

GROENENDAEL

Statistics and Health Strategies

Gathered by Jenni Uski

Groenendael Finland

JTO: <https://jalostus.kennelliitto.fi/RotuPDF.ashx?R=15.1&T=2>

*Separation in show and working lines might make population size smaller in subpopulations, and lines should be combined and groenendaels out of intervariety breedings should be combined back to groenendael in next generation.

*Issues in behaviour are lack of courage and too vivid temperament. Some issues with noises (shooting, rockets, loud noises) are noted, and dogs with character issues should not be bred. Mandatory character testing is presented as possible option in future.

*In health the most significant issues are gastric and digestive problems (sensitive stomach, diarrhoea, allergies), autoimmune sicknesses and cryptorchism. These are very hard to control in breeding unless they are really reported by owners or breeders.

*Earlier goals of our breeding strategy in Finland is not achieved in any part of the breeding.

Breeding restrictions:

-Hips A-B

-Elbows screened

-Eyes no PRA, hereditary cataracts, geographic or total retinal dysplasia (gRD or tRD) or any form of pannus. Any milder form has to be paired with healthy dog. Eye test can be max. 24 months old at the point of mating.

-Correct testicle status for males

-All breeds from FKC – worst level of evaluation closes dog from breeding (Hips E, ED grade 3 and spondylosis gr 4 fi.)

Breeding recommendations:

-Age 2-8 yrs for females and over 2 years for male

-Screened spine (spondylosis and lumbosacral transitional vertebrae (LTV))

-Character test (passed) or working result

-Acceptable bite

-Tested ataxia (SDCA 1 & 2 N/N or N/C, which can be paired only to N/N)

-Show result G (Good) at least 15 months of age

-Elbow grades counted together max 2, so that none of the grades is alone 2.

-Shoulders should be screened healthy

-Epileptic can not be used in breeding. Combination that produced epilepsy, should not be renewed. Epileptic siblings' epilepsy status is unknown, but waiting for more age is recommended and then be very careful when mating partner is chosen.

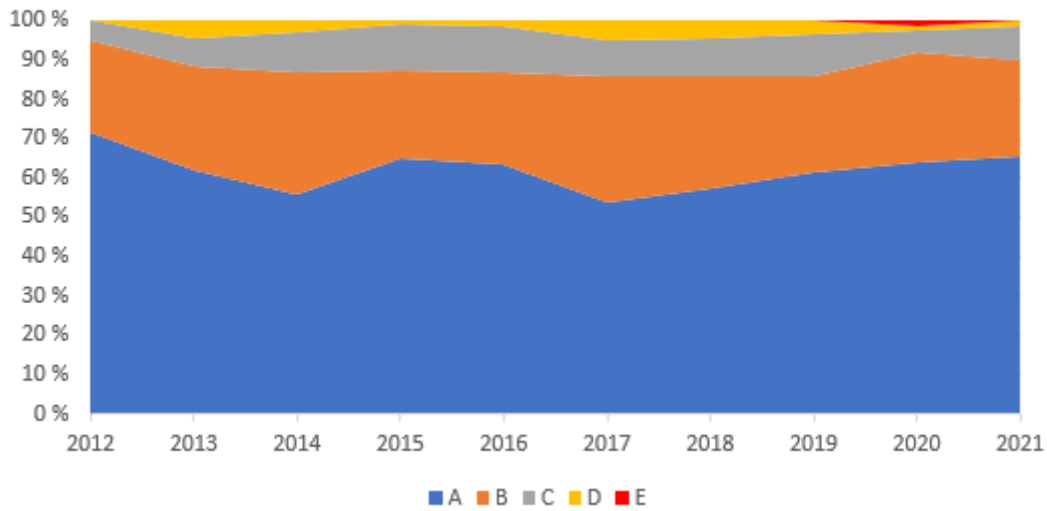
-Maximum number of offspring should be 3% of the number of registrations in one generation (4 years) On groenendaels it should be average 15 puppies

Average inbreeding in groenendaels in Finland is on last period 2012-2021 between 0,73 - 2,81 %, which can be considered moderate to good.

