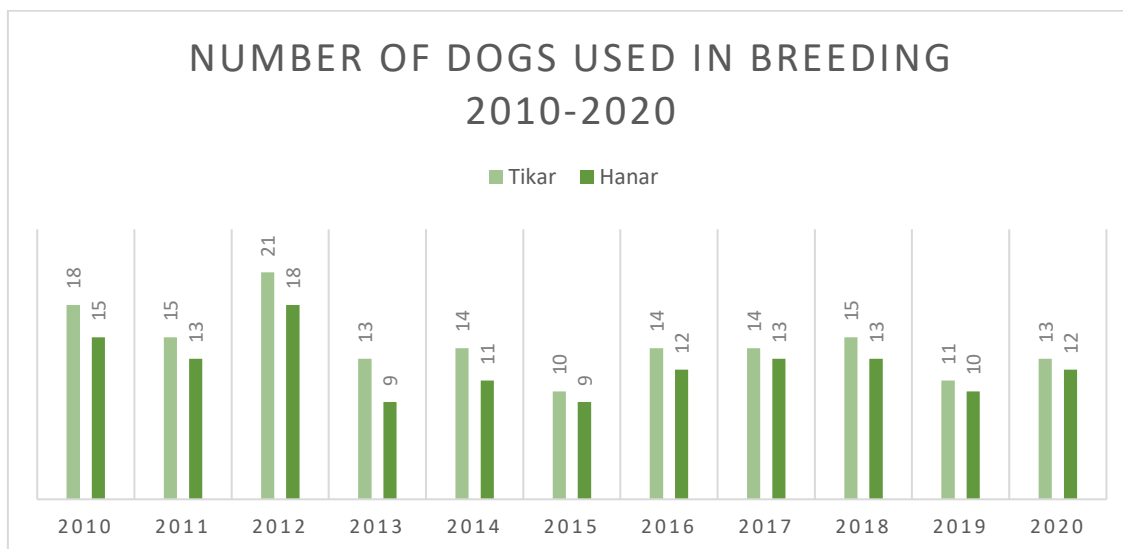
In order to maintain the existing genetic variation, breeders may choose to inseminate a female with sperm from a male dog who, for example, lives too far away for it to be reasonable to travel. The breeder can also choose to inseminate the female with sperm from two different male dogs, alternatively let the female mate with two different male dogs. The White Swiss Shepherd club is positive about this and recommends the breeder who is interested in this to take a look at the regulations that can be found on the SKK's and The Swedish Board of Agriculture's websites.

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<sup>15</sup>A phenomenon that occurs when a small group within a population turns into an isolated unit (founding group). The subgroup's gene pool contains only a fraction of the genetic diversity of the original population, leading to an increased incidence of certain diseases in the group, especially those that are autosomal recessive. <https://mesh.kib.ki.se/term/D018703/founder-effect>

<sup>16</sup>Bottleneck – a drastic reduction of a population size that results in the genetic variation being greatly reduced by only a few individuals being used in breeding. <https://www.skk.se/sv/upfodning/avel-och-upfodning/genetik-och-avel/hundavel-ny-bok/ordlista-avel-och-genetik/>

### *The breeding animals and their age, offspring and grandchildren*



During the time period 2010–2020, a total of 1190 white shepherds have been registered in Sweden (of which 135 dogs are imported). During the same time period, a total of 86 bitches have been used in breeding, which corresponds to 7.2% of the dogs registered during the time period 2010–2020. The corresponding figure for the males is 85, which corresponds to 7.1% of the dogs registered during the same period. This means that a total of 171 dogs (14.3%), out of a total of 1190 registered dogs, have been used in breeding during 2010–2020.

#### ***Males - origin, age, offspring and grandchildren.***

Of the 85 individual males used in breeding, 44 males (52%) were born abroad and imported to Sweden or live/have lived abroad. 12 males have had more than the maximum recommended number of offspring<sup>17</sup>. If you look at how many males that, in total, since the breed was approved, have had more than 40 grandchildren, 5 of these 12 males appears, in addition there are another 15 males that have had more than 40 grandchildren<sup>18</sup>.

The use of males within the age range of 2–3 years constitutes more than half of the males that debut in breeding (53%) in the time period 2010–2020. During the time period 2000–2009, 53% of males debuted at the age of 2–3 years. The use of young males is thus constant.

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<sup>17</sup>See Appendix 1

<sup>18</sup>Ibid.



### *Bitches - origin, age, progeny and grandchildren.*

Of the 86 individual bitches that have been used in breeding, 20 bitches (23%) have been imported to Sweden. 10 bitches have had more than the maximum recommended number of offspring<sup>19</sup>. If you look at how many bitches that, since the breed was approved, have had more than 40 grandchildren, 2 of these 10 bitches appears, in addition there are another 18 bitches that have had more than 40 grandchildren<sup>20</sup>.

During the time period 2010–2020, 71% of bitches debut in breeding at the age of 2–3 years. During the time period 2000–2009, 64% of bitches debuted at the age of 2–3 years. The use of young bitches has thus increased over the past 10 years.

**Breeding recommendations regarding the population** are to incorporate more individuals into the breeding work if possible and that within the breed we strive to make use of as much genetic variation as possible. From the perspective of population and long-term perspective, it is better that several individuals have few litters, than that few individuals have many litters. It is also of great importance to avoid popular sire breeding and to avoid repeated combinations.

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<sup>19</sup> Ibid

<sup>20</sup> Ibid

## Health situation of the breed

The White Swiss Shepherd is considered to be a relatively healthy breed without exterior exaggerations. The health results linked to the dogs' physical health that are registered in the SKK's database are hip joint X-rays, elbow X-rays, and results of eye examinations. With the help of SBK, the White Swiss Shepherd club has obtained information regarding the breed's health through a health survey. The questionnaire was answered by a relatively large number of dog owners and thus gives a fairly good insight into the current health of the breed <sup>21</sup>.

