

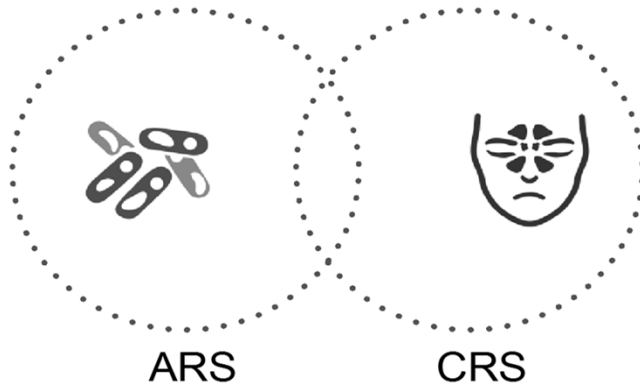
Acute and Chronic Rhinosinusitis

Bradley A. Otto, MD
Assistant Professor
Director, Division of Sinus & Allergy
Department of Otolaryngology – Head & Neck Surgery
The Ohio State University Wexner Medical Center

Acute & Chronic Rhinosinusitis Overview/Goals

- Review definitions / phenotypes of rhinosinusitis
- Describe the general workup and management of patients with:
 - acute rhinosinusitis (ARS)
 - chronic rhinosinusitis (CRS)

Acute & Chronic Rhinosinusitis Overview/Goals



Acute & Chronic Rhinosinusitis Overview/Goals



Diagnosis



Medical therapy



Surgery

Acute & Chronic Rhinosinusitis Overview/Goals



Acute & Chronic Rhinosinusitis Overview/Goals

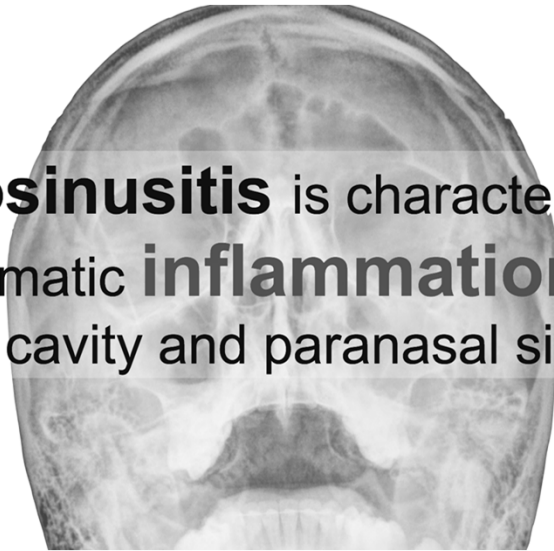


diagnosis



**Key to long term success
and to potentially avoiding
surgery**

Rhinosinusitis is characterized by symptomatic **inflammation** of the nasal cavity and paranasal sinuses



Rhinosinusitis Symptomatic Criteria

Congestion



Drainage



Pain or
pressure



Loss of smell

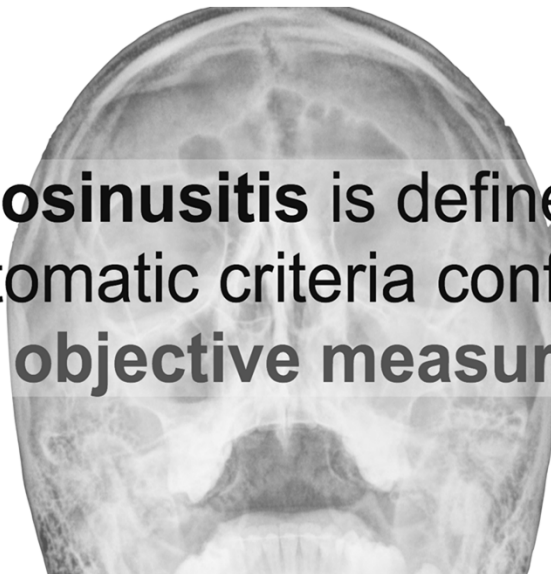


Rhinosinusitis Symptomatic Criteria

- Fever
- Foul taste or odor
- Fatigue
- Ear pressure / fullness
- Sleep disturbance



Rhinosinusitis is defined by
symptomatic criteria confirmed
by **objective measures**



