

USING PEDIGREES TO BREED BETTER FRENCHIES

Conscientious breeders try to produce healthy puppies with good conformation, though few agree on how to do this. Some breeders make decisions based on the phenotype (physical or sometimes physiological characteristics) of the dog and bitch, breeding two similar individuals in order to try to produce puppies with the same desirable features; or breeding two dissimilar individuals in order to try to correct an undesirable feature of one.

Other breeders select breeding stock based on the dog/bitch's ancestors ... that is, the **horizontal pedigree**. A horizontal pedigree fans out from left to right as each earlier generation consists of twice as many individuals as the later one (though with inbreeding/line breeding some individuals may appear more than once, in the same or in different generations). Keep in mind that if you go back 7 generations, there are 128 ancestors..... 50 more ancestors than the dog has chromosomes (78). That means that seven generations back there are at least 50 ancestors from whom the dog has received absolutely no genetic contribution. A horizontal pedigree seldom contains any information about the health or conformation of the dogs involved. Even assuming that an individual in the pedigree has a 'normal' phenotype, this does not mean that that individual may not carry some recessive inheritable condition or conformational feature that could surface in a future generation.

More useful than a horizontal pedigree is a **vertical pedigree**. This generally consists of three columns representing three generations. In the first generation column are the dog or bitch you are considering breeding, PLUS that individual's full siblings (not necessarily all from the same litter). The column representing the second generation includes the dog or bitch's parents, plus THEIR siblings (the aunts and uncles). And the third generation column includes the grandparents and THEIR siblings (the great-aunts and great-uncles). Each individual in the vertical pedigree is assessed as to whatever phenotypic characteristic is under consideration and this assessment is included with that individual's name or ID number.

A vertical pedigree is of value because full siblings, on the average, are genetically as similar to each other as they are to their parents, and when considered as a group they tell the breeder the "range of possibilities" that each of them could pass on. By the same token, it is as important to know about the phenotypes of the aunts and uncles of a dog or bitch as it is to know about its parents; and as important to know about the great-aunts/great-uncles as it is to know about the grandparents.

Every breeder should collect as much information as possible about her dog's relatives and begin constructing vertical pedigrees. This means keeping in touch with puppy buyers, and building a database. When a breeder sells a puppy, she should stress that she wants to be kept up to date on the dog's health and conformation throughout its life. Some health issues do not become apparent until

later in life, so maintaining contact with puppy buyers is essential. If phenotypic testing is required, there should be agreement about what tests should be done, when they should be done, and who will pay for them.

In the end, a breeder should look at the overall health and soundness of each dog and bitch, and should find out as much as possible about the health of its parents, siblings and other relatives in its “vertical” pedigree. An excellent discussion of the use of vertical pedigrees (“Collecting and Utilizing Phenotypic Data to Minimize Disease: A Breeder's Guide”) may be downloaded from the OFA website at <http://www.offa.org/pubinfo.html>.

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