

International Aspects of Health in Rhodesian Ridgebacks



Think Globally, Act Locally



Brenda Bonnett, DVM, PhD



- Veterinarian
- Epidemiologist
- CEO, International Partnership for Dogs
- Formerly tenured Assoc. Professor Univ. of Guelph, Canada
- 70+ refereed research publications, several book chapters on evidence-based medicine, animal welfare, population health, veterinary-client communication, human-animal interactions, etc.
- Swedish collaboration since mid-1990's with Agria Insurance, Swedish KC, and the Swedish veterinary college
- Consultant on welfare initiatives in the USA include pet overpopulation, responsible pet ownership, pet relinquishment, shelter issues, etc.

Goals for today's discussions...

- **What are keys to 'good breeding' practices?**
 - Thought-provoking!
- **What is happening internationally for Ridgebacks?**
- **What resources are out there waiting for you to discover and use?**
- **What have you got to share, how can you lead?**





**IPFD: For the Love of Dogs
(November 2020)**

<https://dogwellnet.com/videos/ipfd-videos/ipfd-for-the-love-of-dogs-november-2020-r1/>

Takeaways? - International... global

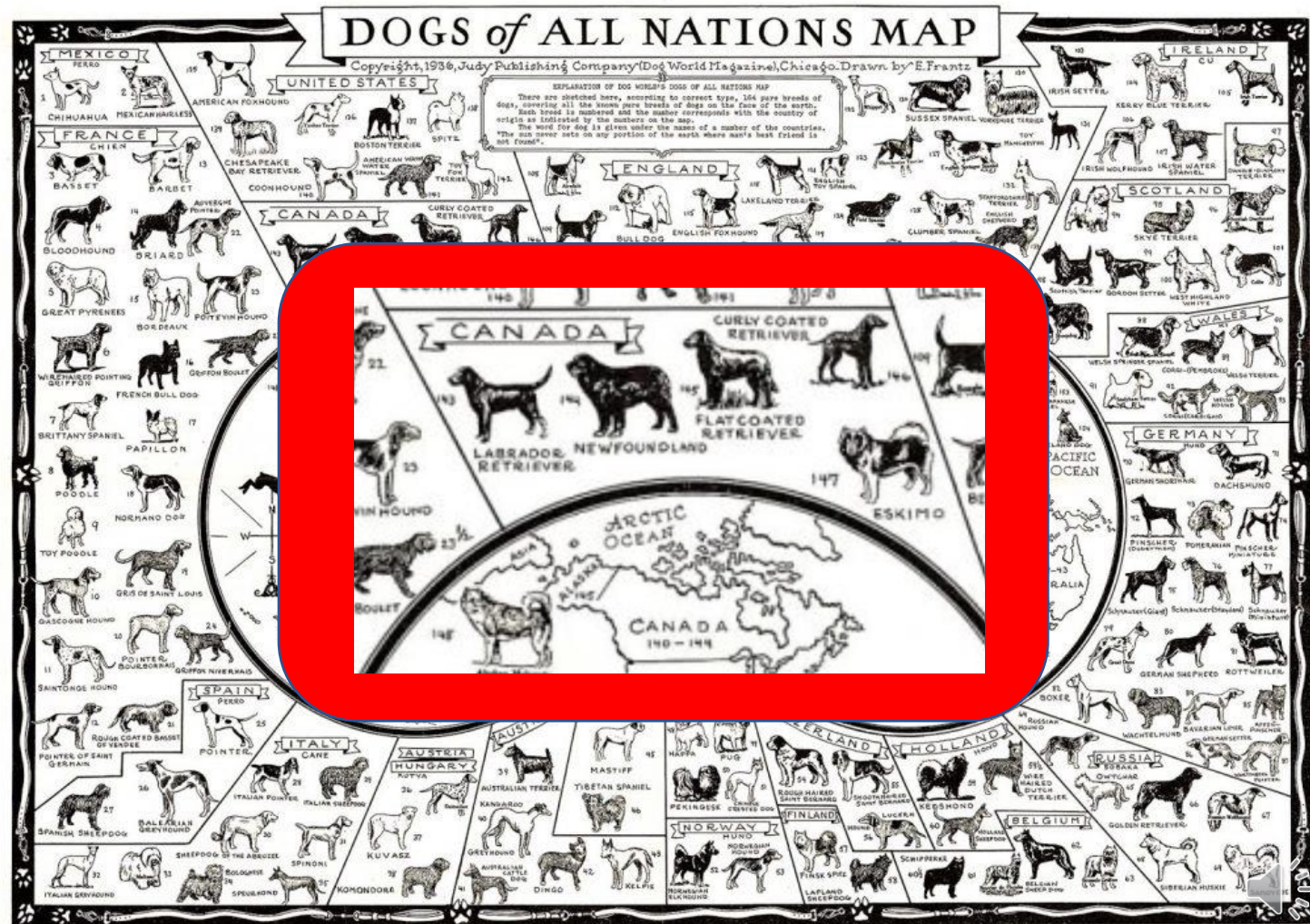
- 164 became over 400 in less than 100 years.

Dogs of all nations map, 1936

created by E. Frantz for Dog World Magazine

“According to the correct type, there are sketched here, 164 pure breeds of dogs

“The sun never sets on any portion of the earth where man's best friend is not found.”



