# Rising temperatures could expose millions to new Aspergillus fumigatus infections



A significant health threat is emerging, propelled by climate change and inadequate medical preparedness, as research indicates that the fungal pathogen Aspergillus fumigatus could pose a danger to millions across Asia, Europe, and the Americas. Commonly found in organic materials such as compost, this pathogen has recently garnered attention due to its capacity to thrive in warmer temperatures and its propensity to exploit weakened immune systems.

As global temperatures continue to rise, the environments in which fungi like Aspergillus flourish are becoming increasingly prevalent. The study highlights that we might be approaching a tipping point where fungal infections become common in regions previously thought to be safe. Co-author Norman van Rhijn underscored the seriousness of the situation, stating, “In 50 years, where things grow and what you get infected by is going to be completely different.” Such environmental changes could not only disrupt public health systems but also threaten biodiversity.

Aspergillus fumigatus is particularly concerning due to its remarkable adaptability. Capable of rapidly growing in high-temperature settings like compost piles—which replicate the human body's internal temperature of approximately 37°C—this fungus can thrive under extreme conditions. Notably, strains from the same genus have even been discovered within the radioactive zones of Chernobyl, which illustrates its resilience. Professor Elaine Bignell from Exeter University’s MRC Centre for Medical Mycology remarked that the environment's impact on the pathogen's behaviour may significantly influence its ability to infect humans. When inhaled, its microscopic spores can lead to various respiratory illnesses, particularly in individuals with existing health issues such as asthma, cystic fibrosis, or compromised immune systems.

Despite the looming threat, the field of fungal research remains vastly underexplored, with only about 10% of an estimated 1.5 to 3.8 million fungal species formally identified. Even fewer have undergone genomic analysis, complicating efforts to predict which fungi might become significant health risks in the future. Scientists caution that ongoing global warming, largely driven by continued fossil fuel use, could facilitate the spread of Aspergillus fumigatus to 77% more regions by 2100. In Europe alone, projections suggest that as many as nine million individuals might be at heightened risk of infection within this timeframe.

Compounding this issue, advancements in medical countermeasures are lagging. Research and development of new antifungal medications remain critically underfunded. Unlike antibacterial and antiviral treatments, antifungal research often receives less attention due to perceptions of lower profitability and significant development costs. This hesitance around financial investment might leave millions without effective treatment options as fungal resistance intensifies.

Experts highlight the need for a comprehensive global strategy to address this looming crisis. Increased investment in fungal research, alongside actions addressing climate change and bolstering public health infrastructure, is essential to safeguard vulnerable populations.

While Aspergillus fumigatus may not yet be widely recognised, its potential for significant disruption is substantial. The interplay between a warming climate and evolving fungal pathogens presents a silent yet escalating biological threat. The readiness of global health systems to contend with this emerging fungal frontier could have far-reaching implications for millions of lives.

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

## Bibliography

1. <https://www.huffingtonpost.es/life/salud/alerta-hongo-asesino-avanza-europa-millones-personas-peligro.html> - This article discusses the rapid expansion of Aspergillus fumigatus in Europe, linking its spread to climate change and rising temperatures, and highlights the significant health risks it poses to millions, especially those with pre-existing conditions like asthma or cystic fibrosis.
2. <https://www.ft.com/content/506f5a03-8520-40e1-aee3-a6e6427f68c0> - This report warns that climate change is accelerating the global spread of dangerous fungal pathogens, particularly Aspergillus species, enabling them to expand into northern regions of Europe, Asia, and the Americas, posing serious health risks, especially to people with weakened immune systems.
3. <https://www.biocycle.net/a-fumigatus-and-conscientious-composting/> - This article explains that Aspergillus fumigatus thrives in compost piles, which replicate the human body's internal temperature of approximately 37°C, and notes that strains from the same genus have been discovered within the radioactive zones of Chernobyl, illustrating the fungus's resilience.
4. <https://www.cdc.gov/fungal/about/climate-change-and-fungal-diseases.html> - The CDC outlines how climate change, through rising temperatures and extreme weather events, may expand the geographic range of fungi like Aspergillus fumigatus, leading to new types of fungal infections and increased health risks.
5. <https://www.biocycle.net/a-fumigatus-and-conscientious-composting/> - This article discusses the presence of Aspergillus fumigatus in compost piles, noting that while the fungus can survive at temperatures above 55°C, it is difficult to ensure that every part of a compost pile reaches this temperature, making it likely that Aspergillus fumigatus spores are present in compost from even well-managed facilities.
6. <https://www.sciencedaily.com/releases/2022/01/220113194909.htm> - This study suggests that compost and compost-enriched soils may contain high concentrations of Aspergillus fumigatus spores, raising public health concerns about exposure during compost handling.
7. <https://news.google.com/rss/articles/CBMiwwFBVV95cUxOd3g5QjFIbHh5WVUyQXZGeDBFaUNvcE1DcGQ0czRCdnZyR3Z6WUZ4cFdyRHBHYnlSMGI2NEQ5YlhhV2pScUVENmp4VUVHaEhLaHFLeWkxMDQyUHRCOXRsR1QtR2NOTUxHMndhQlNfdXpYRU4yMGZNNzN0WmdTUlFubUxEcHhySmtiMXBIdF9VQ0tEWlE5VmY4U2hxa1M0UFJ4TjVMTnBFSTVEb2ZMQ05CM01vUDlINVFqMlJNcjNlWldOOXc?oc=5&hl=en-US&gl=US&ceid=US:en> - Please view link - unable to able to access data