

# Global distribution of fungal rhinosinusitis (FRS)

## Systematic review and meta-analysis

PRISMA Guideline  
(CRD42023481670)

**2,031**  
studies included



## Method

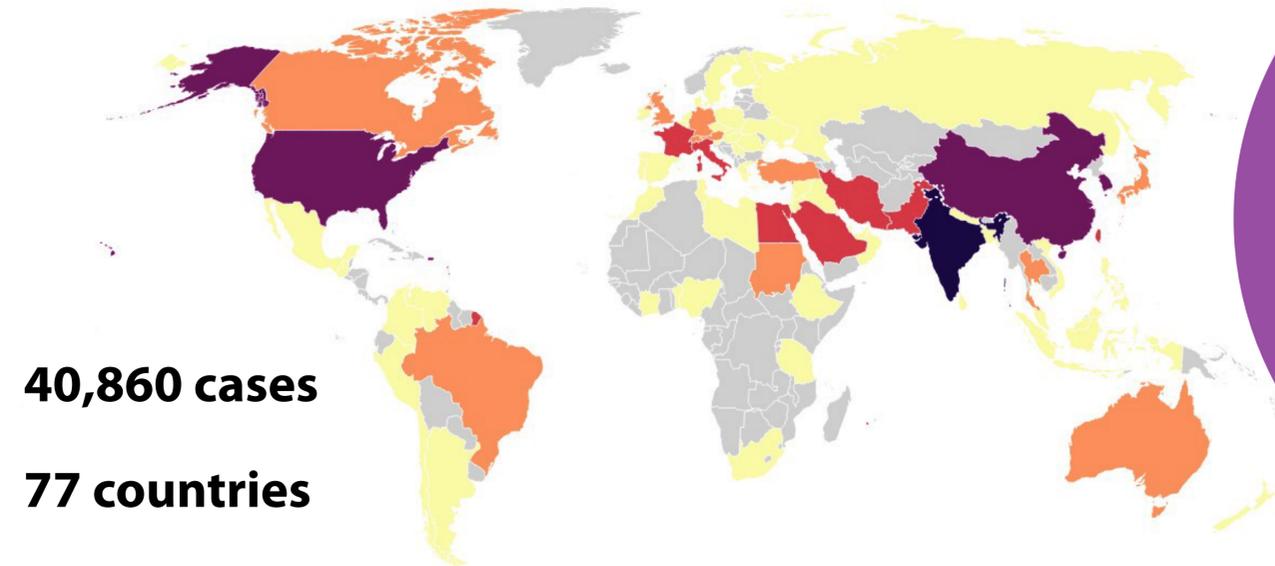


Cases categorized into  
**7 subtypes**

- 1 Highly acute rhino-orbito-cerebral mucormycosis
- 2 Acute and subacute invasive FRS
- 3 Chronic invasive FRS
- 4 Granulomatous invasive FRS
- 5 Allergic FRS
- 6 Fungal ball
- 7 Saprobic FRS

## Results

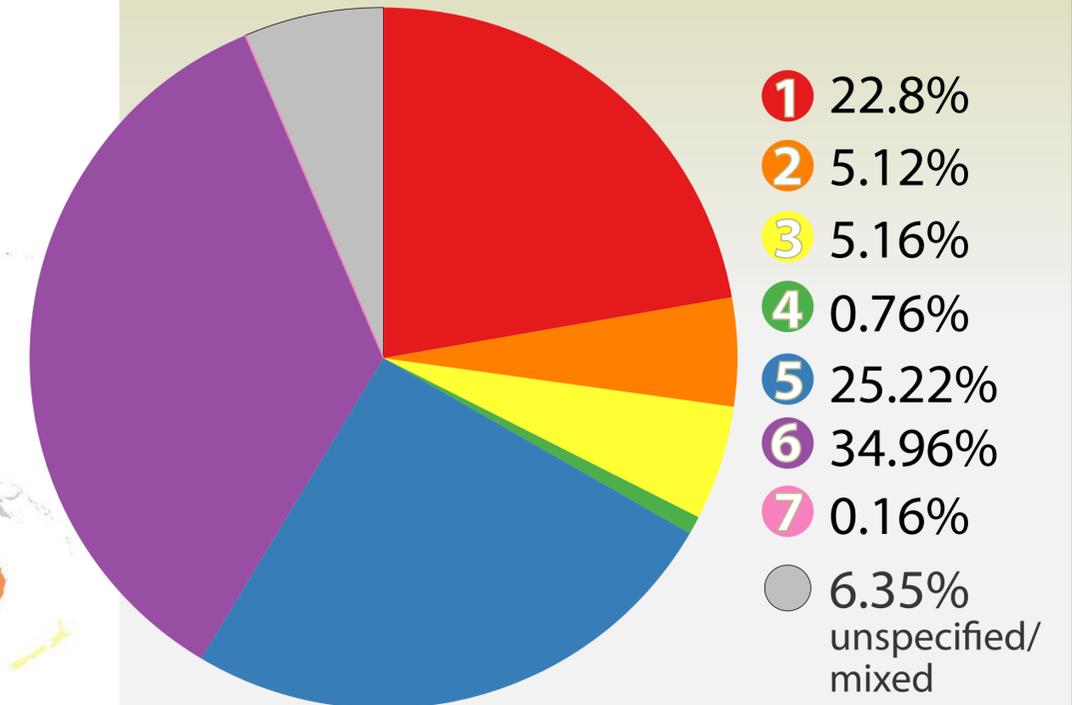
### Total FRS



**40,860 cases**

**77 countries**

### FRS subtypes



*Aspergillus* species  
appeared in  
**~60% of cases**

• *A. fumigatus* was predominant  
in **temperate/continental zones**



• *A. flavus* was predominant  
in **dry/tropical regions**



➔ **Non-invasive FRS is most predominant, while invasive subtypes cause major morbidity and mortality, especially in tropical regions**

➔ **Distinct geographic + climatic preferences for *Aspergillus* species, underscore the importance of environmental surveillance and climate-informed diagnostic strategies**