

Industrial design students create solar bag that purifies water while person walks

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(Phys.org) -- It's common knowledge that a lot of people in the world don't have access to clean drinking water. In some parts of Africa, people, particularly children fall victim to bacteria in the water they drink; a lot of them die. For some, getting to a water source, even one that isn't clean can mean walking for several miles, and then carrying it back. It's for these people that industrial design students Ryan Lynch and Marcus Triest have designed and created what they call the Solar Bag, it's a bag that holds water and hangs off the shoulders and lies on a person's back and uses UV radiation from the sun to kill bacteria in the water while the person is walking or after they have arrived at their destination.

Using UV rays to kill bacteria in [water](#) is nothing new, there are many gadgets that do so, though many require electricity to help the process and virtually all of them are centered around treating the water once it has arrived. Lynch and Triest saw that as inefficient and cruel. Why make seriously thirsty people sit around for hours waiting for their water to become safe to drink when the process could have been started right after filling the container that was brought back?



To create their bag, they turned to a method of water purification known as SODIS, where PET (made of polyethylene terephthalate - the type of plastic used for soft drinks) bottles filled with water are exposed to sunlight for up to six hours, allowing UV radiation to kill most of the bacteria in it. Instead of bottles they created a two sided bag. On the outer side, the one that faces the sun when a person walks, is clear plastic that allows the UV rays to enter. On the inner side is black plastic that absorbs heat, helping the UV rays do their job. The bag is then connected to straps that allow the water to be carried like books in a common backpack. The bag can be hung on a wall as well, for continued treatment after the person carrying it arrives at their destination. It also has a tap at the bottom to let the water out and a squeeze balloon with

filter for additional purification.



The two say that their Solar Bag can purify two and a half gallons of water in six hours, the same amount of time it typically takes other systems to treat much less water. Unfortunately, the bags aren't yet being commercially produced; the two are currently looking for a backer. They say that the material costs for one Solar Bag amount to just \$5, and possibly less if manufactured in bulk.

More information: www.byrye.com/solar-bag.html

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