6.0 EAR NOSE AND THROAT

LAST REVISED: APRIL 2025 LAST REVIEWED: APRIL 2025

6.1 RHINITIS

Last Revised: April 2025 Last Reviewed: April 2024

AEROMEDICAL CONCERNS: Acute rhinitis is often accompanied by mucosal inflammation that can manifest as nasal congestion, rhinorrhea, and/or sinus pressure. At a minimum, these symptoms are distracting during flight and may affect occupational performance. If inflammation progresses to mucosal edema, the function of the paranasal sinuses and the eustachian tubes are often impaired. This may result in **sinus or middle ear barotrauma** with the potential for in-flight incapacitation and prolonged periods of grounding.

Routine treatment of rhinitis is highly effective in managing symptoms. However, certain medications may have side effects that are incompatible with aviation and/or difficult to administer in the deployed environment. Since many of these drugs have Over-The-Counter availability, the FS shall maintain an active role in prescribing, administering, and monitoring the safest "aviation approved" medications (Table 1).

FS MANAGEMENT: Rhinitis is one of the most common diseases affecting adults. There are many causes for chronic rhinitis and it is typically sub-classified into 3 major areas: allergic rhinitis (AR), non-allergic rhinitis (NAR), and infectious rhinitis (IR).

AR is estimated to occur in 1 out of 6 Americans. It can be defined as an IgE-mediated inflammatory response of the sinonasal mucous membranes after exposure to an allergen. Nasal congestion, rhinorrhea, sneezing, post-nasal drip, lacrimation, and pruritis (nasal, ocular, or palatal) are common symptoms. When evaluating the AR patient, it is important to determine the temporal pattern (seasonal vs perennial), frequency, severity, and suspected triggers of these symptoms. These elements will typically guide an initial treatment approach and further define the extent of therapy.

NAR (Vasomotor Rhinitis, Non-allergic rhinitis with nasal eosinophilia, etc.) can mimic AR and often consists of prominent nasal congestion and post nasal drip with associated rhinorrhea and sneezing. The nasal congestion is often reported as alternating, sometimes severe, and may be triggered by specific factors to include: temperature and humidity changes, odors, irritants, recumbent positioning, and emotion.

IR is typically acute, readily diagnosed, and effectively managed with supportive care and/or antibiotics. These episodes typically reflect a temporary illness and the aviator should receive a down-chit until a valsalva maneuver is easily performed and rhinitis symptoms have resolved.

Infrequent IR is Not Considered Disqualifying unless symptoms are consistent with chronic rhino- sinusitis (see Section 6.2).

*Other common causes of rhinitis include: rhinitis medicamentosa, laryngopharyngeal reflux, and nasal polyposis. Any of these disorders are considered disqualifying for aviation and will require an ENT evaluation with subsequent waiver determination.

REQUIRED ELEMENTS OF AN AEROMEDICAL RHINITIS EVALUATION:

1. Diagnosis and clinical management documented on DD 2807/2808
2. Nasal speculum exam documented
3. **Rhinitis Worksheet-** Ensures associated co-morbidities are addressed and pertinent clinical history are considered.

FS management of chronic rhinitis should focus on determining the etiology and treating symptoms with common "aviation approved" medications (Table 1).

Medication Class	Generic	Common	Route	Use Restrictions (see *Note 3*)
Antihistamines 2nd generation (see *Note 2*)	Loratidine Desloratidine Fexofenadine	Claritin Clarinex Allegra	Oral	7 day grounding for initial use
Antihistamines Topical	Azelastine HCL	Astelin	Topical	7 day grounding for initial use
Nasal Steroids	Fluticasone Mometasone budesonide	Flonase Nasonex Rhinocort	Topical	None
Leukotriene receptor antagonist	Montelukast	Singulair	Oral	7 day grounding for initial use
Mast cell stabilizer	Cromolyn sodium	Nasalcrom	Topical	None

Nasal Saline Rinse		**Neilmed/ AYR**	**Topical**	**None**

Note 1: Aviation approved medications listed above should always be trialed before using allergy formulations that require a waiver.

Note 2: Zyrtec, Xyzal, and *any antihistamine combined with a Decongestant* is **CD** and will require a waiver.

Note 3: 7 day Grounding period applies to "initial" use of each individual medication. (Ex. Switching from Claritin to Allegra requires a new grounding period despite both being oral antihistamines.)

If rhinitis symptoms are not well controlled using above medications; the condition is considered disqualifying and an ENT and/or Allergy consultation is required.

Immunotherapy: ENT/Allergy consultants may offer allergy immune therapy (AIT) to patients with Allergic Rhinitis who have inadequate response to pharmacologic therapy. AIT involves controlled repetitive dosing of identified allergen(s) in order to increase immune tolerance. Although AIT can be highly effective, it typically requires a prolonged course (2-5 years) of regularly scheduled treatments with an ENT or Allergy subspecialist. AIT is typically delivered using subcutaneous injections-"subcutaneous immunotherapy (SCIT)", or by sublingual instillation in the form of drops or tablets-"sublingual immunotherapy (SLIT)". Both methods are logistically challenging for the military aviator and should only be pursued if topical sprays and/or non-sedating antihistamines are ineffective.

All forms of AIT require an initial "ramp up" period to achieve clinically effective doses of the allergen(s) being administered. During this treatment phase, the individual will be in a down status. **After reaching **maintenance levels** for all allergens and achieving relief of symptoms, the member may be considered for a waiver. **

After AIT is waived, the “type” of ongoing therapy (SCIT or SLIT) will dictate additional grounding requirements. Administration of SCIT has a risk of anaphylaxis so that a 30 minute period of observation is necessary after each shot in the clinic. A **12 hour grounding period is required after each shot.** SLIT has very low risk of anaphylaxis so only the 1st dose is administered in the clinic with a 30 minute observation period. Subsequent SLIT administration is typically done daily at home and therefore does not have any observation periods or 12 hour grounding requirements. With SLIT, it may not take as long to get to an initial maintenance dose, but there are often subsequent changes made to the concentration of individual allergens in the solution. **During maintenance therapy, if the concentration of any allergen in the SLIT or SCIT formulation is changed, the aviator will be placed in a renewed down status for 7 days in order to be sure that there are no new side effects.**

When using AIT, logistical restrictions must be clearly delineated to the aviator. The proper administration of immunotherapy should be coordinated with the member's immediate flight status so that minimal impact on the mission is achieved.

WAIVER CONSIDERATIONS: *Uncomplicated* Rhinitis is **NCD!** Patients with a history of rhinitis after age 12 must meet ALL of the following criteria to be considered uncomplicated.

1. Symptoms must be effectively managed with any combination of aviation approved medications (Table 1).
2. There must be no use of allergy immunotherapy (AIT) within the past 12 months.
   a. Active use of AIT requires a waiver.
   b. If an individual on a prior waiver for AIT has completed treatment and 12 months have elapsed since last dose, the member may request removal of the waiver.
   c. *Applicants* who have previously used AIT with a last dose greater than 12 months ago, DO NOT require a waiver if symptoms are adequately controlled.
3. Anterior rhinoscopy should be normal. There should be no evidence of a significant obstructive anatomical deformity, mucosal disease, or purulent drainage.

** The nasal exam is optimized when using a nasal decongestant. If uncertain about your exam findings, seek ENT consultation. **

4. Although not required, if sinus imaging is obtained during any clinical evaluation, there should be no evidence of chronic mucosal disease or obstructive sinus or ostiomeatal complex (OMC) pathology. * Non-obstructive maxillary mucus retention cysts are the exception and are NCD.
5. Rhinitis Worksheet findings are considered benign.

If the conditions outlined above are not met, then Rhinitis is CD and the member is NPQ. Specialty consultation with ENT and/or Allergy is required for further evaluation and treatment. Waivers will be considered on a case-by-case basis.

Waiver Submission Requirements for Rhinitis that is CD

1. Discussion statement regarding why Rhinitis is CD
2. Completed Rhinitis Worksheet
3. ENT and/or Allergy consultation
4. Results of any further tests, imaging, and/or recommended treatment.

