The 13th Bernese Mountain Dog International Health Symposium

Forest Oak Farm, Lydney, Gloucestershire, UK

Thursday 22nd of September 2022

hosted by

The Bernese Mountain Dog Club of Great Britain

as part of their Golden Jubilee event

sponsored by

Welcome to our International BMD Health Symposium

Dear Visitor,

Welcome to today's event and thank you for your support.

As I write this our health symposium has almost 60 people due to attend from 17 different countries which qualifies it to be called an International BMD Health Symposium. It is the 13th such event and the second time the BMDC of GB has hosted it in the UK.

Since our International Bernese Community last formally gathered together, close to Amsterdam in 2018 the world has been through several shake ups. Not only COVID, and, for us here in the UK Brexit, but climate change is increasingly difficult to ignore and now we all have to cope with the impactful direct and indirect consequences of the dreadful events in Ukraine. All these things have undoubtedly negatively affected the attendances at our Golden Jubilee events but we still have a significant amount of visitors booked to have a great event and we are grateful to you all for supporting us and especially welcome our overseas Bernese friends.

Like most, our breed has ongoing health issues that we have limited success in tackling and any meaningful action has to be international, with so much cross border breeding and movement of puppies in the world we simply have to work together across the whole breed to improve any aspect. I really hope our COVID delayed event will act to get us going again as a world BMD community after an enforced break and that we will be able to build on this in the near future to take our breed forwards.

Looking back at the timetable from the last time we hosted this event in 2011, I was struck by the similarities, the main issues haven't changed in that time. Thanks to some great science and support from the breed, especially in France and the States, we now have a better understanding of SH and have a process that can at least begin to fight back against this cruel affliction on our breed. The more people use the test and HSIMS the more will be learnt about its efficacy and we can only hope that as time goes on its effect on future generations is every thing we hope it can be.

On that note the HSIMS database has been unavailable for several months and Antagene were approached for a statement on this situation for this get together. I am happy to include this within this booklet and hopefully things will return to normal very soon.

I have to thank everyone who has made this day possible and our Golden Jubilee organising committee who have worked so hard for months and months making arrangements, overcoming problems and collecting sponsors in extremely difficult times.

Thank you to our speakers for their time and effort and I hope their presentations mean you have a stimulating day and you are able to use it to increase awareness of, and maybe action to improve, the health of the Bernese Mountain Dog, because that is the bottom line and why we are all here.

Listen to the presentations and the discussions, take part if you have something to say, and absorb what you can from today's interactions, but don't just go away and forget the day. Let this experience stimulate Bernese health discussions tonight, tomorrow, in the coming months and encourage change where change is needed to improve the health of our breed. Changes in practice come from changes in attitudes and changes in attitudes come from talking about the problems we have. Change is very easy to talk about but much harder to achieve and requires sustained effort from all of us.

So, thank you again for joining us and enjoy your day. Please follow it up by doing whatever you can to actively change the health of the Bernese Mountain Dog, even if only your own. If we all make the effort then hopefully in another 11 years the timetable *will* be different.

Steve Green
President & Breed Health CoOrdinator
BMDC of GB

Booklet Contents

Welcome 2

Sponsorship 4

Previous Hosts 4

Timetable 5

Synopses/Summaries of Presentations & Speaker Biographies 6

Dr Joanna Ilska - Breeding For Health in the BMD 6

Dr Jacqueline Boyd - What's Diet got to do with it. Feeding for the future 7

Prof Steve Dunham - Canine Vaccination - Basics and Issues 8

Dr Benoit Hedan - Systemic Histiocytosis Project Recap & Update 9

Lori Jodar/Gary Galunas - Berner Garde Update 13

History of BIWG 14

Statement from Antagene 22

The BHI 24

A Few UK BMD Health Updates

Brief UK BMD Health Overview 26

UK Cruciate Ligament BMD Survey 28

UK BMD Death Survey 31

Sponsorship of the Symposium

We are grateful to the main sponsors of our event today and if you are reading an electronic version of this you should be able to click on the logos for more information

and

We are also grateful for a number of donations from members and well wishers to the Bernese Health Fund to help support this event which is to improve our breed's health.

One special donation was from Mrs Gerry Whitbread in memory of our former President, the late Mr Frank Whitbread.

Others have donated items towards our health auction which you may see at our evening events or online. Please support these whenever you can as we have wonderful, some unique, Bernese items generously donated to the cause of Bernese Health.

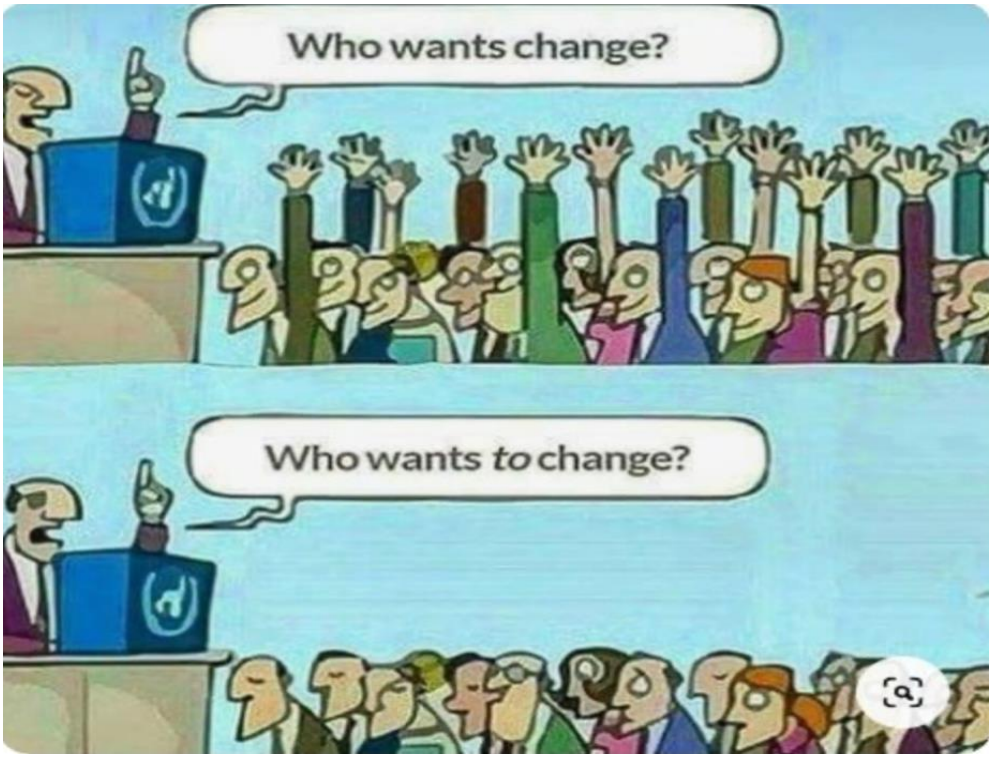
We sincerely thank everyone who has generously donated items for sale or auction in aid of the BHI.

Previous Hosts of the International Health Gatherings

1] 2000 KBS - *Switzerland*
2] 2002 KBS - *Switzerland*
3] 2003 SSV - *Germany*
4] 2005 VSSO - *Austria*
5] 2006 SIBB - *Italy*
6] 2007 KBS - *Switzerland*
7] 2009 CIABS - *Italy*
8] 2011 BMDC of GB - *UK*
9] 2013 KBS - *Switzerland*
10] 2015 SS-FS - *Finland*
11] 2017 AFBS - *France*
12] 2018 VBSH - *The Netherlands*

The 13th International BMD Health Symposium **Thursday 22nd September 2022 - Forest Oak Farm, Lydney UK**		
08:30	Registration - Tea/Coffee	
09:00	Welcome, Housekeeping, 'Rules', Outline of Day.	Steve Green - President, BMDC of GB.
09:10	Breeding for health in the Bernese Mountain Dog	Dr Joanna Ilska - Geneticist at the Kennel Club
10:20	*Refreshment / Comfort Break*	
10:40	What's diet got to do with it? Feeding for the future.	Dr Jacqueline Boyd - Nottingham Trent University
11:50	BernerGarde Update	Lori Jodar / Gary Galunas -BernerGarde USA
12:15	*Lunch*	
13:05	Canine Vaccinations - Basics and Issues	Prof Steve Dunham - University of Nottingham
14:10	'Systemic Histiosarcoma' Research and BMD Genetic Test - Update and review	Dr Benoit Hedan - University of Rennes
15:25	*Refreshment / Comfort Break*	
15:45	BIWG Update	Steve Green - *(i/l Martha Cehrs,* President BIWG)
16:00	Short update on UK BMD health leading to structured discussion in an open BMD health forum.	Steve Green - UK BMD Breed Health CoOrdinator
16:50 - 17.00	Summary, Thanks and Closing.	Steve Green - President BMDC of GB

N.B. Exact timings may vary slightly on the day. We reserve the right to adjust the schedule to deal with any emerging issues.



