

**Schoenen, D. "Role of Disinfection in Suppressing the Spread of Pathogens with Drinking Water: Possibilities and Limitations." *Water Research*. 2002 Sep: 36(15): 3874-88.** (Reviewed by Tracy Maloney)

This article discusses the transmission of pathogens in drinking water and the fact that it is a widespread problem. The author describes that this issue not only affects countries with low hygienic standards, but that it is also prevalent in industrialized countries as well. These pathogens, which cause waterborne illnesses such as typhoid fever, are excreted both by humans and animals and are picked up orally.

The article then introduces two methods of water purification, including both benefits and shortcomings. The first method discussed is chlorination. Chlorination of drinking water has been introduced to the water supply since the beginning of the 19<sup>th</sup> century in order to stop the spreading of pathogens by drinking water. The proposed benefit of this method is that the disinfection of drinking water via chlorine has undoubtedly contributed to the reduction of typhoid fever mortality. The author does mention however, that despite the worldwide use of chlorine for water disinfection, water related illness outbreaks continue to occur. This suggests that the method of chlorination has some inconsistencies.

The second method discussed is filtration, which has also greatly contributed to decreasing the presence of pathogens in water. Filtration of water is a long-known and effective process. Since pathogens in particles cannot be killed sufficiently by a chemical disinfectant such as chlorine, small fecal substances must be removed reliably via filtration. The article concludes that disinfection cannot replace filtration, or the vice versa. Both processes together are the best method for eliminating pathogens within water.

## **Critique**

The author does a very good job explaining the article topic, and does so in a manner that is interesting and straightforward. A general audience could understand the information with little or no scientific background. Methods are discussed clearly, and both the benefits and fallbacks are represented. Another positive point about this article is that the journal in which it was published was released in September of 2002. Therefore, the information is recent, and can take into account more current methods of water purification and pathogen elimination.

This article, covering issues regarding both human health effects and water treatment, is pertinent to the class subject considering that typhoid outbreaks from the Willamette River have occurred in the past. The drawback to this article however, is that it does not directly pertain to the Willamette water basin. It is a more general discussion of water treatment techniques that are performed globally to prevent human sickness; it does not provide a local application that pertains to the region we are considering.

Another down side to this article, aside from its content, is that it is very hard to attain. An abstract can be found through the University search indexes, but a full version requires either requesting it from another library, or purchasing it from the *Water Research Journal* web site. Overall however, this is a

very valid and useful article for understanding water treatment.

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