

The next disease to be eradicated from the planet could be Guinea worm

May 19 2014, by Wendy Gibson



Credit: medicalmuseum, CC BY

In 1986 Guinea-worm disease infected 3.5m people. Simple interventions have since ensured that [in 2013](#) only 148 cases were recorded. With a final push, this could be the second disease to be eradicated from the planet after smallpox, which needed a [worldwide vaccination campaign](#) led by the World Health Organisation in the 1970s.

Guinea-worm disease has been around for a long time. The bible mentions this disease as the "plague of fiery serpents". Although it doesn't cause death, it is very painful. The disease is caused by the Guinea worm, a long, thin worm that lives inside your leg or arm.

That sounds bad enough, but it gets worse when the female worm starts to have babies. A painful boil erupts where the female's body comes near the surface of the skin and out come hundreds of baby worms. When this happens, the traditional treatment is to catch the end of the female worm protruding from the boil and wind it on a matchstick, a little more each day until it is all out. This is important as any left inside will fester.

But this disease is very easy to avoid if you know how. To survive, the baby worms need to get into water – and they have this opportunity when you bathe your leg in water to ease the throbbing, burning pain. If this water is a pond or pool, the tiny worms will get eaten by little bugs. This is not a problem unless the pool is also the main source of drinking water – sooner or later the little bug, along with its cargo of guinea worms, will end up being drunk by someone and that is when the infection starts again. The baby worm soon grows into an adult, finds a mate and raises a family.

To break the cycle, people need to avoid drinking water with bugs. A proper supply of piped water is ideal, but sadly not yet available to everyone in the world. Next best is to filter the water – a simple, low-tech and cheap method within reach of the poorest people.

The other important thing is to stop people who are infected from releasing the baby worms into the supply of drinking water. These are the two simple measures that have been implemented over the past 20 years as part of the [Guinea worm eradication programme](#), led by former US president Jimmy Carter.

At the heart of the program is education, to provide local communities in rural Africa with the knowledge and tools to avoid this awful scourge. A special net cloth suitable for filtering the drinking water is also provided. The source of the drinking water can be treated with a chemical, which destroys not only the bugs infected with Guinea worm, but also other harmful pests such as mosquitoes that breed in stagnant water.

The other arm of the program is to prevent [drinking water](#) being contaminated by infected people in the first place. This is achieved by organising villagers' tasks so that people infected with mature worms are kept away from all water sources until they are clear of the worm. They do this by ensuring that infected people don't collect water, instead a healthy neighbour does it for them.

Through these simple measures, Guinea worm disease is well on the way to eradication, maybe by the end of 2015. And this will have been achieved by low-tech solutions and community action, rather than expensive drugs or vaccines.

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Citation: The next disease to be eradicated from the planet could be Guinea worm (2014, May 19) retrieved 20 April 2024 from <https://medicalxpress.com/news/2014-05-disease-eradicated-planet-guinea-worm.html>

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