<https://jalostus.kennelliitto.fi/frmJalostustilastot.aspx?R=15.1&Lang=en>

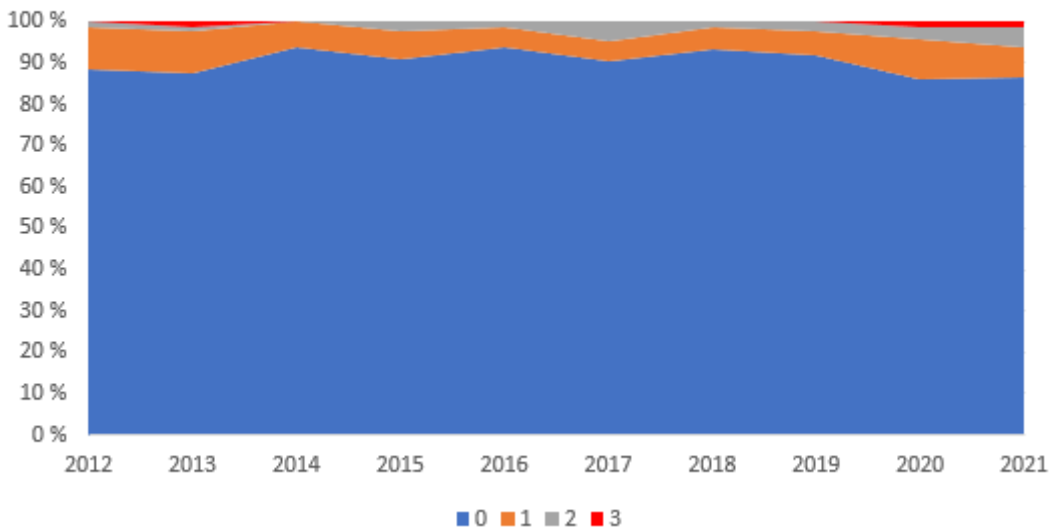
Groenendaels have been screened by hips in Finland already for several decades. Old groenendael lines were merely HD A (old H*)

Hip dysplasia in groenendael by statement year 2012-2021 GR



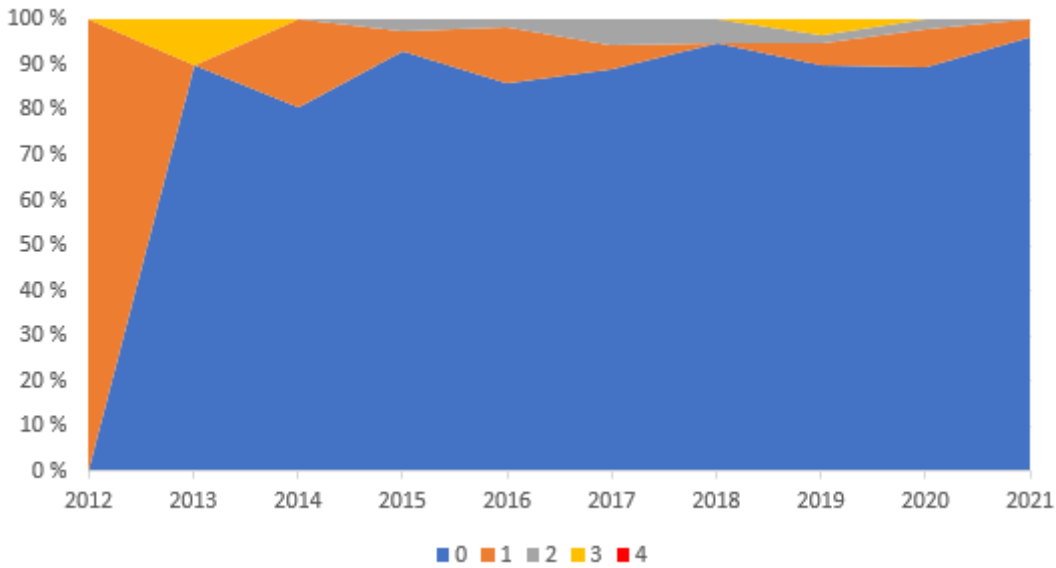
Graphic shows, that overall HD situation remains good, even though number of B-hips has been increasing. (Koiranet)

Elbow dysplasia in groenendaels by statement year 2012-2021 GR



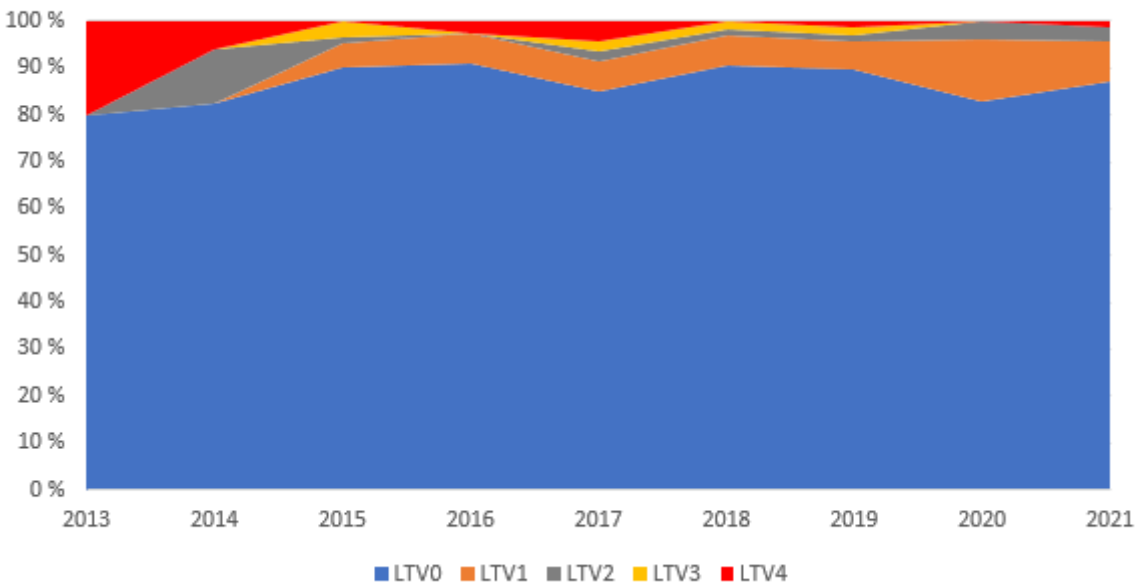
Also elbow situation in groenendaels is very good in Finland. Last 10 years there has been only 4 dogs with ED3 (Koiranet)

