Summary of IWG Questionnaire Responses, 2025

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Clubs Reporting

Club	Country	Contact	Members
VSSÖ	Austria	Karoline Gsell	194 (BMD members)
BMDCNSW	Australia, New South Wales	Lyn Brand	
BMDCV	Australia, Victoria	Felicity Broome	
BGF	International	Lori Jodar, Gary Galunas	NA
BMDCC	Canada	John Simons	300 (approx.)
KŠSP	Czech Republic	Martina Kopecká	780
DBSK	Denmark	Inge Bibby	415
NBMDC	England, Northern Club	Helen Davenport-Willis	100, or a few more
SSFS	Finland	Heli Herranen	2022 – 1089 2023 – 1026 2024 – 993
AFBS	France	None this year; Agnès Vanhee reporting	560
DCBS	Germany	Christian Schmid	2023 – 620 2024 – 580
SSV	Germany	Dr. Norbert Bachmann	
BMDCGB	Great Britain	Steve Green	1254 (dropping year by year)
MBE	Hungary	Dr. Kira Martin	50 to 60
BMDCI	Ireland	Valerie Hughes	250
CIABS	Italy	Angela Del Carro; Isabella Tosti, reporting	175/200/200/195/180
ŠZMK	Lithuania	Jovita Piskunovienė	45 (about 10 breeders)
NBSV	The Netherlands	Mark Kolster	350 (approx.)
VBSH	The Netherlands	Wendy van Dijk	728
NBSK	Norway	Kjersti Olsen	1000 (approx.)
ACCCE	Romania	Gabriela Manu	24
SKSSP	Slovakia	Terézia Gargušová	130
SShK	Sweden	Toril Melangen	1045 in 2023
KBS	Switzerland	Martha Cehrs	855 in 2023 838 in 2025
BMDCA	United States	Tori Pinkas	1300 (approx.)

Registration Numbers

Club	Year	Litters	Puppies	Dogs	Kennels	Notes
BMDCNSW, Austalia	2018			416		
	2024			401		
BMDCV, Australia	2024			401		(Same as BMDCNSW)
VSSÖ, Austria	2022	27	123			♂: 54, ♀: 69
	2023	20	108			♂: 57, ♀: 51
	2024	21	109			♂: 66, ♀: 43
Fertility rates	2022		40 matings	17 preg	43%	
	2023		38 matings	20 preg	53%	
	2024		35 matings	23 preg	65,7%	
BGF, International	2025					Number of dogs: **228.735**
BMDCC, Canada	2023	150	820			>50% of litters are not Members of BMDCC 29 litters had only 1 or 2 puppies
KŠSP, Czech republic	2024		530			
DBSK, Denmark	2024	55	321			
NBMDC, England, Northern Club	2024		591			(Same as BMDCGB, from The Kennel Club)
SSFS, Finland	2022	38	192	246		
	2023	45	242	285		
	2024	38	196	244		
AFBS, France	2024		2725			
DCBS, Germany	2023		230			
	2024		221			
BMDCGB, Great Britain	2022	93	481	569		& 88 imports
	2023	110	634	706		& 72 imports
	2024	102	585	623		& 38 imports
MBE, Hungary	2023	47	221			
	2023	36	181			
	2024	25	103			Jan – July (21 kennels)
BMDCI, Ireland	2022	117	708			All of these are July 1

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	2023	108	696			Through June 30
	2024	91	561			
CIABS, Italy	2022		1589			
	2023		1663			
	2024		1309			
ŠZMK, Lithuania	2024	6	23			The amount from breeders not in the club may double these numbers
NBSV, The Netherlands	2025	40-50	250-300			
VBSH, The Netherlands	2024		899			See chart in notes
	2024	9	63			Club members
NBSK, Norway	2023	43	205			
	2024	42	230			
ACCCE, Romania	2024	20	112			
SKSSP, Slovakia	2019	11	58			♂: 32, ♀: 26
SShK	2023	56	281			
	2024	40	214			
KBS, Switzerland	2023	37	162			
	2024	42	197			
BMDCA, USA	2021	2.920	18.448	8.749		Dog registration rates are low
	2022	3.283	20.420	7.690		
	2023	3.012	19.380	6.523		
	2024	2.515	15.762	5.651		

Information on Health Projects/Health Initiatives during the years 2019- till now

BMDCNSW (Bernese Mountain Dog Club of New South Wales, Australia)

- All club members recognize the need for hip and elbow x-rays, but there is no criteria used for elimination from breeding.
- The majority of breeders do not breed with grade 2 or 3 on an elbow, or a Fair or worse on the hips
- Code of ethics indicate that breeders cannot breed a female under the age of 20 months or over the age of 7 years, and no more than 2 litters in 18 months.
- DM testing is done by many breeders
- HS is not regularly tested

BMDCV (Bernese Mountain Dog of Victoria, Australia)

- Club member breeders follow the guidelines detailed above by the BMDCNSW. Breeders who are not club members tend to work with outside of the recommended hip and elbow criteria.

VSSÖ (Verein für Schweizer Sennenhunde in Österreich, Austria) all 4 Swiss breeds

- Breeders must abide by our breeding rules to be able to get Austrian FCI pedigrees. These breeding rules are discussed regularly by a breeding committee. Members of this breeding committee include our breed wardens, FCI Judges and breeders.
- All dogs used in breeding must pass a breeding approval test organized by the club. At this time health tests (X-ray of hips and elbows, antagene HS- test, DM test Exon 1 and 2) have to be presented to be approved for breeding. Matings have to be approved by a breed warden, regarding longevity, health, structure and temperament. About 25 BMDs are approved for breeding each year (2022: 25, 2023: 18, 2024: 25)
- Beginning 01/2026 all dogs used in breeding will have to send blood to Feragen, the VSSÖ Package including: Genetic Diversity + DLA Haplotypeanalysis + ISAG 2020 + DogCheck 4.0 (incl. Exon 1 u. 2, DM, vWD1 and PRA). At the moment 100 DNA samples of BMD have been analysed at Feragen.

- HD and ED (ongoing)
  - Dogs are not approved for breeding if they have HD-C or ED-2 or worse, and only one parent is allowed to have ED-1, the other parent has to be ED free.
  - Out of every litter at least one puppy is “randomised”, which has to have hip and elbow X-rays done and the results are reported to us. Every year the statistical analysis of these tests are presented to the annual general meeting of VSSOe.
  - X-Ray Results of 2024: 38 HD-X-Rays done (31 As, 3Bs, 3Cs and 1 E)
    38 ED-X-Rays done (32 0s, 2 Is, 2 IIs and 2 IIIs)
    15 OCD-X-Rays done (15 free, 0 OCD)
  - Percentage of X-Rayed Puppies (all 4 Breeds):
    2022: 24,84%
    2023: 21,09%
- Inbreeding (ongoing) - In any mating the Inbreeding-Coefficient is not allowed to be over 3.6% in the first 5 generations (The Ancestral-Loss-Coefficient is not allowed to be under 80% in the first 5 Generations). To reduce the popular sire effect, a dog can only sire a maximum of four litters a year in Austria, the number of litters a bitch can have is also regulated (maximum one litter every 12months). A bitch can only have two litters by the same sire.
- HS (2019 – ongoing) - Starting in 2019 all Bernese Mountain Dogs, that are approved for breeding in Austria, have to be tested for HS (using the Antagene Test) and have to have the HSIMS-Tool activated. However, no breeding regulations exist, regarding this test.
  2023 Austrian Results: HS-A: 0,29 HS-B: 0,48 HS-C: 0,24 Total: 208
  Total Antagene: HS-A: 0,25 HS-B: 0,44 HS-C: 0,30 Total: 6585

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- DM (ongoing) - The gene test for DM Exon 1 and 2 is compulsory and only matings are allowed, where the puppies have no genetic risk of developing DM (Exon 1 and Exon 2). After the first phase, where free-free matings were not allowed, to keep dogs in breeding that are “at risk” or “carriers”, now free-free matings are also allowed.
- Feragen project on genetic diversity (2025) - The gene test for DM Exon 1 and 2 is compulsory and only matings are allowed, where the puppies have no genetic risk of developing DM (Exon 1 and Exon 2). After the first phase, where free-free matings were not allowed, to keep dogs in breeding that are “at risk” or “carriers”, now free-free matings are also allowed.
- Longevity (ongoing) - Our club asks for death notices of all BMDs in our club. The owners of breeding dogs and bitches that die before they are 8 years old, have to give a cause of death notice from a vet. Our breeding wardens collect this information. Information is collected and date of death is entered in Dogbase. The percentage of owners, that provide valid data is not enough to provide a statistical analysis.
- Other musculoskeletal diseases or other disease i.e. epilepsy (ongoing) - The breeding wardens have to be informed in case of any mayor disease or operation of breeding dogs.
  Epilepsy and other inheritable diseases: Dogs with epilepsy (and other inheritable diseases) are not allowed in breeding.
  Our breed wardens collect information and check anecdotal information with breeders. The Breeding Committee is informed and discuss this information regularly.

BGF (Berner-Garde Foundation)

- Early Detection of Cancer, especially HS (2024-2026): using liquid biopsies to maximize the chance of treatment of success. Contact person - Dr Tuddow Thaiwong-Nebelung and Alex Engleberg for Dr. Vilma Yuzbasiyan-Gurkan’s Lab in the Department of Microbiology and Molecular Genetics and Small Animal Clinical Sciences at Michigan State University College of Veterinary Medicine and the Department of Pathology and Diagnostic Investigation at Michigan State University Veterinary Diagnostic Lab. (See Notes).
- Eventual Early Detection of Cancer, especially HS (2024-2026): using urine samples to create a database of molecular fingerprints that will allow the early detection of cancer and other diseases. Contact person – John Robertson, BMD, PhD, President Rametrix Technologies, Inc, affiliated with Virginia Tech. (See Notes).
- Sample submission has been suspended for approximately 2 years. This year we have opened the Repository to include targeted DNA samples to include dogs with Renal Dysplasia, SAS and Veterans.
- BG Database Health Surveys: We have engaged the services of the Office for Survey Research of Michigan State University to provide ongoing surveys to owners of dogs with tissue or blood samples in the BMD DNA and Tissue Repository at Michigan State University to provide updates including health updates. We are sending 250 surveys on a quarterly basis.
- BG Database Programming Updates: There have been several updates to the database to provide ease of submission both for owners, breeders and operators (see Notes).

BMDCC (Bernese Mountain Dog Club of Canada)

- Code of Ethics has been rewritten, and is now require to be signed by all members. There are specific requirements for both breeders and companion animal owners.
- Breeders must do all required testing and post it in Berner-Garde before breeding. The testing that is mandatory is Hips (OFA and/or PennHIP), OFA Elbows, Genetic testing for both mutations of DM, Eyes and Cardiac. We do encourage other testing but it is deemed optional.
- There are some allowances for breeding younger dogs on Preliminary clearances (Hips and Elbows) but even if the dogs are never bred again final testing must be done once they reach the correct age.
- We are now comfortable that we have established a process with a designated long-term breeder who oversees a review process --- where we still believe it is best handled on a case-by-case basis.

