

Is climate change dampening our ability to fight the coronavirus and other diseases?

Scientists have long known that the rise in average global temperatures is expanding the geographical presence of vector-borne diseases such as malaria and dengue fever, because the animals that transmit them are adapting to more widespread areas. The link between respiratory illnesses, including influenza and COVID-19, and a warming planet is less clear. But some scientists are concerned that climate change could alter the relationship between our body's defenses and such pathogens. These modifications could include the adaptation of microbes to a warming world, changes in how viruses and bacteria interact with their animal hosts, and a weakened human immune response.

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"We have two pillars of defense: temperature and advanced immunity. In a warming world, we may lose the pillar of temperature if the [pathogens] adapt to be close to our temperature," [says microbiologist and immunologist Arturo Casadevall.]

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A warming world could also have an effect on humans' other defense mechanism: the immune system. Researchers have been aware for years that factors such as a lack of sleep and stress could weaken it. Last year, in a study published in the [Proceedings of the National Academy of Sciences USA](#), scientists in Tokyo also discovered that heat reduced mice's immune response to a flu virus.

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