



Managing chronic rhinosinusitis in adults

A systematic review found evidence supporting daily high-volume nasal irrigation with saline and topical corticosteroid treatment as a first-line maintenance treatment for adults with chronic rhinosinusitis (symptoms for 12 weeks or longer).

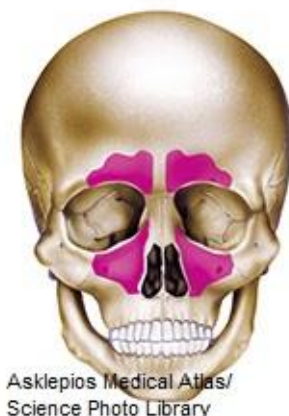
Overview:

- Daily high-volume saline irrigation and topical corticosteroid therapy should be, according to the available evidence, the first-line therapy for chronic rhinosinusitis (symptoms for 12 weeks or longer).
- This systematic review supports current European recommendations to treat people who have chronic rhinosinusitis with topical steroids and nasal irrigation, and review treatment after 4 weeks.
- The evidence on the efficacy of oral antibiotics to treat chronic rhinosinusitis was conflicting.

Background: Rhinosinusitis is inflammation of the mucosal lining of the nose and paranasal sinuses ([European Position Paper on Rhinosinusitis and Nasal Polyps 2012](#)). Rhinosinusitis is defined by nasal blockage, runny nose (rhinorrhoea) or both, and at least one of reduced sense of smell (hyposmia) or facial pressure, confirmed by endoscopic or radiological findings. Rhinosinusitis is considered chronic if these symptoms have persisted for 12 weeks or longer.

Potential causes of chronic rhinosinusitis include allergy and bacterial toxins, but the aetiology of the condition is still uncertain. The condition usually follows a gradual course. Some people with chronic rhinosinusitis may also develop nasal polyps, but the reason for this is unknown.

Current advice: The [European Position Paper on Rhinosinusitis and Nasal Polyps](#) (2012) recommends first-line treatment of chronic rhinosinusitis with topical steroids and nasal saline irrigation. The person with rhinosinusitis should then be re-evaluated after 4 weeks. Those people who show improvement should continue with this treatment. People who do not show improvement should be referred to an ear, nose and throat specialist.



People who are referred should undergo endoscopy to establish the level of mucosal disease. People with mild symptoms and no serious mucosal disease should continue with topical steroids and nasal irrigation. People with moderate or severe symptoms and signs of mucosal disease, and people with mild disease who do not improve after 3 months, should be considered for long-term antibiotics or surgery.

Doxycycline or short-course oral steroids may be considered for people with moderate or severe disease and nasal polyps.

The NICE pathway on [ear, nose and throat conditions](#) brings together all related NICE guidance and associated products on these conditions in a set of interactive topic-based diagrams. The NICE Clinical Knowledge Summary on [sinusitis](#) provides a readily accessible summary of the current evidence base and best practice on this topic.

New evidence: A systematic review of 29 studies (12 meta-analyses that assessed more than 60 randomised controlled trials [RCTs], 13 systematic reviews and 4 RCTs) by [Rudmik et al. \(2015\)](#) considered the evidence on medical treatments for adults with chronic rhinosinusitis.

When maintenance treatment was considered, topical corticosteroids had the strongest evidence (6 meta-analyses of more than 40 RCTs). For people with nasal polyps (4 meta-analyses), intranasal corticosteroid spray was associated with improvement in symptoms compared with placebo (3 meta-analyses). Intranasal corticosteroid spray also improved overall symptom scores, polyp size and polyp recurrence after surgery (2 meta-analyses).

For people without nasal polyps (2 meta-analyses), intranasal corticosteroid spray improved symptoms and the proportion of responders compared with placebo (1 meta-analysis). However, corticosteroids failed to improve symptoms and treatment response in the other meta-analysis. The authors suggested that there was a need for higher quality trials for people without polyps.

