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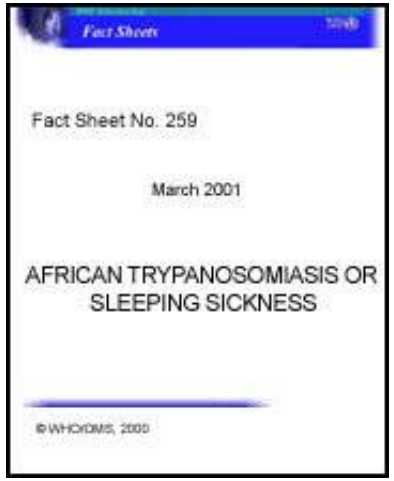

Fact sheet No 259: African Trypanosomiasis or Sleeping Sickness - March 2001 (WHO, 2001, 4 p.)

- *(introduction...)*
- Definition of the disease
- Animal trypanosomiasis
- Major epidemics
- The Geographical distribution of the disease
- Infection and symptoms
- Case management
- Treatment
- First phase treatments
- Second phase treatments
- The Role of the World Health Organization

Home"" """"> ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

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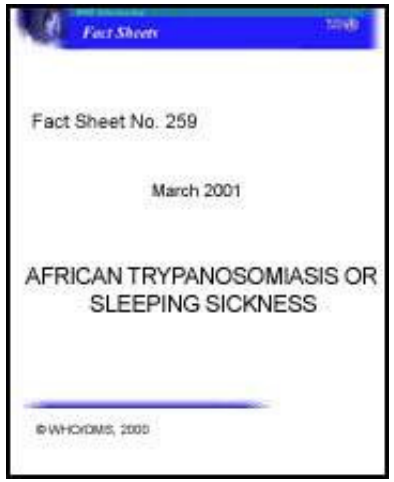

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- Second phase treatments
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March 2001

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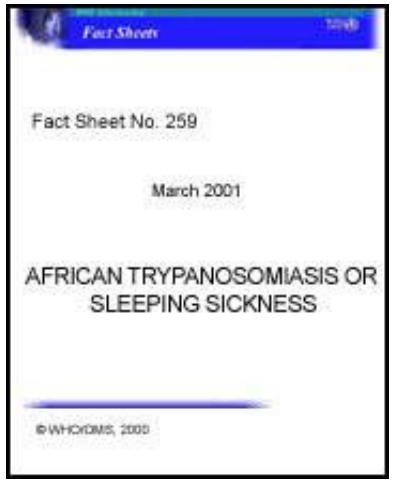

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Second phase treatments

Melarsoprol: discovered in 1949, it is at present the only drug available on the market to treat the advanced stage of sleeping sickness, no matter which parasite is the cause. It is the last arsenical derivative in existence. The undesired effects are drastic; they include reactive encephalopathy (an hyperacute neurological complication of an allergic nature) - often fatal - in 3% to 10% of cases; those who survive the encephalopathy suffer serious neurological sequelae. Furthermore, there is considerable resistance to the drug, rising to 30% in parts of central Africa.

Eflornithine: this molecule, which was registered in 1990, is the alternative to melarsoprol treatment. It is effective only against T.b. gambiense. The regimen is strict and hard to apply. Production ceased in 1999. Last year, the company Aventis gave the licence to WHO, which has undertaken several initiatives to seek a new source of production.

In short, most drugs are old, difficult to administer in poor conditions and by no means always successful. Early diagnosis of the disease, which would guarantee low-risk treatment on an outpatient basis, can rarely be achieved. It is absolutely necessary that a new producer continues the production and the marketing of Eflornithine, the only currently available medicine which can treat the neurological

phase of T.b. gambiense.

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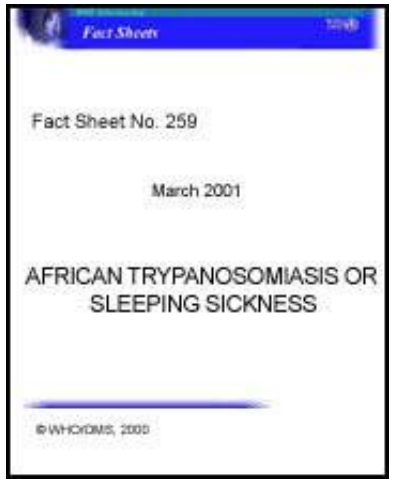

The Role of the World Health Organization

Faced with this resurgence of sleeping sickness, WHO coordinates activities in endemic countries and mobilizes a wide range of partners for this purpose. The Programme for Surveillance and Control of African Trypanosomiasis (PSCAT)

includes national control programmes, nongovernmental organizations (NGOs), donor countries, private foundations, regional institutions, research centres and universities.

