



Winter Rise in Covid-19 Cases

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Why in News

According to a recent study, “**The Covid-19 Spread in India and Its Dependence on Temperature and Relative Humidity**”, the spread of **Covid-19** may pick up the pace during peak monsoon and winter with a fall in the temperature.

- The study was conducted by the **School of Earth, Ocean and Climate Sciences** of the **IIT, Bhubaneswar** and the Department of Microbiology of the **AIIMS, Bhubaneswar**.
- It took into **account the pattern of the coronavirus outbreak and the number of such cases** in all of the states between April and June 2020.

Key Points

- The respiratory viral **pandemics** of the 21st century (**SARS in 2003, Swine Flu in 2009**) have revealed that **seasonality** in environmental factors plays an important role in the dynamics of their spread.
- Researchers tried to observe the state-level relationship between **environmental factors** such as **temperature, relative humidity, specific humidity and solar radiation** on the Covid-19 spread over the Indian region.
The **rainfall, decrease in temperatures and cooling of the atmosphere** coupled with progression towards winter may environmentally favour the spread of Covid-19 in the country.
- **Temperature and relative humidity have a significant impact** on the **disease growth rate and doubling time** and the **rise in temperatures leads to a decline** in the transmission of the virus.

- **Correlation with Covid-19:**
 - A one-degree-Celsius rise in temperature leads to a 0.99% decrease in cases and increases the doubling time by 1.13 days, implying a slowdown of the virus spread.
 - An increase of 10% in relative humidity tends to decrease the growth rate and doubling time of coronavirus cases by 1.18 days.
- The study also carried out an **analysis of the impact of solar radiation on the spread of Covid-19.**
 - A **higher surface-reaching solar radiation leads to a reduction** in the number of infections and an **increase in the doubling time of cases**, similar to that of temperatures.
 - The **mean difference of as high as seven degrees Celsius between summer and winter** points to a possibility for greater potential spread of Covid-19 in winter.
- **Challenge:**

The progression of the season towards **monsoon, post-monsoon, and after that winter** with a continuous reduction in temperature will prove a significant **challenge for health workers and policymakers** attempting to enforce mitigation and control measures.

Way Forward

- Policymakers should take **targeted decisions** that may also include environmental information to slow the spread.
- The actual spread will eventually depend on human intervention, such as strict enforcement of universal masking, physical distancing and improved hand hygiene and possible commencement of herd immunity.

Source: TH