Synopses and Summaries of Presentations / Bios of Speakers

Breeding for Health in the Bernese Mountain Dog

Dr Joanna J. Ilska

Selective breeding can be used to reduce the prevalence, or even completely eradicate, many inherited diseases affecting our dogs. With developments in genetic and veterinary medicine research, a growing number of tools are being offered to breeders to help them on this journey. Different conditions with different genetic architecture require different tools. Some of them, such as DNA tests for conditions determined by a single gene, are relatively easy to implement and can lead to fast and permanent eradication of a specific condition from a breed population. Other tools, e.g. Estimated Breeding Values (EBVs), are considerably more intricate, reflecting the complex nature of traits for which they are developed.

Advances in genetic research have allowed us to not only develop effective breeding tools, but they've elucidated the mechanisms behind disease origin. In particular, the risks associated with inbreeding have been extensively studied and quantified. As a result, the importance of managing genetic diversity in any closed population has become a priority.

In this talk we are going to explore tools aimed at helping breeders select against inherited diseases in dogs. We will cover the basics of inheritance, and explore the intricacies of complex traits using hip and elbow dysplasia as an example. We will discuss how EBVs can be used to improve the precision of breeding programs against these conditions. We will also talk about the current estimates pertaining to genetic diversity in Bernese Mountain Dogs.

Health testing is a necessary component of any progressive breeding program, as "You can't improve what you don't measure". However, its benefits stretch far beyond any single program. We will conclude our talk with the benefits offered by health testing to the breeder, owner and the breed population as a whole.

Dr Joanna J. Ilska

Dr Joanna J. Ilska joined The (UK) Kennel Club in the role of Genetics Research Manager. A quantitative geneticist, Joanna was born in Poland and has lived in the UK for 15 years. From very early childhood she was obsessed with animals, particularly dogs. The topic of genetics and breeding has always fascinated her, in what she calls "both its complexity and tremendous power". This has led to her completing her first degree in BSc Applied Biosciences (Animal Science) in 2008, followed by MSc in Quantitative Genetics and Genome Analysis at the University of Edinburgh in 2009.

In 2014 she completed her PhD in genomic prediction of breeding values in broiler chickens at the Roslin Institute, University of Edinburgh. Following her PhD, she worked as a Research Fellow on a number of projects in a wide range of species. Her main expertise lies in prediction of breeding values for complex traits, using large scale genomic data such as whole genome sequences.

In her private life, Joanna continues to develop her passion for dogs in a range of disciplines. Although she has shown her Russian Black Terrier, Dinastii The Phenomenal (pet name Yarpen) in conformation a few times, she found her calling in dog training. She is particularly interested in competitive Obedience and Nosework. Joanna and Yarpen were a part of a team representing Scotland in the Inter-regional Obedience competition at Crufts 2013, gaining a second place in their class. Currently, Joanna lives in Edinburgh with another Russian Black Terrier, the Polish-imported Argus Electra Petarda (pet name Falka), with whom she has dabbled in IGP, Obedience and Nosework.

'What's diet got to do with it? Feeding for the future.

Dr Jacqueline Boyd, BSc (Hons), MSc, PhD, PGCHE, CHES, FHEA, MRSB

It is now well understood that the nutrition of one generation can have significant impacts on the health of subsequent generations. Indeed, the interaction of genetics and environmental factors is increasingly recognised as critical when we consider feeding our dogs, for their health, wellbeing, and longevity. Add to this the fact that future generations are also affected by the nutrition of their immediate and more distant ancestors, and we see why diet is so important for anyone involved in dog breeding or wishing to maximise their dogs' health span and life span.

This presentation will consider our current understanding of canine nutrition and its impact on future generations. With a robust evidence base, the practical steps that breeders and caregivers can take to support their dogs and their future breeding ambitions will be reviewed and discussed.

This will be an opportunity to assess exactly what diet has to do with it when it comes to supporting canine wellness both now and in the future.

Dr Jacqueline Boyd

Jacqueline is passionate about making the world a better place for dogs and their people, by enhancing peoples' understanding of what dogs really need and how us humans can help them, especially through improving their welfare via evidence-based management, nutrition, and training.

Jacqueline holds a first-class BSc (Hons) in Zoology (Parasitology), an MSc (with distinction) in Animal Nutrition, a PhD in Genetics, a postgraduate certificate in higher education and is a certified humane education specialist. She has worked in academic research exploring nematode genetics and lectured students in animal science, teaching on a wide range of subjects from nutrition to genetics and researching the kinematics of sports dogs (amongst other things). There has also been a stint in the commercial world as a canine and equine nutritionist, gaining further industry-related nutrition and advisory skills.

Jacqueline currently writes, coaches, and consults on all aspects of canine science and works part time as a Senior Lecturer in Animal Science at Nottingham Trent University, as well as tutoring canine-related short courses and guest lecturing. This means that Jacqueline has academic, educational and industry experience. In addition, Jacqueline writes regularly for the canine press.

Jacqueline has also lectured on aspects on animal health and welfare abroad through her voluntary work with a UK based animal welfare charity and is a regular guest speaker at canine events. Living with, working, and training her five cocker spaniels in a range of canine disciplines, from agility to gundog work to heelwork-to-music, means that Jacqueline also has a robust understanding of the practical realities of the dog world from a personal perspective, adding to the "real-word" applications of her experience and content delivery and writing, as well as keeping her very firmly grounded and smiling a lot!

Canine Vaccination – Principles, Processes and Possible Pitfalls?

Steve Dunham, Associate Professor of Veterinary Virology, School of Veterinary Medicine and Science, University of Nottingham. stephen.dunham@nottingham.ac.uk

Vaccines are probably the most effective method available to reduce the number of cases and the severity of life-threatening infectious diseases. Core vaccines in dogs against parvovirus, distemper and adenovirus have greatly reduced the number of animals becoming ill and dying from these viral diseases. Non-core vaccines against leptospira (core in some countries including the UK), Bordetella, Lyme disease and leishmania may be beneficial in some animals depending on their likely risk of exposure to disease – but these vaccines are typically not as effective as the core vaccines.

Vaccines work by mimicking a natural infection, producing an immune response which can protect against the real disease, but not cause disease itself. As such vaccines have been very successful; cases of distemper, adenovirus and parvovirus are now seen far less frequently than in the past. However, vaccination comes with concerns including:

- why doesn't the vaccine always work?
- are we vaccinating too much?
- can they cause immune mediated disease?

This presentation will describe the main vaccines used in dogs and the diseases that they prevent, principles of vaccination (how they work), and consider some of the risks that have been highlighted over the years.

Professor Steve Dunham

Steve Dunham graduated in 1991 from the University of Bristol in Veterinary Science (BVSc). After a short time in general practice, he returned to Bristol Veterinary School as an intern in Small Animal Medicine and obtained his RCVS Certificate in Small Animal Cardiology in 1993. Research training in molecular biology as a Wellcome Trust Clinical Scholar at the University of Glasgow resulted in a number of publications characterising companion animal cytokines. Postdoctoral research initially concentrated on the development of lentiviral vaccines in the feline immunodeficiency virus (FIV) model. A number of experimental approaches were used in attempts to improve the efficacy of DNA vaccines for FIV including the use of cytokine adjuvants, codon optimisation and prime-boost vaccination with DNA and killed virus vaccines. Steve was appointed as Lecturer in Veterinary Virology at Glasgow University in June 2003 and successfully completed his PGCert in Postgraduate Education. Steve joined the School of Veterinary Medicine and Science as Associate Professor in Veterinary Virology in September 2008. His research interests centre largely around viruses and their interaction with hosts, with a particular focus on avian influenza viruses.

Pathophysiological and genetic mechanisms associated with canine histiocytic malignancies

Drs Benoit Hédan and Catherine André

"Canine Genetics" team CNRS Unit, School of Medicine, Rennes University, France. Benoit.hedan@univ-rennes1.fr

Histiocytic sarcoma (HS) is an extremely rare cancer involving histiocytic cells (dendritic or monocytic/macrophagic lineages) with a limited response to chemotherapy and a high mortality. In the whole dog population, HS is a relatively rare cancer, but strikingly, a few but popular breeds are highly predisposed to this cancer: BMD, Rottweiler, Retrievers (especially flat coated retrievers –FCRs-) (Abadie al., 2009; Affolter and Moore, 2002; Hedan et al., 2011 ; Moore et al., 2006).

Two main clinical presentations are distinguished: HS can be localized (LHS) or disseminated (DHS). The distinction has historically been made based upon the number of organ systems affected at the time of diagnosis: peri-articular locations, subcutaneous tissues and lungs are common primary sites for LHS, with very common metastases occurring in 70 to 91% of cases (Lenz et al., 2017). In DHS, tumors are diagnosed in multiple organ systems and no obvious primary site is observed. Localized and disseminated forms of HS present with identical histopathological features; moreover, due to the aspecific nature of the clinical signs and the strong ability to metastasize, it is currently not possible to determine the onset of the disease in these patients (Kennedy et al., 2016). Thus, the current belief is that these clinical presentations represent the early and late stages of a single disease rather than two unique pathological processes (Dervisis et al., 2016; Kennedy et al., 2016).

Nevertheless, breed predispositions influence the clinical presentation with Retrievers developing more localized/external HS (ie affecting skin/soft tissues, joints or lymph nodes), while BMDs and Rottweilers are mostly affected by internal/disseminated HS. Indeed, in a previous study, we showed that 87% of BMDs with HS present internal organ tumors compared to 48% of FCRs (Hedan et al., 2011). In DHS, the internal masses, such as mediastinal masses, could be challenging to detect and to sample for a histological/cytological diagnosis. This issue plus none specific clinical symptoms could, in part, explain why HS is mainly diagnosed at latter stages.