ICD-10 CODES/DIAGNOSIS:
J30 Vasomotor and allergic rhinitis
J30.0 Vasomotor rhinitis
J30.1 Allergic rhinitis due to pollen
J30.2 Other seasonal allergic rhinitis
J30.5 Allergic rhinitis due to food
J30.81 Allergic rhinitis due to animal hair dander
J30.89 Other allergic rhinitis
J30.9 Allergic rhinitis, unspecified
J31.0 Chronic rhinitis

RHINITIS WORKSHEET

MEMBER SECTION

1. Have you ever been diagnosed with allergic or non-allergic rhinitis? ☐ Yes ☐ No

2. What symptoms do you typically demonstrate?
☐ Nasal drainage ☐ Nasal Congestion ☐ Sneezing ☐ Itching ☐ Eye Tearing

3. What is the frequency of your symptoms?
☐ Seasonal ☐ Year round

4. How often do you require medication to manage your symptoms?
☐ Never (skip to question 6) ☐ Occasional ☐ Daily

5. What medications have you used to manage your symptoms in the past?
☐ Claritin/ Clarinex ☐ Allegra ☐ Zyrtec/ Xyzal ☐ Atrovent (Ipratropium Bromide)
☐ Nasal Steroids (flonase, Nasonex, rhinocort) ☐ Nasal Antihistamine (Azelastine)
☐ Nasal Saline Rinses ☐ Singulair (monteleukast) ☐ Other:
_____

6. What medications do you currently use to manage any of your symptoms?
☐ None ☐ List Meds: _____

7. Have you ever been prescribed immunotherapy? ☐ Yes ☐ No (go to next question)
If YES, what type? ☐ Allergy shots ☐ Allergy drops
Have you used immunotherapy within the last 12 months? ☐ Yes ☐ No
If using immunotherapy, are you on a stable maintenance dose? ☐ Yes ☐ No
If immunotherapy discontinued, when was last dose? _____

8. After the age of 12, have you ever been diagnosed with any of the following conditions?
☐ Asthma ☐ Atopic Dermatitis ☐ Sleep disordered breathing ☐ Chronic Sinusitis ☐ Chronic Otitis Media

9. Have you ever experienced Ear or Sinus Barotrauma? ☐ Yes ☐ No
If yes, describe incident? _____

I CERTIFY that the above is TRUE to the best of my knowledge _____
MEMBER signature **Date**

FLIGHT SURGEON SECTION

Anterior Rhinoscopy (Nasal Speculum Exam) within normal limits? ☐ Yes ☐ No
If no, describe findings: _____

Ear Exam within normal limits and TM mobility demonstrated? ☐ Yes ☐ No
If no, describe findings: _____

ENT/ Allergy Consultation ☐ Yes ☐ No
Recommendations: _____

AEROMEDICAL DISPOSITON

☐ CD ☐ WR, routine submission ☐ WNR, _____ ☐ NCD

FS Signature/Stamp: _____

Date		**Name**	
Aviation Duty		**DOD ID #**	

6.2 CHRONIC SINUSITIS/SINUS SURGERY

Last Revised: Nov 2023 Last Reviewed: Nov 2023

AEROMEDICAL CONCERNS: Chronic sinusitis is of particular concern because sinus barotrauma has the potential for in-flight incapacitation, prolonged periods of grounding, and other symptoms affecting performance. Patients with chronic sinusitis may have a wide variety of upper respiratory symptoms (congestion, facial pressure, postnasal drip, cough, Eustachian tube dysfunction) that can lead to frequent trips to sick call and time in a down status, thus impacting squadron flight schedules and mission accomplishment.

TREATMENT: Chronic sinusitis can be relatively asymptomatic and may only come to the attention of the flight surgeon after the member suffers an episode of sinus barotrauma. On the other hand, there may be nasal congestion, persistent or intermittent cough, postnasal drainage, facial pressure, and low-grade malaise for many months before the flight surgeon is consulted. Chronic sinusitis is a multifactorial inflammatory condition, and medical management should involve consistent use of topical nasal steroids and saline irrigations at a minimum. Additional treatments such as leukotriene inhibitors, antihistamines and antibiotics should be tailored to the individual clinical presentation. Surgical management with Functional Endoscopic Sinus Surgery (FESS) or balloon sinuplasty may be an effective adjunct to medical management in refractory cases. Balloon sinuplasty may be used to treat some cases of recurrent acute sinusitis and chronic rhinosinusitis without polyposis refractory to medical management. Surgery may be considered sooner in aircrew because many flying personnel may not be able to do their jobs until the disease is well-managed.

Although this approach may seem aggressive, it can be effective in eliminating disease and returning aircrew to flying sooner than medical management in some cases. Not all ENT surgeons may be comfortable with recommending early surgery, especially if the patient is asymptomatic on the ground and their CT shows only minimal disease. When that “minimal" disease is in the ostiomeatal complex, it can have a profound effect on the sinuses’ ability to ventilate and thereby lead to sinus barotrauma. Although there are several potential complications associated with sinus surgery, the most relevant concern is that patients with chronic sinusitis treated with surgery have an approximately 10% chance of requiring either revision or additional surgery at some point in the future. Chronic sinusitis can persist or recur despite successful treatment in the past, so the flight surgeon should have a relatively low threshold for treatment or for referral back to ENT if symptoms return.

WAIVER: Students and designated aviation personnel with chronic sinusitis or history of sinus surgery are NPQ. Waivers should be requested after the disease has been successfully managed with medical or surgical treatments. If surgery - Functional Endoscopic Sinus Surgery (FESS) or balloon sinuplasty - is performed, the site must be healed and free of active disease as demonstrated by an endoscopic examination performed by the surgeon before the patient can return to flight duties. This may take 4 to 8 weeks after FESS, depending on the extent of disease and procedure. Aircrew members who undergo balloon sinuplasty should be down for minimum two weeks following the procedure and be cleared by the specialist with an endoscopic evaluation.

Regardless of treatment method, the patient must demonstrate that his/her sinuses are able to tolerate pressure changes once cleared. A “functional check” is invaluable in testing whether the member will do well upon returning to flying. Although it seems obvious that the functional check is necessary in someone who had suffered barotrauma previously, it is also necessary in post-surgery patients who never had barotrauma since it is possible for the surgery to result in scarring that can compromise sinus ventilation. A hyperbaric chamber run down to 60 feet or a flight in an aircraft (not in control) that includes touch and go landings from 5,000’ and

10,000' will demonstrate that the individual is able to tolerate pressure changes. However, any approximation to a mission flight profile on their current platform (e.g. tilt rotor or rotary) may suffice. Hypobaric chambers are still in use by the Army and the Air Force, so if you are near one of their hypobaric chambers, you could arrange a hypobaric functional chamber run.

The Navy Diving Medicine Community developed the following process (BUMEDNOTE 6410, 10 Feb 2017) which can be used to evaluate patients for a return to aviation duties once cleared for full duty by the patient's physician or surgeon:
"(Aviation) personnel do not require a diving duty physical exam but must have a current aviation duty physical exam and be otherwise cleared for aviation duty by a Flight Surgeon prior to pressure testing. Upon receipt of a written referral or consultation from a designated Flight Surgeon, the cognizant Undersea Medical Officer will coordinate performance of the pressure test with the local Navy recompression chamber."

For Class III and Class IV aviators (Air Traffic Controllers, Flight Deck Personnel, UAV operators) a history of chronic sinusitis is not necessarily disqualifying "unless symptomatic and requiring frequent treatment." (MANMED 15-94) Thus, Class III or Class IV personnel that require chronic treatment or sinus surgery to manage their symptoms would be NPQ. A waiver will be considered when the patient reports that his/her symptoms have significantly improved on stable medical management or after surgery. **A demonstration of ability to tolerate pressure changes is not required for non-flying personnel.**

Applicants with a history of chronic sinusitis or sinus surgery are NPQ. A waiver may be requested after he or she is free of disease, as indicated by a recent ENT consultation with documentation of an endoscopic examination and/or a sinus CT – if performed. If surgery has been done, enclose any pre- and postoperative notes as well as the operative report. In addition, **some evidence of the applicant's ability to handle pressure changes should be documented, regardless of treatment method**. Pressure chambers are not generally accessible to civilians, so look for a history of recent successful SCUBA diving or aerobatic flying. Many individuals have not done either of these, so please include documentation of their ability to tolerate commercial flights or diving to a depth of 10-12' of water. Make every attempt to have military applicants perform a barofunction test in a chamber or functional test flight.

