

# HEADACHES AND SINUS DISEASE

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## INTRODUCTION

[Sinusitis](#) and headache are each extremely common diseases, and although sometimes they can be related, often they are separate issues. With millions of Americans suffering from each of these problems, there is bound to be some overlap and confusion on the part of the patient as to what their diagnosis truly is. “Sinus headache” is a common complaint that patients present with, but evidence suggests that this phrase may not be a real clinical diagnosis.



## HEADACHES RELATED TO SINUSITIS

Sinusitis can be divided into many different categories, but the simplest distinction is the difference between [Acute Sinusitis and Chronic Sinusitis](#). Acute sinusitis is defined as sinusitis lasting four weeks or less. Chronic sinusitis is defined as sinusitis lasting longer than 12 weeks. An acute exacerbation of chronic sinusitis is defined as a sudden worsening of symptoms in a patient who has chronic sinusitis with a return of symptoms to baseline after treatment.

The diagnostic criteria put forth by the International Headache Society for “headache attributed to sinusitis” require a frontal headache (meaning in the region of your forehead), evidence of rhinosinusitis (on a CT, MRI, nasal endoscopy or by lab data), and resolution of the headache with appropriate sinusitis treatment (Table 1). The clinical evidence may include drainage in the nasal cavity, nasal obstruction, decreased or absent sense of smell, and/or fever. Chronic rhinosinusitis is not validated as a cause of headache or facial pain except in cases of acute relapse. These headaches are caused by the pressure of mucus against the lining of the sinus cavities when that mucus becomes trapped and unable to drain into the nasal cavity due to inflammation and swelling of the openings.

Treatment for these true “sinus headaches” may be medical, including antibiotics and/or steroids, or surgical, depending on the individual presentation.

Tension Headache	Cluster Headache	Headache due to Rhinosinusitis
A. At least 10 episodes occurring on <1 d/mo on average (<12d/y) and fulfilling criteria B-D B. Headache lasting 30min-	A. At least 5 attacks fulfilling criteria B-D B. Severe or very severe unilateral orbital, supraorbital, and/or	A. Frontal headache accompanied by pain in 1 or more regions of the face, ears, or teeth and fulfillingg criteria C and D

<p>7d C. headache has at least 2 of the following characteristics:</p> <ol style="list-style-type: none"> <li>1. Bilateral location</li> <li>2. Pressing/tightening (nonpulsating) quality</li> <li>3. Mild or moderate intensity of pain</li> <li>4. Not aggravated by routine physical activity (e.g., walking or climbing stairs)</li> </ol> <p>D. Both of the following:</p> <ol style="list-style-type: none"> <li>1. No nausea or vomiting (anorexia may occur)</li> <li>2. No more than 1 of photophobia or phonophobia</li> </ol> <p>E. Not attributed to another disorder</p>	<p>temporal pain lasting 15-180 min if untreated C. Headache is accompanied by at least 1 of the following:</p> <ol style="list-style-type: none"> <li>1. Ipsilateral conjunctival injection and/or lacrimation</li> <li>2. Ipsilateral nasal congestion and/or rhinorrhea</li> <li>3. Ipsilateral eyelid edema</li> <li>4. Ipsilateral forehead and facial sweating</li> <li>5. Ipsilateral miosis and/or ptosis</li> <li>6. Sense of restlessness or agitation</li> </ol> <p>D. Attacks have a frequency of 1 every other day to 8/d E. Not attributed to another disorder</p>	<p>B. Clinical, nasal endoscopic, CT, and/or MRI imaging and/or laboratory evidence of acute or acute-on-chronic rhinosinusitis C. Headache and facial pain develop simultaneously with onset or acute exacerbation of rhinosinusitis D. Headache and/or facial pain resolve within 7d after remission or successful treatment of acute or acute-on-chronic rhinosinusitis</p>
<p><i>(Adapted from Headache Classification Subcommittee of the International Headache Society)</i></p>		

## HEADACHES RELATED TO OTHER NASAL PROBLEMS

Headache can also be caused from decreased oxygen saturation or nerve inflammation. In certain circumstances, the etiology of these two causes may be found within the nasal cavity itself.

[Septal deviation and inferior turbinate hypertrophy](#) have been found to contribute to [obstructive sleep apnea \(OSA\)](#) in some people. If a person is not able to breathe well at night, this can cause prolonged or multiple decreases in oxygen saturation, which in turn may produce a morning headache.

The idea of a “contact point” headache is much more controversial, but does have its supporters within the Rhinology community. The idea is that two [mucosal surfaces](#) (the lining of the nasal cavity) which usually do not touch, have contact points in certain individuals. This could happen because of trauma to the nose, prior surgery and scarring, or simply chronic inflammation. Nerve endings which run beneath the mucosal surface in these regions may become inflamed and irritated and some theorize this could cause headache as well.

Although nasal sprays which contain steroids and/or anti-histamines can be used to decrease the

level of mucosal inflammation in the nose, structural issues like those described above often eventually need surgical correction.

## NON-SINUS HEADACHES

Because the sinuses are located around the eyes, people generally tend to think that headache in the frontal, supraorbital and infraorbital regions are related to the sinuses. However, this is also the most common region where migraine sufferers experience pain as well. **MIGRAINE IS THE MOST COMMON TRUE DIAGNOSIS IN PATIENTS PRESENTING WITH “SINUS HEADACHE”.**

Multiple studies, including large multi-center trials, have shown that an average of 78-86% of patients who meet the diagnostic criteria for migraine headaches are self-diagnosed or diagnosed by their primary care doctors as suffering from “sinus headache”. This is clearly a common misconception, shared not only by many patients but by many primary care physicians as well.

Tension headaches are the most common form of primary headaches, and can also easily masquerade as sinus headaches due to referral of pain from muscles in spasm to areas associated with the [paranasal sinuses](#) (Table 2).

Muscles in spasm	Regions of referred pain
Temporalis	Supraorbital ("frontal sinus") Temple Lateral mouth
Sternocleidomastoid	Occiput Ear Lateral forehead supraoptic region
Trapezius	Behind the ear Lateral to the eye
Splenius	Vertex
(Adapted from Curr Allergy Asthma Rep (2010) 10:202-209)	

In cases of non-sinus related headaches, the appropriate specialist in most cases would be a Neurologist.

## CONCLUSION

The best way to establish whether or not your headaches are related to your sinuses is to see your local Rhinologist and undergo a formal evaluation.



Revised 02/17/2015

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