The objectives of PSCAT are:

- **Coordination of the sleeping sickness control network to ensure that field activities are sustainable;**
- **Strengthening of existing surveillance systems;**
- **Development of the network for study of treatment and drug resistance;**
- **Promotion of inter-agency collaboration for example with the FAO;**
- **Development of the information system and training activities.**

For further information, journalists can contact the Office of the Spokesperson, WHO, Geneva. Telephone: (+41 22) 791 25 99. Fax: (+41 22) 791 4858. Email: inf@who.int. All WHO Press Releases, Fact Sheets and Features as well as other information on this subject can be obtained on Internet on the WHO home page http://www.who.int/

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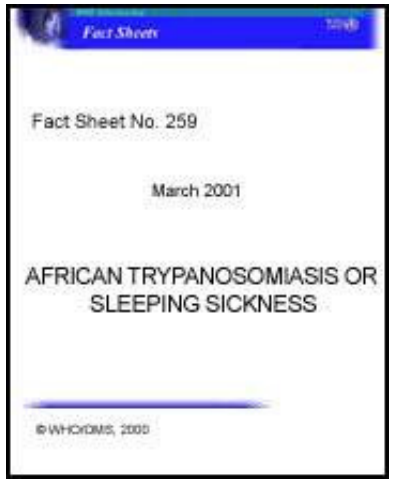

Definition of the disease

Human African trypanosomiasis, known as sleeping sickness, is a vector-borne parasitic disease. *Trypanosoma*, the parasites concerned, are protozoa transmitted to humans by tsetse flies (*glossina*). Tsetse flies live in Africa, and they are found in vegetation by rivers and lakes, gallery-forests and vast stretches of wooded savannah.

Another human form of trypanosomiasis (Human American Trypanosomiasis) occurs in the Americas and is known as Chagas disease.

- **Sleeping sickness occurs only in sub-Saharan Africa, in regions where tsetse flies are endemic. For reasons as yet unknown, there are many regions where tsetse flies are found, but sleeping sickness is not.**

- **The rural populations that live in such environments and depend on them for agriculture, fishing, animal husbandry or hunting are the most exposed - along with their livestock - to the bite of the tsetse fly.**

- **Sleeping sickness affects remote and rural areas where health systems are least effective, or non-existent. It spreads with socio-economic problems such as political instability, displacement of populations, war and poverty.**

- **It develops in foci whose size can range from a village to an entire region. Within a given focus, the intensity of the disease can vary considerably from one village to the next.**

Human African trypanosomiasis takes two forms, depending on the parasite involved:

- **Trypanosoma brucei gambiense (T.b. gambiense) is found in central and West Africa. It causes chronic infection, which does not mean benign. A person can be infected for months or even years without obvious symptoms of the disease emerging. When symptoms do emerge, the disease is already at an advanced stage.**

- **Trypanosoma brucei rhodesiense (T.b. rhodesiense*)* is found in southern and east Africa. It causes acute infection that emerges after a few weeks. It**

is more virulent than the other strain and develops more rapidly, which means that it is more quickly detected clinically.

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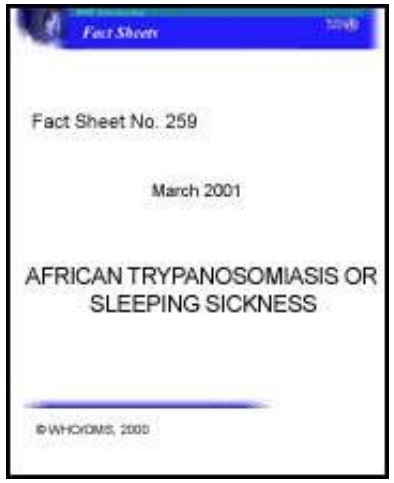

Animal trypanosomiasis

Other sub-species of the parasite cause animal trypanosomiasis, which are pathogenic to animals and are often different from those that cause the disease in

humans. Animals can carry parasites, especially T.b. rhodesiense; domestic and wild animals are a major reservoir. They can also be infected with T. b. gambiense, though the precise role of this reservoir is not well known. The two human and animal forms of the disease remain a major obstacle to the development of rural regions of sub-Saharan Africa: human loss, decimation of cattle and abandonment of fertile land where the disease is rife.