THERE IS NO REQUIREMENT FOR A POST-OPERATIVE CT SCAN IN PATIENTS WHO HAVE BEEN TREATED WITH SURGERY FOR CHRONIC SINUSITIS. Individuals who have had successful surgery will often have persistent changes on a CT scan that are of no clinical significance. We are more interested in the functional outcome. If the surgeon has documented a good surgical result with an endoscopic exam and the individual has demonstrated a good functional result with a functional test, a waiver is generally recommended and usually granted. Depending on the severity of their disease and extent of surgery, aviators must have an annual ENT consultation with nasal/sinus endoscopy for a period before requesting a routine submission if the patient remains asymptomatic. The following is the usual provision in the waiver endorsement from NAMI: "Annual ENT evaluation with endoscopy. After (2 or 3) years, if patient there is no evidence of recurrent sinus disease, may request change to routine submission. After that time ENT evaluation is necessary only if clinically indicated."

INFORMATION REQUIRED (INITIAL WAIVER):

1. Detailed information on the events that led to the diagnosis.
2. Physical examination and ENT consultation notes.
3. CT scan report(s) - if performed.
4. Details on the treatment provided or operation performed.
5. If surgery performed, copies of the pre- and post-op notes and dictated operation report.
6. If surgery performed, postoperative findings and clearance recommendations, including endoscopic examination findings.
7. Documentation of successful post-treatment/post-surgical barofunction via functional flight, hyperbaric chamber, or other means (for class I and II only).

In many cases, it is appropriate for a Local Board of Flight Surgeons to return the member to a flying status while awaiting the waiver if they meet the above criteria. ***REMEMBER: Grounding physicals are required for any condition resulting in a grounding of greater than 60 days and Local Boards of Flight Surgeons are not appropriate after grounding by the Waiver Authority.***

ICD-10 CODES:

J32.0 Chronic Maxillary Sinusitis
J32.1 Chronic Frontal Sinusitis
J32.2 Chronic Ethmoid Sinusitis
J32.3 Chronic Sphenoidal Sinusitis
J32.4 Chronic Pansinusitis
J32.8 Other chronic sinusitis
J32.9 Chronic sinusitis unspecified

CPT Codes for Functional Endoscopic Sinus Surgery (FESS):

31240 Nasal/sinus endoscopy, surgical; with concha bullosa resection
31253 Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior), including frontal sinus exploration, with removal of tissue from frontal sinus, when performed
31254 Nasal/sinus endoscopy, surgical with ethmoidectomy; partial (anterior)
31255 Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior)
31256 Nasal/sinus endoscopy, surgical, with maxillary antrostomy
31257 Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior), including sphenoidotomy
31259 Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior), including sphenoidotomy, with removal of tissue from the sphenoid sinus
31267 Nasal/sinus endoscopy, surgical, with maxillary antrostomy; with removal of tissue from maxillary sinus
31276 Nasal/sinus endoscopy, surgical with frontal sinus exploration, including removal of tissue from frontal sinus, when performed
31287 Nasal/sinus endoscopy, surgical, with sphenoidotomy
31288 Nasal/sinus endoscopy, surgical, with sphenoidotomy; with removal of tissue from the sphenoid sinus

CPT Codes for Balloon Sinuplasty:

31295 Nasal/sinus endoscopy, surgical, with dilation (eg, balloon dilation); maxillary sinus ostium, transnasal or via canine fossa
31296 Nasal/sinus endoscopy, surgical, with dilation (eg, balloon dilation); frontal sinus ostium
31297 Nasal/sinus endoscopy, surgical, with dilation (eg, balloon dilation); sphenoid sinus ostium
31298 Nasal/sinus endoscopy, surgical, with dilation (eg, balloon dilation); frontal and sphenoid sinus ostia

6.3 NASAL/SINUS POLYPS

Last Revised: Oct 2024 Last Reviewed: Oct 2024

AEROMEDICAL CONCERN: Chronic rhinosinusitis with nasal polyps (CRSwNP) is an inflammatory condition of the nose and paranasal sinuses that leads to development of nasal polyps. In this condition, nasal polyps arise as painless, benign growths that may gradually enlarge to restrict or block sinus drainage and ventilation. This commonly results in chronic rhinorrhea, nasal congestion, a decreased "sense of smell", and frequent infections. Obstructed sinuses pose a significant risk for sinus barotrauma that can lead to in-flight incapacitation and prolonged periods of grounding. Decreased olfaction also compromises the timely identification of hazardous odors, fumes, and smoke that may occur in the aviation environment.

FS MANAGEMENT:
CRSwNP is commonly diagnosed in aviators with a history of allergic rhinitis, chronic sinusitis, sinus barotrauma, or those with decreased olfaction. This condition may also be discovered in the asymptomatic patient during a routine flight physical examination. When aviators are suspected of having nasal polyps, an ENT referral should be pursued. ENT endoscopic evaluation will determine disease severity, help guide medical management, and may identify sinonasal abnormalities that require early surgical intervention.

Initial medical management is directed towards treating any underlying inflammatory or infectious conditions that may lead to resolution of obstructive nasal polyps. Routine therapies includes: (a) avoidance of known allergens, (b) nasal saline irrigations, (c) nasal steroids, (d) oral/nasal antihistamines, and (e) oral/nasal antibiotics. Depending upon etiology, systemic steroids and allergy immunotherapy may be used as adjunctive therapies. If medical therapy is effective in eliminating obstructive polyps, a post-treatment endoscopic exam and sinus CT will be required to ensure complete resolution of sinus disease for waiver determination.

If CRSwNP is refractory to routine medical management, then surgery is often recommended. Functional Endoscopic Sinus Surgery (FESS) is a minimally invasive surgery which uses endoscopes to remove obstructive nasal polyps and enlarge sinonasal drainage pathways. The improved sinus ventilation allows for easier access of topical medical therapies and a potential return of normal function. Since surgical treatment is highly effective in removing obstructive disease and post-operative recovery usually occurs within 4 weeks, aviators commonly pursue early surgical intervention to resume flying sooner.
Whether medically or surgically treated, CRSwNP is a chronic inflammatory condition that often requires continued medical management and surveillance. If symptoms are well controlled with aviation approved medications and ENT surveillance exams demonstrate effective treatment, an aviator would be eligible for a waiver. For aviation, effective treatment occurs when sinus drainage pathways are clear and when nasal polyp burden is either eliminated or determined to be minimal and non-obstructive on an ENT endoscopic exam.

In severe cases of CRSwNP (where significant disease recurs after conventional medical management AND completion of a comprehensive FESS procedure), prolonged courses of systemic steroids and/or biologics may be recommended. If the need for systemic steroids is

infrequent (<1 course/year) and there have been no occurrences of sinus barotrauma, the member may still be eligible for a waiver. If systemic steroid use is prevalent, a waiver is less likely to be recommended.

Biologic agents are a newer treatment modality that uses monoclonal antibodies to target specific molecular pathways of inflammation. In 2018, Dupilumab (aka-Dupixent), Omalizumab and Mepolizumab are the only FDA approved add-on maintenance treatment for adults with inadequately controlled CRSwNP. Dupilumab is prescribed as a self-injectable medication that is delivered subcutaneously every 2 to 4 weeks. Although long term efficacy and safety data is unknown, clinical trials have demonstrated its ability to reduce polyp burden and improve subjective symptoms with very few adverse side effects. Dupilumab and other emerging biologic therapies are clinically promising. Yet, as a maintenance therapy, availability of these medications in forward-deployed operational environments may be challenging.
Since biologics are used to control severe, refractory cases of CRSwNP, they are disqualifying for all aviation classes with duties involving flying.

