Breeding Concerns
Early Takeoffs in Dog Jumping

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There is not ONE single reason why dogs take off early when jumping. As stated in my ***2011 Update on Early Takeoffs*** article, I believe early takeoffs are caused by a vision problem and fall into three categories: 1) those caused by detectable lesions in the eye (cerf abnormal), 2) those caused by refraction problems (retinoscopy abnormal), and 3) those for which all tests are normal (these dogs seem to be the most likely to have the symptoms associated with "classic" ETS and relatives with the problem). Early takeoffs are not a "trait". Early takeoffs are the result of the vision problem. However, evidence suggests that whatever causes the vision problem is most likely heritable in some way.

Twelve years ago, I thought early takeoffs in dog jumping were training, structure or physical issues just like everyone else. Dogs that were examined by veterinarians were all found to have "normal" vision, so those seemed the only plausible explanations. However, as time went on I worked with *so* many dogs with this problem, I started to make observations that could not be the result of training or physical pain. I suspected that vision was the cause, regardless of what the veterinarians said. A veterinarian myself, I knew that vision testing in dogs was not quite as sophisticated as it was in humans. I also began to notice that many of the affected dogs were related, and the jumping problems were more prevalent in certain breeds, or within family lines of some breeds.

What really got my attention were three different Border Collie bitches, each owned and trained by a different "top handler". I personally worked with each of these bitches when their respective handlers requested consultations regarding their dog's early takeoffs. When training did not improve the jumping problems, each bitch was ultimately retired from agility and subsequently bred. Time passed. Two or three years later, I realized that some of the dogs I was now consulting on for early takeoffs were puppies produced by these bitches. This confirmed what I already suspected; early takeoffs were more than just a training or physical problem, and in fact they were occurring with higher frequency in dogs that were related. Any trainer working with just a few dogs with early takeoffs would not be aware of the patterns, or the relationships between the dogs, nor would a veterinarian. As time went on, I started to share my observations and compare notes with other agility instructors that worked with many, many dogs. I discovered that others were making similar observations and drawing similar conclusions in other parts of the country.

I believe the cause of early takeoffs in dog jumping has always existed, but the sport of agility and the ever-increasing difficulty of the jumping tasks we ask of the dogs has simply brought the problem to our attention. Dog activities such as being a household pet, or competing in conformation, obedience and fieldwork, don't place the same demands on the dog as agility. Unless the dog is jumping, vision problems will go unnoticed except by the more observant owners. (Note: There have been reports of dogs having difficulty retrieving in field trials that may be related to early takeoffs).

The incidence of early takeoffs in jumping appears to be increasing (*note this is purely my personal observation*). Perhaps this can be explained because we are more educated about early takeoffs and recognizing the problem for what it is, but I believe that breeding practices have also *inadvertently* contributed to this.

Years ago, most dogs competing in agility were originally bred for a purpose other than agility. With the advent of agility, some breeders started to specialize, selecting for traits felt to be desirable for performance events. This led to lines in some breeds that enjoyed a high degree of success in agility. Of course this created a high demand for puppies from those lines. However, some of these same lines *may* also have had a higher incidence of dogs having early takeoffs in jumping. Back then, early takeoffs were believed to be related to training, thus having jumping problems develop in puppies did not raise concern for breeders like epilepsy, CHD or other problems might. Until my ***"What is Early Takeoff Syndrome?"*** article was published in ***Clean Run*** in 2010, most people including breeders had no reason to believe that early takeoffs might be caused by something other than physical pain or training. No one even considered that early takeoffs could have a heritable component. Thus, there was no reason to be concerned about it when selecting breeding stock. However, now that we understand more about early takeoffs, I believe if one is breeding performance dogs that will be required to jump, there is cause for concern.

Today, most breeds in agility are still bred for a purpose other than agility, which creates a problem if that other purpose does not involve jumping. It becomes very difficult to determine which pups will be nice agility prospects! Even in breeds that excel in agility, performance dog breeders are the minority or they do not focus solely on agility. Shelties are bred primarily for conformation or pets. Only a small percentage are bred strictly for performance. Many Shelties that enter agility are offspring of dogs that have never jumped a jump in their life. Border Collies participate in more than one performance sport. A breeder that focuses on producing top herding dogs is understandably not going to be concerned about jumping ability. Both breeds have a high incidence of early takeoffs.

Of course the first step toward prevention is to admit there is a problem. Many breeders are still unaware that a problem even exits. That is the reason I put up this webpage and write these articles. For those that are not breeding performance dogs and

selling them as agility prospects, it probably doesn't matter. But it is very important that a performance dog breeder understand what early takeoffs are and the impact that they might have on the future of their puppies. Most breeders are unaware that there probably is a hereditary component, or they are aware and do not want to admit it. Since we don't yet know what definitively causes most early takeoffs, it is difficult to prove that this problem is heritable. However as previously mentioned, the unusually high incidence in some lines (and some breeds) very strongly suggests that it is, and my recommendation is that breeders (and puppy buyers) err on the side of caution. I have provided some data at the end of this article that lists stats from a few of the family lines I have identified in Border Collies. The real names of the dogs have not been used; each dog was assigned a number. But hopefully the data is presented in such a way that you can see why I think this is a significant, heritable problem. *Based on my own personal, unscientific evaluation of the data available to me*, I believe breeding an affected individual is inadvisable, as is breeding an individual that has produced it in more than one litter, particularly when bred to a different individual each time. Obviously, much more data needs to be collected to ascertain what the real risk is. *Based on my own personal observation*, it appears that dogs affected with "classic ETS", those for which all tests are normal, are the ones that seem to be more at risk for genetic transmission.

