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# Bisphenol A and Phthalates: Public Knowledge and Risk Perception

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## Introduction

Bisphenol A (BPA) and phthalates are chemicals used in the production of many plastics, including food containers, water bottles, and medical intravenous tubing. These chemicals can leach from the plastic, especially when heated, and are found in varying concentrations in the human body.



There is concern about the widespread exposure to BPA and phthalates since studies indicate they may cause adverse health effects, particularly related to endocrine development and regulation in young children.

## Goals

The goal of our project was two-fold: to make an updated recommendation to the State of Vermont Health Department for their BPA and phthalate factsheet, and to survey the public about these chemicals. Our survey was designed to:

- Assess public awareness of BPA/Phthalates
- Determine the public's risk perception of chemicals in plastics
- Identify the source of the public's information

## Methods

For the recommendations to the Department of Health we reviewed literature on the adverse health effects of BPA and phthalates published from August 2008 until present.

A seventeen question survey was administered in paper format at three locations in the Burlington area. 112 surveys were completed by random volunteers between October and December 2009. Data was compiled and analyzed using Microsoft Office Excel.

## Results

### Public Awareness:

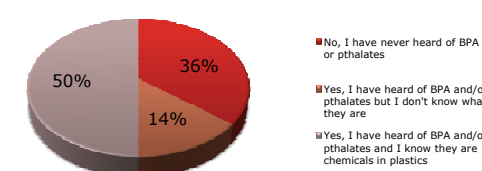
- 94.6% of subjects knew that exposure to chemicals in plastics may cause adverse health effects, but only 50% of subjects could identify BPA and/or phthalates as the harmful chemicals in plastics.

Although 35.7% of all subjects knew that it might be unsafe to use plastic in the microwave, 82.1% of all subjects used plastics in the microwave once a week or more.

81.8% of people with college graduate degrees had knowledge of health risks associated with BPA/phthalates in contrast to 30.9% of people with a high school education only.

Of the subjects caring for a child under the age of six, 85.7% used plastic in the microwave once a week or more.

**Figure 1. Percentage of Participants With Prior Knowledge of BPA/Phthalates (n=112)**

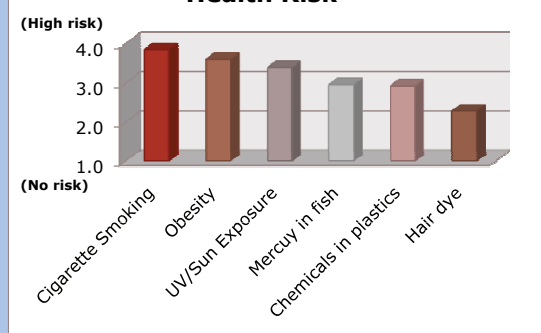


**Figure 2. Awareness BPA/Phthalates and Education Level**



### Risk Perception:

**Figure 3. Average Perceived Health Risk**



### Source of Information:

Media Type	% Total Participants (n=112)
Word of Mouth	50.9%
Newspaper	35.7%
TV	28.6%
Google	17.9%
Scientific Journals	9.8%
VT Dept. Health	5.4%
Other	5.4%
Doctor	4.5%
Daycare	0.9%

## Conclusions

Many studies show that BPA and phthalates build up in the human body following exposure.

- Some studies have linked BPA and phthalates to negative neuroendocrine and developmental effects. This study shows that individual perceived health risk is low and attempts to decrease exposure seem to be minimal.

There is a deficit in the public's knowledge of the health risks of BPA/phthalates as indicated by:

- A lack of public awareness of BPA and/or phthalates.
- A tendency to microwave plastics despite knowing about associated health hazards.

Education level is heavily correlated with information and awareness on this topic.

Parents with young children are not any more knowledgeable about BPA and/or phthalates or the health risks of plastics.

People in Vermont are not using the Department of Health Website for information regarding plastic products.



## Recommendations

Increase the visibility of environmental health on the Vermont Department of Health website.

Additional means of communicating environmental health information to the public is needed.

Public education should raise awareness of health concerns related to BPA/phthalates and available steps to reduce personal exposure.

- Parents and caretakers of young children can decrease exposure to BPA/phthalates by limiting their use of plastic containers and decreasing usage of plastics in the microwave.

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