

## Module 1 - Section - 4 A - Breeds, Breeders

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### Breeds that tend not to get along

Dogs getting along is based very much on the temperament of the individual dogs concerned, but unless the dog is well known to you it is better to keep the basic guidelines in place when helping or advising a client about choosing a breed to be on the safe side and recommend breeds that do get along. We have recently added in a section on the Friends of the Dog website called Breed Compatibility Match to help owners make a decision as to whether or not the breeds will get on. This is aimed at novice owners, not experienced owners. The link is <http://www.friendsofthedog.co.za/breed-compatibility.html>.

Many dogs are deemed dangerous, to both other dogs and humans, but there are some breeds that we have found are really not good when there are two or more of them, especially any of the fighting breeds. Jack Russels can be very aggressive with other dogs, even those of the same breed, and a pup would have to be carefully monitored. Terriers, on average, are not good with other small animals such as cats, hamsters and birds due to their natural hunting instinct and if another Terrier pup is introduced the possibility of problems increases.

Another breed we would be hesitant about introducing a puppy to, is any of the fighting breeds, especially Pit Bulls. Again, we believe a lot of the bad publicity the breed has

received has been a result of both bad breeding and bad or ignorant owners, but one must remember that these dogs were bred to fight and to be devoted to their humans, which could prove to be an additional problem when the attention from the owner is shared. Another point regarding Pit Bulls is that they tend to fight silently so there is not a lot of warning that a fight is about to begin – they just seem to fly at the other dog with no calming signals or signs of aggression happening before the attack.

However, we have also seen many Pit Bulls living together in harmony, but this takes a very special owner who is always on the lookout for trouble. Here we are talking about the general public, not experienced dog handlers.

Other dogs that often do not do well with other dogs are the Chinese Shar-Pei, Boerboel and Chow Chow - however so much of this depends on the individual dog - it is not written in stone but must be taken into account.

Another breed we are always hesitant about when going to introduce a pup, is the Golden Cocker Spaniel who often suffers from 'rage' syndrome which is unprovoked, uncontrollable aggression, and has been described as the dog appearing to have a fit, turning on whoever or whatever is closed and when it is over it is as if nothing ever happened. This seems to be genetic due to bad and indiscriminate breeding where no thought at all has been put in regarding genetics. This rage syndrome is not always directed at other dogs, they can equally 'lose it' with their owners. With a reputable, responsible breeder being sought, the chances of this happening are considerably lowered. Even if there is no rage syndrome due to bad breeding this breed is not a laid back as it should be and can really be 'otherwise' dogs! There have also been reports of "Rage Syndrome" in St Bernard's. Again this is a result of irresponsible breeding or breeding within a gene pool that is too confined.

Rottweilers are also a breed very protective of their people and Daschunds tend to be very impatient and can become snappy. Although we know of many Toy Poodles who live together in harmony, they may lash out in self defence, especially if the new pup is very boisterous.

## 2. Will existing dogs tolerate a pup in the home?

This is an area that many potential owners of pups fail to consider. We probably average at least one phone call from a panicked owner weekly saying that the existing dog will not tolerate the new addition. I have heard of pups both maimed and killed and having to be either be given away or sent to shelters due to the existing dog not tolerating the new addition. Here are some points to consider:-

- 🐾 [Opposite sex is always the best and safest bet.](#) Next best match is two males, but ensure they are both neutered. Worst match, is two females, especially if not sterilized. Whereas male dogs often have the occasional altercation to determine who it top of the pile in the dog hierarchy, they quickly get over it and forget their differences - females on the other hand often live up to their name of 'bitches'!

Very often everything seems to go well until the new female reaches the 8 month period – not only is this the start of the adolescent period (breed dependant), it is also the time where status assumes enormous importance – especially to some dogs more than others, and fights can easily break out.

The difference between males and females in this situation is that many females will simply not give up stating their status in the hierarchy especially breeds such as the Terrier groups and serious fighting can and often does occur, resulting in physical damage and even death in some cases.

- 🐾 [Breed Compatibility – never to be overlooked.](#) As already mentioned in the section on dogs that tend not to get along.
- 🐾 [The existing dogs social abilities.](#) If the existing dog has never been socialized and especially if it is an 'only' dog, the chances of it accepting a puppy are slim to nothing. This obviously depends a lot on your dogs reaction to seeing other dogs when out for a walk. If the dog seems fine walking past and every so often having a smell of another

dog, then this situation could be successful. If on the other hand, the existing dog is reactive towards other dogs, I would not consider the possibility.