Radiologic Imaging Requirements and Comments:
1. CRSwNP patients managed *only with medical therapy* **do** require a post-treatment non-contrast CT scan of the sinuses to determine significant improvement with ostiomeatal (OMC) complex patency, or resolution of CRS.
2. *** *Surgically treated* CRSwNP patients **do not** require a post-operative CT scan unless clinically indicated. ****
3. Maxillary mucous retention cysts (MMRC) are routinely found as an incidental finding on various imaging modalities. When visualized on plain x-ray film, it may be difficult to determine whether a small, ovoid soft tissue density in the maxillary sinus is a MMRC versus a sinonasal polyp. If there are no clinical indicators to suggest CRSwNP (ie. recurrent sinusitis, recurrent barotrauma, polyps identified on exam), it is most likely a benign MMRC that does not require further evaluation and is NCD. If there is suspicion for underlying pathology, additional imaging with a CT scan or an ENT referral is recommended.

WAIVER: CRSwNP is considered disqualifying for all aviation duties involving flying (Class 1&2) and will require a waiver.

Applicants:

1. Presence of nasal polyps on a current exam is CD WNR.
2. Current use of biologic agent to control CRSwNP is CD WNR.
3. History of nasal polyps is CD with waiver consideration based on the following criteria:

A waiver may be considered if the polyps have been effectively treated with medical management or surgery (ie. Functional endoscopic sinus surgery) AND there is a one-year post treatment period with controlled symptoms and no evidence of polyp recurrence.

Designated:

1. Waivers are considered if the polyps have been effectively treated with medical management or surgery (ie. Functional endoscopic sinus surgery) AND the member is cleared by ENT to resume flying duties.
2. In designated aviators who meet clinical indications for Dupilumab or other biologic therapy, a waiver may be considered on a case-by-case basis.

Both Applicants and Designated:
1. Must demonstrate control of sinonasal symptoms on Aviation approved medications.
2. Must successfully complete a barofunction challenge to include a Chamber ride or functional test flight (backseat ride).

AMS information required for a CRSwNP waiver submission:
A. ENT evaluation
B. All Surgical Reports
C. Any Imaging Reports (ie. CT scans)
D. Surgeon's Post- Operative Notes. Usually 4-6 weeks s/p surgery, the note should include an endoscopic examination and recommendations for ongoing medical therapy and follow up.
E. Barofunction Test: Must Pass a Hyperbaric/Hypobaric chamber ride or functional test flight. If treated with surgery- Test should be completed no sooner than 4wks after the surgery and after the ENT surgeon gives clearance to fly. (see ARWG 6.2)

ICD-10 CODES:

J33.9 Nasal polyps, unspecified

J32.0 Chronic Maxillary Sinusitis

J32.1 Chronic Frontal Sinusitis

J32.2 Chronic Ethmoid Sinusitis

J32.3 Chronic Sphenoidal Sinusitis
J32.4 Chronic Pansinusitis

J32.8 Other chronic sinusitis

J32.9 Chronic sinusitis unspecified

J70.8 Respiratory conditions due to other specified external agents (AERD)

09BK4ZZ Excision Nasal Mucosa and Soft Tissue, Percutaneous Endoscopic Approach

6.4 DISORDERS OF THE SALIVARY GLANDS

Last Revised: April 2025 Last Reviewed: April 2024

AEROMEDICAL CONCERNS: Pain or discomfort will usually result from retained salivary stones, especially after eating or drinking. Tumors may interfere with oxygen mask fit.

WAIVER: Following successful treatment of salivary stones or tumors, a waiver may be granted provided there is no facial deformity or nerve damage that would interfere with flight duties.

INFORMATION REQUIRED:

1. Copies of all pertinent consultations
2. CT/MRI reports
3. Operative report (if applicable)
4. Pathology reports (if applicable)

If pathology reports indicate a malignant process, the following information is also required:

1. Oncology evaluation

TREATMENT: Stone removal or gland excision (partial or total) is compatible with waiver, as are most cases of benign tumor removal. Extensive surgery for malignancy may not be, so each case of malignancy will be considered in detail by NAMI ENT before a recommendation can be made.

DISCUSSION: Mixed tumors (pleomorphic adenomas) comprise 70% of all salivary gland tumors; only a small number of these (5-6%) are malignant. The great majority of salivary tumors (85%) occur in the parotid gland, and 70% of these are the benign mixed type. Another benign tumor, the Warthin's tumor, accounts for 10% of parotid neoplasms, while malignant tumors (in descending order of frequency: mucoepidermoid carcinoma; malignant mixed tumor; acinous cell, adenoid cystic, and squamous cell carcinomas), and other rare lesions account for the remaining 20%. Benign mixed tumors have a recurrence rate of approximately 2%, usually due to incomplete removal or seeding at the time of removal. Malignant tumors have a much higher rate of recurrence. With adenoid cystic carcinoma, 40% have metastasized by the time of diagnosis; 5-year survival is 45-82%, depending on the study, falling to as low as 13% at 20 years. The corresponding figure for adenocarcinoma is 49-75% at 5 years, with a drop to 41-60% at 10 years.

ICD-10 CODES:

C08 Malignant neoplasm of the other and unspecified major salivary glands
D11 Benign neoplasm of major salivary glands
D11.0 Benign neoplasm of the parotid gland
D11.7 Benign neoplasm of other major salivary glands
K11.2 Sialoadenitis
K11.3 Abscess of the salivary gland
K11.4 Fistula of the salivary gland
K11.5 Sialolithiasis
K11.8 Other diseases of salivary glands (includes stenosis and strictures)
K11.9 Disease of the salivary gland, unspecified (includes sialoadenopathy)

6.5 HEARING LOSS

Last Revised: April 2025 Last Reviewed: April 2024

AEROMEDICAL CONCERN: The inability to clearly hear cockpit radio transmissions and warning tones can have a significant impact on flight safety.

WAIVER: Waivers for hearing loss will be considered based on the degree of hearing loss and the member's resulting functional capability.

DISCUSSION:

Conductive hearing loss: Waivers following surgical treatment of conductive hearing loss may or may not be necessary, depending on the underlying pathology, extent of surgery, and final hearing results.

Uncomplicated repair of a traumatic tympanic perforation resulting in full correction and normal hearing is NCD.

Otosclerosis:
Stapedectomy or stapedotomy to treat otosclerosis is CD and requires a waiver.

- ***a.*** Designated pilots are grounded for three months following stapedectomy before a waiver would be recommended to SG1.
- ***b.*** For NFO and other Class II of Class III personnel who undergo a stapedectomy, a waiver is also considered for duty involving flying after three months.
- ***c.*** Bilateral stapedotomy will be considered for a waiver on a case-by-case basis.
- **d. Applicants with otosclerosis and a history of stapedotomy or stapedectomy are NPQ. Waivers may be considered on a case-by-case basis.**

Otosclerosis treated with observation is disqualifying and waiver required if the hearing falls below standards.

Vestibular Dysfunction or progressive sensorineural hearing loss: No waiver will be recommended if there are active signs of vestibular dysfunction, spontaneous nystagmus (see chapter 6.6), or if progressive sensorineural hearing loss (SNHL) is present in individuals with hearing loss of any variety.

Sudden Sensorineural Hearing Loss (SSNHL): **Be suspicious of sudden SNHL and have a low threshold for using tuning forks and requesting an urgent audiogram or ENT consult**. The longer it takes for SSNHL to be recognized, the less likely it is that intervention will be successful to restore hearing. Management includes oral or transtympanic steroids and/or hyperbaric oxygen. Some patients will recover most of their hearing with no intervention. The percentage of patients who recover serviceable hearing is improved with steroid treatment. Some patients with sudden SNHL will not recover and this will have a significant impact on their quality of life and may not be compatible with aviation duties.

A patient who has suffered a sudden SNHL may be considered for a waiver following ENT evaluation/treatment and after a suitable interval has elapsed in order to establish the stability of their hearing level (30 days at a minimum). Waivers may be considered after SSNHL based on underlying pathology (if identified), personnel class, hearing and speech reception scores following treatment, and results of functional hearing testing. If an individual has suffered severe sudden hearing loss and does not recover function despite aggressive treatment, it is less likely that a waiver will be recommended.

