

# Assessing Disease Severity and Quality of Life in Patients With CRSwNP

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## LEARNING OBJECTIVE



Apply evidence-based guidance to assess the severity and QOL impact of CRSwNP

## BACKGROUND

### The Disease Burden of CRSwNP



CRSwNP imposes a substantial disease burden on affected individuals as a result of both its physical and psychosocial effects



Assessment of disease severity in patients with CRSwNP is complicated due to the heterogeneity of endotypes/phenotypes

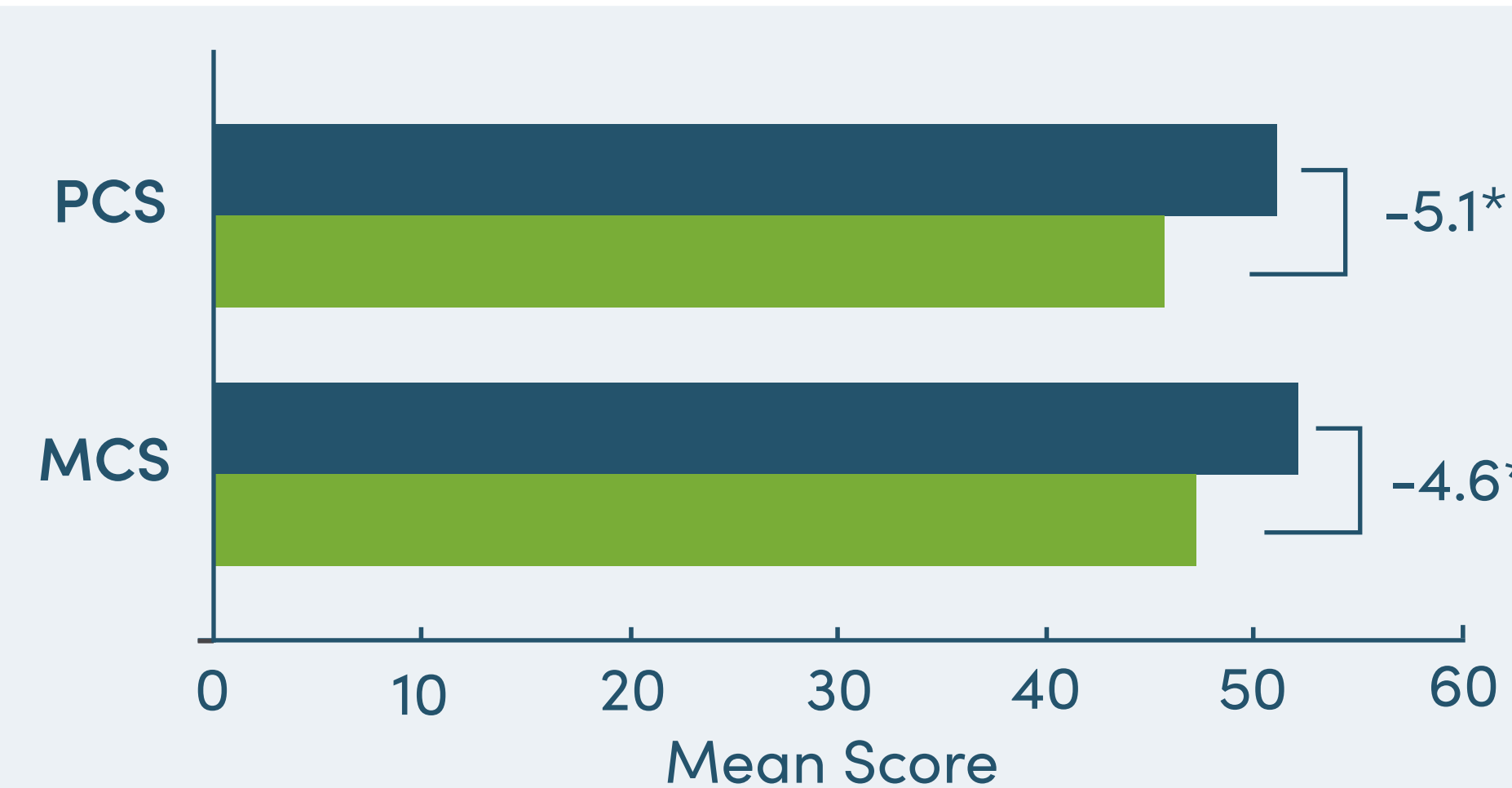


Recognition of poor disease control is crucial to inform the need for surgery or, after surgery, for revision or other systemic treatments (eg, corticosteroids or biologicals)



There is no single ideal metric to assess disease severity. Combined, complementary measures are often needed to capture disease severity in a particular patient.

