

MEASURES OF
DISEASE SEVERITY
IN CRSwNP

CRSwNP

CRSwNP, chronic rhinosinusitis
with nasal polyposis.

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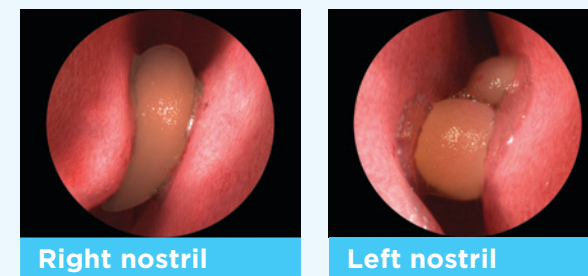
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NPS: PHYSICIAN-REPORTED ASSESSMENT OF EXTENT OF NASAL POLYPS¹

NPS is a physician-reported tool to grade the extent/severity of nasal polyps based on evaluation by nasal endoscopy. Each nostril is scored on a scale of 0 to 4, with the total score being the sum of left and right nostril scores (range: 0-8).

HOW NPS IS SCORED

1 Physicians evaluate their patients’ bilateral endoscopy findings¹



Patient score		
Right	Left	Total score
3	3	6

Example for illustrative purposes only.

Large nasal polyps may also be assessed by routine anterior rhinoscopy²

2 Physicians assess polyp extent using the NPS scoring system³

The total NPS is the sum of scores from the right and left nostrils.

Polyp size/ location					
Anatomical description	No visible nasal polyps	Small amount of polypoid disease confined within the middle meatus	Multiple polyps occupying the middle meatus	Polyps extending beyond the middle meatus	Polyps completely obstructing the nasal cavity
Score	0	1	2	3	4

Adapted from Ferguson et al. 2010.

LUND-MACKAY COMPUTED TOMOGRAPHY (LMK-CT)

LMK-CT: PHYSICIAN-REPORTED ASSESSMENT OF SINUS OPACIFICATION^{1,4}

The Lund-Mackay (LMK) system assesses sinus opacification on CT scans using the following grading system:

- 0 = normal, 1 = partial opacification, 2 = total opacification. These points are then applied to the maxillary, anterior ethmoid, posterior ethmoid, sphenoid, and frontal sinus on each side
- The osteomeatal complex (OC) is graded separately as 0 = not occluded or 2 = occluded, deriving a maximum score of 12 per side

The LMK-CT is a composite score, ranging from 0 to 12 per side, with a maximum of 24 for both sides, with higher scores indicating more severe disease

HOW LMK-CT IS SCORED^{1,4}

1

Physicians evaluate CT scans of their patients' sinus system



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2

Physicians grade opacification by LMK-CT

The total LMK-CT score is the sum of scores from the right and left sinuses.

Sinus system	Right	Left	Total score
Maxillary			
Anterior ethmoidal			
Posterior ethmoidal			
Sphenoidal			
Frontal			
Osteomeatal complex			
Total score			

LMK-CT scoring system

For all sinus systems, except the osteomeatal complex: 0 = normal; 1 = partial opacification; 2 = total opacification. For the osteomeatal complex: 0 = not occluded; 2 = occluded.

SINO-NASAL OUTCOME TEST (SNOT-22)

SNOT-22: PATIENT-REPORTED ASSESSMENT OF SYMPTOM BURDEN ON QUALITY OF LIFE⁶

SNOT-22 is a 22-item health-related quality of life (HRQoL) evaluation with each item scored on a Likert scale ranging from 0 (“No problem”) to 5 (“Problem as bad as it can be”).

On this global 110-point scale, a change in score of 8.9 is the smallest change that is considered clinically important, corresponding to the validated minimal clinically important difference defined by the developer.

Higher scores indicate more severe disease

HOW SNOT-22 IS SCORED⁶

Patients are asked to recall their experience over a period of 2 weeks, and rate their symptoms on a severity scale from 0 to 5. They are also requested to identify up to 5 items that have the greatest impact on their health.

0	1	2	3	4	5
No problem	Very mild problem	Mild or slight problem	Moderate problem	Severe problem	Problem as bad as it can be

The SNOT-22 questionnaire addresses 22 symptoms related to sino-nasal and auricular function, sleep quality, psychological impact, and productivity.

To see the full SNOT-22 questionnaire, go to <https://www.canvasc.ca/pdf/SNOT22.pdf>.

NASAL CONGESTION/ OBSTRUCTION (NC) SCORE

NC SCORE: PATIENT-REPORTED ASSESSMENT OF SYMPTOM SEVERITY¹

The NC score is a patient-reported evaluation of nasal polyp symptom severity, with a focus on congestion and obstruction, recalled over the past 24 hours. Patients are asked to record their symptom severity for the previous day in a diary, using a 0 to 3-point scale.

HOW THE NC IS SCORED¹

Patients evaluate their symptoms of congestion/obstruction from the previous day using the NC scale

Scale	Symptoms
0	No symptoms
1	Mild symptoms (symptoms clearly present, but minimal awareness and easily tolerated)
2	Moderate symptoms (definite awareness of symptoms that are bothersome but tolerable)
3	Severe symptoms (symptoms that are hard to tolerate, cause interference with activities of daily living)

Higher scores indicate worse congestion/obstruction

UNIVERSITY OF PENNSYLVANIA SMELL IDENTIFICATION TEST (UPSIT)

UPSIT: PATIENT-REPORTED ASSESSMENT OF OLFACTORY FUNCTION^{1,7,8}

UPSIT is a rapid, quantitative olfactory function “scratch and sniff” test that consists of 4 booklets containing 10 odorants (1 per page), each associated with a multiple-choice question; patients receive a score ranging from 0 to 40 (total anosmia to normal). There are variations of the test that take into account cultural differences. Norms from nearly 4000 people can be used to provide a basis for comparative ranking.

HOW UPSIT IS SCORED^{1,8}

Patients complete the scratch-and-sniff test from the UPSIT booklet



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Score	Outcome
≤18	Anosmia (complete loss of smell)
19-25	Severe microsmia
26-30	Moderate microsmia
31-34	Mild microsmia
35-40	Normosmia (normal smell appreciation)

Microsmia, diminished sense of smell.

Lower scores indicate worse smell appreciation

IN SUMMARY, A RANGE OF CLINICAL AND PATIENT-REPORTED TOOLS ENABLE MEASUREMENT OF THE SIGNS AND SYMPTOMS OF CRSwNP

- **Bilateral Endoscopic Nasal Polyp Score (NPS):**
Physician-reported assessment of size and extent of nasal polyps
- **Lund-Mackay Computed Tomography (LMK-CT):**
Physician-reported assessment of sinus opacification
- **Sino-Nasal Outcome Test (SNOT-22):**
Patient-reported assessment of symptom burden on quality of life
- **Nasal Congestion/Obstruction (NC) Score:**
Patient-reported assessment of symptom severity
- **University of Pennsylvania Smell Identification Test (UPSIT):**
Patient-reported assessment of olfactory function
- **Daily Loss of Smell:**
Patient-reported assessment of symptom severity

Scan to download an abbreviated version of this brochure to use when assessing patient disease severity.



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