



## **Policy Statement on Environmental Endocrine Disrupting Chemicals & the Impact on Obesity and Cardiovascular Disease September 2010**

### Position

The American Heart Association (AHA) recognizes that the causes of obesity are multi-factorial and complex, and therefore, must be addressed on multiple levels. Recently, endocrine disrupting chemicals (EDCs) such as diethylstilbestrol, bisphenol A, phthalates and organotins have been proposed as potential “obesogens” that contribute to a toxic chemical burden that may initiate or exacerbate the development of obesity and its related comorbidities.<sup>1-7</sup> EDCs are found in a variety of products including plastics, cosmetics, shampoos, soaps, lubricants, pesticides, paints and flame-retardant materials.<sup>2, 8</sup> Laboratory studies are still elucidating the exact mechanisms by which these substances affect weight, but current evidence suggests that they disrupt developmental and homeostatic controls over fat production and energy balance.<sup>9-12</sup> However, determining the link with obesity can be especially challenging because obese people might be eating more and therefore exposing themselves to more of the chemicals in food packaging. Teasing out causality can be challenging. Although limited research exists on the effect of these environmental chemicals on human populations, several epidemiological studies have found that chemical exposure, particularly during critical developmental periods, is positively correlated with increased weight, cardiovascular disease and diabetes.<sup>8, 13-18</sup> Additional research is needed to clarify these results and establish a causal link between exposure to EDCs and adverse health effects in humans as well as discern the physiological/cellular/metabolic impact of exposure. The AHA recommends further research before taking a proactive advocacy position.

### Future Research Questions:

1. What is the overall health burden of these chemicals with long-term, cumulative exposure over a life-time, versus short-term use?
2. What proportion of susceptibility to obesity is explained by chemicals in the environment?

### Background

Endocrine disrupting chemicals are defined as “compounds that mimic or interfere with the normal actions of endocrine hormones including estrogens, androgens, thyroid, hypothalamic and pituitary hormones.”<sup>2</sup> Some EDCs, such as phytoestrogens, are found in nature, but man-made EDCs are believed to pose a more significant risk to human health.<sup>2</sup> Industrially-produced EDCs include diethylstilbestrol (DES), bisphenol A (BPA), phthalates and organotins. They are found in a variety of products such as plastics, cosmetics, shampoos, soaps, lubricants, pesticides, paints and flame-retardant materials.<sup>2, 8</sup>



