Bisphenols: An Investigation of Baby Food Containers

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Bisphenol A, a synthetic organic compound used in the production of polycarbonate plastics, has been determined to be harmful to humans. Due to controversy, most food companies discontinued the use of BPA in their packaging, replacing it with substitutes BPS and BPF. However, recent studies have shown these substitutes also post adverse health risks. This experiment's purpose was to determine if any bisphenol chemical was present in solids stored within baby food containers marketed as "BPA Free" and if the concentration of bisphenol was directly related to the thickness of the container. If the thickness of "BPA Free" polycarbonate baby food containers is dependent on the amount of bisphenol used in manufacturing, thicker containers will result in higher percentages of Bisphenols found in the food stored in them. Each solid food sample was mixed with equal parts of deionized water, which was then homogenized using a vortex. After 24 hours of diffusion, the mixture was centrifuged, and the supernatant was removed for further processed for solid phase extraction in preparation for chromatic analysis using a C-18 cartridge. Fifty-three vials were prepared and sent to the University laboratory for analysis by their staff. As a result of the University limiting the total analysis completed gratis, only 16 samples were analyzed thus making the sample size statistically insignificant. Only one sample tested positive for the BPS chemical, not supporting the hypothesis. For further experimentation, plastics manufactured with different processes could be compared to determine which chemical process produces the safest plastics.