Spondylosis by statement year 2012-2021 GR



Spondylosis screening became recommended 2016 for Finnish Belgian shepherds in breeding recommendations. Dogs are mainly screened at age 2-3 years, when inherited spondylosis can be detected (minimum age 24 months) This doesn't tell the latter incidence for spondylosis and there has been discussion if screening at 2-3 years only is enough for this breed. (Koiranet, discussions in social media)

Lumbosacral transitional vertebrae Groenendael 2013-2021



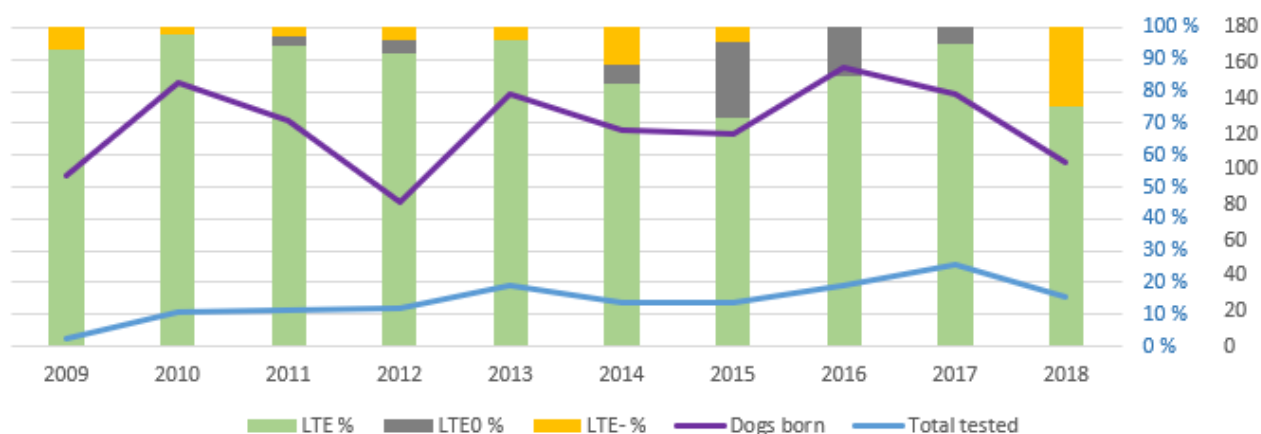
Findings in LTV-screenings are increasing. FBSD general meeting in fall 2021 expressed that LTV-screening should be made mandatory for registration. Proposal is coming in meeting 2022 (Koiranet, meeting diary 2022)

Eye disease findings by statement year 2012-2021

Diagnosis	Occurrences	Koiria
Anterior suture line cataract, found	1	1
Atresia of lacrimal punctum, found	3	3
Cataract without further localisation, suspect	1	1
Corneal dystrophy, found	1	1
Cortical cataract, found	10	8
Distichiasis, found	9	9
Keratitis, found	20	17
Keratitis, suspect	1	1
No evidence of inherited eye diseases	942	659
Nuclear cataract, found	2	2
Other insignificant cataract	2	2
PHTVL/PHPV, grade 1 of sickness	8	8
PHTVL/PHPV, grade 2 - 6 of sickness	1	1
Plasmoma, found	5	5
Posterior polar cataract, found	10	7
Posterior polar cataract, suspect	2	2
PPM, iris-iris, found	25	23
Punctate cataract, found	2	2
RD, multifocal, found	1	1
Severity of cataract, mild	4	4
Severity of eye changes, mild	23	23
Severity of eye changes, moderate	1	1
Vitreous degeneration, found	1	1

Approximately half of the born groenendaels are eye checked in Finland. Mainly they are healthy. Earlier cataracts were considered biggest health problem in eyes, but now there is increasing number of pannus/plasmoma findings. Autoimmune base of this disease is linked to other AI-issues, so earlier screening frequency was shortened from 24 months to 12 months in general meeting 2022 (Koiranet, meeting diary 2022)