The insurance company Agria is one of the largest companies in the dog insurance market in Sweden. They regularly produce statistics on injury frequency, cause of injury, cause of death and much more <sup>22</sup>. There are a number of parameters in Agria's statistics that can give a less complete description of the health of the White Swiss Shepherd. For example, not all White Swiss Shepherds are insured at Agria. Veterinary visits that do not incur costs that exceed the deductible are also excluded from Agria's statistics. Problems related to mentality are not covered by the insurance and are therefore not visible either.

In order to get as comprehensive a picture as possible of the health of the White Swiss Shepherd, Agria's information has therefore been supplemented with information from the Finnish kennel club's database Koiranet <sup>23</sup> health questionnaire <sup>24</sup> and of course SKK's breeding data. In Koiranet, only data connected to the Finnish population is recorded, but with reference to the breed's limited genetic variation, the Finnish dogs are <sup>25</sup>very closely related to our Swedish dogs. One parameter that needs to be highlighted is that it is voluntary to register the cause of death in Finland, which can make the information less complete when it comes to the specific cause of death.

### *The five main reasons of death*<sup>26</sup>

1. Cancer (average life expectancy 8 years 11 months. 18%)
2. Old age (average lifespan 12 years 1 month. 18%)
3. Unspecified cause of death (average life expectancy 7 years 11 months. 11%)
4. Skeletal or joint disease/musculoskeletal system (average life expectancy 7 years. 10%)
5. Back/spine disease (average life expectancy 8 years. 7%)

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<sup>21</sup>Health survey 2021. Available on the website of Vit Herdehundklubb.

<sup>22</sup>White Shepherd Agria Breed Profiles Veterinary Care 2011–2016

<sup>23</sup><https://jalostus.kennelliitto.fi/>

<sup>24</sup>Health survey 2021. Available on the website of Vit Herdehundklubb.

<sup>25</sup>2021-08-18 the cause of death statistics contain 602 dogs in the Finnish Koiranet. Registration of cause of death is voluntary in Finland, which can cause gaps in the information.

<sup>26</sup> <https://jalostus.kennelliitto.fi/>, 2021-08-18

In a comparison of older data, between Agria's<sup>27</sup> statics regarding cause of death and the Finnish registration regarding cause of death during the time period 2006–2011, the following emerges:

Agria: The most common was skeletal or joint disease/movement apparatus, followed by stomach/intestine, injury and neurological causes, and only in fifth place was cancer the most common cause of death.

Koiranet : Old age (natural or euthanasia) was most common, then cancer, then unspecified cause of death and then skeletal or joint disease/movement system and back/spine disease.

Apart from old age, which is probably not reported to Agria to any great extent as it does not generate any insurance event, the cause of death in Agria and Koiranet during the time period 2006 – 2011 is relatively similar.

### ***The main five reasons for veterinary visits<sup>28</sup>***

Pain symptoms linked to the locomotor system, problems linked to the gastrointestinal tract (vomiting/diarrhea/ gastroenteritis) and damage to the skin are among the most common reasons for veterinary visits. Next come tumors and uterine inflammation.

Tumor in blood/vessels, also called hemangiosarcoma , is a relatively common type of tumor in dogs. The typical patient is an older German Shepherd<sup>29</sup>and it is also more common for White Swiss Shepherdsto suffer from this, compared to other breeds.

### ***Hip dysplasia***

According to the health program that applies to the White Swiss Shepherd, offspring of parent animals that do not have known hip joint status may not be registered.

Since 2017, the HD index has been calculated and the recommendation is that the parent animal's average HD index at



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<sup>27</sup>Agria Insurance Data 2006-2011 for White Shepherd

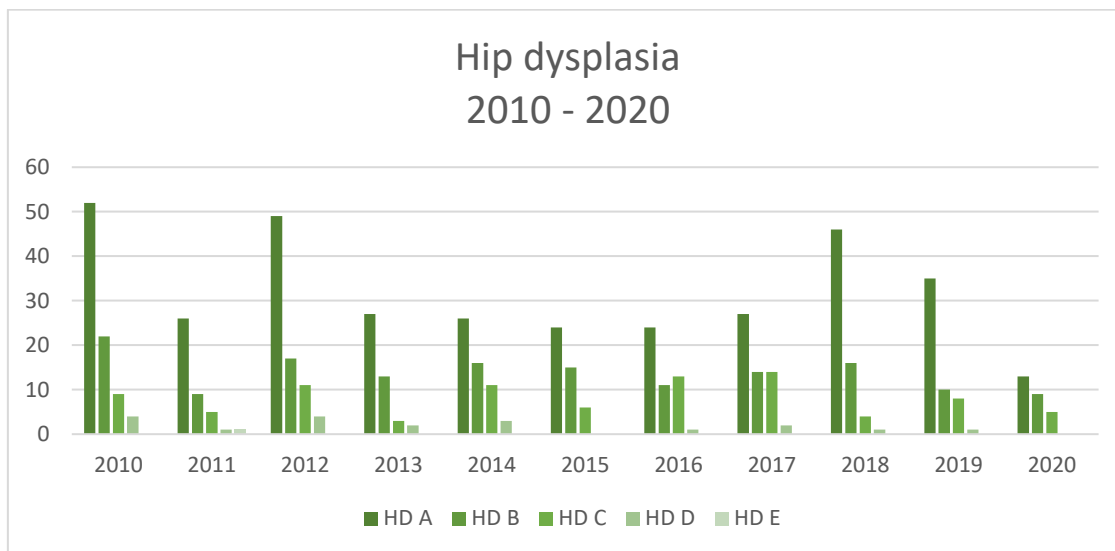
<sup>28</sup>White Shepherd Agria Breed Profiles Veterinary Care 2011-2016

