

My Personal Experience with Exercise Induced Collapse (EIC)

I had my first experience with EIC approximately 15 years ago after one of my carefully planned litters of Labrador Retrievers sired by a Field Champion and Amateur Field Champion (FC-AFC) arrived. The female Lab pup I kept back for myself for a potential field trial prospect became very unsteady with moderate field work starting at 8 months of age. At about the same time, her littermate male was going through retriever basic training with a professional trainer and started showing the same symptoms. I had heard through discussion with other breeders and field trainers of an unknown collapse issue in Labrador Retrievers.

A couple of times after that experience, I purchased Labrador pups from other breeders that starting show the typical EIC symptoms when field work started. Diagnostic testing ruled out all other possible causes. My goals for these young dogs were also derailed by this yet unknown condition.

A large number of the prepotent and very popular Labrador Retrievers studs that were being used in many performance breeding programs were carriers for EIC which increased the incidence of EIC affected and EIC carriers in Labrador Retrievers. EIC has also been identified in Labrador Retriever conformation lines although due to their temperament and lifestyle those dogs may or may not show EIC symptoms.

Fortunately, after comprehensive studies and research by teams of medical and capable professionals for nearly a decade, the DNM1 gene mutation was identified. The University of Minnesota Veterinary Diagnostic Lab tested approximately 2000 dogs in their research phase, and over 11,000 dogs since the test became commercially available in 2008.

In Early 2010, affected and carrier Boykin Spaniels have been identified by the University of Minnesota. **Only a limited number of Boykins have been tested, so there is no indication yet of the prevalence of the mutation in the breed.** The University of Minnesota Diagnostic Lab recently updated their web site to identify Boykin Spaniels so that EIC information is made available to Boykin Spaniel owners and veterinarians.

I encourage all Boykin owners to carefully review the EIC information from the University of Minnesota below. With your participation in EIC testing and

sharing awareness of EIC with others, we can partner together to reduce the incidence of EIC in our Boykin Spaniels in the future.

- Terrie Tomlinson
Health Committee BSCBAA

What is Exercise Induced Collapse

Exercise Induced Collapse, or EIC, is a neuromuscular condition that causes collapse of dogs when they become overly excited or exercise heavily. The gene mutation causes an amino acid in the coding sequence of the dynamin 1 (DNM1) gene, which is involved in nerve signaling during high level neurological stimulation. After intense hunting or retrieving or other exercise, affected dogs start to lose control of their hind limbs. Body temperature is normal at rest in dogs with EIC but is almost always dramatically increased at the time of collapse (*temperature* >41.5 C, >107.6F).

EIC and the DNM1 gene mutation are quite common in Labrador Retrievers, and have been also identified by the University of Minnesota in several other breeds, including Chesapeake Bay Retrievers and Curly Coated Retrievers, and Boykin Spaniels

Comprehensive EIC information and links are available at the University's web site. <http://www.vdl.umn.edu/ourservices/canineneuromuscular/home.html>

The Veterinary Diagnostic Lab's EIC Brochure explains the mode of inheritance and how to interpret the test results of affected, carrier, and clear. http://www.vdl.umn.edu/prod/groups/cvm/@pub/@cvm/@vdl/documents/asset/cvm_asset_117797.pdf

Implications of the EIC Mutation for Breeding

http://www.vdl.umn.edu/prod/groups/cvm/@pub/@cvm/@vdl/documents/asset/cvm_asset_107687.pdf

Presently, the University of Minnesota recommendation to breeds identified with EIC is that they should not automatically remove all carriers/affecteds from their breeding programs.

The best approach to maintain genetic diversity while decreasing the frequency of the mutation in the population is to choose matings in which **at least one of the parents is EIC clear**. A mating of a carrier to a clear will produce litters that are on average 50% clear and 50% carri-

ers, with no affecteds.

Then breeders will be able to choose otherwise equal pups that are clear for breeding homes, and carriers to pet homes. Of course if there are other reasons why you would consider the carrier pup to be superior, that dog could be kept in a breeding home and only mated to cleared dogs. Using this approach the carrier rate should drop, and you can eliminate the production of affected dogs without the need to remove a carrier dog from your breeding program.

How to Test Your Boykin for EIC

Boykin owners can have their dogs tested through their veterinarian by submitting a blood sample or cheek swab to the University of Minnesota Veterinary Diagnostic Laboratory following the EIC Submission Guidelines. <http://www.vdl.umn.edu/guidelines/canineneuro/home.html>

The EIC Submission form must be taken to your vet for either the "blood draw option" or "cheek swab" option. Be sure to fill the form out completely. http://www.vdl.umn.edu/prod/groups/cvm/@pub/@cvm/@vdl/documents/asset/cvm_93648.pdf

Your results will be sent directly to your veterinarian. If owners would also like a copy of the report sent directly to them for their records, please include the owner's email address in the Result Reporting section of the EIC submission form.

