

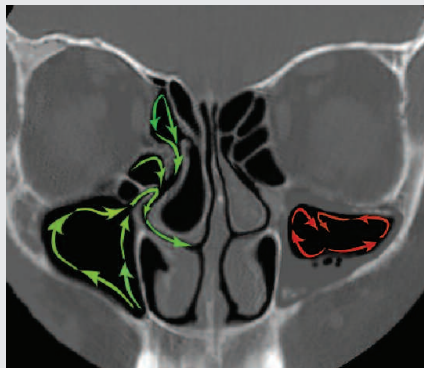


ALLERGIES, SINUSITIS & TARGETED ENDOSCOPIC SINUS SURGERY

Allergies and Sinusitis

The statistics on sinusitis is staggering, with 31 million adults being affected annually. In the late 1990s the cost was estimated to be \$6 billion, which has only increased since then. The increase in the number of ads on TV and print media about allergy remedies and medications is a reflection of the upward trend in expenditure and the prevalence of the disease (second to advertising for PPIs, and preceding ED meds).

For many decades it was believed that chronic rhinosinusitis was as a consequence of **persistent infection**, thus the prevalent use of antibiotics. It is, however, clear the problem is more complex. Factors that cause or contribute to chronic sinusitis include those that cause *inflammation, obstruct the sinus openings and impair mucous flow out of the sinuses (red arrows)*. Any treatment of sinusitis both acute and chronic must address all these issues. Thus treating an acute sinus infection with antibiotics alone makes little sense if the obstruction of the sinuses is not addressed by decongestants and/or nasal sprays.

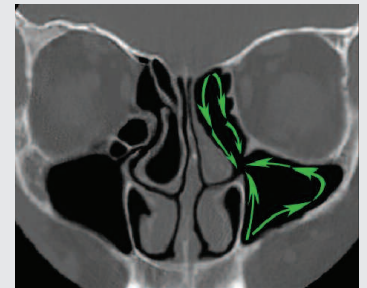
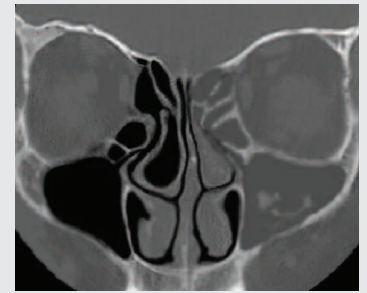


It is commonly believed that **allergies** are the most common cause of chronic sinusitis; they are clearly present in a majority of patients, but they are not the only factor because prolonged immunotherapy does not in and of itself cure a majority of cases. A predisposing local pro-inflammatory condition must exist in patients with chronic sinusitis. This also explains why sinus surgery alone does not cure most chronic sinus disorders.

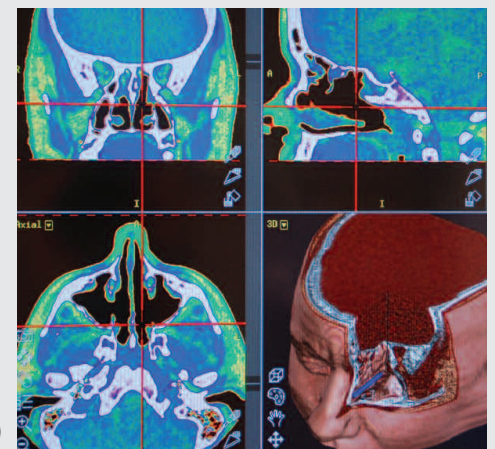
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Targeted Endoscopic Sinus Surgery (TESS)

Sinus Surgery has undergone revolutionary changes reflective of our better understanding of the intricate nature of the sinuses. Endoscopic technology allowed trans-nasal access to the sinuses, and endoscopic sinus surgery was born. But our understanding of the sinuses and their physiologic function and healing ability lagged. The era of radical sinus surgery and empty nose syndrome is behind us. Now the objective is to create a naturally functioning sinus with minimal trauma to the mucosa as to assure appropriate mucous flow.