Rhinosinusitis

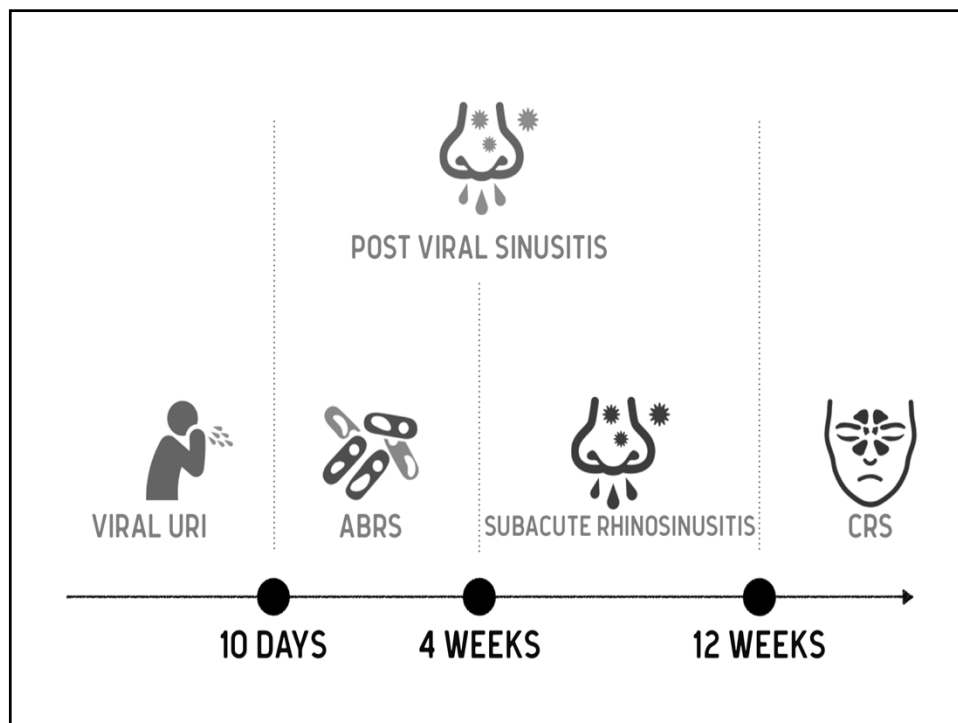
Objective Findings

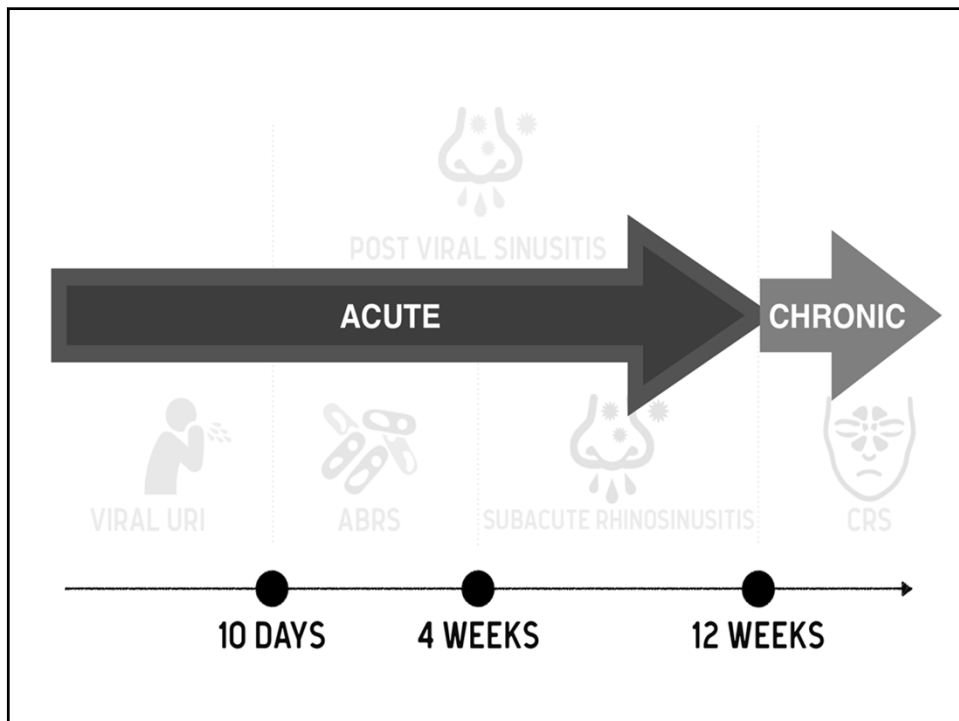
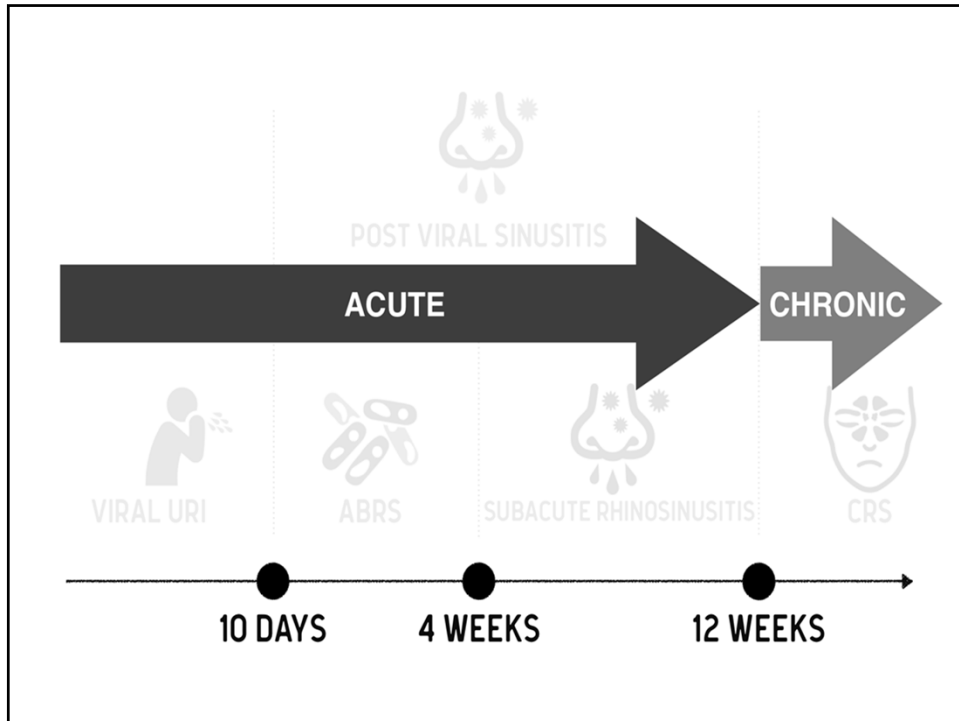


- pus
- edema
- polyps



- mucosal changes





ARS

Acute Rhinosinusitis

- Viral URI by far the most common form
- Estimated ~95% cases of ARS
- In most cases diagnosis based on:
 - symptomatic criteria
 - relatively nonspecific / insensitive examination

ARS

Acute Rhinosinusitis

- **Acute viral rhinosinusitis** < 10 days
- 10 days < **postviral rhinosinusitis** < 12 weeks
- **Acute bacterial rhinosinusitis suggested by:**
 - discolored discharge (esp. unilateral)
 - severe local pain
 - fever
 - symptom duration

ABRS

Acute Bacterial Rhinosinusitis

- Duration of symptoms is a commonly used determinant
 - increase in symptoms after 5 days
 - persistent symptoms after 10 days
- Double worsening
 - exacerbation following a phase of improvement

ABRS

Acute Bacterial Rhinosinusitis

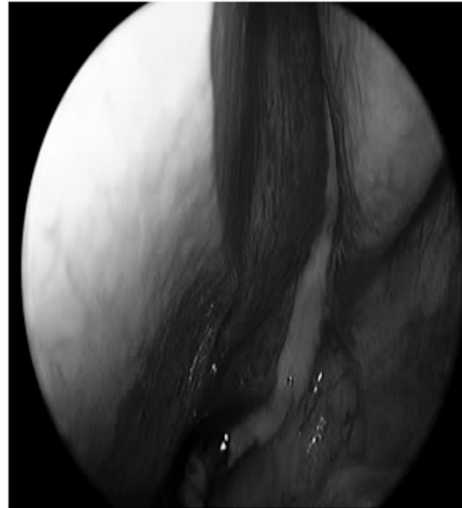
- Sensitivity and specificity of symptoms and general exam findings variable
- We lack objective, easy-to-use, point-of-care tests
- Rhinology practice:



ABRS

Acute Bacterial Rhinosinusitis

- Endoscopy allows for:
 - identification of pus
 - culture acquisition



ABRS

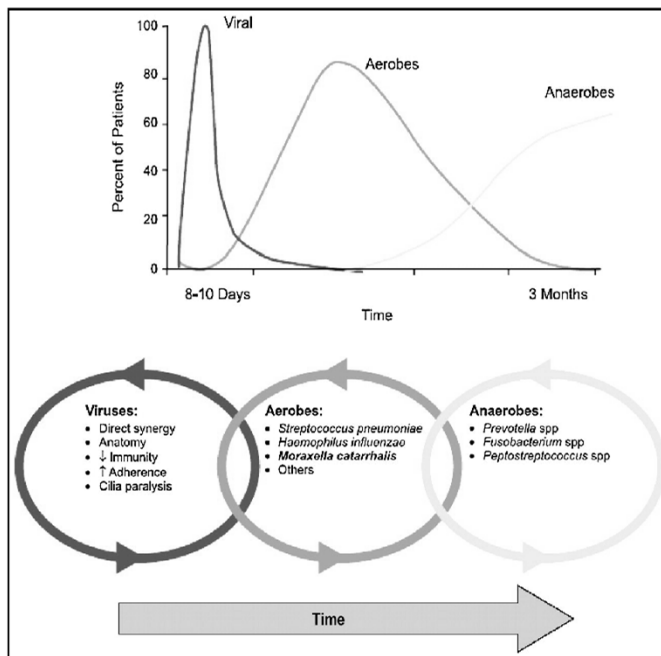
Acute Bacterial Rhinosinusitis

- Endoscopic culture:
 - middle meatus culture generally accurate
- *Streptococcus pneumoniae*, *Moraxella catarrhalis*, *Haemophilus influenzae*
- *Staphylococcus aureus*, *Pseudomonas aeruginosa*

Microbiology of Sinusitis

Itzhak Brook¹

¹Georgetown University School of Medicine, Washington DC
Proc Am Thorac Soc Vol 8, pp 90-100, 2011
DOI: 10.1513/pats.201006-038RN
Internet address: www.atsjournals.org