KŠSP (Klub Švýcarských Salašnických Psů, Czech Republic)

- Longevity Research: In collaboration with the Institute of Molecular Genetics of the Academy of Sciences of the Czech Republic and Mr. RNDr. Evžen Korec, CSc.
    - Health problem addressed: Based on DNA research in another breed, common genes for long-lived individuals were discovered.
    - Time frame of project:2025-2026
    - Contact person for project: M.Kopecká (for club) and RNDr.Korec, Csc.(for leading the research team)
    - Common genes of long-lived individuals have been found in the Cane Corso breed, which are believed to be related to the greater ability of said individuals to resist the onset of disease. The goal is to achieve the same result in Bernese mountain dog.
    - We are currently collecting 30 samples of individuals older than 10 years and a control sample of individuals 2-7 years old.

DBSK (Dansk Berner Sennen Klub, Denmark)

- Held workshops on breeding and on Berner-Garde.
- Had a vet take blood samples at two shows for the Antagene risk-test. The club provided the paperwork, and the blood draw. The dog owners only had to pay the Antagene fee.

NBMDC (Northern Bernese Mountain Dog Club, England, northern)

- Dr Malcolm Willis pioneered the first Date of Death survey, which is continued by the BMDCGB
- Support “Fit for Life” with general awareness of breed priorities
- Requested information about health and lifestyle of veterans, but only got a dozen responses
- Encourage members to support health initiatives and health surveys for the BMDCGB

SSFS (Suomen Sveitsinpaimenkoirat ry, Finland)

- Use questionnaires to collect data on birth and health
- Maintain lists of cause of death, and diseases
- Continue to encourage use of genetic tests and character tests for breeding dogs

AFBS (Association Francaise des Bouviers Suisses, France)

- Antagene data on von Willebrand disease, degenerative myelopathies and HS for 2024 in Bernese Mountain Dogs (charts included in notes at end):
    - Von Willebrand disease: we observe a frequency of < 1% of carriers, the mutation is therefore extremely rare
    - DM-sod1a : We observed a carrier frequency of 46% among all dogs tested. This frequency tends to decrease further in 2024 (34% of carriers observed this year), which is very good news for future generations.
    - DM-sod1b : We observed a frequency of 17% of carriers among all dogs tested. While it was stable in 2023, this frequency tends to decrease in 2024 (12% of carriers).
    - SH : For all the dogs tested, here are the observed frequencies: 27% A / 44% B / 29% C. In 2024 in general and in the French population, we observe an increase in the frequency of A dogs (34% in 2024) and a decrease in the frequency of C dogs (25% in 2024). This is also excellent news for future generations!
- The CNRS is working with Antagene on a version 2 of the SH test. This version appears promising because it allows for better diagnosis of at-risk dogs. They still need time to validate and resolve the various technical issues.
    - At the same time, the CNRS is working on cancer screening in plasma using a simple blood test. This allows the disease to be detected approximately six months before the appearance of clinical symptoms, an early detection that could potentially improve treatment for this cancer.
    - The cost of this screening is 50 euros and can be used to confirm a suspicion, conduct a check-up before a costly operation, or for early detection of cancer. You can find more information on the website below: https://igdr.univ-rennes.fr/cani-dna-oncodiagnostic

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- Obtaining national champion titles is correlated with health results in degenerative myelopathies, dogs mutated on one of the myelopathy exons or double carriers are no longer allowed to be champions.
- Our selection grids are also being modified and dogs with mutations or double carriers of degenerative myelopathies can no longer access the high rating level.

DCBS (Deutscher Club für Berner Sennenhunde, Germany)

- In 2024 more than 50 blood samples were sent to Antagene

BMDCGB (Bernese Mountain Dog Club of Great Britain, Great Britain)

- Provided testing for the Antagene 'Genetic Check Up' at our biggest club event with free sampling, a subsidized fee, and the club arranged for shipping and paid the costs. The club will be doing that again this year.
- In addition, our vet offers Vaccination Immunity testing for DHP and this is actually more popular. Some B-IWG members may recall the Vaccine presentation by Professor Steve Dunham at our 2022 UK Health Symposium, who validated the use of such testing to avoid unnecessary vaccination.

MBE (Magyar Bernipásztor Egyesület, or Hungarian BMD Association)

- No changes in requirements for breeding dogs. They must pass the breeding test for exterior and temperament, where they must also present the health certificates. They must have HD (A-C) and ED (0-1). In case of HD C or ED 1 the dog must be bred with a dog having a better result.
- Most breeding dogs are tested for DM, but it isn't compulsory. In our opinion, the population is too small to make the gene pool smaller along DM. Breeders are well informed, they handle this disease on its place, most of them are testing their breeding dogs for it.
- Testing for HS isn't a common practice yet, but some dogs are tested for it as well.
- MBD organizes its yearly "Bernese Garden Party" each June, hosting lectures in different health issues since 2024. The lecturers are vets (about health issues like heartworm, tick-borne diseases, different types of cancer, etc.), and the President of the Breeding Committee (about breed-specific health issues for breeders like the actual results of SH-research, health projects of breed clubs in different countries, etc.)

BMDCI (Bernese Mountain Dog Club of Ireland)

- The club has been able to make available a health testing package at a discounted rate with one of Ireland's leading Veterinary Hospitals in the Midlands. As a result, we have seen a marked increase in the number of breeders health testing prospective breeding Bernese.
- The club has collaborated with other Clubs to set up two eye testing clinics at a reduced rate to the clients in November 2024 and again in May 2025.

CIABS (Club Italiano Amatori Bovari Svizzeri, Italy)

- Promotion of the HS risk test (2017 – present); the club subsidizes the cost of the test for dogs between 7 and 10 years old that have produced at least one litter. We are very satisfied with the participation.
- Promotion of the DM tests (2014 – present); the club has conducted webinars and conferences to inform members about the need to use the genetic test and to avoid producing puppies that are homozygous for the mutation.

ŠZMK (Šveicarų Zenenhundų Mylėtojų Klubas, Lithuania)

- In Lithuania there are no rules to register litters only through breed clubs, it is also possible to make registration through regional clubs. We do not know and do not have statistics on how many litters and puppies were born in Lithuania.
- Health testing is mandatory for hips, elbows, eyes, and DNA profile.

NBSV (Nederlandse Berner Sennenhond Vereniging, The Netherlands)

- 2024 to present – National Breed Improvement Plan and Long Life Program: Following recent court rulings and increasing public pressure on the health of pedigree dogs, the NBSV has

conducted a national risk assessment. In response, the club is developing an (international) Breed Improvement Plan (RVP), aimed at extending the average lifespan of the Bernese Mountain Dog to 10–12 years. (The NBSV explicitly chooses to collaborate with independent scientific partners. As commercial interests increasingly enter the DNA testing market (e.g., the acquisition of Zoeasy by VHL Genetics in the Netherlands), independent interpretation and data governance become essential. Partnerships with UGent and DogsGlobal ensure that breeding decisions are guided by the needs of the breed and its population — not commercial incentives.)
    - structured use of pedigree data, DNA profiles, clinical testing, and DogsGlobal (including Mean Kinship and estimated breeding values)
    - scientific guidance from Dr. Pieter Oliehoek (population genetics) and Prof. Dr. Bart Broeckx (Ghent University)
    - selection against high-risk HS profiles via Antagene DNA testing
    - attention to epigenetic factors such as nutrition, upbringing, stress reduction, and a holistic approach to health during the first 40 weeks of life
    - balance between selection and preservation of genetic diversity
- 2024 to present - Mandatory DNA testing for PTPN11 (HS): As of 2024, the NBSV requires a complete 9-locus DNA profile from Antagene, including HS, DM, and other mutations. The HS profile is considered in combination with diversity metrics and clinical health indicators when making breeding decisions.
- 2024 to present - Integration of DogsGlobal in breeding strategy: In collaboration with DogsGlobal and with approval from international kennel clubs, historical pedigree data (dating back to the 1890s) is being uploaded. The goal is to calculate breeding values based on MK/COI and health traits, forming the foundation of the RVP.
- 2025 – 2027 - Epigenetic Clock and Biological Age: A project in collaboration with Ghent University aiming to develop an epigenetic clock for the Bernese Mountain Dog. The goal is to measure biological age and explore links between early-life conditions (stress, housing, care) and disease expression or lifespan.
- Spring 2025 - Survey: Future of the Bernese Mountain Dog (April 2025): A nationwide survey among breeders and owners exploring knowledge, concerns, willingness to change, and health priorities. The results support outreach and refinement of the RVP.

VBSH (Vereniging de Berner Sennenhond, The Netherlands)

- Donation to Berner-Garde (2024)
- Survey of breeders regarding breeding regulations HS-test Antagene (2024)
- Breed regulations extended to include requirements for HS-test and DM-test (since Oct 2024)
- By law, breeding with sick animals is prohibited. The disciplinary board of the Dutch Kennel Club has ruled that this now includes ED grade 2. Breeding rules adjusted accordingly.

NBSK (Norsk Berner Sennenhund Klubb, Norway)

- BFF - Berner For Framtida (Berner For the Future) - An information-letter was sent to KBS and IWG 30.01.2025, about the project BFF - Berner For the Future. You can find the letter here: Dokument uten navn - Google Dokumenter
- Since then the project has progressed. In April and May 2025 NBSK/BFF tested 33 dogs to analyze their genetic inbreeding level using Embark Laboratory. Average genetic COI for the tested dogs was 31%.
- 25.04.2025 new breeding rules was adapted and adopted to facilitate for sustainable breeding of the Bernese breed. One of the most important changes with the greatest impact is the rule on number of offspring. Breeding dogs, male or female, can now have a maximum of 30 offspring in their lifetime.
- In the beginning of June 2025 BFF had several meetings with NKK's (Norwegian Kennel Club) veterinarian and breeding consultant about the future plans for the breed in Norway.

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- 18.06.2025 BFF/NBSK/NKK arranged a digital meeting about NKKs breeding program for the Bernese mountain dog. These programs are now mandatory for all breeds in Norway.
- Over 50 breeders and stud dog owners attended the meeting. NKK informed us about what measures we need to consider and implement in order to be able to conduct sustainable breeding. Due to health issues, fertility problems, low genetic diversity and high genetic COI, NKK has decided that we must bring in new blood. This is crucial for the future of the Bernese mountain dog.

ACCCE (Asociatia Clubul Cainilor de Cireada Elvetieni, Romania)

- The club supports blood collection and shipping fees for SH testing with Antagene.

SKSSP (Slovenský klub švajčiarskych salašníckych psov, or Slovak Club for Swiss Mountain Dogs, Slovakia)

- No new projects

SShK (Sennenhundklubbeb SShK, Sweden)

- No new projects, still ongoing projects since earlier

KBS (Schweizerischer Klub für Berner Sennenhunde, Switzerland)

- HS Early Screening/Diagnosis (contact Adrea Maret and Dr. B. Hédan of Rennes) The international cooperation between Dr. Hédan of the University of Rennes, France and a Veterinarian of the University of Zurich, Switzerland is progressing well. An early screening test (blood test) is now available. This blood test has so far detected presence of HS up to one year before clinical symptoms could be found.
- Creation of BMD Sperm Bank ((contact Adrea Maret) The BMDC of Switzerland has decided to actively participate in the project, managed overall by the Swiss Kennel Club, to create a sperm bank for BMDogs. The sperm of dogs with FCI pedigrees who have passed the qualification for breeding tests in Switzerland can be deposited and stored for a reasonable fee in that bank.
- Development of Genetic Test to Understand Mode of Inheritance (contact Andrea Maret) A considerable increase of puppies born with an overbite has led to the decision to develop a test which will allow to understand what mode of inheritance causes this condition and detect the carriers. The University of Bern using the blood bank of the BMD population in Switzerland which is in operation since fifteen years has agreed to develop such a test until the end of 2025.