Asymmetric Hearing Loss: Unilateral sensorineural hearing loss presents few operational problems, but new or progressive unilateral loss can have significant medical implications and ENT consultation is necessary to rule out such conditions as a vestibular Schwannoma (see chapter 6.8).
It is important to recognize when asymmetry is present and be sure that it receives appropriate consideration and evaluation if indicated. Restriction from flying is not required during this workup. The guidelines for when to refer a patient for MRI of the IACs and/or ENT evaluation of asymmetric hearing loss are:

- Three contiguous frequencies that are each 10 dB or more worse than the same frequencies in the other ear,
- Two contiguous frequencies that are 15 dB or more worse than the same frequencies in the other ear, or
- One frequency that is 25 dB worse than the same frequency in the other ear.

Hearing Aid Use: Wearers of hearing aids will require a cockpit/in-flight hearing evaluation to demonstrate the ability of the subject to communicate adequately in that environment. Air traffic controllers will also need to have a functional hearing test completed by their supervisor or other qualified individual to document that they are able to communicate effectively with the aircraft that they are controlling and with tower personnel. Newer hearing aids that sit entirely within the ear canal are comfortable enough to be compatible with in-flight use, although they may not improve one's ability to hear in that environment and may be detrimental. ***All equipment must be tested for use in the aviation environment to make sure that it is compatible with systems.*** Therefore, an **in-flight hearing test should be performed both with and without the aid(s), if the individual intends to wear them.**

TREATMENT: Hearing loss may be improved with amplification (hearing aids) if surgical treatment is not indicated or reasonable, or the individual does not desire to pursue surgery. The use of hearing aids in flight is not necessarily advantageous due to possible interference with wearing of the helmet and the perceived lack of benefit in the noisy cockpit environment. Hearing aid users will often do well without the aids in the cockpit if they have a properly fitting helmet, wear noise attenuating plugs or Communication Ear Plugs (CEPs), and carefully adjust their radio volumes. Hence an in-flight hearing test provides the most information if performed both with and without the aid(s).

INFORMATION REQUIRED: *(Refer to ManMed section 15-85 for current hearing standards for applicants and designated personnel.)*

1. Audiology consult (audiogram must include speech reception thresholds and speech discrimination scores)
2. ENT consult
3. Surgical report (s) (if applicable)
4. Result of functional/cockpit hearing test if hearing loss persists following treatment/surgery that exceeds designated standards:

Hz 500	1000	2000	
dB 35	30	**50**	**(worse ear)**
dB 35	30	30	(better ear)

Functional Hearing Assessment: Testing in a multiplace aircraft will suffice for testing of aviators normally assigned to single seat aircraft, provided ambient noise levels are similar. It may be most practical to have the member repeat a list of common aviation phrases, such as checklist items and responses, air traffic control commands, air-to-air communications, etc. The list of phrases can be tailored to the aircraft and its mission. A third party with normal hearing can take the test at the same time so that there will be some means of comparison. Such testing should not be necessary unless the member fails to meet SG1 hearing standards that are listed above or is interested in trying a hearing aid in flight. Testing should also be considered in the rare instance of an aircrew member who is having communication difficulties in the aircraft despite an audiogram that shows pure tone thresholds to be above standards. A sample submission narrative for a functional hearing test follows.

Adjust this statement as necessary:

NARRATIVE STATEMENT FOR FUNCTIONAL HEARING TEST:

On (date)_____the subject, (name)_____had a functional hearing test performed at (location)___. The test was performed in (aircraft type) on the ground with the engine functioning and with the aircraft capable of achieving flight. (name)_____demonstrated that he/she was able to communicate clearly and effectively with the air traffic control personnel on the radio as well as with aircrew and ground crew personnel on the intercom. There were no errors in communication and he/she demonstrated effective understanding of instructions given over the radio. I was present during this test and witnessed his performance. (Alternatively you could state the pilot's name, or whoever it was, who witnessed the test and verified the performance.)

ICD-10 CODES:

H90.0 Conductive hearing loss, bilateral
H90.1 Conductive hearing loss with unrestricted hearing on the contralateral side
H90.11 Conductive hearing loss, right ear, with unrestricted hearing on the contralateral side
H90.12 Conductive hearing loss, left ear, with unrestricted hearing on the contralateral side
H90.2 Conductive hearing loss, unspecified
H90.3 Sensorineural hearing loss, bilateral
H90.4 Sensorineural hearing loss unilateral with unrestricted hearing on the contralateral side
H90.41 Sensorineural hearing loss, unilateral, right ear, with unrestricted hearing on the contralateral side
H90.42 Sensorineural hearing loss, unilateral, left ear, with unrestricted hearing on the contralateral side
H90.5 Unspecified sensorineural hearing loss
H90.6 Mixed conductive and sensorineural hearing loss, bilateral
H90.7 Mixed conductive/sensorineural hearing loss unilateral, unrestricted hearing on contralateral side
H90.71 Mixed conductive/sensorineural hearing loss right ear, unrestricted hearing on contralateral side
H90.72 Mixed conductive/sensorineural hearing loss left ear, unrestricted hearing on contralateral side
H80.8 Other otosclerosis
H80.81 Other otosclerosis, right ear
H80.82 Other otosclerosis, left ear
H80.83 Other otosclerosis, bilateral
Z96.29 Presence of other ontological and audiological implants (includes stapes replacement)
09B8 Excision of auditory ossicle, right
09BA Excision of auditory ossicle, left

6.6 PERIPHERAL VERTIGINOUS DISORDERS

Revised: March 2025 Reviewed: March 2025

AEROMEDICAL CONCERNS: All forms of vertigo involve some degree of incapacitation and safety risk. Aeromedical decision making to return personnel to flight duties should consider risk of recurrence, mission, platform, and flight responsibilities. Waiver recommendations will be considered on a case-by-case basis.

SUMMARY:

	Risk of recurrence	**Minimum time asymptomatic**
Vestibular neuritis	Minimal	4 weeks
Labyrinthitis	Minimal	4 weeks
BPPV	Variable	12 weeks (class I), 4 weeks
Meniere's disease	Variable/moderate	6 months
Superior semicircular canal dehiscence	<5% lifetime risk post-surgery	6 months (to SG3) 12 months (to SG1)

DISCUSSION:
A precise diagnosis is not always possible in vertigo cases. Waiverability is easier to determine in vertigo cases with diagnostic certainty. Cases of unexplained vertigo, dizziness or disequilibrium with no definitive diagnosis are generally not recommended for aeromedical waiver due to inability to accurately assess future recurrence risk.

VESTIBULAR NEURITIS:

- Vestibular neuritis (or neuronitis) is a common form of vertigo in young and otherwise healthy aviation personnel. It presents as isolated vertigo, lasting hours to days, and frequently preceded by a viral illness. Occasionally, the vertigo can be disabling enough to require vestibular suppressants such as diazepam or meclizine, which are not compatible with flight. Patients with vestibular neuronitis commonly have a protracted course of non-vertiginous imbalance lasting weeks to months after an episode. The use of vestibular suppressants can delay central compensation, so it is recommended that patients use them sparingly and only during the initial, acute vertiginous phase.
- The risk of recurrence for vestibular neuritis is low.
- If an individual has a viral illness associated with a brief (1-3 day) period of vertigo or disequilibrium followed by complete recovery of function and a normal neurologic evaluation (no evidence of vestibular dysfunction), then this can be classified as NCD. The individual may be returned to flight duties without need for a waiver if they remain completely free of symptoms for at least 4 weeks.
- More protracted cases of vertigo following viral illnesses should be fully evaluated with advanced vestibular testing, particularly in higher-risk personnel such as SG1 aviators. If an uncompensated vestibular deficit is identified, they will need to demonstrate complete

central compensation as indicated by vestibular testing performed by an audiologist or specialized physical therapist.
- Vestibular rehabilitation therapy improves recovery of patients with a protracted course of vertigo and referral is recommended.