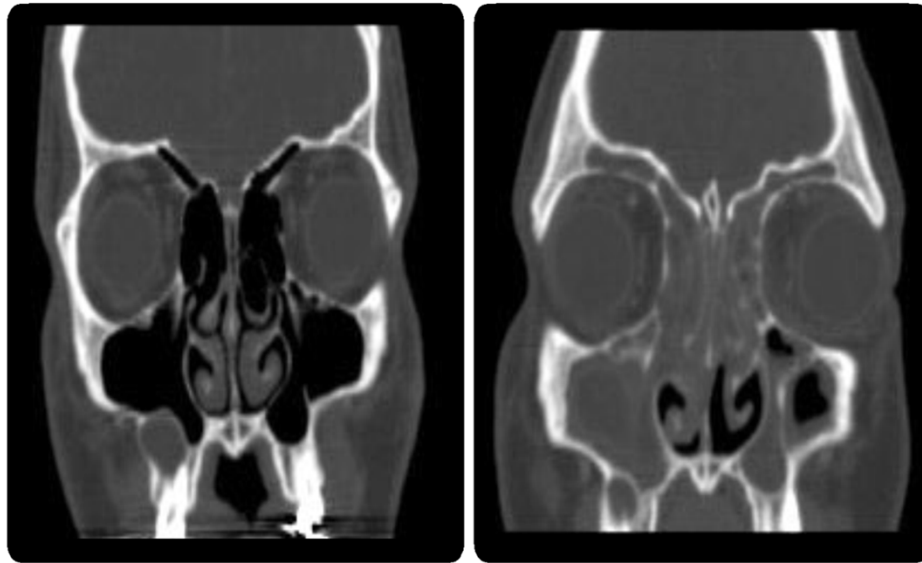




ABRS CT Scans

- Limited value in uncomplicated acute infection
- Will be positive regardless of etiology
- Best done at **baseline**



ABRS Odontogenic Sinusitis

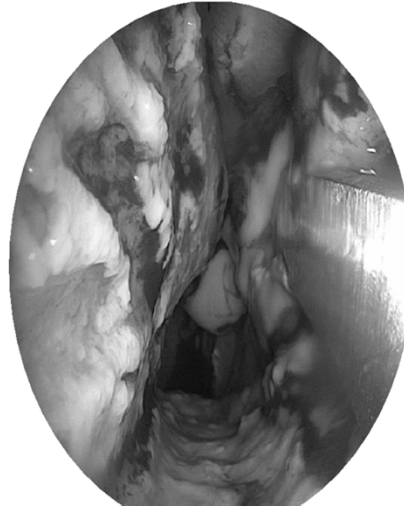


	<u>SYMPTOMS</u>	<u>BASELINE CT</u>	<u>ENDO</u>
Recurrent ABRS		-	+
Viral URI		-	-

ABRS

Acute Bacterial Rhinosinusitis

- In setting of ABRs:
 - friable
 - significant edema
 - bleeds easily
- Avoid surgery if possible



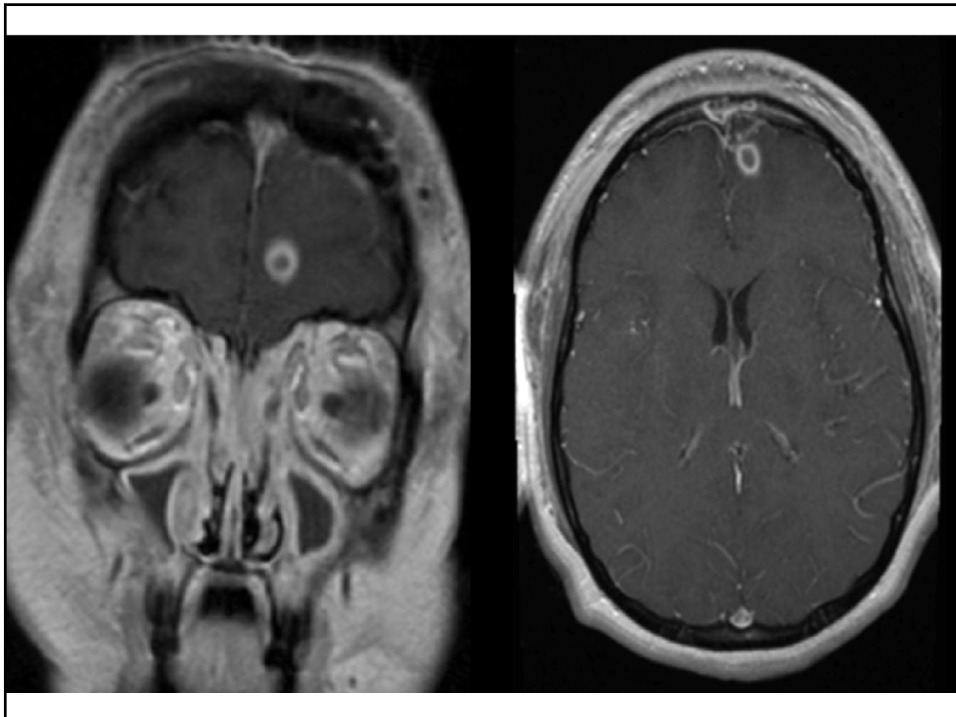
ABRS: Complications

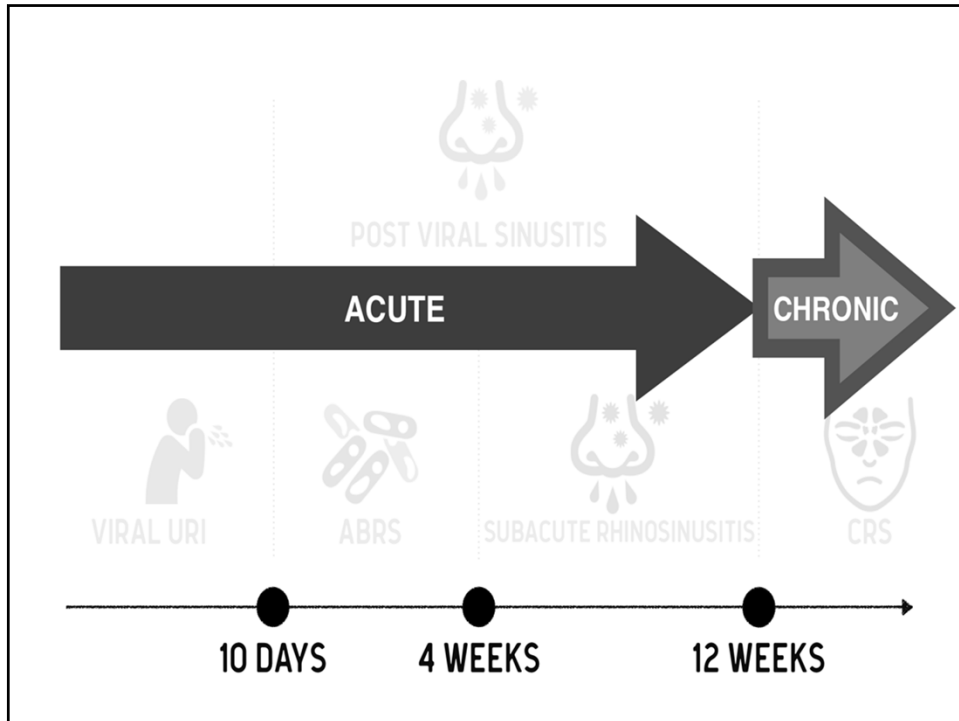
- Meningitis
- Intracranial abscess
- Orbital extension
 - cellulitis
 - abscess
- Cavernous sinus thrombosis



ABRS: Complications

- Prompt inpatient management
- ENT consultation
- Main indication for imaging in setting of ARS