If the existing dog has any behaviour concerns such as barking, demanding attention, separation anxiety, destructive behaviour, many owners think that bringing in another dog to keep the existing dog company is a good idea. Think again! All that happens in this scenario is that the owner will end up with two dogs exhibiting the unacceptable behaviour. This is mimicking behaviour, and the correct terminology is Allelomimetic behaviour. Any behaviour concerns need to be dealt with first.

🐾 [Size Matters](#) – a large Rotti could easily sit and squash your miniature Teacup addition. What can also cause problems is that the larger dog is kept outside away from the small dog - this very often, understandably causes tension.

🐾 [The age of the existing dog](#). Many owners think that because a dog has lost its companion due to death that bringing in a new puppy will provide company for an older dog. This is not always the case and although a new addition can sometimes seem to provide 'renewed life' for the existing older dog, not all dogs will accept a new puppy.

🐾 [Health Concerns](#) If the older dog has arthritis, Hip Dysplasia, or other health problems, it is unlikely to enjoy the constant attention of being jumped on by the new addition, who wants to play all the time. A lot of this will depend on the dog's actual age and physical condition, and with some older dogs it is far better to allow them to enjoy their 'golden years' in peace and quiet.

🐾 [Existing Pack Dynamics](#) Other factors that may result in the pup not being accepted, even though the existing dogs have happily accepted a pup before, are the current hierarchy dynamics in play with the existing dogs. We have seen so many cases where dogs have always accepted a new addition, especially with people that foster dogs, and suddenly the latest new addition is just not accepted. We do not always realize it, but pack hierarchy is always changing. As one dog gets a bit older, a younger dog may try to increase its own standing in the current pack and will not take kindly to a new addition. If

a new pup is brought in under a situation such as this, there is a definite chance that it will not be accepted and could also push the buttons in the existing pack and fighting can break out.

### 3. Nature or Nurture

The eminent behaviourist and veterinarian Dr. Ian Dunbar, says that when looking for a pup you have two options:-

1. Nature – This gives you the opportunity of looking for the perfect dam and sire, from the perfect breeder, to obtain your pup, and has a distinct advantage to it as you have more chance of getting what you want from the very best that is on offer. There is now even more scientific research than was available previously that point to the Nature aspect being even more important than previously considered.
2. Nurture – Basically you do the utmost you can with what you have got! The inherent character of a puppy can be somewhat modified by circumstances and environment, but behind this you will always be dealing with the genetic based personality, therefore start off with the best you can possibly afford.

This subject is a fascinating one, and there are always discussions and arguments as to whether a dog's behaviour is based on Nature or Nurture. This subject is also beyond the basics of this course, you will learn a lot more about it if you take your studies further, and for those that would like to widen their knowledge of this subject (which is a good idea if considering a career in the canine profession), there are multiple articles to browse through and form your own opinions. Here are a couple of links to get you started:

🐾 Nurture vs. Nature – some new science on this matter

<http://btoellner.typepad.com/kcdogblog/2010/01/nature-vs-nurture-some-new-science-on-the-matter.html>

- 🐾 Aggressive Dogs: Nature or Nurture? <http://www.clickertraining.com/node/1690>  
The Roles of Heredity and environment in  
behaviour [http://romanreign.com/nature\\_vs\\_nurture.html](http://romanreign.com/nature_vs_nurture.html)

#### 4. Where to purchase your pup from.

**Golden Rule – Never take a child with you when viewing pups until you have made final decision!!**



[Pet Shop, Flea Market, Side of Road, Gumtree, Junk Mail?](#) Most definitely not! Although these pups will be 'cheap' by comparison to some of the breeders, you could well end up paying a fortune in vet bills, behaviour consults and you are probably inadvertently supporting a puppy mill somewhere.

No breeder worth his salt would ever consider taking one of his precious puppies to places such as these. Selling puppies at these places is emotional blackmail! These pups look so appealing and adorable, but what about their own and their parents health? Were the parents inoculated against all the know diseases? Are there any hereditary health or behaviour problems? Were the parents screened for breed specific genetic defects? Does the person running the pet shop have the knowledge to answer the questions you have?

We do not 'blame' the breeders and shops in the case of above; rather I 'blame' our own profession for not educating people enough on where to buy their puppies. It is the potential owner's responsibility to do the homework required *before* purchasing the pup.

There are several organizations that 'register dogs', officially supplying them with papers, but only KUSA (Kennel Union of SA) is recognized overseas and is really the only official body of a good breed standard.

Additionally, if a pup is registered with KUSA (Kennel Union of SA), that is all it has – papers. There are no checks done at all. This is the case with all KUSA registered dogs.

