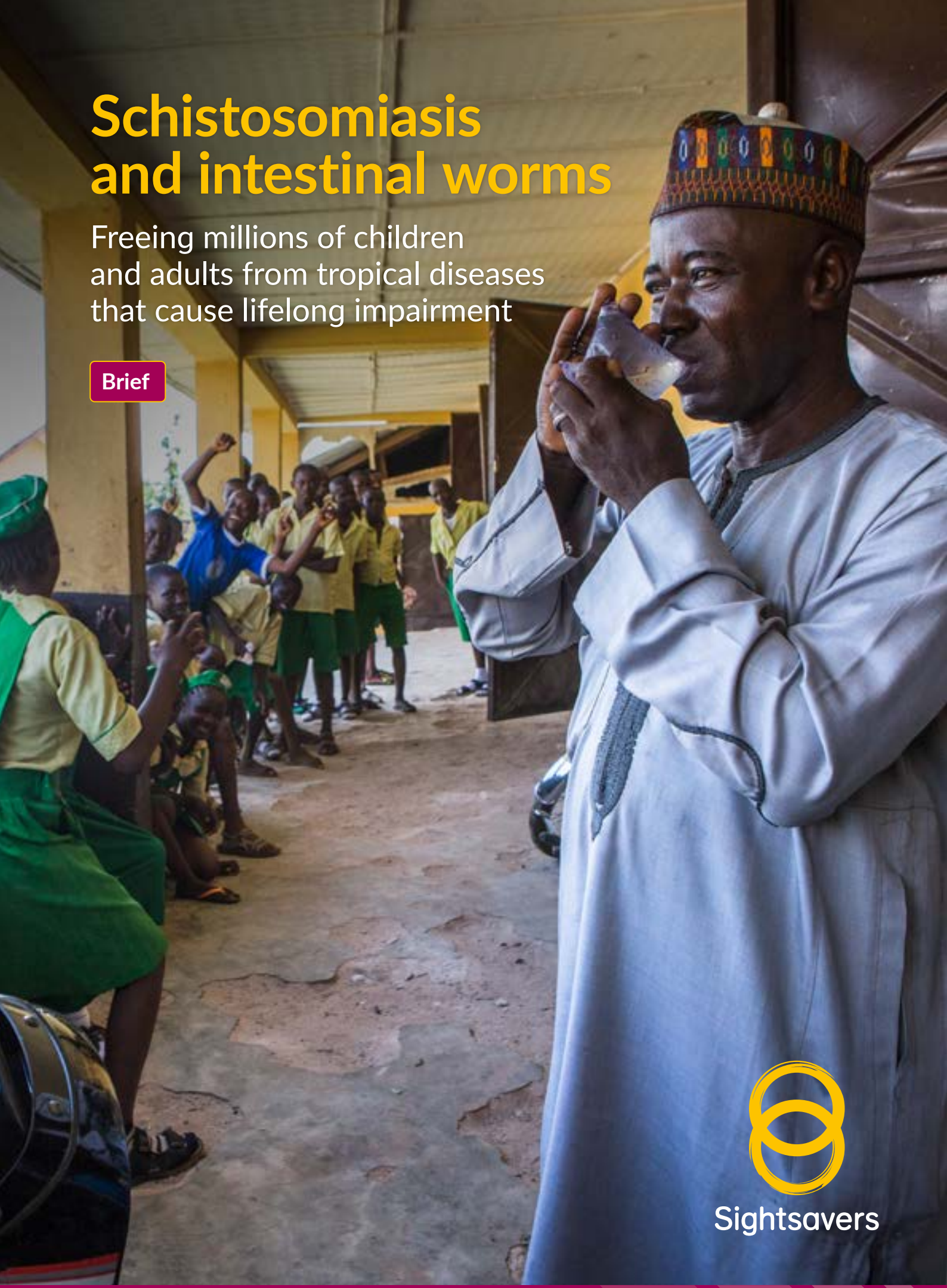
Schistosomiasis and intestinal worms

Freeing millions of children and adults from tropical diseases that cause lifelong impairment

Brief



Sightsavers

Now is the time to say goodbye to neglected tropical diseases

Road to Yantodo, Tsafe, Nigeria. During the rainy season, the river is full so the road is impassable. There is another but much longer route.