Breeds happened through selective breeding.
Which means linebreeding/ inbreeding.

Selective breeding has also produced special traits, skills, and abilities



And beautiful dogs!

“New Marketing Opportunities for Guide Dogs?”





Roselle led her owner and 30 other people down **1,463 steps – from the 78th floor - out of Tower 1** of the World Trade Center on 9/11.

Salty and Roselle (Hero Dog)

What is happening internationally?



Think Globally, Act Locally



Canadian Kennel Club embracing an international perspective with IPFD:

Opportunities

- Benefit from others' expertise and experience
- Participate in international efforts (e.g. ICECD - collaborative on extreme conformation in dogs... CVMA)

Challenges

- Balancing with local/national efforts/commitments
- Adapting to or changing Canadian culture (and balancing with e.g. American issues/interests)

Global Perspectives Elevate your view!

Illegal trade/
importation of
dogs/ online sales

Education/
programs/
information

Advances in genetics
and genomics



Legislation/ regulation,
e.g.
breeds with extreme
conformation; docking and
cropping

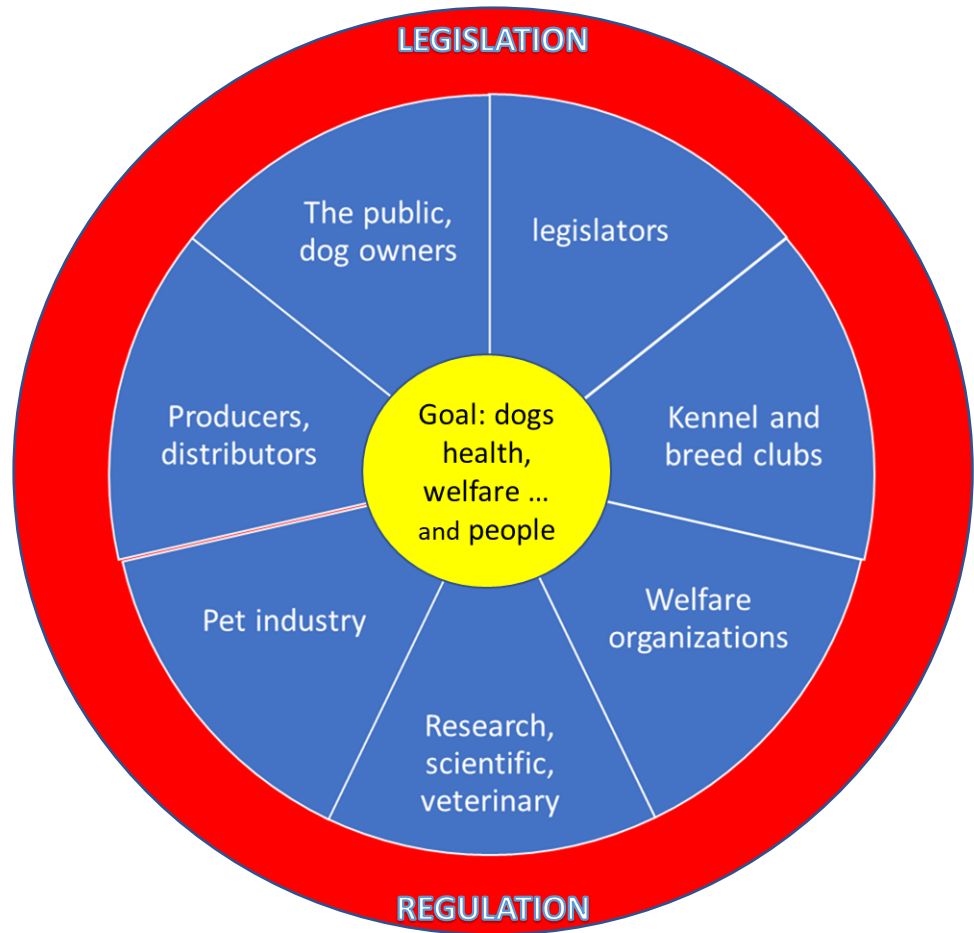
Breed-specific breeding
strategies

Advances for KCs: e.g.,
linking health and
pedigree data; DNA
profiles/ parentage testing

- Dealing with controversies and challenges...
- IPFD: Reframing Current Challenges Around Pedigree Dogs:
A Call for Respectful Dialogue, Collaboration, and Collective Actions:
- <https://dogwellnet.com/content/international-actions/think-globally-act-locally/reframing-current-challenges-around-pedigree-dogs-r707/>
- Let's be sure it is **DOING**
not just talking...



If there is an unwillingness to have **open, respectful dialogue** – if there is **denial** that problems exist in certain breeds – or there is only **confrontation** – the result may be that we are hemmed in by **legislation and regulation**.



(not shown here) Series of slides...

- No major extremes in Rhodesian Ridgebacks over 100 years... compared to
- French Bulldogs
 - Extremes of facial and body conformation
 - Changes that impact health and welfare
- Such trends should be guarded against!

NOW: Judges could ...