Groenendael, character tests and testing activity per birth year



Testing frequency in Finland is lower than fi. in Sweden with MH, so result is only directive at its best. Main cause for not approved test is reaction to shooting (Koiranet)

Groenendael, causes of death last 10 years

Cause of death	Average life span	Total
Accident	6 years 2 months	10
Age (natural or euthanasia)	14 years 1 months	111
Congenital defect or malformation of a puppy	0 years 8 months	1
Dead without diagnosis of illness	10 years 8 months	7
Euthanasia due to behavioral problems	4 years 10 months	8
Euthanasia, non-diagnosed	11 years 0 months	19
Heart disease	10 years 9 months	8
Immunological disease	8 years 11 months	2
Jecur or digestive disease	9 years 10 months	12
Neurological disorder	7 years 2 months	10
Other unspecified disease	9 years 10 months	15
Respiratory disease	8 years 2 months	3
Skeletal or articular disease	7 years 10 months	17
Skin or ear disease	13 years 4 months	1
Spinal disease	8 years 0 months	11
Tumor, cancer	10 years 0 months	94
Urinary disorder	11 years 4 months	6
Cause of death not specified	10 years 9 months	47
Altogether	10 years 11 months	382

Statistics show clearly, that groenendaels live long and healthy life. Increasing issue is cancer, especially gastric and bone cancers. Also, activity in reporting groenendael owners is very good, and that makes result quite reliable. (Koiranet)

Groenendael Sweden

RAS: <https://www.skk.se/globalassets/dokument/rasdokument/ras-belgisk-vallhund.pdf> (All variations in the same)

In RAS you can see population structure on pages 4-11 "Population och avelstruktur" (Population and breeding structure)

*Short period goals and breeding recommendations for all variations are

* Increase the population size for groenendaels up to 70 registrated dogs/year

* Get more dogs to be character (MH) tested and get shot proof average over 1,5

- * Make breeders also look the family results when making breeding choices and use only ED free in breeding
- * Epilepsy awareness, not to use epilepsy producers or epileptics in breeding. Sibling can be used with caution.
- * Increase the number of conformation-evaluated dogs.

Breeding restrictions:

-Hips and elbows as in Finland HD A-B, Ed screened, no other restrictions

Average inbreeding in groenendael in Sweden. Value stays in 5 generation between 2-3% in data *inavelsgrad*=inbreeding degree.

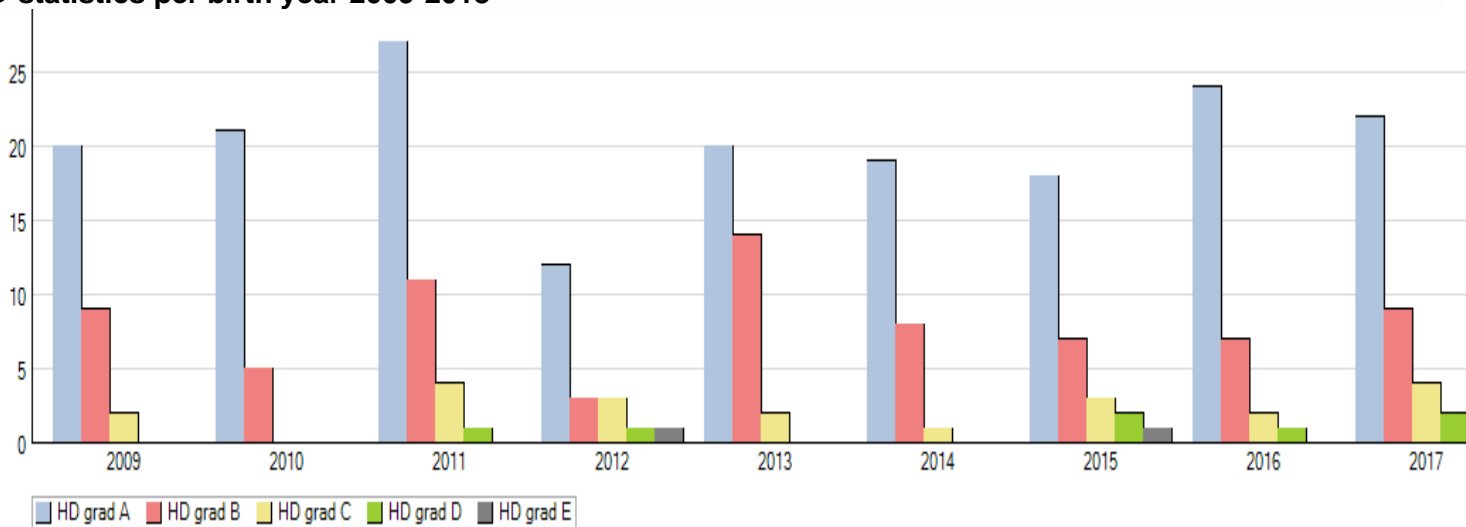
https://hundar.skk.se/avelsdata/Flikar.aspx?sida=Ras_info&id=107

Health statistics in Sweden

Overall health in groenendael population in Sweden is very good.