### The Physical and Mental Impact of CRSwNP



**Mean SF-36 Physical Component Summary and Mental Component Summary Scores for Patients With CRSwNP vs Age-Adjusted Population Norms**

■ Population norm  
■ CRSwNP (n=355)

\*Clinically important difference (MCID  $\geq 2$  points for PCS score and  $\geq 3$  points for MCS score);  $P < .0001$  for both

## EVALUATION OF PATIENTS WITH CRSwNP

### Distinguishing Between Uncontrolled vs Severe Disease (EUFORIA 2021 Definitions)

#### Uncontrolled CRSwNP

Persistent or recurring CRSwNP despite long-term INCS and having  $\geq 1$  course of OCS in the preceding 2 years and/or previous sinonasal surgery.

##### Explanations:

- 1 course OCS = 5 days at 0.5–1 mg/kg/day
- Long-term systemic OCS not recommended
- Previous sinonasal surgery = any surgical procedure to remove polyps

#### Severe CRSwNP

Bilateral CRSwNP with NPS  $\geq 4$  (out of 8) and persistent symptoms despite long-term INCS with the need for add-on treatment.

##### Explanations:

- NPS determined by bilateral nasal endoscopy
- Persistent symptoms assessed by
  - Loss of smell score (0–3)  $\geq 2$  points
  - NCS (0–3)  $\geq 2$  points
  - SNOT-22  $\geq 35$  points
  - Total symptom VAS  $\geq 5$  out of 10 cm

### Assessing the Level of CRS Control

#### EPOS 2020: Assessment of Current Clinical Control of CRS (in the Last Month)

	Controlled (all of the following)	Partly Controlled (at least 1 present)	Uncontrolled (3 or more present)
Nasal blockage <sup>1</sup>	Not present or not bothersome <sup>2</sup>	Present on most days of the week <sup>3</sup>	Present on most days of the week <sup>3</sup>
Rhinorrhea/Postnasal drip <sup>1</sup>	Little and mucous <sup>2</sup>	Mucopurulent on most days of the week <sup>3</sup>	Mucopurulent on most days of the week <sup>3</sup>
Facial pain/Pressure <sup>1</sup>	Not present or not bothersome <sup>2</sup>	Present on most days of the week <sup>3</sup>	Present on most days of the week <sup>3</sup>
Smell <sup>1</sup>	Normal or only slightly impaired <sup>2</sup>	Impaired <sup>3</sup>	Impaired <sup>3</sup>
Sleep disturbance or fatigue <sup>1</sup>	Not present <sup>2</sup>	Present <sup>3</sup>	Present <sup>3</sup>
Nasal endoscopy (if available)	Healthy or almost healthy mucosa	Diseased mucosa <sup>3</sup>	Diseased mucosa <sup>3</sup>
Rescue treatment (in last 6 months)	Not needed	Need of 1 course of rescue treatment	Symptoms (as above) persist despite rescue treatment(s)

<sup>1</sup>Symptoms of CRS. <sup>2</sup>For research VAS  $\leq 5$ . <sup>3</sup>For research VAS  $> 5$ . <sup>4</sup>Showing nasal polyps, mucopurulent secretions or inflamed mucosa.

## ASSESSMENT TOOLS & QUESTIONNAIRES

### Clinician-Reported Measures

Nasal endoscopic and radiographic studies are important tools in the evaluation of CRS. They inform not only the diagnosis but also indicate the severity of disease.



