REPORT ON THE STATE OF HEALTH OF THE PETIT BASSET GRIFFON VENDEEN
Based On the 2000 Health Survey Undertaken by the Petit Basset Griffon Vendeen Club of America

Lauren Kovaleff, Health and Genetics Committee Manager July 2001

I. Introduction

In 2000, the Health & Genetics Committee of the Petit Basset Griffon Vendeen Club of America (PBGVCA) made a recommendation to its Board of Directors that the PBGVCA undertake a general health survey of PBGVs for the year 2000. The PBGVCA would then be able to use the results of the survey to identify the most significant of PBGV health problems and then would be in a better position to evaluate and support research efforts necessary to address these problems. Survey data will be available to support grant applications, and to provide a basis for initial and ongoing evaluation of the health of our breed. The Board of Directors approved the survey project and identified funds in the Health & Rescue Foundation of the PBGVCA to finance the project.

Anil Chaturvedi, DVM, and Patty Kissinger, PhD, Department of Epidemiology at Tulane University School of Public Health and Tropical Medicine in New Orleans, agreed to compile the survey database and developed a report of the findings for the PBGVCA. George Padgett, DVM, University of Michigan and author of Control of Canine Genetic Diseases, provided consultation on the survey process and reviewed the survey questionnaire prior to distribution. Dr. Padgett also provided analysis of the PBGV survey data during a one-day presentation at the 2001 PBGVCA National Specialty in New Orleans on May 26, 2001. The seminar was videotaped and is available for sale. Ordering information can be found on the last page of this packet.

Process

The Health & Genetics Committee established the following objectives for a comprehensive health survey:

- To obtain data on the general health of our PBGVs.
- To determine the incidence of problems, disorders, and diseases that affect PBGVs.
- To identify health screening practices of PBGV owners.
- To determine breeding practices and litter health information.

A survey subcommittee reviewed the AKC's "Model Health Questionnaire for Parent Clubs" and the health surveys undertaken by other breed clubs, notably those undertaken by the Rhodesian Ridgeback Club of the United States, and the Scottish Terrier Club of America before designing and developing a survey questionnaire. A smaller questionnaire subcommittee was established to develop the format and content of the survey.

Survey forms were developed to determine general owner information, health information, and breeder information. The survey covered all PBGVs acquired by the survey respondent before January 1, 2000 who also lived with the respondent on January 1, 2000, and any PBGV that lived with the respondent at the time of death since January 1, 1995. This time period was selected so that a range of ages would be represented. The health information section was completed with the use of a numbed list of diseases and conditions developed for this purpose. A list of definitions was developed to assist the responders in the disease selection process.

The survey was pre-tested by the 20-member Health & Genetics Committee to be sure that responders with varying backgrounds and experience were able to complete the questionnaire with some degree of confidence.

Advertising of the survey process was included in Saber Tails, the publication of the PBGVCA, and on the PBGVCA website. Information to urge participation by PBGV owners who were not PBGVCA members was widely distributed on Internet mailing lists dedicated to discussions about PBGVs. A reminder flyer was sent to each PBGVCA member 2 weeks prior to the cut off date.

Five hundred and nineteen copies of the survey were mailed to PBGVCA members and PBGV owners who were not club members. The survey and associated materials were available for downloading on the PBGVCA website. Most surveys were mailed to individuals living in the United States; however, surveys were also distributed abroad, mainly in Europe. Two hundred and fifty completed surveys were returned, a 48.2% response rate. These surveys included data representing 640 PBGVs. Of those that responded, 64 (25.6%)had bred at least one litter during the survey period, and 186 were non-breeder owners (74.4%).

All surveys were treated anonymously. Surveys did not request or include information that would identify the respondents. Survey packets included plain envelopes pre-addressed to Dr. Patty Kissinger. Dr. Kissinger and her staff removed each survey from its envelope and assigned a survey number.

We were very pleased with the number of surveys that were submitted. This data provided a huge amount of information about our dogs. Although the number of responses exceeded our expectation, the content in a number of responses was incomplete to the extend that some of the questions particularly with respect to age of onset of a disease./condition, could not be answered. Dr. Padgett has recommended that we repeat our survey (or at least parts of it) in 5 or 6 years to follow trends. We will need to continue to carefully consider the importance of each question we ask in a survey and to encourage responders to make every effort to complete their surveys as thoroughly as possible.

We would like to thank the following people for their support and involvement in the PBGV Health Survey:

The Board of Directors of the PBGVCA, the Board of Directors of the Health and Rescue Foundation of the PBGVCA, members of the Health & Genetics Committee of the PBGVCA, members of the Survey Sub-committee, and Drs. Padgett, Kissinger, and Chaturvedi.

Other documents in this mailing include:

II. Survey Report by Anil Chaturvedi, DVM, and Patty Kissinger, MD with annotations by Jeanne Dumestre (blue paper)

III. Comparison of Findings: 1994 Survey to 2000 Survey by Kasmin D. Bittle, DVM (white paper)

IV. Genetic Diseases of the PBGV by George Padgett, DVM

Commentary and Terminology adapted from the American White Shepherd Association Survey by Judy Huston (cream paper)

V. Ordering information for the George Padgett Seminar Video (white paper)

II. RESULTS –PBGV HEALTH SURVEY

Anil Chaturvedi, DVM, and Patty Kissinger, PhD February, 2001

GENERAL BREEDER/OWNER INFORMATION:

There were 250 respondents in the survey, of these, 64 were breeders and 186 were owners. The survey consisted of 640 dogs owned by the respondents. The Mean number of PBGVs residing with the respondents on January 1, 2000 was 2.38, with a Standard deviation of 2.54. A majority of the respondents (92.8%) acquired their first PBGV from breeders, 5.6% acquired from previous owners, 1.2% from shelters, and 0.4% each from rescue and other sources. 71.4% of the respondents were members of the PBGV Club of America. 64% of the Breeders reportedly always maintained contact with puppy buyers, while 29% maintained contact sometimes, and 1.5% rarely. 85.4% of the owners maintained contact with the persons from whom they purchased their pups. 92.4% of the respondents reported being registered with the American Kennel Club, 10% with Canadian Club, 4.4% with U.K Kennel Club, and 4% with United Kennel Club. 60.4% of the respondents participated in at least one Health open registry . Eighty–eight percent of the respondents were willing to participate in future surveys.