Many of the pet shops buy their pups from puppy mills that breed solely for profit. You may all have seen some of the horrendous scenes of a puppy mill on Carte Blanche over the years as well as the stories that abound on Facebook. That is not to say that all of them are as bad as the ones shown on the show, but there is no responsible breeding involved, and more often than not it results in inferior specimens of the breed, which may have the name of the breed on their papers, but, due to ‘mistakes’ do not act and often do not look anything like what they were meant to! Also think about the poor bitch, she would be mated every single season. Think also about what kind of conditions they are bred in and then kept in at the ‘breeder’ and the pet shop – would you like one of the pups you bred to end up like this?

The pups, due to having lived in small cramped cages (both at the puppy farm and pet shop) have no idea about toilet training as they would have been confined to their cage. A dog will normally never eliminate where it sleeps and eats, but in cramped conditions such as above, the dog will eliminate anywhere simply because it doesn’t have enough room. This could lead to possible soiling problems in the house and the pup ending up in a shelter.

Distemper is a disease which was virtually unheard of in SA until a number of years ago. Now, with puppies being sold in this manner it has come back again with a vengeance and it really can be a killer. If the pup survives, it often has health scars to show for it which will end up costing you money and many dogs end up physically disabled. Parvo virus is another killer disease and is rampant in Gauteng. Parvo is normally found in pups from puppy farmers; a pet shop etc and is highly contagious.

As you will learn a bit later on, a pup should not be taken away from its mum until 8 weeks of age, the majority of dogs from these reprehensible places are in the region of 5-6 weeks of age – far too young, and have missed out on one of the most important parts of their education – how to relate to littler mates and self and discipline from mom. So often we see dogs that are purchased at this age and the behaviour problems normally involve fear behaviour.

Apart from the behavioural and health issue you are risking, what about the emotional side of things? You bring home this lovely little bundle of fluff and everybody in the home falls in love with it – then disaster strikes – it suddenly gets ill, you take it to the vet only to discover it has distemper or a similar disease – the puppy doesn't make it – heartbreak for the whole family, especially if there are children – is it worth it just to save a bit of money? Also bear in mind that every time you support these people, you are reinforcing the way they operate – rather give a pup a home from a shelter if a pup from a really good breeder is not an option.



[Rescue Shelter](#) It really makes one feel good to give a young puppy that may otherwise be put down a home, but whether or not you go this route is a very personal decision. If you have young children, I would not recommend adopting a pup from a rescue shelter. The main reason for this is that you have no idea at all how the pup will end up, whereas if you get a purebred dog from a reputable breeder

(Nature) you have a much better chance of success which is even more important when children are involved with the dog – however, having said that, we have known umpteen dogs that came from shelters as pups who made wonderful family dogs – some of my own dogs included!

You may even find that the pet shop puppy which has now grown somewhat and is no longer as cute and appealing, has been given to the shelter to home! The litters of back yard breeders who can't find homes for the pups more often than not end up at a shelter. Again, you have no idea if the pup is purebred or mixed, no idea of the genetic background, no idea as to how big it will grow (feet are often an indication as to size but can be misleading) and even less idea of how the pup will turn out – a risky chance to take, especially when you are bringing this young animal into your family and you have young children.

If we consider the health aspect at a rescue shelter, again, there is perhaps a higher chance of the pup being diseased. This is not due to lack of care on the part of the staff, but rather that nearly every animal at a shelter could have been exposed to disease, either just before it arrived or once it is taken in at the shelter, and not all shelters have a quarantine section.



A pup that is taken to the shelter has probably not been given any vaccinations and there is a good chance that the dam was not inoculated either, another area of concern. The shelter does inoculate as soon as the pups/dogs arrive, but this is not a guarantee that the pup will not get ill, and not all shelters do this – some wait until the dog/pup is being adopted before spending the money.

People do not always realize how expensive it is to maintain a dog in a shelter. Here is a link to an article done for FOD on this subject.

<http://www.friendsofthedog.co.za/are-you-paying-too-much-for-a-shelter-dog.html>

Responsible Reputable Breeder This is your best option, but as above, just because a dog is 'registered' and the breeder a member of an organization such as KUSA (Kennel Union of SA), it does not guarantee that the dog is the best of the breed that you are looking for – all this proves is that the dog has papers.

With the debacle that happened in 2015 where a leading Miniature Schnauzer breeder, Roodewal Kennels, was found to be puppy farming (with many other breeders contracted in to supply pups), purchasing from a breeder who is a member of an organization such as KUSA also has its pitfalls - the responsibility is unfortunately on the new owner to really do their homework before purchasing. The conditions that many of the 'puppy farmers' tied into Roodewal kept the breeding stock in were beyond belief. I was called in to work with some of the worst cases and these dogs were in a shocking emotional condition and in depth rehabilitation had to be done.