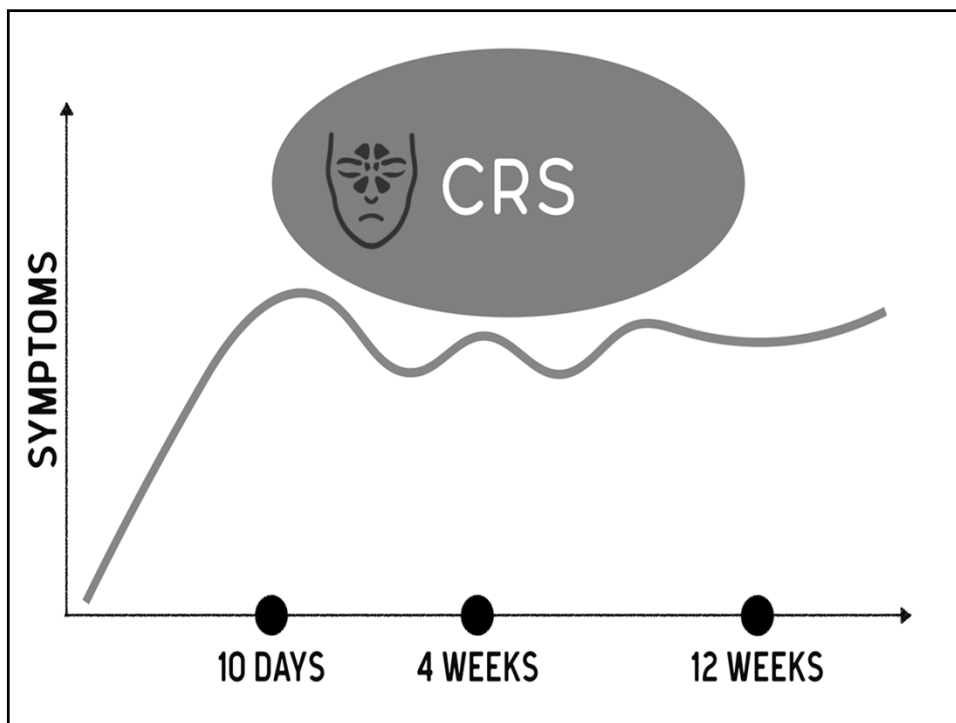


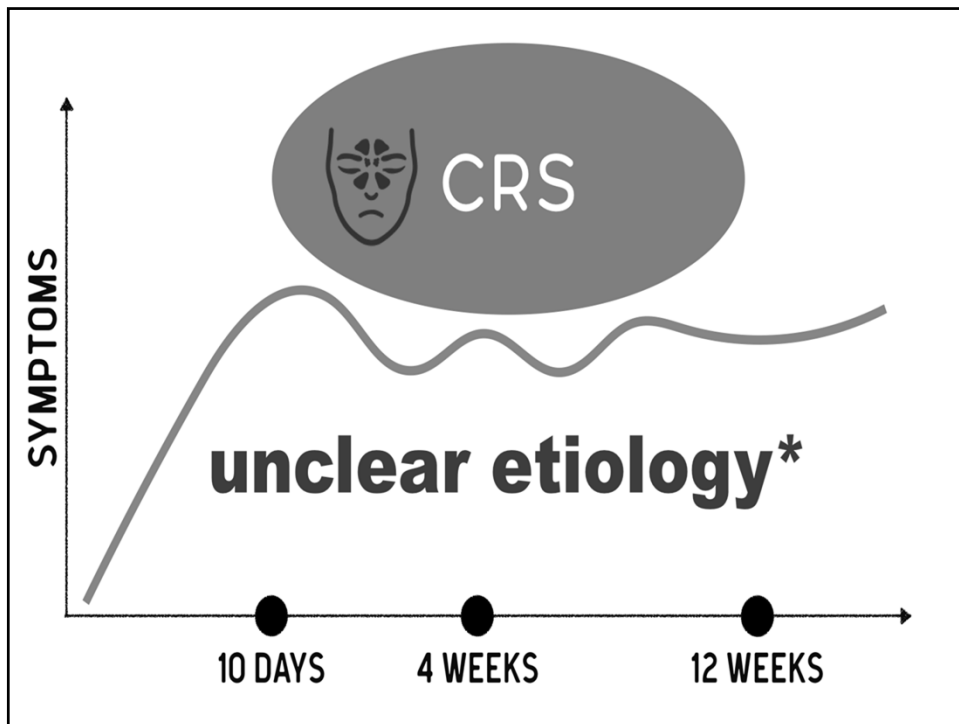
chronic rhinosinusitis is:

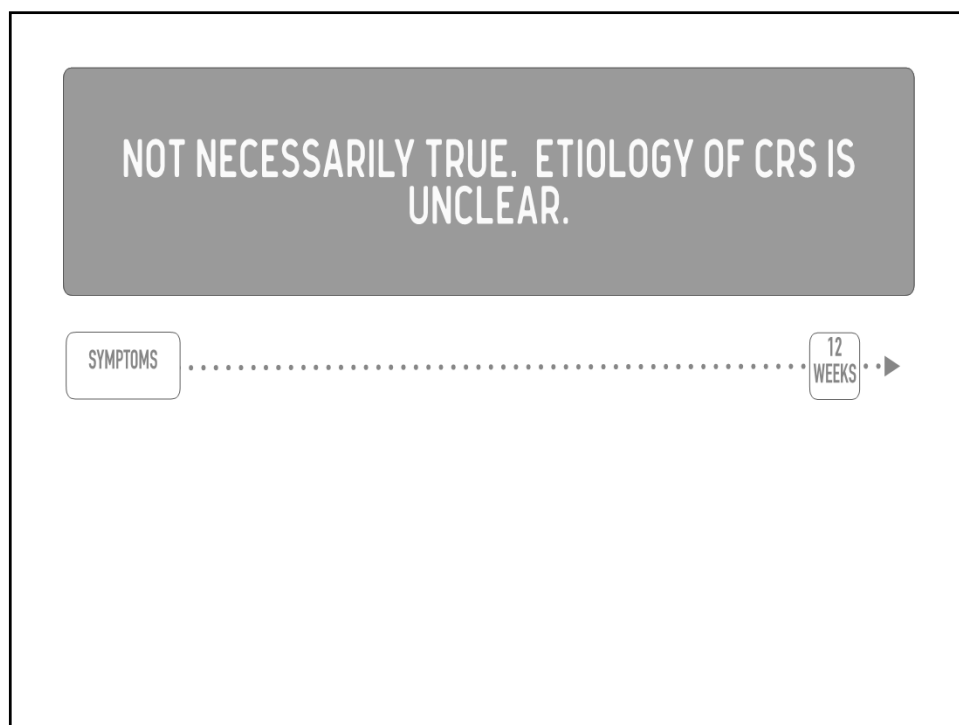
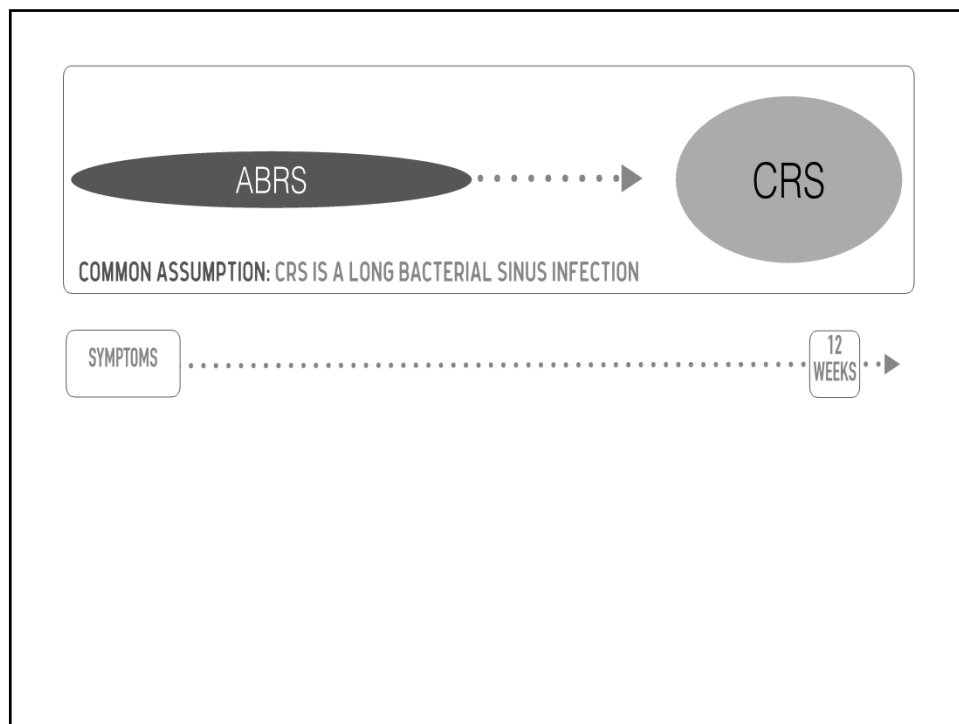
1. symptomatic **inflammation** of the nasal cavity and paranasal sinuses lasting over 12 weeks
2. confirmed by objective measures

