



Onchocerciasis (River Blindness): Factsheet

Parasitic worm infections are among the most widespread neglected tropical diseases, affecting **hundreds of millions of people worldwide**, primarily in sub-Saharan Africa and other tropical regions.

One of the most devastating of these diseases is **Onchocerciasis**, commonly known as **river blindness** – a chronic parasitic infection that can lead to severe skin disease and irreversible vision loss.

What Causes Onchocerciasis?



Onchocerciasis is caused by the filarial nematode *Onchocerca volvulus*, a **macroscopic worm** that lives under the skin of infected people.

How Is It Transmitted?



The disease is transmitted to humans **through bites of infected blackflies** (*Simulium* spp.). These small flies breed in fast-flowing rivers and streams, where their larvae develop. When a blackfly takes blood, it transmits the parasite's infectious larvae. Over time, these larvae mature into adult worms beneath the skin.

Who Is Affected?



- ~19 million people are currently infected with *O. volvulus* worldwide.
- 14.6 million have skin disease symptoms and ~1.15 million experience vision loss.
- >99% of cases are in sub-Saharan Africa, especially in rural riverine areas.
- Smaller endemic foci exist in Yemen and at the Brazil-Venezuelan border.
- 240 million people live at risk of infection due to environmental and socioeconomic conditions that favour transmission.

What Happens in the Body?



Adult worms live in subcutaneous nodules for up to 15 years. Female worms release millions of microscopic larvae (microfilariae) that migrate through the skin and eyes. The body's inflammatory immune response to dying microfilariae causes most of the disease symptoms, including:

- Severe itching and skin rash
- Skin thickening, depigmentation, and atrophy
- Eye inflammation and lesions, which can progress to partial or permanent blindness
- Subcutaneous nodules around adult worms

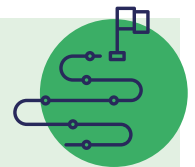
Because symptoms develop slowly and begin with subtle skin changes and discomfort, many people in endemic communities live with chronic disease without early medical detection.

Current Treatment



Ivermectin is distributed through annual or biannual mass drug administration (MDA) campaigns. It reduces symptoms and transmission by killing microfilariae, **but does not eliminate adult worms**. As a result, treatment must be repeated for **10–15 years**. Daily doxycycline treatment for six weeks can kill the adult worms, but the long treatment regimen limits it to individual therapy.

Remaining Challenges



- Long treatment duration and repeated dosing are operationally demanding.
- Sustaining high treatment coverage is essential to prevent resurgence.
- Co-endemicity with other filarial infections (e.g., *Loa loa*) complicates safe use of standard therapies.

We at eWHORM are generating the clinical evidence needed to support the registration of oxfendazole (OXF) as a broad-spectrum, adulticidal treatment for multiple worm infections, including onchocerciasis. This would be a major step toward achieving WHO's 2030 goals to eliminate filarial and soil-transmitted helminth infections and strengthen health systems in endemic countries.



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