A dedicated breeder is somebody who is passionate about his particular breed and breeds *only* for the betterment of the breed, not to make a quick buck. A reputable breeder will be very fussy about who his pups go to. A perfect example of this is a client who contacted us a while ago for help in getting a pup. Their breed choice was eventually a Beagle and after going through the puppy questionnaire did a lot of research on the breed, going to shows, they eventually found two breeders that were recommended to them at a show and made appointments to go and see them. Both these breeders 'interviewed' my clients and insisted that Mother, Father, Child and Home Helper came to the interview. They were asked countless questions, including what Arrangements had they made for puppy

class. After they 'passed' this section, the breeder came to view their premises and home. Only then were their names put on the *Waiting List* for a pup. Yes, a waiting list – the majority of good breeders have clients on waiting lists and will not be found advertising in the local paper – they are well known in the industry and seldom have a problem finding homes for their pups. These particular people waited nearly six months to get their pup as the breeder would only breed when he knew that there were good homes waiting for his pups.

When looking at breeders you want to find one that allows the pups to be part of the family by interacting with them at least part of the time. They should see a lot of different people, be allowed to come into the house, be familiar with the vacuum cleaner and the comings and goings on of a normal household. I went to see seven different breeders before getting my own Border collie, Brady, and he was purchased from a situation as I have just described. Even with Reputable Responsible Breeders, there are cases where breeding becomes extreme, and the bitch is kept in very sterile conditions, no or little interaction with family or people and is in a way 'over protected'. Here too, we would caution against getting a pup. The parent would not have good socialization skills, the pups would not have been exposed to different people and noises and family interaction, and with the run the dogs are being kept in being very sterile, the pup would not have built up immunity towards germs.

The above does not mean that the situation is all one sided – ask the breeder for names and contact numbers of people who have purchased puppies and phone them – even better go and visit them and see what their dog is like! Ask the breeder what type of family is best suited to his own breed. A reputable breeder will not try to push you into buying a puppy or even two; the quality of his pups will speak for themselves. Breeders love talking about their own dogs, so take advantage of this and find out all about physical problems, development stages, problems and so forth. You may end up not taking one of the pups, but you will have learnt a huge amount!

Another point to take into account when purchasing from a reputable breeder, is that if you pick up any serious problems such as the pup not being accepted into your existing pack or health problems when checked by your own vet or later which could be genetic, the reputable breeder will normally take the pup back. A reputable breeder often keeps in touch

with the owners of his pups to see how they are progressing and I know of many breeders who have taken back full grown dogs when their owners decided to leave the country or there is a dramatic change in their circumstances. They cared so much about what they had bred that they kept the dogs until they could find suitable homes for them.

Reputable breeders very often insist that their pups are sterilized – this is to ensure the bloodline is kept pure. If you find a breeder that wants you to keep the pup intact as he will use it to breed with at a later stage – run a mile – a reputable breeder will keep the best for themselves or trade with another breeder – the best of the litter will never be sold.

The best kind of breeder in my eyes is the Responsible Reputable Breeder where the mother is very much part of the home and the family and the pup is brought up in conditions much like it will experience in its new home. If you or your client is not purchasing from one such as this – then adopt, don't shop!

[What to ask the breeder](#) Ask to see both the dam (mother) and the sire (father). If there is any reason why you cannot see and interact with them leave immediately! Have a look at the general condition of the dam, she may be a bit on the thin side due to recently having given birth and caring for her pups, but apart from this, should appear to be in good physical condition. This is the 'stock' that your puppy will come from, and it is imperative that you can see what your own pup will grow up to be like – not just in looks, more importantly in temperament. Genetics account for approximately 60% of what your pup will end up as.

Have a look around and ensure that the premises where the dogs and pups are kept are spotless. Dirty premises could well be an indication of not enough care being taken and this could rub off onto what is bred as well.

Here are some articles on breeders for you to read through to further your knowledge.

<http://www.friendsofthedog.co.za/breeders.html>

<http://www.friendsofthedog.co.za/probing-the-pedigree.html>

<http://www.friendsofthedog.co.za/1-truth-about-puppy-mills.html>

<http://www.friendsofthedog.co.za/puppy-farms--are-you-unwittingly-supporting-them.html>

<http://www.friendsofthedog.co.za/horrendous-cross-border-puppy-trade.html>

<http://www.friendsofthedog.co.za/puppies-on-the-internet.html>

## 5. What to look for in a pup

Now comes the most exciting moment, you have chosen your breed, and you have found your breeder, now you can choose your puppy! If your client has an existing dog at home, then go for the opposite sex to what they already have as well as having done the homework into whether the breeds will get on well.

