

# Autoimmune Disorders as Risk Factors for Otolaryngologic Disease and Head and Neck Cancer



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## Introduction

- **Systemic disease:** Autoimmune conditions are increasingly recognized for systemic symptomology, with chronic inflammation and immune dysregulation associated with a broad range of comorbidities.
- **ENT association:** Growing evidence suggests an association between autoimmune disease and otolaryngologic conditions.
- The relationship between autoimmune disorders, incident ENT manifestations, and head and neck malignancies remains incompletely characterized.

## Methods

- **Design:** Multicenter retrospective cohort study using the TriNetX de-identified national database.
- **Population:** Adult patients with common autoimmune conditions, including systemic lupus erythematosus, rheumatoid arthritis, psoriasis, and multiple sclerosis, matched with controls (n=4,184–34,061 per cohort).
- **ENT outcomes:** Chronic rhinosinusitis, otitis media, sensorineural hearing loss, tinnitus, vestibular disorders, and dysphonia.
- **Head & neck malignancies:** Epithelial and lymphoid cancers involving the oropharynx, larynx, sinonasal tract, salivary glands, thyroid, and lymphoma, including squamous cell carcinoma.
- **Analysis:** Risk ratios (RRs) with 95% confidence intervals were calculated.

## Results

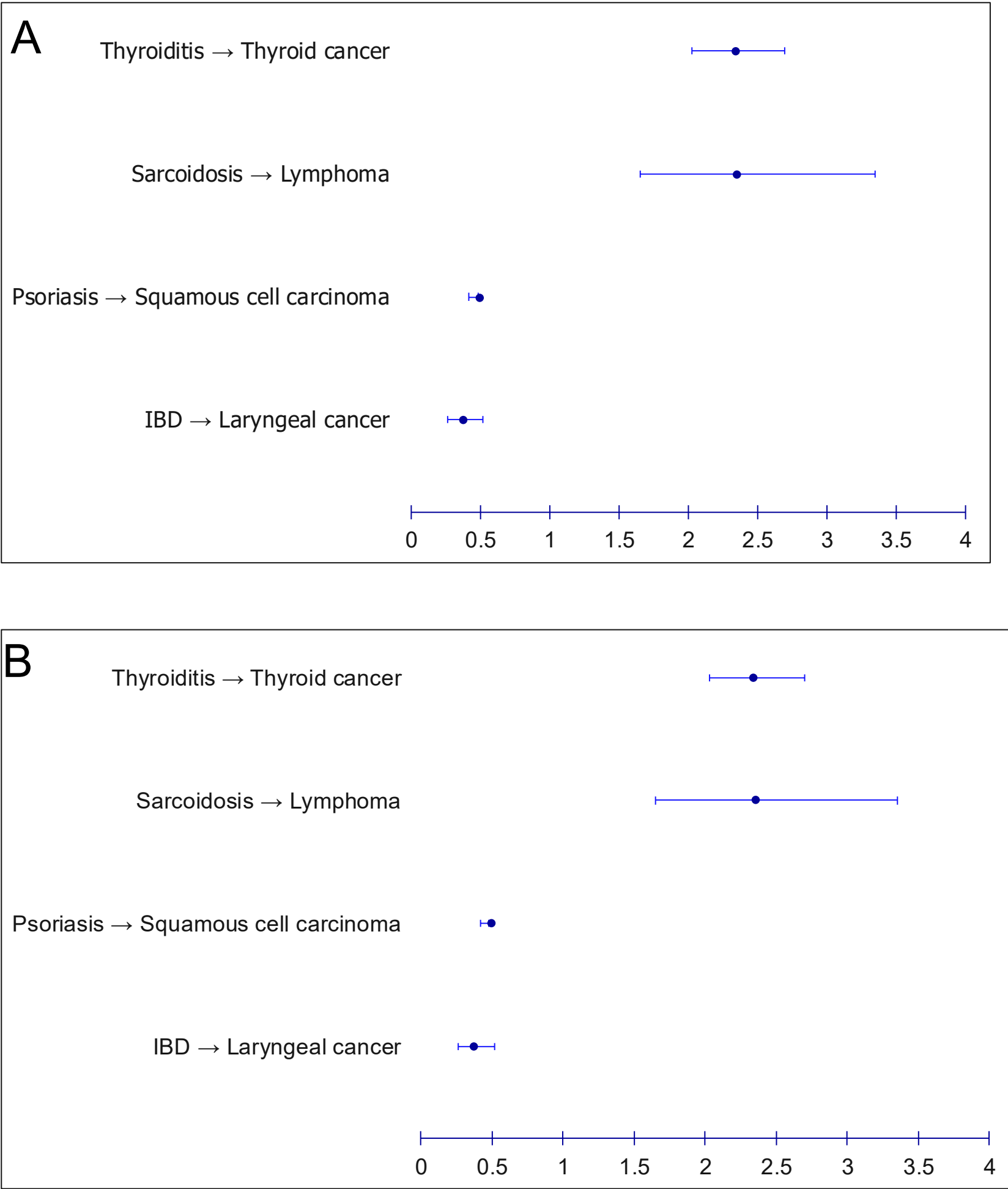


**Figure 1. Forest plots of associations between autoimmune disease and otolaryngologic outcomes.** Forest plots display relative risk (RR) estimates with 95% confidence intervals for selected ENT manifestations (A) and head and neck malignancies (B) among patients with autoimmune disease compared with matched controls. Points represent RR estimates and horizontal lines represent 95% CIs. The dashed vertical line indicates the null value (RR = 1.0); values to the right indicate increased risk and values to the left indicate decreased risk.

## Discussion

- Potential Mechanisms Linking Autoimmune Disease and ENT Manifestations**
- Shared inflammatory pathways:** Chronic systemic inflammation may promote inflammation of the upper airway and sinonasal mucosa, potentially contributing to CRS and recurrent otologic disease. Recent literature supports overlapping inflammatory pathways between autoimmune disease and CRS.
- Immune-mediated tissue injury:** Autoantibodies, immune-complex deposition, and T-cell-mediated injury can directly affect otologic structures. Vasculitis may additionally compromise the microvasculature supplying the cochlea and vestibular system, providing a potential explanation for hearing and vestibular manifestations.
- Upper airway–middle ear connection:** Chronic sinonasal inflammation may contribute to Eustachian tube dysfunction and impaired middle-ear ventilation, providing a possible pathway linking autoimmune-associated CRS with recurrent otitis media.

## Conclusions

Autoimmune disease was consistently associated with increased incident otolaryngologic comorbidities. In contrast, most head and neck cancers were unchanged or decreased in autoimmune conditions. These findings support increased clinical monitoring for ENT complaints in patients with autoimmune disease and emphasize the need for future studies to identify subgroups in which cancer risk may differ.

## References

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