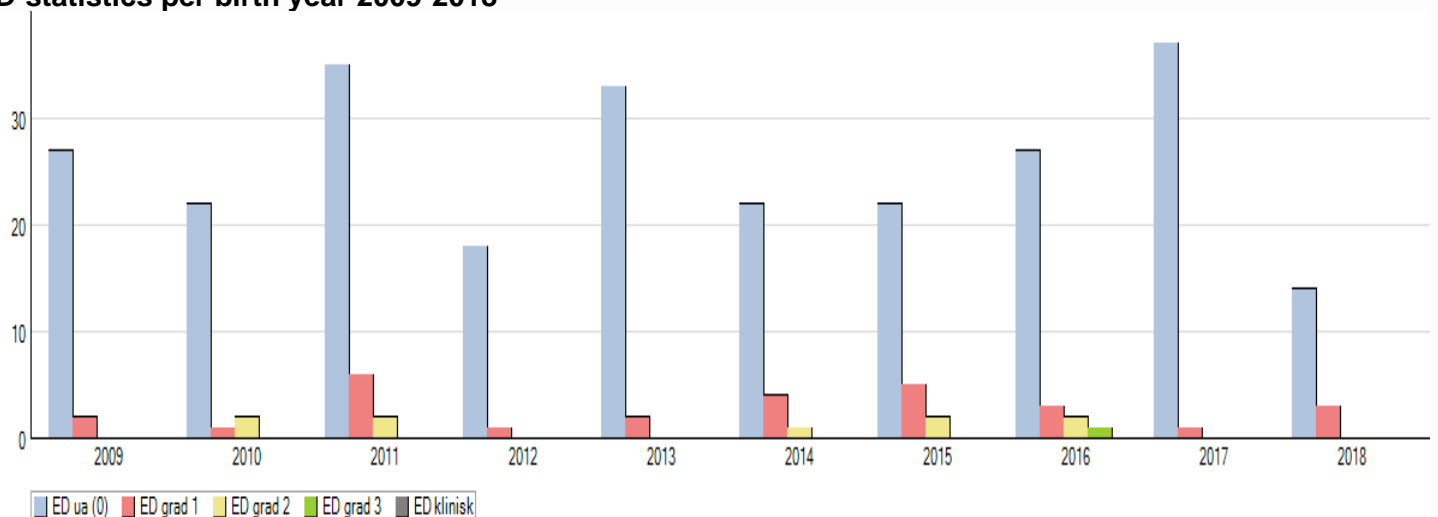
Source: https://hundar.skk.se/avelsdata/Flikar.aspx?sida=Ras_info&id=107 SKK Avelsdata

HD-statistics per birth year 2009-2018



Tendency seems to correlate in results in Finland. Earlier in both Finland and Sweden only A-hips were used in main breeding lines. After accepting more B-hips in breeding or combining two B-hipped, results are not that good as earlier.

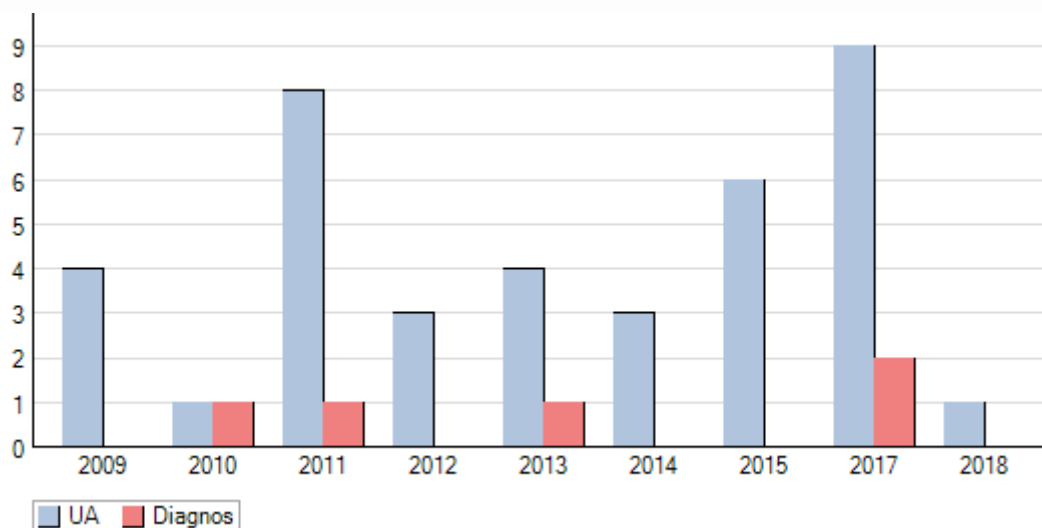
ED-statistics per birth year 2009-2018



As also in Finland, elbow dysplasia doesn't make significant affect on breed's health.