Spend as much time as you can sitting and observing the pups – remember what you buy will be with you for many years, so please spend as much time as possible looking for the best pup for you.

On average the first pup that runs up to greet you, jumps all over you, licking and chewing on you, is not the pup to take for a family. This is often the most bossy of the pups and may be a handful to manage. We often come across people we are helping from a behavioural point of view of dominant behaviour, who will tell me *“oh he chose me, just jumped into my arms and started licking and chewing on me!”* At the opposite end of the spectrum, don't choose the pup who is sitting quietly in a corner ignoring everybody or being bullied by the others. This could very well be the most fearful pup in the litter and you could end up with fear based behaviour. When working with these dogs later in their lives, when asked why they purchased this particular dog we are often told *‘shame, she just sat at the back and looked so sad!’*

Ideally you want to choose one from in between these two extremes – one that is friendly and comes to say hello, but is just as interested in playing with its litter mates or getting a drink from mum. Pick up the pups individually – a friendly pup will normally be happy to be picked up and say hello for a period of time, while an unfriendly pup may struggle against you to be released or become slightly reactive towards you, demanding to be put on the ground. A good breeder will know all the pups intimately and will help you to make the correct decision as to which pup is right for you. Many of the breeders have their pups

'temperament tested' so that they can better match a pup to its prospective new owners and notes on this are given later.

- 🐾 The pups in a litter should be approximately the same weight and size. If there are large variations in weight and size this could very well indicate underlying health problems.
- 🐾 The eyes will be clear and shiny and will not have a discharge.
- 🐾 See if the ears smell clean with no discharge. The inside of the ear should not be red or look swollen or inflamed.
- 🐾 The nose should be a little moist with no excessive discharge. There should not be any sniffing or sneezing.
- 🐾 The coat should be lovely and soft, shiny and smooth with no patches of dry or irritated skin. A pup cannot have flea and tick products until they are over 8 weeks of age but do look to see if there are any fleas on the skin.
- 🐾 See what the pup smells like. Pups have a gorgeous 'puppy' smell especially when healthy.
- 🐾 Have a look at the rear region and down the back legs. This should not have any bits of faecal matter and no staining on the legs from a runny tummy.
- 🐾 A healthy pup will run, play, jump and interact with its litter mates. It will have a good appetite and on awaking will quickly be full of energy.

On taking your pup home, one of the first things you should do is take it to your own vet for a thorough check up – even arrange this for the day you take the pup home.

#### [What to look for - an unhealthy pup](#)

- 🐾 As opposed to the healthy pup that runs around and interacts with its litter mate, an unhealthy pup tends to isolate itself or if there is more than one in this condition, they will lie together.

- The eyes may be dull with no sparkle and possibly have mucous or discharge at the sides. Some unhealthy pups, when picked up seem to avoid looking at you and will turn away.
- The ears may smell, have a discharge or be red and inflamed inside.
- The coat may be dull and appear lifeless. Also look for raw patches, lumps or bumps. Check for fleas or ticks.
- The pup should not be skinny with the ribs showing. By the same token a pup that has a definite pot belly may well have worms.
- A pup that has faecal matter at the rear end or soiling marks on the back legs could be suffering from diarrhoea and possible disease.
- See if you can see any stools in the area where the pups are kept and look at the consistency.



- Often a pup that is unhealthy does not have that lovely 'puppy smell' – instead it will have an odour. Different diseases have different smells but anything that doesn't smell 'right' should not be considered
- The pup may be off its food.

You may find that the pup your clients have set their heart on is one of the healthy pups, but I urge you to tell your client to walk away from the whole litter. That an unhealthy pup is in with healthy one's spells trouble – you don't know what the puppy you have chosen may be harbouring and the breeder has a definite question mark on his abilities as a breeder as far as we are concerned.

## 6. One or Two Pups?

Once again, a reputable breeder will not let you take two pups. There are various reasons for this:-

- The pups will tend to bond more with one another than with their new family.

- The attachment could become so intense that if they are separated you start to have behaviour problems – this happens very, very quickly.
- Two pups of the same breed are more likely to fight especially if bitches– the same things are important to the dogs. This will not always occur until the pups reach approximately 8 months of age, the adolescent age.
- Two dogs are double work and are much harder to train than one dog.
- When you have two pups together, one will tend to be boisterous and the other more reserved. This can lead to the more reserved pup never growing to its full potential.

The above is a good example of where further education to the general public needs to be undertaken. I have come across two Boerboels, bitches that were literally killing one another and on asking why they had two was told that the SPCA said there wouldn't be any problems as they were sisters.