BMDCA (Bernese Mountain Dog Club of America, United States)

- HS Liquid biopsy; early diagnosis of HS. Dr. Hedan has been working on this project to use blood plasma to search for PTPN11 mutations that are found in the blood when some forms of HS are present. Detects 43% of histio, mainly disseminated and HS localized in the lungs. The BMD Charitable Foundation raised $35,000 in 2024 in support of this project, and this year at the BMDCA National there were 51 samples collected. Four were positive for the PTPN11 mutation.
- Raman urinalysis study; early diagnosis of HS. Dr. Robertson at Virginia Tech is using urine to see if it can detect HS. The BMDCA and Berner-Garde are splitting the cost of this study, which is $100,000 to date. At the National Specialty this year 250 samples were collected. These samples will be analyzed and plotted to make a database that will hopefully be able to show the difference between normal and HS results. Their work can already distinguish cases of lymphoma, mast cell, osteosarcoma, kidney disease, and diabetes. They have also applied for a grant with the Golden Retrievers to work to detect hemangiosarcoma.
- Trametinib to treat HS; a clinical trial which was cancelled, followed shortly after by the death of the researcher – Dr. Vilma Yuzbasiyan-Gurkan. No plans at the current time to continue that research.

- Antagene Risk Test; the BMDCA subsidizes this test each year at the National thanks to the efforts of Julie Jackson. The club pays for all shipping.
  2023 – 95 tests done
  2024 – 133 tests done
  2025 – 141 tests done

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Information on planned future Health Projects/Health Initiatives

BMDCNSW (New South Wales, Australia)
- No plans at the moment

BMDCV (Victoria, Australia)
- No plans at the moment

VSSÖ (Austria)
- See Notes at end

BGF (Berner-Garde Foundation)
- See Notes at end

KŠSP (Czech Republic)
- Continuation of the longevity project

DBSK (Denmark)
- No plans at the moment

NBMDC (England, northern)
- No plans at the moment

SSFS (Finland)
- Beginning to keep a list of autoimmune diseases and add to it yearly
- In 2026 we are planning to develop and update lifespan index information
- In 2025 we are planning to update the Ideal Temperament Profile with new behavioral measurements.
- In 2025 we are planning to check and update the program to combat hereditary diseases and defects and its targets

AFBS (France)
- Continuing efforts detailed in past projects above.

DCBS (Germany)
- No plans at the moment.

BMDCGB (Great Britain)
- No current plans

NBMDC (Great Britain, Northern England)
- No current plans

MBE (Hungary)
- The club is quite small, and the Breeding Committee is mainly in information-sharing position. The “working ability” of the members is sadly low. This makes it difficult to have exact plans for the future. The long-term plans are getting data for seeing the situation of average lifespan and main causes of death and making steps forward in field of HS testing.

BMDCI (Ireland)
- The Club is in the process of finalizing a Breed Health Seminar to be held in October 2025
    - The subjects will be Osteosarcoma, Gastric Torsion, and Orthopaedics
    - These will also be a discussion on Berner-Garde and its benefits to breeders and owners

CIABS (Italy)
- DM study with two main purposes
    - Carry out an epidemiological investigation aimed to know the effective prevalence of the mutations associated with the Dm in the Italian population. BMD owners and breeders will be asked to send the results of the genetic test for both exons (SOD1a e SOD1b) in order to build a database.
    - Evaluate the sensibility and specificity of new diagnostic techniques besides clinical investigations and routinary imaging methods for Dm. The study will evaluate the diagnostic

potential of somatosensory evoked potentials (SSEPs), motor evoked potentials (MEPs) and Proteomic analysis (Canine Neuron-specific enolase e Canine S100B binding protein).

- Biometric measurements project: The deviation from the standard in the selection causes not only morphological defects but affects the dog's working ability and might leads to consequences on the health of the subjects. To tackle this issue, CIABS is planning a series of meetings where the largest possible number of Italian BMDs will be subjected to biometric measurements. The aim of the project is to extrapolate a reliable picture of the morphological status of the breed in Italy, identify the main discrepancies from the current standard and therefore the selection goals. We hope that the database that will derive from the project will also serve as a source of information for future research.
- 2022/2023/2024: CIABS, the Italian Dog Club, with the technical health committee made up of veterinary surgeons has created an online questionnaire.
    - The goal is to collect as much data on the Italian population of the Swiss Cattle Dogs. The survey is divided into 3 sections: health, behavior and nutrition.
    - The questionnaire has already been disseminated through social channels and has obtained very high feedback, over 700 responses. This large number of replies, received in a very short time, has allowed us to start a collaboration for the processing of data, relating to behavior, with the University of Milan (Dr. Palestrini and Cannas).
    - 2024: 77° SISVET Congress, Parma 12-14 Giugno 2024 presentation the Poster "*Expression of Behavioural Traits in Bernese Mountain Dog"* A. Del Carro, S. Cannas, I. Tosti, A. Accatino, C. Palestrini
    - 2025: Work in progress for a new project which will be illustrated during IWG in Helsinki.

ŠZMK (Šveicarų Zenenhundų Mylėtojų Klubas, Lithuania)

- No plans for future projects.

NBSV (Netherlands)

- Expansion of the Long Life Program to 20+ breeders, with structured monitoring of phenotype, x-rays, titer testing, and temperament
- Implementation of automated breeding value estimation (via DogsGlobal, 2025)
- Pilot project for health certificates based on epigenetic age (UGent, 2025–2026)
- Clinical health audits (x-rays, cardiac, GI, autoimmune) as a complement to genetic profiling
- International data exchange via Berner Garde and DogsGlobal

VBSH (Netherlands)

- In the Netherlands every puppy bred from two pedigree dogs gets a pedigree. The Dutch Kennel Club is going to make a mark on the pedigree of dogs that are bred with health standards, 'foknormen'. The breed clubs can suggest the standards for their breed. We, together with our sister club, suggested the HS-test from Antagene, using the tool. (And HD and ED testing) As the majority of BMD-breeds outside the clubs, these breed standard scan make a difference.

NBSK (Norway)

- NKKs breeding program for Bernese Mountain Dog, that includes a crossbreeding project from 2025 and continious.

ACCCE (Romania)

- No plans for future projects.

SKSSP (Slovakia)

- No new planned projects.

SShK (Sweden)

- The Swedish Club will start a discussion with the Norwegian club and their project "Berner For the Future".
- We have the same problems int the breed in Sweden and we are worried about the future of the breed. With a diminishing number of puppies and overuse of individual males we must limit the

-

  number of puppies from each male. And address the fact that we have an increase in grandchildren every year and how that can impact the genetic variation if they are breeding in the future.
  - Starting in 2025, it is mandatory to have an SH test result from Antagene on the parents if the breeders want to advertise on the homepage for puppies for sale.

KBS (Switzerland)

- A study on causes, mode of inheritance, for ruptures of ligaments (contact Andrea Maret)
- A study on causes/reasons for appearance of deformation/"kinks" at the end of tails after the puppies have left breeders (contact Andrea Maret)

BMDCA (United States)

- Looking for studies on gastrointestinal problems (irritable bowel, protein losing enteropathy, lymphagiectasia, etc)

Information on major health concerns in your club/country

Cancer – NBSV, VBSH, SSFS, BMDCGB, KŠSP, KBS, MBE
- HS/SH – NBSV, BMDCA, KBS, SSFS, BMDCI
- Lymphoma – SSFS, BMDCI, KBS
- Hemangiosarcoma – KBS
- Osteosarcoma – BMDCI
- TCC (urinary tract) – SSFS
- Lung - SSFS

Reproductive issues – SShK, NBMDC
- Fertility - BGF, BMDCA, SShK, NBMDC, BMDCGB
- Missed breeding - MBE
- High rate of C-sections – BGF
- Pyometra – BGF, BMDCA
- Low semen counts/quality – BGF
- Benign prostatic hyperplasia – BGF

Health Data
- Lack of system for data collection, and low use of diagnostic tests – CIABS
- Need more information on cause of death - CIABS

DNA testing
- Need more use of genetic tests – CIABS

Longevity - VSSÖ, BMDCA, KBS, KŠSP, BMDCI, MBE
Genetic Diversity - VSSÖ, NBSV, NBSK
SAS (Sub aortic stenosis) - BGF, BMDCA
GI Tract
- IBD/IBS, PLE – BGF, BMDCA, NBSV
- Bloat – BGF, BMDCI
- Giardia - NBSV

Skin/Allergy problems - NBMDC
Temperament/Behavior - NBMDC, SSFS
Steroid Responsive Meningitis-Arteritis – BGF
Hypothyroidism – BGF
Immune problems – KŠSP
Lyme/Anaplasmosis/etc
- KŠSP (a high susceptibility Lyme disease and anaplasmosis and related diseases. It is often a loss of appetite, increased temperature, etc., often the primary is not detected.); Anaplasmosis connected to kidney damage with subsequent damage to other organs

Puppy Mills - NBMDC
Cross Breeding - NBMDC
Advertising – NBMDC (rise in interest from the general public)
Torn ligaments - KBS
Orthopedics - HD/ED – NBSV, BMDCGB (unscored or high scoring parents)
Legal Breeding Restrictions
- NBSV (As of 2025, 25 breeds (brachycephalic) are banned from breeding in the Netherlands; an additional 27 breeds are under review due to stricter CFR criteria (moving from 1:0.3 to 1:0.5). Authorities have indicated that short-legged, hairless, and giant breeds will be next. The NBSV views this societal pressure as an opportunity to lead with a transparent, sustainable, and scientifically grounded health policy for the future of the breed.)

Results HS test Antagene January 2023
(Thanks to Martha Cehrs)

country	% of A	% of B	% of C	number of dogs
MEXICO				<10
ISRAEL				<10
LATVIA				<10
LUXEMBOURG				<10
BULGARIA				<10
LITHUANIA				<10
UKRAINE				<10
ESTONIA				<10
ROMANIA				<10
SLOVENIA				<10
SLOVAKIA	0,20	0,50	0,30	10
PORTUGAL	0,23	0,36	0,41	22
AUSTRALIA	0,18	0,38	0,44	39
HUNGARY	0,29	0,50	0,21	42
IRELAND	0,28	0,37	0,35	54
POLAND	0,34	0,38	0,28	61
BELGIUM	0,17	0,49	0,34	70
CZECH REPUBLIC	0,27	0,44	0,30	94
SPAIN	0,21	0,47	0,32	94
NETHERLANDS	0,26	0,35	0,39	96
CANADA	0,30	0,49	0,21	103
FINLAND	0,09	0,49	0,42	111
UNITED KINGDOM	0,18	0,37	0,46	158
AUSTRIA	0,29	0,48	0,24	208
GERMANY	0,23	0,51	0,26	257
ITALY	0,22	0,38	0,41	268
NORWAY	0,26	0,44	0,30	276
DENMARK	0,22	0,50	0,28	315
SWEDEN	0,23	0,43	0,34	481
SWITZERLAND	0,30	0,48	0,22	569
UNITED STATES	0,24	0,42	0,34	894
FRANCE	0,27	0,44	0,28	2323
Total	0,25	0,44	0,30	6585

From the VSSÖ, Austria

LONGEVITY is the main issue in BMD breeding:
Neoplastic diseases (including HS) are a major reason for the low life expectancy of our breed. We are happy to have rather good outcomes in the HS-Testing in comparison to a lot of other countries, however, there still is a long way to go!

