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## Re: Integrated research on the association between climate change and *Bjerkandera* allergy

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### TO THE EDITOR:

Barnes et al<sup>1</sup> reviewed the effects of climate change and environment on respiratory and allergic disease and emphasized that the approach of allergists and/or environmental physicians to global climate change should be as integrated and anticipatory as possible rather than solely reactionary. Recently, *Bjerkandera adusta* has attracted attention because of its potential role in enhancing the severity of allergic fungal cough by sensitization to this fungus.<sup>2</sup> *B adusta* is generally classified as a wood decay basidiomycetous fungus; however, it actually is a mushroom spore that grows mostly in fields. The frequent detection of this fungus in both indoor and outdoor samples in France was previously reported.<sup>3</sup> Furthermore, yellow sand dust directly sampled with a bioaerosol sampler, at a height of 400 m, by using a tethered balloon over Noto peninsula, Suzu City, Ishikawa prefecture, was reported to contain *B adusta*.<sup>4</sup> Yellow sand dust with the long-range transport of atmospheric pollutants that originated from the Taklamakan and Gobi Deserts was shown to reach not only Asia but also North America and Europe.<sup>5</sup> Therefore, when discussing the influence of yellow sand dust on human health,<sup>6</sup> we should not overlook exposure to particulate matter less than 2.5 µm in diameter as an air pollutant<sup>7</sup> or mushroom spores as fungal antigens.

In the report by Barnes et al,<sup>1</sup> indoor and outdoor aspects of human responses to climate change were widely reviewed. However, the question remains regarding how best to deal with such mushroom spores to prevent sensitization to this fungus. Are air-filter systems recommended to reduce mushroom spores in the indoor environment? Should we open or

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shut the windows? As noted by Barnes et al,<sup>1</sup> integrated research, which would not be possible by a solely reactionary methodology, may contribute to the protection of human health against *Bjerkandera* allergy enhanced by climate change.

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