

Educating owners on risks of raw meat-based diets

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ABSTRACT

The feeding of raw meat-based diets (RMBD) is a subject of much contention. Having recently made the transition from student to qualified practising vet, it has surprised the author how widely these so-called “natural diets” are fed, in both home-made and commercially-produced forms. This article explores the arguments for and against such a diet, and attempts to get to the root of their popularity.

While anecdotal accounts of the benefits of raw feeding exist, no research-based scientific evidence is in support of such a diet. In contrast, a mounting volume of studies give evidence on the risks of such a diet, including concerns regarding infectious disease, nutritional imbalance and physical dangers, such as bone ingestion. Subsequently, many small animal veterinary professional bodies have released consensus statements advising against RMBDs. Pet owners can feed their pets what they choose; we can only offer guidance. If our advice is to be based on scientific evidence, the only advice we can give is against such a diet.

Food culture has become an integral feature of modern life; it's scarcely possible to turn on the television, open a newspaper or magazine, or scroll through social media without being barraged by information about food.



Feeding raw chicken constitutes a significant risk of *Campylobacter*, the author explains. Image: Fotolia/Grisei.

Whether it be everyday recipes, sensationalised tabloid articles about cancer-curing berries, this year's trendy diet or popular cookery programmes – food is everywhere. It's no surprise that, as obsession with what we put in our own mouths grows, modern-day pet owners are becoming increasingly conscious of what they feed their beloved pets.

Frequently in consultations, when the subject of diet is raised, owners will proudly proclaim they are feeding their pet the very best diet; they only get raw food. Clearly, owners who feed this type of diet do so with the very best intentions. In the author's experience, owners who feed raw diets are often those who care most deeply about their pet.

Veterinary opinion

Raw feeding is an increasingly popular practice among pet owners and a quick internet search on the subject will yield more than three million pages.

The internet age has brought increasingly easy access to information, and the ability for anybody to express their views and opinions publicly, including on veterinary topics. Raw meat-based diets (RMBD) are a prime example of such a topic, and it can be tricky to appraise the validity of information found online.

As a profession, the onus is on us to advise clients on such issues. Where should we stand? As a student, it was instilled into the author diets based on raw meat and bones should be avoided, and he has not personally met a vet in clinical practice who would actively recommend a raw food diet. So, why do many owners rave about them?

An internet search will quickly reveal a plethora of websites condemning the pet food industry, often with wild, unsupported claims extolling the virtues of feeding raw food. They often accuse the veterinary profession of being in cahoots with the pet food manufacturers, claiming nutritional

education is limited among vets, who are ignorant of the benefits of a raw diet.

Pet food industry marketing and sponsorship activities clearly have some effect on vet recommendation habits for pet food. Irrespective of this, the evidence of the risks of a raw food diet is stacking up^{1,2} – and that evidence is not being produced by the pet food industry.

Educating pet owners

Proponents of a raw food diet are keen to point out raw meat is what dogs should be eating because they are closely related to wolves, are carnivores and would have eaten meat in the wild³. Evidence from genome sequencing studies points towards the domestic dog diverging as a separate species between 9,000 and 32,000 years ago⁴.

The origins of dogs can be traced to early human agricultural activities and this relationship correlates with an increase in copy number of the AMY2B gene⁵, encoding amylase activity, required for carbohydrate digestion. While dogs do not produce salivary amylase, they do produce amylase within the exocrine pancreas.

Dogs are considered to be omnivores and should be fed accordingly. While cats are considered to be obligate carnivores (however, still capable of producing pancreatic amylase), possible nutritional issues are still associated with feeding raw meaty bones. Alarmingly, an owner of a young cat with a greenstick fracture asked the author whether a raw diet would be appropriate for their cat while the fracture healed.

Multiple studies of the nutritional adequacy of home-made and commercial RMBDs have identified the majority were nutritionally imbalanced^{6,7}. Diets low in vitamin D or with a low calcium:phosphorous ratio can predispose to osteodystrophy fibrosa due to nutritional secondary hyperparathyroidism and rickets⁸.

Furthermore, RMBDs are often high in fat¹. Home-prepared diets of any sort are at risk of nutritional imbalance and advice should be sought from a qualified veterinary nutritionist when they are being formulated.

Pet owners are often unaware of the regulations surrounding what is permitted to go into commercial pet food; the author had a hard time convincing one gentleman ear tags from farm animals and dead pets are not permitted ingredients in manufactured pet food.

Category three animal by-products are permitted as ingredients; these include body parts and tissues for which there is no human commercial market, but have been passed as fit for human consumption. According to EU Regulations 1069/2009, enforced by the Animal By-Products [Enforcement] [England] Regulations 2011, they may contain animal hooves, hair, hides, skin and feathers.