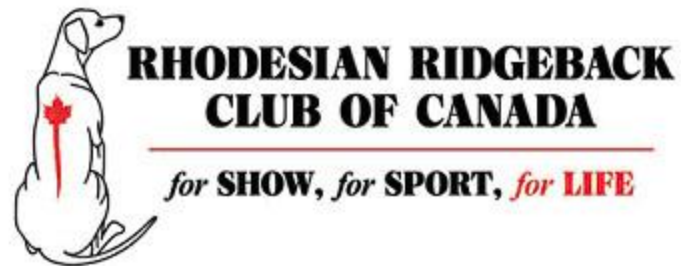
- Avoid awarding 'extremes' i.e. dogs at either 'end' of the standard... too big, too small, extremes of heads, angulation or lack of angulation, etc. etc.
- Avoid awarding any dog with signs of clinical problems... breathing, skin, gait, temperament problems.
- 'On the day' regardless of past performance/ politics
- Not get caught up in fads or the 'wow factor' if it embodies an extreme or affects function.

NOW: Breeders could ...

- Prioritize health and longevity – a Big Picture approach to breeding – **appropriate** health testing
- Consider the level of inbreeding and remember that line-breeding IS simple less-extreme inbreeding.
 - Monitor Coefficients of Inbreeding – from pedigrees or genomic.
 - Always try to breeding for lower than average. Anything >5% is a concern.
 - If these values are not available – work to build a record of them
- Not get caught up in fads or the ‘wow factor’ if it embodies an extreme or affects function – or requires extreme line-breeding
- Test/follow ALL puppies not simply show dogs – keep and share records
- **RRCC: 6.** Anyone breeding a RR (bitch or stud dog owner) is responsible for all of the progeny for the lifetime of every animal. – rescue...

Code of Ethics (COE) for the Rhodesian Ridgeback Club of Canada (RRCC)

- Members of The Rhodesian Ridgeback Club of Canada (the “Club”) have an obligation to the Rhodesian Ridgeback breed to **preserve and improve the breed** without exploiting it.



https://www.rrclubofcanada.org/code_ethics.html

Breeding decisions – Ideally? In reality?

- Short term goals:
 - Produce show winning puppies?
 - Produce healthy offspring?
 - GENETIC TESTING – enough to show you tried?
 - **One thing to test... another to act appropriately based on the result.**
 - Easier than big picture approach using all inputs that define good breeding.
- Long term goals: develop ‘your’ line?
- Breed health and sustainability?

How many breeders prioritize this?

e.g. ‘DON’T ELIMINATE CARRIERS’... and yet – people do!

Inbreeding (linebreeding) vs. Genetic Diversity

- **The Downside of Inbreeding: It's time for a new approach.** C.A. Sharpe
- Varieties treated as separate breeds: e.g. Belgian Shepherds in US. E.g. types – conformation and performance.
- **Popular Sires**
- “It is becoming more and more apparent that the short term gains of inbreeding are outweighed by the long term costs. Present day breeders need to rethink their strategies.”

IPFD Partner ASHGI: The Downside of Inbreeding: It's time for a new approach.

<http://www.ashgi.org/home-page/genetics-info/breeding/breeding-genetic-diversity/the-downside-of-inbreeding>

Inbreeding how it can be reduced

- The Nordic breed clubs are careful to keep the inbreeding rate low to maintain health.
- Finland: Only a small number of dogs are being used for breeding, effective population size is small. This contributes to the increase in immunological diseases (Finnish Breed Club).
- **Maximum recommended number of offspring per individual dog:**
 - Sweden: 40 offspring and 80 second-generation offspring.
 - Norway: 38 offspring - females altogether, males in a 5-year-period.
 - Finland: 3 litters. However, the dog may, for justified reasons, be used for breeding after that, **as long as there is evidence in the offspring that the dog inherits healthy, typical for the breed offspring with a good character.**
 - **Great Danes in Germany – use of older dogs in breeding...**
- **Average inbreeding coefficients:**
 - Sweden: **The inbreeding coefficient of a litter should not exceed the average value for the breed...**
 - The average inbreeding coefficient in Finland seems small, because mainly foreign dogs are used for breeding. Recommendation of the **Breed Club is to keep the maximum five-generation inbreeding coefficients of litters at 6.25 %.**

See: Get a GRIHP! On Rhodesian Ridgebacks.... Link live as of Sept 23rd 2021.

<https://dogwellnet.com/content/health-and-breeding/breeds/breed-specific-health-reports/get-a-grihp-on-rhodesian-ridgebacks-r754/>

Paper 2007 (Vicki Moritz)

- 10-generation pedigree analysis
 - Australia 12.5%
 - US 15.2 %
 - Sweden 1.9% (maybe 5 gen??)
-
- GENOMIC COIs – usually higher than pedigree based... probably more accurate.

Australian COI Analysis 1967-2007

<https://www.rhodesian-ridgeback-pedigree.org/articles-informations/breeding-and-genetics/australian-coi-analysis-1967-2007-by-vicki-moritz/>

SOMETHING TO THINK ABOUT:

The Flawed ridge is a major factor affecting the size of the gene pool! Issues related to the correct/incorrect ridge result in 20 % of the population removed from breeding.

