

Health Concerns of the Basenji Dog

Fanconi Syndrome of the Basenji Dog

Definition: The renal tubules of the kidney begin to fail to do their job of reabsorbing nutrients, resulting in loss of multiple vitamins, minerals, electrolytes and bicarbonates. These losses result in muscle wasting and weight loss and left untreated will ultimately kill. With early intervention and Dr. Gonto's management protocol, prognosis appears excellent for long term, healthy survival. Fanconi syndrome appears to be a simple recessive disease in nature with no clear inheritance patterns, therefore ALL basenjjs that carry the mutant (or recessive) gene are at risk. If you are in contact with a breeder that says "My line is clean" or "Fanconi? Never heard of it." run, don't walk until you find a breeder more informed, and more honest, regarding the ills of this breed and their line.

Diagnosis: Polyuria (PU) - excessive urination, polydipsia (PD) - excessive thirst and/or frequent urinary tract infections accompanied by sugar in the urine (glucosuria). Positive diagnosis is made by having glucosuria with normal blood glucose levels. Previously, the most common misdiagnosis is diabetes, or Cushings disease. ALL basenjjs should be tested with the Fanconi Direct Test offered through OFA (Orthopedic Foundation for Animals). There is absolutely NO excuse for breeding a dog that has NOT been tested. The Direct Test has been available since early fall of 2011, and the Linkage Test since early summer of 2007.

Onset: Age of first symptoms (PU/PD) is usually 5 to 7 years; however, it has been diagnosed from 3 to 11 years. Early diagnosis is essential since the earlier treatment begins, the less renal damage there is, resulting in fewer replacements needed to maintain said animal. Prior to the availability of the Fanconi Linkage Test, the only way to test a dog for Fanconi Syndrome was through urinalysis and monthly ketone strip testing. The strip tests are NOT an alternative to the Linkage test. The Linkage test will provide the answer to whether your basenji is clear of the recessive gene, a carrier, or affected with two recessive genes. Although your basenji may not appear to be sick, it is imperative to know the future of his or her status in regard to Fanconi Syndrome.

Home Testing: Simple, quick, and relatively inexpensive**. Go to the diabetic section of your local pharmacy and buy one of the following urine test strip bottles: Bayer Clinistix, Gluco-Ketostix, Ames Combistix, or Glucose/Ketone Chemstrips. Take your basenji out on leash and wait for him/her to piddle. Place the end of the strip in the dog's urine stream being careful not to contaminate the strip by accidentally touching it to leaves, grass or dirt. If needed, a shallow dish or large spoon/ladle can be used to collect a sample of urine with which to dip your strip. Wait the appropriate amount of time given on the bottle and then compare the color of the test strip to the bottle chart. Report any positive readings to your veterinarian along with a copy of Dr. Gonto's management protocol. It is believed by many that strip testing should be done monthly on basenjjs younger than three years of age and more frequently on basenjjs over the age of three. Please note: Strip testing is only a tool used in early detection of fanconi, it is NOT intended to be used as a conclusive diagnosis of the disease. Only through more advanced laboratory tests can fanconi syndrome be accurately and definitively diagnosed.

Visit the Canine Phenome Project to get your basenji registered and then visit the OFA (www.offa.org) website to order your FTA card to have your basenji tested for Fanconi Syndrome.

Eye Disorders of the Basenji Dog

PPM - Persistent Pupillary Membrane (in brief):

PPM is a very common problem in the basenji breed. When a puppy is born, his eyes appear a bluish color. This color is caused by the embryonic membranes covering the eyes. As the pup grows, the membranes break apart and normally disappear by four to five weeks of age. When these membranes do not disappear they become known as PPM, of which there are several types; Iris Sheets, Iris to Lens, Iris to Cornea and Iris to Iris.