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Cover image

Gimba Yaro, head teacher at UBE Kabawa Ward of Lokoja LGA junior high school in Lokoja Nigeria, educates pupils on how to prepare for a mass drug administration.

Adame Sane, 12, receives schistosomiasis medicine (Praziquantel) from Ernesta Adolfo Lopez and Rosa Camara during a mass treatment campaign at EBU Miguel Antonio Mango school in Farim, Guinea Bissau.

Introduction

Schistosomiasis and intestinal worms are neglected tropical diseases (NTDs) that can cause severe and lifelong impairment. They are found in tropical and sub-tropical climates, particularly in rural areas, urban slums and areas of conflict where communities lack safe drinking water and sanitation.

Schistosomiasis, commonly known as 'snail fever', is an infection carried by parasitic freshwater snails. Initial symptoms include a rash or itchy skin, and later a fever. If left untreated, schistosomiasis can damage the intestine, bladder, liver, lungs and spleen. It can also cause anaemia, malnutrition and learning disabilities in children.

Infection occurs when people come into contact with contaminated water when fishing, swimming, bathing or washing clothes. When this happens, trematode worms carried by infected snails hatch larvae that penetrate into the body. Once inside, the larvae develop into adult worms and produce eggs. If a person infected with schistosomiasis urinates or defecates in water containing freshwater snails, they will pass eggs into the water and those eggs will infect more snails. The cycle of disease then starts again and the infection spreads.

Intestinal worms, otherwise known as soil-transmitted helminths, are parasitic infections caused by roundworms, whipworms and hookworms, which live in a person's intestine. They can impair cognitive and physical development and lead to a range of illnesses.

Adult worms produce thousands of eggs each day. The disease is spread when these eggs are passed via human faeces into the soil then ingested through contaminated vegetables and water or via children's hands and feet.

At first, symptoms may be mild or non-existent, but infections can lead to diarrhoea, abdominal pain and general weakness. The disease can also lead to impaired cognitive and physical development, nutritional problems, intestinal obstruction, inflammation of the colon and anaemia (in the case of hookworms). If left untreated, it can be fatal.

Both conditions significantly decrease people's quality of life and can have negative long-term effects on employment, education and fertility.

Did you know...

Neglected tropical diseases are a group of parasitic and bacterial infections that affect more than one billion people worldwide. They became known as 'neglected' because historically they did not spark the same public attention or investment as other tropical diseases such as malaria. They also affect some of the poorest communities in the world.

Ernesta Adolfo Lopez and Embessal Moreira administer treatment for schistosomiasis at EBU Miguel Antonio Mango school, Farim, Guinea Bissau.

Treatment and prevention

The spread of schistosomiasis and intestinal worms can be controlled though large-scale treatment programmes, often referred to as 'mass drug administrations' (MDAs). As both NTDs affect the same at-risk communities, they're often treated together in an integrated approach.

Our schistosomiasis and intestinal worms treatment programmes specifically target school-age children and adults considered at risk, such as fishermen living in endemic regions. In areas with very high rates of infection, entire communities may be treated through MDAs, in which a vast network of local volunteers, known as community-directed distributors (CDDs), provide treatment. Many CDDs have first-hand experience of how these diseases affect lives, often having a family member or a neighbour who has been affected.

To treat schistosomiasis and intestinal worms, Sightsavers and partners also support water, sanitation and hygiene (WASH) initiatives, health education and behaviour change.

Facts and figures

Schistosomiasis[1]

200,000

people die from the disease every year

97.2 million people

received treatment in 2018

92% of people

who need treatment live in an African country

50 countries are endemic

for schistosomiasis, 52 of which require large-scale preventive treatment programmes

Intestinal worms[2]

1.5 billion people

(around a quarter of the world's population) are infected with intestinal worms

835 million children

are estimated to be infected

103 countries are endemic

for intestinal worms, all of which require large-scale preventive treatment programmes

676 million children

were treated for intestinal worms in 2018, corresponding to 53% of all at-risk children

Sightsavers' impact

7 countries

are supported by Sightsavers to tackle schistosomiasis and intestinal worms

7.1 million treatments

for schistosomiasis were provided by Sightsavers and partners in 2019

4.6 million people

were treated by Sightsavers and partners in 2019 for intestinal worms

1 million local volunteers

trained to distribute medication to treat both diseases and other NTDs

Bibaiyo Filasho is a teacher at St Mary's School and a community designated distributor in Kogi State, Nigeria.