<sup>29</sup><https://stud.epsilon.slu.se/7848/>

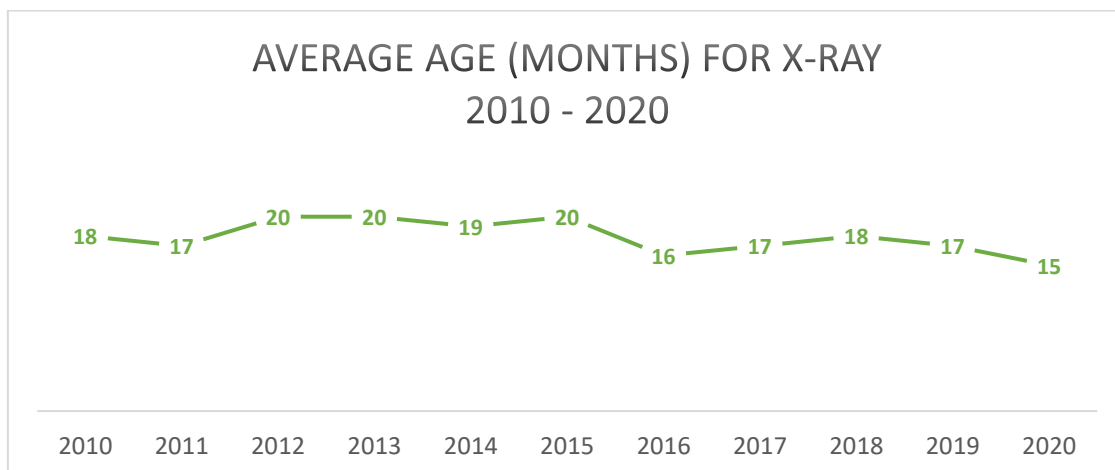


the time of mating is greater than 100. Dogs with hip joint status D or E may not be used regardless of the HD index <sup>30</sup>.

Since 2000, 1083 hip joint results have been registered in SKK's breeding database. Since HD A and HD B are classified as normal hip joints, 80% of the White Swiss Shepherds have had normal hip joints over time. The chart below shows the x-ray results of dogs with birth years from 2010 to 2020.<sup>31</sup>



The number of x-rayed dogs during the time period 2000–2020 is 57%. If this time period is divided between 2000–2010 and 2011–2020, a clear positive development emerges. During the first time period, 52% were x-rayed and during the later time period, 62% were x-rayed.



<sup>30</sup>See SKK's registration rules,

[https://www.skk.se/globalassets/dokument/upfodning/registreringsregler\\_r42.pdf](https://www.skk.se/globalassets/dokument/upfodning/registreringsregler_r42.pdf)

<sup>31</sup>The year 2020 may look different when more dogs from that cohort are x-rayed.

Since the hip joint index was introduced in 2017, first as a requirement and later turned into a recommendation, it is too early to evaluate any changes regarding hip joint health at the time of writing this RAS. A trend could possibly be that the age for X-rays drops after the index was introduced.

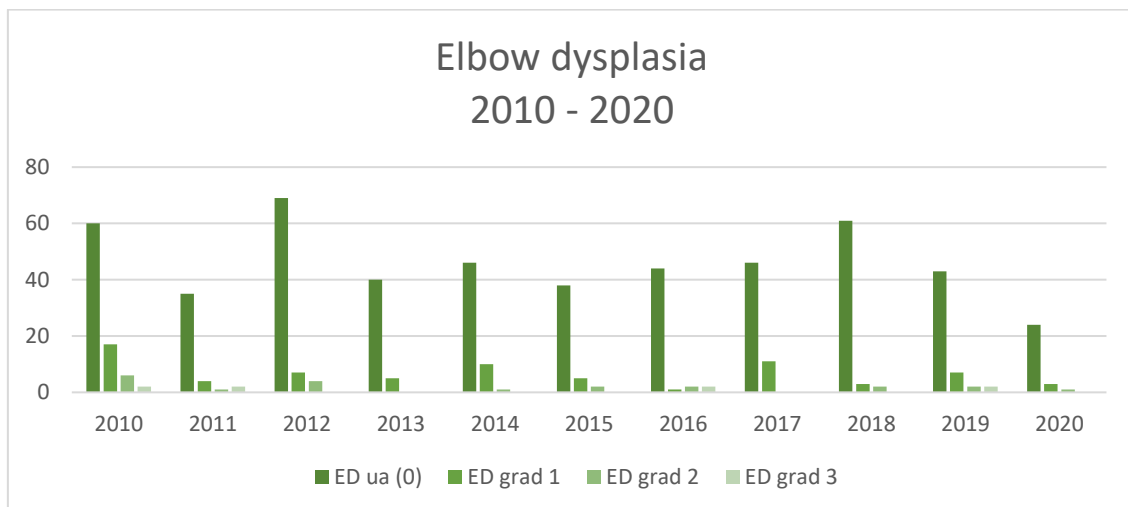
### *Elbow dysplasia*

Offspring of White Swiss Shepherds may be registered even if the parent animal does not have a known elbow status. If an individual dog can add genetic variation to the breed, it can be used in breeding despite ED1. Dogs that have ED2 or ED3 should never be used in breeding according to the White Swiss Shepherd club. The recommendation is that combinations made exceed 100 in preliminary litter index.