## 7. Puppy Testing

If the owner is in any doubt about the puppy they would like, then suggest to them that they have the pup temperament tested. Many good breeders have this done anyway at 7 weeks of age by professionals. There are two well know tests that the owners can use themselves – the first is the one developed by Wendy and Jack Volhard and is known as the Volhard Puppy Aptitude Test or PAT. Some of these tests were developed in the 1930's for dogs that were going to become Guide Dogs. Then further studies were done in the 1950's to determine how quickly pups learned. Further information can be found on the Volhard system of testing at [www.volhard.com](http://www.volhard.com). When you eventually qualify as a behaviourist, offering the services of puppy testing will increase your financial earning power and additionally you should know the basics of what to look for in the event that a potential owner will ask you to come with them to choose the puppy.

An alternative method to help determine the pup's personality is the Campbell Tests. The best site I have found was on the Royal Canin site and the link to use is:

<http://publications.royalcanin.com/renvoie.asp?type=1&cid=120740&id=102446&com=2&animal=0&lang=2&session=2001760>.

## 8. Canine Genetic Disease Testing

(Not for testing - just for knowledge)

Not all people are aware of what Canine Genetic Disease testing is, or what it entails. Many of the top breeders will have their dogs tested to rule out genetic diseases.

Henriette van der Zwan, a leading genetic expert here in SA, and one of our students, did the following excellent article for us which will give you the basic information you need. You will not be tested at all on this section; it is only to broaden your knowledge. [www.inqababiotec.co.za](http://www.inqababiotec.co.za)

### [What is a genetic disease?](#)

There are around 500 diseases, abnormalities or disorders that are passed on from parents to puppies. Most of these are not curable and can only be eradicated by selecting against animals or lines known to display the symptoms of these disorders.

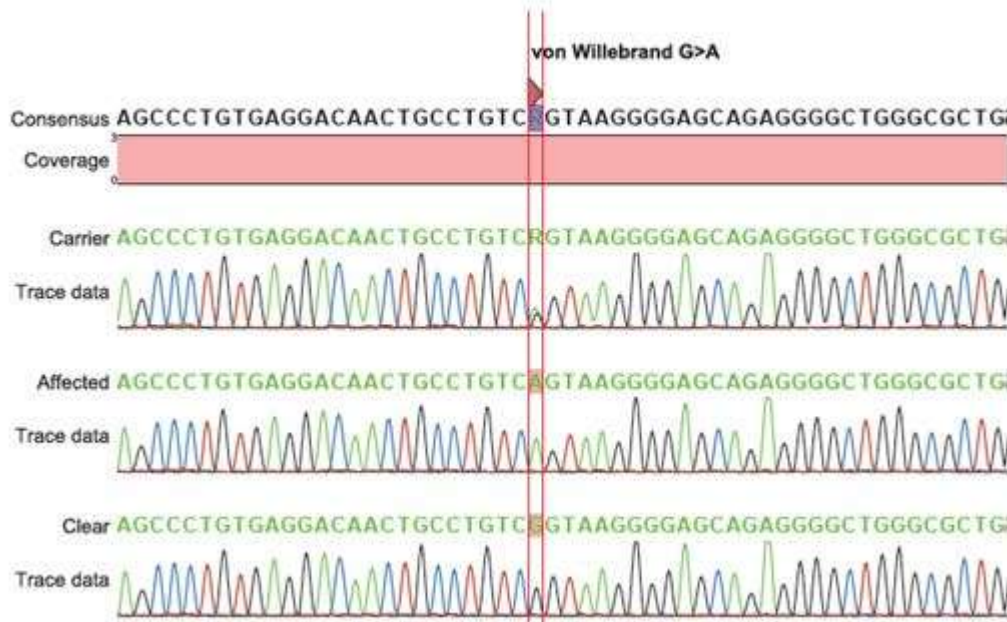
Genetic disorders can be grouped into two classes: single gene traits and polygenic traits. For single gene traits, as the name suggests, only one gene is involved and the animals can be classified as “clear”, a “carrier or heterozygote” and “affected”. Many of these disorders can be tested for (given that the gene and mutation have been identified) and the easy test can tell the owner into which category the dog falls. Polygenic traits are harder to test for and for most of them there isn’t an accurate genetic test to predict if the dog will develop the disorder. Another

All animals have two copies of each gene, one copy inherited from each parent. The building blocks of genes are nucleotide base pairs. There are only four base pairs (A, T, G and C) which are arranged in different orders. For the gene to be expressed correctly the base pairs needs to be in the correct sequence. Sometimes the sequence becomes altered and this change is called a mutation. The mutation could be the substitution of one base (e.g. a G) for another (e.g. an A) (like von Willebrand’s disease), or an insertion (PRA-cord 1 in Miniature Dachshunds) or deletion (MDR1) of one or more bases.

