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**Press release**  
**For immediate publication**

**Climate change and disasters:  
How fungal diseases are spreading globally**

Graz, 27 March 2024: Climate change and its consequences are reflected in different areas of our lives. Medicine and our health will also not be spared the consequences of changing climatic conditions. A new international scientific paper that appeared in the renowned journal *The Lancet* is concerned with how climate change, disasters and social factors are having an effect on the spread of fungal diseases globally. Martin Hoenigl of the Med Uni Graz Division of Infectious Diseases was involved in the study. The paper shows how climate change favors an increase in fungal infections and how globally coordinated systematic interventions are necessary to bring this problem under control.

**Fungi and climate change**

Climate change is changing the world, and its inhabitants must change with it. This applies not only to us human beings, who must learn how to deal with changing circumstances, but also to other living beings such as fungi. The average temperature of the atmosphere is increasing, the climate is changing and very adaptable fungi are quickly becoming used to these new conditions. This results not only in the spread of pathogenic fungi into geographical areas that are warming up. In the extreme case, fungi can adapt to the temperatures on and in the human body. This leads to the emergence of new fungi such as *Candida auris*, which can cause infections in immunocompromised people and then spread throughout the world.

**Fungi and natural disasters**

The main focus of the study was not on climate change but its direct (and indirect) consequences. Different climatic conditions lead to more natural disasters, which have been proven to lead to more fungal diseases in the population. Fungal outbreaks following natural disasters have been reported most frequently in the USA and southeast Asia. This is mainly because natural disasters occur relatively often in these regions, yet their basic medical infrastructure allows them to accurately diagnose these diseases even in a catastrophic situation. It can be assumed that fungal diseases are becoming more frequent after disasters, but the infrastructure and resources to diagnose them are often not available in health care systems overtaxed by natural disasters.

There are many reasons for the increase in infections. They include the distribution of spores during the actual disasters. Wind, forest fires and similar disasters cause spores to be released

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and distributed more widely. For example, firefighters who have fought forest fires suffer from fungal diseases at a higher rate, as do people in coastal areas farther away from the fires due to exposure to airborne spores.

In addition, disasters cause trauma and severe injuries in people, which in turn makes them more susceptible to an infection. Disasters may continue to have an effect over a long period of time. Houses become infected, for example through flooding, which creates the perfect habitat for fungi, which can then spread through the walls and make inhabitants sick for years or decades.

Main corresponding and senior author Martin Hoenigl put together the project team and took on the senior lead for the "natural disasters" section. Matthias Egger of the Med Uni Graz Division of Infectious Diseases also collaborated on the paper. They provide an outlook of the steps that must be taken in the future in order to get a handle on the challenges associated with climate change that are related to fungal infections: In addition to general measures to combat climate change, the globally coordinated provision of resources for monitoring fungal infection outbreaks, improvement of diagnostic capacities, training of health care professionals and public sensitization campaigns are all essential.

Link to the study: [https://doi.org/10.1016/S2666-5247\(24\)00039-9](https://doi.org/10.1016/S2666-5247(24)00039-9)

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**Profile: Martin Hoenigl**

Following his habilitation on the subject of systemic fungal infections in 2012, Martin Hoenigl spent several years at the Division of Infectious Diseases at the University of California-San Diego. Since 2021 he has been an Associate Professor of Translational Mycology at the Medical University of Graz. Hoenigl is the author of over 300 scientific publications.