

Holistic science in veterinary medicine, animal husbandry and management

## TECHNICAL INFORMATION

### CONGENITAL DISORDERS

Serious congenital disorders in dogs are, thankfully, comparatively rare but there seems to be an increasing number of less serious but chronic conditions which may be associated with this. Congenital disorders are defined as conditions that are present at birth. They are caused by genetic abnormalities, the environment affecting the foetus during pregnancy, or unknown factors. The congenital disorders discussed here are those which may be inherited through genetic make-up – those governed by parentage.

According to Darwin's 'survival of the fittest' theory, animals which thrive well in their environment confer their physical attributes on to the next generation through their genes. Conversely, those that don't thrive well are not favoured in this way by the 'system', which appears to be about a balance between optimum health and vitality of a species within a given environment.

A good example of this operating in practice can be seen in undomesticated animals which live in groups, wolves or wild dogs for example. The stability and vitality of the family group is crucial to the survival of the species and this is maintained through a complex interaction of many factors. Central to this is the ability of the group to find food and shelter, breed, and rear young successfully. According to Darwin, individuals in the group which do these tasks optimally are favoured by the 'system' in that they are able to pass on these beneficial traits to the next generation through their genes. For example male dogs that are beneficial to the group are the ones most efficient at catching prey for the group to eat. These individuals tend to be muscular, swift, and are successful at mating. A female who is a good mother, is useful to the group, because she will produce youngsters who thrive well - and she will be favoured by the fittest males. Darwin's theory shows how in the general run of things, optimal health and vigour is maintained through an inbuilt system of birth control which favours beneficial physical traits to ensure the survival of the species. Those traits which are not beneficial are not favoured and therefore are not carried forward.

Darwin's theory has been the basis for modern scientific study since he first proposed it in his famous book 'On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life' published in 1859. There are those who see things rather differently though, arguing that the fossil record does not support his views entirely and putting forward other theories such as 'intelligent design' or in other words, species

did not gradually evolve, but arrived on earth as they are by some other means. Whoever is right about how it actually took place there is an elegant link for all to see between certain physical characteristics of a species and its environment. For example some animals possess long muscular legs for running fast in pursuit of prey, in the case of the wolf, or short stubby legs with feet adapted as spades for digging, in the case of the mole. Meat eating animals have shorter digestive tracts than herbivores, which need larger intestines to obtain maximum value from vegetation. As biological systems are investigated in more depth using modern techniques, many examples such as these appear to be features of complex interacting natural phenomena.

Undomesticated animals belonging to the same species generally look the same, but dogs such as the Great Dane and the Chihuahua vary hugely in stature and size. The diverse physical characteristics of our modern breeds were not developed through any process of natural selection or put on earth as they are by any other agency, but by man, for his own ends, either for practical or aesthetic reasons. Inherent in many of the 'made made' breeds are congenital problems, such as respiratory difficulties in the Bulldog and musculo-skeletal problems in Basset. This is opposite to the situation in nature where breeding 'programmes' are controlled by a deeper natural order and such problems are not apparent. The necessity for developing such characteristics in these dogs has long past, so perpetuation of the 'show standard' with such fervour is difficult to justify.

Breeders do their utmost to eliminate breed-specific congenital problems, but there are a staggering amount of these, many of which are not generally discussed outside the veterinary profession. Despite best efforts to eradicate this phenomenon through selective breeding, they just seem to come back again in another form. Perhaps more radical methods are required in order to try and prevent them. For example more hybrid vigour could be introduced – in other words, further increase the gene pool. Apart from the physical problems discussed above, breeding for type in modern dogs also raises questions of longevity. The dog's close relative the wolf will live up to twenty years and the *Guinness Book of Records* entry for longevity in the domestic dog is twenty seven, compared with the average life span of the European domesticated dog, which is generally less than thirteen years.

Of course the effects of these problems are a question of degree but most individuals will survive quite happily with proper care. Some need occasional or constant veterinary intervention but others just need an appropriate diet. Two common associated problems are dietary intolerance, which seems increasingly to have a genetic component, and susceptibility of large and giant breeds to musculo-skeletal problems. In the case of dietary intolerance, the carbohydrate base is often at the root of the problem, which can often be successfully managed through provision of the right type and quantities of these. In the case of the propensity of large breeds to develop musculo-skeletal problems, special consideration of growth rates and calcium phosphorus ratios is necessary. In both of these situations the use of diets manufactured to the principles of Natural Feeding have been used

successfully. These involve the use of unadulterated raw materials which the dog is designed to eat and they are becoming more popular for use as part of the prevention and treatment of many chronic ailments, which may or may not be associated with congenital problems, some of which are discussed here.

**For free information on integrated nutrition and medicine and for advice in specific circumstances contact: [tech.help@bahnm.org.uk](mailto:tech.help@bahnm.org.uk)**

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