

RAW DIETS by Dr. Rebecca L. Remillard

Microbial Contamination

Food is contaminated with microbes. Meat from healthy animals becomes contaminated at slaughter. Meat surfaces become infected with microorganisms associated with food poisoning during handling, packaging, processing, storage, and transportation. Approximately one third of the poultry sold for human consumption has tested positive for *Salmonella*. Disinfected grade A eggs that caused salmonellosis were determined to have been contaminated during ovulation; as a result, they were contaminated with the bacteria before formation of the shell. Although many procedures have been incorporated into food processing procedures for both the meat and poultry industries to reduce the level of contamination, bacteria persist: All products should be considered contaminated. Thus, we should be concerned about pet owners who feed raw diets to their pets. Such diets have been documented to contain pathogenic *Yersinia enterocolitica* 4/O:3, *Salmonella* species, and *Escherichia coli* O157:H7. Commercial raw products, sold frozen or freeze-dried, carry no claim to be pathogen-free; in fact, recent work strongly suggests that they are contaminated. Twenty-one commercially available raw-meat diets (beef, lamb, chicken, and turkey) cultured over a 4-month period were all positive for *E. coli*, and 10 were positive for *S. enterica*. The FDA now has guidelines for companies selling such products to pet owners but no such legislation exists in Canada.

Zoonotic Potential

Pets fed contaminated raw meat shed viable organisms in feces. Evidence validates this public health risk. *Salmonella* was isolated from 80% of the BARF (i.e., bones and raw food) diets sampled and from 30% of the stools from dogs consuming those diets. Greyhounds and sled dogs fed raw-meat diets have been documented to shed the same subspecies of *Salmonella* in their feces as that found in their diets. Serovars of *Campylobacter* species isolated from the diarrhea of dogs was the same as that isolated from the poultry carcasses consumed by the dogs. Individuals who clean the cat's litter box or pick up their dog's stool should consider the feces contaminated with viable pathogenic microbes. Extra precautions should be taken when persons or pets in the household have immune-suppressive diseases, such as human immunodeficiency virus infection, feline leukemia, or feline immunodeficiency virus infection; are undergoing chemotherapy; or are using antiinflammatory medications. Extra caution should also be exerted in households with young children to prevent fecal-oral contamination.

Handling Raw Diets

Feeding infected raw diets increases the risk for infection of both human and animal household members. Humans can become infected with food-borne pathogens when handling contaminated meat and egg products. Household transmission of food-borne pathogenic organisms from dogs to humans has been documented.

Veterinarians are trained in zoonotic diseases and thus have a responsibility to inform owners who feed raw meat or eggs of these potential health dangers. **Veterinarians who recommend feeding raw meat or eggs without giving full disclosure of the risks and precautions may face legal ramifications.** *Salmonella*, *E. coli*, and *Campylobacter* infection in humans are notifiable diseases, and physicians are required to report cases to local health departments.

Dispelling the Myths

The morphologic and pathophysiologic characteristics of the gastrointestinal systems of dogs, cats, and humans are remarkably similar.

Many who advocate feeding raw diets contend that dogs and cats have a more acid stomach and shorter gastrointestinal tracts than do humans, protecting them from pathogenic bacteria. However, there is no difference among these species in regard to gastric pH and no evidence to suggest the difference in length of the gastrointestinal tract is protective to dogs and cats. All three species manifest similar clinical signs after ingesting food contaminated with pathogens. The severity of these signs is related to the dose of microbes or toxin ingested as well as the condition of the host.

Raw-meat advocates do not deny but downplay the potential health risks. No scientific evidence exists that a raw diet is superior to any dry or canned pet food. **As a result, this practice is associated with health risks to pet and family with no demonstrable benefit.**

Suggested Reading

An inter-familial outbreak of *Yersinia enterocolitica* enteritis. Gutman L, Ottesen E, Quan T, et al. *N Engl J Med* 288:1372-1377, 1973.

Application of polymerase chain reaction for the correlation of *Salmonella* serovars recovered from greyhound feces with their diet. Stone GG, Chengappa MM, Oberst RD, et al. *J Vet Diagn Invest* 5:378-385, 1993.

Preliminary assessment of the risk of *Salmonella* infection in dogs fed raw chicken diets. Joffe DJ, Schlesinger DP. *Can Vet J* 43:441-442, 2002.

Prevalence of *Campylobacter* spp., *Escherichia coli*, and *Salmonella* serovars in retail chicken, turkey, pork, and beef from the greater Washington, D.C., area. Zhao C, Ge B, de Villena J, et al. *Appl Environ Microbiol* 67:5431-5436, 2001.

Public health concerns associated with feeding raw meat diets to dogs. Lejeune JT, Hancock DD. *JAVMA* 219:1222-1225, 2001.

***Salmonella* shedding in racing sled dogs.** Cantor GH, Nelson S, Vanek JA, et al. *J Diagn Invest* 9:447-448, 1997.

The legal implications of the veterinarian's role as a private practitioner and health professional, with particular reference to the human-animal bond: Part 2, the veterinarian's role in society. Jack DC. *Can Vet J* 38:653-659, 1997.

Transmission of *Yersinia enterocolitica* 4/O:3 to pets via contaminated pork. Fredriksson-Ahomaa M, Korte T, Korkeala H. *Lett Appl Microbiol* 32:375-378, 2001.

Other Resources **Bad Bug Book.** FDA. <http://www.cfsan.fda.gov/~mow/intro.html>