Eye test statistics (ECVO) by birth year 2009-2018

UA=utan anmärkning – without markings, clear



In diagnosed dogs 4 are PPM and one (1) with partial posterior polar cortical cataracts, which is marked not inherited. In Sweden amount of eye checks is very small, so this doesn't give proper accuracy in eye disease in the total population in Sweden.

MH average values in excel, all variations in one excel (Sweden)

MH description in english:

<http://www.lapphund.se/mheng.htm>

Evaluation describes dogs' reactions' strength - the bigger the number, the stronger the reaction.

Compilation per year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Amount born	39	56	49	53	56	66	38	31	35	46
Dogs with recongnised character status	13	22	27	16	20	28	14	16	3	-
of wich - males	6	8	12	9	9	8	4	9	2	-
-females	7	14	15	7	11	20	10	7	1	-
1a. Contact greeting	3,7	3,9	3,7	3,4	3,8	3,7	3,6	3,7	4	-
1b. Contact cooperation	3,2	3,4	3,3	3	3,2	3,3	3,1	3,3	3,7	-
1c. Contact handling	2,6	3	3,3	3	3,2	2,9	3	3,1	4	-
2a. Play 1 play drive	4,1	3,5	3,6	3,3	3,7	3,4	3,3	4,2	4,7	-
2b. Play 1 gripping	3,5	3,2	3,3	3	3,3	3	3,4	3,6	4	-
2c. Play 1 grip and pull	3,1	2,9	3,1	2,7	3,3	2,3	2,6	3,6	4,7	-
3a.1. Chasing	2,3	3,3	3	2,4	2,6	2,8	2,6	4,1	3	-
3a.2. Chasing	2,5	3,3	3	2,4	3	2,7	3	4	3,3	-
3b.1. Gripping	2	2,2	2,3	1,8	1,8	2,3	2	3,1	2,3	-
3b.2. Gripping	2,1	3,1	2,8	2,3	2,5	2,3	3,1	4,1	3,3	-
4. Activity level	3	3	2,9	2,8	2,3	2,9	3	2,6	2,7	-
5a. Distance - interest	3	2,8	3	2,5	3,1	2,9	2,9	2,8	3	-
5b. Distance reaction to threat/aggression	1,2	1,1	1,2	1,3	1,3	1,1	1,1	1,1	1	-
5c. Distance - curiosity	2,4	2,7	2,8	2,9	2,8	2,6	2,9	3,7	4,7	-

5d. Distance - willing to play	2,6	2,6	2,7	2,3	2,7	2	2,2	3,8	5	-
5e. Distance - cooperation	1,8	2	2	2,2	2	1,7	1,6	2,5	3,7	-
6a. Surprise-fear	3,1	2,7	2,6	2,8	2,7	2,5	2,6	2,6	3	-
6b. Surprise- threat/aggression	2	1,7	1,4	1,3	1,7	1,4	1,6	1,8	3	-
6c. Surprise- curiosity	2,7	2,8	2,6	2,8	2,5	3,1	2,7	3	2,7	-
6d. Surprise, remaining fear	2,2	1,6	1,8	1,8	1,9	1,9	1,8	1,3	1,3	-
6e. Surprise, remaining interest	1,9	1,4	1,3	1,2	1,4	1,2	1,2	1,4	1,7	-
7a. Sound - fear	2,8	2,7	2,9	2,9	3,2	2,6	2,7	2,9	2	-
7b. Sound - curiosity	4,1	3,8	3,8	3,5	3,4	3,8	3,6	4,2	5	-
7c. Sound, remaining fear	1,3	1,2	1,4	1,4	1,1	1,1	1,4	1	1	-
7d. Sound, remaining curiosity	1,4	1,4	1,3	1,6	1,2	1,2	1,1	1,3	1,3	-
8a. Ghost - threat, aggression	2,2	2,1	1,7	2	2	2,3	2	2,6	2,7	-
8b. Ghost - control	4,3	4	3,9	3,4	3,8	3,9	3,9	4,1	5	-
8c. Ghost - fear	2,5	3	2,3	2,5	2,5	2,5	2,4	2,4	1,7	-
8d. Ghost - curiosity	3,2	3,6	3,6	3	3	3,4	4,1	3,7	3	-
8e. Ghost - contacting	2,6	3,2	3,7	2,8	2,8	3,2	3,4	3,6	4,3	-
9a. Willingness to play	3,5	3,2	3,4	3,3	3,5	3,2	3,1	3,8	4,7	-
9b. Willingness to grip	3,5	2,8	3,3	2,7	3,4	2,8	3,3	3,4	4	-
10. Reaction to gunshots	1,7	1,8	1,9	2,1	1,9	1,6	1,4	1,3	1	-