For several years, the goal of our team has been to decipher the genetic bases of this cancer for the benefit of dogs but also for human patients affected by this cancer. In humans, this cancer is extremely rare and is characterized by proliferation of cells with the phenotype of mature tissue histiocytes. This aggressive tumor leads to a high mortality and nowadays there is no consensus on prognostic factors and standard treatments (Emile et al. 2016). Faced to such rare cancers, the challenging problem is the small number of patients and the difficulty to point out genetic recurrent and driver alterations to select targeted therapies. On the opposite, this rare cancer in humans, is very frequent in some popular predisposed dog breeds (up to 20%); thus offering a unique opportunity to better characterize the genetics of HS in such canine natural models of HS.

Generally speaking, cancer is a genetic multifactorial disease leading after a multiple step process to dysregulation of genes involved in cell growth and differentiation. Some gene alterations/dysregulations –called germline or predisposing alterations- occurring in all cells of the body, are transmitted from parents to siblings; these predisposing mutations explain the high risk of some dog breeds to develop HS, but they are very difficult to identify in humans. On the other hand, other genetic alterations–called somatic alterations- occur during life in the affected tissue only and participate to cancer progression. Environmental or health-related factors can also influence the occurrence of these somatic alterations and cancer progression, severity, age of onset …. In HS, inflammation has been identified as a modifiable risk factor for cancer development in BMD (Klopfenstein et al., 2016; Ruple and Morley, 2016). These environmental factors are suspected to promote the occurrence and selection of somatic alterations, which boost histiocytic proliferation

and tumorigenic transformation.

Concerning the identification of the genetic bases of HS in dog predisposed breeds, we have collected over 4000 blood samples from BMD, including 400 HS affected dogs, for which we also collected tissue samples, through the Cani-DNA Biological resource centre. Since many years, we have focused on the 2 genetic aspects:

- The Identification of predisposing alterations, in collaboration with Dr. E. Ostrander (NIH, NHGRI, Bethesda, USA) (Shearin, Hédan et al., 2012; Hédan et al., 2021) ;

- The identification of somatic alterations, using CHG arrays, RNAseq and exome sequencing in collaboration with Dr. M. Breen (NCU, Raleigh, USA) (Hédan et al, 2011, Hédan et al., 2020).

1. The search of predisposing genomic regions led us to the identification of several loci shared between different predisposed breeds and not only involved in HS predisposition but also in lymphoma and mast cell tumor predisposition. In order to help breeders to diminish the frequency of HS in their breed through the selection of BMDs with lower risk to develop and transmit HS, we developed a genetic risk test, based on our results. In collaboration between the French Bernese breed club (AFBS) and the Antagene Company, we developed, in 2012 a genetic risk test based on 9 markers located in the predisposing loci, which alleles significantly discriminate at risk and protected individuals. We confirmed the reliability and significance of this set of markers in a population of over 1000 BMDs from France. This genetic risk test has been set up for BMD breeders to help their selection, based on A, B and C indexes: A dogs present 4 times less risk to develop and transmit HS, while C dogs present 4 times more risk to develop and transmit HS. This genetic risk test has been first used in a pilot study made of French breeders (2012), then has undergo a validation phase on BMDs from Europe and USA (2013-2014), then is now available for breeders to adapt mattings in order to reduce the prevalence of this devastating cancer. The follow up of > 5000 BMDs tested over the 10 years-used has already showed the benefit of this genetic risk test to improve BMDs health.

2. Through the search of somatic alterations in tumoral tissues, we identified relevant and recurrent mutations in oncogenes of the MAP kinase pathway, confirmed by Thaiwong et al., 2017, Takada et al., 2018. We found that the gene PTPN11 is mutated in over 57% of canine HS and associated with the disseminated form of HS in dog and human (Hédan et al 2020). We showed that these mutations are detectable in the plasma of affected dogs and could be used for the diagnosis of affected dogs or the follow-up of the treatment (Prouteau et al 2021). We anticipated these mutations as targetable for therapies and owing to canine HS cell lines that we developed in the lab; we tested the efficacy of several drugs on cell proliferation. Altogether, these results, not only provide a biomarker for HS in dogs, but also provide a relevant model for human medicine.

We will detail the state of art on these 2 aspects and the consequences for breeders and veterinary medicine of these scientific advances, on the selection, diagnosis and treatment of Histiocytic sarcoma.

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Dr Benoit Hédan

I am a veterinary and a research engineer at CNRS
I am a veterinary specialising in dog genetics as a means to decipher genetic disease or multifactorial diseases such as cancers for benefit of dog and human's medicine . I obtained my diploma of veterinary medecine (DVM) from the veterinary school of Nantes, France, in 2003.
I completed a PhD in canine genetics at the University of Rennes, France. During my PhD, I focused on genetic bases of monogenic traits (ex. merle coat color in Australian Shepherd dogs) as also polygenic disease (ex. histiocytic sarcoma in Bernese Mountain Dogs).
To continue my interest in the genomics of canine cancer, I performed a Post Doctoral position in Pr M. Breen's lab, Raleigh, NCSU,USA, in 2008-2010. Using array based CGH and FISH techniques, I looked for the cytogenetic anomalies/genome lesions associated histiocytic malignancies in high risk breeds.
I was hired by CNRS in 2012 in the dog genetics team where I am now working and supervising studies on predisposing and acquired alterations in different cancers in dogs (histiocytic sarcoma, lymphoma,…).
These approaches highlighted chromosomic regions involved in histiocytic sarcoma predisposition in Bernese Mountain Dogs. This allowed us, in collaboration with the private Antagene company to develop a genetic tools to help breeders to manage selection against this devastating cancer.

Responsibilities

- Supervision of junior and graduate students, or visitors
- Setting up networks for sample collection with breeders, veterinarians, histology labs

Education

- Genetic lessons for Veterinary School of Nantes, France, « génétique UV72-physiologie pathologique fonctionnelle, cellulaire et moléculaire » 2010- 2015

Berner Garde Foundation

Lori Jodar and Gary Galunas

Put very simply, Berner Garde is a massive, ever growing database making available details of an incredible 207,000 Bernese Mountain Dogs. Tracing its origins back to the late sixties but becoming a more formal organisation in 1977 it has grown steadily since then and in the past few decades has expanded more internationally building on its already strong USA base.

Bernergarde is all about accuracy, openness and availability. It is free to use for anyone and is very strict about validating its data ensuring all data is as accurate as it can possibly be. Breeding, health, veterinary, pedigree related data from many countries is provided which is all invaluable for anyone serious about our breed or researching any aspect of it.

Bernergarde is a fantastic facility for our breed to have and we are very happy to have Lori and Gary to give the latest updates on its size, status and capability to our Bernese Health Symposium today.

Lori Jodar
President - Berner-Garde Foundation

Bernese Mountain Dogs have been a part of Lori Jodar's entire adult life. Her first Bernese Mountain Dog Ajax arrived one spring day in 1978 and she was hooked. Through the years, she has done some very limited breeding and has raised and shown several champions. Her current Berner, Margo, is a direct 9th generation descendent of that first BMD.
She has served in the breed in many capacities. The Berner-Garde Foundation is her heart's work. This is a volunteer organization dedicated to the health of the BMD. They work with several veterinary organizations participating in research for pure-bred dogs. Lori serves as founding member and has been the President for 20 years.
Other activities have included serving the Bernese Mountain Dog Club of America in many capacities, including President, serving on various committees, all of them involved in health. Educated as a Registered Nurse, she can bring some medical background to assist with the programs.
She has been privileged to judge the breed many times over the years. That has also allowed her to serve as a judging mentor.
She currently owns her own real estate business in Petoskey, Michigan, a beautiful resort community on the shores of Lake Michigan. She also volunteers and serves as Vice President of the board of the Little Traverse Bay Humane Society. She lives with a beautiful Bernese Mountain Dog Margo, and two rescued cats Maxwell and Marigold.

Gary Galunas
IT Director - Berner-Garde Foundation

Gary's background is primarily in information technology. He spent 30 years at a Fortune 500 company responsible for computer systems design, programming, and systems management. These were very large corporate systems that connected thousands of locations together and processed millions of transactions.
Gary has been the IT Director for Berner-Garde since 2004. He is responsible for the design and implementation of the online database system we use today. The latest iteration, Berner-Garde 5.0 was implemented in September of 2020. Gary has also worked with a number of scientific researchers, extracting specific data for analysis.
Gary has been heavily involved with Bernese Mountain Dogs since 1994. In addition to showing his dogs in multiple disciplines, he is a past President of the Heart of Michigan Bernese Mountain Dog Club and a past director of the Bernese Mountain Dog Club of America. Gary has been the Assistant show chair for the Bernese Mountain Dog Club of America National Specialty Show with 800 attendees and 1,500 entries. Gary is currently the Records Chair for the Bernese Mountain Dog Club of America.

A Summary History of the BIWG
by Steve Green (Past President).