Limited GENETICAL DIVERSITY in BMD was already discussed in the Berner IWG Meeting by Dr. Laura Kennedy in 2011 in England. ("Is the Major Histiocompatability gene a genetic risk marker for Malignant Histiocytosis in BMD?") and addressed in a study by Anna Letko and Benoit Hedan et al..
Here some links to interesting publications:
(PDF) Genomic Diversity and Runs of Homozygosity in Bernese Mountain Dogs (researchgate.net)
https://www.instituteofcaninebiology.org/blog/the-genetic-status-of-the-bernese-mountain-dog
https://pmc.ncbi.nlm.nih.gov/articles/PMC9886701/#Sec15

To address this problem, a collaboration with Feragen was started, beginning 01/2026 dogs used in breeding have to have a Feragen "VSSÖ Package" including: Genetic Diversity + DLA Haplotypeanalysis + ISAG 2020 + DogCheck 4.0 (inkl. Exon 1 u. 2, DM, vWD1 and PRA). We hope to collect information e.g. on unsuccessfull matings and haplotype-analysis.
At the moment 100 BMDs in total have been tested by Feragen:

Average Genomic Inbreeding Coefficient: 11,78%
Average Heterocygotism: 31,81%

DLA Haplotypes:	59%	-	00601/005011/00701
	14,5%	-	01601/00101/00201
	11,5%	-	02001/00401/01303
	7,5%	-	01501/00601/02002
	6,0%	-	04801/00101/008011
	1,5%	-	01501/00601/00301

As already discussed in Lydney and in Geneva, FERTILITY seems to be an issue:

BMD matings in Austria/not leading to pregnancy	2021	17/40 (= 43%)
	2022	15/40 (= 38%)
	2023:	20/38 (= 52,6%)
	2024:	23/35 (= 65,7%)

The reasons for the very low fertility rate during the COVID-Pandemic could have something to do with elevated stress levels (of the humans) traveling and less time meeting and mating. We will observe our fertility rates in future.

One case of COPPER-TOXYCOSIS showed in an Austrian BMD in a routine health checkup at the vet. Genetic Testing showed no known mutations. Litter-sisters have no elevated Copper or Liver-Parameters. Parents of this dog are dead already, there is no information on Copper-Levels or Liver Problems in those dogs.

From the BGF

Information on Health Projects/Health Initiatives during 2024 till now

Name of Project # 1:

Tackling Cancer in Bernese Mountain Dogs: Using liquid biopsies to maximize the chance of treatment success
Health problem addressed: Early Detection of Cancer especially HS
Time frame of project: 2024 -2026
Contact person for project: Dr Tuddow Thaiwong-Nebelung and Alex Engleberg for Dr. Vilma Yuzbasiyan-Gurkan's Lab in the Department of Microbiology and Molecular Genetics and Small Animal Clinical Sciences at Michigan State University College of Veterinary Medicine and the Department of Pathology and Diagnostic Investigation at Michigan State University Veterinary Diagnostic Lab

Project description

Liquid biopsies can be used to identify the occurrence of cancers at an early stage through the sequencing of tumor DNA fragments that occur naturally in body fluids also known as circulating cell free DNA (ccfDNA). Circulating cell free DNA from tumor cells occurs due to cell death, being killed by white blood cells, among other possible causes.

In this research project blood based liquid biopsies in combination with Next Generation Sequencing (NGS) will be used to identify mutations that occur in different cancers (histiocytic sarcoma (HS), mast cell tumors, lymphomas, hemangiosarcomas and osteosarcomas). The advantage of the use of NGS over other techniques such as droplet PCR is that researchers using NGS are able to identify heretofore unknown cancer specific mutations.

The project encompasses the following two Aims.

· Aim 1: Using a Comprehensive Cancer Panel (CCP) curated by the lab, liquid biopsy and tumor DNA sequencing will be performed on 20 Bernese Mountain Dogs (BMD) with Histiocytic Sarcoma and 20 BMD with another type of cancer. The expectation in this first phase is that for 90% of the dogs the cancer signature in the tumor matches the cancer signature in the cell free DNA obtained through liquid biopsies.
· Aim 2: In this aim blood liquid biopsies on 20 healthy dogs (10 BMD and 10 other breeds) between the age 2 and 5 years will be obtained. These will subsequently be tested using the CCP as well as any new mutations identified in aim 1. The expectation is that none of these dogs will show a cancer signature. However, when there is a positive result dogs will be retested as soon as possible and recommended for follow-up with a veterinarian.

At the end of this study the expectation is that there is a good understanding of the sensitivity and specificity of the liquid biopsy. The results are also expected to be used to design a comprehensive testing panel.

It is of special note that the following two papers resulted from collaboration with Berner-Garde published in the last two years.

- Engleberg A et. al. 2025. Transcriptome Analysis of Canine Histiocytic Sarcoma Tumors and Cell Lines Reveals Multiple Targets for Therapy. Cancers (Basel), 17(6):954 (PMID: 40149290).

- Yang YT et.al. 2024. Canine Histiocytic and Hemophagocytic Histiocytic Sarcomas Display KRAS and Extensive PTPN11/SHP2 Mutations and Respond In Vitro to MEK Inhibition by Cobimetinib. Genes (Basel), 15(8):1050 (PMID: 3920241

Name of Project #2

Rametrix® Technologies, Inc. Testing Agreement
Health problem addressed: Eventual Early Detection of Cancer especially HS
Time frame of project: 2024 -2026
Contact person for project: John Robertson, VMD, PhD, President Rametrix Technologies, Inc.

Project description

BGF, in partnership with the BMDCA, has engaged in a contract with Rametrix® Technologies:

To utilize the RTI's Raman technology to attempt to:

a. Identify specific urine molecular fingerprints unique to BMDs
b. Discover specific urine molecular fingerprints to describe stage and grade of tumors and soft tissue sarcomas in BMDs
c. Predict treatment efficacy for dogs undergoing chemotherapy
d. Detect and differentiate other pathologic processes in the urinary tract, with a focus on early-onset renal disease or renal failure
e. Research possibilities for identifying early signs of incipient cancer development before tumors develop in BMDs (i.e., researching possible means for early detection through regular screening over six (6) or twelve (12) month periods)
f. Research whether other common medical conditions affecting BMDs, produce a unique Raman molecular fingerprint that could be useful in detection and management of these diseases

The BGF team successfully collected 263 individual dog urine samples at this year's BMDCA National Specialty to support this study.

Name of Project # 3

BMD DNA and Tumor Repository

Project description # 3 Sample submission has been suspended for approximately 2 years. This year we have opened the Repository to include targeted DNA samples to include dogs with Renal Dysplasia, SAS and Veterans.

Name of Project # 4

Berner-Gade Database Health Surveys

Project Description

We have engaged the services of the Office for Survey Research of Michigan State University to provide ongoing surveys to owners of dogs with tissue or blood samples in the BMD DNA and Tissue Repository at Michigan State University to provide updates including health updates. We are sending 250 surveys on a quarterly basis.

Name of Project # 5

Berner-Garde Database Programming Updates.

Project Description

Berner-Garde Database Updates. There have been several updates to the database to provide ease of submission both for owners, breeders and operators.

A. New, modern litter submission form with greatly enhanced operator processing. This was specifically targeted for breeders.
B. New, modern dog submission form with greatly enhanced operator processing. This was specifically targeted for owners.
C. Ability for anyone to have a personal login for the Berner-Garde database. This will make data submissions more secure and easier. Users can now upload their own documents. This also enables several new enhancements planned for the
next year including personal notes and saving favorites. Also exploring some limited ability for logged in users to update data directly.
D. Focus over the past couple of years has been to make things easier for our data operators.
E. Focus over the next few years will be on new reports and capabilities

From the SSFS, Finland

Average lifespan in Finland is around 7,92 years and median 8,20 years per information on clubs own list of deceased dogs in 2024. The average lifespan has decreased from 2014 when the corresponding lifespans was 8,1 year and median 8,53 years.

In 2018 the club made a profile for ideal temperament of Bernese Mountain dogs. Based on a limited number of behavioral tests performed the temperament is moving towards dogs being reserved as compared to the ideal profile. Therefore, this is something that requires to be followed.

Breeding and health screenings

The Breed-specific Breeding Strategy (JTO) and Health program against genetic diseases and defects (PEVISA) for Bernese Mountain Dogs are valid for 5 years at a time.

Members of the breed club vote for JTO and PEVISA and Finnish Kennel Club approves the programs.

Current Breeding Strategy (JTO) is over 100 pages, a comprehensive study and strategy of the breed, the strengths and problems we are facing and how to approach them.

JTO includes PEVISA Health Program (breeding regulations)

The latest JTO and PEVISA came into effect in January 2022 and are valid until the end of 2026.

Basic limitations and recommendations by The Finnish Kennel Club

- Inbreeding% should be under 6,25% 4-5 generations
- Unless the breed-specific PEVISA program sets stricter requirements, the limit value for breeding use is Hip dysplasia grade D, elbow dysplasia grade 2, patellar luxation grade 3 and spondylosis grade SP3 and shoulder osteochondrosis Open to interpretation.

Current PEVISA breeding regulations

HD/ED screening is compulsory for all breeding stock. *(Over 50% of the population is officially X-rayed and evaluated)*

Hips: HD-A HD-B and HD-C are allowed for breeding. HD-C must be bred to a partner with HD-A or HD-B.

Elbows: ED-0 and ED-1 are allowed in breeding. ED-1 must be bred to a partner with ED-0.

Dog must be at least 18 months old for official HD/ED screening.

Limit for puppy registration: a BMD can have a maximum of 60 puppies born in Finland. However, the last litter that crosses the border will be registered in its entirety.

Breeding recommendations briefly

Estimated breeding values should be utilized when making breeding decisions. EBV has been established for HD/ED (2003) and longevity (2012).

A dog should not be used in breeding if it is sick, timid, aggressive, surgically operated due to genetic defects (such as OCD, HD, ED, cruciate rupture, eye disease), or if it has bite defects, blue eyes, or has entropia or ectropia.

Only dogs and bitches that can mate naturally should be bred. Bitches should be able to whelp naturally.

Breeders should research ages and causes of death at least four generations back in the breeding dogs.

If a bitch has had a litter before it is highly recommended to evaluate the litter before bitch is mated again. Also stud dog's previous offspring should be evaluated when making new breeding decisions.

Timeline of breeding regulations

1991: Compulsory hip x-rays, no restrictions.

1994: Also elbow x-rays became compulsory, no restrictions. HD-E hips were removed from breeding

2000: Grade 3 elbows were removed from breeding.

2003: Estimated Breeding Values for hips and elbows came in use.

2009: Restrictions for hips: if a dog has C or D hips, the breeding partner must have A or B hips. Restrictions for elbows: if a dog has grades 1 or 2 elbow, the breeding partner must have normal elbows (0/0). Offspring limit came into use: a dog can have a maximum of 60 puppies in Finland.

2015: D or E hips and grades 2 & 3 are NOT allowed in breeding. If a dog has HD-C, the breeding partner must have A or B hips. If a dog has a grade 1 elbow, the breeding partner must have normal elbows (0/0). Offspring limit is 60 puppies.

Breeding and health screenings – other health screenings and tests

Other health screenings than HD & ED are voluntary.