Diagnosis

Chronic Rhinosinusitis (CRS)







NOT NECESSARILY TRUE. ETIOLOGY OF CRS IS UNCLEAR.

SYMPTOMS

12
WEEKS

COMMON ASSUMPTION: MULTIPLE INFECTIONS PER YEAR = CRS

ABRS

ABRS

ABRS

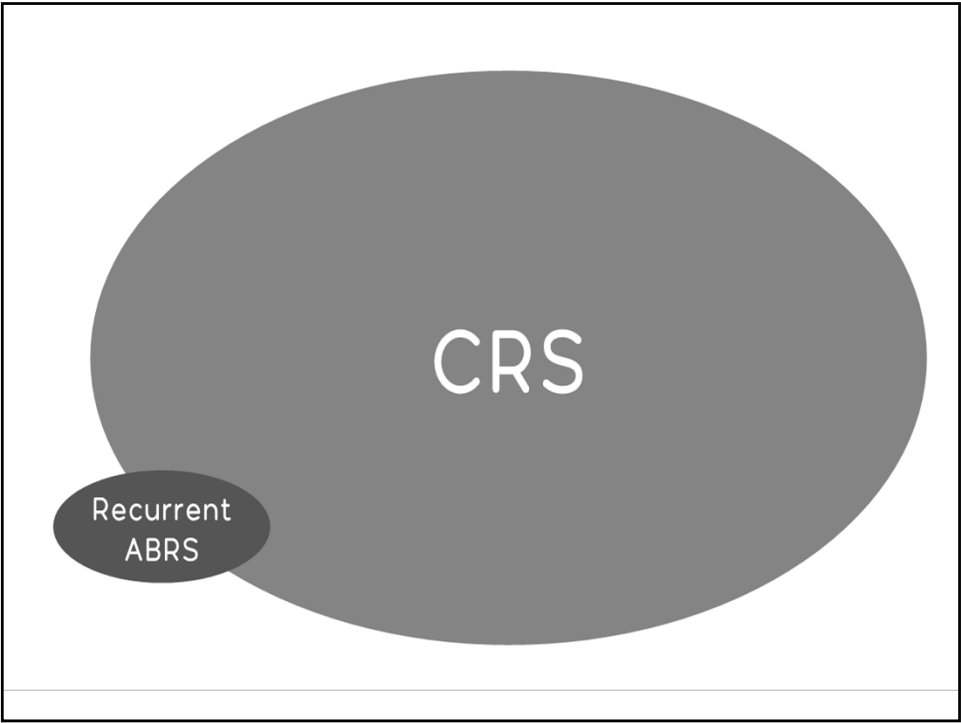
ABRS

NOT NECESSARILY TRUE. ETIOLOGY OF CRS IS UNCLEAR.

SYMPTOMS

12
WEEKS

RECURRENT INFECTIONS MAY BE AN ASSOCIATION TO UNDERLYING CRS. ALTERNATIVELY, PATIENT MAY BE EXPERIENCING **RECURRENT ACUTE BACTERIAL SINUSITIS (RABS)**



	<u>SYMPTOMS</u>	<u>BASELINE CT</u>	<u>ENDO</u>
Recurrent ABRS		-	+
CRS		+	+/-

CRS

Chronic Rhinosinusitis

- Baseline chronic inflammatory state



- Th1 biased profile in **CRS withOUT** nasal polyps
- Th2 biased profile in **CRS with** nasal polyps
- Exacerbations may or may not be related to infection

CRS

Chronic Rhinosinusitis

- **Treatment:**
 - “maximal medical therapy” (MMT)
 - surgery
- Not well standardized
 - MMT and surgical indications vary
 - appropriate degree of surgery and skill set varies

CRS

Chronic Rhinosinusitis

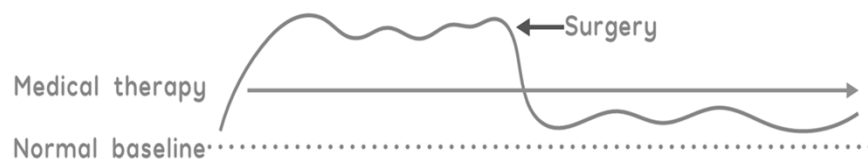
	CRSsNP	CRSwNP
Topical steroids	Yes	Yes
Oral Steroids	Unclear	Yes*
Short term abx	For acute exacerbation	For acute exacerbation
Long term abx	Yes*	Yes*
Nasal irrigation	Yes	Yes

Fokkens WJ et al. EPOS 2012: European position paper on rhinosinusitis and nasal polyps 2012. A summary for otorhinolaryngologists. rhinology. 2012;50(1):1-12.

CRS

Surgery

- **Goal:** to serve as an adjunct to medical therapy to help decrease the severity of symptoms related to CRS
- **may not necessarily cure the disease**