The Beginning

In the year 2000 the KBS, Swiss BMD breed club, decided to hold the first international health seminar exclusively for Bernese Mountain Dogs in Langenthal and invited clubs from around the world to attend, around half a dozen of us attended from the GB club. There were invited speakers from these clubs outlining various health schemes their club was involved in and I was asked to present a summary of the recent UK Bernese health survey I had conducted. I remember spending ages producing my **overhead slides** full of charts and bullet points and it is hard to imagine the world before Powerpoint now! I can't remember an exact number of people present from all over the Bernese World, (I think approximately 200) but the large conference room set in a converted industrial building was packed and the week-end was a great success.

Following Meetings

Two years later the Swiss club repeated the exercise, this time in Lensburg and Dr Malcolm Willis was the invited speaker from the UK summarising the 'Trembler' situation we had dealt with in the UK some years earlier. Again there were BMD speakers from numerous countries updating the Bernese world on breed health issues their clubs were dealing with and had managed in the past.

The next year, 2003, the event moved on to be hosted by the German SSV club in Hohenroda, but, much to my deep regret, no one from the UK attended. At this meeting the first ideas about a working group began to be developed so the idea, if not the name, of the BIWG was conceived with Dr Norbert Bachmann from the German club, SSV, as its President.

Two years later in December 2005 the meeting was held in a very 'Christmasy' Salzburg in Austria hosted by the Austrian Swiss Breeds club, VSSO. At this meeting the discussion continued about the structure and processes of the group to collect and collate heath information about the Bernese Mountain Dog so that we could all learn from each other and share our experiences. There was some energetic discussion at this meeting as we debated the basis of the group. There were concerns from a few quarters about the sharing of information between fully recognised main FCI breed clubs and second breed clubs and also with other country's non FCI clubs, found mostly in the English speaking parts of the world, such as the BMDC of GB & BMDCA. I became involved in this discussion as I did not want to see all the breed clubs from the UK, America and Australia for example being excluded from the group before it even got going.

It was eventually agreed that all dedicated BMD or Swiss Mountain Breed clubs could join as it was completely voluntary what information anyone wished to share. It was at this meeting that the name of Berner International Working Group, BIWG, was agreed as well as the overall objective of the group. Known as 'Objective 10' and devised and explained by Martha Cehrs from the Swiss club, the stated purpose was to work towards a time when all Bernese born could expect to have a life expectancy of at least 10 years instead of the 7 years, or even less, that seemed to be fairly typical around the world at the time.

The other notable first at this meeting was the attendance of Dr Catherine Andre from the University of Rennes and this was the first time most of the Bernese world outside France heard of the emerging French research into Malignant Histiocytosis, (as we mostly referred to it then). I still remember feeling awe at the schematic of the pedigree with (I think) over 400 dogs on it, that showed that 'Histio' followed an familial pattern which proved it had an hereditary influence. The obvious massively significant point being proved here for the first time was that if you can identify that hereditary influence you can reduce the occurrence with managed breeding choices. I don't think any of us realised just how difficult this 'simple sounding' task would prove to be and how long it would be before we were given a genetic test to utilise but I still recall the excitement at this first news delivered at the International meeting. Since then Catherine, and her soon to join colleague Dr Benoit Hedan, have become great friends of the BIWG. They have presented an update to the BIWG and the Health Seminar at every event since and we have

watched the research and subsequently the testing develop over the years and everyone who appreciates the size of the cancer problem we have cannot fail to have been enthralled by its story.

The following year the all too short lived Italian breed club SIBBS hosted the seminar in a fantastic lakeside hotel on Lake Como in the Italian Lakes. I think this seminar was the first where the BIWG had a separate meeting scheduled over the week-end at the end of, and independent from, the seminar itself. This week-end also had a second UK person present in the form of the then Southern club Secretary Irene Soper making the week-end a part of a family holiday.

Due to the administration structure in some countries it was clear a few clubs still seemed to feel a little threatened by this new group and it was clear our group could not properly settle until this was resolved. Consequently I agreed to work on a constitution for the group to try to address this for the next meeting. I based this loosely on parts of the British Bernese Breed Council constitution which was designed to bring our BMD breed clubs together, as (I think) I was Breed Council Secretary at the time.

2007 was the Swiss club's big centenary year and they hosted the International get together for the third time with the international Seminar being held on a completely different day to the BIWG meeting for the first time, fully emphasising its emerging status. This event being a part of the huge Centenary show week-end in Burgdorf. I presented my proposed constitution at the BIWG meeting and it was accepted as addressing all the necessary points. As a group we deliberately stated in this constitution that we had no interest in dictating any rules or conditions to any club. We had no interest in approving judges, holding shows or collecting monies. We also decided not to hold any funds or have a bank account. We were completely a discussion and health related information collecting group for the benefit of the breed and meetings were to be sponsored by the hosting clubs. We relied on support from our member clubs to host our meetings but no other form of finance was required unless individual clubs wished to assist with the expenses of their own representatives, entirely a matter for each club. Our small running costs, web site hosting for example, were and still are covered by personal donations from our regular attendees.

Personally, I was honoured to be chosen as the new President of the BIWG at this meeting and later took part in the health seminar outlining the BIWG meeting and explaining the group to about 200 hundred people in a large local college lecture theatre, including a handful from the UK. As the new President it was also a pleasure to help to hand over a large cheque from SIBB to Catherine Andre's research as well as a further cheque to some multi international collaborative research into our breed's cancer headed by Dr Johan de Vos (Netherlands), Dr Janos Butinar (Slovenia) and the UK's Dr Mike Brearley.

The photo also shows the three Presidents of the BIWG to date, Dr Bachmann in the centre rear, Martha Cehrs along from him on the back row and myself on the end. Dr Catherine Andre is holding the large cheque at the very front.

The next meeting in 2009, was hosted by CIABS the main Italian club, again within the Italian Lake district but this time on the shores of Lake Garda and this time 3 people attended from the UK when I was accompanied by Bernice Mair and Louise Harrington, both now sadly departed and much missed who both also came to the BIWG meeting the day after the health seminar. (Typically, despite urging, Bernice declined to be in the post meeting photograph). As BIWG President I had closed the breed health seminar the previous day with a short presentation on the BIWG and then an invite to our own event in two years time. At the BIWG meeting we welcomed several new clubs to the group.

A new Decade

We moved on to our own Ruby Jubilee in 2011 when we hosted the BIWG meeting and International Health Seminar at the Woodside Hotel and Conference centre in Kenilworth as part of our Championship show and Sunday Funday week-end at nearby Stoneleigh Park. My memories of the BIWG meeting itself, which I had organised and chaired, are of it being a little chaotic at the start as over three times the amount of people who had booked to attend turned up on the day. Fortunately, rather than turn people away, we were lucky enough to be able to change to a larger room and proceed with the meeting, albeit a bit later than planned.

Looking at this photo from the meeting I can see Bernese people from America, Finland, Eire, Denmark, Sweden, UK, Belgium, Switzerland, Spain, Canada, Germany, Austria, Italy, France (and one or two I am not sure of their origin) and, on the right, Pat Long from the USA fulfilling Secretary duties.

As has become regular practice as BIWG President I gave a brief summary of the BIWG and our meeting at the health seminar the next day where about 90 people, listened to breed relevant speakers from around the world. The health seminar was a great success, with really cheap entry cost and an informative 128 page booklet thrown in giving summaries of the presentations and useful details of each club represented.

In 2013 the Swiss club yet again generously hosted the week-end for the 4th time to co-incide with their CAC show staged just outside Geneva. At the BIWG meeting held before the other events I stood down as President and was replaced by Martha Cehrs from the KBS who had always been very active and a strong mainstay of the International gatherings from the very first in 2000. Martha had been instrumental in developing the BIWG and *very* supportive of the principles of breed health.

The photo below shows Catherine Andre and Benoit Hedan presenting the latest update from the French research to the BIWG meeting. I think it was at this meeting that they first outlined the beginnings of the 'Histio' test that was being developed and tested in France. In addition to the countries represented in 2011, there was also a Russian presence at this meeting, I think for the first time.

In 2015 the International BMD week-end was hosted by the Finnish Swiss Mountain Breeds club in Helsinki to coincide with their own Ruby Jubilee and show and again was well attended with, I think, three of us from the UK attending, Jeanette, Helen Davenport Willis and myself. This get together also saw the first of the International BMD Judges meetings which was well supported and over ran its time slot and some of us had to leave to attend the BIWG. One of the speakers here, to the BIWG and the Seminar, was Brenda Bonnett from the newly formed IPFD (International Partnership for Dogs), who told me that one of the organisations they had based their group's structure on was the BIWG.

The host in 2017 was the French Swiss breeds club, AFBS, as a part of their Championship show week-end, in the village of Lamotte Beuvron, a little South of Paris. We met the day before the show started and I found myself chairing our meeting as unfortunately Martha Cehrs was unable to attend, due to a last minute, poorly dog. We had two really good sessions here, an informal "what do you want to discuss" type session where everyone engaged and contributed and then the more structured meeting later and I remember these being very constructive and stimulating much more discussions over the coming days. At the health seminar the French researchers were present with their Antagene counterparts for the first time and one of them presented the proposed 'Histio' database for the first time. It was still to be funded and constructed but the principle sounded very exciting, especially when explained alongside mentions of an embryonic future blood test and possible beginnings of a treatment for Histio. The French club and its members should be really acknowledged by our breed for the effort and support they have put into the 'Histio' research over the years both financially and in supporting the research with essential dogs and samples.

