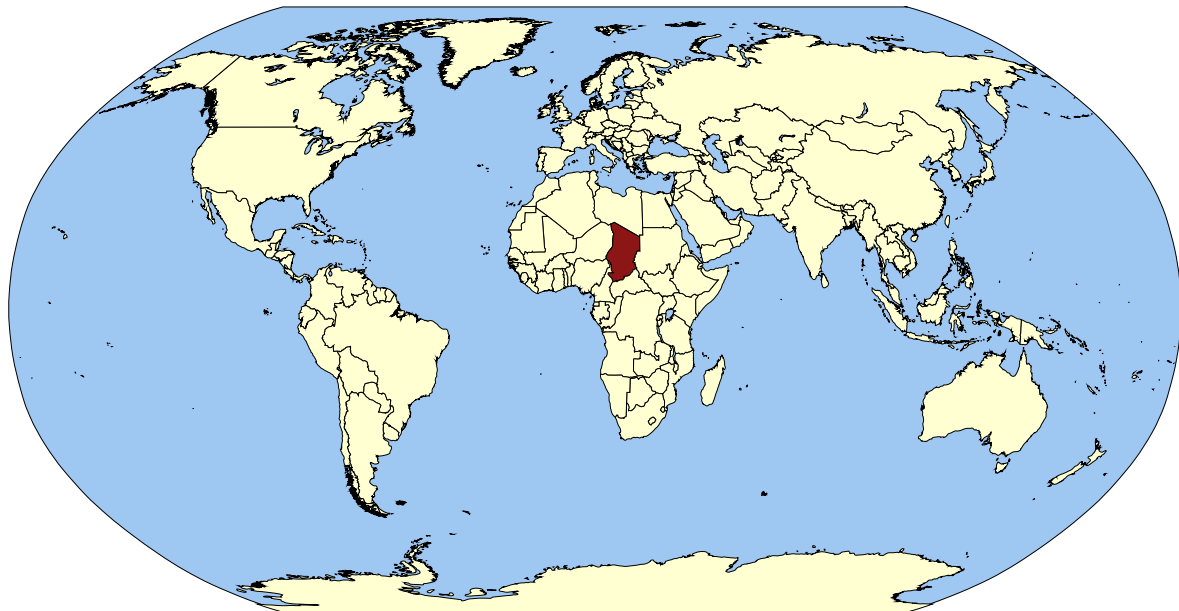


Chad



The History of Schistosomiasis in Chad

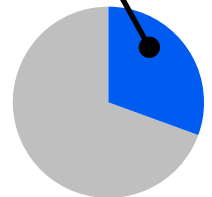
Fossils of schistosomiasis intermediate host snail species *Biomphalaria alexandrina*, *B. pfeifferi* and *Bulinus truncatus* dating back to the Neolithic Period, circa 9500 BCE, have been found in Chad [1]. Though little documentation of snail range and disease spread is available, it is clear that schistosomiasis has been a well-established and problematic disease in Chad for many decades. The first country-wide estimate of *Schistosoma haematobium* prevalence was published to be about 43% in 1951. A survey performed in 1955 by the General Directorate of Public Health for French Equatorial Africa indicated that 16-87% of adults and 24-70% of children were infected with schistosomiasis [2]. A 1987 publication by the World Health Organization reported that people living on the south-eastern shore of Lake Chad were more heavily affected by schistosomiasis than those in other regions of Chad. Prevalence in this area reached 100% in 1969, a figure that did not change in subsequent surveys conducted in 1982 [2].

Schistosomiasis in Chad [9]

1.8 million children require annual treatment

31% of the population requires preventative chemotherapy for schistosomiasis

Chad does not have any control programs in place to treat schistosomiasis.



