101
VARIATIONS

The latest craze among dog lovers is the designer hybrid, but there is a downside to messing with dog DNA. Veterinarian **Pete Wedderburn** on how to choose a puppy

On the streets of New York, London, Paris, and yes, even Dublin, the latest must-have accessory is the designer dog, also known as a "dog hybrid". It is a deliberate cross-breed between two pedigree breeds of dog, with the intention of obtaining the best of both breeds. The resulting breed-mixes have carefully coined names to add to their appeal: Labradoodles, Peke-a-poos, puggles, Labradingers and cockapoos.

The theory behind designer dogs seems logical: if you mix two different pedigree breeds, you hope to produce puppies that have the best qualities of each of their parents, and a lower likelihood of the inherited diseases that plague some breeds. The term "hybrid vigour" (or "outbreeding enhancement") describes the extra health and vitality that is hoped for. However, there is a risk that is often forgotten. You may end up with the worst of both breeds – a phenomenon known as "outbreeding depression".

If a pug was crossed with a Pekinese, you could end up with puppies whose eyes protrude so far that they literally fall out. Or if a Newfoundland was crossed with a St Bernard, the huge progeny could have debilitating heart disease or crippling arthritis. The problem with designer dogs is that genetics is a complex game of chance. You could be taking a big gamble, especially if you are mixing breeds which represent the extremes of the normal range of domestic dogs.

In the world of pedigree breeding, there is always the risk of a puppy developing diseases inherited from its parents. If you open a standard veterinary text book, you will find a long list of the conditions that are common in different breeds. Examples include arthritis, blindness, non-functional kidneys, liver disease, heart failure, breathing problems, psychiatric disorders, itchy ears and skin disease.

Why are pure-bred animals prone to these diseases? The answer lies in the genetics of breeding. In nature, "survival of the fittest" is the basic law. Individuals that are stronger, healthier and more vigorous than their siblings are more likely to survive and breed. As a consequence, the "weak" genes that make animals prone to disease are weeded out.

In the dog-breeding world, humans have taken over nature's role. Dog breeders select the animals that are used for breeding, and their criteria may be very different from the simple "survival of the fittest". To produce puppies with a particular physical appearance and personality, you need to deliberately breed from dogs that possess those qualities. However, as well as possessing the desired attributes, the resulting puppies may have other, less desirable qualities, such as vulnerability to inherited diseases that may not become obvious for several years.

The authorities which represent the dog breeding world (such as the Irish Kennel Club) are very aware of breed dispositions to certain diseases, and they are working hard to solve the problems. There are screening programmes in place, with the aim of removing some of the worst inherited diseases from the breeding pool. If you plan to breed from a golden retriever, you should have her hips and elbows X-rayed and analysed by experts. If she has healthy joints, she is given a good rating, and if she has joints that are more likely to develop arthritis later in life, she is given a bad rating. If you choose a golden retriever puppy from parents which both have good ratings, then you are much more likely to have a dog that matures with healthy, arthritis-free joints.

Similar screening programmes are in place for other breeds with a tendency to arthritis, and for certain types of inherited eye problems. The latest genetic technology is now being introduced to develop even more advanced methods of screening. An international research programme known as the Dog Genome Project has mapped out a detailed genetic analysis of the domestic dog.

Recent screening trials involve analysing the genetic make-up of a large number of animals to try to pinpoint the genetic background to known inherited problems. If this information can be obtained for a particular disease, the best animals for breeding can be identified through a simple laboratory test carried out on a blood sample or a mouth swab. Already, more than 15 diseases can be screened out using the latest DNA tests.

Many breeders already have a good understanding of genetics. If you look at any pure-bred dog's pedigree, you will see a map of an individual's genetic background over half a dozen generations. The rapid turno-