LABYRINTHITIS:

- Vestibular considerations are the same for those with vestibular neuritis, however, labyrinthitis presentation includes sudden sensorineural hearing loss. This is an ENT emergency, requiring urgent ENT referral with aggressive oral steroid taper, transtympanic steroids treatment and/or hyperbaric oxygen.
- Degree of recovery of hearing (see ARWG section 6.5) and vestibular function will dictate the potential for a waiver. Consideration for a waiver will require, at minimum, a 4-week asymptomatic period, normal or compensated results of vestibular testing.

BENIGN PAROXYSMAL POSITIONAL VERTIGO (BPPV):

- Lifetime prevalence of BPPV was 2.4 percent (Brevern et al., 2007). Recurrences are common at 20-30% within the first year, and 50% of recurrences occurring over the first 6 months. Recurrence in USAF aviators reported at less than 1% in the first year and approximately 24% in five years after 6 months of remission (U.S. Air Force School of Aerospace Medicine, 2024).
- Canalith repositioning maneuvers (e.g. Epley Maneuver) expedite recovery. Advanced vestibular testing and/or therapy is not usually required but may be beneficial in cases with protracted symptoms or when the diagnosis is uncertain.
- Waivers for BPPV will be considered on a case-by-case basis, considering aviation personnel class, platform and mission. Aviation personnel with BPPV may be considered for a waiver when their symptoms have been completely resolved without recurrences for at least 4 weeks. A longer symptom-free period of 12 weeks should be considered for Class I, SG1 aviators, or in cases where there is diagnostic uncertainty.

MENIERE'S DISEASE:

- The exact pathophysiology resulting in "endolympatic hydrops" and Meniere's disease (MD) is unknown. MD results in unpredictable, recurrent symptoms of vertigo, aural fullness, tinnitus and fluctuating hearing loss that may progress to a significant and permanent impairment with the potential to become bilateral.
- Treatment includes low sodium diet, thiazide diuretics, and stress management. Vestibular sedatives such as diazepam or meclizine may be used for active vertigo, however these medications are not compatible with duties involving flight. Despite treatment, the underlying condition persists and is typically <u>not waiverable</u>. Surgery for MD or transtympanic middle-ear gentamicin therapy has variable results on vertigo. These treatments have not routinely been considered for waiver and will require one-on-one communication with the NAMI ENT Department or designated specialty SME.

- Waivers for MD are rarely recommended. They are considered on a case-by-case basis in those with prolonged remission, long term stability of symptoms, and normal function on vestibular testing using aeromedically appropriate non-sedating medical management or ablative therapy. If a waiver is granted for a pilot, he or she will have to demonstrate at least 6 months of being symptom free and will generally be recommended for SG3 only.

SUPERIOR SEMICIRCULAR CANAL DEHISCENCE (SSCD):

- SSCD can result in vertigo provoked by loud noises or pressure-changing maneuvers such as coughing, straining (including anti-G straining maneuvers), or sneezing. Other symptoms include aural fullness and autophony in the affected ear.
- Diagnosis can be confirmed with temporal bone CT imaging, audiogram (may show conductive hearing loss) and vestibular testing.
- Definitive treatment is surgical resurfacing or plugging of the superior semicircular canal.
- Waivers are considered on a case-by-case basis after successful treatment. Class I personnel will likely be limited to SG3, non-ejection seat aircraft.

NEUROLOGIC CONSIDERATIONS:

- Vestibular migraine: dizziness is a common symptom in patients with migraine.
    - Patients may have episodic symptoms described as vertigo, unsteadiness, or lightheadedness. These symptoms may be triggered by head movements, visual stimuli, and other common migraine triggers (stress, sleep deprivation, etc.).
    - There is wide variability reported in the temporal association of vertigo to the headache (before, during or after headache phase), but commonly the vertigo is associated with other migraine features (photophobia, phonophobia, nausea).
    - Symptomatic vestibular migraine is considered for a waiver on a case-by-case basis given the unpredictability of the symptoms, high prevalence of interictal symptoms, and non-aeromedically compatible medications typically recommended for treatment. See ARWG 10.5 for further headache waiver guidance.

WAIVER REQUIREMENTS:

1. Complete history components:
    a. Frequency
    b. Duration
    c. Severity
    d. Character of vertiginous attacks
    e. Type of maneuvers that provoke symptoms
    f. Presence or absence of associated symptoms such as hearing loss, aural fullness, tinnitus, headaches, or focal neurologic symptoms.
    g. Include past history of syphilis, mumps or other serious infections, inflammation of the eye, autoimmune disorder or allergy, and ear surgery.

2. Current physical including ENT and neurologic examination findings: nystagmus, balance, and results of Dix-Hallpike testing.

3. ENT evaluation.

4. Audiology evaluation including speech discrimination, tympanometry and acoustic reflexes.

5. Vestibular function testing (if completed): rotary chair testing, video nystagmography (VNG), vestibular evoked myogenic potentials (VEMP), electrocochleography (Ecog), dynamic posturography or dynamic visual acuity. Not every test is indicated and will depend on availability.

6. Results of vestibular rehabilitation therapy (if performed).

7. Results of follow up vestibular function testing with demonstration of resolution or compensation as indicated by vestibular testing (if applicable).

8. Neurology consult can be considered and should be included if completed.

9. Laboratory testing (when clinically indicated): consider CBC, ESR, TFTs, lipids, glucose, and syphilis serology.

10. Imaging (if indicated by diagnosis): pre/post-contrast MRI of the brain and internal auditory canal (IAC) to rule out retrocochlear pathology such as cerebello-pontine angle (CPA) tumors, multiple sclerosis, anatomical variants, etc. and/or temporal bone CT to rule out superior semicircular canal dehiscence.

ICD-10 CODES:
H81.0 Meniere's disease
H81.01 Meniere's disease, right ear
H81.02 Meniere's disease, left ear
H81.03 Meniere's disease, bilateral
H81.09 Meniere's disease, unspecified ear
H81.1 Benign positional vertigo
H81.10 Benign positional vertigo, unspecified
H81.11 Benign positional vertigo, right ear
H81.12 Benign positional vertigo, left ear
H81.13 Benign positional vertigo, bilateral
H81.39 Other peripheral vertigo
H81.391 Other peripheral vertigo, right ear
H81.392 Other peripheral vertigo, left ear
H81.393 Other peripheral vertigo, bilateral
H81.399 Other peripheral vertigo, unspecified
H81.4 Vertigo of central origin

H81.2 Vestibular neuronitis
H81.20 Vestibular neuronitis, unspecified
H81.2 Vestibular neuronitis, right ear
H81.2 Vestibular neuronitis, left ear
H81.2 Vestibular neuronitis, bilateral

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6.7 CHOLESTEATOMA

Last Revised: January 2023 Last Reviewed: January 2023

AEROMEDICAL CONCERNS: Cholesteatoma is a concern in aviation personnel due to potential for hearing loss, risk of recurrence, and the possibility of labyrinthine and intracranial involvement in severe cases. It is often – but not always - associated with chronic Eustachian tube dysfunction, which on its own presents a risk for otic barotrauma in flight.

WAIVER: A history of cholesteatoma is considered disqualifying. Most cholesteatomas must be surgically removed before a waiver can be considered. Recurrence rates of cholesteatoma are approximately 12%- 25%, hence they require long-term follow-up. Initial waivers should be annual and Otolaryngology evaluations must be submitted for waiver consideration. Persistence of cholesteatoma maybe cause for waiver withdrawal, pending the outcome of further surgery. Routine waivers may be recommended in cases of a remote history of surgery and / or established lack of persistent cholesteatoma on repeat annual specialty evaluations. Waivers for applicants will be considered on a case-by-case basis.

INFORMATION REQUIRED:
1. Otolaryngology evaluation, including post-operative clearance and follow-up plan for initial request. Subsequent evaluations confirming lack of recurrence for annual submissions.
2. Pre and post-operative audiology evaluation (formal audiogram with tympanometry, bone conduction and word recognition testing)
3. Operative report (s)

Since cholesteatoma surgery involves the middle ear and – usually- the mastoid cavity, there is risk to hearing, balance, and facial nerve function. Any impairment in these areas should be addressed in the waiver request.

Post-operative hearing that is below standards will also require a waiver (see section on Hearing Loss).

TREATMENT: Surgical removal.

