

offer sinus surgery to an adult with chronic rhinosinusitis when the anticipated benefits exceed that of nonsurgical management alone, there is clarity regarding the anticipated outcomes, and the patient understands the expectation for long-term disease management following surgery (KAS 6). For an adult who is a candidate for sinus surgery, the surgeon or their designee should obtain a computed tomography (CT) scan with a fine-cut protocol, if not already available, to examine the paranasal sinuses for surgical planning (KAS 7). The surgeon should not plan the extent of sinus surgery (eg, which specific sinuses to operate on) solely based on arbitrary criteria regarding a minimal level of mucosal thickening, sinus opacification, or outflow obstruction on a CT scan (KAS 8). The surgeon or their designee should educate an adult with chronic rhinosinusitis who is scheduled for sinus surgery regarding anticipated postoperative care, specifically pain control, debridement, medical management, activity restrictions, return to work, duration and frequency of follow-up visits, and the potential for recurrent disease or revision surgery (KAS 9). When the sinus involves polyps, osteitis, bony erosion, or fungal disease in an adult with chronic rhinosinusitis who is scheduled for sinus surgery, the surgeon should perform sinus surgery that includes full exposure of the sinus cavity (lumen) and removal of diseased tissue, not just balloon or manual ostial dilation, or refer the patient to a surgeon who can perform this extent of surgery (KAS 10). The surgeon or their designee should routinely follow up to assess and document outcomes of sinus surgery for chronic rhinosinusitis, between 3 and 12 months after the procedure, through history (symptom relief, quality of life, complications, adherence to therapy, need for rescue medications, and ongoing care) and nasal endoscopy (KAS 11). There were no recommendations that were considered *options* from the Guideline Development Group.

Keywords

chronic rhinosinusitis; clinical practice guideline; evidence-based practice; endoscopic sinus surgery; novel data; rhinosinusitis; systematic reviews

Received January 14, 2025; accepted April 7, 2025.

Sinus surgery is an established treatment for chronic rhinosinusitis (CRS), infectious complications of acute rhinosinusitis, benign or malignant tumors, and conjoint skull base disease. CRS affects 11.6% of adults and prompts 4.1 million annual ambulatory visits.^{1,2} If CRS is refractory to appropriate medical management, patients may undergo surgical intervention, which may be performed through endoscopic or open approaches.

Endoscopic sinus surgery (ESS) is a common procedure which has a variety of potential indications.^{3,4} ESS is performed with a telescope, video

system, and instruments, which can be used to access the paranasal sinuses without an external incision. Goals include improving the natural drainage of the paranasal sinuses, as well as excising disease. This technique evolved from the preceding developments of the Hopkins rod (1959) and Messerklinger endoscopic atlas (1978), and after a formal training began in the United States in 1985, ESS usage expanded steadily both here and worldwide.^{3,5} Related advancements in computed tomography (CT) imaging and instrumentation further bolstered its use,³ and by 2006, ESS constituted 43% of nasal surgery performed, second only to septoplasty (57%).⁶

Even as the adoption of ESS has grown throughout the decades, no universal agreement about indications for ESS has emerged. In fact, there has been notable variation in the performance of these surgeries across regions: for example, practitioners in some locations performed triple the number of sinus surgeries per 1000 patients, in comparison to other sites.⁷ Usage rates in some locales were fourfold more than others.⁸ These variations may arise because some studies suggest that medical and surgical therapy have similar outcomes,⁹ whereas others conclude that surgery not only derives more benefits, but early intervention is warranted.¹⁰

In addition, our understanding of the pathogenesis and potential etiologies of CRS has continued to evolve. CRS has been defined in adults as at least 12 weeks of two or more key symptoms (thick and/or discolored nasal drainage [anterior, posterior, or both]; nasal obstruction or congestion¹¹; facial pain, pressure, or fullness; and hyposmia or anosmia), along with at least one sign of inflammation (abnormal mucus or edema in the middle meatus or anterior ethmoid region; polyps in the nasal cavity or the middle meatus; and/or radiologic imaging showing inflammation of the paranasal sinuses).¹² Related definitions are as described in **Table 1**. Among those with CRS, an estimated 14% may undergo ESS, based on national-level data from 2010 to 2012.¹³

The decision to proceed with ESS incorporates whether medical treatment alone would be sufficient.¹⁰ Accordingly, understanding the underlying disease process informs overall medical management.¹⁴ Beyond anatomy, additional factors contribute to CRS, including those as disparate as genetics, microbiomes, atopy, vitamin levels, and fungi.^{14,15} The wide variety of potential CRS subgroups might each respond differently to specific medical and surgical therapies. CRS has traditionally been categorized as with and without polyps,¹⁴ and more recently as Type 2 or non-type 2 disease,¹⁴ but there is not yet a universally accepted categorization for the myriad disease states which prompt ESS. Further delineating the categories of CRS may not only provide the basis for more compatible clinical research data, but more clear determination of the indications and extent to which ESS is performed.