

Difference Between Sinusitis and Rhinosinusitis

www.differencebetween.com

Key Difference – Sinusitis vs Rhinosinusitis

The [inflammation](#) of the paranasal sinuses is known as sinusitis. Sinusitis rarely occurs without a preceding episode of [rhinitis](#). Because of this concurrence and the interrelationship between sinusitis and rhinitis, nowadays clinicians refer to sinusitis as rhinosinusitis. Therefore, the difference between sinusitis and rhinosinusitis is that **sinuses are inflamed in sinusitis while the nasal mucosa overlying the nasal cavity is inflamed in rhinitis.**

What is Sinusitis?

The inflammation of the paranasal sinuses is known as sinusitis. It is most often associated with [upper respiratory tract infections](#) and [asthma](#). Bacteria like *Streptococcus pneumoniae* and *Hemophilus influenza* are the commonest causative agents of sinusitis. Occasionally, some fungi can also give rise to this condition.

Clinical Features

- Headache
- Purulent rhinorrhea
- Facial pain with tenderness
- Fever

Trigeminal neuralgia, migraine, and cranial arteritis also have a similar clinical picture.

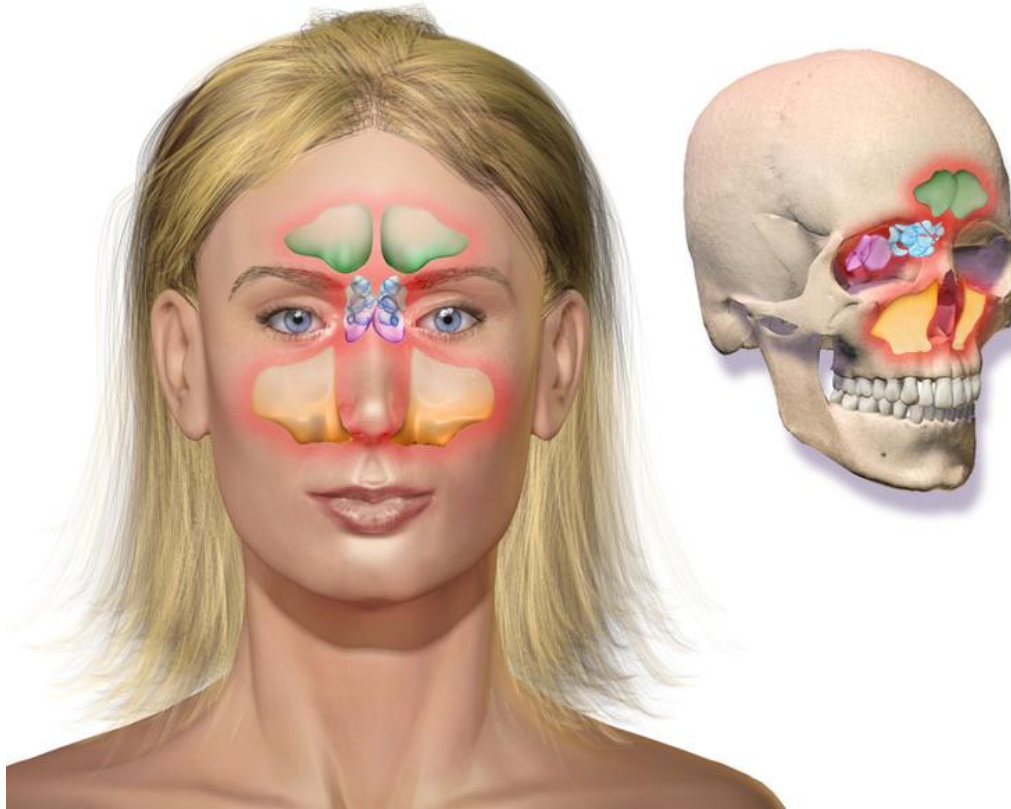


Figure 01: Sinusitis

Management

- Bacterial sinusitis can be treated with nasal decongestants and antibiotics such as co-amoxiclav. Anti-inflammatory drugs are sometimes used to alleviate the discomforts due to mucosal swellings.
- In case of recurrent sinusitis and if any complications arise, it is appropriate to take a CT scan.
- Functional Endoscopic Sinus Surgery is required rarely for the ventilation and drainage of the sinuses.