On a voluntary basis breeders and dog owners test their dogs for eye diseases, patella, shoulders, heart and back and also various genetic tests (e.g. DM, vWD, HS pre-test and MyDogDNA Pass)

Breeding tests and character tests are voluntary.

The breed club keeps records of breeding tests.

All character test results are published in Finnish Kennel Club database Koiranet.

The breed club has supported breeders financially in tests

Genetic tests

The DM test is voluntary. The first dogs were tested in 2008. The breed club keeps a public database of tested dogs (currently over 720 dogs in the database).

DM tests are kept voluntary and slowly more people are testing their dogs. We have not seen that the test results would have too high of an importance for the breeders. For many breeders or stud dog owners DM result has no importance

HS test is not yet widely used, only a few dogs have been tested.

Many people do not want to spend money on any voluntary testing; only mandatory testing is done. Some are afraid that the possible bad test results would limit their choices or harm their reputation.

Data collection

All registration data, pedigrees, official health screening data (HD, ED, shoulders patella, eyes, heart, back), EBV's for hips and elbows, titles, results of shows and trials are publicly available in Koiranet which is Finnish Kennel Club's public database http://jalostus.kennelliitto.fi

Members of the Finnish Kennel Club can add the day of death and cause of death of their dogs in the database.

The breed club has been collecting age and cause of death data since the 90's. Over 4970 public age records, 4200 public COD records (10/2022). The Finnish Kennel Club database has 3301 deceased Bernese.

The breed club also keeping records of veteran dogs alive, various genetic test results, cases of epilepsy, autoimmune and renal diseases

The breed club encourages breeders and owners to find out the cause of death of their dogs. The breed club and its health fund reimburse the cost of the autopsy for membership in exchange for the autopsy report of the dog.

From the AFBS, France

Elbows

	2024		2023		2022		2021		2020	
	Nbre	%	Nbre	%	Nbre	%	Nbre	%	Nbre	%
ED-0	263	85%	396	84%	336	84%	387	85%	321	82%
ED-SL	6	2%	13	3%	14	4%	9	2%	9	2%
ED-1	23	7%	35	7%	37	9%	35	8%	26	7%
ED-2	9	3%	20	4%	8	2%	14	3%	20	5%
ED-3	7	2%	6	1%	4	1%	10	2%	14	4%
TOTAL ED	308		470		399		455		390	

Lof Select Club

Hips

	2024		2023		2022		2021		2020	
	Nbre	%	Nbre	%	Nbre	%	Nbre	%	Nbre	%
HD-A	243	75%	375	79%	319	79%	363	76%	317	75%
HD-B	46	14%	60	13%	47	12%	52	11%	49	12%
HD-C	27	8%	32	7%	30	7%	41	9%	35	8%
HD-D	5	2%	8	2%	7	2%	15	3%	12	3%
HD-E	4	1%	1	0%	2	0%	6	1%	7	2%
HD	0	0%	0	0%	0	0%	0	0%	0	0%
TOTAL HD	325		476		405		477		420	

Lof Select Club

Degenerative Myelopathy

		2024		2023		2022		2021		2020	
		Nbre	%	Nbre	%	Nbre	%	Nbre	%	Nbre	%
DM1A	DM1A-1.1	143	75%	205	73%	120	77%	105	71%	56	69%
	DM1A-1.2	45	24%	73	26%	33	21%	43	29%	22	27%
	DM1A-2.2	2	1%	4	1%	2	1%	0	0%	3	4%
	TOTAL	190		282		155		148		81	
DM1B	DM1B-1.1	285	93%	380	86%	215	91%	202	84%	105	85%
	DM1B-1.2	20	7%	60	14%	20	9%	38	16%	18	15%
	DM1B-2.2	0	0%	4	1%	0	0%	0	0%	0	0%
	TOTAL	305		444		235		240		123	
DM	**TOTAL**	495		726		390		388		204	

Lof Select Club

From the SSV, Germany - Changes in the breeding strategy

Schweizer Sennenhunde-Verein für Deutschland e. V. /SSV

Changes in the breeding strategy for dogs in the Swiss Dog Association for Germany e.V. ;

A review of the last 20 years by Dr. med. vet. Norbert Bachmann/SSV breeding director

And it was precisely this feeling that dog breeding must be more than exhibition results, championships, and shows that characterized this era. Representatives of all four dog breeds felt a strong need to address health issues more intensively, create transparency, and develop individual breeding strategies for each breed. "Individual" because each breed has breed-specific problems. The population range of the respective breeds was and is also very different. Therefore, any breeding strategy had to take the genetic diversity of the four dog breeds into account. In addition to joint problems in all four mountain dog breeds, early mortality from cancer in the Bernese Mountain Dog, eye diseases (glaucoma, progressive retinal atrophy, and cataracts) and ectopic ureters in the Entlebucher Mountain Dog, and eye diseases and epilepsy in the Greater Swiss Mountain Dog have been and continue to be addressed in breeding strategies. The Appenzeller Mountain Dogs were considered the most robust breed of mountain dog. In addition to health problems, functional characteristics such as mobility and suitability for everyday use, including their qualities as family, companion, or working dogs, were always the focus of breeding efforts. Last but not least, significant breeding successes have been achieved through the selective, critical examination of the Bernese Mountain Dog's desired confident and calm demeanor at exhibitions and breeding licensing, and through the introduction of standards for upbringing and training. Of course, the selection for functional anatomical structure and freely ranging movement patterns has, and continues to, bring about long-term breeding progress, which can be measured in a better quality of life for both dog and owner. The testing of these characteristics played an increasingly large role in breeding approval tests. In this respect, the SSV also aimed to be a guarantor of quality-oriented breeding, which benefits puppy buyers from SSV breeders. The introduction of breed-specific breeding strategies was accompanied by a major reform of the statutes. The Breeding Committee was created, consisting of one breed representative from each of the four dog breeds, two representatives from the breeding wardens, the chief breeding warden, and the breeding director. The animal welfare officer, the officer for education and training, the project managers, and the president were regularly present but did not have voting rights. In terms of personnel, the SSV was also fortunate to have cynologists with extensive expertise within its own ranks, some of whom have shaped the association's breeding efforts in the interests of the dogs for decades. This development has been particularly noticeable during this period for Christel Fechler (as breeding manager until 2022,then President), Christine Harder-Buschner (as Chief Breeder), Dr. Norbert Bachmann (as President, 2005-2022, then Breeder Manager, as Project Manager for Genomic Breeding Values), Margret Epple (as Representative of the Breeder Managers and Project Manager for EU for the Entlebucher Mountain Dog), Hildegard Urankar, (Project Manager for Epilepsy in the Greater Swiss Mountain Dog), Dr. Andrea Herz (Chairman for education and training until 2009), Anni Warfen (Chairman for education and training from 2009) together with other committed representatives of the breeding committee. The individual breeding strategies were developed, accompanied and supported through the intensive cooperation of the SSV with scientists from home and abroad. Particularly noteworthy are Prof. Dr. Ottmar Distl (Foundation of the University of Veterinary Medicine Hannover), Dr. Reiner Beuing (TG-Verlag; Computer Centre for Animal Breeding and Applied Genetics), Dr. Gabriele Schiller (TG-Verlag; Computer Centre for Animal Breeding and Applied Genetics), Prof. Dr. med. vet. Iris Reichler (Vetsuisse Faculty University of Zurich), Prof. Dr. Andrea Tipold (Foundation of the University of Veterinary Medicine Hannover), Prof. Dr. Martin Fischer (Movement Studies), Dr. vet. med. Silke Viefhues (Expert for joint diseases). This is how it came about that in the years from 2004 onwards, breed-specific breeding

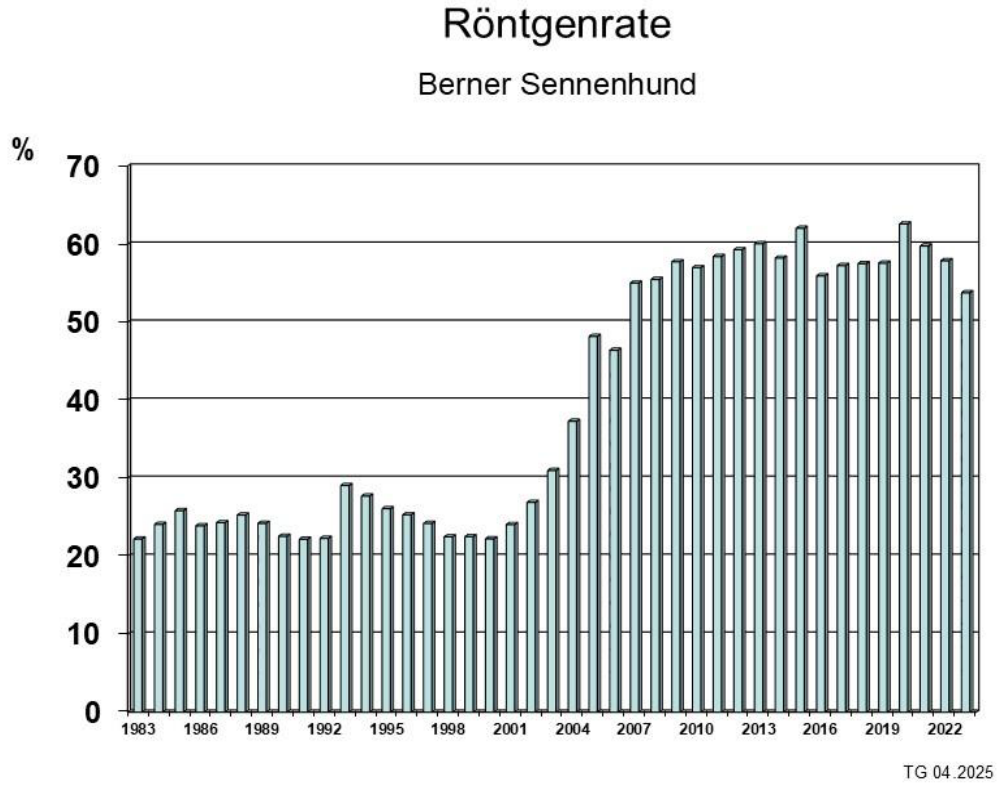
plans were designed for each breed and also subsequently were continually being developed further. These plans were, of course, and continue to be the subject of intense debate within and outside the breeding committee. Ultimately, all plans were voted on at the SSV's general meetings. However, the SSV has always managed to maintain a common thread over the decades. The goal of breeding healthy, everyday-suitable, and standard-compliant mountain dogs has prevailed. It has also always been important to maintain solidarity among members and breeders. This has not always been easy.

Health trends in our mountain dogs.