The mutation causes the gene to be expressed incorrectly and this leads to the development of the genetic disease. For example von Willebrand’s disease Type I am caused by a mutation in the gene that controls the manufacturing of a blood clotting protein. The substitution of the “G”



nucleotide with an “A” causes the sequence of the gene to be altered. The gene is not processed correctly and an insufficient quantity of this protein is manufactured to ensure sufficient blood clotting.



**Substitution of a “G” nucleotide to an “A” nucleotide causes von Willebrand’s disease Type I in Dobermanns**



**Deletion of 4 nucleotides causes MDR1 in Collie breeds**

<b>Disorder</b>	<b>Breed(s) affected and description of disorder</b>
von Willebrand's disease Type I	Bleeding disorder affecting Dobermanns
prcd-PRA	Eye disorder that could lead to blindness that affects over 27 breeds including Labrador retrievers, Golden retrievers, English cocker spaniels, Australian shepherds, Toy- and Miniature Poodles, Australian cattle dogs, Yorkshire terriers and Chinese crested dogs
cord 1-PRA	Eye disorder that could lead to blindness that affects Miniature Long- Wire- and Smooth-haired Dachshunds and English Springer spaniels
Collie eye anomaly	Eye disorder that could lead to blindness affecting Australian shepherds, Border collies, Rough- and Smooth collies and Shetland sheepdogs
Multiple Drug Resistance (MDR1)	Disorder that leads to a sensitivity or resistance towards certain drugs that could lead to death affecting Border collies, Australian shepherds, English shepherds, German shepherd dogs, Old English sheepdogs, Rough- and Smooth collies and Shetland sheepdogs
Familial Nephropathy (FN)	Renal disorder that could lead to renal failure affecting English cocker spaniels
<u>Ceroid Lipofuscinosis</u>	A neurodegenerative disease affecting Border collies
Fucosidosis	A fatal metabolic and neurological disorder that affects English Springer spaniels
Phosphofructokinase (PFK)	A metabolic disorder affecting English Springer spaniels
Cystinuria	A metabolic disorder affecting English Springer spaniels
L2HGA	A neurological disorder affecting Staffordshire bull terriers
Heritable cataracts	An eye disorder affecting Staffordshire bull terriers and Boston terriers as well as Australian shepherds
CLAD	Immune disorder affecting Irish setters
PRA-rcd1	Eye disorder affecting Irish setters

### What does the test indicate?

The tests only cover the region of interest that is associated with a specific disease mutation and does not give you a profile of all the dog's genes. The test indicate if the dog is clear (no mutant copies for that gene present), a carrier (only one mutant copy present) or affected (two mutant copies present). In Figure 4 an example of a chromatogram of the region of the gene associated with the PRA-prcd disease is shown. The mutation is indicated within the two lines and is a base pair substitution of a G to an A. Each peak on the graph indicates a different base to represent the sequence of the gene. A clear dog will have a G on both copies of the gene and will never display the symptoms of the disease nor will it pass the mutant gene to its offspring. On the graph only one peak is visible as they align on top of each other. A carrier dog will not display the symptoms of the disease but may pass the gene to its offspring. This dog has a G on one copy of the gene and an A on the other copy presenting as two peaks on the graph. An affected dog has an A on both copies of the gene and will pass the mutant gene to its offspring. The probability of an affected dog presenting the symptoms is high, but for most diseases it is not a guarantee that the dog will develop the disease.



**A chromatogram illustrating the three different statuses of PRA-prcd found in dogs.**

[Why do I have to test my dog?](#)

For most genetic diseases there is no cure. Dogs affected by von Willebrand’s disease Type I could bleed to death and PRA affected dogs could go blind at a young age. Nobody wants to have dog suffering from a disorder and much less wants to sell a puppy that has this disorder. The only way to manage this disease is by selective breeding. The table below shows the outcome when dogs with different statuses for a mutation is mated.

Parent 1 genotype	Parent 2 genotype		
	Normal	Carrier	Affected
Normal (No mutant copies)	All normal	50% Normal 50% Carrier	All carriers
Carrier (One mutant copy)	50% Normal 50% Carrier	25% Affected 25% Normal 50% Carrier	50% Carrier 50% Affected
Affected (Two mutant copies)	All Carrier	50% Carrier 50% Affected	All Affected

Table 1: Possible breeding outcomes when mating dogs with different statuses

Ideally all mating should be between two clear dogs. Unfortunately dogs with excellent features for other traits might be a carrier or even affected and by breeding only clear dogs, the gene pool is shrunk even further. A breeder should use these test results as a tool to plan a mating. If a carrier dog is used in a mating the puppies should also be tested and the breeder should advise the buyer on the status of the pup.