Finland and Sweden: every tenth dog is ridgeless and approximately 13 % have flawed ridge. Different countries have different practices and cultures for these puppies - **sometimes these puppies are still put down.**

- Finland: puppies are mostly being registered in the Not for breeding (EJ) - register and sold as pet dogs. Considering options... allowing breeding of ridgeless dogs.
- A DNA test to identify hetero- (Rr) or homozygous (RR) ridge mutation in a ridged dog **could be used** to allow for the use of ridgeless dogs in breeding:
- Mating between a ridgeless dog (rr) and a homozygous (RR) dog would produce only ridged individuals.
- Easing breeding requirements for ridge would increase the genetic diversity of the breed and possibly decrease the frequency of immunological problems.
- Breeding policies allowing ridgeless dogs in breeding would require wider international agreement among the breed enthusiasts

See: Get a GRIHP! On Rhodesian Ridgebacks.... Link live as of Sept 23rd 2021.

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Health testing for breeding decisions

- Health testing encompasses everything from **behavioral assessment to radiographic grading for, e.g. hips and elbows, to clinical exams, e.g. eye exams and of course genetic testing.**
- Many of the most important/common/severe conditions **do not now nor will they soon** have a simple health or DNA test – most are complex diseases in terms of inheritance and environmental influences.
- So the **'Big Picture'** is important when choosing dogs for mating and for the breed.
 - (See, for example: [The Big Picture - in the Dog World as a Whole and for your next Breeding Decision](https://dogwellnet.com/blogs/entry/186-the-big-picture-in-the-dog-world-as-a-whole-and-for-your-next-breeding-decision/)) (<https://dogwellnet.com/blogs/entry/186-the-big-picture-in-the-dog-world-as-a-whole-and-for-your-next-breeding-decision/>)



Code of Ethics (COE) for the Rhodesian Ridgeback Club of Canada (RRCC)

- **8.** Anyone breeding RRs (bitch or stud dog owner) will use purebred Rhodesian Ridgebacks only and will neither breed nor sell a Rhodesian Ridgeback that cannot be registered with the CKC. They will only use animals that are healthy and are certified free of the following heritable diseases: hip dysplasia, elbow dysplasia, thyroid disease (only valid for 1 year from date of test), cardiac disease and degenerative myelopathy (DM). It is highly recommended that all dogs and bitches that will be bred be tested for the presence of eye diseases- CERF (when available). Breeders should only breed a known DM carrier to a DM certified clear dog or bitch. Anyone who claims that their dogs are free of certain diseases, must (when requested) provide written proof showing the up to date/current disease free certification.

https://www.rrclubofcanada.org/code_ethics.html

International
Partnership
for Dogs



GET A GRIHP!

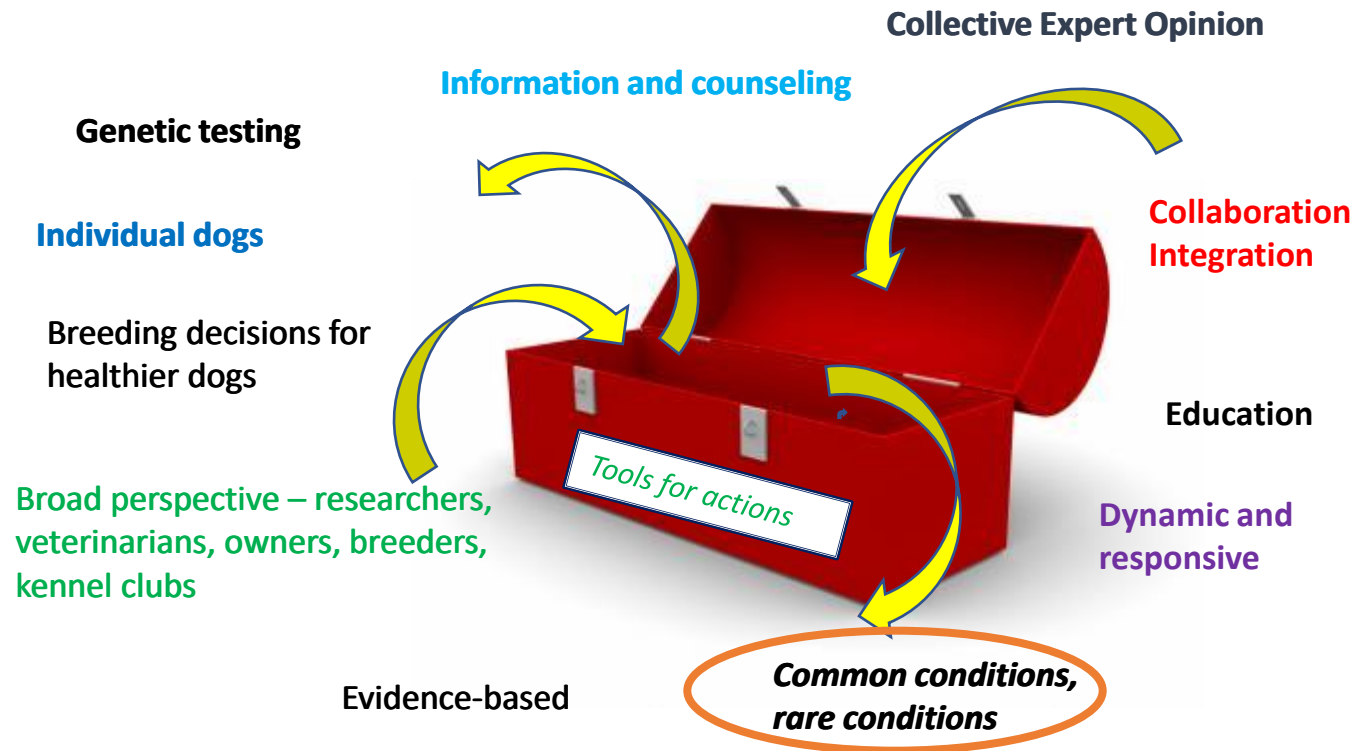
Breed-specific **G**lobally **R**elevant **I**ntegrated **H**earth **P**rofile



Coordinated with articles for veterinarians in the WSAVA Bulletin.