Julie Gionfriddo, DVM Diplomate ACVO writes: "Iris to lens PPMs are more problematical. These PPMs cause opacities (cataracts) at the point where they are attached to the lens. The cataracts do not usually progress and cause only minor visual deficits. Iris to cornea PPMs cause opacities on the cornea due to their ability to damage the inner lining of the cornea. These opacities may be small or may be severe due to the development of fluid in the cornea. Severely affected puppies (with numerous strands) may be blind, though they may improve as they get older. The strands may regress but do not disappear. In general, iris to iris PPMs cause no problems. They may be single strands or a forked structure. These PPMs may break and become less prominent as the puppy gets older, but they usually do not disappear completely. PPMs are found in many breeds of dog. In most of these breeds, iris to iris PPMs are classified by CERF (Canine Eye Registration Foundation) as a "breeder option" problem. This means that most of the PPMs, which have been reported in these breeds have been small and are probably sporadically occurring and not hereditary defects. In some breeds, PPMs are known to be hereditary and puppies who have any type of PPM will not receive a certification number. The Basenji is the most well known but CERF will also not certify Chow Chows, Mastiffs, Pembroke Welsh Corgis, or Yorkshire Terriers with PPMs. Members of these breeds have been shown to produce offspring with blindness directly associated with their PPMs. In these breeds, the mechanism of inheritance is not known but breeding any of these dogs with PPMs is highly discouraged. Even severe PPM rarely causes vision problems but breeders should be aware of the intensity of any PPM their dog has and try to lessen the severity in future generations."

PRA - Progressive Retinal Atrophy (in brief):

PRA is a blinding condition. Early signs include nightblindness and lack of ability to adjust vision to dim light. Later on, daytime vision will also begin to fail. At the same time the pupils become increasingly dilated, causing a noticeable "shine" to the eyes; and the lens may become cloudy, or opaque, resulting in a cataract. There are two types of PRA onset: early onset and late onset. In early onset the disease results from abnormal or arrested development of the photoreceptors -- the visual cells in their retina, and affects pups very early in life. In late onset, which includes the basenji breed, affected dogs appear normal when young, but develop PRA as adults. The mode of inheritance is believed to be recessive. That means both parents must pass on the defective gene to the offspring for them to be affected by PRA. Current research is close to finding a DNA test to help determine afflicted, carrier, and non-carrier status. Until then, breeders and pet owners alike, should test their dogs regularly. Diagnosis of PRA is normally made by ophthalmoscopic examination by a board certified ophthalmologist.

Immunoproliferative Small Intestine Disease (IPSID) of the Basenji Dog.

IPSID - An article written by Cindy Griswold

IPSID stands for immunoproliferative small intestine disease, but it is a disease of many names. It is also called basenji enteropathy, immunoproliferative lymphoplasmacytic enteritis, basenji diarrheal syndrome, and malabsorption. IPSID is one of several different types of inflammatory bowel disease, which result in the dog not being able to utilize and absorb nutrients correctly from food. The human equivalent is Chrons disease. While IPSID is considered to be inherited,

inheritance alone appears to be only one of the factors involved. When genetically normal Basenjis have food allergies, viral or bacterial infections and they become sick, at worst, they will come down with inflammatory bowel disease (IBD). With proper medical care they can be cured or maintained for life. A dog genetically predisposed to IPSID and its resultant immunological weakness might start with plain vanilla IBF and eventually progress to IPSID. Stress of a physical or emotional nature also seems to be a factor. Symptoms can include diarrhea (both large and small bowel), vomiting, weight loss, protein loss, increased or decreased appetite, depression, and gas. The type of symptoms and their severity differ from dog to dog, and from one time to another. Dogs with IPSID often show improvement before the dog again takes a turn for the worst. While some dogs go into remission, they usually relapse and eventually die. Most of the time vets will use a process of elimination to diagnose IPSID. My vet started out by ruling out giardia. From there, we did a complete blood panel. Everything was normal except the protein levels, which were low. Next, we did a barium x-ray, which showed an enlarged section of the intestine. Last was a biopsy, which is the only reliable way to diagnose IPSID. The biopsy was also done to rule out cancer and systemic fungal infections. Treatment success is generally limited to improving the quality and length of life. Prednisone is started at 1 mg/kg twice a day to suppress the immune system. Over time the pred can generally be lowered or eliminated until the symptoms resume. However, if the pred is eliminated and restarted it might not be as effective as it was previously. Other drugs that are used are metronidazole, tylosin, and other antibiotics to treat the severe bacterial infections that the dogs are susceptible to. IPSID dogs seem to be a bacterial reservoir, which can cause infections in other household dogs. The dog's diet is also changed to a hypoallergenic food. A division of Natures Recipe produces prescription diets, venison/potato, rabbit/potato and duck/potato, that work well for IPSID dogs. Dr. Willard of Texas A&M suggests switching diets on a monthly basis to help prevent the intestine from becoming sensitive to what it is being fed can be appropriate. A homemade diet also can be used. Additional vitamin supplementation may be indicated.