The funding they asked for to develop the web site database was subsequently donated by some of the attending BMD clubs and the HSIMS initiative was launched in February 2019 and was a hot topic at Crufts a few weeks later.

The Most Recent Meeting

In 2018, only a year after gathering in France, we had been invited to join with the Dutch BMD club, VBSH, for their Ruby Jubilee week-end celebrations which followed the World Show in Amsterdam, making a great 12 days or so away for me. Although due to its size the Health seminar had to be held in a large, modern hotel function room, the meetings and the show were hosted at a stunning chateau property courtesy of the club President. With Michelin starred food and lovely traditional decor we felt a little bit special as visitors to the crowded meetings and evening events which again included the International BMD judges meeting.

I recall when this photo was taken on the chateau steps after the BIWG meeting quite a few people had already left to catch flights but it still shows a very multi national gathering. As you can see, if you want to study the photos, there is a hard core of regulars but each time there are some new people representing new clubs that that attend the meeting and this is very encouraging.

So what is the BIWG today?

In essence the BIWG is a mechanism for the various breed clubs from around the world to send representatives to gather and discuss health issues affecting the Bernese Mountain Dog and how their club or country is learning about and tackling them. Even in this increasingly homogenised world it is still the case that all countries come at these problems from different standpoints, histories and cultures so have different viewpoints and experiences of them. Actions that are commonplace in one country might not be allowed in others, for example in some countries health test results are made public and in others they are completely private and only disclosed by the individuals. In some countries it is *compulsory* to be club members in order to show and breed and in order to be a club member you *have to share* your own health information and *have to* take part in health initiatives whereas in other countries you can just decide not to health test or contribute any health information but still breed and/or show. The BIWG is not, and actually never could never be, about anyone telling anyone what they should or shouldn't do. Nor is it about anyone saying what is the right and wrong way to deal with health issues because sometimes things that work in one

country might not work or even be legally possible in another. It is simply about hearing what each club is doing and learning from each other and making links to ask questions in the future.

We can all learn from each other and there is still a place in this world for proper old fashioned face to face discussion. As anyone who has been to any similar kind of event will confirm lots of, if not even more, interesting discussions and learning takes place in the bars, cafes, lobbies and restaurants around these events during breakfast lunch and tea and, when you add ringside time to this as well, much debate occurs right from first arrival and I have been sat discussing events with fellow attendees at the airport and, even after a long week-end, ending up rushing to catch my plane home!

Meetings

The BIWG Meetings have to be restricted to people representing their clubs and prepared to give a short report from their country. The costs of the meeting are kindly met by the hosting club as the BIWG has no funds. All official BMD Breed clubs are invited to send a representative to each BIWG meeting. The exact frequency probably averages out at about 2 years but depends on the generosity of clubs offering to host the meeting, usually to coincide with an event of their own which in turn sometimes coincides with a larger event such as World Show being held in their country.

In addition there are a number of regular experts who are welcome, such as scientists Drs Catherine Andre and Benoit Hedan, and some founding stalwarts of the organisation who are allowed to continue to attend at the discretion of the group for help and guidance. It then very much depends on the venue size but interested non participants who are not representing clubs, or countries where there is no recognised club, are welcome to attend as individuals but only if there is enough space. This is down to the hosting club to organise and manage once the BIWG has said how many people are officially attending. Sometimes the meetings are almost all about the health reports from each country but sometimes there are procedural issues to discuss as well. The idea is that all representatives both report from their country to the BIWG community but also back to their clubs so that the clubs and members are informed. As I cannot stress too often, it is simply about sharing information from club to club and experts to clubs and learning from each other for the benefit of the Bernese Mountain Dog.

Some representatives have professional veterinary or scientific related backgrounds, others are breeders or just serious owners but all have interest in improving the health of the breed at heart.

I have many happy memories from these trips and experiences far too long winded and mostly inconsequential to recount here in this brief history. I have made some real Bernese friends from many countries all with Breed health as a priority for them. Some are breeders, some are exhibitors, some 'just' conscientious owners but we all have the long term interest of the breed at heart.

Some people dismiss the BIWG as a 'talking shop' and as a body with no powers but for me that is a strength not a weakness. We have no axes to grind with any club or country so people can come and speak freely about their own country's situation without fear of judgement. All countries have different resources, capabilities, histories, regulations, laws, cultures to deal with and what is acceptable in one country may even be illegal in another.

There cannot be any 'one size fits all' solution to our breed's health issues. Having said that, certainly across Europe but also across the world it seems welfare reforms that are introduced in one country do seem to spread to others in similar forms. It can be that listening to updates from a country one year describing a development from government or society in their own country and finding it repeating in another country a few years later. For example, at the 2009 Health Seminar in Italy one of the speakers described the effects that Pedigree Dogs Exposed, a massively influential **UK** TV programme in 2008 for anyone too young to remember it, had had on the ***Italian*** dog scene.

We went out of our way when forming to ensure we could not be seen as a threat to any club in any way and, whilst we still occasionally have some misunderstandings raised at the meetings, mostly things are settled down and the BIWG is an accepted body for most parts of the International Bernese world.

More info

The BIWG has a web site on http://berner-iwg.org/ where you can find all sorts of related information about Bernese health issues and the BWIG itself as well as links to member clubs and other sources of BMD health information such as notes from the seminars.

Finally, my thanks to BIWG President, and long standing supporter, Martha Cehrs for checking this article and confirming my recollections.

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Original article first published in BMDC of GB handbook 2021 hence the British bias to some of the content.

A Statement from Antagene to the Bernese Mountain Dog Community

SH genetic test and HSIMS tool

Histiocytic sarcoma is a common cancer with a very poor prognosis in the Bernese Mountain Dog breed.

The ANTAGENE laboratory offers the SH test which estimates the risk of developing and transmitting Histiocytic Sarcoma. This genetic risk test has been developed in 2012, thanks to fundamental research carried out by the CNRS team from Rennes (France) at the IGDR since the 2000s (Benoit Hédan & Catherine André), in collaboration with the Club Français des Bouviers Suisses (AFBS).

Since 2013, each breeder can test his animal using the SH genetic test. And now, since May 2022, ANTAGENE offers a new Genetic Check-up which allows to perform the SH test and to analyse other genetic diseases and morphological traits scientifically validated in the Bernese Mountain Dog breed. Please note, that ordering the SH test alone remains possible.

Since 2018, the ANTAGENE laboratory also offers the HSIMS tool (Histiocytic Sarcoma Index Mate Selection) which was developed thanks to the work of the CNRS team in Rennes (France) and made available online for free thanks to the help of French, European and American Clubs. HSIMS is a tool for simulating all possible offspring from two already SH tested dogs in order to find the best matings to limit the proportion of puppies at risk in the offspring. Its high usage since 2018 (about 50,000 simulations per year) shows the interest of breeders for this tool.

Following the complete overhaul of the IT system, the online customer centre and the ANTAGENE laboratory website, HSIMS tool has been no longer available between the end of May and mid-July 2022. The IT developments undertaken to restore all the modules and functionalities are very important and unfortunately require more time than initially estimated.

To best meet the needs of breeders in this transition, the old version of HSIMS tool has been restored in mid-July 2022, but without access to the newly SH tested dogs.

The new version of the HSIMS tool is currently being finalized. ANTAGENE is doing its best to have it available for the second half of September 2022. This new version will be available from the ANTAGENE online customer account and will work on smartphone, tablet and computer.

By the end of September 2022, the SH test results will be available in pdf format in French and English.

The priority of the ANTAGENE laboratory is to guarantee the reliability and deadlines of results. We do our best to manage the requests of all breeders and to ensure the best possible quality of service.

The entire ANTAGENE team apologises for the lack of visibility, for the delays in implementing the new version of HSIMS tool and for the inconvenience caused.

We thank all Bernese Mountain Dog breeders for their patience, understanding and loyalty.

Guillaume QUENEY

President of ANTAGENE

ANTAGENE customer service is available by phone or email to process your requests and answer your questions: +33 (0)4 37 49 90 03 contact@antagene.com

Test génétique SH et logiciel HSIMS

Le Sarcome Histiocytaire (SH) est un cancer fréquent de très mauvais pronostic chez le Bouvier Bernois.

Le laboratoire ANTAGENE propose le test SH, qui permet d'estimer le risque de développer et de transmettre le Sarcome Histiocytaire. Ce test de risque génétique a été développé en 2012 grâce aux recherches réalisées par l'équipe du CNRS de Rennes à l'IGDR depuis les années 2000 (Benoit Hédan & Catherine André), en collaboration avec le Club Français des Bouviers Suisses (AFBS).

Depuis 2013, chaque éleveur peut ainsi tester son animal grâce au test génétique SH. Depuis mai 2022, ANTAGENE propose une nouvelle offre avec le Bilan Génétique qui permet de réaliser l'analyse SH et d'analyser d'autres maladies génétiques et caractères morphologiques validés scientifiquement chez le Bouvier Bernois. À savoir, qu'il reste possible de commander le test SH seul.