#### Nasal Polyp Score (NPS)

- Polyps are evaluated on each side through nasal endoscopy\* each visit and graded based on polyp size, resulting in scores of 0 to 4
- Sum of the left and right nostril scores is the NPS
- Severe CRSwNP is defined by NPS  $\geq 5$

\*Large nasal polyps may also be assessed by routine anterior rhinoscopy



#### Lund-Kennedy Endoscopic Score

- Each side is graded separately
- Score range is from 0 to 24 (with 24 being the most severe)



#### Lund-Mackay CT Score

- Each side is graded separately
- Score range is from 0 to 24 (with 24 being the most severe)

### Patient-Reported Outcome Measures (PROMs)

PROMs, which are widely used in clinical decision-making and research, can be used longitudinally, and reflect patient perception of disease impact.



#### Sinonasal Outcome Test (SNOT-22)

- 22-item, disease-specific, validated, PRO measure
- Key diagnostic symptoms: EPOS definition for CRS and other items of importance to patients with CRS
- Score ranges from 0 to 110
- Suitable tool for practice in terms of ease of use
- Increasingly used to measure the disease-specific QOL in clinical practice



#### Nasal Congestion/Obstruction Score

- Patients evaluate their symptoms of congestion/obstruction from the previous day using the NCS
- Higher scores indicate worse congestion/obstruction



#### The University of Pennsylvania Smell Identification Test (UPSIT)

- Commercially available smell identification test
- Self-administered by the patient
- Does not require scoring by a medical professional
- Available in multiple languages
- Comprises 40 multiple choice questions (4 answer choices each)
- Each question relates to a scratch and sniff strip
- Scores are compared to normative scores based on age and sex

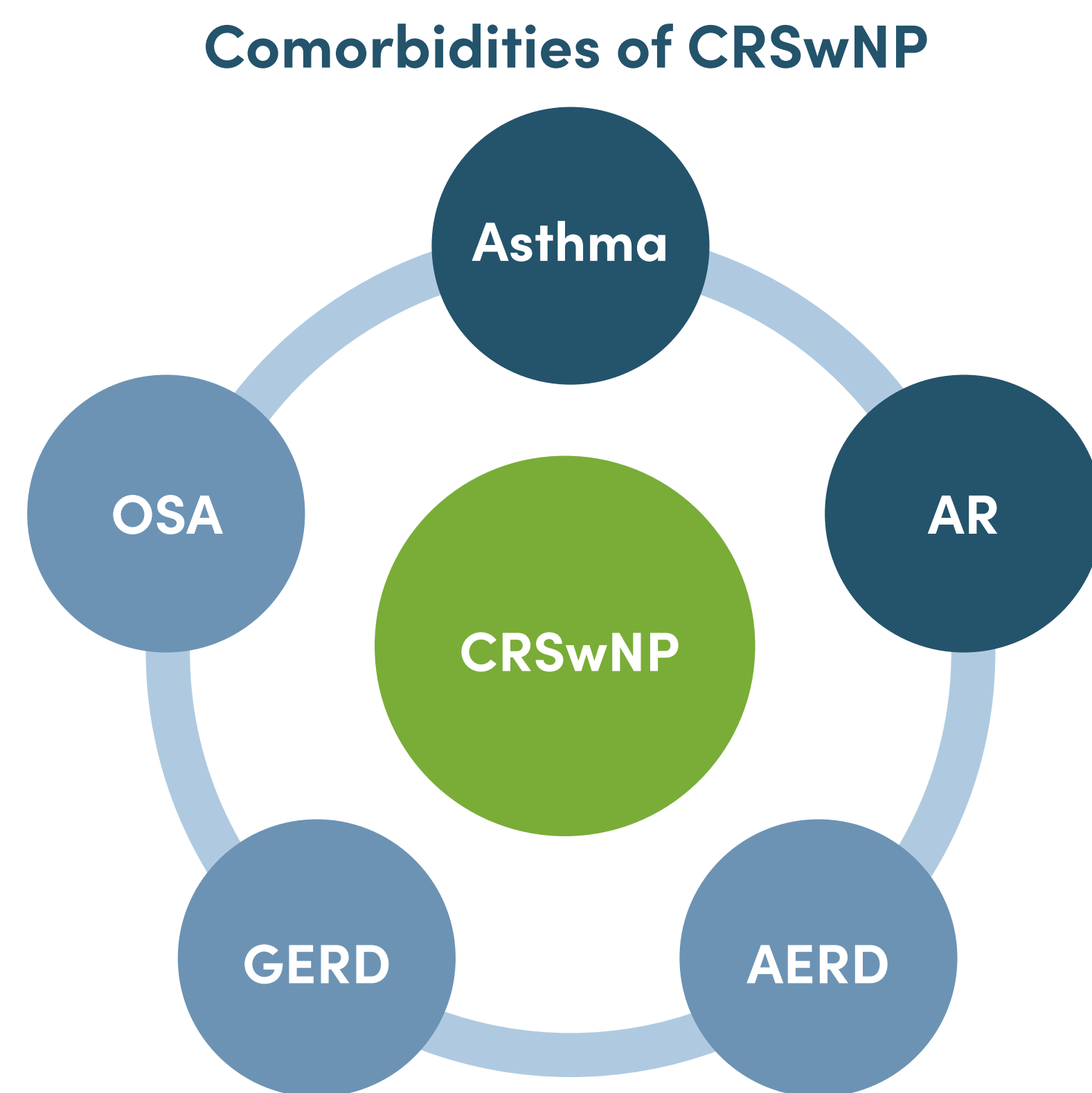
### General Health Assessment Questionnaires