Table 1: Activities participated in with PBGV, N=250

	Percentage
Companion/pet	74.4
Conformation	51.0
Obedience	28.0
Agility	14.8
Pet-assisted therapy	8.0
Tracking	6.0

** Participants chose more than one field; therefore, the total may not add to 100%

Table 2: Participation in Open Health Registries, N=161

	Percentage
CERF eyes	26.8
OFA hips	26.0
OFA elbows	8.4
OFA/Patellar examination	2.4
Penn Hips	2.0
OFA/thyroid	2.0
GDC/eyes	1.2

** Some Participants mentioned that they participated in open registries, but did not specify; therefore, does not add to 100%.

Breeding Information:

Of the 640 dogs in the survey, 22.8% were Male, 33.1% Female, and 20.8% and 23.3% were neutered and spayed respectively. 84% of the respondents spayed their bitches; the mean age of spaying was 6.38 years, with S.D 1.02 years. 70.5% reportedly neutered their dogs and the mean age of neutering was 7.45 years, with S.D 1.86 years. 90.7% of the breeders, reported regular heat cycles in bitches. The average number of months between heat cycles was 7.6 months.

Table 3: PBGV Breeding information, N=61 breeders

	Mean	**S.D**	**Median**
# of litters bred	4.52	5.60	2
# of pups	20.81	26.92	10
Average size of litter	4.51	1.22	5
Size of largest litter	6.87	2.17	7
Size of smallest litter	2.85	1.65	2

Table 4: Breeding practices of the breeders N=61

	Mean	**S.D**
Age of breeding bitch for first time (years)	2.4	0.82
Age of breeding bitch for last time (years)	5.9	1.17
Age of breeding stud for first time (years)	1.8	0.44
Age of breeding stud for last time (years)	8.5	1.90

Table 5: Breeding characteristics of Bitches, N=361

	Mean	**S.D**
Age of first heat (months)	9.8	2.44
Earliest age of first heat (months)	8.0	2.93
Latest age of first heat (months)	13.5	4.47
Frequency of seasons in a year	2.0	1.34

Table 6: Litter survey, Litter status in the survey, N=870 Pups

	Percentage
Male pups	50.8
Female pups	49.2
Pups born without birth defects	87.5
Pups born with birth defects	12.5
Pups stillborn	2.98
Pups died between 0-12 weeks of age	3.90

HEALTH INFORMATION:

In the survey, the average time of onset of the first disease in the dog was 28.49 months, with standard deviation of 36.89. The average lifetime of the dogs was 12.7 years, with a standard deviation of 3.88 years.

Table 7: Frequency of Health Screening N=250. (%)

	Once	**Annually**	**Every few years**	**Never**
Vet physical	0.8	91.5	5.6	2.0
Opthalmologist	17.2	14.4	13.2	55.2
Hip radiologist	33.6	0.4	3.6	62.4
Elbow radiologist	15.6	1.2	0.0	83.2
Patellar luxation exams	15.2	3.2	3.2	78.4
Thyroid	14.4	9.6	11.2	64.4

Table 8: Diseases considered by survey participants to be of greatest concern to the breed N=250

	Percentage
NPS (neck pain syndrome)	25.6
Epilepsy	18.8
Eye problems (Glaucoma, lens luxation, and general infections, PPM)	16.4
Thyroid problems (hypo and hyperthyroidism)	8.8
Immune system problems (Drug reactions, vaccine reactions, auto immune diseases)	6.0
Allergies	5.6
Ear infections	4

** Other diseases the respondents mentioned of concern are: Aseptic meningitis, cardiac murmur, hip dysplasia.

Note: *We asked respondents to list the top five diseases or conditions* ***they believed*** *to be of most concern to the breed. The above table represents that list. The next table shows the actual diseases and conditions as reported in the survey. As you can see, both lists are very similar.*

DISEASES OBSERVED:

Table 9: Table includes diseases with an observed count of greater than 10 N=640

Disease	Count	Percentage
Persistent pupillary membranes	57	8.90
Recurrent ear infections	56	8.75
Hypothyroidism	26	4.06
Neck pain syndrome	24	3.75
Epilepsy	21	3.28
Warts	20	3.12
Thunderstorm phobia	20	3.12
Atopic dermatitis	20	3.12
Undershot	19	2.96
Caesarian	18	2.81
Cataract	17	2.65
Food allergy	17	2.65
Arthritis	17	2.65
Aseptic meningitis	15	2.34
Chronic bladder infections	14	2.18
Vaccine reaction	14	2.18
Hip dysplasia	14	2.18
Separation anxiety	14	2.18
Lateral patellar luxation	13	2.03
Pyometria	11	1.71
Fearfulness	11	1.71
Aggression to dogs	10	1.56

Of the 640 dogs in the study, 58.4% (n=374) of the dogs reported at least one disease and 41.6% (n=266) of the dogs were disease free.