The impact on children and the role of teachers

School children are particularly vulnerable to schistosomiasis and intestinal worms.

These diseases not only affect their health, but their ability to concentrate. This can have a negative impact on their education and a long-term effect on their future.

To address this, Sightsavers works with local grassroots partners to train teachers and local volunteers to provide schistosomiasis and intestinal worms medication in schools. This involves training them in what the diseases are, how they are transmitted, and how to distribute treatment.

Providing medicine within schools is an extremely effective way of preventing both diseases, because it enables us to reach many children. To ensure we reach children who are not attending school, we also make medication available in communities, given out by volunteer distributors.

"One of the good things about the services we support is that there is a very high level of engagement from communities and ministries of health and education," says Sunday Isiyaku, Director of Sightsavers in Nigeria, a country with the highest NTD burden in Africa.

"Communities select the volunteer drug distributors. Our work is mainly to ensure we create awareness of the diseases – we educate people about what they should and should not do – and then we train the selected volunteers and teachers to distribute the medicines correctly."

Embessal Moreira: head teacher and health volunteer

"Health is so important for education: if you're not healthy, you can't attend school, so they work hand in hand," says Embessal Moreira, head teacher at a school in Farim in Guinea-Bissau, who has been trained how to treat and protect children against schistosomiasis, intestinal worms and other NTDs.

"This is the farming season," explains Embessal. "If you go to the community, sometimes the children have gone to harvest cashews – it's difficult to get to all of them. So school is the best place. I was very happy when I was called to do the training, as we are dealing with children on a daily basis."

As well as distributing medication, the teachers have been taught about the importance of good hygiene to stop the spread of infections.

"In Africa, as a whole, we still have a problem with sanitation," says Embessal. "You see children playing with sand, then using the same hand to put food into their mouths. With this learning, we can help the community to change their behaviour.

"Now, if we hear someone in the community or in the school saying they have worms, I can recommend they go to the health facility for treatment. We know how to make sure the children receive their drugs, and we can refer children to the health facility for specialised treatment."

Antonio Mango school, Farim, in Guinea Bissau.

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Getting Aruna back to school

Despite knowing how important it is to go to school, 12-year-old Aruna struggled to keep up his attendance after catching schistosomiasis.

"I remember falling sick sometimes – I got a headache and a stomach ache," says Aruna.

Aruna, from Farim in Guinea-Bissau, is the youngest of eight children. His mother Aminata describes him as "a very lively boy", but says he didn't want to go to school when he became ill.

"We gave him some traditional medicines, and when he felt better he went to school," adds Aminata. "[But] we didn't know he had blood in his urine."

Aruna Embalo, 12, a student at Djumbembe school in Farim, Guinea Bissau, tested positive for schistosomiasis, and has now received treatment at his school.

It was only when Aruna was tested at school that he was diagnosed with schistosomiasis and given treatment.

"I remember when I got tested and took the medicine," says Aruna. "After taking the drug I felt well – I felt better."

"It was a great happiness for us to know that our son was given the drug to be cured of this disease," Aminata adds. "We were very afraid when we heard the news [of his diagnosis]. We are old now – we have never contracted this disease so we were surprised to hear our son was infected."

Now that Aruna is no longer in pain, he's able to help his father during farming season. Aminata has noticed the difference too.

"Before he always complained about the stomach pain, but after taking the drug he hasn't complained at all," she says. "We're happy he's not feeling pain any more. The only thing we can do is to thank the people who gave him the medication."

To ensure we reached older children at school, Sightsavers worked alongside school-based, community-led sanitation and hygiene programmes that share data with head teachers on hand and face washing in schools. We also worked with partners to adapt the national electronic health system to include data about trachoma and face washing.

Aruna Embalo with his parents Aminata Balde and Braima Embalo.

Embessal Moreira, the head teacher at EBU Miguel Antonio Mango school in Farim, reviews mass drug administration paperwork.

Our integrated programmes

To ensure children and adults at risk of schistosomiasis and intestinal worms are reached with prevention and treatment, we are supporting a number of large-scale, multi-country integrated NTD programmes.

Fighting NTDs in West and Central Africa

Ascend West and Central Africa is Sightsavers' largest multiple-disease initiative to date and UK aid's flagship NTD programme. It aims to deliver more than 400 million treatments in 13 countries to treat five NTDs, including schistosomiasis and intestinal worms.