What is Rhinosinusitis?

Sinusitis rarely occurs without a preceding episode of rhinitis. Because of this concurrence and the interrelationship between sinusitis and rhinitis, nowadays clinicians refer to sinusitis as rhinosinusitis.

Therefore in this part of the article, we are going to discuss rhinitis which predisposes the development of sinusitis.

[Allergic rhinitis](#) is defined as nasal discharge or blockage and sneezing attacks that last for more than an hour on most of the days due to an [allergen](#). It can be of two types: seasonal or intermittent rhinitis which occurs during a limited period of the year and perennial or persistent rhinitis which occurs throughout the year.

Pathophysiology

[IgE](#) antibodies are produced against the allergen by the [B cells](#). IgE then binds to the mast cells. This cross-linking leads to the degranulation and the release of chemical mediators such as histamine, prostaglandin, leukotrienes, cytokines and proteases (tryptase, chymase). Acute symptoms like sneezing, pruritus, rhinorrhea and nasal congestion are caused by these mediators. Sneezing may occur within few minutes from the entry of an allergen into the nasal cavity, and it is followed by an increase in the nasal secretions and blockage which are due to the action of histamine. Furthermore, eosinophils, basophils, neutrophils and T lymphocytes are recruited to the site by the antigen presentation to the [T cells](#). These cells cause irritation and edema resulting in the nasal obstruction.

Seasonal Allergic Rhinitis

Seasonal rhinitis, which is also known as hay fever, is one of the commonest allergic disorders with prevalence rates exceeding 10% in some parts of the world. Sneezing, nasal irritation and watery nasal secretions are the common clinical features. But some patients may suffer from itching of the eye, ear, and soft palate as well.

Tree pollens, grass pollens, and mold spores are the usual culprits that act as the allergens to provoke our immune system. Seasonal allergic rhinitis may occur at different times of the year in different regions mainly because of the variation in the pattern of pollination.

Perennial Allergic Rhinitis

About 50% of the patients with perennial rhinitis may complain of sneezing or watery rhinorrhea and others usually complain of nasal blockage. These patients may also have eye and throat symptoms.

Inflammatory mucosal swellings can obstruct the drainage of secretions from the sinuses, leading to sinusitis.

The most common allergen causing perennial allergic rhinitis is the fecal particles of house dust mite, *Geratophagoides pteronyssinus* or *D. farinae*, which are invisible to the naked eye. These mites are found in dust all over the house, especially in damp places. The highest concentration of mites is found in human beddings. Next commonest allergen is the proteins derived from urine, saliva or skin of domestic pets especially the cats. Perennial rhinitis makes the nose more responsive to nonspecific stimuli like cigarette smoke, household detergents, strong perfumes, washing powder and traffic fumes.

Investigations and Diagnosis

History of the patient is important in identifying the allergen. Skin prick test is useful, but it is not a confirmative test. Allergen-specific IgE antibody levels in the blood can be measured, but it is expensive.

Treatment

- Allergen avoidance
- H₁ antihistamines- commonest therapy (ex: Chlorphenamine, Hydroxyzine, Loratidine, Desloratadine, Cetirizine, Fexofenadine)
- Decongestants
- Anti-inflammatory drugs
- Corticosteroids- most effective
- Leukotriene

Any nasal condition with the symptoms of allergic rhinitis but whose etiology is unknown is defined as nonallergic rhinitis.

Causes

Several internal and external factors may cause nonallergic rhinitis.

External factors include

- Viral infections (cold) which attack the lining of the nasal cavity and the throat
- Environmental factors like high temperature, humidity, exposure to noxious fumes

Internal factors include

- Hormonal imbalance
- Hormonal replacement therapy or hormonal contraception

Common Cold (Nonallergic Rhinitis)

A variety of respiratory viruses such as rhinovirus, coronavirus, and adenovirus can cause this highly infectious illness. Among them, rhinovirus is the commonest causative agent. Since the rhinovirus has several serotypes, it is not possible to design a vaccine against the virus. The disease characteristics are limited to the upper respiratory tract because the virus grows well at 33°C which is the local temperature of the upper respiratory tract. The transmission is mainly through close personal contact (nasal mucus on hand) or respiratory droplets. Overcrowding and poor ventilation facilitate the spread of the infection.



