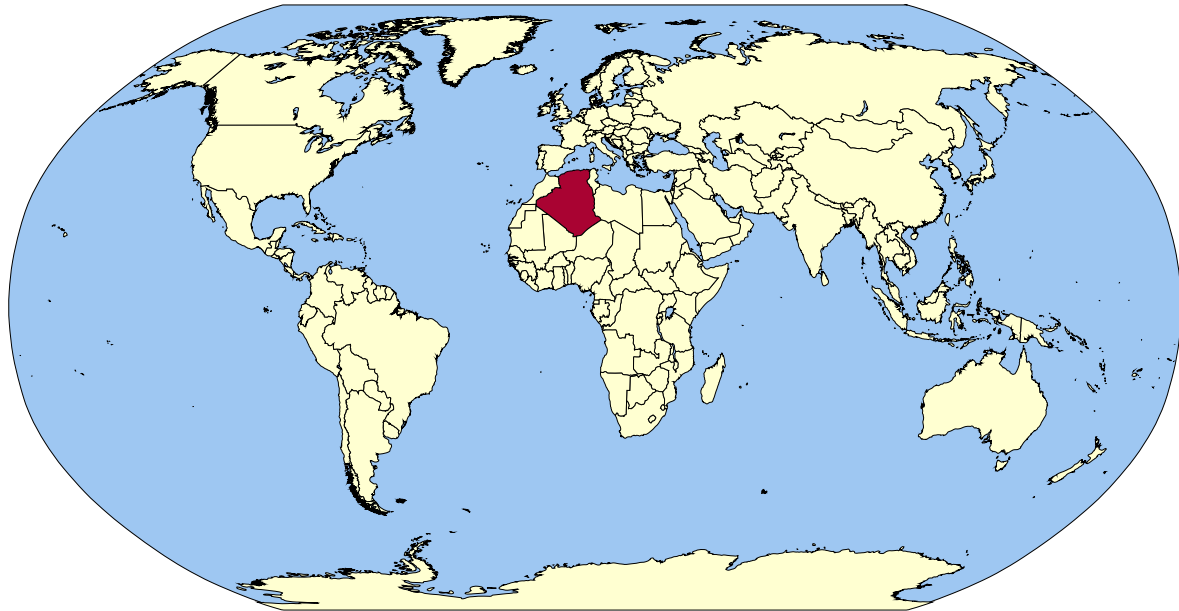


# Algeria



## The History of Schistosomiasis in Algeria

By land area, Algeria is the largest country on the continent of Africa and the 10th largest in the world. It is in North Africa, bordering the Mediterranean Sea and the countries of Morocco, Tunisia, Libya, Mali, Mauritania, Niger, and Western Sahara [1]. Algeria was under colonial rule by France for a century until a war in the 1950's led to independence in 1962 [1]. Political unrest has been intermittent over the last several decades, stemming from conflicting views of secular elite and religious extremists. Algeria's economy is mostly state-controlled (based on a socialist development model), and relies heavily on hydrocarbons (oil and natural gas), which make up about 30% of their Gross Domestic Product [1].

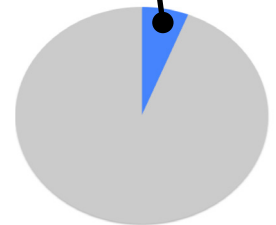
*Schistosoma haematobium* was reported from Algeria as early as 1893[4, 5] and by 1903 was reported as "not uncommon" [6]. The disease was - and remains - very focal, with a few well described hotspots, such as in the Djanet area on the border with Libya, the Tell mountains near the Mediterranean coast, and a few other foci [4].

## Schistosomiasis in Algeria [3]

2.3 million people estimated to be infected in 2012

6% of the population estimated to be infected with schistosomiasis

Conflicting reports have made Algeria's schistosomiasis status unclear.



## Overview of Algeria [1]

- » Population in 2015: 39,542,166
- » Official Language: Arabic
- » Capital: Algiers
- » Presidential Republic
- » Percentage of Population with Access to Improved Drinking Water in 2015: 83.6%
- » Percentage of Population with Access to Improved Sanitation in 2015: 87.6%

## Algeria's Geography

The snail host of schistosomiasis in Algeria, *Bulinus truncatus*, was historically plentiful where there were natural or man-made surface fresh waters [4]. Yet the parasite was restricted to areas where human activities brought infected people in close contact with the fresh water. For example, Moroccan troops were stationed in Khemis el Khechna in the 1940's, and the soldiers' bathing activities in nearby reservoirs were thought to contribute to establishment of endemic schistosomiasis in the region [4].