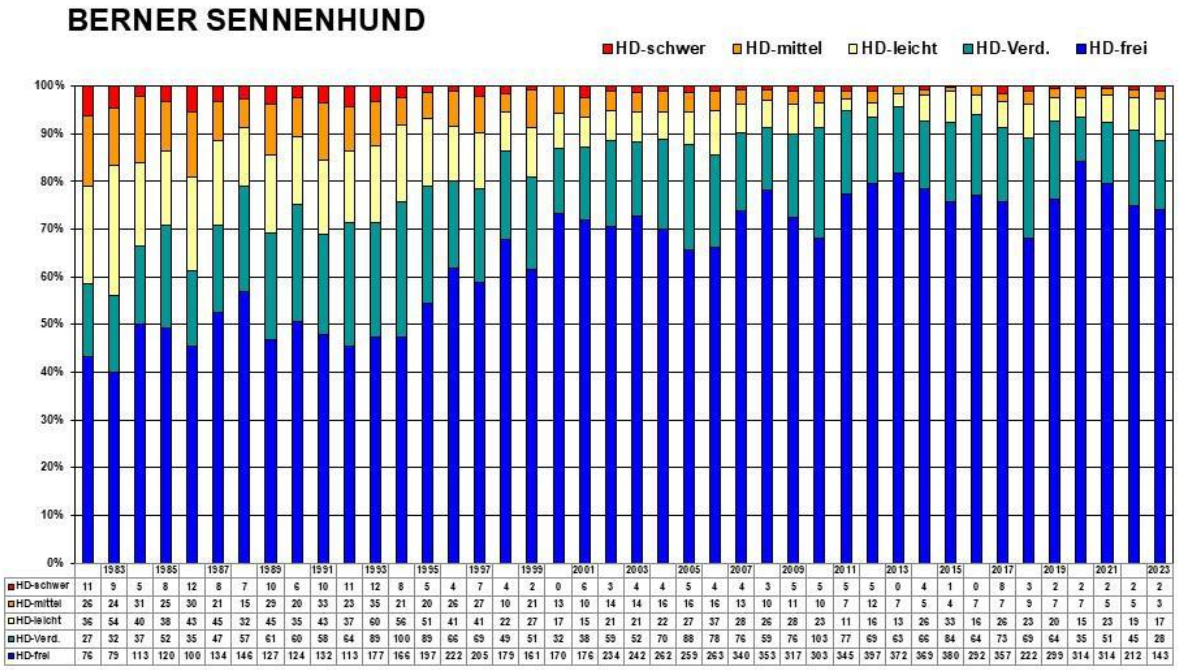
Here, we will examine the health trends for specific traits in our mountain dog breeds as examples. Every breeding strategy includes regular monitoring of breeding success and, if necessary, correction or adjustment of the breeding strategy. TG-Verlag has contributed numerous evaluations to the review of population trends.

High X-ray rate – the basis for high reliability in breeding values for joint diseases such as HD, ED, and OCD.

The X-ray rate compares the X-rayed dogs with the bred dogs of a given birth year. A high X-ray rate, which in the case of Bernese Mountain Dogs is additionally paired with a sample (randomization), creates high reliability in the breeding values (Blub) for joint diseases.



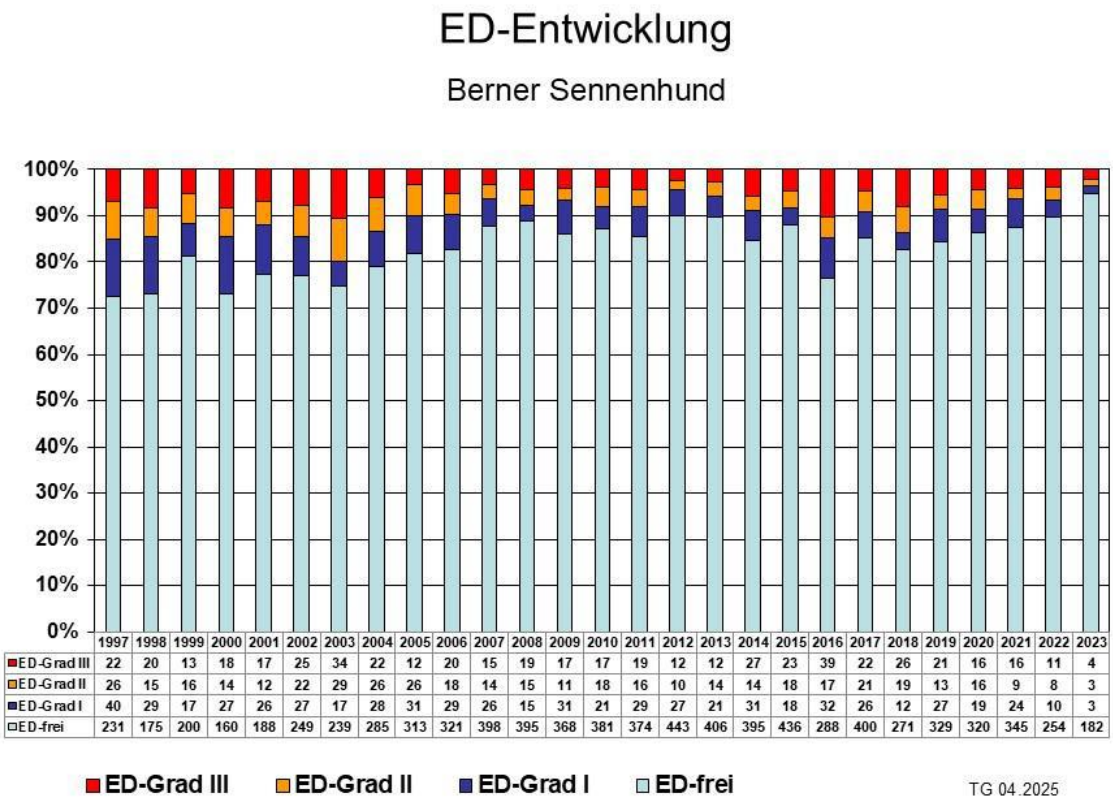
Different requirements apply to the radiographic screening of joint diseases for breeding dogs in the four mountain dog breeds. Hip x-rays are mandatory for all four breeds. Elbow x-rays are mandatory for Bernese Mountain Dogs.Severe joint diseases have been significantly reduced in all mountain dog breeds, also due to the use of breeding value assessments for HD, ED, and OCD.



	1983		1985		1987		1989		1991		1993		1995		1997		1999		2001		2003		2005		2007		2009		2011		2013		2015		2017		2019		2021		2023
HD-schwer	11	9	5	8	12	8	7	10	6	10	11	12	8	5	4	7	4	2	0	6	3	4	4	5	4	4	3	5	5	5	5	0	4	1	0	8	3	2	2	2	2	2
HD-mittel	26	24	31	25	30	21	15	29	20	33	23	35	21	20	26	27	10	21	13	10	14	14	16	16	16	13	10	11	10	7	12	7	5	4	7	7	9	7	7	5	5	3
HD-leicht	36	54	40	38	43	45	32	45	35	43	37	60	56	51	41	41	22	27	17	15	21	21	22	27	37	28	26	28	23	11	16	13	26	33	16	26	23	20	15	23	19	17
HD-Verd.	27	32	37	52	35	47	57	61	60	58	64	89	100	89	66	69	49	51	32	38	59	52	70	88	78	76	59	76	103	77	69	63	66	84	64	73	69	64	35	51	45	28
HD-frei	76	79	113	120	100	134	146	127	124	132	113	177	166	197	222	205	179	161	170	176	234	242	262	259	263	340	353	317	303	345	397	372	369	380	292	357	222	299	314	314	212	143

TG 04.2025

The development of the elbow dysplasia rate in Bernese Mountain Dogs is remarkable. After 2004, a significant improvement in elbow dysplasia was evident. Only the breeding regulation of all ED grades (I-III) and the independent influence on breeding values – ED grades I-III have been negatively impacted on the ED breeding values since this period – brought about a significant positive breakthrough in elbow disorders. Digital X-rays have also become established in most veterinary practices. This has improved the resolution of the images and reduced diagnostic uncertainty.



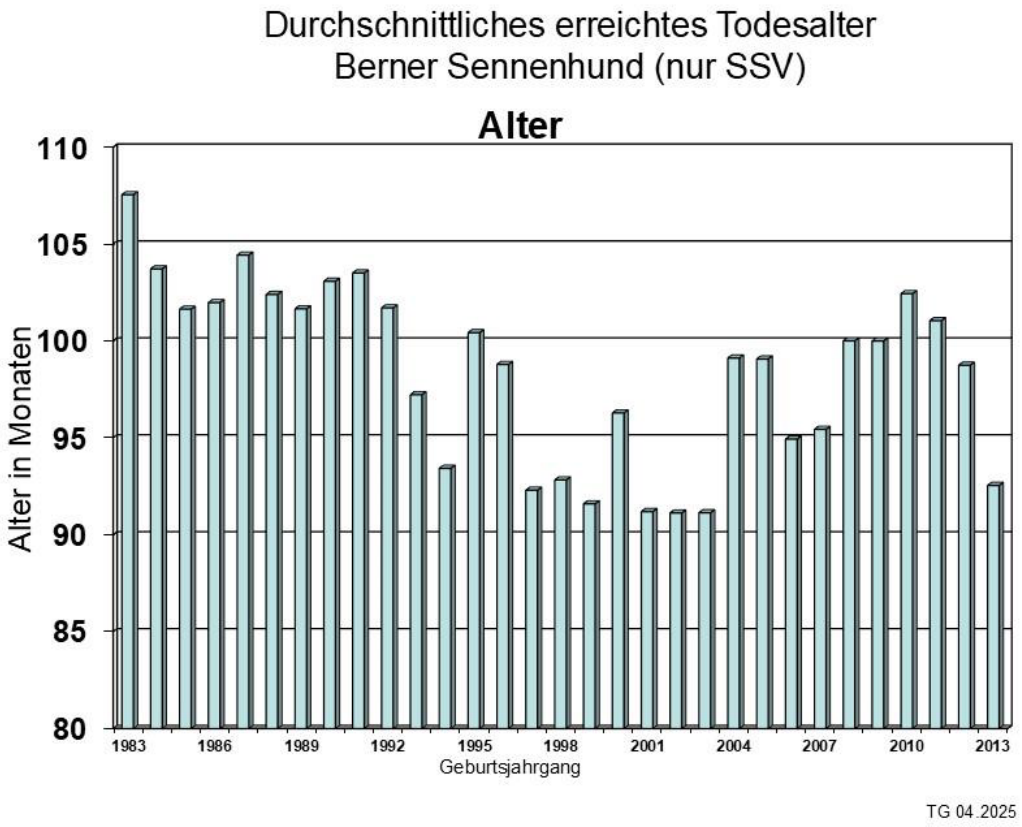
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ED-Grad III	22	20	13	18	17	25	34	22	12	20	15	19	17	17	19	12	12	27	23	39	22	26	21	16	16	11	4
ED-Grad II	26	15	16	14	12	22	29	26	26	18	14	15	11	18	16	10	14	14	18	17	21	19	13	16	9	8	3
ED-Grad I	40	29	17	27	26	27	17	28	31	29	26	15	31	21	29	27	21	31	18	32	26	12	27	19	24	10	3
ED-frei	231	175	200	160	188	249	239	285	313	321	398	395	368	381	374	443	406	395	436	288	400	271	329	320	345	254	182

Breeding goal: longer life expectancy in Bernese Mountain Dogs; genomic breeding values.

Lifespan of Bernese Mountain dogs in SSV is almost 9 years!