Since the year 2000, 1060 elbow results have been registered in SKK's breeding database, of these results 85% have ED0, 12% ED1, 2% ED2, and 1% ED3.

The number of x-rayed dogs during the time period 2000–2020 is 56%. If this time period is divided between 2000–2010 and 2011–2020, a positive development emerges. During the first time period, 50% were x-rayed and during the later time period, 62% were x-rayed. The average age for elbow x-rays is the same as for hip x-rays.



As the elbow index was introduced as a breeding tool in 2017, it is too early to evaluate any changes regarding elbow health at the time of writing this RAS. A trend could possibly be that the age for X-rays is falling as the average for X-rays was done at 16 months in 2018–2019.

### ***Other health issues***

#### ***Skin***

Itching in dogs can be caused by different things and manifest in different ways. The causes of itching can be divided into four groups; parasites, infections, allergies and other causes.

In the health questionnaire, the question was asked: Has your dog had skin problems or itching? 103 (34%) answered yes, 198 (66%) answered no. 116 chose not to answer this question. The main reasons given are allergies and eczema. Skin problems are the seventh most common reason for vet visits for White Swiss Shepherds according to Agria's statistics.

#### ***Stomach and intestines***

In the dog's gastrointestinal tract, there is the intestinal flora that fulfills many functions, including the production of nutrients such as vitamins and fatty acids. Close to 90% of the dog's immune system is concentrated in the intestinal tract and protects the dog against disease-causing bacteria and viruses that the dog is exposed to during its life. Gastrointestinal function is important as it can affect the dog's entire body and well-being.

In the health questionnaire, the question was asked: Has your dog had digestive and/or intestinal problems? 62 (21%) answered yes, 236 (79%) answered no. 119 chose not to answer this question. The most common among the answers is that the dog gets diarrhea due to hypersensitivity/allergy to a certain protein/proteins, some dogs have had inflammation of the pancreas, some have been affected by Giardia and some have had stomach problems due to medication. In the breed problems with the stomach and intestines are the second most common reason for veterinary visits according to Agria's statistics.

#### ***Reproduction***

As there are limited statistics available on the problems that are considered to belong to reproduction, it is not possible to describe this in a reliable way. In the vast majority of cases, the White Swiss Shepherd can reproduce through a normal mating and a normal delivery. Difficulties in reproducing through natural mating due to the male and/or female not having sufficient sex drive or ability occur but are not mapped out. Bitches that "go empty", i.e. do not become pregnant despite a normal mating also occur, but there are no statistics on that either. Bitches that are weak in labor or due to other reasons cannot give birth normally occur, as do stillborn or weak puppies. The

statistics available in this area are litter size, which we see a negative development of, and that uterine inflammation, which adversely affects reproductive capacity, is one of the five most common reasons for veterinary visits. In a study<sup>32</sup> of the Golden Retriever breed, the researchers determined that inbreeding depression leads to reduced litter size, which could be an applicable explanation for the reduced litter size in the White Swiss Shepherds as well.

**Breeding recommendations regarding health** are to only breed healthy dogs, and to take into account, not only the health of the two parent animals, but also the health of other relatives, such as litter siblings, grandparents, cousins and half-siblings. It is recommended that each litter be carefully evaluated for health before the respective parent animals possibly have another litter.

## Short-term goals regarding population and health (5 years)

- Increase the genetic diversity within the breed.
- Increase the number of individuals that go into breeding from today's 7% to 10%.
- Reduce the pedigree calculated inbreeding increase for the population on average to a maximum of 1%.
- Create an understanding that an individual dog, based on the prevailing population, should not leave behind more than a **maximum of 25 puppies** or a **maximum of 4 litters**. The maximum suitable number of offspring after one dog is 8-9 puppies.<sup>33</sup>
- Maintain the percentage of dogs that have free hips and elbows.

### *Short-term strategy to achieve the goals (5 years)*

- The White Swiss Shepherd club shall, in collaboration with SBK/SKK, strive to establish a permanent opportunity to be able to introduce new genetic material.

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<sup>32</sup> <https://www.morrisanimalfoundation.org/article/inbreeding-depression-reduces-litter-sizes-golden-retrievers>

<sup>33</sup> According to SKK's basic rules, a bitch may not have more than 5 litters. This does not mean that a bitch **should** have five litters. The number of suitable puppies is 8-9 due to the fact that no male or female should be given the opportunity to have more puppies than 5% of those born in his/her generation. The ideal number of puppies is 2%, which is currently 8-9 puppies.



- White Swiss Shepherd club shall promote unused dogs in breeding. Promote the import of sperm from unrelated dogs (artificial insemination) and increased use of the possibility of double mating.
- White Swiss Shepherd club shall not give puppy reference to litters that exceed 0.4% in pedigree calculated inbreeding coefficient <sup>34</sup>.
- The White Shepherd club shall not give puppy referrals to litters whose parents have had more than 18 Swedish-born puppies before <sup>35</sup>.
- White Swiss Shepherd club shall not give puppy referral to repeated combination.
- White Swiss Shepherd club should encourage many individuals to be x-rayed so that we continue to have 60% or more x-rayed.

#### *Long-term goals regarding population and health (10-15 years)*

- 20–30% of all White Swiss Shepherds are used in breeding.
- The pedigree-calculated inbreeding increase is no longer used, but DNA is the basis for the inbreeding calculation.
- Introduction of new genetic material is a natural part of breeding work and is considered a resource.
- The breed has a large genetic diversity that is nurtured and maintained.
- The breed has a consistent, high level of dogs with excellent joint health and it is at least 65% x-rayed.

#### *Long-term strategy to achieve the goals (10-15 years)*

- The White Swiss Shepherd club must continue to inform all breeders about the risks of inbreeding and loss of genetic diversity, as well as the importance of allowing a larger number of individuals to be included in the breeding work.