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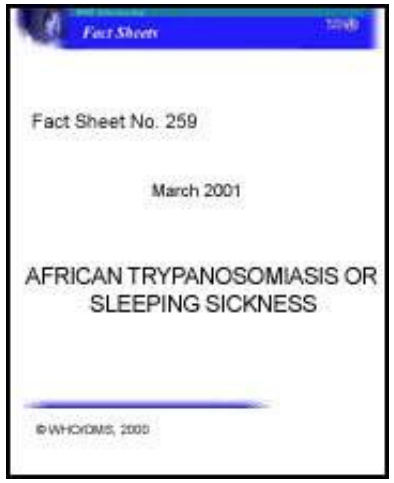

Major epidemics

There have been three severe epidemics in Africa over the last century: one between 1896 and 1906, mostly in Uganda and the Congo Basin, one in 1920 in several African countries, and one that began in 1970 and is still in progress. The 1920 epidemic was arrested due to mobile teams systematically screening millions of people at risk. The disease had practically disappeared between 1960 and 1965. After that success, screening and effective surveillance were relaxed, and the disease has reappeared in endemic form in several foci over the last thirty years.

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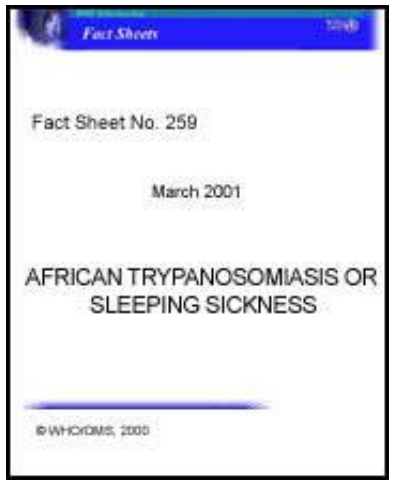

Second phase treatments
The Role of the World Health Organization

The Geographical distribution of the disease

Sleeping sickness threatens over 60 million people in 36 countries of sub-Saharan Africa. Only 3 to 4 million people at risk are under surveillance, with regular examination or access to a health centre that can provide screening.

Detection of the disease calls for major human and material resources, such as well-equipped health centres and qualified staff. Because such resources are lacking, most people with sleeping sickness die before they can ever be diagnosed.

- **Almost 45 000 cases were reported in 1999, but the World Health Organization (WHO) estimates that the number of people affected is ten times greater. The 45 000 case figure shows not the true situation but rather the lack of screening in many foci. The real number of cases seems to be between 300 000 and 500 000. Reported cases in recent years are from countries where surveillance coverage is no more than 5%.**

- **In certain villages of many provinces of Angola, the Democratic Republic of Congo and southern Sudan, the prevalence is between 20% and 50%. Sleeping sickness has become the first or second greatest cause of mortality, ahead of HIV/AIDS, in those provinces.**

Countries are placed in four categories in terms of prevalence. In each country the spatial distribution of the disease is very diverse; it is found in foci and micro-foci.

- **Countries where there is an epidemic of the disease, in terms of very high cumulated prevalence and high transmission: Angola, Democratic Republic of Congo and Sudan;**

- **Highly endemic countries, where prevalence is moderate but increase is certain: Cameroon, Central African Republic, Chad, Congo, Cte d'Ivoire, Guinea, Mozambique, Uganda and United Republic of Tanzania.**

- **Countries where the endemic level is low: Benin, Burkina Faso, Equatorial Guinea, Gabon, Kenya, Mali, Togo and Zambia;**

- **Countries whose present status is not clear: Botswana, Burundi, Ethiopia, Liberia, Namibia, Nigeria, Rwanda, Senegal and Sierra-Leone.**

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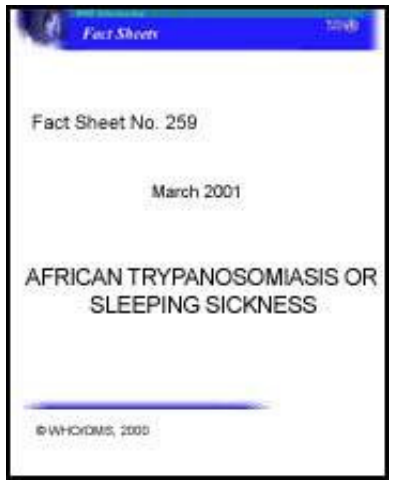