It was and remains a major concern for the SSV and its members to increase the average life expectancy of Bernese Mountain Dogs. The lowest point was reached at approximately 7.6 years for those born between 2001 and 2003. After 2003, the average life expectancy increased significantly. Those born between 2008 and 2010 had an average life expectancy significantly over eight years. The average life expectancy can almost always only be calculated after approximately 13 years, because only then can one assume that almost all dogs of that year, with few exceptions, have died. The digitalization of breeding within the SSV, which has been underway since 2022, makes it possible to assess developments better and earlier. Based on the digital death reports currently being received, it can be extrapolated that the average life expectancy of Bernese Mountain Dogs in the SSV is currently almost nine years. This is a tremendous success and shows that the many measures have paid off. As described in detail in the article " ", various measures have been taken to increase life expectancy. In my opinion, the intensive data collection in Dogbase using live and death reports over many years was particularly important. This enabled every breeder to gain an overview of the age structure in their family circle. The obligation to only breed if there is a high level of transparency regarding the time of death or live report prompted many breeders to submit current reports and take a closer look. The restriction on breeding – as a result, more diverse males were used and genetic diversity increased – was certainly an important building block in achieving the goal of a longer life expectancy. The increased use of stud dogs from abroad had a similar effect. Approximately 30% of males were regularly used each year from non-SSV breeding. The introduction of genomic breeding values for longevity and malignant histiocytosis/histiocytic sarcoma in 2012 gave breeders the opportunity to better assess risks prior to mating. Almost 1,500 dogs were genomically tested

by 2023. In retrospect, it was shown that the combination of genomic breeding values for longevity and genomic breeding values for malignant histiocytosis/histiocytic sarcoma offers a very good selection option for increasing the average life expectancy in the population, since an average life expectancy of over 9.5 years could be calculated for dogs with high genomic breeding values for longevity (over 100) and simultaneously low genomic breeding values for malignant histiocytosis/histiocytic sarcoma (under 100).



Summary: significant health improvements for our dogs.

We have achieved considerable health improvements with all four sennen-dogs in the SSV. The everyday suitability of our dogs in the SSV is exemplary; they are excellent family dogs, and dogs from SSV breeding can also compete successfully in international exhibitions. It was an arduous path to continuously, purposefully, and successfully address the health issues in dog breeding. Looking back, from my perspective, one can say that these efforts were worthwhile.

I also wish the association continued commitment to the welfare of dogs, sparing no effort to keep these wonderful breeds, with their outstanding qualities, healthy.

Dr. med. vet. Norbert Bachmann - SSV Breeding Director

From the BMDCGB, Great Britain – The Royal Kennel Club's Health Initiatives

The Royal Kennel Club's health department has been busy coming up with two main health related initiatives in the last year or so. One called the **Breed Health Standard** where specific breed health guidance is stated for each breed. This is a development of the Breed Health and Conservation Plan (BHCP) for each breed of about 7 years ago. Ours only contains a recommendation to hip and elbow score Bernese breeding dogs as attempts to include recommendations to HS and DM test breeding dogs were not backed by a majority of the breed clubs. After a review, our breed does not see this as a great development and it is not likely help us in any meaningful way but discussions are still to be held and things could change.

Their second initiative is a **Breed Population Analysis** study for every recognized breed, produced mainly by the Kennel Club's geneticist, Dr Joanna Ilska, who some of you will also remember as another of the speakers at our UK Health Seminar at our Golden Jubilee event in 2022.

The feedback from the two initiatives has caused the Kennel Club to decide to merge the two projects and extend their timeframe for expected completion, (across all breeds), but hopefully I will be able to report more at our next meeting.

The population analysis is a genetic study of our UK BMD population but sadly, after checking, I am unable to circulate my advance copy at this time, as a final version for public consumption will come out *after* discussions with the breed. However, I do have permission to share extracts and below are *most* of the points given under "Key Findings". I have underlined two of the possibly most notable points made.

KEY FINDINGS FOR THE BERNESE MOUNTAIN DOG

- The breed population suffered a significant decline in size between 1990 and 2021
- The percentage of dogs used in breeding was very low, which poses a considerable risk to genetic diversity
- The number of imported dogs significantly increased over time, with concurrent increase in the percentage of litters produced from imported parents over time
- Large percentage of litters were produced by at least one parent with a stud book number, however, that percentage declined consistently since 1996
- Average COI for dogs born in 2021 was 3.3%
- There was a significant and negative association between COI and litter size – litters with higher COI tend to be smaller
- The average relationship among dogs assumed to be alive is 4.1% - i.e. average Bernese Mountain Dog in the current population is more related to any other dog in the same cohort than a great-great-great-grandparent and great-great-great- grandchild
- Across time, there was evidence of popular sire use

(Just for clarity, the Kennel Club stud book referred to does not directly relate to breeding but to be listed in the stud book you need a certain level of win at shows. So, speaking very generally dogs in the stud book should be more widely known dogs, and dogs not in the stud book are, in theory at least, poorer quality because they have been to a show but not won to the required level, or simply dogs that have never been to a show).

I think the first point, concerning the low percentage of our population of dogs used in breeding, fits in with some previous discussions we have at the BIWG had over the years and is I expect this is a common finding in countries which do not have any stud use restrictions, even voluntary ones, on the use of popular sires.

The second underlined point, connecting the connection between CoI and litter size, could be meaningful in the light of our concerns about BMD fertility which we have been raised at our recent BIWG meetings.

The boxplot chart below expresses the observed relationship between litter size and CoI of the parents.

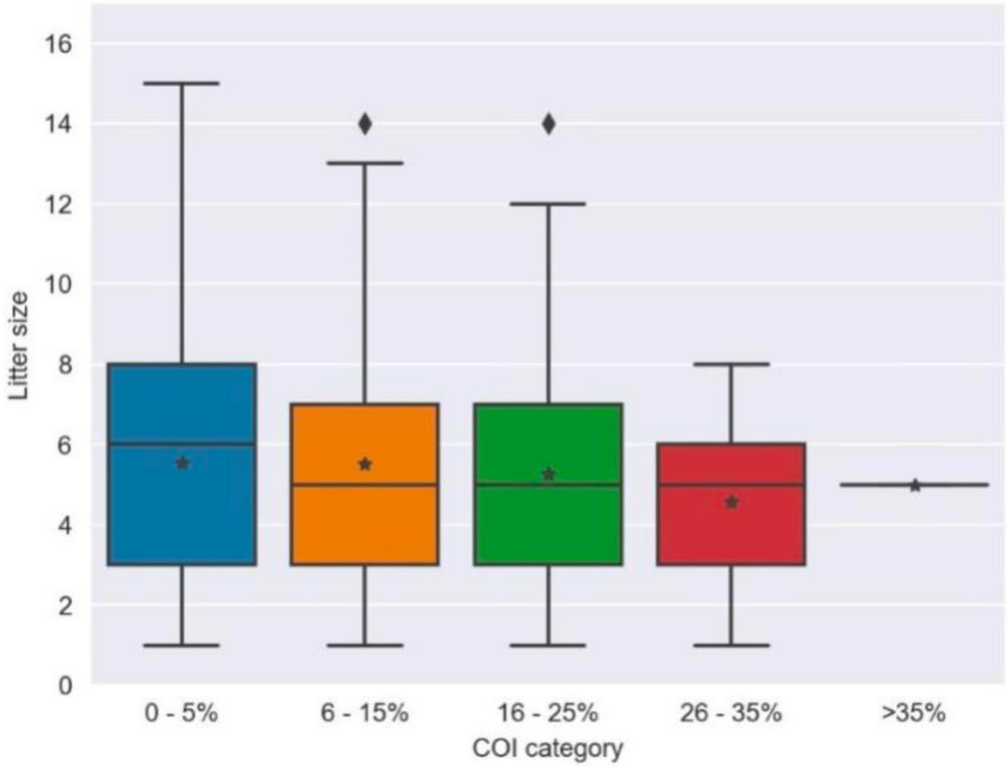


Figure 7 Boxplot of litter size distribution by category of COI. The number of litters in the particular categories were: 0-5% = 2,122, 6-15% = 1,412, 16-25% = 353, 26-35% = 36, >35% = 1

Over the coming year or so, each Breed Health CoOrdinator is to have discussion with the Royal Kennel Club to discuss the individual report for their breed and how to make best use of it. I will upload the full report to the IWG when this is possible.

From the NBSV – The Netherlands

Clarification on Diversity Metrics

In the current market of commercial DNA testing, there is growing confusion about what "genetic diversity" truly means. The DNA-based coefficient of inbreeding (DNA-COI) presented by some commercial providers is often mistakenly seen as a direct measure of diversity. However, this value is highly dependent on the size and structure of the lab's internal reference database.

The NBSV is guided in this matter by population geneticist Dr. Pieter Oliehoek, who applies the concept of Mean Kinship (MK) as a robust and population-level metric for maintaining genetic diversity. Unlike the focus on low COI in individual dogs, MK considers how rare a dog's genetic contribution is within the total population.

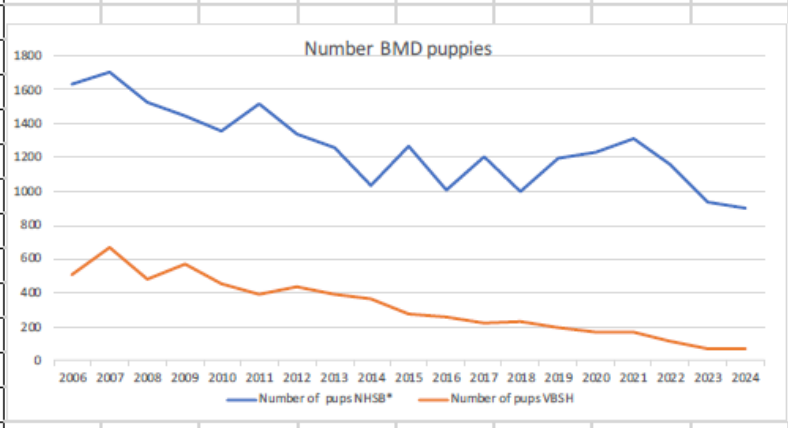
Within the Breed Improvement Plan (RVP), this broader view helps avoid narrowing the population through the unintended overuse of individuals with low (but unrepresentative) DNA-COI values.

Number of puppies or litters – VBSH, The Netherlands

Number of puppies or litters born per year

VBSH - The Netherlands

Year	Number of pups NHSB*	Number of pups VBSH	Number of litters VBSH	Average pups per litter VBSH
2006	1636	502	78	6,4
2007	1708	666	105	6,3
2008	1525	480	71	6,8
2009	1448	569	85	6,7
2010	1358	453	67	6,8
2011	1518	392	57	6,9
2012	1339	429	67	6,4
2013	1255	389	58	6,7
2014	1038	363	54	6,7
2015	1265	275	41	6,7
2016	1009	258	41	6,3
2017	1201	221	35	6,3
2018	1000	229	37	6,2
2019	1195	195	29	6,7
2020	1228	167	28	6,0
2021	1314	162	30	5,4
2022	1160	113	20	5,7
2023	936	66	12	5,5
2024	899	63	9	7



* NHSB = Nederlands Honden Stamboek (Dutch Pedigrees Kennelclub) incl. import

* VBSH - pups bred by VBSH-members (with pedigree Kennelclub)

We have conducted an analysis of the Dutch Bernese Mountain Dog population (2000–2023), based on data from the Berner-Garde Database. This analysis reveals a concerning pattern of genetic concentration due to the overuse of a small number of popular sires:

- 24,262 puppies born from 4,085 litters
- Only 573 unique sires were used
- 34 sires (6%) account for 33% of all puppies
- The 10 most used sires account for 15% of all puppies

This so-called **popular sire effect** contributes over time to a decline in genetic diversity, an increase in inbreeding, and a heightened risk of hereditary disorders. We are observing the consequences more frequently in both clinical issues and genetic evaluations within our national population.

We believe this trend is not unique to the Netherlands and deserves attention as a shared concern within the IWG framework.