Once you have received your results from the University of MN, you can record your results through OFA. You will need to submit a copy of your test results report from University of MN. OFA's Application for DNA Based Genetic Database form is optional. However, submission of the OFA form in addition to the EIC results form will ensure recording of sire/dam information as well as one additional registration number if applicable. <http://www.offa.org/dnaappbw.pdf>

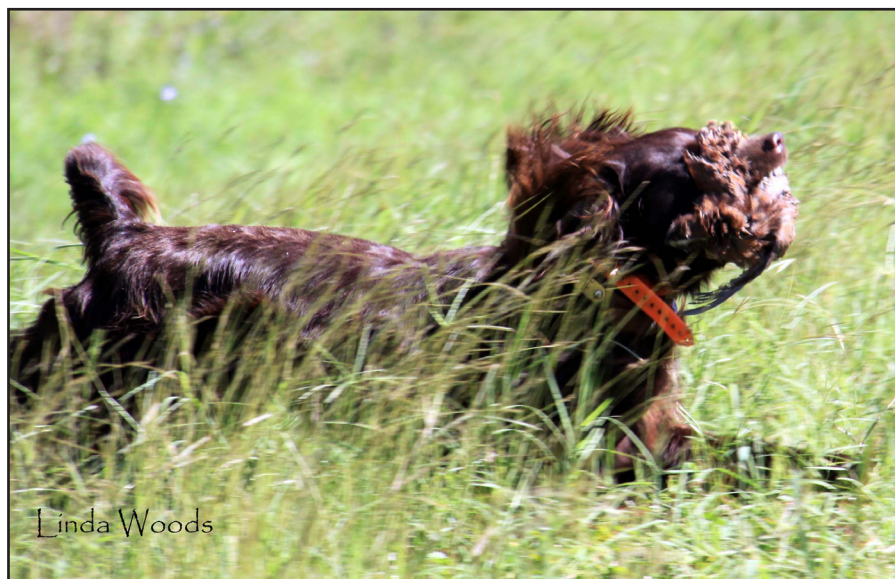
You will send the OFA form (optional) and the University of Minnesota report, along with the OFA application fee (currently \$15) to OFA. Affected results will be published at no charge by OFA.

For questions or additional EIC information contact the University of Minnesota:

email: vdل@umn.edu
ph: (612) 625-8787
toll free: (800) 605-8787

IT'S THE NEXT BEST THING

By Joe Doggett



Diesel retrieving quail Photo by Linda Woods

It's a dress rehearsal in hunter orange, but you need a diesel to really make it work. Or at least you need a dog with the same discipline and disposition as guide Doug Growden's Diesel.

Growden's chocolate Boykin spaniel would, on command, jump with flapping ears and wagging tail right into the middle of things - literally. The "things" were pen-raised bobwhite quail recently released amid the fields of grass and brush on the sprawling Rio Brazos Hunting Preserve near Simonton.

And, as with any proper dress rehearsal, the results were close to the real deal.

Our first covey rise during a recent morning hunt set the pace. An English pointer bounded over a ridge and spun into a stylish point. A trailing Brittany spaniel honored.

Diesel slithered close, bringing up the rear. Jim Easterling, Whitney Easterling and I paced forward with poised shotguns.

The tableau of frozen dogs amid winter stubble was a classic upland image - until Growden gave the nod to Diesel. Gracious! The little spaniel sprang like a bottle rocket into the tangles of straw.

Three, no four, bobwhites vaulted up and out, wings buzzing and blurring against the blue sky. You hear stories of pen-raised or "liberated" quail that can scarcely flutter, but trust me, these birds were moving with authority. They wanted to put serious air between them and whatever demon had violated the brush

pile.

Jim reacted smoothly and smacked down a double with his 28-gauge Beretta over/under. Whitney was caught off guard and missed with the first barrel of her 20-gauge but cleanly rolled a bird with the second shot.

I was "brushed out" and never raised my 20-gauge Parker Reproduction side-by-side.

That opening volley was typical of the fast action during the session at Rio Brazos. The rises were legitimate and the shots were challenging - and the misses not altogether uncommon.

"That was fun, a lot better than not quail hunting at all," said Easterling, a veteran South Texas gunslinger, as Growden counted out 68 birds at the conclusion of our three-hour session.

Proving skeptics wrong

This has been a poor season for wild bobwhites, so bad that some leases and hunting operations have shut down. The terrible summer drought combined with several hard freezes took a desperate toll on native birds in prime regions such as South Texas.

The accepted wisdom among many veteran hunters this season is to "leave 'em for seed" and hope for better, wetter fortunes during the 2010-11 season.

However, the alternative to this glum return is to book a few hunts for liberated quail on a proven game preserve.

"A lot of hunters who first come here

are skeptical about the pen-raised quail, but we get excellent dog work and the birds flush well and fly hard," Rio Brazos hunt manager Robert Young said. "The success average over the course of the season is about 60 percent - so that means a lot of shots are being missed on these so-called easy birds."

The season on pen-raised quail at Rio Brazos begins in mid-October and runs through mid-March. The operation is open seven days a week — weather permitting. Two to four guns per hunt can be accommodated on mornings or afternoons. A valid Texas hunting license is required, but because the birds are non-native, no bag limits are imposed. Hunters are charged a flat fee of \$450 per gun, and the tab includes bird cleaning and bagging - and the quail are delicious.

Confidence builder

They also are big, almost twice as large as the "brush country" bobwhites native to Texas.

"We get our birds from Roadside Quail Farm in Columbus," Young said. "It's a top operation and raises more than 150,000 bobwhites per year. The ones we use are called 'Carolina Jumbos' - big, strong birds that are in great condition.

"We've been running the hunts for six years now and have a good relationship with the farm. And, as a strong point, they are just down the road so we can obtain birds on an as-needed basis; our quail are released fresh into the field and are not held over in pens or nets."

Two sprawling areas interspersed by woods and ponds are used - pleasing upland settings. Young stressed that the birds are not disoriented or hampered in any way once they are released.

"We usually figure about 30 quail per gun and release two to four birds in a spot, depending on the number of shooters," Young said. "But they can move at will and the dogs never know for sure where they'll be - or how many in one place, for that matter. It's great training for beginners and a lot of fun for experienced quail hunters."

Easterling and I can attest to that. We've hunted extensively in the prime bobwhite country of South Texas and northeastern Mexico yet had a great morning watching the dogs and swinging on the

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