IPFD  DogWellNet.com

Get a GRIHP! on breed health





- **Breeds data base** <https://dogwellnet.com/breeds/pedigree/>

- International Clubs/ standards/
- Health surveys
- Other links

- **Swedish Agria insurance breed-specific statistics – 190 Breeds**

<https://dogwellnet.com/breeds/additional-breed-resources/breeds-with-swedish-insurance-data-r111/>

- **Breed-specific breeding strategies**

- Sweden, Norway, Finland

<https://dogwellnet.com/breeds/additional-breed-resources/breeds-with-summaries-of-swedish-kc-finnish-kc-or-norwegian-kc-breeding-strategies-r179/>

- Translations
- Template

Get a GRIHP!
(and in WSAVA
Bulletin articles)

<https://dogwellnet.com/breeds/additional-breed-resources/dog-breeds-what-you-need-to-know-ipfd-feature-in-wsava-bulletin-r222/>



Why IPFD?

- Health issues include those for which there are genetic tests, but also many others which may be common and important. The [Harmonization of Genetic Testing \(HGTD\)](#) database, expert input for health and genetic counseling, and the
- **Health Strategies Database for Dogs (HSDD*)** (Coming soon)

Home > Harmonization

Unread Content Mark site read



Harmonization of Genetic Testing for Dogs

HGTD GOAL: Improve standardization of, and access to, robust genetic testing to support health improvements and a sustainable future for healthy dogs. *The portal for information on Genetic Testing Providers (labs); genetic tests, and tests by breed.* There are two major components: the Quality Testing

Database and Genetic Counselling resources. [See Full Description](#)

Note: IPFD cannot be held responsible for inaccurate content or any outcome from the use of information or resources found on this site. Listing in the HGTD Database does not represent an accreditation or endorsement of any Genetic Test Provider.

[More >>](#)

[Manage Relations](#)

HGTD Quick Search

Breed
Test/Disease
Lab/GTP

IPFD Weighs In

...on recent media commentary:
**Genetics and Genomics for Dogs:
Balancing daunting challenges and
great potential**

GTPs: Learn more about participating
[here](#)



Aimee Llewellyn-Zaidi

HGTD Project Director

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(DNA) tests are **tools** not goals or outcomes
- and except for rare, simple gene disorders –
NOT A MAGIC BULLET!

Get a GRIHP! on Rhodesian Ridgebacks

- LOADS of info... available online in about 10 days. (Sept 22nd-ish)

Statistics and Health Strategies

What do Caretakers of Rhodesian Ridgebacks need to Know?