**9. Some Additional breed knowledge – not for testing**

[Hypo Allergenic Dogs](#)

Many people have allergies, or children with allergies and the idea of owning a dog, as much as one is wanted is gone. However, there are dogs that people such as these and also people who don’t want dog hair all over the house can look at.

Dog allergies are really allergies to the dander, saliva and urine of dogs, rather than the hair. The

proteins produced in the sebaceous glands are commonly transported into the environment by the shedding of dander and the hair.

Dander is the scales of dead skin that are constantly being shed by all mammals. Dander is similar to dandruff in humans, but much smaller and not usually able to be seen by the naked eye.

Due to its small size and light weight, dander shed from the pet can stay airborne for hours. The allergens in dander are sticky, and can be transported on clothing, and can remain in carpets, mattresses and furniture, so cleaning of these items is essential.

No dog is shed free unless hairless, but the following dogs shed no more hair than we humans lose each day. The coat should still be maintained in that regular brushing is done to remove any loose hair and in the case of a breed than can be trimmed for this to be done at least every other month. Not all the following breeds are available in SA.

Affenpinscher	Havanese	Soft Coat Wheaten
Airedale Terrier	Irish Terrier	Std. Schnauzer
Azawakh	Irish Water Spaniel	Tibetan Terrier
Afghan Hound	Italian Greyhound	Welsh Terrier
Australian terrier	Kerry Blue Terrier	West Highland Ter
Basenji	Lakeland Terrier	Wire Fox Terrier
Bedlington Terrier	Lowchen	Wirehair Griffon
Bergamasco	Maltese	Xoloitzcuintli
Border Terrier	Manchester Terrier	Yorkshire Terrier
Bichon Frise	Minature Bull Terrier	
Bouvierdes Flandres	Minature Schnauzer	
Chinese Crested	Norwich Terrier	
Cesky Terrier	Peruvian Inca	
Carin Terrier	Poodle Standard	
Dogo Argentino	Poodle -Toy	
Dandie Dinmont Ter	P.guese Water Dog	
Giant Schnauzer	Puli	
Harrier	Pumi	

The fourteen oldest know breeds from around the world are:-

- Afghan Hound - Afghanistan
- Akita Inu – Japan
- Alaskan Malamute – Alaska
- Basenji (DR Congo)
- Chow Chow – China
- Lhasa Apso – Tibet
- Pekingese - China
- Shar Pei – China
- Saluki – Middle East
- Samoyed - Russia
- Shiba Inue – Japan
- Shih Tzu – China
- Siberian Husky – Russia
- Tibetan Terrier

### **Extreme Dog Breeding**

Have a look at this You Tube below so that you can see how we humans have changed the appearance of dogs and affected their physical abilities over the years - not good!

<http://www.youtube.com/watch?v=Hex00WjSobE>.

### **Unusual and Rare Breeds**

This is just for fun and to extend your knowledge. I have not listed them all, just some that I find more interesting as they have unusual features.



Catalburun: - This breed is a Turkish Pointer, and is readily identified by its “split-nose”.



Norwegian Lundehund: - Also known as the Puffin dog. The lundehund has at least 6 toes on each foot; can close its ears so that the ear-canal is protected against dirt and moisture; has neck-joints which enable it to bend the head backwards over the shoulders, so that the forehead touches the back



Cambodian Razorback Dog: - above and on the right. The dog has a unique "razor" of hair that runs down the length of its spine. They have been known to make strange noises which include yelps, yodels and howls



Bergamasco:-another dread-locked dog, but this dog does not have dreadlocks in the form of cords but rather in what is known as a felt. Their coat has three different types of hair which is very thick and easily mats.



Puli - While there are a few different dread-locked breeds this is one of the more popular and unique breeds. The Puli has dreads which are called cords and they start to form when they are 9 months



Affenpinscher: - has the nickname of Monkey Dog because it has a very primate like appearance and personality. It has a terrier body, shaggy fur and squashed in face and the hair is thicker and shaggier around chest and shoulder



Pumi: - trademark is its ears, which make it appear always alert and very lively. The ears are high-set and the tip flops down. The ears are covered with longer hair than the rest of the body which gives it a goffy appearance.



Lagotto Romagnolo: - what really makes this dog stand out is that it is the first known dog with the ability to search for truffles.



Bedlington Terrier: - looks just like a lamb and is a sweet and friendly dog. They have pear shaped heads, triangular ears and fur that looks like the curly hair of the sheep. This dog was actually bred as a fighter, which may seem strange compared to his docile appearance.



Ridge



Head

Thai Ridgeback: - from Asia. above and on left. Also had a ridge down back, and the face is wrinkled