CRS

Symptoms \neq Diagnosis

- Sensitivity 89%
- Specificity 12%
- PPV 49%
- NPV 54%

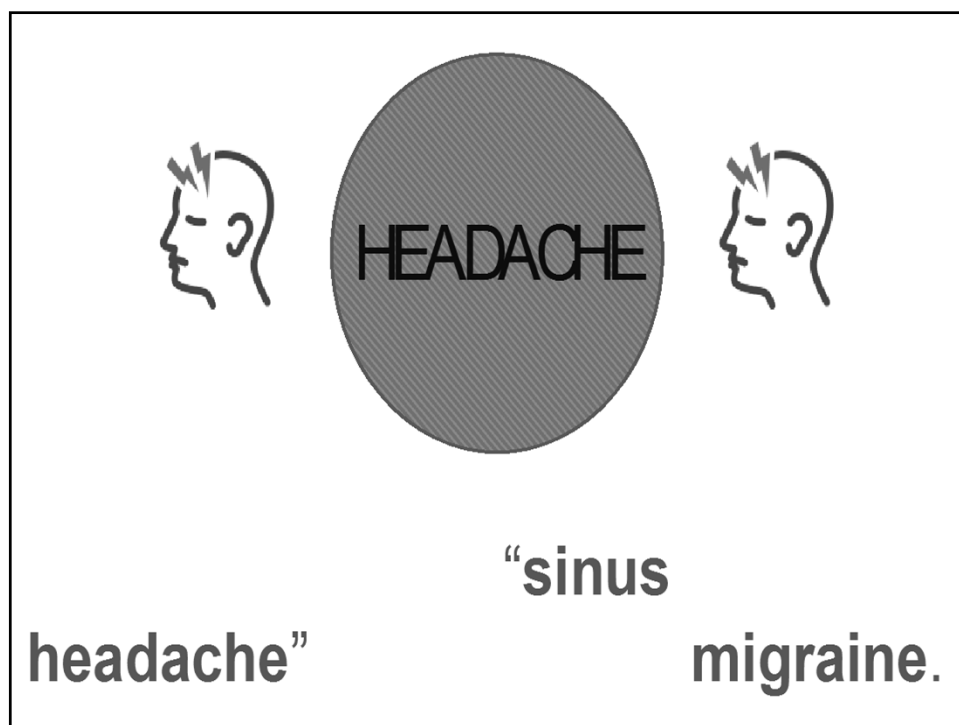
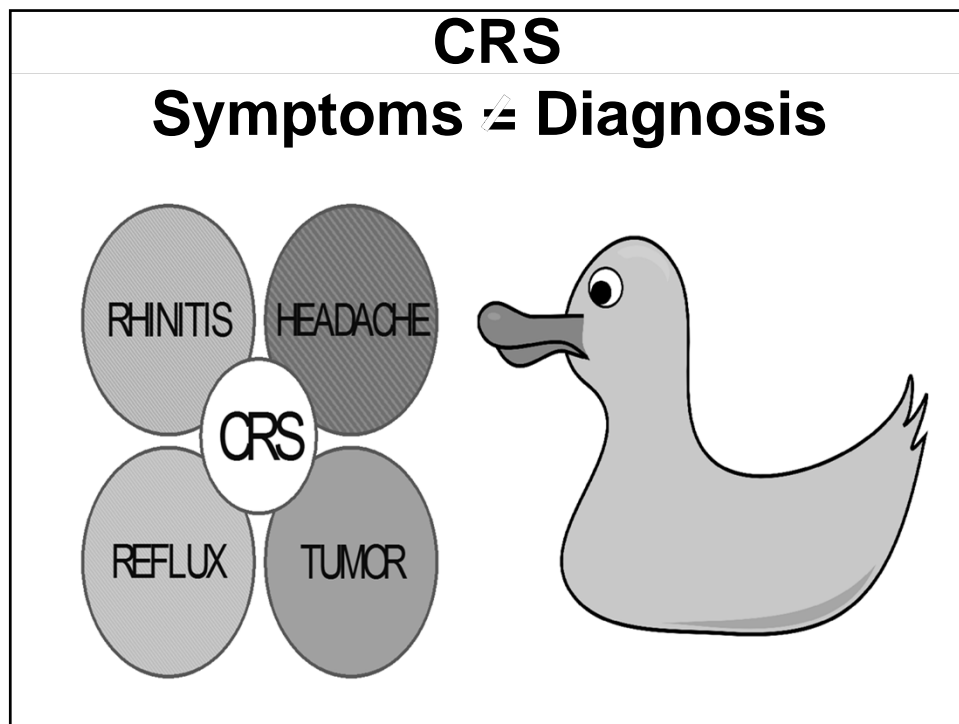


Fokkens WJ et al. EPOS 2012: European position paper on rhinosinusitis and nasal polyps 2012. A summary for otorhinolaryngologists. *rhinology*. 2012;50(1):1-12.

CRS

Symptoms \neq Diagnosis

- | | |
|------------------------|--------------------|
| ○ Headache | ○ Nasal airway |
| ○ LPR | ○ Tumor |
| ○ Rhinitis | ○ Nasopharyngitis |
| ○ Trauma | ○ Chronic rhinitis |
| ○ Nasopharyngeal sinus | ○ Dental disease |



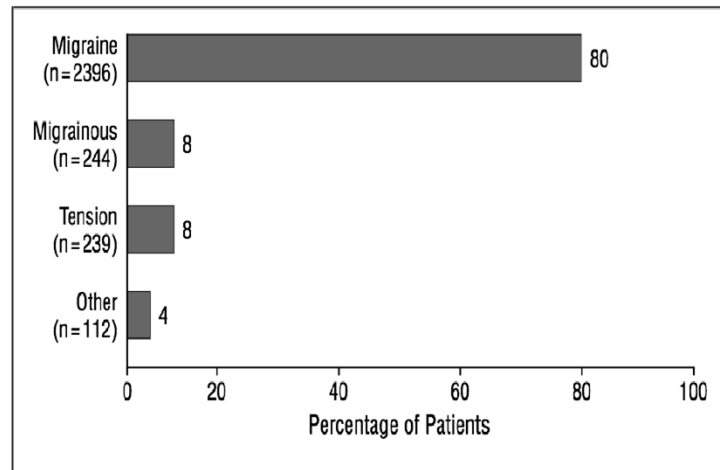


Figure 1. Physician diagnoses of 2991 patients with “sinus” headache according to self-description or previous physician diagnosis.

Schreiber CP, et. al. Prevalence of migraine in patients with a history of self-reported or physician-diagnosed “sinus” headache. Arch Intern Med. 2004;164(16):769-1772.

Headache
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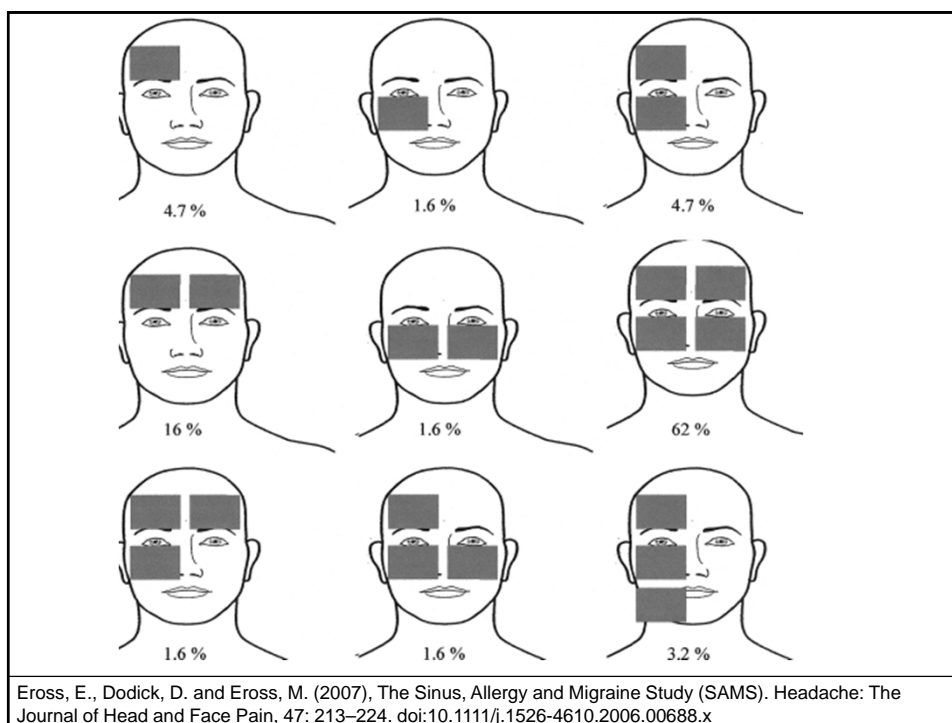
ISSN 0017-8748
doi: 10.1111/j.1526-4610.2006.00688.x
Published by Blackwell Publishing