There have been arguments that more research is necessary as to the cause of early takeoffs before changes in breeding programs are considered. I fully agree that more research is needed, and that is exactly why I have taken the time to write these articles. But if one identifies a dog that has early takeoffs that cannot be resolved, is it appropriate to potentially produce more of these dogs, no matter what the cause? Some individuals feel that early takeoffs may be caused by behavioral problems such as lack of impulse control. There is no doubt that the temperament and behavior of the dog can exacerbate early takeoffs. But this raises the question as to whether it is appropriate to breed dogs with temperament and behavior problems for performance?

It is my personal opinion and recommendation that performance dog breeders evaluate the puppies they've bred by surveying previous puppy buyers, inquiring about jumping problems in the puppies that are 4 years old and older. By identifying potentially affected dogs, it may be possible for breeders to identify if specific dogs in their kennel are at risk for producing it. If they choose to keep those dogs in their breeding program, that's their choice. However, it would be prudent to establish an open line of communication with prospective puppy buyers and inform them of the potential risk. If I were a puppy buyer, personally I would have the utmost respect for such a breeder, knowing she was trying to do the best she could do for both her puppies and their prospective owners. In Border Collies and Shelties (and other breeds), obviously many of them are bred for other purposes that don't involve jumping (herding or conformation for example). In these cases, the puppy buyer needs to realize that the status of the sire and dam are unknown because an early takeoff problem will not be expressed in dogs that don't jump. The buyer must understand this and thus assume the risk.

Much more data needs to be collected and evaluated before definitive conclusions can be drawn about the heritability of early takeoffs in dog jumping. There has been discussion about a potential research study to identify the trait involved and hopefully map it on the canine genome. When and if that becomes a reality, I will update the webpage.

In this article I have tried to present the facts as I know them and where statements are my personal opinion, I have tried to make that clear. This is not a scientific journal article, I am simply trying to share my observations, raise awareness and let people know why I feel there is a cause for concern. Until we learn the actual cause of ETS, the only way to deal with it is prevention. Hopefully more breeders will realize that until the veterinarians 1) recognize that the problem exists, 2) determine the cause, 3) determine a diagnostic test, and 4) devise an effective treatment; it may be they that are ultimately responsible for what happens with ETS because prevention is the only real option I know of at this point in time.

The data that follows was collected through the cooperation and contributions of individuals throughout the USA. The dogs represented are all Border Collies. Note that many of the litters with affected dogs also had nationally recognized dogs in the same litter. The dogs' real names are not shown, but each dog has been assigned a number to help you see the relationships, if any. Where one male or bitch was bred multiple times to different individuals, I tried to group them together to show this. Although sincere efforts have been made to assure that this data is as accurate as possible, I do not claim that it is. The data is provided merely to give you a *rough* idea of the prevalence of affected dogs and show why I feel there is concern. Please be careful about drawing conclusions based solely on this data. Note I have similar stats on Shelties (however, that data is not as complete and I was not as familiar with the dogs, so I chose not to include it at this time.

Key
# offspring = Number of live puppies in the litter
# affected = Number of dogs in the litter that are considered to be affected (observed to have early takeoffs etc)
# clear = Number of dogs in the litter that jumped normally after ~4 years of age and are considered unaffected
# unknown = Number of dogs in litter that couldn't be evaluated due to age, nonperformance, whererabouts unknown, other
Comments = Some relationships to other dogs in the list are noted where known, but in many cases this information was not available and there may be many more related dogs than are shown.
TYE = The litter is still too young to evaluate for jumping issues
Column 3 indicates whether the male or bitch was affected (if known)

Male	Female		# offspring	# affected	# clear	# unknown	Comments	
Male 1	Bitch A		7	**3**	4	0		
Male 1	Bitch A		9	**1**	0	8		
Male 1	Bitch A		4	**0**	0	4		TYE
Male 1	Bitch A		3	**0**	0	3		TYE
Male 2	Bitch C		4	**0**	3	1		
Male 2	Bitch B	BB affected	3	**0**	3	0		
Male 2	Bitch B	BB affected	4	**2**	1	1		
Male 14	Bitch B	BB affected	6	**3**	1	2		
Male 14	Bitch U		3	**0**	2	1	sibling to BV	
Male 14	Bitch CC		4	**0**	3	1		
Male 15	Bitch B	BB affected	4	**2**	1	1		
Male 16	Bitch B	BB affected	2	**1**	1	0		
Male 16	Bitch B	BB affected	4	**2**	2	0		
Male 16	Bitch B	BB affected	6	**3**	1	2		
Male 16	Bitch V		8	**3**	0	5	sibling to BU	
Male 16	Bitch V		7	**1**	3	3		
Male 17	Bitch B	BB affected	?	**2**	?	?		
Male 20	Bitch B	BB affected	3	**?**	?	?		
Male 21	Bitch Y	BY abn cerf	1	**1**	0	0		
Male 22	Bitch Y	BY abn cerf	2	**1**	0	1	produced BX	
Male 18	Bitch W	BW affected	8	**3**	2	3		
Male 18	Bitch W	BW affected	9	**5**	3	1		
Male 18	Bitch X	BX affected?	4	**0**	4	0	BX from M22 & BY	
Male 18	Bitch X	BX affected?	6	**0**	6	0		
Male 18	Bitch X	BX affected?	6	**0**	0	6		TYE
Male 29	Bitch EE		5	**3**	1	2		

