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## Filtering Water with Old Clothes to Prevent Cholera

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Filtering water through old clothes can effectively remove many of the copepods (a type of zooplankton) that carry cholera-causing bacteria. Researchers from the University of Maryland, College Park, did a study in Bangladesh comparing the effectiveness of old saris and nylon filters for filtering pond and river water. The study was written up in the Proceedings of the National Academy of Sciences. The following information was obtained from a summary by CBC News online staff.

Bacteria called *Vibrio cholera* cause cholera. The bacteria live in standing water and enter the human body attached to copepods. The bacteria grow in the human gut, releasing a toxin that causes extreme diarrhea leading to severe dehydration. In Bangladesh, where much of the well water is contaminated with arsenic, people end up drinking surface water contaminated with cholera.

Researchers did a study with 44,000 people in different villages; people in some villages filtered water with folded cloth from old saris, people in other villages used nylon filters supplied by the WHO (World Health Organization), and still others gathered water traditionally using no filter. After 18 months, the rate of cholera in villages that used sari filters was 0.65 per 1,000 people per year. The rate for villages that used nylon filters was 0.79 cases per 1,000 people per year. The rate in control villages (where people did not filter water) was 1.16 cases per 1,000 people per year.

Saris filtered best when four layers of cloth were used. Any finely woven fabric could be used instead. Old clothes seemed to be most effective at filtering. The fibers of the cloth unraveled slightly, making the holes smaller and more effective at trapping fine particles.