PREVALENCE AND INCIDENCE OF CHRONIC RHINOSINUSITIS WITH NASAL POLYPS AMONG NEW ZEALAND ADULTS: A NATIONAL RETROSPECTIVE COHORT STUDY

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Why was this study needed?

- Chronic rhinosinusitis with nasal polyps (CRSwNP) is a chronic inflammatory airway disease associated with substantial symptom burden, impaired quality of life, and healthcare utilisation.
- Prevalence estimates vary across populations, but population-level epidemiological data from New Zealand were lacking.
- This study estimated the prevalence and incidence of identified CRSwNP among New Zealand adults and described key demographic and surgical characteristics.

Global Context

- Recent European data demonstrates prevalence estimates ranging from 2.1%-4.4%.[1]
  - United Kingdom population-based studies report prevalence of 476 per 100,000 population.[1]
  - Finnish registry data reports prevalence from 602 per 100,000 in 2012 to 857 per 100,000 in 2019, representing a 42% increase over 7 years.[3]
  - In Germany, claims data analysis estimated a 5-year prevalence of 550 per 100,000 adult patients.[2]
- International data demonstrate that 17-47% of CRSwNP patients undergo endoscopic sinus surgery.[2,3] Among surgical patients, revision surgery rates range from 10-30%.[1,2]

How did we perform this research?

- **Retrospective cohort study** using linked Health NZ National Collections.
- **Cohort identification** based on relevant hospitalisation and procedural codes; adults aged ≥18 years included.
- **Study period:** 1 January 2021 to 30 September 2024; point prevalence calculated on 1 July annually (2022–2024).
- **Incidence:** applied a 365-day washout period.

Statistical analysis

- Clopper–Pearson confidence intervals for prevalence
- Exact Poisson confidence intervals for incidence
- Temporal trend assessed by Poisson regression

CRSwNP case definition

Adults were included if ≥1 of the following criteria was met:

ICD-10-AM J33: nasal polyp diagnosis

Endoscopic sinus surgery: procedure record

12,925 adults in the identified CRSwNP cohort

What did we find?

12,925
adults met the case definition

61.1 years
mean age (SD 13.5)

Sex distribution of the identified cohort

24% female — **76%** male

Point prevalence of CRSwNP among NZ adults

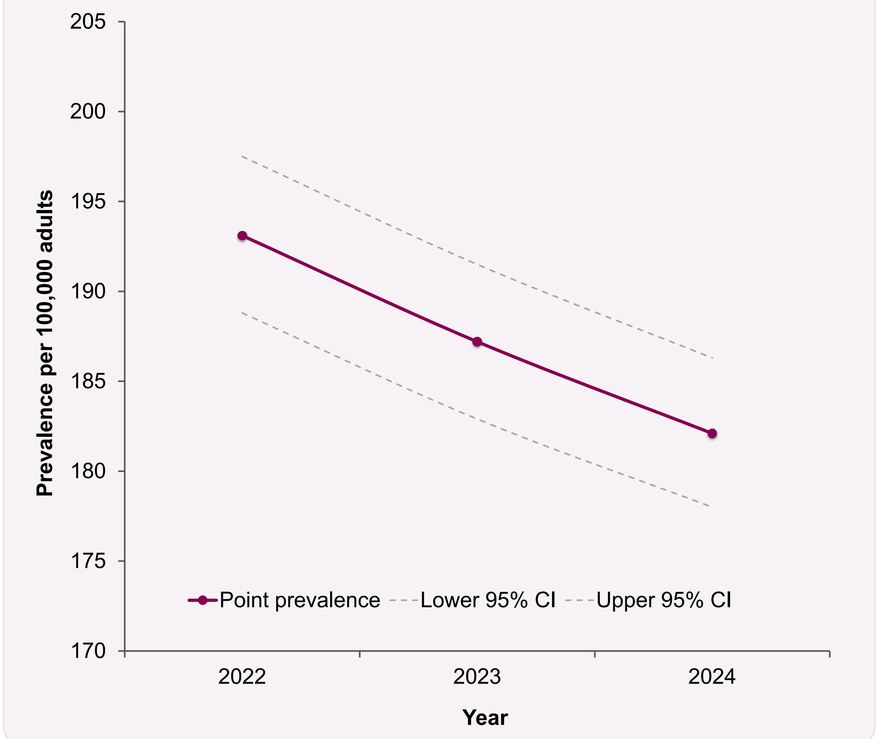

Figure 1. Annual point prevalence of identified CRSwNP among New Zealand adults, with 95% confidence intervals