The SF-36 and EQ-5D can be used to assess overall well-being. However, they are not specific to CRSwNP. The NPQ is a novel tool that has been developed to evaluate HRQOL impairment specific to CRSwNP.

## IMPLICATIONS OF COMORBIDITIES FOR DISEASE SEVERITY & MANAGEMENT

### CRSwNP Comorbidities Can Have a Major Impact on Patient Quality of Life

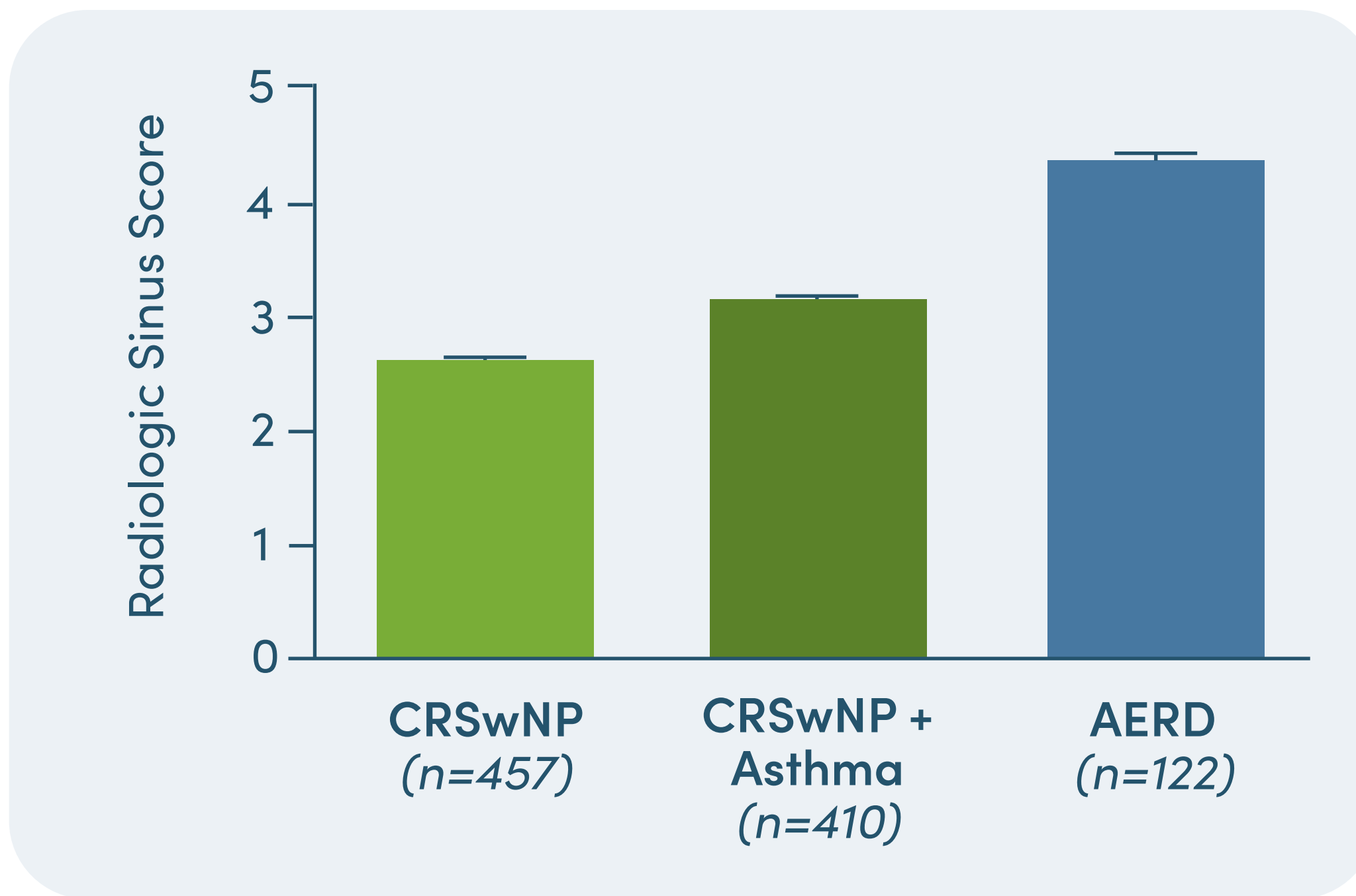


CRSwNP in the presence of comorbidities:

- Is associated with **more severe disease**
- Imposes a **heavier symptom burden**
- Is **more difficult-to-treat**