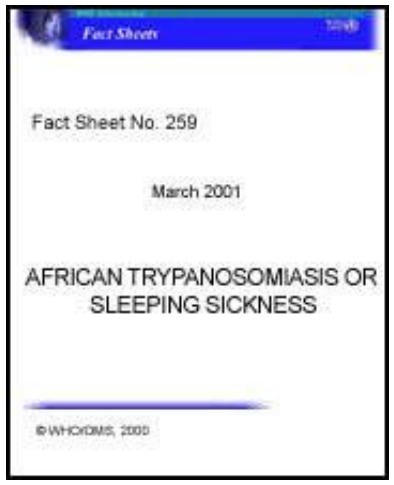
Infection and symptoms

The disease is transmitted with the bite of the tsetse fly. At first the trypanosomes multiply in the blood, and that process can last for years with T.b. gambiense.

- **Mother-to-child infection: the trypanosome can cross the placenta and infect the fetus, causing abortion and perinatal death.**

- **Accidental infections can occur in laboratories, for example, through the handling of blood of an infected person, although this is fairly rare.**

The early phase entails bouts of fever, headaches, pains in the joints and itching. The second, known as the neurological phase, begins when the parasite crosses the blood-brain barrier and infests the central nervous system. This is when the characteristic signs and symptoms of the disease appear: confusion, sensory disturbances and poor coordination. Disturbance of the sleep cycle, which gives the disease its name, is the most important feature. Without treatment, the disease is fatal. If the patient does not receive treatment before the onset of the second phase, neurological damage is irreversible even after treatment.



Case management

There are three stages to case management:

- **Screening is the initial sorting of people who might be infected. This involves checking for clinical signs or the use of serological tests.**

- **Diagnosis shows whether the parasite is present. The only sign, one that has been known for centuries, is swollen cervical glands.**

- **Phase diagnosis shows the state of progression of the disease. It entails examination of cerebro-spinal fluid obtained by lumbar puncture and is used to determine the course of treatment.**

The long, asymptomatic first phase of T.b. gambiense sleeping sickness is one of the factors that makes treatment difficult. Diagnosis must be made as early as possible in order to preclude the onset of irreversible neurological disorders and prevent transmission. Case detection is difficult and requires major human, technical and material resources. Since the disease is rife in rural areas among poor people with little access to health facilities, this problem is all the more difficult.

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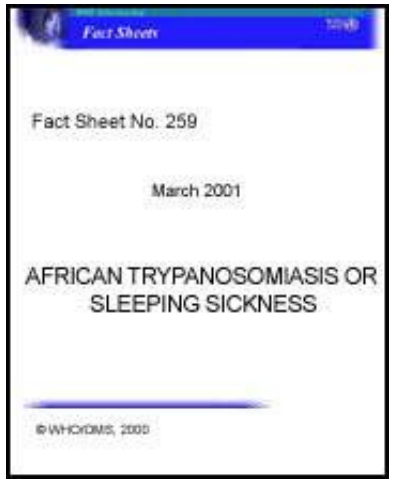

Fact sheet No 259: African Trypanosomiasis or Sleeping Sickness - March 2001 (WHO, 2001, 4 p.)

Treatment

If the disease is diagnosed early, the chances of cure are high. The type of treatment depends on the phase of the disease: initial or neurological. Success in the latter phase depends on having a drug that can cross the blood-brain barrier to reach the parasite. Four drugs have been used until now.

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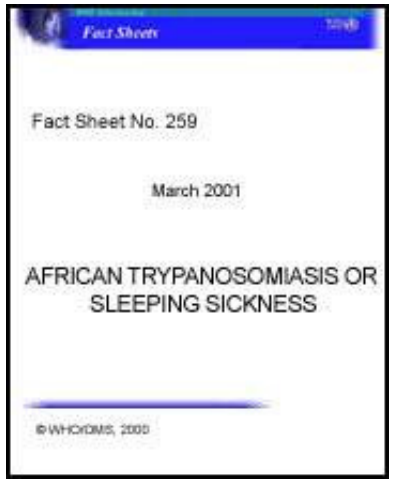

Fact sheet No 259: African Trypanosomiasis or Sleeping Sickness - March 2001 (WHO, 2001, 4 p.)

First phase treatments

- **Suramine: discovered in 1921, it is used in treatment of the initial phase of T.b. rhodesiense. There are certain undesirable effects, especially on the digestive tract.**

- **Pentamidine: discovered in 1941, it is used in treatment of the initial phase of T.b. gambiense sleeping sickness. In spite of a few undesirable effects, it is well tolerated by patients. Future production is guaranteed by an agreement between WHO and Aventis.**