

# Countries closer to the equator have up to 33% less COVID infections

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Countries that are closer to the equator have been shown to have less COVID-19 cases, relative to the number of residents, research from Vienna University of Economics and Business (WU Vienna) has revealed.

The research, undertaken by Klaus Prettnner from the Department of Economics at WU Vienna, alongside researchers from Heidelberg University and the Chinese Academy of Medical Sciences, offered findings that are consistent with the idea that heat and sunlight reduce the spread of COVID-19.

According to the study, which compared confirmed COVID-19 cases per million inhabitants in a country against that country's distance from the equator, a one-degree increase in absolute latitude is associated with a 4.3% increase in COVID cases per million.

These findings imply that, if a country was located 1000km closer to the equator, it could expect 33% fewer cases per million inhabitants.

Further still, according to the study, one could expect a difference of around 64% in the number of cases per million inhabitants between two countries whose climates differ to a similar extent as two adjacent seasons.

Accounting for confounding factors, the researchers included data on air travel, urbanisation, COVID-19 testing intensity, cell phone usage, income, old-age dependency, and health expenditures in their analysis.

According to the results of the research, countries are expected to see a decline in new COVID-19 cases during summer and a resurgence during winter.

However, the researchers argue that these findings do not mean that the disease will vanish during summer, but that higher temperatures and more intense UV radiation in summer are likely to support public health measures to contain COVID-19.

Klaus Prettnner, Department of Economics, Vienna University of Economics and Business, says:

"The closer a country is to the equator, the fewer cases of COVID-19 virus per million population occur. The closer to the equator, the higher the humidity and temperatures tend to be, as well as the UV radiation. Knowing this is important in order to set appropriate measures against the spread of the COVID-19 virus. Overall, however, our results do not mean that countries closer to the equator will not be affected by the pandemic at all or that the virus will disappear altogether in the summer."

The paper, Climate and the spread of COVID19, was published in the journal Scientific Reports, and can

be accessed here. (<https://www.nature.com/articles/s41598-021-87692-z>)

Alongside Heidelberg University and the Chinese Academy of Medical Sciences, other cooperation partners involved in the study are from Harvard University, the International Institute for Applied Systems Analysis, the Wittgenstein Centre, and Stanford University.

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