

## **Misconception 9—Regulation of low, hypothetical risks is effective in advancing public health**

Since there is no risk-free world and resources are limited, society must set priorities in order to save the greatest number of lives (Graham & Wiener 1995; Hahn 1996). The EPA drew attention to the rising and sizeable cost to society of environmental regulations in its 1991 report *Environmental Investments: The Cost of a Clean Environment* (US Environmental Protection Agency 1991b). The EPA estimated that public and private costs in 1997 would be about \$140 billion per year (about 2.6% of Gross National Product) (US Environmental Protection Agency 1991b).

Several economic analyses have concluded that current expenditures are not cost effective (Hahn & Stavins 2001); resources are not being used so as to save the greatest number of lives per dollar. One estimate is that the United States could prevent 60,000 deaths per year by redirecting the same dollar resources to more cost-effective programs (Tengs & al. 1995). For example, the median toxin control program costs 146 times more per life-year saved than the median medical intervention (Tengs & al. 1995). This difference is likely to be even greater because cancer risk estimates for toxin control programs are worst-case, hypothetical estimates, and the true risks at low dose

are often likely to be zero (Gaylor & Gold 1995; Gold & al. 1998; Gold & al. 1992; **Misconception 5**). Some economists have argued that costly regulations intended to save lives may actually increase the number of deaths (Keeney 1990), in part because they divert resources from important health risks and in part because higher incomes are associated with lower mortality (Viscusi 1992; Wildavsky 1988; Wildavsky 1995). Rules on air and water pollution can be beneficial to health—it was a public-health benefit to phase lead out of gasoline—and clearly cancer prevention is not the only reason for regulations. However, worst-case assumptions in risk assessment represent a policy decision, not a scientific one, and they confuse attempts to allocate money effectively for risk abatement.

Regulatory efforts to reduce low-level human exposure to synthetic chemicals because they are rodent carcinogens are expensive since they aim to eliminate minuscule concentrations that can now be measured with improved techniques. These efforts distract from the major task of improving public health through increasing scientific understanding about how to prevent cancer (e.g., the role of diet), increasing public understanding of how life-style influences health, and improving our ability to help individuals alter life-style.