# Climate change fuels rise of dangerous fungal pathogen Aspergillus fumigatus across continents



A significant global health threat is emerging due to climate change and inadequate medical preparedness, as revealed by a recent study. The research highlights the blueprints of a dangerous fungal pathogen, *Aspergillus fumigatus*, which poses a rising risk to populations across Asia, Europe, and the Americas. Traditionally found in organic matter such as compost, this pathogen is increasingly concerning as it gains a foothold in warmer, more humid environments catalysed by climate change.

As temperatures rise globally, the conditions required for fungi like *Aspergillus* to thrive are becoming more prevalent. The study warns of an impending tipping point, wherein fungal infections may become common in regions previously unaffected. Norman van Rhijn, a co-author of the study, articulated the urgency of the situation, stating, “In 50 years, where things grow and what you get infected by is going to be completely different.” This rapid transformation has the potential to disrupt public health systems and biodiversity significantly.

One of the notable characteristics of *Aspergillus fumigatus* is its resilience and adaptability. It flourishes in high-temperature environments, such as compost heaps, which closely resemble the human body's internal temperature of approximately 37°C. This unique adaptability is evident in its capacity to survive even in extreme conditions, including radioactive environments like Chernobyl. Professor Elaine Bignell from Exeter University’s MRC Centre for Medical Mycology indicated that the pathogen’s environmental behaviour is pivotal in its infectivity. Inhalation of its microscopic spores can lead to various respiratory issues, particularly affecting individuals with pre-existing conditions such as asthma, cystic fibrosis, or weakened immune systems.

Compounding the issue is the limited understanding of fungi, as the fungal kingdom remains largely unexplored. Of the estimated 1.5 to 3.8 million species, only about 10% have been formally documented, with even fewer undergoing genomic analysis. This lack of knowledge hampers researchers' ability to predict which fungal species might emerge as significant threats. Projections suggest that, if current global warming trends continue, *Aspergillus fumigatus* could expand its range by 77% by 2100, putting up to nine million individuals in Europe at increased risk of infection during that timeframe.

Despite the growing urgency, the medical response has been insufficient. Research and development for new antifungal treatments suffer from chronic underfunding compared to antibacterial and antiviral therapies, primarily due to perceived profitability challenges and high development costs. This financial stagnation raises concerns that vulnerable populations may lack effective treatments amid rising fungal resistance.

Experts advocate for a proactive global strategy to tackle this emerging crisis, highlighting the necessity for investments in fungal research, climate action, and bolstered public health infrastructure. The potential impact of *Aspergillus fumigatus* remains largely underappreciated, yet its capacity to affect health on a large scale is apparent. As pathways for these fungal pathogens evolve with the changing climate, the readiness of the global health system to confront this challenge may significantly influence the well-being of millions in the years to come.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

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