Targeted Endoscopic Sinus Surgery (TESS) is a focused technique of treating chronic sinus disorders with minimal tissue trauma that maximizes muco-ciliary flow. The addition of **image guidance technology** not only allows a more complete operation by showing the exact anatomy of the convoluted ethmoid system live during surgery, but also confirms proximity to the surrounding structure (orbit, brain, optic nerve...) and decreases the risk of surgery. Combining image guidance and *atraumatic* techniques such as **balloon sinuplasty** makes TESS a highly successful surgery



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ALLERGIES, SINUSITIS & TARGETED ENDOSCOPIC SINUS SURGERY

Allergies and Sinusitis *(Continued)*

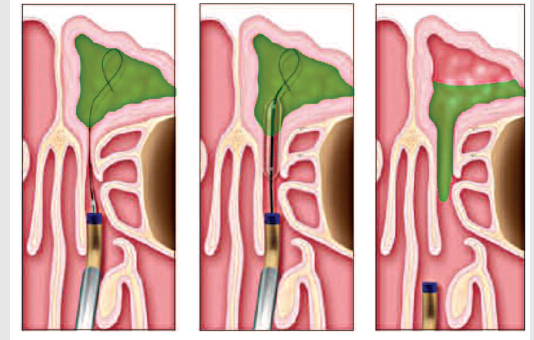
Obviously, in a majority of cases the cause for chronic sinusitis is multi-factorial, and that treatment of only one facet of the problem is doomed to failure. ***Having a close bond with the patient and an ardent relationship with their primary physician and allergist is part of a successful strategy.*** Often times multiple different regimens have to be used in order to come to the most successful solution, and even then the problem is not solved but rather just controlled.

A special subset of chronic rhinosinusitis is that form accompanied by severe **polyps** extending into and sometimes filling the nasal cavity. Polyps represent severely swollen lining from the sinus and nasal wall that obstructs, sometimes completely, the nose and sinuses. Chronic allergic aspergillosis of the sinuses as well as aspirin hypersensitivity and asthma (Samter's triad) are both associated with extensive polyps, indicating that disturbances in regulation of inflammation are capable of causing polyps. The fact that complete surgical removal of the polyps and infection often is followed by the rapid return of polyps would indicate that some sort of malfunction in the control of inflammation, rather than the mere presence of bacteria or anatomic factors, underlies the development of chronic polypoid rhinosinusitis.

Additionally, **biofilm** formation by microorganisms in the mucus blanket allows organisms to flaunt the efforts of the immune system and antibiotics to eliminate them. Biofilms are a state of bacterial life characterized by the formation of a starch-like barrier to protect the encased organisms, which slow down their metabolic and growth behavior as well. Most sinus infections are associated with biofilm formation. Anti-adhesion substances, such as xylitol, show promise in preventing the attachment of organisms before they can form biofilms. ***Treating chronic sinusitis and nasal allergies can be complex, prolonged, demanding, and very rewarding.***

Sinus Surgery *(Continued)*

with a much simpler recovery and a lot less pain. Packing is rarely used, as a consequence, there is little tissue trauma and less chance of post-operative bleeding. The healing process is also much more predictable, especially when patients are followed routinely in the immediate post-operative period to assure no build up or scar is formed



that could obstruct the sinuses again. Regular follow up with the otolaryngologist and allergist after surgery assures optimal results. A patient that has sinus surgery and has little follow-up is destined to have revision sinus surgery.

Airway and Reconstructive Surgery

Nasal airway obstruction is a very common problem and when medically treatable options have been exhausted surgery becomes an option. Although the surgery itself may be simple, pre-operative planning is vital to ensure all anatomical causes of the problem are addressed. That may be as simple as turbinate reduction, or as complex as a total nasal reconstruction, as in the case of the patient with auto-immune disorder affecting the cartilages (Relapsing Polychondritis).