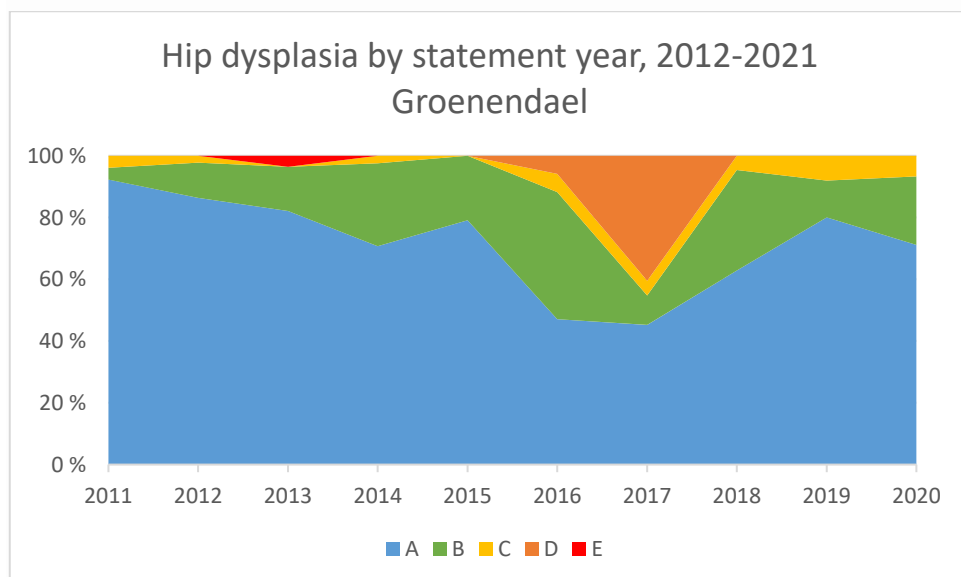
Norway

Norwegian breedclubs Breeding strategy RAS is from older sample and can be found in here:

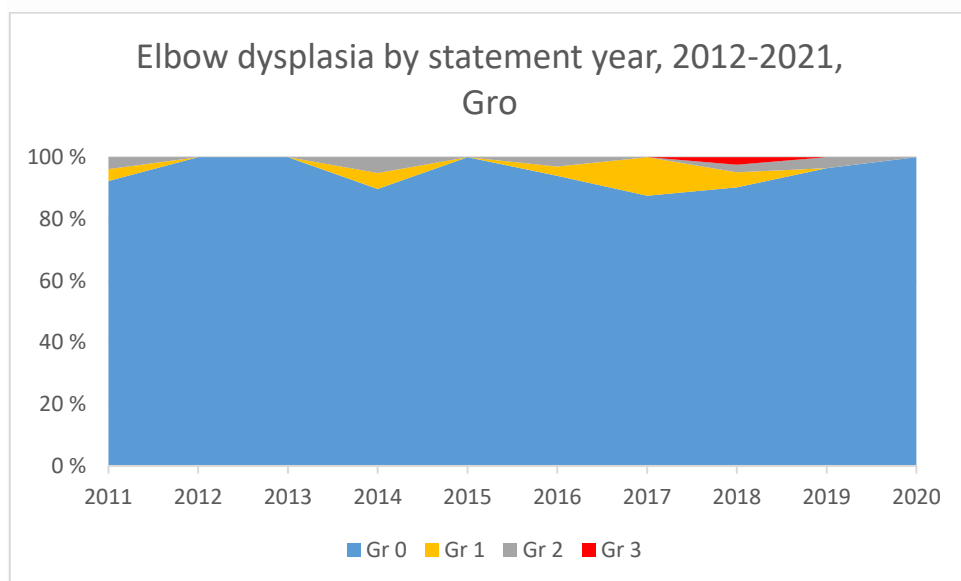
<https://www.nkk.no/getfile.php/131646-1528360203/Filer/RAS/RAS/Belgisk%20f%C3%A5rehund%20RAS%20v1.pdf>

- HD A-B mandatory for full registration
- Inbreeding coefficient and matador breeding should be kept on correct level
- In health issues HC (hereditary cataract) is noted as biggest issue in eye tests.
- Epilepsy and cancers are noted. In here also gastric cancer is mentioned as rising health problem
- Hypothyreosis is mentioned mainly on malinois concern
- In summary breed is considered healthy and in breeding the entity should always be understood. Working quality of the dogs should be maintained. In conformation better fronts are needed