Research Submission

CME

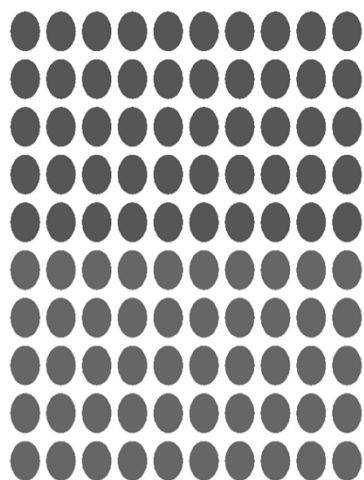
The Sinus, Allergy and Migraine Study (SAMS)

Eric Eross, DO; David Dodick, MD; Michael Eross

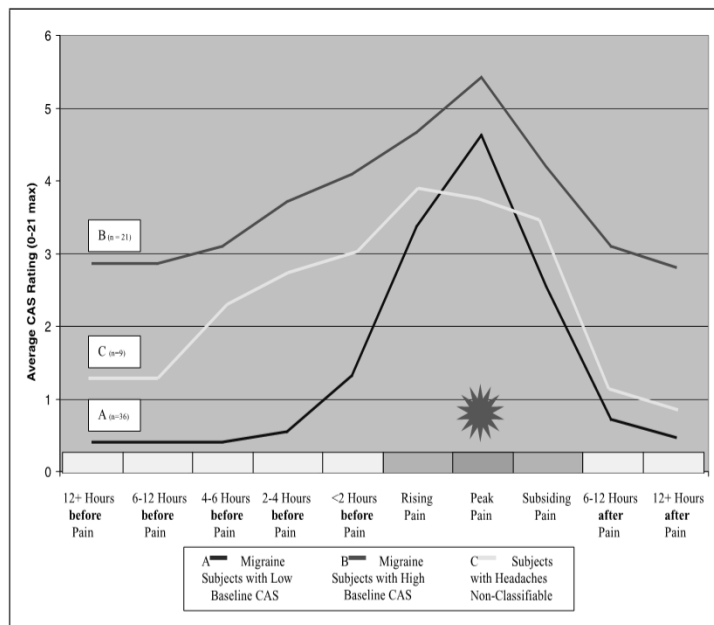


Headache is Often Mistaken for “Sinus Headache”

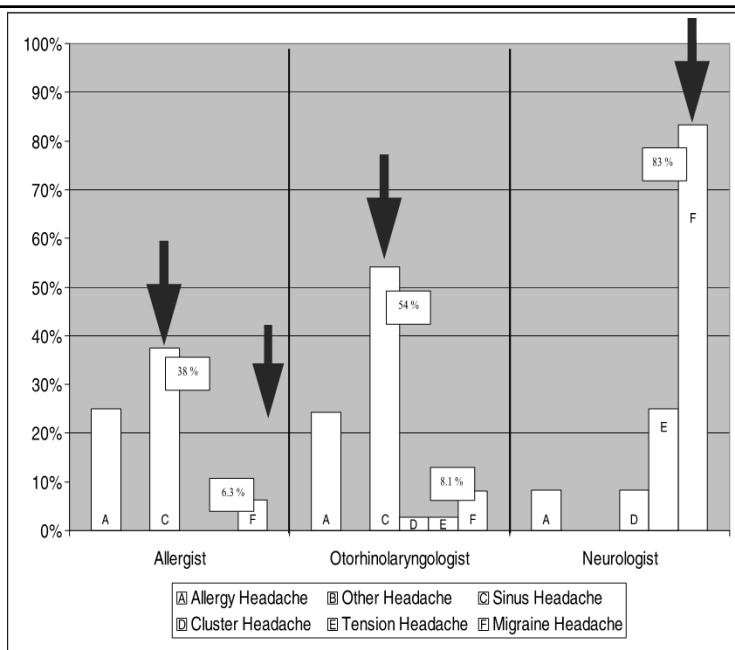
MIGRAINE



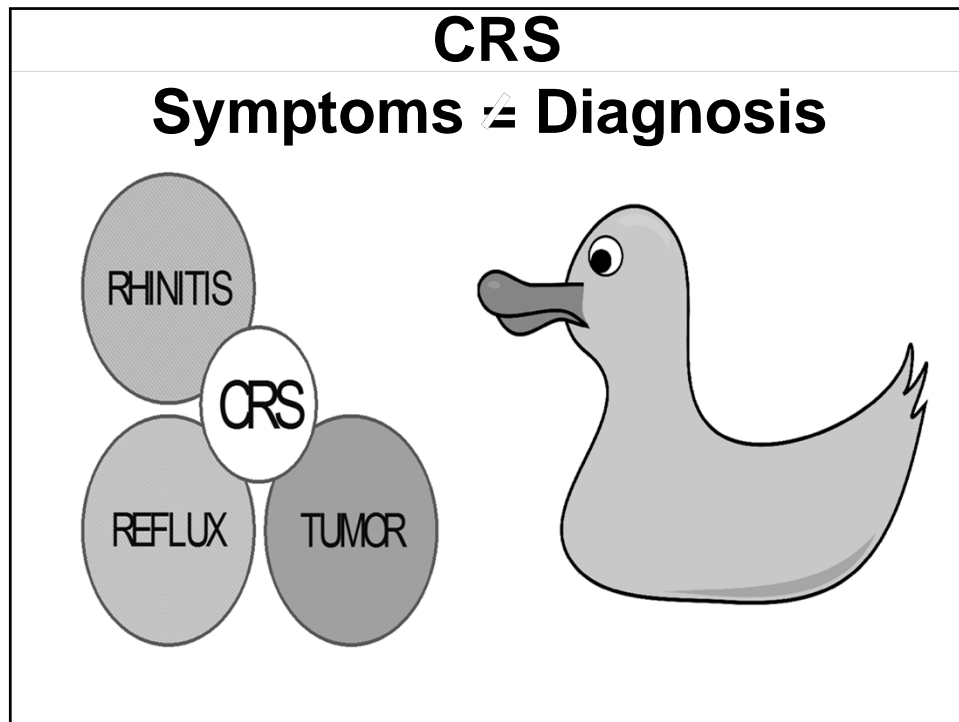
~50%
of patients who meet
criteria for migraine
have nasal or ocular
symptoms



Eross, E., Dodick, D. and Eross, M. (2007), The Sinus, Allergy and Migraine Study (SAMS). Headache: The Journal of Head and Face Pain, 47: 213–224. doi:10.1111/j.1526-4610.2006.00688.x



Eross, E., Dodick, D. and Eross, M. (2007), The Sinus, Allergy and Migraine Study (SAMS). Headache: The Journal of Head and Face Pain, 47: 213–224. doi:10.1111/j.1526-4610.2006.00688.x