DISCUSSION: Given the relatively high recurrence rate of cholesteatomas, it is important that every attempt is made by the surgeon to ensure that there is no residual disease after surgery. Occasionally, the surgeon will plan (or advise) a re-exploration of the ear, usually in 6-12 months, or the middle ear and mastoid followed radiographically (MRI, CT or both). Recurrent or continuous drainage following surgery may indicate the presence of persistent cholesteatoma. **If the clinical, surgical or radiographic follow-up is concerning for residual cholesteatoma, the waiver process must be repeated.** As a rule, each time residual cholesteatoma is found, the surgeon will recommend re-exploration until no further cholesteatoma is found. There is no maximum number of repeat surgeries before a waiver is permanently revoked. The extent of disease, co-existing Eustachian tube dysfunction, hearing outcome, likelihood of recurrence, and any complications will all be taken into account in each case.

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Code 53HN and NAMI ENT shall be notified each time a surgery is performed for recurrent cholesteatoma.

ICD-10 CODES:
H71 Cholesteatoma of middle ear

H71.9 Unspecified cholesteatoma of middle ear
H71.90 Unspecified cholesteatoma of middle ear, unspecified ear
H71.91 Unspecified cholesteatoma of middle ear, right ear
H71.92 Unspecified cholesteatoma of middle ear, left ear
H71.93 Unspecified cholesteatoma of middle ear, bilateral
09BD8ZZ Excision of right inner ear, via natural or artificial opening, endoscopic
09BE8ZZ Excision of left inner ear, via natural or artificial opening, endoscopic

6.8 VESTIBULAR SCHWANNOMA / ACOUSTIC NEUROMA

Last Revised: January 2023 Last Reviewed: January 2023

AEROMEDICAL CONCERNS: Progressive hearing loss, tinnitus, trigeminal paresthesia, imbalance, and occasionally vertigo have all been attributed to vestibular Schwannomas. Profound hearing loss / deafness, labyrinthine dysfunction, and facial nerve weakness or paralysis can occur after surgical excision. Following treatment with radiation or proton beam therapy, some patients experience a gradual, but significant, decrement in hearing (up to 75% of patients in one study). Facial nerve weakness is less common, but possible, following radiation therapy.

WAIVER: A waiver may be considered if there are no serious sequelae one year following successful excision of a unilateral tumor. Individuals treated with observation may be eligible for a waiver after an initial 6-month period of observation, as long as there is no evidence of clinically significant vestibular dysfunction. Class I Aviators will be considered for an SG3 waiver initially. Vertigo, ataxia, and facial paralysis are examples of unacceptable complications. Unilateral hearing loss, even deafness, is common following treatment (surgical or with radiation therapy) and may well be waiverable provided adequate hearing remains in the other ear and the hearing loss is compatible with the member's mission.

Waivers for applicants are generally NOT recommended.

INFORMATION REQUIRED:
1. ENT consult
2. Audiology consult
3. MRI (serial reports if indicated)
4. Neurology consult
5. Neurosurgery consult
6. Surgical report
7. Pathology report (if tumor was resected)
8. Radiation oncology report (if treated with radiation)
9. Post-operative vestibular evaluation including dynamic posturography and dynamic visual acuity testing to demonstrate complete compensation of any permanent vestibular deficit.
10. Functional cockpit hearing test if there is significant hearing loss present
11. Include a copy of all Medical Boards which have been written for the member (if applicable).

Untoward postoperative symptoms, such as recurrent headaches, as well as complications (CSF leak, facial paralysis, etc.), need to be especially well documented in the Aeromedical Summary and waiver request.

TREATMENT: Observation with serial MRI, surgical excision, stereotactic radiotherapy, stereotactic radiosurgery, or proton beam therapy.

DISCUSSION: Vestibular schwannomas arise from the superior or inferior branch of the vestibular division of the eighth nerve within the internal auditory canal. Although patients may describe some degree of unsteadiness, true vertigo is not a very common presenting complaint due to central compensation of the gradually progressive loss of vestibular function on the affected side. Asymmetric hearing loss is the most common presenting symptom, followed by tinnitus. Large tumors can extend from the internal auditory canal into the cerebellopontine angle as they enlarge and impact cranial nerves in that region such as the trigeminal nerve, resulting in facial paresthesia. Other neurologic dysfunction is possible, so a thorough neurologic evaluation is critical. Most vestibular Schwannomas are unilateral. In patients with neurofibromatosis (NF2), neuromas can occasionally be bilateral. Vestibular schwannomas are virtually always benign. Operative morbidity is related to the size of the tumor, and hearing is often affected. Up to 50% of patients will have no useful hearing in the involved ear after surgery, although hearing preservation following surgical treatment of small tumors can be higher than with stereotactic radiosurgery. Other cranial nerves also may be damaged during surgery (i.e. trigeminal and facial). Facial paralysis may make wearing of an oxygen mask difficult, may result in speech problems, and can cause eye symptoms due to inability to close the eyelids. Radiotherapy is not without risk and although complications may take longer to develop, patients can still develop a significant hearing loss. There is a slight risk of benign cyst development and a rare possibility of malignant transformation. Persistent tumor growth occurs in roughly 5% of patients following various forms of radiation treatment and will require surgical excision. Treatment choice will be up to the patient and the available resources.
In the aviation community - where all individuals are part of the hearing conservation program - asymmetric hearing loss may be the first noticeable sign of concern. Small vestibular Schwannomas may not have a significant effect on the individual's ability to function. Many may be completely asymptomatic. In these cases, it may be completely appropriate for a patient to elect observation as treatment as approximately 50% of these lesions will not progress any further. The tumor will usually be observed with serial MRIs at 6 to 12 month intervals. Generally, the tumor is either removed surgically or treated with stereotactic radiation therapy if it increases in size, there is further decrement in the hearing on the affected side, or facial weakness, imbalance or vertigo develop. If the tumor demonstrates growth at a rate greater than 2.5mm per year, the individual is at greater risk of hearing loss and should receive treatment sooner than later.

This guide does not recommend a specific treatment for vestibular Schwannomas. A waiver can be considered regardless of treatment modality – including observation - if the treatment is effective and the patient demonstrates a good recovery without significant complications, normal or compensated vestibular function and adequate hearing.

ICD-10 CODE:
D33.3 Benign neoplasm of cranial nerves

H93.3X Disorders of acoustic nerve

6.9 OVAL/ROUND WINDOW PERILYMPH FISTULA

Last Revised: April 2025 Last Reviewed: April 2024

AEROMEDICAL CONCERNS: A perilymph fistula (PLF) can result in either or both episodic vertigo and sudden onset or fluctuating sensorineural hearing loss. It may mimic Meniere's disease.

WAIVER:

1- A history of fistula is CD, no waiver, for all applicants.
2- In Designated Naval Aviators, ground for six months, SG3 for six months, then SG1 if remains asymptomatic.
3- For NFO's and all Class II or III personnel, ground for six months, submit a waiver request if remain asymptomatic. Call NAMI ENT in the rare case of bilateral fistulae.

INFORMATION REQUIRED:

1. Copies of all records involving the initial clinical presentation
2. All ENT consults, notes, tests, operation reports, etc.
3. Audiology report
4. Vestibular test results

TREATMENT: Initial treatment is conservative, with avoidance of lifting, straining or exposure to significant barometric pressure changes, especially ones that might require a Valsalva maneuver. If a medevac is necessary, it will be important to limit altitude changes. If hearing and vestibular symptoms don't improve, and certainly if they worsen, exploratory tympanotomy is indicated. If a fistula is present, it can be surgically sealed.

DISCUSSION: While fistulae may occur spontaneously, most are associated with head injury or barotrauma, especially in the active-duty population. Many patients with a "fresh" PLF from barotrauma will complain of vertigo coming in waves in a crescendo/decrescendo pattern accompanied by a progressive or fluctuating sensorineural hearing loss. This pattern of symptoms/findings occurs as perilymphatic fluid is forced through a tear in the round window (RW) membrane or through the annular ligament of the stapes in the oval window (OW). The tear may partially seal itself until more perilymphatic fluid is produced and forces its way through the defect. Perilymphatic fluid is thought to be produced as a filtration product of cerebrospinal fluid, so there is a bit of a pressure head that tends to force more fluid out through the defect in either the RW or OW.

