

# THE BEST OF THE WEEK (05 set – 11 set 2022)

Islam Momin et al.

## **Correlation between COVID-19 and weather variables: A meta-analysis**

Heliyon, August 2022; doi.org/10.1016/j.heliyon.2022.e10333

### **Abstract**

**Background:** COVID-19 has significantly impacted humans worldwide in recent times. Weather variables have a remarkable effect on COVID-19 spread all over the universe.

**Objectives:** The aim of this study was to find the correlation between weather variables with COVID-19 cases and COVID-19 deaths.

**Conclusion:** This meta-analysis disclosed significant correlations between weather and COVID-19 cases and deaths. The findings of this analysis would help policymakers and the health professionals to reduce the cases and fatality rate depending on weather forecast techniques and fight this pandemic using restricted assets.

A. Bertoletti et al.

## **SARS-CoV-2-specific T cells in the changing landscape of the COVID-19 pandemic**

Immunity, August 2022; doi: 10.1016/j.immuni.2022.08.008

### **Abstract**

Since the onset of the coronavirus disease 2019 (COVID-19) pandemic, multiple severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants with increasing ability to evade neutralizing antibodies have emerged. Thus, earlier interest in defining the correlates of protection from infection, mainly mediated by humoral immunity, has shifted to correlates of protection from disease, which require a more comprehensive analysis of both humoral and cellular immunity. In this review, we summarized the evidence that supports the role of SARS-CoV-2-specific T cells induced by infection, by vaccination or by their combination (defined as hybrid immunity) in disease protection. We then analyzed the different epidemiological and virological variables that can modify the magnitude, function, and anatomical localization of SARS-CoV-2-specific T cells and their influence in the possible ability of T cells to protect the host from severe COVID-19 development.

J. Yang et al.

## **Co-existence and co-infection of influenza A viruses and coronaviruses: public health challenges**

Innovation (Camb), August 2022; doi: 10.1016/j.xinn.2022.100306

### **Abstract**

Since the 20<sup>th</sup> century, humans have lived through five pandemics caused by influenza A viruses (IAVs) (H1N1/1918, H2N2/1957, H3N2/1968, and H1N1/2009), and the coronavirus (CoV) SARS-CoV-2. IAVs and CoVs both have broad host ranges and share multiple hosts. Virus co-circulation and even co-infections facilitate genetic reassortment among IAVs and recombination among CoVs, further altering virus evolution dynamics and generating novel variants with increased cross-species transmission risk. Moreover, SARS-CoV-2 may maintain long-term circulation in humans as seasonal IAVs. Co-existence and co-infection of both viruses in humans could alter disease transmission patterns and aggravate disease burden. Herein, we demonstrate how virus-host ecology correlates with the co-existence and co-infection of IAVs and/or CoVs, further affecting virus evolution and disease dynamics and burden, calling for active virus surveillance and countermeasures for future public health challenges.