The domestic dog evolved alongside humans; when fed meat they were unlikely to be fed the premium cuts, and will have more frequently eaten offal and the less aesthetic parts of the carcass. Should reservations about inclusion of animal by-products in their pet's food be a primary driving force for owners feeding a RMBD, they should be guided in the direction of fixed-recipe pet food products, which use more premium cuts of meat.

Health benefits versus health risks

It is claimed by some pets receiving a RMBD have longer, healthier lives with reduced risk of diseases, such as arthritis, pancreatitis and neoplastic conditions⁹. No scientific evidence exists to verify these claims.

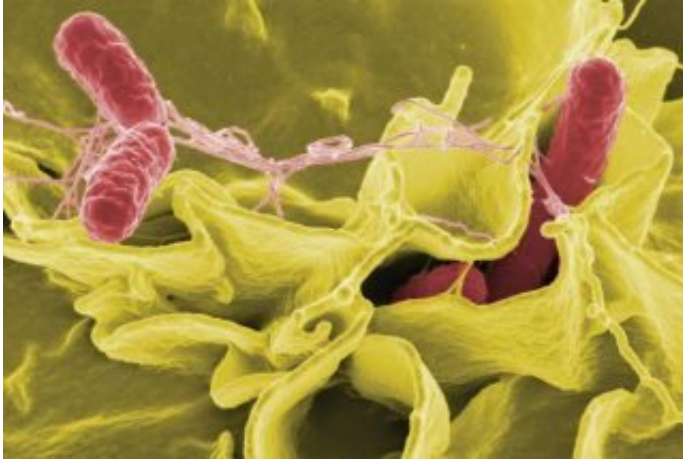
Personal testimonies online in support of RMBD diets often highlight improvements in allergic skin conditions when their pets are transitioned on to a RMBD diet. Commercial pet foods often contain protein from multiple sources.

For dogs affected by cutaneous adverse food reactions, a single protein source diet is more suitable for diagnosis and in some circumstances, ongoing management. RMBDs may have a role to play in management of such allergic conditions with a dietary component. However, a suitable commercial diet, or properly formulated home-prepared diet, would fulfil the same purpose.

Another claim is cooking food renders it less digestible due to denaturing enzymes. A much referenced study by RMBD proponents stated in the abstract cooking a raw beef-based diet "does not alter apparent total tract energy and macronutrient digestibility", compared to the same food when analysed in its raw state¹⁰. Digestibility of this beef-based diet was only slightly higher than the comparison extruded diet.

Dental calculus and periodontal disease levels have been suggested to be reduced by RMBDs due to the action of gnawing on bones; this is logical. However, other chewing toys and commercially available dental chews can have a similar physical action and provide the same mental stimulation, with a lower risk of tooth fractures.

Other physical risks of bones include obstruction and perforation of the GI tract, and constipation. In one study, 49 per cent of oesophageal foreign bodies removed were bones, with other similar studies reporting comparable figures¹¹. Bone foreign bodies in this study were also associated with a higher risk of complications in comparison to other objects. No evidence is available to suggest uncooked bones constitute a lower risk than cooked bones. Most evidence available on this area focuses on infectious disease risks.



Salmonella bacteria.

While proper hygiene can minimise the risk, raw feeding of pets is a significant public health risk. Dogs fed a *Salmonella*-contaminated raw diet have been shown to shed *Salmonella* in their faeces¹², which constitutes a health risk to humans. It is often claimed, without supporting evidence, dogs and cats are insusceptible to pathogens in raw meat. Septicaemic salmonellosis has been identified in cats fed a RMBD¹³.

Other pathogens present in raw meat include *Neospora*, *Toxoplasma gondii*, *Echinococcus*, *Trichinella*, *Yersina enterocolitica*, *Escherichia coli* and *Campylobacter*. Many of these pathogens cause clinical disease in both man, and dogs and cats¹⁴. In a survey conducted by the Food Standards Agency between February 2014 and February 2015, 73 per cent of chicken at retail was identified to be contaminated with *Campylobacter*, across a range of retailers, so feeding of raw chicken constitutes a significant risk.

A firm stance

Professional bodies, including the WSAVA, American Animal Hospital Association, Animal Veterinary Medical Association (AVMA) and Canadian Veterinary Medical Association, have released consensus statements designating RMBDs as high risk, with the AVMA stating there is “no properly documented evidence of health benefits (for RMBDs), but well-documented risks”.

While multiple literature reviews now exist on the subject^{1,2}, there is a paucity of high-quality evidence in the form of randomised controlled trials or prospective studies in the area. Small animal veterinarians should work to protect and improve the health and welfare of animals in our care, as we pledge on admission to the RCVS, with advice founded on evidence-based medicine, where possible.

Further work is needed to more accurately document risks of RMBDs, but, given the absence of evidence in support of feeding a raw diet – and mounting evidence of the risks – we should feel

confident in advising owners not to feed such a diet. It is crucial we take a firm stance on this issue and help guide owners through the minefield of misleading information in the media and online.

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