The programme is tackling schistosomiasis and intestinal worms by providing treatment to at-risk communities, even in the most remote areas. In order to ensure the approach is effective, three-quarters of all people in endemic communities must receive treatment, in line with recommended treatment thresholds. We are achieving this high coverage rate by working closely with community distributors, teachers and health workers.

Ascend West and Central Africa is a vast and complex programme, managed by a consortium of partners led by Sightsavers and consisting of Mott Macdonald, the Schistosomiasis Control Initiative Foundation and the Liverpool School of Tropical Medicine.

GiveWell

GiveWell is a non-profit organisation that rates the effectiveness of global charities each year and promotes them to donors. In 2019, the organisation recommended Sightsavers as one of only eight 'Top Charities' globally and praised our deworming work for its 'strong track record and excellent cost-effectiveness', as well as our standout record of transparency.

Our GiveWell recommended and funded work is providing preventative treatments for schistosomiasis and intestinal worms to millions of school-age children in Nigeria, Guinea, Guinea Bissau, Cameroon, and the Democratic Republic of the Congo.

GiveWell-directed funding has supported the distribution of over 11.8 million deworming treatments to over 8.7 million school aged children.

Learning from the UNITED programme

Between 2013 and 2019, the UK aid-supported UNITED programme took an integrated approach to protect 26 million Nigerians from multiple NTDs.

Sightsavers led the UNITED consortium and, together with partners, it helped to reach communities that were at risk of schistosomiasis, intestinal worms and blinding trachoma in five states of northern Nigeria (Kaduna, Kano, Katsina, Niger and Zamfara). The programme was so successful it distributed 15 million more treatments than originally envisaged, earning it a 'triple-A' rating from the UK's Department for International Development (DFID).

UNITED pioneered schistosomiasis treatment in Kano, Niger, Kaduna and Katsina, the latter having never done mass drug administration before. It has also generated important knowledge that is being put to good use in our current NTD initiatives.

From the start, UNITED focused on sustainability. The programme worked closely with federal and state ministries of health to improve health systems by training surgeons and healthcare staff, providing equipment, helping to gather data, developing ways to monitor health data, streamlining drug supply chains and raising awareness about the causes and treatments of NTDs. These activities helped to ensure Nigeria's health systems could continue tackling both diseases after the programme ended.

UNITED was carried out by a consortium led by Sightsavers, with Accenture, Crown Agents, Helen Keller International, CBM/HANDS, MITOSATH and DAI, in close collaboration with Nigeria's federal and state ministries of health.

Hawau Aliyu (black headscarf) and Nura Rufai (red shirt), community drug distributors in Yantodo, Tsafe.

Looking to the future

The coming years will be decisive for controlling the impact of schistosomiasis and intestinal worms.

A major focus for Sightsavers will be to continue to work closely with local implementers and affected communities to ensure we reach 75 per cent of people with deworming treatment in endemic areas.

Another key focus will be to strengthen multi-sector efforts to improve hygiene and sanitation practices in places where both diseases are present. Doing so will sustain the gains of MDAs and guard against persistent high levels of re-infection, especially in schistosomiasis and intestinal worms 'hotspots'. Fostering good hygiene practices will equally benefit endemic communities affected by other WASH-related conditions, including NTDs such as trachoma and viruses such as COVID-19.

We are optimistic that the progress made in recent years will be reflected in future parasitological monitoring, and through a decline in the prevalence and intensity of infection, to levels that will see many countries control both diseases, freeing millions from their debilitating impacts.

Mariam Yakubu, a student at St Mary's catholic school, Lokoja, receives Praziquantol during a mass drug administration.

References

1. WHO (2020) Schistosomiasis: key facts (accessed June 2020). **www.who.int/en/news-room/fact-sheets/detail/schistosomiasis**

2. WHO (2020) Soil-transmitted helminth infections: key facts (accessed June 2020). **www.who.int/news-room/fact-sheets/detail/soil-transmitted-helminth-infections** and WHO (2020) 2030 targets for soil-transmitted helminthiases control programmes: overview (accessed June 2020). **www.who.int/publications-detail/9789240000315**

We work with partners in developing countries to eliminate avoidable blindness and promote equal opportunities for people with disabilities.

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