Depuis 2018, le laboratoire ANTAGENE propose également l'outil HSIMS (Histiocytic Sarcoma Index Mate Selection) qui a été développé grâce au travail de l'équipe du CNRS de Rennes et mis à disposition gratuitement sur internet grâce à l'aide des Clubs Français, Européens et Américains. HSIMS est un outil de simulation de tous les descendants possibles à partir de deux chiens déjà testés SH, afin de trouver les meilleurs accouplements permettant de limiter la proportion de chiots à risque dans la descendance.

Sa forte utilisation depuis 2018 (environ 50 000 simulations par an) montre l'intérêt des éleveurs pour cet outil.

Suite à la refonte complète du système informatique, de l'espace client et du site web du laboratoire ANTAGENE, l'outil HSIMS n'a plus été disponible entre fin mai et mi-juillet 2022. Les développements informatiques engagés pour remettre en place tous les modules et les fonctionnalités sont très importants et demandent malheureusement plus de temps qu'initialement estimé.

Afin de pouvoir répondre au mieux aux besoins des éleveurs dans cette transition, l'accès à l'ancienne version de HSIMS a été ré-ouvert à la mi-juillet 2022, mais sans pouvoir disposer des animaux nouvellement testés pour SH.

La nouvelle version du logiciel HSIMS est en cours de finalisation. ANTAGENE fait le maximum pour qu'elle soit disponible pour la deuxième quinzaine de septembre 2022. Cette nouvelle version sera disponible depuis l'espace client ANTAGENE et fonctionnera sur smartphone, tablette et ordinateur.

Pour fin septembre 2022, les résultats du test SH seront disponibles au format pdf en langue française et anglaise.

La priorité du laboratoire ANTAGENE est de garantir la fiabilité et les délais des résultats. Nous faisons nos meilleurs efforts pour gérer les demandes de l'ensemble des éleveurs et pour assurer la meilleure qualité de service possible.

Toute l'équipe d'ANTAGENE s'excuse pour le manque de visibilité, pour les retards de mise en place de la nouvelle version d'HSIMS et pour les désagréments occasionnés.

Nous remercions tous les éleveurs de Bouvier Bernois pour leur patience, leur compréhension ainsi que leur fidélité.

Guillaume QUENEY

Président ANTAGENE

Le service client du laboratoire ANTAGENE est disponible par téléphone ou par email pour traiter vos demandes et répondre à vos questions :
+33 (0)4 37 49 90 03
contact@antagene.com

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BERNESE HEALTH INITIATIVE

The BHI is the Health Management part of the BMDC of GB overseeing Bernese health based activities and health fund raising and spending. For many years we had the Bernese Health Fund which was basically just a club bank account which was ring fenced for health spending. By incorporating this into the BHI we plan to extend the scope and awareness of all health related activities, raise more money and be able to help more Bernese health related causes.

2021 saw the first events when the formal BHI had a physical presence with the stall offering advice and exclusive BHI items to raise health funds being present at all four of our club events held in our restricted year. The new stall was designed to be a focal point for all the BHI activities and had a sales area, a laptop internet link and screen to demonstrate information and a private area at the rear for the taking of blood samples for the SH project.

Many people took advantage to, not only have their sample processed cheaply and taken without a vet's fee, but also to have the system explained and demonstrated for them. Big thanks to Bernese owner and veterinarian Dr Rich Irvine for all his interest, time and effort to help by taking blood samples for us.

Donna Hughes, Emily Green and Steve Green of the BHI and Dr Rich Irvine in front of the BHI stand at the club Championship Show in September 2021 and Nora, Ginny and Matt on the front row.

We are repeating this initiative at our Golden Jubilee event shows and extending it to also include titre testing to check immune levels and therefore vaccine requirement.

As well as providing this subsidised testing at our Golden Jubilee event the BHI has provided this health symposium and assisted with its funding.

So, if you are at an event where the BHI stall is present, e.g. our Golden Jubilee events, please come along and either enquire about the various health initiatives we have or support us with a purchase to boost the funds we can spend on health based projects to help our breed. If you are approached with a raffle or present at an auction in aid of BHI please give what you can to support this worthy cause for our breed.

Another important way to support breed health is to support the health initiatives such as the Death Survey by contributing the requested information about your Bernese.

If you have any questions on UK Bernese health, would like to help organise fund raising or educational events, or would like to simply donate please email the BHI at bhi@bernese.co.uk

A (very) quick Overview of BMD Health processes in the UK

Here in the UK, like most countries, we undertake periodic health projects and have ongoing activities as well. Our whole system for breeding throws all responsibility completely on the breeders. The club has a role to play in supplying health information and updates but has no mechanism to take any responsibility for breeder's actions. This has occasionally been tested at AGMs over the years but the members have always come down on the side of freedom of choice and any proposed club interventions or enforceable rule is voted down. We therefore totally rely on breeders to be responsible for their own reasons.

The BMDC of GB has health criteria within its Code of Ethics which members follow but basically these are only written as recommendations, not mandatory rules. Members have to hip and elbow score their dogs before breeding with them but there is no baseline score for breeding approval needed so application of the scores is completely the breeder's responsibility. There is nothing to stop anyone mating high scoring hips or elbows for example, breeders are completely free to do as they wish. The Kennel Club will register puppies regardless of the score of parents.

The club plays no part in approval of matings or checking of litters. We have no breeding committee or approval panel and no power to control anyone's activities. People do not have to be member of any breed club to breed or register puppies with our KC.

Of course, this does not mean that everyone breeds recklessly with no regard for scores or even scoring, most breeders are perfectly happy to follow good practice simply because it is the right thing to do. However, if you are ever looking at buying puppy from the UK do not assume club membership ensures any breeding practice has been followed or approved by the club as it does in some countries.

All litter registrations and each puppy's details, are made public by the Kennel Club, as are Hip and Elbow scores as long as they are sent via the British Veterinary Association scheme. Unfortunately during COVID the BVA got themselves into a bit of a backlog and stopped assessing hips and elbows at one time so breeders were forced to go elsewhere and many chose to use the almost identical Australian scheme. These results are not made public except by the individuals choosing to advertise them. We are still waiting for the system to settle down again but it will be difficult because the Australian system is much faster and quite a bit cheaper. The club repeats the KC litter summary registrations and the hip and elbow scores that are published by the Kennel Club by publishing them on our web site.

Whilst the elbow scoring is very similar, the British Hip scoring system is different to that in FCI countries being numerical 0 -53 at the worst for each hip. We also have EBVs available from the Kennel Club for hip and elbow scores. For more information on UK BMD Hip and Elbow soring see this page on our web site.

The club also recommends breeders test for both DM mutations and ensure they breed no affected dogs. They are asked to undertake the SH test and utilise the KC COI calculation for proposed matings but again these are not mandatory and there are no criteria enforceable for results.

There is also a request for breeders to take into account the CoI of any breeding combination and try to stay no higher than average. The CoI of any proposed mating of KC registered, or recorded in the case of imports or known overseas dogs, is easily available on the Kennel Club website.

If you'd like to see more of an explanation of what the club's Code of Ethics means for breeders see this link to our web site

Much of the above, and more, is also given in the Kennel Club's Breed Health and Conservation Plan (BHCP) for our breed which all BMD clubs have been asked to agree to. Some have been unable to do this and progress to make the plan effective has been slow. There is more information about our breed's BHCP on our web site at this link

Despite the lack of compulsion, of course most breeders are fairly responsible in terms of testing hips and elbows and use of the SH test was increasing, until Antagene's recent problems anyway. Some feel DM is a significant issue and test for both mutations but others do not consider it worthy of attention.

We have organised an ongoing Death Survey now for several years and an updated summary of this follows below. From previous experience our outcomes broadly follow those of other countries who conduct similar surveys.

At the end of 2020 and into the beginning of 2021 we ran an online Cruciate Ligament survey following comments at our AGM and I include a summary of the results below. This is modified from that first printed in our club magazine, The biggest purpose of this was to try and estimate the extent of this as a problem in our breed. Obviously for those affected it is individually a serious problem but just how widespread it is across our breed is more important to know. We therefore repeatedly stressed that respondents must include all of their Bernese, current and historical dogs and say just how many of these there were affected by Cruciate Ligament problems and how many had not encountered this at all. We then went on to enquire more about the details of the affected ones, seriousness, treatment, diet, exercise etc. If anyone has any comparable survey I would love to hear about it.

Earlier this year I attended a meeting at our Kennel Club and the speaker was a specialist on GDV (bloat) and we have applied to join in with his research project although he did not have Bernese in his top 20 of affected breeds. This surprised me a little, totally anecdotally, I expected us to be in the top 20, and it is very early days for this and I await developments of joining in his research. Maybe we will be able to report progress on this next year.

As well as the links above, there is much more about many more aspects of UK Bernese health in the health section of our web site at bernese.co.uk

The Kennel Club has much general health information available as well in their website's Health and Dog Care section. this includes access to hip and elbow scores of all registered dogs where they have been scored on the UK.