			# offspring	# affected	# clear	# unknown	Comments	
Male 3	Bitch I			1	**0**	0	1 BI from M26 & BBB	
Male 3	Bitch E			9	**0**	0	9	
Male 3	Bitch D			4	**3**	0	1	
Male 3	Bitch F			6	**0**	0	6 BF from M27 & BE	
Male 3	Bitch G			6	**2**	0	4 BG from M27 & BE	
Male 3	Bitch J			7	**2**	0	5	
Male 3	Bitch G			6	**1**	0	5	
Male 3	Bitch G			6	**2**	0	4 produced M9	
Male 3	Bitch L			5	**1**	0	4	
Male 3	Bitch D			6	**2**	0	4	
Male 3	Bitch D			7	**3**	0	4	
Male 3	Bitch N			5	**4**	0	1	TYE
Male 3	Bitch JJ			2	**0**	0	2	TYE
Male 3	Bitch T			6	**1**	0	5	TYE
Male 3	Bitch S			8	**0**	0	8	TYE
Male 3	Bitch D			4	**0**	0	4	TYE
Male 3	Bitch Q			2	**0**	0	2	
Male 4	Bitch E			4	**2**	0	2 produced M6 & BJ	
Male 5	Bitch H			5	**1**	0	4 produced BL & BQ	
Male 5	Bitch JJ			1	**0**	0	1	
Male 5	Bitch JJ			7	**0**	0	7	
Male 5	Bitch J			5	**3**	0	2	
Male 5	Bitch JJ			8	**0**	0	8	
Male 5	Bitch O			7	**1**	0	6	
Male 5	Bitch P			5	**1**	0	4	
Male 5	Bitch JJ			4	**0**	0	4	TYE
Male 5	Bitch O			7	**0**	0	7	TYE
Male 5	Bitch O			8	**0**	0	8	TYE
Male 6	Bitch I			4	**1**	0	3	
Male 6	Bitch JJ			7	**2**	0	5	
Male 7	Bitch J			7	**3**	0	4	
Male 7	Bitch K			5	**0**	0	5	
Male 34	Bitch K			4	**0**	0	4	
Male 8	Bitch J			6	**3**	0	3	
Male 8	Bitch J			6	**0**	0	6	
Male 9	Bitch S	M9 affected?		6	**0**	0	6	TYE
Male 9	Bitch N	M9 affected?		6	**0**	0	6 M9 from M3 & BG	
Male 9	Bitch Q	M9 affected?		8	**0**	0	8	
Male 9	Bitch Q	M9 affected?		5	**0**	0	5	TYE

		# offspring	# affected	# clear	# unknown	Comments	
Male 10	Bitch Q	8	**0**	0	8		TYE
Male 10	Bitch D	8	**1**	0	7		
Male 11	Bitch R	9	**1**	0	8		TYE
Male 12	Bitch T	4	**0**	0	4		TYE
Male 12	Bitch R	8	**0**	0	8		TYE
Male 13	Bitch P	5	**0**	0	5		TYE
Male 23	Bitch AA	2	**0**	0	2		
Male 24	Bitch AA	2	**0**	0	2		
Male 25	Bitch AA	1	**0**	0	1		
Male 26	Bitch BB	7	**1**	0	6	produced M4	
Male 26	Bitch P	6	**0**	0	6		
Male 27	Bitch E	7	**0**	0	7	produced BF & BG	
Male 28	Bitch DD	6	**0**	0	6	produced M5	
Male 28	Bitch I	6	**0**	0	6		
Male 30	Bitch N	7	**0**	0	7	BN from M31	TYE
Male 31	Bitch FF	3?	**2**	0	1	M31 sired 25+ litters (only 1 listed here) M31 produced BN	
Male 32	Bitch E	2	0	0	2		
Male 33	Bitch GG	8	0	0	8	BGG sibling to M4 & BI	
Male 35	Bitch K	6	0	0	6		
Male 36	Bitch Q	6	**0**	0	6		
"Control"							
Male 100	Bitch II	8	0	8	0		
Male 100	Bitch HH	8	0	8	0		
Male 100	Bitch HH	5	0	5	0		
Male 100	Bitch KK	1	0	1	0		
Male 100	Bitch LL	1	0	1	0		
Male 100	Bitch HH	8	0	0	8		TYE