The Effect of Epoxy Resin Liners on Bisphenol A Contamination of Canned Foods

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Bisphenol A (BPA) is present in a variety of consumer products and has been linked to numerous health effects in humans. Especially in food and beverage containers, the inner epoxy liner of metal cans represents a potential source of BPA. Since Americans consume large quantities of canned foods, the safety of these epoxy liners is a major public health concern. It is important to evaluate these liners for their possible role in BPA contamination of canned food. To establish that the epoxy liners are a main source of BPA contamination and to assess the effect of heat and water treatments on BPA release, empty metal cans were subjected to a variety of water solutions and/or temperatures for specified lengths of time. BPA that had leached into solution was extracted, concentrated, and analyzed using high performance liquid chromatography coupled with mass spectrometry (HPLC/MS/MS). Pure BPA samples were used to create a standard curve and to determine the detection limit of analysis. BPA concentrations in the food contents from these metal cans were measured for comparison purposes. While BPA levels in the canned food were found to be high, BPA was not detected in any water samples prepared in the emptied cans, regardless of the treatment conditions. In conclusion, the inner epoxy liners of metal cans are not a main source of BPA contamination in canned food products. The source of BPA may be the food products themselves, e.g. the canned-vegetables were grown in BPA contaminated soil, or the canned-meat was prepared from animals fed with BPA contaminated food or water.

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