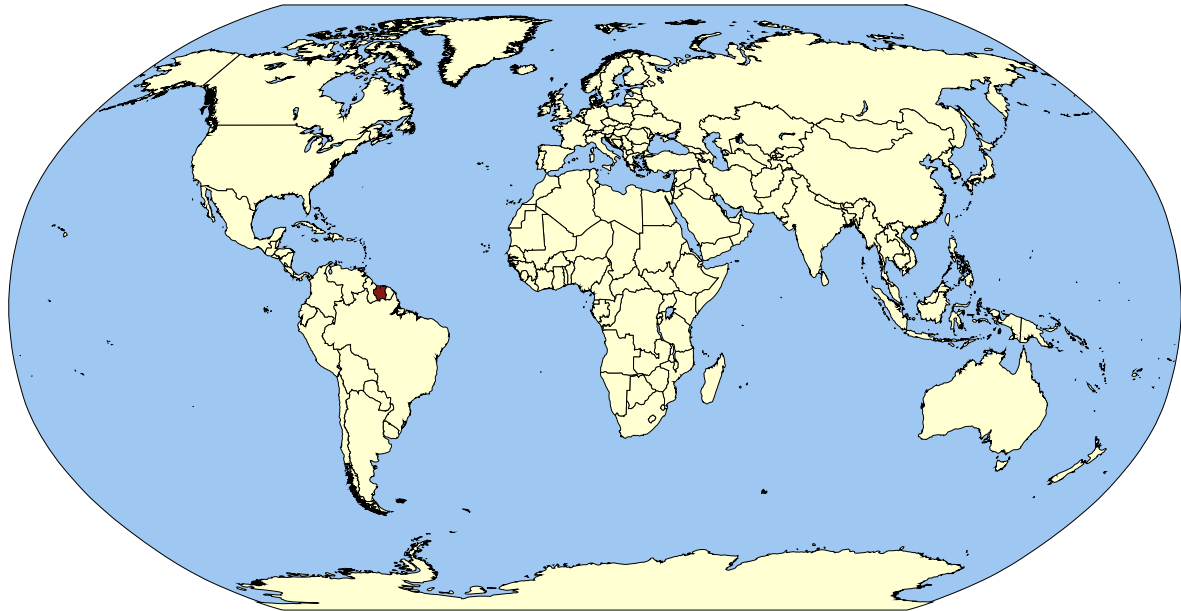


# Suriname

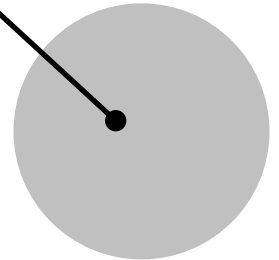


## Near-Successful Schistosomiasis Control in Suriname

In Suriname, *Biomphalaria glabrata* is present in the brackish, swampy, calcium-rich waters of the northern coast, where the majority of the country's population resides. This strip of land is the only region in the country in which *S. mansoni* is endemic. Conversion of swamps to rice paddies in the region has increased transmission [1]. The first identification of *B. glabrata* in Suriname came in a paper from 1859. The snail is likely endemic to the country rather than imported [2]. In 1911, the first schistosomiasis case was discovered in the country [3]. A survey of multiple coastal plain localities suggested mean prevalence of 12.7% in 1956 [1]. A house-to-house survey in the Sarawacca district of Suriname from 1961-1964 showed 23.1% prevalence in 9456 people surveyed [4]. An estimated 9300 Surinamese were infected and 100,000 at risk out of a total population of 322,000 in 1968 [5] and an estimated 8,608 people were 'exposed' in 1971 [6].

## Schistosomiasis in Suriname [17]

The WHO reports no treatment required in 2013.



## Overview of Suriname [18]

- » Population in 2015: 579,633
- » Official Language: Dutch
- » Capital: Paramaribo
- » Constitutional Democracy
- » Percentage of Population with Access to Improved Drinking Water in 2015: 94.8%
- » Percentage of Population with Access to Improved Sanitation in 2015: 79.2%

## Treatment, Control, and Recent Trends

A 1972 paper detailed the treatment of 216 patients with hycanthone, and reported 213 of them cured, though with significant side effects [7]. In 1974, rates as high as 45% were reported in the Saramacca region of Suriname [3]. 1974 marked the initiation of a schistosomiasis control project in Saramacca with the overall objective of reducing prevalence to 5% [8]. To do so, the governments of Suriname and the Netherlands (which funded the project) planned to test every inhabitant, treat those infected (presumably with oxamniquine), and provide other control activities like spraying snails, educating people about schistosomiasis, installing improved latrines, and ensuring proper drainage of standing water and swamps [9]. In 1976, Suriname employed 20 people for schistosomiasis control and also molluscicided 60 km [2] of land throughout the year [6]. Phase 1 of the program lasted from 1974 until 1983, when control was transferred to local authorities and integrated with existing public health programs [8]. A 'pronounced' regression in prevalence was seen throughout the 1970s [1].