Annual incidence of CRSwNP among NZ adults

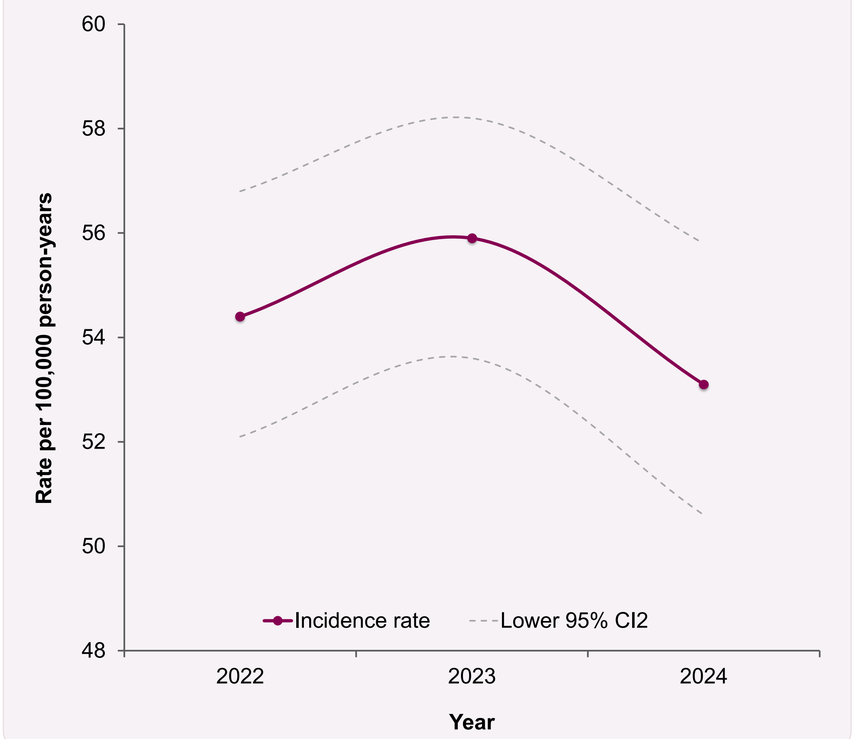

Figure 2. Annual incidence of identified CRSwNP among New Zealand adults, with 95% confidence intervals

182–193
prevalence per 100,000 adults across 2022–2024

53–56
annual incidence per 100,000 person-years

3.6-fold
higher prevalence among males than females

Prevalence increased markedly with age

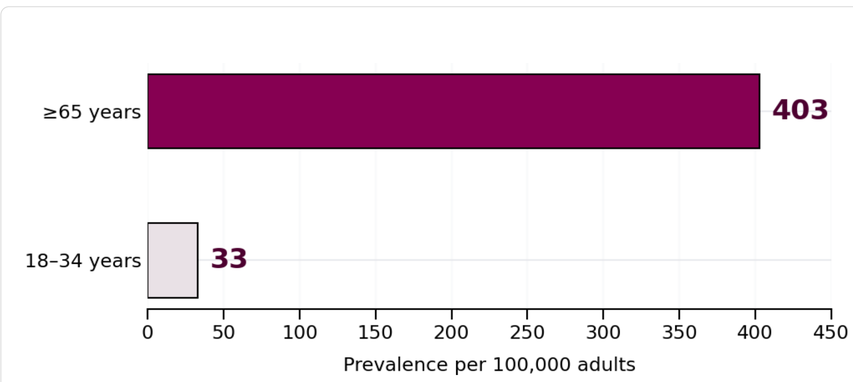

Figure 3. CRSwNP point prevalence by age group among New Zealand adults in 2024.

Ethnicity distribution of the identified cohort

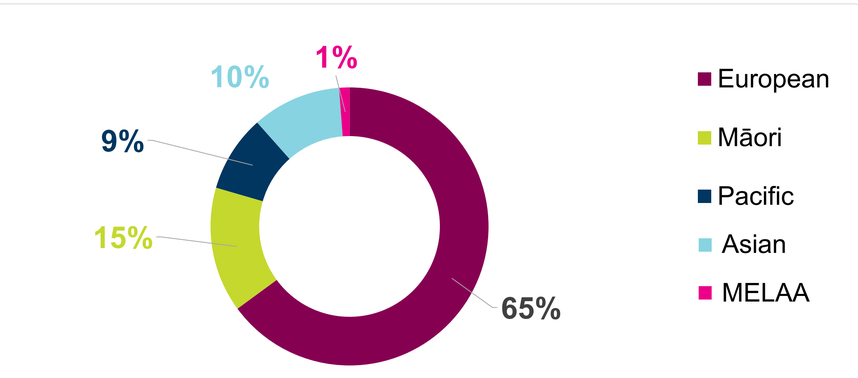

Figure 4. Ethnicity distribution among adults meeting the CRSwNP case definition.

Surgical treatment

Overall Population	Māori + Pacific
75% of the identified cohort had a record of endoscopic sinus surgery	**76%** had endoscopic sinus surgery
30% of surgical patients met the study definition of post-surgical recurrence*	**28%** of those undergoing surgery experienced recurrence*

*Underwent at least one ESS after the initial surgery. Only patients with at least 12 months of follow-up available.

How might this impact current clinical practice?

Primary finding: The annual prevalence of identified CRSwNP was 182–193 per 100,000 New Zealand adults during 2022–2024, while incidence remained stable at 53–56 per 100,000 person-years.

Burden: Prevalence increased with age and was 3.6-fold higher among males than females. Of the identified cohort, 75% had a record of endoscopic sinus surgery, and 30% of surgical patients met the study definition of post-surgical recurrence.

Implications: These findings provide national epidemiological evidence to support health-system planning. Estimates and subgroup differences should be interpreted in the context of the healthcare-contact case definition.

Abbreviations

CI, confidence interval; **CRSwNP**, chronic rhinosinusitis with nasal polyps; **ESS**, endoscopic sinus surgery; **ICD-10-AM**, International Classification of Diseases, 10th Revision, Australian Modification; **INCS**, intranasal corticosteroid; **MELAA,** Middle Eastern / Latin American / African; **NZ**, New Zealand; **OCS**, oral corticosteroid; **PY**, person-years; **SD**, standard deviation

Disclosures

WH has no relevant conflicts of interest to disclose. **JN** and **SJ** are employees of AstraZeneca and may hold stock and/or stock options in the company. **AHYC** and **JH** have received consulting fees, payment or honoraria for lectures and presentations, and support for attending meetings and/or travel from AstraZeneca

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