Table 10: Table showing proportion of dogs reporting number of diseases N=640

	Count	Proportion
At least one disease	374	58.4
At least two diseases	203	31.7
At least three diseases	111	17.3
At least four diseases	56	8.7
At least five diseases	25	3.9
At least six diseases	11	1.7
At least 7 diseases	9	1.4
At least 8 diseases	6	0.9
At least nine diseases	3	0.4
1 dog reported 14 diseases	1	0.1

* The groups are not mutually exclusive; therefore, percents do not add to 100.

ADDITIONAL SURVEY INFORMATION:

AKC Region of Survey Participants

21%	Division 1 (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont)
12%	Division 2 (Delaware, New Jersey, Ohio, Pennsylvania)
12.4%	Division 3 (District of Columbia, Kentucky, Maryland, North Carolina, Tennessee, Virginia, West Virginia)
11.6%	Division 4 (Alabama, Arkansas, Florida, Georgia, Louisiana, Mississipi, South)
8.4%	Division 5 (Michigan Illinois, Indiana
4.0%	Division 6 (Iowa, Kansas, Minnesota, Missouri, Nebraska, Wisconsin)
7.6%	Division7 (Arizona, New Mexico, Oklahoma, Texas)
6.4%	Division 8 (Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming)
12.8%	Division 9(California)
0.8%	Division 10 (Alaska)
0.4%	Division 11 (Hawaii)
0%	Division 12 (Puerto Rico)
2.4%	Other

Note: *Participants were asked what AKC Region they lived in. This was to ensure that the respondents represented a cross-section of all regions. A comparative analysis was one and the above percentages corresponded well with the regional distribution of the membership of the PBGVCA.*

DISEASES OBSERVED WITH COUNT OF LESS THAN 10

N=9 (1.406%)
umbilical hernia
false pregnancy

N=8 (1.25%)
deafness with old age
anal sacculitis

N=7 (1.09%)
Other bone and joint
sebaceous cysts
tick borne diseases
retinal folds
cryptorchidism-unilateral
bladder stones

N=6 (0.93%)
heart murmur (no diagnosis)
hot spots
other dermatologic
ear mites
Other eye
cryptorchidism-bilateral

N=5 (0.7%)
Other behavior
mast cell tumors
Other ear
seizures other than epilepsy
Other reproductive bitches
kennel cough
teeth missing

N=4 (0.6%)
cranial cruciate ligament rupture
elbow dysplasia
Other cancers and tumors
congestive heart failure
interdigital skin infection
glaucoma
lens luxation
Other neurologic
teeth-retained baby

N=3 (0.4%)
behavior-specifics unknown
autoimmune hemolytic anemia
ventricular septal defect
diarrhea, chronic
vomiting, chronic
inflammatory bowel disease
pancreatitis
Other GI tract
parvovirus
portosystemic shunt
neurologic, specifics unknown
overshot teeth
other-urinary tract

N=2 (0.3%)
agression to people
inguinal hernia
panosteitis
patellar luxation-medial
bone and joint –specifics unknown
brain tumor
mammary adenocarcinomas
cancer and tumor-specifics unknown
cardiovascular-other
cardiovascular-specifics unknown
demodictic mange
recurrant pyoderma
deafness at birth
cushings disease
bloat
colitis,chronic
drug reaction
immune system-specifics unknown
coccicia
giardia
neosporosis
infectious disease-other
liver spleen gallbladder-other
liver, spleen gallbladder-specifics unknown
meningitis-septic
infertility
reproductive bitches-specifics unknown

N=1 (0.1%)
anasarca
cleft palate
fading puppy syndrome
hydrocephalus
pectus excavatum
stilborn puppy
birth defects/puppy problems other
immune mediated thrombocytopenia
blood-other

blood – specifics unknown
crooked tail
fracture
intervertebral disk disease lumbar/lumbosacral
intervertebral disk disease-thorocolumbar
hemangiopericytoma
histiocytoma
lung tumor
mammary gland adenoma
osteosaarcoma
endocarditis
mitral valve insufficiency
patent ductus arteriosus
tricuspid valve insufficiency
ringworm
sarcopic mange
seborrhea sicca
dermatologic –specifics unknown
hyperthyroidism
endocrine – other
corneal dystrophy
entropion
gastritis, chronic
intestinal parasites
lupus erythematisis
immune system-other
toxoplasmosis
infectious disease- specifics unknown
gall bladder infection
gall stones
cerebrospinal demyelination
spinal muscular atrophy
dystocia
eclampsia
masitits
spontaneous abortion or reabsorbtion of litter
infertility
reproductive dogs – specifics unknown
chronic cough
nasal discharge –chronic
tonsilitis
cystinuria
polycystic kidneys
pyelonephritis (kidney infection)

III. A Comparison of the 1994 and 2000 PBGVCA Health Surveys

Kasmin D. Bittle DVM May 2001

There were inherent differences in the year 1994 and year 2000 health surveys that limit direct comparisons in many ways. The design of the 1994 survey was based upon a somewhat limited knowledge of the spectrum of the health problems know to occur in the Petit Basset Griffon Vendeen breed, coupled with an effort to explore the extent of problems known to occur in other purebred dog breeds. At the time of the 1994 survey, club membership was just under 200 members. Surveys were sent only to PBGVCA members. In the 2000 survey, an attempt was made to contact non-PBGVCA members in addition to the members (about 325) to broaden the perspective of the survey. In the year 2000 survey, we asked questions about a number of diseases that we did not necessarily suspect occurred in the breed. In my opinion, there were few surprises from this list of additional diseases that we did not explore in the year 1994. However, we have certainly come a realistic way from my first introduction to the breed where I was told that the only significant health concerns were "bites and eyes". We also made some attempt to explore the issue of longevity in the more recent survey since at the time of the 1994 survey there were few geriatric animals to count. The issue of temperament was also superficially explored in the most recent survey. I will attempt to make further comparisons based upon subjects explored in both surveys with final comments addressing findings of interest in the year 2000 survey.