BHI Cruciate Ligament Survey - Results Extract

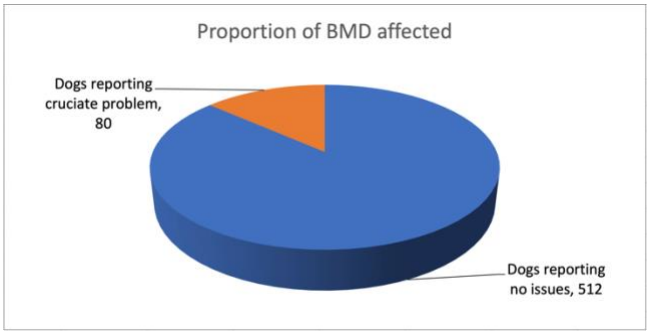
Steve Green BMD Breed Health Co-Ordinator

We would like to thank the owners who took the trouble to respond to the survey. To give correct context it was absolutely vital that as many people as possible responded whether they had encountered Cruciate problems in their Bernese or not.

I would also like to thank Donna Hughes for collating the data on a very detailed spreadsheet and producing most of the summarised data below.

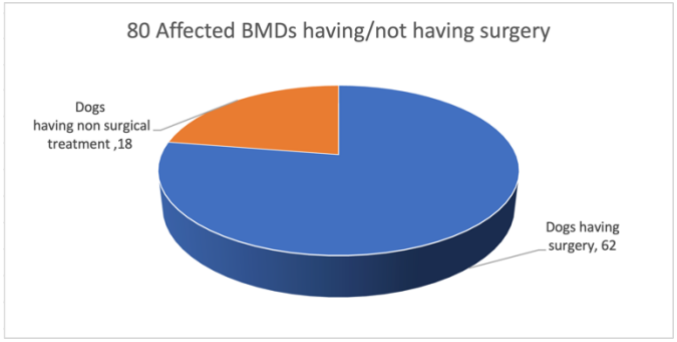
The following are just some of the findings of the survey. We can never know just how accurately reflective of the true full picture surveys are. No one can say for sure so we can only examine the data as gathered.

592 dogs were submitted to the survey and of these 80, or 13.5%, registered some kind of Cruciate problem. However, only 51 of these 80 supplied full details so the more detail we extract the lower the numbers we may be talking about.



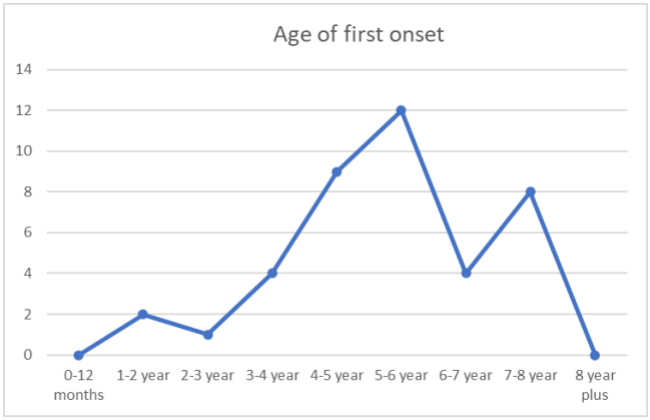
So taking this as a representative sample, we can flip this around to say that 86.5% of BMD should not experience any cruciate problem.

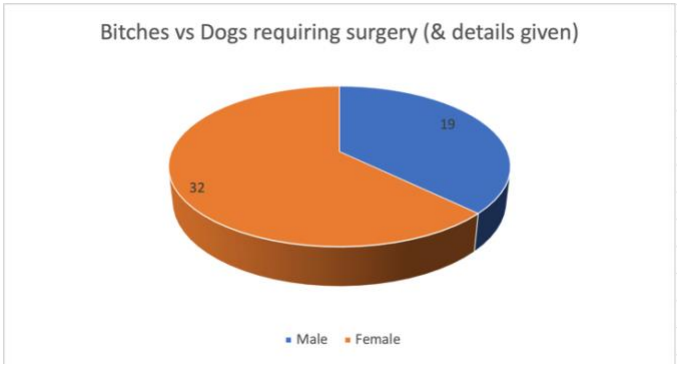
Having estimated the scale of the problem, looking for any patterns or links between those affected was a further part of the survey's aim.



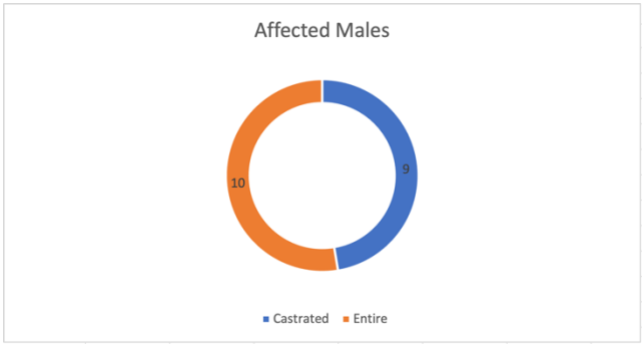
Of the 80 dogs 52 reported having a surgical intervention and 18 were treated only by non surgical means.

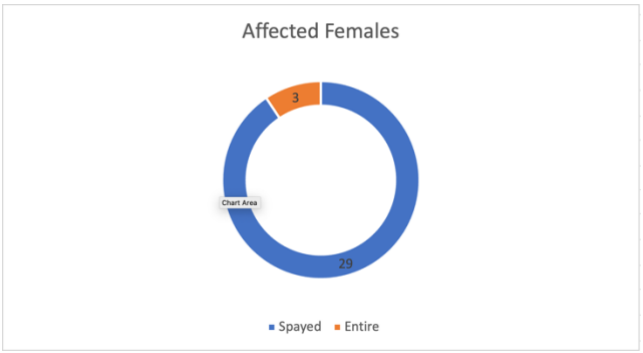
The age of first onset was also fairly spread although there was a peak around 5-6 years old and no dogs reported developing Cruciate problems after 8 years old. Moving on to look more at the 51 affected dogs we were given details of, it appears there was something of a bias towards females being more affected than males in that nearly two thirds of the BMDs requiring surgery were females.



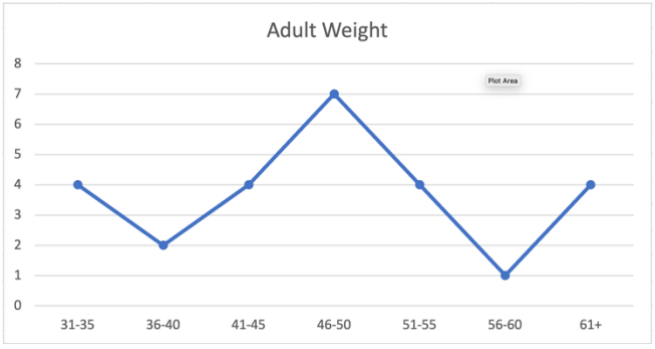


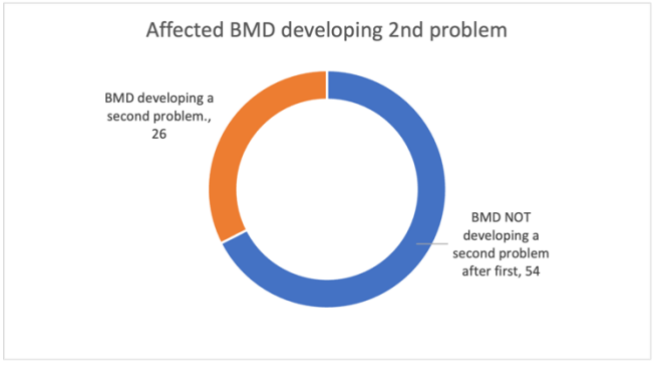
Looking further into these two groups it may appear the significance of being neutered is far more pronounced in bitches than dogs. The 19 males were as even as they could be but the 32 females only contained 3 entire bitches which means 91% of affected females were spayed bitches.



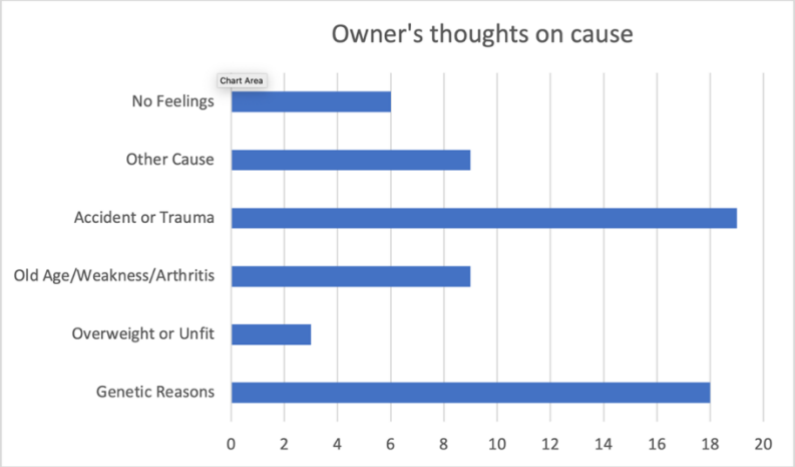


Looking at weights of dogs affected with the spread probably not too far away from the spread of weights you'd expect to see. 32.5% of BMDs experiencing a Cruciate problem went on to develop a problem in their other leg.





