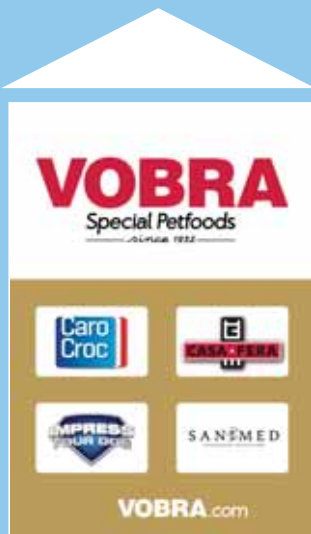




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Nutrition and Quality of Life in Dogs

Good nutrition promotes health-related quality of life by averting nutritional deficiency and excess and enhancing optimal functioning of the body. Humans have the duty to properly care for their domestic animals. Supplying good nutrition is part of proper dog care. Although the characteristics of good canine food are equivocal, the desired result invariably is a long, healthy life.

Signs of nutrient deprivation can occur in stray or neglected dogs. Those dogs may not have had food often and lacked the nutrients needed. An undernourished dog looks gaunt with visible bones and frequently displays an unkempt hair coat. These abnormalities should not put off adoption or taking the dog to a shelter as the prognosis is usually good. As similar symptoms of dog underfeeding are induced by internal parasites, a veterinarian should be consulted for the correct diagnosis.

The occurrence of underfeeding is surpassed by overfeeding. Many pet dogs are overweight or obese. Although some diseases can lead to obesity in dogs, the main cause is excessive dietary intake of calories. Using a questionnaire completed by owners, a study found that health-related quality of life is reduced in obese dogs, but improved after successful weight loss. Another dog study showed that diet restriction without nutrient deficiency prevented overweight and increased life span.

There is no proof, but there is indirect evidence that diets high in eicosapentaenoic acid (EPA) and low in phosphorus may curb the development of joint and kidney disease in ageing dogs and thus support their quality of life. It is not known whether such dietary intervention is clinically effective and/or elicits competing health risks.

Malnutrition

Malnutrition is a condition that results from eating a diet that provides either not enough or too much nutrients. It may involve calories, protein, essential fatty acids, minerals, trace elements and/or vitamins. Not only stray or neglected dogs can be malnourished. Dogs that are cared for may unintentionally be fed on poor home-made or industrially prepared foods. The two feeding practices have not been honestly compared, but commercial diets probably carry very little risk.



There are case reports on dogs with swollen upper and lower jaws due to calcium and vitamin D deficiency. The dogs' home-made rations consisted of raw beef and a muesli preparation (1) or raw meat with cooked pasta and canned beans (2) or cooked horse meat with pasta, bread and vegetables (3). Some all-life stage, commercial diets are so excessive in calcium (4, 5) that they may cause skeletal disorders in young, growing dogs (6, 7).

Nutrient-unrelated, but diet-induced illness and death can be caused by a calamity. The pet food contamination crisis of 2007 is unprecedented in scope (8). Dogs and cats that ate the adulterated food developed kidney failure and many of them died. The deaths were traced to

melamine and cyanuric acid in vegetable protein concentrates used as food ingredients. The two compounds were added to artificially increase the apparent level of the protein.

Humanisation

In relation to pets and pet foods, the term "humanisation" is used. Humanising pets can be described as caring for them with the same devotion and commitment as human family members. Humanisation



motivates many dog owners to turn to functional foods as a way to ameliorate pet health conditions and promote overall wellness. Functional foods purport to provide health benefits beyond basic nutrition.

The other side of humanisation is that less healthy lifestyles of owners may also be extended to their dogs. Three studies show that overweight in owners is associated with overweight in their dogs (9-11). Owners should be informed about the observation (12) that health-related quality of life was reduced in obese dogs and improved upon weight loss. Weight loss in obese dogs with joint disease (osteoarthritis) improves mobility and reduces pain (13-15).

Obesity

Obesity develops when dietary energy intake exceeds energy expenditure. A renowned study demonstrated that diet restriction without malnutrition prevented overweight and increased life span in dogs (16). Until the age of three years, the control dogs had free access to a dry food followed by a slightly restricted plane of nutrition. The test dogs were always fed 25 percent less of the same food. They had a lower body weight, ideal body condition and lived almost two years longer than the controls.

It is likely (12) that optimum body condition of dogs promotes quality of life as perceived by their owners. In order to achieve or maintain healthy weight, food restriction is normally required. It could be argued that the owners' evaluation does not correspond with the dogs' perception of their own state. Dogs given limited access to food could have inferior mental well-being as they are hungry between meals.

Chronic Diseases

High intakes of EPA-rich fish oil may reduce the severity of canine osteoarthritis and improve the owner's assessment of dog's quality of life (17, 18). Phosphorus restriction diminished the progression of induced, chronic kidney disease (19). Consumption of a veterinary, low-phosphorus diet by dogs with naturally occurring chronic kidney disease increased their health-related quality of life (20). Possibly, diets high in fish oil and low in phosphorus reduce the risk of joint and kidney disease and so sustain health-related quality of life in ageing dogs.

List of references is available on request from the author (beynen@freeler.nl)

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