Respondents: In1994, 78 survey responses were received and 503 dogs were counted. In 2000, 250 responses were received and 640 dogs were counted. In other words, in spite of an increase in respondents of 172, only 137 more dogs were counted. The average number of dogs counted per respondent in 1994 was 6.4 as opposed to a median number of dogs *residing* with respondents of 2.38 in 2000. The apparent lower number of dogs counted per respondent may reflect several things.—1. A greater participation among pet owners, 2. The "time frame" limitation designated in the 2000 survey vs. the totality of dogs owned in the 1994 survey, and 3. Lowered participation among "breeders" owning more than 3 dogs.

Hip dysplasia: The format of the questions concerning hip dysplasia was different in the two surveys. In 1994, we asked how many dogs had been radiographed for hip dysplasia. In 1994, 84 dogs had been radiographed, 17% of the dogs counted. In 2000, the question asked was whether respondents participated in health registries, and if so, which ones. One hundred sixty-one respondents answered Yes to registry participation with 28 percent of them indicating either OFA/hip or PennHip participation. In the disease frequency category in the year 2000, 14 of 640 dogs were reported to be dysplastic. In1994, 5 animals were reported to be dysplastic (of 84 that were radiographed). However, only 2 of the 5 animals were reported to be lame. Hard conclusions as to the real frequency of hip dysplasia are hard to make as in both surveys, we cannot assume that the dogs radiographed are necessarily representative of the PBGV population as a whole. In fact, it is likely that most PGBVs have not been radiographed, making it probable that we are underestimating the real frequency of hip dysplasia, but perhaps not

the frequency of lameness. In other words, it is very likely that lame PBGVs are being radiographed, but not all dysplastic PBGVs are necessarily lame.

Eye examinations: In the 1994 survey, 147 of 503 dogs had eye examinations performed by a board certified ophthalmologist, 29% of the dogs counted. Less than half of those dogs were submitted to CERF. In 2000, of 161 respondents participating in health registries, 27% participated with the CERF or GDC registries. However, it is hoped that his figure underestimates the eye examination rate, as some respondents, such as myself, have eye examinations performed regularly without necessarily seeking out CERF registry. In both surveys, the most frequent eye anomaly was persistent pupillary membranes. I was surprised at the frequency of ectropion in the 2000 survey (the second most common eye abnormality reported). Unlike the Basset Hound or Bloodhound, this breed should not display a looseness of the lower eyelids, and breeders should certainly strive to select against this trait. The third most common eye abnormality in the 2000 survey was retinal folds, a problem known to be present in the breed since its early introduction to this country. The reported frequency of this problem in 1994 was similar (5 of 147 dogs in 1994 vs. 7 of 630 in 2000). Again, it is possible that particularly in the 2000 survey we are underestimating disease frequency, as we are counting affecteds among the total number of dogs counted vs. affected only among dogs having eye examinations in 1994. In the 2000 survey, 4 cases of glaucoma and 4 cases of lens luxation were reported. It is likely that some of these and possibly all of these dogs had both conditions and may, in effect have been counted twice, once for each condition.

Hearts: In 1994, 6 of 503 dogs were reported to have heart defects. In the 2000 survey, there were 4 dogs with congenital heart defects-- one with patent ductus arteriosus (PDA) and 3 with ventricular septal defects. The listing of 6 dogs with heart murmurs and no diagnosis is not particularly useful as these dogs may be truly normal dogs or dogs with undiagnosed developmental or congenital anomalies. I was surprised to not see pulmonic stenosis cases listed, as I am aware of at least 3 cases having been diagnosed, one of which appeared in the 1994 survey.

Meningitis: In 1994, an attempt was made to count meningitis cases based upon pre-questioning as to the clinical signs and diagnostic procedures performed. Based upon these preparatory questions, we counted 6 animals with confirmed meningitis and 10 with suspected meningitis for a percentage affected of 3.1. In 2000, we made no effort to prequalify the questions. Fifteen cases of aseptic meningitis were reported and 2 cases of septic meningitis. In addition, 24 cases of juvenile pain syndrome were reported. Whether some of these animals were later confirmed with meningitis is unclear. Again, if we group the septic meningitis cases with the aseptic cases (15 plus 2) we get a percentage of about 3 percent.

Seizures and epilepsy: In 1994, 11 dogs were reported with seizures with one of the 11 dogs diagnosed with hydrocephalus. In 2000, 21 dogs were reported to be epileptic, with 5 dogs affected with non-epileptic seizures. This would appear to be a near doubling of the seizure rate from 2.16% of the dogs counted to 4.0 percent. This apparent increase in the seizure frequency rate is cause for concern in my opinion. Certainly we would like to

avoid the high prevalence of seizures and epilepsy seen in breeds such as Cocker Spaniels and Irish Setters.

Hydrocephalus: In 1994, 4 cases of hydrocephalus (one with seizures) were counted and in 2000, one case was reported.

Skin: It is very difficult to compare the frequency of skin problems in the two surveys as I suspect that there may be a great deal of overlap in skin cases in year 2000 survey. In other words, it would be very likely that dogs reported with flea allergy, may also have inhaled or food allergies. Questions about demodectic mange were not asked in 1994. In the 2000 survey, 2 cases were reported. Overall, the frequency of this condition appears to be low. Certainly, allergies represent the most prevalent skin conditions.