**Key Health Conditions - The Basics:
Rhodesian Ridgeback**

Conditions/Health Tests and Health Strategy Provider Recognition Status

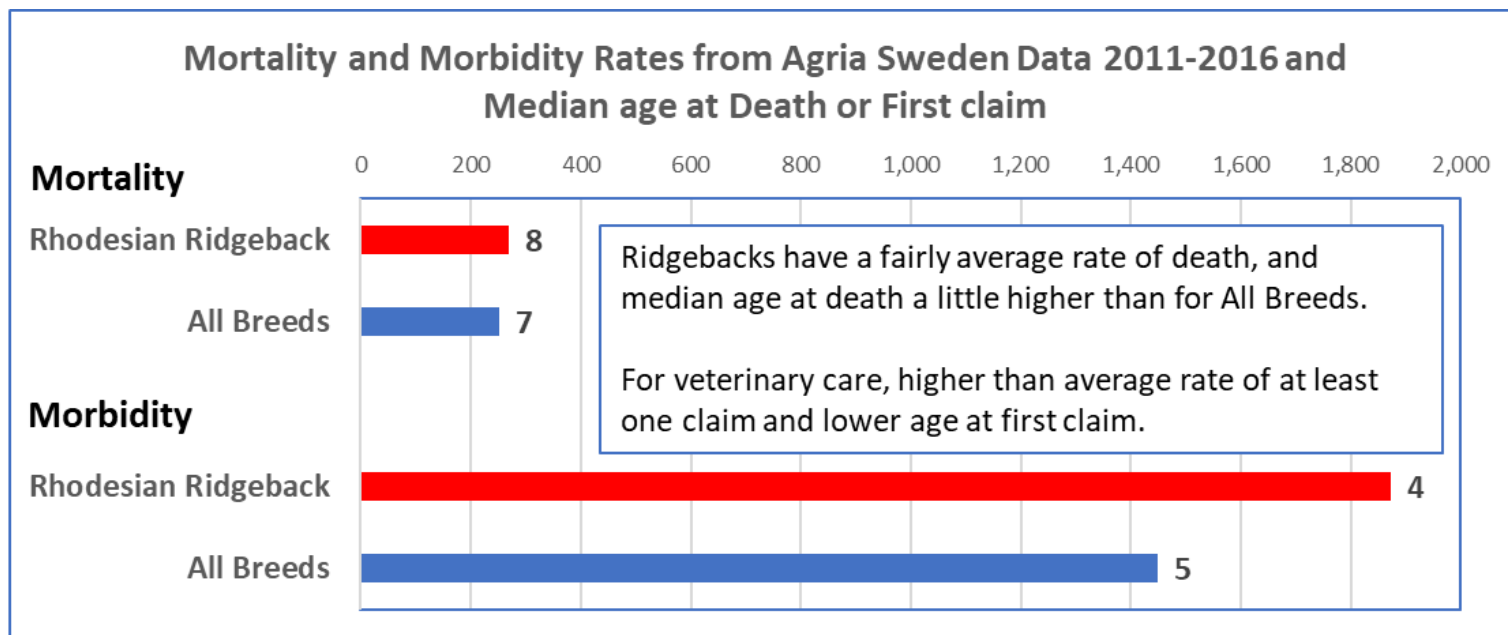


Hip Dysplasia	All clubs acknowledge, recommend, or require this screening
Elbow <u>Dyplasia</u>	All clubs acknowledge, recommend, or require this screening
Spine	Mandatory screening in Finland for breeding dogs (LVT / Spondylosis)
Dermoid Sinus	All clubs acknowledge the condition - evaluation by an experienced party is recommend. Vets may not have seen this condition
Thyroid	All clubs acknowledge, recommend, or require this screening
Heart	Some clubs acknowledge, recommend, or require this screening, The US club in particular.
Eye Exam	Some clubs acknowledge, recommend, or require this screening, The US club in particular.
Epilepsy (JME)	All clubs acknowledge, recommend, or require this DNA test
Degenerative Myelopathy	Some clubs mention the DM DNA Risk test
Allergies / Immune conditions	All clubs acknowledge Allergies and Immune conditions, including cancers impact some dogs in the Ridgeback breed



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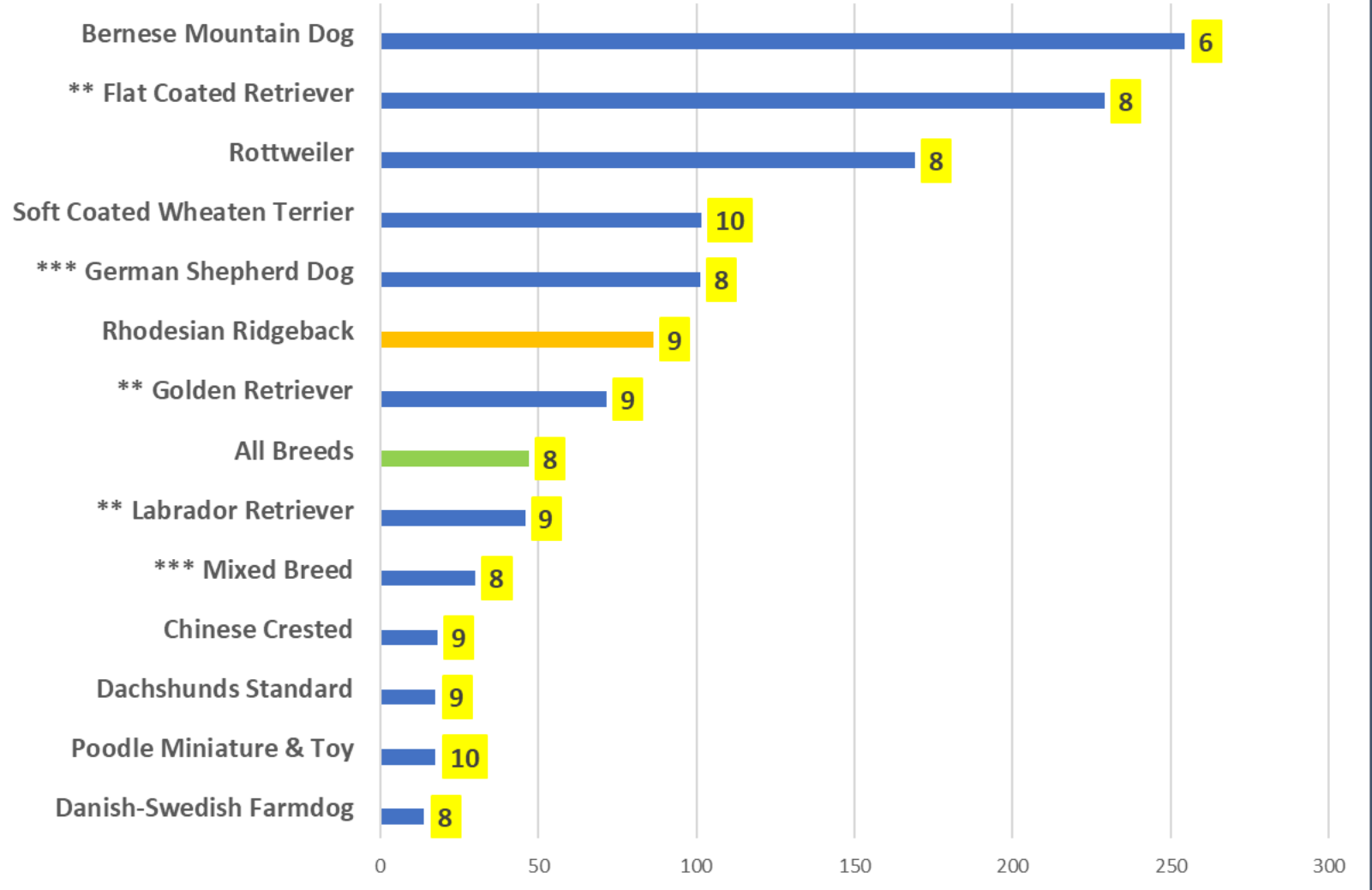
Cause of death		Average life span	Total
Accident		4 years 10 months	11
Age (natural or euthanasia)	★	12 years 3 months	81
Congenital defect or malformation of a puppy		0 years 5 months	2
Dead without diagnosis of illness		8 years 9 months	6
Endocrine disease		9 years 6 months	2
Euthanasia due to behavioral problems		7 years 2 months	5
Euthanasia, non-diagnosed	★	10 years 1 months	12
Heart disease		9 years 5 months	8
Immunological disease	★	7 years 3 months	12
<u>Jecur</u> or digestive disease	★	8 years 0 months	21
Neurological disorder		9 years 2 months	4
Other unspecified disease	★	7 years 2 months	16
Respiratory disease		11 years 3 months	2
Skeletal or articular disease		7 years 6 months	8
Skin or ear disease		5 years 11 months	7
Spinal disease	★	6 years 9 months	12
Tumor, cancer	★	9 years 0 months	88
Urinary disorder		8 years 3 months	5
Cause of death not specified	★	8 years 7 months	33
Altogether		9 years 2 months	335

