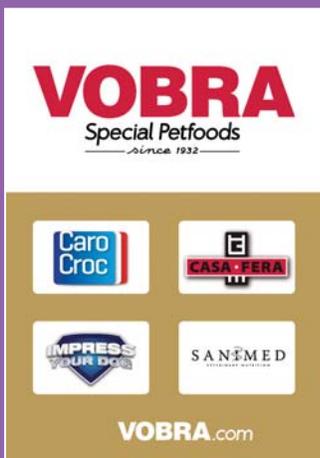




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Home-prepared Pet Diets

Anyone can have her or his opinion about dog and cat nutrition and put it into practice, provided no harm is done. Some owners make their own pet diets which they believe to be healthier than commercial foods. There is no objective evidence that adequate, self-prepared diets have health advantages when compared with industrially produced, complete pet food.

In principle, people can prepare nutritionally appropriate diets for their pets. However, home-made diets entail a certain risk of malnutrition. Practical examples are shortage of calcium and vitamin D in dogs, and excess of vitamin A in cats. There is no feeding practice with zero risk. The health risks of home-made diets and industrially produced dog and cat foods cannot be compared directly, but it is likely that commercial foods are safer.

Nutrient deficiency hazards in adult animals put on home-made diets can be minimised by feeding a complete, commercial food as at least one third of the total diet. Diets containing raw animal ingredients potentially cause human infections through pathogenic bacteria or parasites, but the risk magnitude is unknown.

Making Pet Food at Home

Home-made pet diets take different forms. The ration can be specially prepared for the animal. The recipe may be fixed or variable and contain cooked or raw animal feed materials. It could even be a vegetarian diet (which can be read in the February 2015 issue of *Creature Companion* on pages 50 and 51) or an all-meat diet (next column).

Some rations consist of table scraps, and leftovers. Self-prepared food can constitute 100 percent of the pet's nutrition, but it often contains a fraction of commercial pet food on a daily or occasional basis. An individual owner of a sick animal may cook at home a therapeutic diet as prescribed by a veterinarian.

About ten years ago, it was found in the United States and Australia that for 3 percent of the dogs and 0.5 percent of the cats, the whole diet was home-made, whereas 31 percent of the dogs and 13 percent of the cats received a mixture of home-prepared and commercial food.

Similar outcomes were obtained by a German study published in 2012. In westernised countries, most of the pet owners preferring home-made diets as sole source of nutrition, wish full control over the food they feed to their pets.

Raw Food Diets

All home-made raw food diets are not alike. In 1993, Billinghurst proposed that a dog's diet should consist of about 60 percent raw, meaty bones. A balanced diet would consist of bone meals, combined with variable meals based on raw green leafy vegetables, milk, offal, meats, cooked grains, potatoes or legumes.

Each meal is not balanced, but the overall diet over a 2-3 week period is expected to be nutritionally complete. Billinghurst published his second book in 1998, and then used the echoing term BARF, an acronym for *'Bones And Raw Food'*.

Others have also advocated their interpretation of home-made raw food diets. In her book released in 1995, Volhard recommends feeding cereal in the morning, raw beef and vegetables in the evening and further foods according to a rotating schedule.

Schultze (1998) describes the *'Ultimate*

Diet Raw Food Pyramid' with raw muscle tissue, organs and eggs as foundation. Raw bones and raw vegetables make up the second and third largest sections of the diet, followed by an extras category. In 2001, Lonsdale's book entitled *'Raw meaty bones'* appeared. In 2003, the ebook *'Raw food for dogs'* was launched by Eliassen.

Nutritional Value

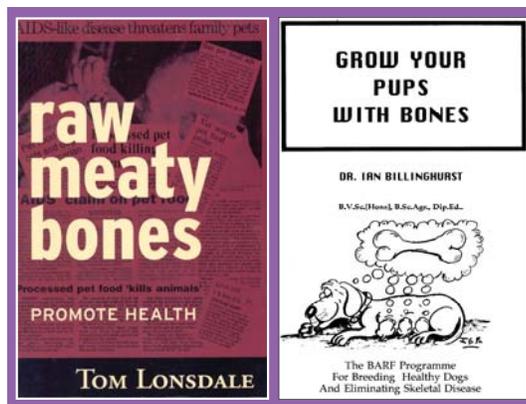
Recipes for home-made diets, including therapeutic diets, are available in books and articles as well as on the internet. Various researchers have calculated the conversion of recipe ingredient compositions into nutrient profiles, which were then compared with the recommendations set by expert committees. Others did the comparison upon chemical analysis of diets, prepared in accordance with recipes. It was concluded that, many of the recipes deviate to such a large extent, that they should be considered nutritionally inadequate.

Phrased in a simplified way, dietary levels of essential nutrients lower than 50 percent of the allowance as recommended by the NRC (National Research Council, 2006) cause deficiency in adult dogs. Roughly half of the BARF-compatible recipes evaluated in a survey, would then be deficient in iodine, manganese and vitamin D, while one fifth would contain insufficient calcium, zinc and vitamin A.

Under comparable conditions of nutrients supply, adult dogs that were fed home-prepared diets containing less than 15 percent commercial food, did not show deficiency symptoms. This is credit to various nutrient deficiencies setting in well below 50 percent of the NRC allowances. Moreover, owners generally favour a varied diet and thus modify recipes and rotate them, thereby achieving nutritional balance over time.

Deficiencies and Intoxications

There are many case reports on dogs or cats fed home-made diets and displaying clinical signs of shortage or excess of nutrients. Cats fed a diet based on pork or beef liver developed intoxication of vitamin A, and showed paralysis, malformation of the neck vertebrae, and chronic liver disease.



Diets consisting mainly of oily fish or pig's brain caused primary and/or secondary vitamin E deficiency in cats, leading to inflammation of adipose tissue. Non-supplemented diets consisting of raw beef and a muesli preparation, or raw meat with cooked pasta and canned beans or cooked horse meat with pasta, bread and vegetables all induced deficiencies of calcium and vitamin D in dogs. The animals showed swelling of lower and upper jaws.

Population Diseases

Home-made diets are associated with some population diseases. Periodontal disease is more common in dogs and cats, mainly fed home-made diets (presumably without bones) instead of commercial dry foods. When compared with healthy control animals, dogs with mammary tumours consumed a higher percentage of home-made diet. A Swedish study in dogs demonstrated that furnishing a home-made versus commercial food increased the odds of obesity.

Salmonella Infection

Raw animal products intended for human consumption or feeding to pets are often contaminated with bacteria, including types of *Salmonella enterica*. Dogs may carry salmonella and shed the bacterium with their faeces. Owners providing raw meat products should consider the threat of infection, when handling the food or feeding dish or through direct contact with carrier dogs or their faeces. Extra precautions to prevent infection should be taken.

Dr Anton C Beynen writes this exclusive column on dog and cat nutrition related items every month.