Saline irrigation for maintenance treatment was considered in 1 meta-analysis and 2 systematic reviews. Sinonasal saline irrigations improved symptoms in people with and without nasal polyps compared with no treatment (1 meta-analysis). However, when saline irrigation was compared directly with topical corticosteroids, it was associated with less improvement (1 meta-analysis). Similar symptom improvements were reported with isotonic and hypertonic saline irrigations (1 meta-analysis), but volumes over 100 ml were superior to low-volume nasal spray techniques (1 systematic review).

The authors considered both leukotriene antagonists and allergy immunotherapy as maintenance treatment for chronic rhinosinusitis. However, the evidence on these was relatively weak. For intermittent or rescue treatments, conflicting evidence was found for oral antibiotics used short term (1 systematic review) or long term (2 systematic reviews and 1 meta-analysis).

The authors concluded that the available evidence supported daily high-volume saline irrigation with topical corticosteroid therapy as first-line therapy for chronic rhinosinusitis. Limitations of this systematic review include the differences between the studies assessed, such as in the diagnostic criteria used, and the use of mixed populations of people with and without polyps. The quality of the studies included in the systematic review was generally poor or moderate and the clinical significance of effect sizes was unclear.

Commentary by Carl Philpott, Clinical Senior Lecturer, Norwich Medical School and Honorary Consultant Ear, Nose and Throat Surgeon and Rhinologist, James Paget University Hospital:

“The evidence presented by Rudmik et al. (2015) confirms the conclusions in the European Position Paper on Rhinosinusitis and Nasal Polyps (2012), but doesn't add any new evidence or recommendations. This is not surprising because there have been no new RCTs in that time for chronic rhinosinusitis. Although open label and non-randomised series have been reported, any publications since 2012 have been themselves meta-analyses. As such, this systematic review supports the current recommendations to treat people who have chronic rhinosinusitis with topical

steroids and nasal irrigation, and review treatment after 4 weeks.

“Practice variation in the UK is high. Longitudinal data from the Clinical Practice Research Datalink (CPRD) show that 1% of UK adults receive treatment for chronic rhinosinusitis from their GP each year, averaging 4 GP visits ([Gulliford et al. 2014](#)). These people receive multiple medications, with 91% receiving an antibiotic prescription. The recent ENT-UK commissioning guideline ([Royal College of Surgeons of England 2013](#)) does not recommend routine antibiotic use for chronic rhinosinusitis in primary care, but GPs often prescribe repeated courses ([Akkerman et al. 2005](#)), which may cause resistance.

“There is growing interest in the immune-modulating effects of macrolide antibiotics in chronic airway inflammatory disease. Low-dose, long-term macrolides are being prescribed in chronic rhinosinusitis for their effect on immune response and not primarily as antibacterial agents ([Cervin and Wallwork 2007](#)). Some evidence exists for longer term antibiotic use in secondary care, but this evidence is from 2 small conflicting RCTs ([Wallwork et al. 2006](#) and [Videler et al. 2011](#)), resulting in a call for further larger trials ([Piromchai et al. 2011](#)). Recently some Clinical Commissioning Groups (CCGs) have insisted on a 3 month trial of macrolide antibiotics before people with chronic rhinosinusitis can be referred to secondary care ([Soni-Jaiswal et al. 2015](#)), despite the fact that no high-level evidence is available to support this approach.

“[Hospital Episode Statistics](#) show that 1 in 3 people with chronic rhinosinusitis attending ear, nose and throat clinics in England are considered not to have responded adequately to current medical treatment and are considered for surgery. However, insufficient evidence is available to define the role of surgery, which has contributed to a 5-fold variation in UK intervention rates ([Royal College of Surgeons of England 2013](#)). Symptom duration before surgery varies from under 1 to over 10 years ([Hopkins et al. 2015a](#), [Hopkins et al. 2015b](#)). If surgery is less effective than continued medical therapy, patients may be exposed to unnecessary risks and morbidity. If surgery is better, current variation reflects suboptimal patient care.”

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