■ More common  
■ Less common

### Patients with AERD Have a Different Clinical Course Than Those With CRSwNP and Asthma

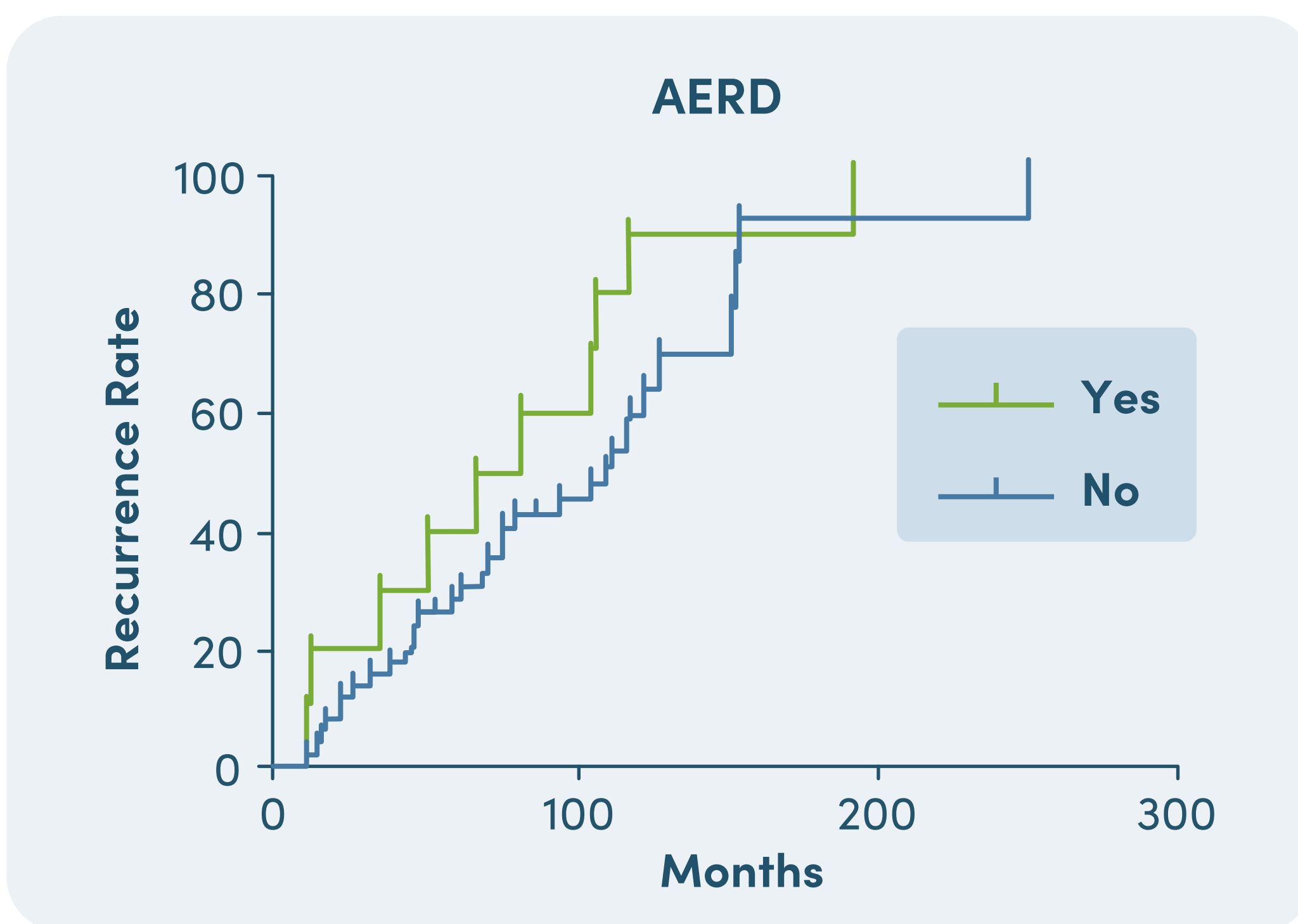
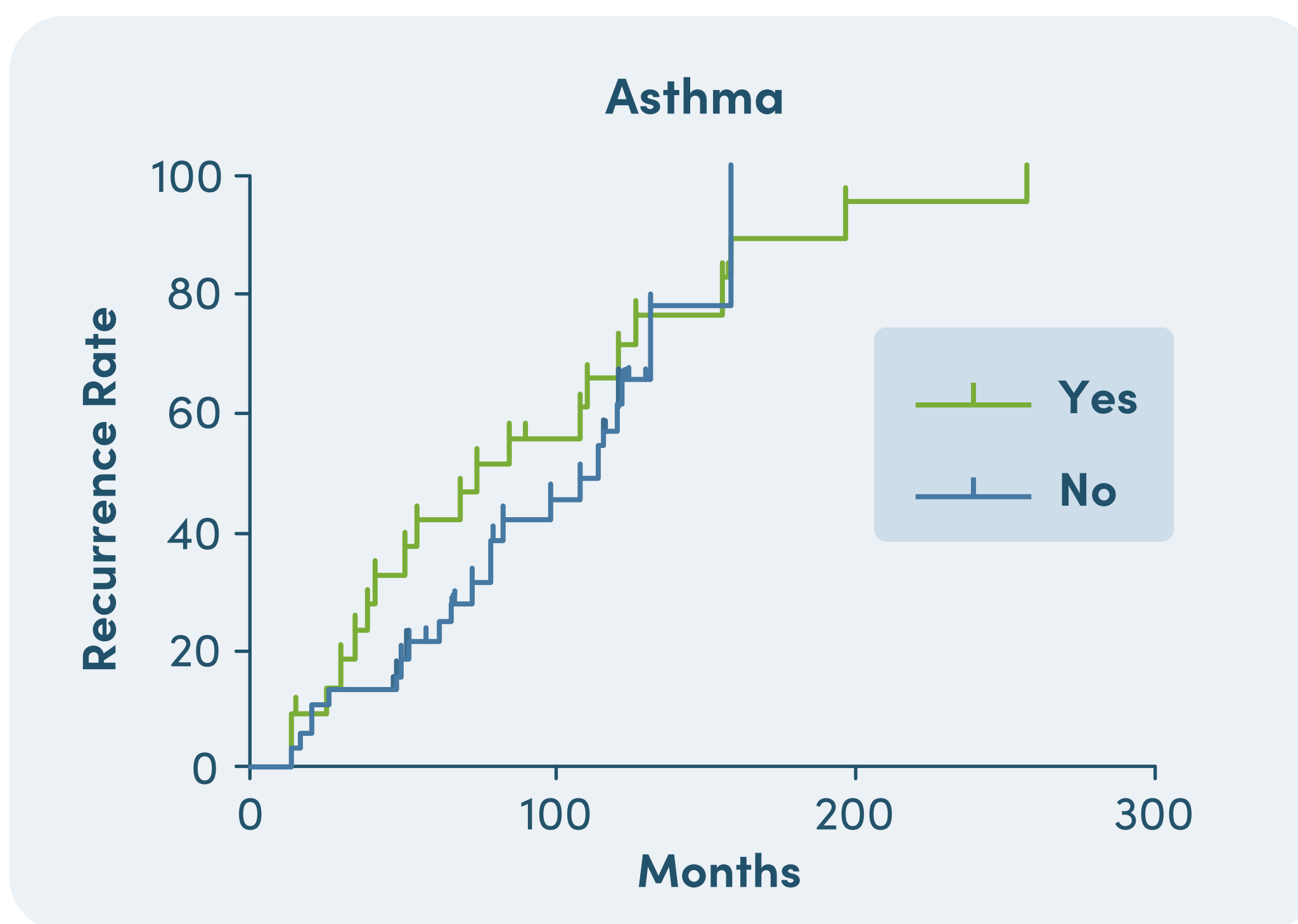