Cryptorchidism: Nineteen cases of crytorchidism were reported in the 1994 survey and 13 were reported in the 2000 survey. I find the frequency in the 2000 survey surprisingly low, but would be pleased if there is a genuine improvement in the frequency of this trait.

Patellar Luxation: Five cases of patellar luxation were reported in 1994 and 15 in the year 2000. Similar to the reports of seizures, this appears to be a significant increase in frequency, although still not rampant. However, the frequency of hip dysplasia and of patellar luxation were similar in 2000, so we should perhaps be placing as much emphasis on this condition as on hip dysplasia. However, since luxating patellas may be diagnosed on physical examination without the aid of radiographs, we are probably not underestimating the extent of the disease to the same degree. Thirteen of the 15 reported cases of patellar luxation were lateral as opposed to medial. This implies a greater similarity to the disease as seen in Basset Hounds vs. the toy breeds. Certainly breeding stock should be palpated for the condition., as not all dogs with luxating patellas are lame.

General observations on the year 2000 survey: Umbilical hernias were the most frequent birth defects/puppy problem reported. Autoimmune hemolytic anemia was the most frequent blood disorder with 3 cases counted. The frequency of recurrent ear infections (56) was surprisingly high. I also was very interested in the report of two cases of congenital deafness. Because the link noted in other breeds between piebald and white coloring and deafness, I have wondered if this condition might at some time be seen in our breed. Geriatric deafness does not particularly concern me because it is often the most long-lived dogs that develop this. Unilateral deafness cannot be detected without specialized testing. Were the two cases of congenital deafness or a fluke, or do we have unilaterally deaf dogs that may later produce affected offspring? I would also be most interested in learning what the coloring in the affected dogs was. Were they predominantly white dogs, or were they typical in their coloring?

I did not find the frequency of Caesarian sections or of pyometra to be particularly surprising. We would really need more specific information to determine whether the frequency of these reproductive conditions is high enough for concern, particularly when compared to other breeds of similar size. Undershot dentition was the most common dental abnormality as seen in 1994. The frequency appears to be similar.

In summary, it would appear that the high level of concern among respondents for “neck pain syndrome”, epilepsy, and eye problems is justified. While meningitis cases appear to be somewhat stable in frequency, the increased reporting of epilepsy is of great concern. We should also keep in mind that our most frequent hereditary problem is persistent pupillary membranes, but because of the high frequency, the trait will be difficult to eliminate entirely. While a concern about glaucoma is justified because of the serious effect on quality of life, the frequency of this trait is still fortunately low when looking at the population statistics. An increased level of concern and attention toward patellar conformation is also justified. It is somewhat surprising that while the concern about hypothyroidism is relatively high among respondents, that so few respondents are participating in routine thyroid screening.

IV. The Risk of Genetic Diseases in the Petit Basset Griffon Vendeen
By George Padgett
Commentary and Terminology adapted from American White Shepherd Association Health and Genetics Report by Judy Huston

General

Of the 147 diseases mentioned at least once in our survey, Dr Padgett has determined that 49 of them are likely to be genetic diseases.

An important number to remember is 7.9! This represents the average number of defects carried in each of our dogs. This means is that whether you know it or not, your dog carries the genes to pass along, on an average of 7.9 different genetic defects to its offspring. Dr. Padgett's work and the results of this survey will help you to identify these traits and breed healthier dogs.

Explanation of Terminology

The chart on page 4 and 5 of this section entitled "Genetic Diseases of the PBGV was developed by Dr George Padgett based on the frequency of genetic diseases seen in our survey.

The fourth column is the Mode of Inheritance. "Und" means undetermined. "R" means it is a recessive trait. 'Poly' means Polygenic (more than one gene is involved), "D" means dominant and the one with a "?" indicates there is still uncertainty about the mode of inheritance.

The fifth column indicates the % of dogs affected with the disease per 100 dogs. For example 1.0 signifies 1 in 10 PBGVs is affected with the disease.

The sixth column is the one you will want to learn to use and become very familiar with. This column was figured by using the Hardy-Weinberg Law. Based on this law, a formula was used to determine a guesstimate of carrier frequency in our general population of PBGVs. One way to interpret the meaning of this column is to understand that if you randomly pick a dog for your bitch, this column indicates the risk that the dog you pick will be a carrier of a particular disease. For example, the risk for Tricuspid Valve Defect in the general population of PBGVs is 8.4%. If you have picked a mate that you know based on your research is "clear" for that disease, you reduce the risk to zero.

In order to thoroughly understand how to utilize this chart we highly recommend that you read Dr. Padgett's book , The Control of Canine Genetic Diseases or view the Padgett Seminar Video or both.

Keeping Records

If you have been a breeder who has kept records of all diseases thrown by your dogs, you are ahead of the game. If you have not, you will have to gather records, go back through the pedigrees, call other breeders, and call puppy buyers. The good news is that you only have to do this once and from then on, keep good records. Since we buy dogs from each other, we can help each other gather the information. The biggest job that you have to do is go back and call every puppy buyer you can locate and find out whether your puppy is healthy or whether it is affected with one or more genetic defects. Some are easy to pinpoint like the missing teeth, umbilical hernias, etc. Others need to have been diagnosed by a veterinarian. Once you accumulate this data, you will have the facts you need right at your fingertips to help make good breeding decisions.

Pet Owners (non-breeders)

You may find this information about PBGVs quite interesting. Since you are not a breeder, however, you may think it doesn't really affect you -- or does it? If the information could help you in selecting your next puppy, how would it help?