The transition from oxamniquine to praziquantel in treating schistosomiasis in 1983 [10]. In 1986, about 3,400 were infected and 34,000 people were at risk in Suriname [11]. In 1995 about 3,700 were infected and 37,000 at risk in Suriname [12]. School surveys in coastal provinces from 1997 to 2001 found between 0.3% and 4.7% prevalence [13]. Countrywide prevalence rose from 0.9% to 1.0% between 2003 and 2010 [14]. There were about 3,935 cases in Suriname in 2008 [15]. There was no record of schistosomiasis control in Suriname by 2007 [13]. The results from a 2011 survey of 6 coastal districts and 1 inland district showed very low prevalence rates, well below the 20% deemed necessary for a mass drug administration [16].

## References

1. WHO. Atlas of the global distribution of schistosomiasis - Venezuela, Suriname. (1987).
2. Paraense, W. L. The Schistosome Vectors in the Americas. *Mem. Inst. Oswaldo Cruz* **96**, 7-16 (2001).
3. PAHO. *Schistosomiasis in Suriname. PAHO/WHO Preparatory Meeting on Epidemiological Data Needed to Plan Elimination of Schistosomiasis in the Caribbean.* (2007).
4. Van Der Kuyp, E. Schistosomiasis mansoni in the Saramacca District of Surinam. *Trop. Geogr. Med.* **21**, (1969).
5. Wright, W. H. Schistosomiasis as a World Problem. **44**, (1968).
6. Iatroski, L.S. and Davis, A. The schistosomiasis problem in the world: results of a WHO questionnaire survey. *Bull. World Health Organ.* **59**, 115-127 (1981).
7. Ootsburg, B. F. J. Clinical trial with hycanthone in Schistosomiasis mansoni in Surinam. *Trop. Geogr. Med.* **24**, (1972).
8. WHO. *WHO Technical Report Series 830: The Control of Schistosomiasis, Second report of the WHO Expert Committee.* (1993). at <[http://whqlibdoc.who.int/trs/WHO\\_TRS\\_830.pdf](http://whqlibdoc.who.int/trs/WHO_TRS_830.pdf)>
9. Locketz, L. Health education in rural Surinam: use of videotape in a national campaign against schistosomiasis. *Bull. Pan Am. Health Organ.* **10**, 219-226 (1976).
10. Alberda, A., Weits, J., Limburg, A. J., Grond, J. & Ilic, P. Chronic schistosomiasis in Surinam subjects: symptoms, treatment and course. *Ned. Tijdschr. Geneesk.* **131**, 2308-12 (1987).
11. Utroska, J.A., Chen, M.G., Dixon, H., Yoon, S., Helling-Borda, M., Hogerzeil, H.V., Mott, K. E. *An Estimate of Global Needs for Praziquantel within Schistosomiasis Control Programmes.* [whqlibdoc.who.int](http://whqlibdoc.who.int/HQ/1989/WHO_SCHISTO_89.102_Rev1.pdf) at <[http://whqlibdoc.who.int/HQ/1989/WHO\\_SCHISTO\\_89.102\\_Rev1.pdf](http://whqlibdoc.who.int/HQ/1989/WHO_SCHISTO_89.102_Rev1.pdf)>
12. Chitsulo, L., Engels, D., Montresor, a. & Savioli, L. The global status of schistosomiasis and its control. *Acta Trop.* **77**, 41-51 (2000).
13. PAHO. *Epidemiological profiles of neglected diseases and other infections related to poverty in Latin America and the Caribbean.* (2009).
14. Rollinson, D. *et al.* Time to set the agenda for schistosomiasis elimination. *Acta Trop.* **128**, 423-440 (2013).
15. Hotez, P. J., Bottazzi, M. E., Franco-Paredes, C., Ault, S. K. & Periago, M. R. The neglected tropical diseases of Latin America and the Caribbean: A review of disease burden and distribution and a roadmap for control and elimination. *PLoS Negl. Trop. Dis.* **2**, (2008).
16. Colston, J. & Saboyá, M. Soil-transmitted helminthiasis in Latin America and the Caribbean: Modelling the determinants, prevalence, population at risk and costs of control at sub-national level. *Geospat. Health* **7**, 321-340 (2013).
17. WHO. PCT Databank for Schistosomiasis. at <[http://www.who.int/neglected\\_diseases/preventive\\_chemotherapy/sch/en/](http://www.who.int/neglected_diseases/preventive_chemotherapy/sch/en/)>
18. Central Intelligence Agency. (2015). Suriname. In *The World Factbook.* at <<https://www.cia.gov/library/publications/the-world-factbook/geos/ns.html>>