H2Go: A Construction and Analysis of a Novel Purification Device

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There are already hundreds of different ways to create clean water. Yet in the world today, thousands of people don't have access to this necessity because of their lack of time, money and the shortcomings of different water purification systems. The goal of this project is to create a portable and relatively cheap product that can build upon different purifying processes to overcome their flaws. The overall system was built upon 3 different procedures. The most common method, the process of reverse osmosis in which H2O travels through small, porous openings, could remove sediments and lower turbidity within a sample. The second most utilized technique, chemical purification by Aquatabs (NaDCC/C3HC12N3O3Na), could eliminate harmful bacteria and microorganisms. The third procedure of charcoal purification could add minerals and better taste to the water while also lowering levels of chemicals and turbidity. The system, composed of PVC pipes, valves, and a homemade suction, was able to take in dirty water and filter it through layers of gravel, sand, charcoal, a mosquito net saturated in colloidal silver, and a coffee filter, chemically clean it with an Aquatabs tablet and purify it through a charcoal block. By combining these different procedures in a cost-effective, portable way, each process resolved a deficiency in another and created a viable system in which water could be filtered and chemically purified to become better tasting and cleaner for all people.

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