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<sup>34</sup>During the time period 2011-2021, 156 litters were born of which 97 (62.1%) had 0% inbreeding. 6 litters (3.8%) had 0.2% in inbreeding. 13 litters (8.3%) had 0.4% in inbreeding. A total of 74.3% of the litters thus had 0.4% or less in inbreeding, thus it is reasonable to set 0.4% as an upper limit for puppy referral.

<sup>35</sup>The current average number of puppies per litter is 6.1 puppies. A dog that has 18 or more puppies before having a new litter can have more than 25 puppies. (18 + 6.1 = 24.1)



- White Shepherd club must ensure that new genetic material can be included over time.
- White Swiss Shepherd club shall encourage continued work to maintain existing joint health.
- White Swiss Shepherd club shall to promote international cooperation.

## Mentality - situation of the breed.

### *Mental description Dog (MH)*

The number of dogs with known mental status within the time period 2010 – 2020 is 490. In total, during the same time period, 1190 White Swiss Shepherds have been registered in Sweden. This means that 41% of the dogs have completed mental description.

MH is a test situation where the results have been proven to have a certain degree of heritability. Mainly, MH is intended to be used as a progeny test in order to be able to see tendencies about which characteristics the parents inherit. For the individual dog owner, there is also a benefit to do the test as you can gain better knowledge of the dog's way of reacting in different situations. The White Swiss Shepherd must have MH with known mental status in order to register puppies with the Swedish Kennel Club.

For dogs over 18 months, MH is a requirement for competitors in utility tests and to be able to attend service dog training.

The White Swiss Shepherd must be lively, appreciate activity and have a balanced temperament. The breed should be attentive and easy to learn, very social and faithful. It is friendly and open, never afraid or unprovoked aggressive.

### *Mental test*

The mental test 2007 is one part of the breeding titling called Korad. The second part is an exterior description<sup>36</sup>. On a mental test, the dog is assessed according to a point scale where 300 points is approved/passed and 600 points is the maximum. As of 2012, a certain number of points are required per part. In addition to the minimum score, the score distribution must be at least 50 points in part 1 (Cooperation - endurance) and at least 215 points in the remaining part of the protocol.

Since 2010, 78 males and 72 bitches have undergone the Mental Test according to SKK's breeding data.<sup>37</sup> 54 males (69.2%) and 35 females (48.6%) of the tested dogs have been approved. The average of the passed tests is 396 points for the males and 376 points for

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<sup>36</sup>See Location description Exterior

<sup>37</sup>2021-08-24

the bitches. If we look at the time period 2012-2020 , where the point total was divided between two parts, there are a total of 105 mental tests that have been done, of which 35 have received an unapproved result. 12 out of 105 dogs have received full or partial Can not be described (KEB).

Of the 35 unapproved results, 5 dogs had high enough scores on both parts but were not approved due to fear of gunshots.

Out of 35 dogs, 16 dogs that did not receive an approved result had more than the minimum score on part 1 and 19 dogs had less than 50 points.

### ***Results of mental descriptions and mental tests.***

The mental descriptions show that the majority of the White Swiss are interested in greeting and investigating people unknown to them, but that interest wanes and that they are somewhat less inclined to engage in play and activity with strangers. We also see that a number are burdened, both by the initial greeting and by handling. This is likely a holdover from the time when it was considered that a herding dog could be reserved in front of strangers, perhaps that it was required to be so. Today society looks a little different and a vanishingly small part of our former shepherds are used in the way they once did. It is therefore desirable that our dogs today are socially safe and do not become negatively burdened by being in a situation or environment where strangers are included. It is considered relatively common that our White Swiss mature quite late, so a comparison with mental tests is therefore interesting to make. When the dog performs the mental test, it is older than when it performs the mental description and has therefore had more time to mature and build up experience. However, we see that the majority show social insecurity in some or more moments even during the mental tests, which indicates that it is not something that the dog necessarily grows out of, even if it can learn to handle it better. Interest in engaging with other people also continues to be low, but they seem to maintain their social curiosity. When they show interest in interacting with strangers, but still do not do so, it may be a sign that the social self-confidence is not great enough.

The majority of White Swiss Shepherds show a desire to play, which is positive, but we also see that there is a percentage that does not play and that few shepherds play very actively. Grabbing the toy is something most shepherds do, but there is also a percentage that does not want to grab or engage with the toy. A very small percentage play vigorously by grabbing the toy directly or chopping it on the fly. Most White Swiss show no desire to wrestle the toy in a tug of war, but do not grab the toy, or grab the toy hesitantly and let go, or don't pull back. When compared to the results from the mental tests carried out, we see that the desire to play is there but that the shepherd mostly prefers to play either by himself or with his handler, most choose not to engage in play with the test leader. As the White Swiss Shepherd is to be an active and cheerful dog, it is desirable that it exhibits playfulness and social self-confidence.



At the moment of pursuit, about half show disinterest or only short-term interest, they do not start to pursue the prey (a cloth that is dragged quickly along the ground) or start but interrupt the pursuit. The other half are more active, they start slowly or quickly, run after the prey but rarely grab or grab cautiously. This type of pursuit describes more the dog's playfulness than actual hunting. In the mental tests, we see that the majority of the dogs are more active in their pursuit, but most often the shepherd does not grab the object there either. It is desirable that the White Swiss maintains its playfulness even as it grows older.

During the activity phase which shows the dog's ability to go from activity to passivity, the majority show that they are alert but mainly calm, some occasional increase in activity may occur. It is desirable that our shepherds on such occasions can "wind down" and deal with the situation on their own.