We propose the following actions:

- A joint population data review across European countries (via Berner-Garde or comparable databases)
- An international awareness campaign about **Mean Kinship (MK)** as a complement to COI
- A call to owners of underused but healthy sires with diverse lineage to contribute to preserving genetic diversity

To support this effort, we will launch a national awareness campaign in the Netherlands this September. We will actively invite owners of healthy, non-show-focused males to make their dogs available for breeding — provided they meet the health and genetic criteria.

We hope this contribution may offer useful insights.

In line with the ongoing discussions on outcrossing in purebred dogs, we would like to recommend **Dr. Pieter Oliehoek**, a conservation geneticist based in Portugal. He is currently advising the Dutch Shepherd Association on their outcross project and has extensive experience supporting breed clubs, authorities, and welfare organizations in developing responsible breeding strategies. See also: https://verenigingh ollandseherder.nl/fokkerij/outcross-project/

From NBSK, Norway – BFF, Berner For the Future

21.07.2025

KBS Schweizerische Klub für Berner Sennenhunde
Präsidentin Andrea Maret

Berner - IWG International Working Group
Group President Martha Cehrs

Dear Berner Friends We have previously sent you a letter to inform you about the situation of the Berner in Norway and the Norwegian Bernese Mountain Dog Club project BFF - Berner For the Future.

Since then, we have tested 33 dogs for genetic COI. 25 of the dogs were sponsored with 75% by NBSK/BFF and eight dogs were tested by their owners and at their expense. One test was lost in the mail so now we have 32 dogs with known genetic COI.The average result of these 32 Berners was 31% COI. The results ranged from 25% to 37%.

This result, together with a previous similar study, where 33 Bernese Mountain Dogs from the USA, Sweden, France and Switzerland where the result was an average COI of 39.5%, gives us the main answer to why we have the health and fertility problems that we find in the breed.

After evaluating the results, NBSK's leader Solveig Aarbogh, together with BFF's representatives Tony Cathrine Torp and Kjersti Olsen, had a meeting with the Norwegian Kennel Club's breeding consultants PhD Kim Bellamy and Frida Gulbrandsen.

NKK was very clear that the base level of inbreeding together with the challenges the breed has with health, it will not be enough to just take various measures within the breed. We must add new blood to the breed for a sustainable future and to solve or improve the health challenges that the Berner have within a reasonable time.

NKK is currently preparing breeding programs for all breed clubs, which is mandatory from 2026. The Norwegian dog breeds have almost completed their breeding programs and we have been promised by NKK that the Berner is the next breed that will be prioritized for a breeding program. This is due to the breed's particularly demanding health challenges and the fact that it is a numerically large breed. We appreciate this support from NKK.

A breeding program will contain:
- goals and partial goals in a prioritized order
- recommendations and requirements for health screening and tests
- breeding rules
- statistics and tools to monitor the status of the health situation and its development in the breed
- a crossbreeding project will also be incorporated into the breeding program.

For all breeds, this breeding program should be a plan for long-term and sustainable breeding that must be based on high professional standards.

On June 18, 2025, we had a breeder meeting that brought together around 50 breeders and stud dog owners. BFF first updated the meeting participants on the current status of the project in addition to the results of the COI testing, before NKK's Kim Bellamy and Frida Gulbrandsen informed about NKK's breeding programs and why we need to start a crossbreeding project for Bernese Mountain Dogs.

Kim Bellamy explained to the audience how other measures will be ineffective in reducing the level or slowing down the development of the already very high genetic inbreeding rate in the breed as a whole, but that the introduction of new blood is the only effective tool for us to use now. Kim and Frida also

talked about how we should go about choosing breeds that should be suitable to contribute new blood to our breed.

It will be important to look at the breed's temperament and purpose, their health statistics, average lifespan or life expectancy for the breed, the breed's risk for cancer and in particular HS. For example, retrievers are excluded due to their predisposition to HS. Due to the high rate of caesarean section (53%) and other fertility problems in both female and male dogs, this will also be emphasized when choosing one or more breeds for the project. NKK will assist us in the work of finding the right and appropriate model for the crossbreeding project, such as how many breeds to use, how many crossbred litters we need, the time aspect, should the crosses be able to cross with each other and otherwise all eventualities such a project could have. Here you can find detailed information about various aspects of a crossbreeding project.

NKK introduces an additional register/appendix according to FCI registration rules from approximately September 2025. This will make it possible and facilitate breed clubs to start crossbreeding projects according to their adapted and required model.

NBSK/BFF and NKK are planning for a breeders' meeting late August 2025, where models, breeds and rules for the project and more will be discussed. NBSK's preferred model for the crossbreeding project will appear there, and will be forwarded to NKK for the final decision and approval.

In the spring and early summer 2025, BFF/NBSK has been contacted and has noticed interest from bernese clubs, especially in neighbouring countries. In addition, we have been contacted by other breed clubs that are considering similar initiatives and projects for their breed. We appreciate this very much.

We see now this as a sign of the times, and this chronological summary explains the background history for this.

We sincerely hope for support and commitment from the breed's homeland and the IWG with its associated national clubs and with a hope of cooperation for a bright future for the Bernese.

We will continue to keep you updated with the progress of our project BFF - Berner For the Future.

Best regards
Tony Cathrine Torp og Kjersti Olsen
BFF- Berner For the Future
Norsk Berner Sennenhund Klubb

From the SShK, Sweden – Reproduction results reported from the breeders

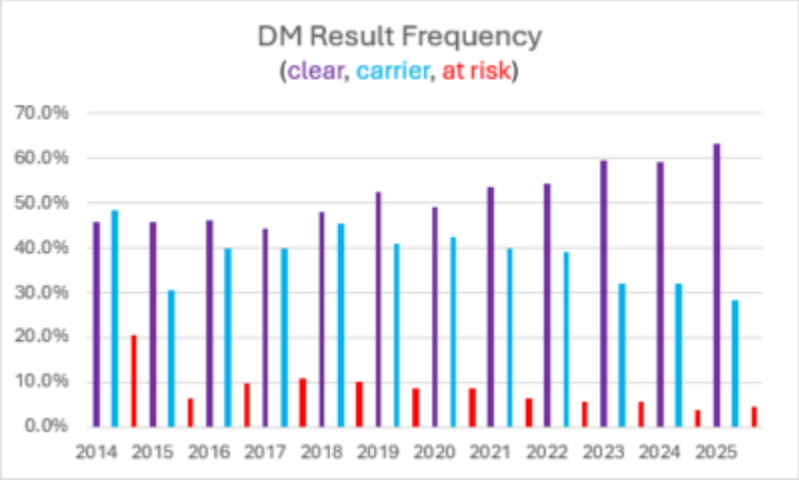
Year	2023	2024
SShK reported litters	41	34
SShK reported puppies (alive)	172	144
Stillborn puppies	44	43
Dead before registration SKK	3	8
Caesarian sections	16	19
Non-pregnant matings	23	27

From the BMDCA, USA – Progress with Genetic Testing of DM (Pat Long)

What progress have we made with genetic tests?

Dr. Halpern gave a presentation for Berner-U, and I wasn't able t o be there because there were too many other excellent health based presentations! He was able to send us a file of the tests that the BMDs have done since 2014 with GenSol. I was very interested to see the results.

Here are the counts of all the tests, with the percentage of each result:



Here are the counts of all the tests, with the percentage of each result:

Test Type	Result	Count	Result Frequency
Degenerative Myelopathy (DM/S0D1A)	Clear	7658	51.6%
Degenerative Myelopathy (DM/S0D1A)	Carrier	6299	42.5%
Degenerative Myelopathy (DM/S0D1A)	At Risk	875	5.9%
SOD1B Degenerative Myelopathy (SOD1B)	Clear	9296	85.0%
SOD1B Degenerative Myelopathy (SOD1B)	Carrier	1584	14.5%
SOD1B Degenerative Myelopathy (SOD1B)	At Risk	54	0.5%
Von Willebrand's Disease Type I (VWD1)	Clear	5563	97.7%
Von Willebrand's Disease Type I (VWD1)	Carrier	133	2.3%
Von Willebrand's Disease Type I (VWD1)	Affected	0	0.0%

But that cumulative data doesn't help show us what sort of progress has been made. To see that, I calculated the percentage of mutated genes based on the data for each year:

Test	Year	Mutated Allele Frequency
Degenerative Myelopathy (DM)	2014	32.1%
Degenerative Myelopathy (DM)	2015	30.8%
Degenerative Myelopathy (DM)	2016	30.7%
Degenerative Myelopathy (DM)	2017	32.3%
Degenerative Myelopathy (DM)	2018	29.1%
Degenerative Myelopathy (DM)	2019	26.7%
Degenerative Myelopathy (DM)	2020	28.4%
Degenerative Myelopathy (DM)	2021	25.7%
Degenerative Myelopathy (DM)	2022	24.9%
Degenerative Myelopathy (DM)	2023	22.8%
Degenerative Myelopathy (DM)	2024	22.1%
Degenerative Myelopathy (DM)	2025	20.4%

SOD1B Degenerative Myelopathy (SOD1B)	2014	4.5%
SOD1B Degenerative Myelopathy (SOD1B)	2015	5.8%
SOD1B Degenerative Myelopathy (SOD1B)	2016	6.2%
SOD1B Degenerative Myelopathy (SOD1B)	2017	6.9%
SOD1B Degenerative Myelopathy (SOD1B)	2018	7.2%
SOD1B Degenerative Myelopathy (SOD1B)	2019	7.8%
SOD1B Degenerative Myelopathy (SOD1B)	2020	9.3%
SOD1B Degenerative Myelopathy (SOD1B)	2021	9.8%
SOD1B Degenerative Myelopathy (SOD1B)	2022	8.3%
SOD1B Degenerative Myelopathy (SOD1B)	2023	7.8%
SOD1B Degenerative Myelopathy (SOD1B)	2024	7.7%
SOD1B Degenerative Myelopathy (SOD1B)	2025	6.4%

Von Willebrand's Disease Type I (VWD1)	2015	1.9%
Von Willebrand's Disease Type I (VWD1)	2016	0.6%
Von Willebrand's Disease Type I (VWD1)	2017	0.9%
Von Willebrand's Disease Type I (VWD1)	2018	1.4%
Von Willebrand's Disease Type I (VWD1)	2019	1.1%
Von Willebrand's Disease Type I (VWD1)	2020	1.0%
Von Willebrand's Disease Type I (VWD1)	2021	0.9%
Von Willebrand's Disease Type I (VWD1)	2022	1.2%
Von Willebrand's Disease Type I (VWD1)	2023	1.9%
Von Willebrand's Disease Type I (VWD1)	2024	0.9%
Von Willebrand's Disease Type I (VWD1)	2025	1.2%

From the calculations it shows that we have gradually reduced the percentage of copies of the SOD1-A mutation alleles (an allele is a form of a gene, in this case, one with the SOD1-A mutation), which is exactly the way that we want to see that mutation be reduced: SLOWLY! We aren't seeing the same decline of the SOD1-B mutation alleles, but it occurs more infrequently so the small numbers may skew the results.

While we aren't seeing any cases of vWD (zero affected cases) it's still out there in some lines and it would appear that those breeders are being good about doing the testing!

All in all, we should feel very good about how we are using these tests. They aren't designed to eliminate the mutations all in one fell swoop, but to allow breeders to avoid producing affected or at-risk puppies without eliminating any of the good breeding dogs from the gene pool.