Overview of Chad [10]

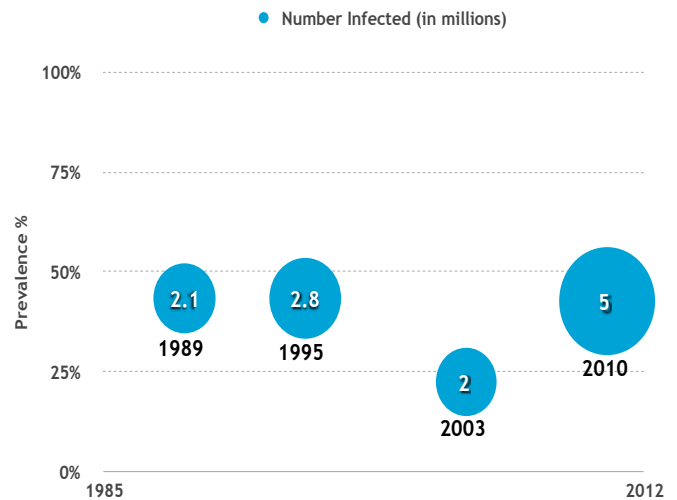
- » Population in 2015: 11,631,456
- » Official Languages: French and Arabic
- » Capital: N'djamena
- » Republic
- » Percentage of Population with Access to Improved Drinking Water in 2012: 50.7%
- » Percentage of Population with Access to Improved Sanitation in 2011: 11.9% [9]

Schistosomiasis Distribution in Chad

In addition to the higher transmission in the southwest, the bordering countries Cameroon and the Central African Republic are also highly endemic for the disease. No snail hosts were found in the northern portion of Lake Chad or in Lake Fitri, which is located in the southwest region of the country. Origins for the spread of the disease in the 20th century have been related to an increased demand for vegetables, which led to an increase in vegetable farms along the major watercourse, thus increasing human contact with snail-infested waters. Nomadic herds-men following livestock (cattle sheep and camels) in their migration from south to north represent an especially high at-risk group in Chad [2].

Control Programs in Chad

Through the 1960s and 1970s there were sporadic reports of another human schistosome, *S. guineensis*, throughout Chad [3]. In 1975, 27,601 people were treated for schistosomiasis. Twenty seven of those were treated in a hospital. The rest were treated as outpatients. It is unknown what drugs were used to treat the patients or if the treatments were successful. This is the only documented treatment of schistosomiasis in Chad. By 1977 Chad's population was 4,197,000 and 3,600,000 people, or 85.8% of the population, was exposed to schistosomiasis [4]. *S. haematobium* was highly endemic, *S. mansoni* was mildly endemic and only occurred within the *S. haematobium* range [2], and *S. intercalatum*/*S. guineensis* (genetic studies are unclear of evolutionary distinction) were lowly endemic [4].



Schistosomiasis Over The Years

Schistosomiasis has infected millions in Chad over the past few decades. Disease prevalence has hovered around 45%, while the number of infected individuals has increased as Chad's population increases.

Increases in Prevalence

By 1989 the population of Chad reached 5,018,000 and 3,964,220 were estimated to be at risk for contracting schistosomiasis. 2,180,000 people were estimated to be infected [5]. As the population grew, so too did these estimates. In 1995 the population of Chad grew to 6,400,000 with 5,056,000 people at risk of contracting schistosomiasis and 2,780,000 people were already infected with the disease [6]. The estimated country prevalence in 2003 was 22.5 % [3]. The total population of Chad was 11,506,130 in 2008 and it was estimated that 9,089,843 people would require preventative chemotherapy [7]. Recent data from 2010 reveals that of the 11,715,000 citizens of Chad, 4,997,975 people were infected with schistosomiasis, correlating to an estimated countrywide prevalence of 42.7%. No known control programs have been carried out [3].

The Political Situation in Chad

Chad's history is full of political unrest and insecurity, and since independence from French colonial rule there has not been a cohesive government structure able to address the health concerns of schistosomiasis or other major public health issues. War has been constant in Chad, but there have been bouts of peace. In 1996 Idriss Deby was named President in Chad's first election. Chad began to export oil in 2003, a move that has brought much-needed money into the country. Violence and unrest remain massive hurdles in Chad to generate the social structures necessary to address schistosomiasis disease [8].

There is only one documented round of schistosomiasis treatments in Chad

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