When playing at a distance, most White Swiss do not show any threatening behavior. When the dogs are let loose, we see a more varied behavior. Just over half choose not to approach the figurant at all and many show no interest in playing or interacting with the figurant, some choose to engage with the figurant when it is active, some approach the figurant when it is hidden but speaking. We see some who, despite the fact that they think the situation feels awkward, choose to go forward. We also see that there are some shepherds that go directly up to the figure without hesitation or anxiety. It is desirable that the White Swiss does not show threatening behaviors in this situation and that it has enough self-confidence to solve the situation itself by controlling or playing with the figurant.

During the moments of surprise, the majority have a reaction that is described as making a small evasive maneuver without taking their eyes off the overall. Few individuals react with aggression directed at the overall. After the initial surprise, it is described how the dog solves the situation and most commonly with the White Swiss is that it takes support from its handler, it walks up to the overall when the handler is squatting and speaks to the overall or when the handler is standing next to the overall. We also see that there are some dogs that solve the situation partially without help and some completely without help, and that some do not get over the reaction that occurred and thus do not progress regardless of help. The dog's remaining fear and interest is also described here, and it is positive that the majority of shepherds show no remaining fear and no remaining interest.

After the moment of surprise comes another surprise in the form of sound. Again we see that the majority of the shepherds make a minor evasive maneuver without looking away. Here, the majority of shepherds are again supported by their owner, in whole or in part. Here, too, the dog's remaining fear and interest are assessed, and the majority of shepherds release both fear and interest, which is again seen as positive.

After these surprises, the dog arrives at a place where it is exposed to a form of threat, colloquially known as "ghosts". Here, the dog's ability to keep a distance from a threatening situation is described, and the majority of the White Swiss show no or few



threatening behaviours. Next, we see that some show a number of threatening behaviors for a longer period of time. Very few White Swiss progress from threatening behavior to actual attack without attempting to end the threat by merely displaying menace. We see that the majority of White Swiss either control and act against the threats (for example by barking, growling, raising a rag, taking a step forward) with longer or shorter interruptions. About one-fifth of the dogs stay in front of or next to the owner during the moment, one-fifth stay mainly in front of or next to the handler but can adjust their distance somewhat, one-fifth alternate between escape start and control but continue to be in front of or next to their owner, and one-fifth seek support or protection by standing behind the owner and there switch between escape start and control and the last fifth choose to withdraw from the whole situation by either backing further than the length of the leash and/or getting away from the place.

When the threat ends, that is, the ghosts stop and turn their backs towards the dog, the dog's ability to resolve the situation through its social curiosity is described. Here, too, we see a relatively large spread in the reactions. We see that the majority of the dogs need some form of support from their owner to resolve the situation, but about a fifth are unable to move forward despite support. A fifth needs no support but goes forward by himself and smells/examines the two ghosts. Here it is desirable that the dogs have the strength to get through the situation with little or no support from the owner. When the ghosts then take off their headgear and make contact with the dog with a happy and pleasant voice, we see that most respond to the contact or initiate contact themselves. This is to be seen as positive as it means that the dog has released its fear/discomfort of the threat that has just been directed at it.

During threatening situations in the mental tests, we see that most White Swiss show a certain fear and deal with this by keeping their distance or making an evasive maneuver and respond with little or moderate aggression. The results of the mental tests are therefore largely consistent with what we see in the mental descriptions. The dogs need the support of their owners and would rather avoid or extend the distance than forcefully repel what is perceived as threatening.

Dogs that played at the beginning of the description but at the end of the description do not show the same play behaviors may have been stressed and thus do not have the ability/willingness to start playing again. It may also be that the dog has been triggered during the tests and plays more after all the moments it experienced. Here we see that a number of White Swiss go from playing at the beginning of the description to not playing and not grabbing the object at the end of the description, but the majority, however, play as at the beginning of the description. It indicates that they have not been negatively burdened by all the preceding elements of the description, which is positive.

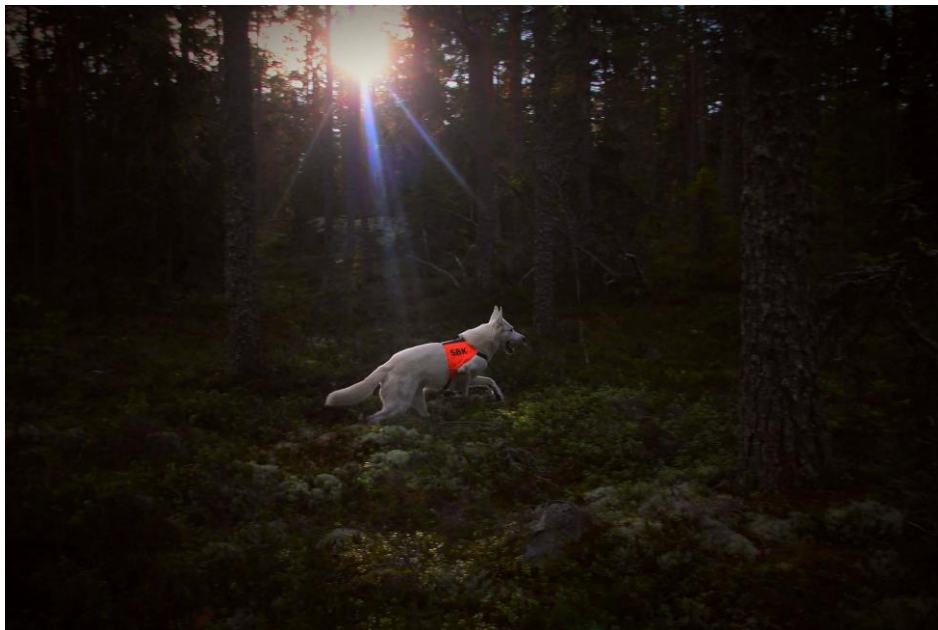
The majority of White Swiss are judged to be "bulletproof", that is, they are not frightened by the loud and sudden sounds (shots) that come as the last moment during the mental description, which is to be considered very positive. Some react with