#### Clinical Characteristics of Patients With CRSwNP, Asthma, and AERD

AERD is common in patients with CRSwNP, BUT the clinical course is not the same as that of patients with CRSwNP and asthma but COX-1 inhibitor tolerance. Patients with AERD have significantly more severe sinus disease on average. (Graph)

### Allergy, Asthma, and AERD Are Risk Factors for Nasal Polyp Recurrence After ESS

#### Nasal Polyp Recurrence After ESS in Patients With Comorbidities

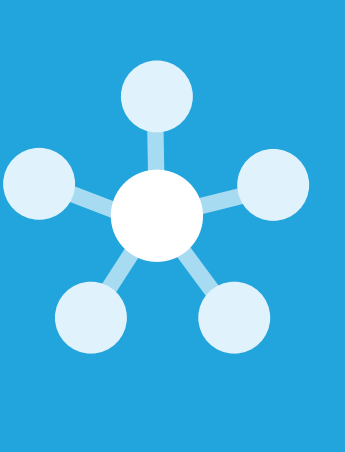


## KEY POINTS



Measurements of disease severity and its impact on QOL are crucial for guiding disease management in terms of:

- Treatment selection
- Evaluating treatment response



Accurate assessment of disease severity and impact requires a multi-pronged approach:

- Thorough clinical history
- Use of complementary tools
- High suspicion for comorbidities

## References

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## Glossary

AERD, aspirin-exacerbated respiratory disease; AR, allergic rhinitis; COX-1, cyclooxygenase 1; CRSwNP, chronic rhinosinusitis with nasal polyps; CT, computed tomography; EPOS, European Position Paper on Rhinosinusitis; EQ-5d, European Quality of Life 5 Dimension; ESS, endoscopic sinus surgery; EUFORIA, European Forum for Research and Education in Allergy and Airways Disease; GERD, gastroesophageal reflux disease; HRQOL, health-related quality of life; INCS, intranasal corticosteroid; MCID, minimum clinically important difference; MCS, Mental Component Summary; NCS, Nasal Congestion Score; NPQ, Nasal Polyposis Quality of Life; NPS, Nasal Polyp Score; OCS, oral corticosteroid; OSA, obstructive sleep apnea; PCS, Physical Component Summary; PROM, patient-reported outcome measure; QOL, quality of life; RSS, radiologic sinus score; SF-36, 36-Item Short-Form Health Survey; SNOT-22, 22-Item Sinonasal Outcome Test; UPSIT, University of Pennsylvania Smell Identification Test; VAS, Visual Analogue Scale