Figure 02: Sneezing

Signs and Symptoms

- Tiredness
- Slight pyrexia
- Malaise
- Sneezing
- Profuse watery nasal discharge

Treatment

Nonallergic rhinitis is usually a self-limiting condition. The choice of treatment options depends on the severity of the disease. Rinsing the nasal passage or a nasal spray of corticosteroids may relieve the symptoms.

What are the Similarities Between Sinusitis and Rhinosinusitis?

- Both conditions are due to the inflammation of the mucosa overlying the respective regions
- Nasal symptoms such as nasal congestion, mucopurulent discharge are common to both.

What is the Difference Between Sinusitis and Rhinosinusitis?

Since rhinosinusitis principally describes the rhinitis which precedes an attack of sinusitis, the differences between sinusitis and rhinosinusitis will be listed under this section.

Sinusitis vs Rhinosinusitis	
The inflammation of the paranasal sinuses is known as sinusitis.	Rhinitis is the inflammation of the mucosa overlying the nasal cavity.
Cause	
Sinusitis is most of the time caused by bacteria such as <i>Streptococcus pneumoniae</i> and <i>Hemophilus influenzae</i> . In rare cases, fungi can also give rise to this condition.	Rhinitis can be due to the exposure to allergens in which case it is known as allergic rhinitis. Non-allergic rhinitis is often caused by infectious agents.
Behavior	
Clinical features of sinusitis, · Headache	Clinical features of rhinitis, · Tiredness

- Purulent rhinorrhea
- Facial pain with tenderness
- Fever

- Slight pyrexia
- Malaise
- Sneezing
- Profuse watery nasal discharge

Treatment

Bacterial sinusitis can be treated with nasal decongestants and antibiotics such as co-amoxiclav. Anti-inflammatory drugs are sometimes used to alleviate the discomforts due to mucosal swellings.

- In case of recurrent sinusitis and if any complications arise, it is appropriate to take a CT scan.
- Functional Endoscopic Sinus Surgery is required rarely for the ventilation and drainage of the sinuses.

Rhinitis is treated with,

- Allergen avoidance
- H1 antihistamines- commonest therapy (ex: Chlorphenamine, Hydroxyzine, Loratidine, Desloratadine, Cetirizine, Fexofenadine)
- Decongestants
- Anti-inflammatory drugs
- Corticosteroids- most effective
- Leukotriene

Summary – Sinusitis vs Rhinosinusitis

The inflammation of the paranasal sinuses is known as sinusitis. Rhinitis is the inflammation of the mucosa overlying the nasal cavity. Thus, the difference between sinusitis and rhinosinusitis is in the place where the inflammation occurs. In sinusitis, it is the sinuses that are inflamed and, in rhinitis, it is the mucosa of the nasal cavity that is inflamed.

References:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.

Image Courtesy:

1. "Blausen 0800 Sinusitis" By Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014". WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. – Own work ([CC BY 3.0](#)) via [Commons Wikimedia](#)
2. "Sneeze in white hankie" By mcfarlandmo – originally posted to Flickr as No273 13 Oct 2009 Sneeze ([CC BY 2.0](#)) via [Commons Wikimedia](#)

How to Cite this Article?

APA: Difference Between Sinusitis and Rhinosinusitis. (2017, October 26). Retrieved (date), from <http://differencebetween.com/difference-between-sinusitis-and-vs-rhinosinusitis/>

MLA: "Difference Between Sinusitis and Rhinosinusitis" *Difference Between.Com.* 26 October 2017. Web.

Chicago: "Difference Between Sinusitis and Rhinosinusitis." *Difference Between.Com.* <http://differencebetween.com/difference-between-sinusitis-and-vs-rhinosinusitis/> accessed (accessed [date]).



Copyright © 2010-2017 Difference Between. All rights reserved.