## Status of Schistosomiasis in Algeria

During the 20th century, some areas experienced declines in schistosomiasis prevalence without any large-scale or coordinated national control efforts. For example, in the Djanet region between 1949 and 1969, local prevalence fell inexplicably from 70% to 33% in children and 50% to 25% in adults. In the Khemis El Khechna region (also known as Fondouk or Hamiz), local prevalence was 42.4% in 1966 and 7.8% in 1979 [4]. However, even as the disease was apparently declining in some regions, new endemic regions were sometimes noted, such as the newly discovered focus in El Harrack in 1977, with prevalence in local schoolchildren at 6.9%. Conflicting reports have made Algeria's schistosomiasis status unclear. In 2011, Algeria was designated a country "requiring evaluation in order to verify if interruption of transmission has been achieved" by the World Health Organization (WHO) [2]. Yet, in a 2012 publication, Hotez et al. report that Algeria is the country with the third highest prevalence of schistosomiasis within the WHO's Middle East and North African region, with an estimated 2.3 million people infected. [3] National assessments in Algeria suggest that the overall prevalence of schistosomiasis countrywide has changed little over the last few decades: 7.5% in 1986 [7], 7.5% in 1995 [8], 7.7% in 2003 [9], and 6% in 2012 [3].

## Lack of Schistosomiasis Control in Algeria

Despite a recognition of the risk of spread of schistosomiasis in Algeria with ongoing irrigation expansion in the mid 20th century, it is unclear if Algeria ever instituted a national schistosomiasis control effort [4]. This contrasts with the well-documented schistosomiasis control program in neighboring Tunisia starting in the 1970's. Since most of Algeria is Sahara desert, the presence of irrigated land was (and probably remains) an important factor in schistosomiasis risk, with about 280,000 hectares of irrigated land by the 1980's (most of that developed since the 1960's [4]) increasing to 569,000 hectares in 2003 [1]. Focal schistosomiasis control efforts may have occurred sporadically in Algeria, as suggested in the 1987 Atlas of the Global Distribution of Schistosomiasis which claims: "implementation of new control techniques... [promise that] schistosomiasis may soon be brought under control in Algeria" [4]. The 2012 edition of the World Schistosomiasis Risk Chart also claims: "Public health control programs have reduced the incidence of schistosomiasis, however two active localized infections are present in the municipality of Khemis el Khechna (El Hamiz River dam) in the province of Boumerdès, and in the oases of Djanet, Iherir, and Tamadjert (Tassili-n-Ajjer National Park) in the province of Illizi [10]."

## References

1. Algeria: The World Factbook. 2013-14 [cited 2015; Available from: <https://http://www.cia.gov/library/publications/the-world-factbook/index.html>.
2. WHO, Schistosomiasis: progress report 2001-2011 and strategic plan 2012-2020, 2011, World Health Organization: Geneva.
3. Hotez, P.J., L. Savioli, and A. Fenwick, Neglected tropical diseases of the Middle East and North Africa: review of their prevalence, distribution, and opportunities for control. *PLoS Negl Trop Dis*, 2012. 6(2): p. e1475.
4. Doumenge, J.P., et al., Atlas of the global distribution of schistosomiasis, 1987, World Health Organization: Geneva, Switzerland.
5. Sonsino, Foreign University Intelligence, in *The Lancet* vol. 2, T.H. Wakley, Editor. 1893, The Registered Proprietors, at the offices of "The Lancet": London. p. 454.
6. Clemow, F.G., *The Geography of Disease*. 1903, London: C.J. Clay and Sons, Cambridge University Press.
7. Utroska, J.A., et al., An estimate of the global needs for praziquantel within schistosomiasis control programs, 1989, World Health Organization: Geneva, Switzerland.
8. Chitsulo, L., et al., The global status of schistosomiasis and its control. *Acta Trop*, 2000. 77(1): p. 41-51.
9. Rollinson, D., et al., Time to set the agenda for schistosomiasis elimination. *Acta Trop*, 2012.
10. IAMAT, World Schistosomiasis Risk Chart, 20