curiosity directed towards the place where the sounds are coming from and some show waning playfulness. Just over a tenth of the White Swiss are affected, scared and/or run away from the place where they receive a rating of 5. A rating of 5 is also automatically given to the dogs whose owners have said that they want to refrain from the shots, which is allowed but not desirable. Fear of sound in our dogs is hereditary and therefore it is important that it is continuously tested. In comparison with the mental tests, we see even slightly better results, which may be due to the fact that dogs that showed fear of gunshots during the mental description do not sign up for the mental test to the same extent, as the mental test is not passed regardless of the score if the dog shows fear of gunshots.

## Work characteristics – situation of the breed

### Working dog utility test

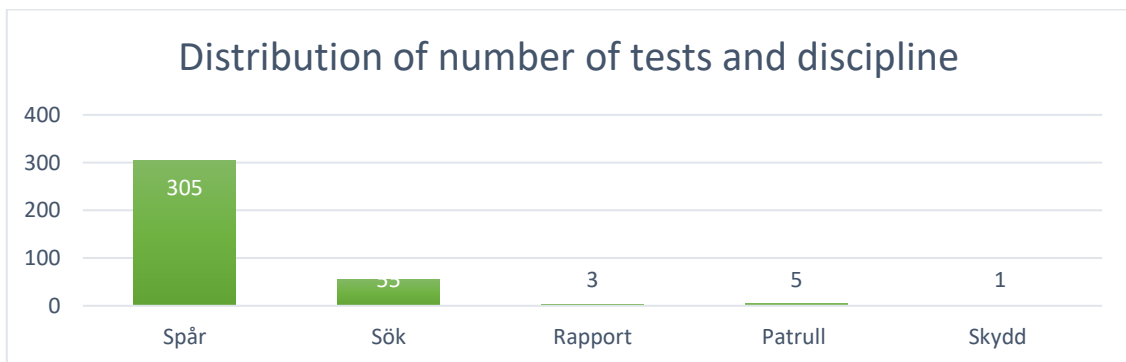
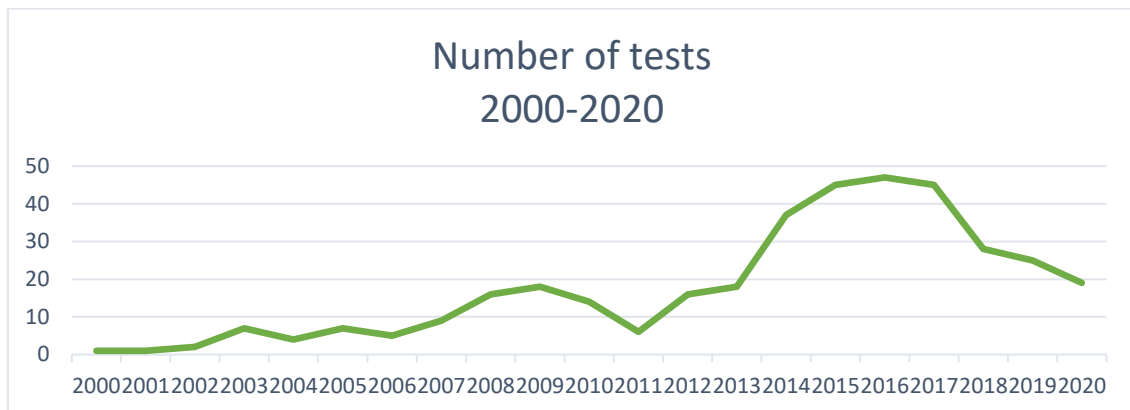
In the Swedish working dog utility test, the dog is tested in both an obedience phase and in a phase showing its utility in work. The test takes place both on a field/lawn (for the obedience) and in the forest. The tests are arranged in four classes: beginners class, lower class, higher class and elite class. There are five different disciplines of utility test which are track, search, report, patrol and protection. In the time period 2000–2020, 371 use tests of White Swiss have been carried out. 195 utility tests have been in the beginners class, 110 tests in the lower class, 42 tests in the higher class and 23 tests in the elite class.<sup>38</sup>



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<sup>38</sup>Statistics provided by the Swedish Working Dog Club 2021-08-27.

Starting in 2010, when the White Swiss Shepherd was accepted as a working breed in the Swedish Working Dog Club (SBK), the trend regarding participation in working trials looked relatively positive, up to and including 2017. However, the downward trend is in symbiosis with the registration statistics, which have also been somewhat decreasing.



82% of all tests have been within the track branch and behind all 371 starts there are 100 individuals.

### *Service dogs*

Since 2010, 8 White Swiss Shepherd s have been approved as service dogs, all are approved as patrol dogs.



### *Other tests and competitions*

White Swiss Shepherd is a real all-round breed. Over time, it has participated in, among other things, a large number of obedience tests, rally obedience, nosework, agility, game trail tests and on a few occasions in herding dog tests and international trials (IGP).

Since the breed was approved in 2000 up to and including 2020, an average of 45% of all registered White Swiss have participated in some form of test, exterior evaluation (exhibition, exterior description, exterior assessment) or mental description/mental test (which is registered by SKK).