It would help because you are now a more informed buyer. Any breeder who would tell you there are no genetic defects in their line would not be telling you the truth. It doesn't mean they would necessarily be telling you an untruth – some of them did not have the knowledge to determine these risks before we did this survey. How do you know this for sure? Because, as a result of this survey, we "KNOW" that each one of our dogs carries on the average of 7.9 genetic defects. And, you would know that if your breeder selected a breeding pair that didn't carry the SAME genetic defects, the puppy you buy from that litter is probably going to be healthy. Your breeder would even be able to tell you the likelihood the puppy may have Epilepsy or Atopic Dermatitis in the event both dogs did carry these defects but were otherwise very compatible. Or, if you've had the good fortune of living with a healthy dog from a breeder you trust, you know that breeder is a good bet to buy from again.

The breeder you want to run away from and don't go back to would be the one who tells you they have totally healthy lines and have never had any genetic defects. It could be they don't follow-up on their dogs.

Even though you never intend on breeding your dog, it is still critical for you to keep records on your dogs health and convey the information to your breeder. This information will also be useful to have on hand for any future surveys that the PBGVCA conducts.

Summary

The bottom line is that dogs have defects just like we do. We can't make good breeding decisions if we don't know what defects they carry. We can't know what they carry unless we tell each other.

TABLE 5.6 from Control of Canine Genetic Diseases George A. Padgett, DVM
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RISK OF BEING A CARRIER IF RELATED TO AN AFFECTED DOG (AUTOSOMAL RECESSIVE TRAIT)*

		Degree of Relationship	Minimum Carrier Risk
1 =	Parent, progeny	1	100.0%
2 =	Full brother/sister	1	66.6%
3 =	Grandparents, aunts, uncles, half-brothers or sisters, grand-children	2	50.0%
4 =	Niece, nephew	2	33.3%
5 =	Great-grandparent, first cousins half-aunts and uncles, great grandchildren	3	25.0%
6 =	Great-great-grandparents, first cousin once removed, second cousins	-	12.5%
7 =	Great-great-great grandparent, first cousin twice removed, third cousins	-	6.25%

*This chart is used for Autosomal Recessive Traits as well as Polygenic Traits – the risk for the Polygenic Trait will be "at least" this percentage.

Genetic Diseases of the PBGV by George Padgett

#	Age of Onset	Disease	Mode of Inheritance	Frequency of Diseases /100	Guesstimate of gene frequency (% carriers)
1	<3 mo	Persistent Pupillary Membranes	Und	8.9/100	41.8
2	<2 yr	Hypothyroidism	R	4.1/100	32.2
3	<2 yr	Neck Pain syndrome	Und	3.8/100	31.3
4	>1 yr	Epilepsy	R/Und	3.2/100	29.6
5	<1 yr	Atopic Dermatitis	Und	3.1/100	29.5
6	<1 yr	Undershot	Poly	3.0/100	28.6
7	<1 yr	Food Allergies	Und	2.7/100	26.7
8	Varies	Cataracts	Und	2.7/100	26.7
9	<2 yr	Aseptic Meningitis (idiopathic meningitis)	Und	2.3/100	26.4
10	<1 yr	Patellar Luxation	R	2.3/100	26.4
11	<2 yr	Hip Dysplasia	Poly	2.2/100	25.2
12	=2-3 yr	Aggression	Und	2.0/100	24.1
13	<3 mo	Cryptorchidism	R/Und	2.0/100	24.1
14	6 mo	Fearfulness	Und	1.7/100	22.6
15	<6 mo	Umbilical hernia	R/Poly	1.4/100	20.8
16	<1 yr	Retinal Dysplasia (Folds)	Und	1.1/100	18.6
17	<9 yr	Bladder Stones	Und	1.1/100	18.6
18	<1 yr	Heart Murmurs (not specifically diagnosed)	Und	0.9/100	17.4
19	<7 yr	Mastosarcoma	Und	0.8/100	16.2
20	<5 mo	Missing Teeth	R/Und	0.8/100	16.2
21	<1 yr	Lens Luxation	Und	0.6/100	14.2
22	<3 yrs	Glaucoma	Und	0.6/100	14.2
23	1 yr	Elbow Dysplasia	Poly	0.6/100	14.2
24	<1 yr	Retained Deciduous	Und	0.6/100	14.2
25	Birth	Ventricular Septal Defect	Poly	0.5/100	13.1
26	<1 yr	Portocaval Shunts	Poly	0.5/100	13.1
27	<1 yr	Overshot	R/Und	0.5/100	13.1
28	=1 yr	Bloat (Gastric Torsion)	Und	0.3/100	10.2
29	Birth	Deafness (Birth)	R/Und	0.3/100	10.2
30	<4 yr	Autoimmune Hemolytic Anemia	Und	0.3/100	10.2

Genetic Diseases of the PBGV (continued)