← Cancer

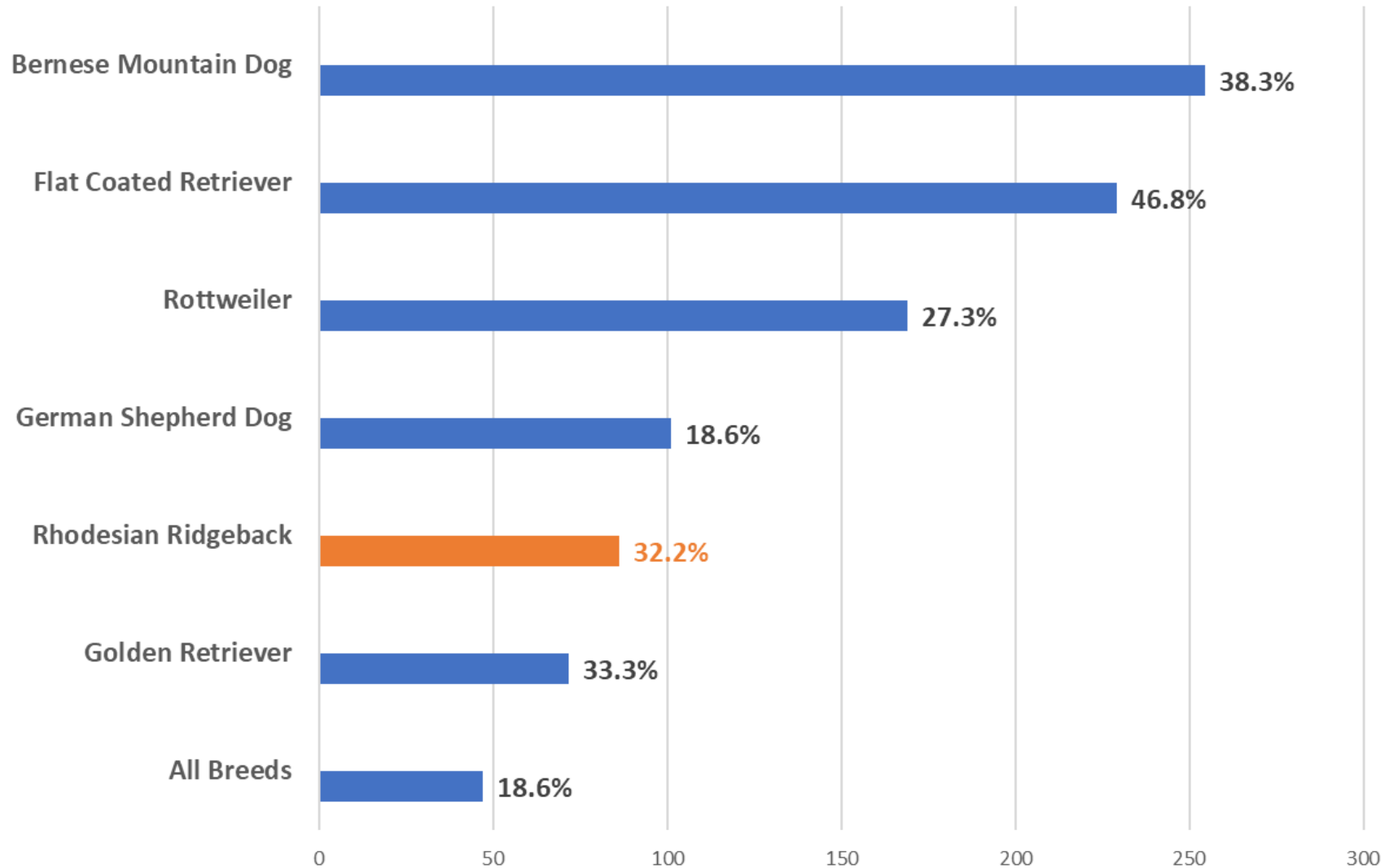
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Neoplasia Mortality per 10K yrs@risk from Swedish Insurance Data 2011-2016 and Median Age at Death