Dr. Willard is a gastroenterologist that teaches and does research at Texas A& M University. A couple of years ago he did a preliminary study on IPSID and apoptosis. Apoptosis is when the cell doesn't die as scheduled and growth is uncontrolled. Cancer is a form of apoptosis as is IPSID. In IPSID, the intestine over produces lymphocytes and plasmacytes. As part of his study he was using preserved intestinal tissue. Although the study is not promising at this time he is still collecting tissue samples to bank for research in the future. What he is looking for is preserved tissue samples of dogs suspected of having IPSID or diagnosed with IPSID. If you have a dog suspected of having IPSID and are planning on having a biopsy done or are willing to have a necropsy done and would like to support this study Dr. Willard suggests "they send samples to Dr. Gayman Helman at the Oklahoma Animal Disease Diagnostic Laboratory, Oklahoma State University, Stilwater, Oklahoma 74078. He will treat them like a routine biopsy (i.e., read it and send report) and, if requested, will send me a recut so I can look at it too." According to Dr. Willard, Dr. Helman is one of the best intestinal pathologists in the country. If your dog has been diagnosed with IPSID you can send the sample to Dr. Willard at 409-845-2351, e-mail address mwillard@cvm.tamu.edu. Dr. Willard is available for consultations by phone with vets needing more information on the disease. I am also willing to offer what help I can. I can be reached at 830-868-7649 or griswold@moment.net

Additional references:

Cornell University College of Veterinary Medicine Animal Health Newsletter
Vol. 10 number 10: Sept. 1996 pgs.3-6

Immunoproliferative Enteropathy of Basenjis By Edward Breitschwerdt, Seminars
in Veterinary Medicine and Surgery (small animal), Vol. 7 no 2 (May), pp. 153-161.

Hemolytic Anemia of the Basenji Dog

(Also known as Pyruvate Kinase Deficiency Hemolytic Anemia)

This is quoted from "A Review of Hemolytic Anemia," by Russell V. Brown, Ph.D., 1983

"There are two types of anemia that have been found in the Basenji. One is a nonhereditary type called auto immune anemia. This happens when the dog produces antibodies that will attack its own red blood cells. This can be treated, by giving drugs like steroids, to shut down the immune system temporarily. Transfusion of blood can be given to keep the red cell count up. As the antibodies in the blood go down in number the anemia becomes less severe. Dogs that would have died have recovered with proper treatment. The other type of anemia is, of course, the hereditary type, where the red cells have a genetically controlled defective pyruvate kinase activity. This is not a curable anemia. Removal of the spleen & transfusions may prolong life, but the enzyme defect is permanent. Because of the short life span of red cells in the dog with hemolytic anemia, the bone marrow must replace the red cells more rapidly than normal. The bone marrow is not capable of this with mature red cells, so immature red cells (erythroblasts or eritculocytes) are released into the blood..."

Pyruvate Kinase Deficiency Hemolytic Anemia per VetGen

"Pyruvate kinase deficiency in Basenji dogs is an inherited lack of an enzyme (pyruvate kinase) in the red blood cells of an affected animal. This enzyme is required for red blood cells to survive for a normal length of time in the blood of the animal, and when it is missing, the red blood cells break down and are destroyed prematurely. This leads to lifelong anemia in the affected animal. The symptoms of anemia are lack of energy, low exercise tolerance, easy fatigability, and probably reduced fertility. This disease is inherited as an autosomal recessive. This means that affected animals have two doses of the mutant gene. Dogs that have one mutant and one normal gene are called carriers. Carriers are not ill (they do not have anemia), but can produce affected offspring if mated to another carrier."