#	Age of Onset	Disease	Mode of Inheritance	Frequency of Diseases /100	Guesstimate of gene frequency (% carriers)
32	<18 mo	Panosteitis	Und	0.3/100	10.2
33	<1 yr	Mitral Valve Defect	Und	0.2/100	8.4
34	<1 yr	Tricuspid Valve Defect	Und	0.2/100	8.4
35	Birth	Patent Ductus Arteriosus	Poly	0.2/100	8.4
36	Birth	Anasarca	R	0.2/100	8.4
37	<1 yr	Demodectic Mange	Und	0.2/100	8.4
38	<10 yr	Immune Mediated Thrombocytopenia	Und	0.2/100	8.4
39	Varies	Lupus Erythematosis	Und	0.2/100	8.4
40	<3 mo	Hydrocephalus	Poly	0.2/100	8.4
41	<4 mo	Cerebrospinal Demyelination	R	0.2/100	8.4
42	<8 mo	Spinal Muscular Atrophy	Und	0.2/100	8.4
43	Varies	Corneal Dystrophy	Und	0.2/100	8.4
44	<1 yr	Entropion	Und	0.2/100	8.4
45	Birth	Cleft Palate	Poly/Und	0.2/100	8.4
46	<5 mo	Pectus Excavatum	Und	0.2/100	8.4
47	<3 mo	Crooked Tail	Und	0.2/100	8.4
48	<1 yr	Cystinuria	R/X-R	0.2/100	8.4
49	<1 yr	Polycystic Kidneys	Und	0.2/100	8.4
				58.9	792.9

PBGVCA Health & Genetics Survey

Section I: General Owner Information

1. How many PBGVs were residing with you on January 2000? _____
2. What year did you acquire your first PBGV? _____
3. Where did you acquire your first PBGV? (circle your choice)

   Breeder Shelter Previous Owner Rescue Other

4. Are you a member of the Petit Basset Griffon Vendeen Club of America? (circle your choice)

   Yes No

5. Please circle the section of the country where you live (division breakdown per AKC)

   Division 1: Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont

   Division 2: Delaware, New Jersey, Ohio, Pennsylvania

   Division 3: District of Columbia, Kentucky, Maryland, North Carolina, Tennessee, Virginia, West Virginia

   Division 4: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, South Carolina

   Division 5: Michigan, Illinois, Indiana

   Division 6: Iowa, Kansas, Minnesota, Missouri, Nebraska, Wisconsin

   Division 7: Arizona, New Mexico, Oklahoma, Texas

   Division 8: Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming

   Division 9: California

   Division 10: Alaska

   Division 11: Hawaii

   Division 12: Puerto Rico

   Other_____ (please indicate where)

6. Please indicate which of the following activities you participate in with your PBGVs. (circle all that apply)

   Conformation Obedience Agility Hunting Tracking Pet-assisted Therapy

   Companion/pet Other_____

7. If you are a breeder, do you maintain contact with your puppy buyers? (circle your choice)

   Always Sometimes Rarely Never Not a Breeder

8. Do you maintain contact with person(s) from whom you purchased your puppies? (circle your choice)

   Yes No

9. Circle the internationally recognized registries in which your PBGVs are registered. (circle all that apply)

American Kennel Club (AKC)	Canadian Kennel Club (Canada)
United Kennel Club (USA)	The Kennel Club (United Kingdom)
Swedish Kennel Club	Danish Kennel Club
Club du Basset Griffon Vendeen (France)	Other_____

10. What health screening do you routinely perform for your dogs? (circle all that apply and indicate frequency)

• Veterinary physical examinations:	Once	Annually	Every few years	Never
• Eye examination by board-certified Ophthalmologist:	Once	Annually	Every few years	Never
• Hip radiographs:	Once	Annually	Every few years	Never
• Elbow radiographs:	Once	Annually	Every few years	Never
• Patellar luxation exams:	Once	Annually	Every few years	Never
• Thyroid testing:	Once	Annually	Every few years	Never

• Other (please list, with frequency performed)

_____

_____

11. Do you participate in the currently available closed or open registries for health problems? (circle all that apply)

OFA/hips	Penn Hip	OFA/elbows
OFA/thyroid	OFA/patellar exam	CERF/eyes
GDC/eyes	GDC/deafness	GDC/orthopedic diseases

Other_____ (please specify)

No, I do not participate in any of the registries_____

Note regarding the next question: The currently available registries such as OFA and CERF are "closed registries," meaning that information is collected on individuals, but is made available on a breed basis only. For example, you can call OFA and find out the percentage of Golden Retrievers with hip dysplasia for a given time period. You cannot call OFA and find out if your dog has relatives with dysplasia. "Open" registries collect that same health information, but pedigree information is included and is available to anyone who asks for it. Currently, the Institute for Genetic Disease Control in Davis, CA, maintains open registries for hip dysplasia, elbow dysplasia, and hereditary eye disease. It is possible to write for a kinship report, which lists all affected and unaffected animals listed in the registry that are related to a particular animal within a certain number of generations. GDC also works with individual breed clubs to establish closed research databases for study of diseases suspected to be hereditary. Once the genetic basis of the disease is proved and the mode of inheritance is established, the club *may* elect to convert the closed database to an open registry, which would then be available to anyone.

12. If the PBGVCA initiated a research database through Genetic Disease Control in Davis, CA or another canine database or research institution, to investigate one or more of the diseases suspected to be inherited in PBGVs (epilepsy, juvenile vasculitis or neck pain syndrome, glaucoma, etc.) would you be willing to participate? (circle your choice)

Yes No

Section II: Health Information

1. What diseases or health related conditions do you perceive to be the greatest concern in the PBGV?_____

   _____

   _____

   _____

   _____

2. What is the average lifetime of your PBGVs? _____yrs. _____Not known

3. For intact bitches, do heat cycles occur regularly? (circle your choice) Yes No N/A
   If so, identify the number of months between heats.

   Bitch 1_____ Bitch 2_____

   Bitch 3_____ Bitch 4_____

   Bitch 5_____ Bitch 6_____

4. For each PBGV, now deceased, that was residing with you at the time of its death, between 1/1/95 and 1/1/2000, please indicate the age, and if known, the proximate cause for death of each dog. If the dog was euthanized, please indicate the reason for the euthanasia.