**Neoplasia Mortality per 10K yrs@risk from Swedish Insurance Data 2011-2016
and Percent of Claims (Proportional Mortality)**





Breed Specific Disorders

- Dermoid Sinus (DS)
- Juvenile Myoclonic Epilepsy (JME)
- Early Onset Adult Deafness (EOAD)
- Rhodesian Ridgeback Inherited Arrhythmia (RR IVA)

Non-breed specific conditions

- Hip Dysplasia (HD)
- Elbow Dysplasia (ED)
- Lumbosacral Transitional Vertebra (LTV)
- Bony deviation of the tail
- hypothyroidism
- Degenerative Myelopathy
- Allergic Skin Conditions
- Ectropion/entropion
- cryptorchidism
- umbilical hernia
- dental errors

Breeders within the RRCN confirm to the VFR (association breeding regulations, [link](#)). This means, among other things, that the parent animals are tested for **HD, ED and JME** before being used for breeding

There are also research options for a number of other disorders, but these are either not yet conclusive, depend on several factors or occur to a (very) limited extent. It is up to the breeder to decide whether or not to conduct further research.

Monika Pehr – Germany

<http://www.thuraia.de/rr-article-english/breeding-with-carrier/>

Carrier dogs are also authorized in breeding and for genetic diversity it is important not to ignore this!

Of course, they may only be paired with breeding partners who have been freely tested in this genetic test, so that no animals are bred who are affected by this disease.

But for diseases with a recessive inheritance, for which there are already genetic tests, that is also quite simple.

We must guard against branding entire bloodlines due to the fact, that some dogs in these lines have been tested as carriers. In some diseases the lines are known and certainly should not be doubled, but it must not cause that in principle certain lines are no longer used in breeding, because that would narrow our genetic bottleneck even more and will lead to other problems ,



The breeders' thinking over generations - not just from one litter to the next - that's the big challenge - that has always been it and it always will be. Genetic tests can help us in breeding, but they are not the only remedy.

Reasonable used they are a great help for us today and in the future, in order to advance the breeding of healthy dogs.

Monika Pehr

March 2018

Other articles

- Dermoid Sinus <http://www.thuraia.de/rr-article-english/avoiding-the-gene-defect-ds/>
- Degenerative Myelopathy <http://www.thuraia.de/rr-article-english/degenerative-myelopathy-dm/>

“...the mutation SOD1 gene is a risk factor. But it is not solely responsible for the outbreak of the disease.”

Research is inconclusive. DO NOT ELIMINATE CARRIERS FROM BREEDING.

Common Sense: Not all dams and sires with 'clear' test results will be good choices for breeding.

See: <https://dogwellnet.com/blogs/entry/158-not-all-puppies-from-health-tested-parents-will-be-healthy/>

- *Good breeders* use appropriate health testing.
- **BUT – health-testing alone does not make someone a good breeder.**
- *Common sense:* signs of disease (skin, eyes, breathing difficulties, other) in any dog should preclude it from breeding.
This is law in some countries.



What you see is what you got

- What is the evidence that people in your breed have been selecting for health, longevity and good temperament?
- What is the evidence that people are selecting for the benefit of the breed, vs. their personal achievement?
- Are dog exhibitions/ shows embracing the diversity within the breed... **“We have always only judged for soundness.”**
 - Said to me by judges... but the current situation in some breeds might not support this.

What criteria have been used in selection??

- (Over)Use of popular, show winning sires?
- Narrow view of desirable appearance`?
- Broad and informed view of overall health, longevity, performance, etc?
- **If you SAY: ‘we want healthy, long-lived dogs with good temperaments’ ... and then CHOOSE based on the likelihood of getting a BIS puppy ... you are unlikely to achieve the former.**
- Genetic studies of hunting dogs... higher frequency of genes for improved physiology, intelligence, endurance compared to companion/terrier. Because selecting on performance selected for those attributes. (Duh??)

Solutions?

- Review the criteria being used for selection.
- Reduce relatedness of sire to dam – **TOOL: Coefficient of Inbreeding**
- Limit numbers of offspring by individual dogs (popular *sire and his bros and sons!*)
- Use **higher proportion of** available **healthy (in the broadest sense)** stock (randomise)
- Inner-breed “crossing” (working vs. showing)
- Make use of overseas bloodlines (depends...)
- Outcross – carefully planned and monitored



There are almost no easy answers.

Focus on the immediate and the 'easy' e.g. genetic testing, may be leading us away from a balanced, big picture view of health and breeding.



And...Keep Looking!