Thyroid Problems of the Basenji Dog

Thyroid Problems

It is said that hypo-thyroidism is being found more often in the Basenji breed. Below you will find some great information compiled by long time Basenji fancier Susan Kamen-Marsicano of Apu Basenjjs.

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM: Alterations in Cellular Metabolism: lethargy, mental dullness, exercise intolerance, neurologic signs, polyneuropathy, seizures, weight gain, cold intolerance, mood swings, hyperexcitability, stunted growth, chronic infections.

Neuromuscular Problems: weakness, stiffness, laryngeal paralysis, facial paralysis, "tragic" expression, incontinence, knuckling or dragging feet, muscle wasting, megaesophagus, head tilt, drooping eyelids, ruptured cruciate ligament.

Dermatologic Diseases: dry, scaly skin & dandruff, coarse dull coat, "rat tail," hyperpigmentation, pyoderma or skin infections, myxedema, chronic offensive skin odor, bilaterally symmetrical hair loss, seborrhea with greasy skin, seborrhea with dry skin.

Reproductive Disorders: infertility, lack of libido, testicular atrophy, hypospermia, aspermia, prolonged interestrus interval, absence of heat cycles, silent heats, pseudopregnancy, weak, dying or stillborn pups.

Cardiac Abnormalities: slow heart rate (bradycardia), cardiac arrhythmias, cardiomyopathy.

Gastrointestinal Disorders: constipation, diarrhea, vomiting

Hematologic Disorders: bleeding, bone marrow failure - low red blood cells (anemia), low white cells, platelets - low.

Ocular Diseases: corneal lipid deposits, uveitis, infections of eyelid glands (Meibomian gland), Vogt-Koyanagi-Harada syndrome, corneal ulceration, keratoconjunctivitis sicca or "dry eye."

Other Associated Disorders: IgA deficiency, loss of taste, other endocrinopathies - adrenal, pancreatic, parathyroid, loss of smell (dysomia), glycosuria, chronic active hepatitis.

How to prepare a thyroid blood sample to send to Dr. Dodds for evaluation.

Draw 3 - 5 ml blood, spin down. Send serum to lab, overnight - does not need to be on ice. They need vet info, your info and dog info. Be sure to include dogs age and weight.

Send to:

Dr Jean Dodds, Hemopet

17672 A Cowan Suite 300

Irvine, Ca 92614

Tel 949-252-8455

Fax310-828-8251

Dr Dodds office is 310-828-4804

Hip Dysplasia in the Basenji Dog

Canine Hip Dysplasia (CHD) - in brief:

Although CHD appears to be rare in the basenji breed (see below) ALL breeding stock should be tested prior to breeding. Hip Dysplasia is a disease that affects development of the hip joint in a young dog. It may or may not affect both the right and left hip joints. It is brought about by a laxity of the muscles, connective tissue, and ligaments that should support the joint. Dysplastic dogs are born with normal hips but the soft tissues that surround the joint start to develop abnormally as the puppy grows. This is because of genetic factors in the individual dog. The most important result of the change is that the two bones are not held in place but actually move apart. The joint capsule and the ligament between the two bones also stretch, adding further instability to the joint. As this happens, the articular surfaces of the two bones lose contact with each other. The slight separation of the two bones of the joint is called subluxation; this—and this alone— causes all of the resulting problems we associate with this disease. Three important aspects of the disease have been repeatedly and independently documented and are generally accepted by the scientific community - they are:

1:) Canine hip dysplasia is caused by the presence of many genes (polygenic). While no environmental cause has been found, many environmental factors contribute to its expression in a particular dog (phenotype).

2:) The only current means for reducing the occurrence of CHD is by selectively breeding for normal hips.