   _____Age of death _____Cause of death

   _____Age of death _____Cause of death

   _____Age of death _____Cause of death

   _____Age of death _____Cause of death

   _____Age of death _____Cause of death

   _____Age of death _____Cause of death

5. Please use this space to tell us anything about the health of your dog(s) not covered in the survey.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

NOTE: Please fill out the Health and Disease Survey on page 5 to complete Section II. If you are a PBGV breeder, please answer the questions on the following page (Section III) and fill out the Litter Survey on page 7. Thank you.

Section III: Breeder Information

1. How many litters have you bred? _____Total number of puppies?_____

   Average size of litter?_____ Largest litter?_____Smallest Litter?_____

2. At what age do you normally breed a bitch for the first time?_____ Last time?_____

3. At what age do you normally use a dog at stud for the first time?_____ Last time?_____

4. At what age in months do your bitches normally first come in season? _____

   Earliest? _____ Latest? _____ Average frequency of seasons? _____

5. Do you routinely spay bitches when they will no longer be bred? _____ At what age? _____

6. Do you neuter your males when they will no longer be at stud? _____At what age?_____

7. What is the average lifetime of your dogs? _____ Oldest? _____

8. Please use this space to tell us anything about your breeding practices not covered in the survey.

_____

_____

_____

_____

_____

_____

_____

_____

_____

NOTE: Please fill out the Litter Survey on page 7 to complete Section III. Thank you.

Health & Disease Survey

Please complete a line for each dog that lived with you on 1/1/00 or died during the 5-year survey time period (**January 1, 1995** - **January 1, 2000)**. Complete a line even if the dog has/had no health problems.

Dog #	Did dog live with you on Jan. 1, 1995	If No, when did dog enter kennel/ household (by birth or purchase)	Date of Birth	Sex (also, indicate N for neutered or S for spayed)	Date sold or died or N/A	**List all diseases or health problems affecting this dog (see list of Diseases & Conditions))	Current Status (see key at bottom of page)	Approx. age at onset of disease in months	Diagnosed by: Regular Vet Specialist Lab Test Owner
A	***No***	***SAMPLE 1/14/98***	***9/11/97***	***FS***	***N/A***	***225*** ***045***	***N*** ***N***	***6 mos*** ***18 mos***	***Owner/Vet*** ***Vet/Lab Test***

****** If you answer "Other," please use the space in Question 5 on page 3 to indicate description.

CURRENT STATUS:

N – Normal activity and/or lifestyle with or without treatment
R – Mild restriction or interference in lifestyle or activity
S – Severe restriction or interference in lifestyle or activity
D – Died or euthanized as a result of the problem
O – Died or euthanized – not related to the problem

Health & Disease Survey (continued)

Please complete a line for each dog that lived with you on 1/1/00 or died during the 5-year survey time period (**January 1, 1995** - **January 1, 2000)**. Complete a line even if the dog has/had no health problems.

Dog #	Did dog live with you on Jan. 1, 1995	If NO, when did dog enter kennel/ household (by birth or purchase)	Date of Birth	Sex (also, indicate N for neutered or S for spayed)	Date sold or died or N/A	**List all diseases or health problems affecting this dog (see list of Diseases & Conditions))	Current Status (see key at bottom of page)	Approx. age at onset of disease in months	Diagnosed by: Regular Vet Specialist Lab Test Owner

****** If you answer "Other," please use the space in Question 5 on page 3 to indicate description.

CURRENT STATUS:

N – Normal activity and/or lifestyle with or without treatment
R – Mild restriction or interference in lifestyle or activity
S – Severe restriction or interference in lifestyle or activity
D – Died or euthanized as a result of the problem
O – Died or euthanized – not related to the problem

Litter Survey

Please complete a line for each litter born in your kennel or home between **January 1, 1995** and **January 1, 2000**.

Litter	Birth Date	Number of Pups #Males #Females	Number with Disease or Birth Defects noted prior to 12 weeks old (see list of Diseases & Conditions)	Number Stillborn	Number Died Between Birth and 12 Wks Old Cause, if known
Sample 1	***1/14/99***	***2 Males*** ***3 Females***	***None*** ***1 Yes*** ***015***	_____	_____
1		_____ Males _____ Females	_____ None _____ Yes	_____	_____
2		_____ Males _____ Females	_____ None _____ Yes	_____	_____
3		_____ Males _____ Females	_____ None _____ Yes	_____	_____
4		_____ Males _____ Females	_____ None _____ Yes	_____	_____
5		_____ Males _____ Females	_____ None _____ Yes	_____	_____
6		_____ Males _____ Females	_____ None _____ Yes	_____	_____

Litter Survey (continued)

Please complete a line for each litter born in your kennel or home between **January 1, 1995** and **January 1, 2000**.

Litter	Birth Date	Number of Pups #Males #Females	Number with Disease or Birth Defects noted prior to 12 weeks old	Number Stillborn	Number Died Between Birth and 12 Wks Old Cause, if known
7		_____ Males _____ Females	_____ None _____ Yes	_____	_____
8		_____ Males _____ Females	_____ None _____ Yes	_____	_____
9		_____ Males _____ Females	_____ None _____ Yes	_____	_____
10		_____ Males _____ Females	_____ None _____ Yes	_____	_____
11		_____ Males _____ Females	_____ None _____ Yes	_____	_____
12		_____ Males _____ Females	_____ None _____ Yes	_____	_____
13		_____ Males _____ Females	_____ None _____ Yes	_____	_____
14		_____ Males _____ Females	_____ None _____ Yes	_____	_____