Attempting to tap into the perception and knowledge in the breed the survey also asked owners if they had any thoughts on this condition, why their dogs were affected or unaffected.



The two opinions clearly in front of the others were that it was due to a trauma incident or that it was a hereditary condition. Clearly more information would be needed to investigate any of these opinions but I have been at presentations on this subject where the experts have stated that a healthy cruciate ligament on a well exercised dog is not easily prone to damage.

This infers that at least some of those accredited to 'trauma' may have been indeed occurred at a moment of stress on the joint but the fact that an injury occurred was actually due to some inherent weakness in the structure. This can only ever be speculation of course and there is no way of knowing. Some people were honest enough to admit their dogs were overweight of unfit and they felt this was the cause.

Dogs Giving Summary of Feeding regime		
Complete kibble	19	46%
Raw	9	22%
Kibble and Wet	9	22%
Mixed	3	7%
Vegetarian	1	2%

The requests for information on exercise regimes, revealed no real pattern with the vast majority of dogs having either one or two walks a day and falling between 30 and 60 minutes per day.

The 41 affected dogs who gave us a summary of their feeding regime produced nearly half only feeding kibble and 'Raw' and a mixture of 'Raw and Wet food' making up almost the same number. This could well be fairly typical of the general population but we have no way of knowing for sure.

Conclusions

Firstly we are very conscious that this was only ever intended to be a broad snapshot of the Cruciate situation in our breed and give data for an informed decision of what, if anything, to do next. In some areas we only generated further questions which we perhaps could and should have asked.

Looking at the overall results it is very clear that obtaining more information about the unaffected dogs would have been extremely helpful, well actually essential, to give some context to some of these figures, without which we can only guess at their significance. For example looking at the spread of weights of affected dogs or the feeding regimes we have no data to say whether these are in line with the general population or not. However, I think most people would say these could well be fairly representative of the general population returns which means these figures would not be meaningful for the cruciate figures.

Overall perhaps the only surprising figure to me would be the 91% of bitches affected being neutered bitches but, again, how untypical of the general population is this actually? What percentage of adult bitches are spayed bitches? It could well be approaching that figure, or at least a fairly high figure, in which case the figure loses its apparent significance. We just don't know at this time?

We have more extractions and summaries to do with the information when time allows and then we will seek some expert opinion on whether any issue has a case take it further. I also hope to seek any similar surveys out both across the Bernese world and other breeds to look for any kind of reference data to give more context and help us decide if we have any notable figures.

UK BMD Death Survey

Due to data protection issues this ongoing survey was relaunched in late 2016 and details of contemporaneous and historical dogs requested.

The tables below give summaries of some of the data to date.

UK Bernese Mountain Dog Death Survey			
SOME SUMMARY FACTS OF DOGS IN SURVEY			
Number of Dogs in Survey			421
Average Age at Death of ALL Dogs in Survey			7.69
Number of Dogs *(males)*			212
Number of Bitches			209
Oldest Reported Death in Survey (yrs)			13.36
Youngest Reported Death in Survey (yrs)			0.20
Most Recent Death in Survey			August 22
Oldest *(Longest Ago)* Death in Survey			August 85
Most Recent Birth in Survey			October 19
Oldest (Longest Ago) Birth in Survey			December 76
Reported Deaths in 2022 *(Av Age/No.)*	7.79	9	2%
Reported Deaths in 2021	7.03	45	11%
Reported Deaths in 2020	7.58	45	11%
Reported Deaths in 2019	8.45	37	9%
Reported Deaths in 2018	7.92	32	8%
Reported Deaths in 2017	7.66	39	9%
Reported Deaths in 2016	7.77	43	10%
Reported Deaths in 2015	7.96	24	6%
Reported Deaths in 2014	7.30	34	8%
Reported Deaths in 2013	7.56	20	5%
Reported Deaths in 2011 - 2015		101	24%
Reported Deaths in 2006 - 2010		33	8%
Reported Deaths in 2001 - 2005		21	5%
Reported Deaths 1991 - 2000		12	3%
Reported Deaths 1981 - 1990		4	1%

	REPORTED CAUSE OF DEATH	407	Average Age	% of Total
1	Cancer - various (but not Histio)	175	7.90	43.0%
2	Cancer - 'Histio'	101	7.21	24.8%
3	Orthopaedic - Rear	17	8.52	4.2%
4	Kidney Failure	16	7.18	3.9%
5	"Old Age" *(as viewed by owner)*	13	7.92	3.2%
6	Bloat	11	8.21	2.7%
7	Heart Problem	10	6.64	2.5%
8	Orthopaedic - Not Specified	7	10.48	1.7%
9	Neurological	7	7.55	1.7%
10=	Orthopaedic - Hips	4	8.27	1.0%
10=	DM	4	8.05	1.0%
12=	DCM	3	10.94	0.7%
12=	Pnuemonia	3	5.00	0.7%
14=	Pancreatitis	2	9.68	0.5%
14=	Liver	2	8.08	0.5%
16=	Abcess	1	7.35	0.2%
16=	Abdominal Abnormalities	1	11.64	0.2%
16=	Accident	1	11.64	0.2%
16=	Aneasthetic Reaction	1	6.30	0.2%
16=	Arthritis	1	10.21	0.2%
16=	Auto Immune	1	8.45	0.2%
16=	Collapse of Larynx Muscles	1	10.24	0.2%
16=	Digestion Issue	1	4.64	0.2%
16=	Epilepsy	1	4.45	0.2%
16=	Eye Problem	1	7.94	0.2%
16=	Heatstroke	1	4.03	0.2%
16=	IMPA	1	5.54	0.2%
16=	Injury	1	5.51	0.2%
16=	Laryngeal paralysis	1	8.77	0.2%
16=	Lung Problem	1	7.53	0.2%
16=	Mega-Oesophagus	1	8.83	0.2%
16=	Meningitis	1	1.01	0.2%
16=	Orthopaedic - Elbow	1	3.45	0.2%
16=	Orthopaedic - Cruciate	1	6.63	0.2%
16=	Orthopaedic - Hips AND Elbows	1	5.76	0.2%
16=	Orthopaedic - Spine	1	7.47	0.2%
16=	Parvovirus	1	0.49	0.2%
16=	Peritonitis	1	7.97	0.2%
16=	Pyometra	1	4.00	0.2%
16=	(Rare) Digestion Condition	1	4.64	0.2%
16=	Rage Syndrome	1	0.93	0.2%
16=	Sepsis	1	7.08	0.2%
16=	Shock after surgery	1	7.14	0.2%
16=	Spine Injury (car crash)	1	12.12	0.2%
16=	Steroid Responsive Menigitis (SRM)	1	0.72	0.2%
16=	Stroke	1	9.60	0.2%
16=	von Willebrands Disease	1	2.11	0.2%

All causes of Death are as given by owners and/or their vets.

Date of Data Extract *Sat 10/09/22*

Most of the causes are as reported by the owners, sometimes with assistance of the vet. Some issues have very clear cut signs and confirming symptoms or tests and very rarely a Post Mortem, but many others, if we are honest, are a best guess. This does not make the data useless as some would have you believe. The larger the number in the sample the more any issues can cancel each other out. A mistake in one direction will be cancelled by one in the opposite. The overall picture therefore remains of value and this survey results are broadly consistent with others around the Bernese world completed under different regimes.

It is not compulsory for people to submit their deaths to the survey. We usually get a flurry of responses when we promote the survey and then everyone forgets until the next reminder. We have been very busy this year and not had time to chase people ..... yet, hence the low figure so far for 2022. Overall though, the UK responses are very disappointing and we only get less than 10% of the Bernese deaths that musty happen in the country each year and very few from the higher profile breeders. All responses are handled anonymously and only summary data is ever published.

Still as the numbers rise there are interesting points arising from this data.

The overall average is falling having crept up to almost 8 years about 3 years ago it is rapidly dropping towards $7^{1}/_{2}$ years. This is depressing.

"Histio" is used to cover SH, HS and MH as it is the common word used by most in the breed. Many of the vague 'cancers' reported may be "Histio" and all experts I have spoken to feel our particular form of 'Histio' is under diagnosed and could often be written off as lung cancer, or cancer of the spleen etc. For this survey those reports are just compiled under 'cancer' and only those the owner, or their vet, diagnose as 'Histio' are recorded as Histio.

Reported DM deaths have doubled in the last 2 years but only up to 4%. Only one of these mentioned any Post Mortem process to confirm the diagnosis, the others were only visually diagnosed from symptoms and, as those who were present for Iris van Deur's input in Amsterdam will recall, many BMDs were presented at her clinic with 'DM symptoms', sometimes diagnosed by a vet, but hardly any actually had the disease when investigated further by a knowledgeable specialist. One of the main points of Iris' presentation was that DM must over diagnosed in Bernese. Having said that it is entirely possible that one or more of the 17 reported "Orthopaedic - Rear" deaths could be DM, equally they could be HD related, cruciate related, we just don't know for sure.

So, whilst bits of the individual data *may* be viewed as unconfirmed, but the alternative would be to collect nothing. It is what it is and collected together the whole survey has good validity. The message and guidance for any further direction of action is to look at the overall summary figures.

Steve Green
BMDC of GB
Breed Health CoOrdinator
September 2022