3:) Radiography is the accepted means for evaluating the hip status OFA (in brief): There are currently two organizations that evaluate hips. The best known and most widely accepted at this time is the Orthopedic Foundation for Animals (OFA). Radiographs submitted to the OFA are independently evaluated by three randomly selected, board-certified veterinary radiologists. Each radiologist evaluates the animal's hip status taking into account the breed, sex, age, and conformational differences and assigns a hip rating of either Excellent, Good, Fair or Borderline. Only excellent, good and fair are considered passing scores and issued an OFA number. While borderline, mild, moderate and severely dysplastic hip grades are documented by the OFA, the information is closed to the public.

VERY good description of what HD is and how it is evaluated

How prevalent is CHD in the Basenji dog?

Per the OFA website:

From January 1974 to January 1998

Number of evaluations: 720

Percent of Excellent: 23.3%

Percent dysplastic: 3.1%

Some other sighthound comparisons:	Greyhound	Ibizan	Saluki
Number of evaluations:	168	159	204
Percent of Excellent:	34.5%	37.1%	42.2%
Percent dysplastic:	3.6%	2.5%	2.0%

PennHIP - in brief:

It was generally recognized that the traditional diagnostic methods of hip evaluation were associated with disappointing progress in reducing the frequency of CHD. The PennHIP method was developed to address this problem. PennHIP is a SCIENTIFIC method to evaluate a dog for HD - (aka an objective opinion whereas OFA is purely a subjective, visual opinion). Dr. Gail Smith, from the University Of Pennsylvania began to actively research and develop a method for the early diagnosis of CHD. This research resulted in a method capable of estimating the susceptibility for CHD in dogs as young as 16 weeks. In the traditional hip extended position (OFA style) joint laxity is not clearly evident. This position may actually give a false impression of joint tightness (manmade tightness - as the vet actually rotates the hip-ball in towards the socket and holds it there during the x-ray.) While the view is accurate in detecting existing arthritic changes, there is not scientific data to show that the view can reliably distinguish between "normal" and disease susceptible dogs when arthritic changes are not present.

The PennHIP radiographic procedure involves a special positioning of the dog so that the dog's PASSIVE hip laxity can be accurately measured - this means the dog must be under anesthesia. In simple terms - passive hip laxity -refers to the degree of "looseness" of the hip ball in the hip socket when the dog's muscles are completely relaxed. Research has shown that that the degree of passive hip laxity is an important factor in determining susceptibility to developing degenerative joint disease (DJD) later in life. Radiographic hip DJD, aka osteoarthritis is generally accepted as confirmation of CHD.

Distraction Index - The DI is a measure of passive hip laxity and is expressed as a number between 0 and 1 (a DI number of 0 would indicate no joint laxity and very tight hips. A DI closer to 1 would indicate a high degree of laxity and very loose hips). Investigations have confirmed that dogs with tighter hips are less likely to develop joint disease (CHD) than their counterparts.

Other informative PennHIP links:

<http://www.spinone.com/pennhip.htm>

<http://www.canismajor.com/dog/pennhip1.html>

OFA vs. PennHIP

PennHIP = Six X-rays = Must be put under general anesthetic.

OFA = One X-ray = Anesthesia to be determined by your vet.

PennHIP can be done as early as 4 months.

OFA - Earliest: 2 yrs of age (preliminaries can be done before the age of two)

PennHIP is a newer test, but does seem to be reliable.

OFA has been around a lot longer and is more well known.

PennHIP is evaluated by a computer program.

OFA is evaluated by three board certified veterinary radiologist and can be done by most any vet.

PennHIP requires training for the vets to perform the x-rays.

PennHIP and OFA do not use the same rating system.

PennHIP is more expensive than OFA.

If a person has their animal X-rayed for PennHIP, and those hips do not "appear" to be rated good to you or the vet, the X-rays are still required to be submitted for the database. In OFA, we get a more slanted view due to the fact that if the vet or yourself think the X-ray turned out bad or the dog's hips are "bad", you can choose not to submit the x-rays for viewing.