Bisphenol A (BPA) in the Serum of Pet Dogs Fed Canned Dog Food

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In the Literature

Koestel ZL, Backus RC, Tsuruta K, et al. Bisphenol A (BPA) in the serum of pet dogs following short-term consumption of canned dog food and potential health consequences of exposure to BPA. *Sci Total Environ.* 2017;579:1804-1814.

FROM THE PAGE ...

Bisphenol A (BPA) is a monomer ($C_{15}H_{16}O_2$) used in the manufacture of some consumer products and food containers,[1,2] including the lining of pet food cans.[3] Structural similarities between BPA and estrogen permit BPA to bind to estrogen receptors in animal tissues, which has led to classification of BPA as an environmental endocrine disruptor.[4]

Experts disagree about the risks of BPA to human and animal health,[5] with opinions ranging from "safe at current levels occurring in foods" (FDA) to "reliably produces effects in animals ... and many should be considered adverse."[6] Controversy also surrounds appropriate tissues to sample (eg, urine, serum)[7]; analytical approaches to avoid sample contamination during collection, transport, storage, and analysis[8]; and even reference ranges (which can range from pico- to nanomolar).[9,10]

This article's authors sought to determine BPA content of 2 dog foods (one labeled "BPA-free"); serum concentrations of BPA in 14 healthy, privately owned, neutered adult dogs fed the foods for 2 weeks (food intake was not measured); and potential changes in a range of laboratory parameters. They found that although the diets dif-

fered in ingredient and nutrient composition, both contained BPA. Consequently, significant increases between food-deprived (pre-) and fed (post-) serum BPA concentrations were found in all dogs. These increases were associated with some serum chemistry (none outside reference ranges for the dogs studied) and microbiome changes. However, because of the presumed differences in diet composition (composition was not actually reported), it cannot be determined if the changes were due to changes in BPA intake or to compositional differences in the diets themselves.

Given the study's short duration and design (eg, small sample size, neutered adult animals), no conclusions about any effects of BPA on dogs can be drawn. Because of the presence of BPA in the product labeled "BPA-free," however, continued skepticism about manufacturer marketing claims seems warranted.

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… TO YOUR PATIENTS

Key pearls to put into practice:

1. Many aspects of BPA biology are controversial. A useful fact sheet can be found at https://www.niehs.nih.gov/health/assets/docs_a_e/bisphenol_a_bpa_508.pdf.
2. The experimental design of this study precluded drawing actionable conclusions about effects of any amount of BPA in canned dog food on the dogs studied, let alone the larger populations of owned dogs.
3. A product labeled "BPA-free" had as much BPA as one with no BPA claim. Therefore, caution should be used when interpreting manufacturer marketing claims.

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