

## Disinfection byproducts

Human Health Risk	M
Ecological Risk	
Socioeconomic Risk	L

Disinfection byproducts (DBPs) are a group of chemicals formed by the reaction of active chlorinating agents and simple organic molecules during the disinfective treatment of surface water. DBPs remain in the drinking water ultimately consumed by the public. DBPs have been linked to bladder and possibly other cancers, neural tube birth defects (such as spina bifida), and spontaneous abortions. The DBPs with the highest concentration include the trihalomethanes (THMs) and the haloacetic acids (HAAs).

### Who's at risk?

About 55% of the New Jersey population is served by water utilities supplied by surface water, with varying levels of DBPs. Populations at increased risk include pregnant mothers and their fetuses, particularly when their drinking water is derived from treated surface water.

### What are the human health impacts in New Jersey?

Based on population percentages established by EPA, DBPs may be expected to cause 40-350 cases of bladder cancer, 2 neural tube defects, and 200 miscarriages each year in New Jersey. About 25% of the New Jersey population, or half of people served by surface water based systems, are exposed to THM levels greater than 50 parts per billion (ppb), as compared to people served by private wells, which generally have less than 5 ppb. While the US EPA sets the standard for THM at 80 ppb, studies have linked neural tube defects with THM levels greater than 40 ppb.

### What are the socioeconomic impacts in New Jersey?

The largest socioeconomic impacts of DBPs are the health care costs attributed to bladder cancer and neural tube birth defects. Estimates of bladder cancer costs range from about \$5 million to about \$17 million, and birth defect estimates range from \$2 to \$3 million per year. Overall, the costs total between \$7 million and \$20 million.

### What's being done?

The Maximum Contaminant Level (MCL) for total THMs in drinking water was recently reduced to 80 ppb, and an MCL for total HAAs level was recently established at 60 ppb.