

HEALTH IMPACTS OF CLIMATE CHANGE IN CASCAIS, PORTUGAL

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In this study we present the potential health impacts of climate change in the Cascais municipality, Portugal. Current and future health impacts associated with heatstress and vector borne diseases are presented.

Heatstress impacts were assessed based on the local temperature and daily mortality relationship that was determined using Generalized Estimating Equations (GEE) modelling. The risk of transmission of vectorborne diseases was assessed based on biological temperature thresholds for disease transmission. For the future impact assessment we used daily climate data indicative of the period of 2020-2047 and 2070-2097 for IPCC SRES scenarios. The latter datasets were developed specifically for this study region by downscaling global climate scenarios.

Heatstress impacts: Our results show that increases of 1°C in the maximum temperature above the threshold of 30°C results in a 4.7% increase risk of mortality. Since all the future climate scenarios used in this study indicate significant increases in days with maximum temperatures above this threshold, we concluded that the risk of dying from heatstress will increase in the future.

Vector-borne disease Impacts: Diseases endemic to Cascais such as leishmaniasis and Mediterranean spotted fever were studied as well as those currently not endemic to the region such as malaria, dengue, West Nile fever, yellow fever, Chikungunya fever and murine typhus. Climate change may change the disease transmission risks of these diseases throughout the year. There is also a real risk that transmission risks of diseases currently not endemic will increase significantly under current as well as future climates if infected vectors are introduced to the region. It is therefore urgent that vector surveillance systems be developed and implemented in Cascais.