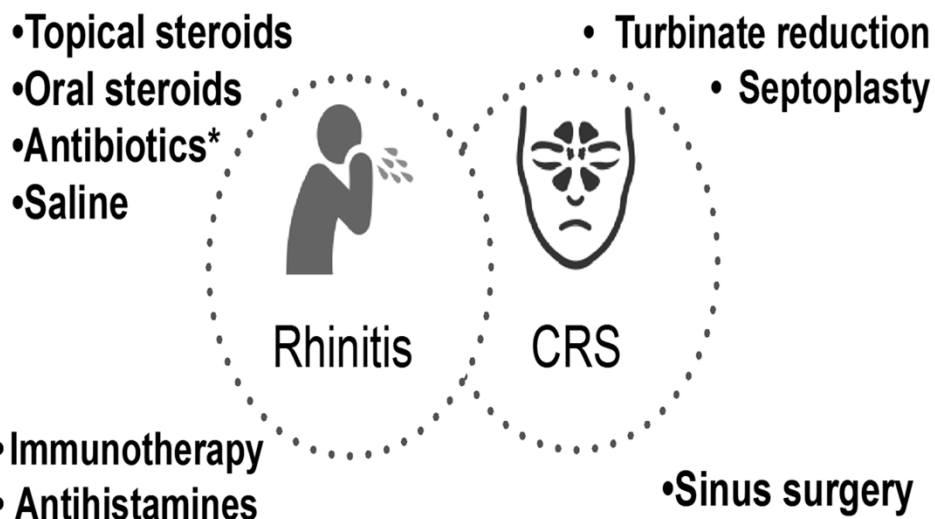


Allergic & Nonallergic Rhinitis	
Chronic Rhinitis (CRS)	
<ul style="list-style-type: none">o Association with CRSo present in 50-80% of patient with CRSo No definitive cause-effect relationship has been establishedo Overlapping symptom set and treatment paradigm	Rhinitis

Allergic & Nonallergic Rhinitis Chronic Rhinitis (CRS)

- **Overlapping symptom set**
 - patient satisfaction is a result of symptom improvement
- Managing the overlapping CR symptoms is critical for some patients

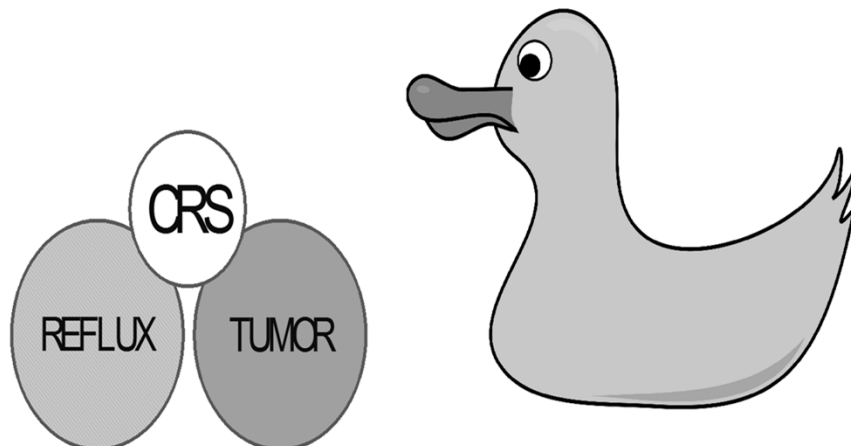
Chronic Rhinitis & CRS Similar Symptoms / Treatment



Allergic & Nonallergic Rhinitis Chronic Rhinitis



CRS Symptoms \neq Diagnosis



LARYNGOPHARYNGEAL REFLUX

LPR

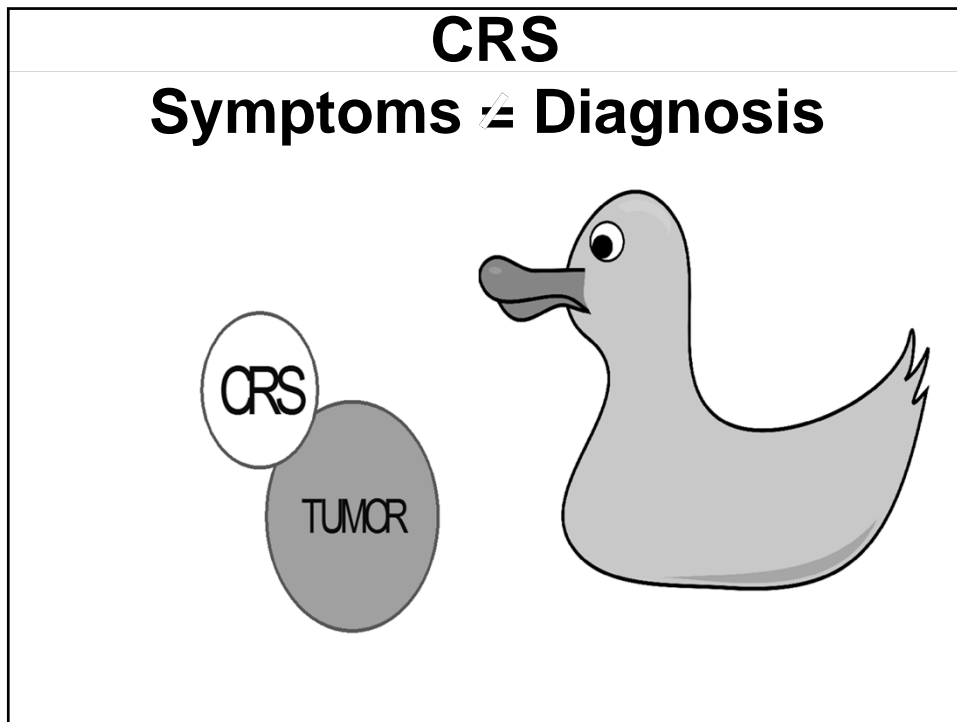
- No cause effect relationship
- + association with difficult-to-treat CRS
- **Mimic CRS**
 - postnasal drip

REFLUX

LARYNGOPHARYNGEAL REFLUX

LPR

- Most patients do NOT have heartburn
- Dietary changes and acid reduction are mainstays of therapy
- “Normal” post nasal drip from nose mistaken as etiology to symptoms



Benign & Malignant Tumors
Sinonasal Tumors

- o Commonly mistaken for sinusitis
- o especially during early phase
- o malignant tumors tend to be advanced at time of diagnosis
- o small tumors in paranasal sinuses have paucity of symptoms

Tumor

Benign & Malignant Tumors

Suggestive Symptoms

- Unilateral
- Nasal obstruction
- Epistaxis
- Progressive

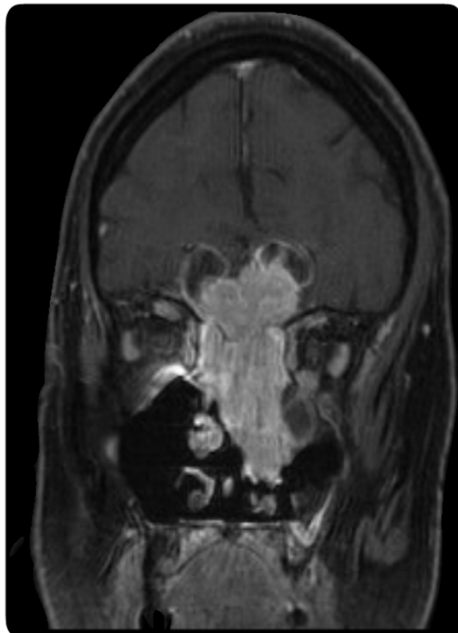


Benign & Malignant Tumors

Suggestive Symptoms

- New and different
- Unresponsive
- Pain, numbness
- Visual changes
- Loose teeth





Acute and Chronic Rhinosinusitis Summary

- Acute rhinosinusitis
 - viral > Bacterial
 - recurrent acute bacterial rhinosinusitis
 - surgery may be indicated with 4 episodes / yr
 - endoscopy may help identify candidates

Acute and Chronic Rhinosinusitis Summary

- Chronic rhinosinusitis
 - unclear etiology in many cases
 - medical therapy +/- surgery aimed at symptom resolution
 - symptoms overlap with other disorders