



## Rocky Mountain spotted fever, an underdiagnosed cause of headache

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### Introduction

Rocky Mountain spotted fever is a tick-borne rickettsiosis. The main clinical signs and symptoms are fever, severe headache, rashes and myalgia. Endothelium tropism can lead to vasculitis, thrombosis, and hemorrhage. In addition, the disease can generate neurological impairment through meningoencephalitis, characterized by holocranial headache. It is considered difficult to diagnose and underreported because nonspecific signs and it is commonly confused with dengue.

### Objectives

To analyze the epidemiology of spotted fever in São Paulo (state) between 2010 and 2020.

### Methodology

The work is a descriptive cross-sectional study that statistically analyzes the cases of spotted fever in São Paulo between 2010 and 2020 through data obtained by the Information System of Notifiable Diseases (SINAN). The proportions of spotted fever cases were calculated according to: sex, age group, race/color, infection environment, confirmation criteria and evolution. The correlation coefficient between human development index (HDI) and that of the reporting city and mortality was estimated. The number of inhabitants and HDI were from the latest IBGE (Brazilian Institute of Geography and Statistics) census in 2010.

### Results

There are 869 cases were confirmed (representing 44% of the country's cases), of which 324 are from the metropolitan region of Campinas. The correlation coefficient between HDI and deaths is 0.06 and the average HDI of the cities is 0.79.

As for the age group, cases are predominant in adulthood, 29.4% of cases occur between 20-39 years and 33.2% between 40-59 years. 76.7% of the cases are male. As for color/race, 61.7% of the cases are in whites, 19.8% in browns, 5.3% of the cases in blacks.

The most used confirmation criterion (96%) was laboratory. Of the cases, 56.1% died. As for the infection environment, 27.6% are at home, 15.3% are at work, 33.2% are leisure places and 33.3% are from unidentified places and others

### Conclusion

The prevalence in males and the predominant age group 20-59 years can be linked to work activity, which leaves them more exposed to ticks. The high numbers in adulthood can also be related to ecotourism, with 33.2% of cases being related to leisure. The color/race distribution reflects the state's population.

The high rate in the metropolitan region of Campinas evidences the need for preventive public campaigns, such as the use of repellents in areas of tick infestation. The average HDI of the cities that reported spotted fever is high, contrary to common sense, and this is precisely because they have more investment in health and a population that is more likely to seek medical help, reducing underreporting.

One of the limitations of the research was that there was no data on whether the infection was in rural or urban settings.

Lastly, São Paulo is the state with the most cases of spotted fever, which reinforces the need for prevention campaigns and clarification of health professionals that fever, severe headache and myalgia in regions with the presence of ticks are indicative of the disease

**Keywords:** Rocky Mountain spotted fever, Severe headache, Epidemiology.