



# The relationship of sinus opacification, olfaction and dupilumab efficacy in patients with CRSwNP\*

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## Improving sinus opacification and restoring loss of smell in patients with CRSwNP

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a type 2 inflammatory disease of the nasal passages and sinuses. The symptoms can be severe and debilitating, significantly impacting on quality of life. Loss of smell is one of the most burdensome and difficult to treat symptoms of CRSwNP. The mechanisms underlying smell loss in CRSwNP are not fully understood, but are thought to be related to the inflammation of the sinonasal mucosa (the lining of the nasal cavities). Patients with CRSwNP often have sinus disease, which can be visualized using computed tomography (CT) scans, with the image density (opacity) indicating the level of disease. However, the importance of sinus disease in smell loss is not well understood. In a recent article in *Rhinology*<sup>1</sup>, Dr Stella Lee and colleagues describe an investigation into the relationship between sinus opacification, smell loss, and the efficacy of dupilumab in the treatment of patients with severe CRSwNP.

Dupilumab is a monoclonal antibody approved as an add-on maintenance treatment for adults with inadequately controlled CRSwNP. In this study, the extent of paranasal sinus disease was assessed by degree of sinus opacification observed in CT scans. The results of the study showed for the first time that there is an association between severity of smell impairment and degree of sinus opacification in patients with severe CRSwNP. Sinus opacification was greatest among those patients reporting the most severe impairment of smell. Importantly, the results also showed that treatment with dupilumab can reduce sinus opacification and led to an improvement in sense of smell along with improvements in other symptoms of CRSwNP including nasal polyp size and patient-reported nasal congestion. These findings indicate that patient-reported loss of smell may be a marker of disease severity in patients with CRSwNP.

**Key words:** ethmoid sinus, frontal sinus, nasal polyps, smell, sphenoid sinus

### **Conflict of interest**

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### **References**

1. Lee SE, Amin N, Mannent LP, et al. The relationship of sinus opacification, olfaction and dupilumab efficacy in patients with CRSwNP. *Rhinology*. 2023. [DOI 10.4193/Rhin22.220]

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