## **Short-term goals regarding mentality and work characteristics (5 years)**

- Increase the number of mentally described dogs to 45%.
- Traits that the White Swiss Shepherd club wishes to be strengthened are play (hunting, grabbing, tug of war) as well as social confidence and that the White Swiss Shepherd has less fear in relation to loud noise in the future.
- Increase the number of starts in utility tests from today's average of 30/year to 35 or more per year. Increase the number of individuals who participate in utility trials from today's average of 8 dogs/year to 10 dogs or more.

### *Short-term strategy to achieve the goals (5 years)*

- Encourage increased numbers of mentally described dogs to further map out the White Swiss mentality and incorporate socially strong and playful individuals into the breed. White Swiss Shepherd club must arrange at least two mental descriptions per year.
- Avoid breeding dogs that exhibit fear of gunshots in connection with mental description. White Swiss Shepherd club should not give puppy referral to combinations that contain parents with a fear of shots ( 5th on shots/MH).
- The White Swiss Shepherd club, in cooperation with local working dog clubs, must facilitate and promote dog owners to choose to start their dog in



working trials and/or other competitions, as well as contribute to meeting the need for officials and volunteers needed to conduct working trials.

***Long-term goals regarding mentality and work characteristics (10–15 years)***

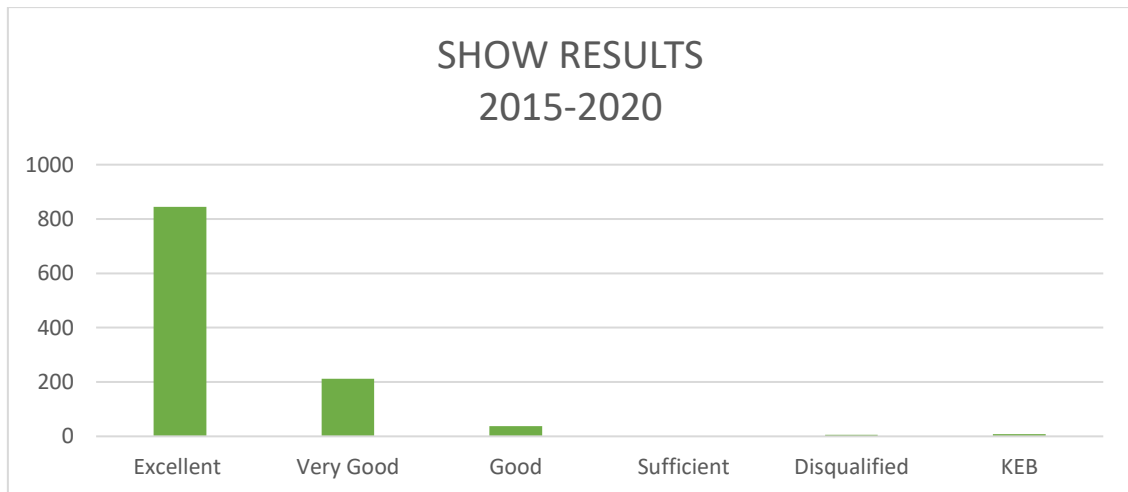
- Dogs with great social confidence and playfulness are widely used in breeding. Dogs with remaining fears, social inaccessibility and gunshot fear are not used in breeding.
- Close to 50% of all dogs are mentally described.
- White Swiss Shepherd club has a good collaboration with local working dog clubs all over Sweden and can thus organize several mental descriptions for the breed annually.
- The number of starts in utility tests per year is over 50.
- The number of individuals who participate in utility trials is over 20 dogs/year.

***Long-term strategy to achieve the goals (10-15 years)***

- White Swiss Shepherd club must arrange mental descriptions every year, on at least two occasions.
- White Swiss Shepherd club must cooperate with local working dog clubs and thereby increase the number of mentally described working dogs across the country.
- White Swiss Shepherd club must continuously recruit and train helpers/figurants and, if possible, also describers.
- White Shepherd club shall endeavor to arrange a recurring breed championship to encourage greater participation.
- The White Swiss Shepherd club will participate in the Swedish Working Dog Club's work to strengthen the status of working breeds in Sweden.

## Exterior – situation of the breed

### *Show results*



During the time period 2015–2020, 1102 assessments have been made at dog shows. During these dog shows, 845 Excellent have been awarded, 212 Very Good , 38 Good , 1 Sufficient . 6 dogs have been disqualified and 8 Cannot be judged have been awarded. 562 Certificate Quality have been distributed. There are 254 individual dogs behind the results made during this time period. If it is assumed that 1190 dogs were registered during 2010-2020 , then it is 21% of the dogs that were judged in a dog show.

### *Exterior description*

During the time period 2015–2020, 65 exterior descriptions (part of the titling Korad) have been made of 61 individual dogs. 64 have rendered in approved exterior description and 1 has not received approved exterior description. If you assume that 1,190 dogs were registered between 2010 and 2020, then it is 5% of the dogs whose exterior has been described.





## Short-term exterior goals (5 years)

- Increase the number of individuals judged at a show from today's 21% to 25%.
- Increase the number of individuals whose exterior is described from today's 5% to 9%.

### *Short-term strategy to achieve the goals (5 years)*

- The White Shepherd club will organize a breed show every year, in line with previous years.
- The White Swiss Shepherd club must arrange for an exterior description on at least 1 occasion per year. Preferably in connection with mental tests and/or the breed show.

### *Long-term goals regarding exterior ( 10-15 years)*

- 30% of all White Swiss are showed at least once.
- 20% of all White Swiss are exterior described.

### *Long-term strategy to achieve the goals (10-15 years)*

- The White Shepherd club will organize a breed show every year, in line with previous years.
- The White Swiss Shepherd club must arrange for an exterior description on at least 1 occasion per year. Preferably in connection with mental tests and/or the breed show.