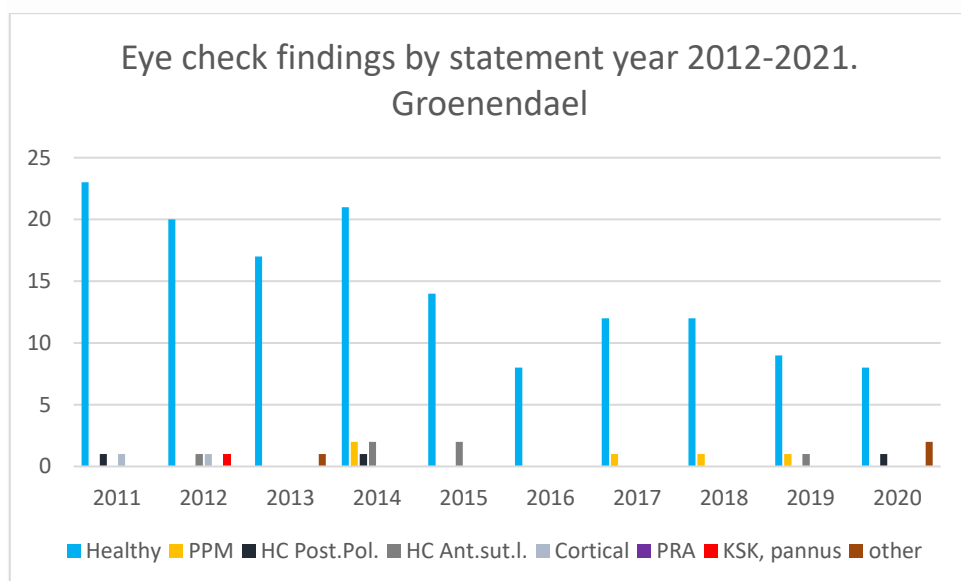
Health statistics, source NKK Dogweb



Overall situation is fairly good and trend looks the same as in other Nordic countries



Elbow dysplasia in Norway is very good. Severe ED is only random.



In Norway eye checking is not very common practise, and findings are very random. Pannus is considered non-inherited eye disease and not always diagnosed.

Europe

Belgium

Belgium has national laws of health of the dogs, and dogs should be bred accordingly. Belgians Shepherd is guarded also by national kennel club *KMSH/SRSH* as a national breed.

For registration you need mandatory DNA parentage test according ISAG 2006 or other with same quality. Breed club *Koninklijke Unie der Clubs voor Belgische Herdershonden vzw./ l'Union Royale des Clubs de Bergers Belges asbl. K.U.C.B.H.-U.R.C.B.B.* doesn't have breeding programs or goals and no official statistics are available.

Holland

There are two breed clubs in Holland. Registration demands are by national kennel club *Raad van Beheer (RvB)* and their breeding rules (*Verenigingsfokreglement (VFR)*) that apply to all breeds. Belgians need to have age and inbreeding demands fulfilled for registration.

CHEN	Maladie	Test	Gene	Mutation	N	Porteurs	Atteints	Non atteints	Total	Statut
CHIEN DE BERGER BELGE	MYELOPATHIE DEGENERATIVE	SOD1A	SOD1	c.118G>A	352	9%	5%	0%	660	Non
	DEGENERESCENCE SPONGIEUSE ATAXIE CEREBELLEUSE TYPE 1	SDCA1	KCNJ10	c.986T>C	335	9%	6%	0%	440	Non
	DEGENERESCENCE SPONGIEUSE ATAXIE CEREBELLEUSE TYPE 2	SDCA2	ATP1B2	c.130_131ins227	334	9%	7%	0%	440	Non

Nbre de résultats sur la période=number of tests on the period

Résultats/Chiens Confirmés=Results, confirmed dogs

Porteurs sains=healthy carriers

Atteints=affected

Nbre de tests annuel= number of yearly tests

objectif atteint en 2020= goal achieved in 2020?

Breed club has collected results of hip and elbow dysplasia on quarterly reports:

<https://www.centrale-canine.fr/club-francais-du-chien-de-berger-belge/articles/dysplasie-resultats>

Click "CLIQUEZ-ICI" to open the pdf-file

Worldwide results of ataxia and degenerative myelopathy testing:

<https://www.centrale-canine.fr/club-francais-du-chien-de-berger-belge/articles/suivi-sdca-et-md>

French club pays a lot of interest in standard and conformation. Here is a link to comments and clarifications of the structure:

<https://www.centrale-canine.fr/sites/default/files/2021-06/COMMENTAIRES%20DU%20STANDARD.pdf> (In French only)

Multiple drawings and pictures of correct and incorrect type and structure.

Also, in France the issue of long-haired variations' gastric cancer is in discussion:

<https://www.centrale-canine.fr/club-francais-du-chien-de-berger-belge/articles/etude-predisposition-genetique-au-carcinome-chez-le-berger-belge-groenendael-tervueren>

- Gastric Carcinoma (later GC) most frequent stomach cancer type
- Predisposition in certain breeds, in groenendael and terrieren males seem to be more affected
- Average age (*in this study*) 8-10 years
- Aetiology poorly known and understood, but both genetic and environmental factors
- Classic signs, vomiting, weight loss, anorexia
- Diagnosis endoscopy with biopsies
- Fatal disease
- Netherland study incidence rate (1,18%) much higher than in US study of general canine population
- Groenendael and terrieren seem to have high racial predisposition in gastric cancer, so important role in genetic factors