PLFs may also occur as a result of Q-tip misadventure or improper cerumen irrigation technique. These will be associated with injury to the tympanic membrane and probably the ossicular chain. These patients will most likely have a conductive hearing loss in addition to the sensorineural loss that is caused by the PLF.

It will be of critical importance to know the timing of symptom onset in relation to the patient's flight profile in order to distinguish a PLF from Type II decompression sickness. Barotrauma of sufficient severity to cause a PLF generally only occurs during descent. If the onset of vertigo and/or hearing loss occurs during or after ascent (or a rapid decompression), consideration must be given to the more likely onset of DCS, in which case hyperbaric oxygen therapy is indicated. The descent involved in HBO treatments will make a PLF worse.

As surgery does not always seal the fistula, and recurrence is possible, various waiting periods are prescribed for different classes of personnel. The longest period is for designated Naval Aviators, as there is a considerable safety issue should acute vertigo occur during flight.

ICD-10 CODE:
H83.1 Labyrithine fistula
H83.11 Labyrithine fistula, right ear
H83.12 Labyrithine fistula, left ear
H83.13 Labyrithine fistula, bilateral
H83.19 Labyrithine fistula, unspecified ear

6.10 EUSTACHIAN TUBE DYSFUNCTION

Last Revised: April 2024 Last Reviewed: April 2024

AEROMEDICAL CONCERN: Eustachian tube dysfunction (ETD) may lead to chronic ear symptoms that could adversely affect flight performance and result in disqualifying middle ear conditions. When challenged with rapid pressure changes commonly experienced during flight; even mild forms of Eustachian tube dysfunction (ETD) may lead to significant barotrauma. The sudden ear pain can be incapacitating and poses a significant risk for flight safety.

WAIVER: Chronic Eustachian tube dysfunction with the inability to equalize middle ear pressure is considered disqualifying for all aviation duties involving flying. Waivers will be considered after the ETD is fully evaluated and successfully using current clinical best practices that includes ENT consultation.

1. Applicants: Chronic ETD is CD and waivers are rarely considered unless ETD is completely resolved. Normal otoscopy findings and TM mobility need to be demonstrated at least 6 months after medical or surgical intervention. Ear tubes are CD for applicants and waivers will rarely be considered in this case.

2. Designated: Chronic ETD is CD and waivers will be considered on a case-by-case basis.

INFORMATION REQUIRED:

A. History – symptoms (when on the ground and flying), duration. Treatment.
B. Physical – HEENT including Valsalva.
C. ENT consultation. Include any surgical reports if applicable.
D. Audiology with Impedance test (tympanometry) consultation report.
E. Barofunction Test - Must Pass a Hyperbaric/Hypobaric chamber ride or functional test flight after treatment. If treated with Balloon Dilation of the Eustachian Tube (BDET)- Test should be completed no sooner than 8 weeks after the procedure and after ENT surgeon gives clearance to fly.

DISCUSSION: The Eustachian tube (ET) is a narrow passageway that connects the nasopharynx to the middle ear space. It functions to: a) equalize pressure between the middle ear and the environment, b) clear secretions from the middle ear, and c) protect the middle ear from pharyngeal pathogens and sounds. At rest, it is normally collapsed. Aided by muscles associated with swallowing or yawning, the ET will transiently open to ventilate the middle ear space and equilibrate it to the surrounding atmospheric pressure. Eustachian tube dysfunction (ETD) can be classified as Obstructive (OETD) or Patulous (PETD).

A: OETD occurs when the ET does not properly open to ventilate or clear secretions from the middle ear space. Characteristics include: aural fullness, ear discomfort, tinnitus, and hearing loss. When clinically significant, it is commonly associated with persistent negative middle ear pressure that may lead to chronic otitis media, tympanic membrane (TM) retractions, perforations, and sometimes cholesteatoma. When subclinical, it may only become apparent with rapid barometric pressure changes that occur during flight. This baro-challenge induced ETD is frequently identified during aircraft descent. Since OETD is more common and

significant for members with duties involving flying, the remainder of this discussion will focus on this subtype.

B: PETD occurs when the ET remains in an open configuration. The middle ear and nasopharynx maintain a constant pressure environment that exposes the middle ear to pharyngeal pathogens and sounds. Typical findings include aural fullness, audible respirations, voice autophony, and/or pulsatile tinnitus. Although aviation barotrauma is not a major concern with PETD, an ENT evaluation is recommended if symptoms are persistent and/or bothersome.

Aviation Evaluation of ET Function:
Most aviators are assumed to have good ET function based on successful repetitive exposures to barometric pressure changes. However, ET function is a dynamic process that is easily altered by transient or newly developed chronic medical conditions. Therefore, an assessment of ET function should be performed during every flight physical.

Key Elements when Assessing ET Function: ** Routine exam should document a benign ear history and normal otoscopic exam with TM mobility. **

Ear History:
1. Ask about difficulty clearing ears when flying, diving, or with other baro-challenge experiences.
2. Document any history of ear barotrauma, aural fullness, hearing loss, otalgia, tinnitus, dizziness, recurrent ear infections, ear perforations, or ear surgery.
3. Determine if any comorbid conditions exist: Allergic rhinitis, sinusitis, chronic ear disease, gastroesophageal reflux.

Physical Exam:
1. Ensure a normal **Otoscopic exam and TM mobility**. TM mobility can be demonstrated with swallowing, Toynbee maneuver (swallowing with nose/mouth closed), or Valsalva maneuver (forceful expiration against closed nose/mouth).
2. Additional Testing: (if available)
   - **Pneumatic Otoscopy** may be useful in assessing TM mobility, TM retractions, and/or middle ear effusions.
   - **Diagnostic audiogram with tympanometry** may provide useful information regarding middle ear function and an indirect assessment of ET function. This can be especially helpful when TM mobility is not visualized, and ET function is uncertain (ie. the new aviator with a normal otoscopic exam but minimal baro-challenge history or the designated aviator recovering from an acute inflammatory condition).

Aviation Management of ET Dysfunction:
If there is concern for ET dysfunction on routine exam or during a specific flight event, the flight surgeon should focus on determining and treating the underlying etiology.

1. **Acute ETD** is commonly due to infectious or inflammatory disorders that affect the upper airway (ie. allergic rhinitis, rhinosinusitis, pharyngitis, laryngopharyngeal reflux). Once the underlying etiology is medically managed, the ET should revert to its normal function. *Acute ETD is Not Considered Disqualifying*. It should be managed conservatively with temporary grounding until symptoms resolve and normal ET function is demonstrated. In cases where ETD results in barotrauma, the condition is still NCD if normal function returns, and recurrence is unlikely. **Repetitive ear barotrauma is treated as a chronic condition and will require ENT consultation and subsequent waiver determination.**

2. **Chronic ETD** is frequently associated with anatomic abnormalities: narrow ET or palatal dysfunction, chronic inflammatory conditions, and/or obstructive masses (adenoid hypertrophy, neoplasm). ***All cases of chronic ETD are Considered Disqualifying for members with duties involving flying (Class I, II).*** The flight surgeon will typically identify chronic ETD when members: a) fail to demonstrate tympanic membrane mobility despite appropriate medical management, b) report frequent difficulty equilibrating ear pressure during flying, and/ or c) show signs of chronic ear disease on routine otoscopic exam. **Chronic ETD will require ENT consultation and subsequent waiver determination.**

A typical ENT evaluation for recurrent barotrauma with or without chronic ETD should include ear microscopy, nasopharyngeal endoscopy, and formal audiologic exam with tympanometry. Initial treatment focuses on managing comorbid conditions such as allergic rhinitis, chronic sinusitis, ear disease, and other inflammatory disorders. If medical management does not resolve ETD, surgical procedures such as a) balloon dilation of the eustachian tube or b) tympanostomy (ear tube) placement may be recommended.

A). **Balloon Dilation of the Eustachian Tube (BDET)** was approved by the FDA for use in 2016 and has shown encouraging results in improving Obstructive ET Dysfunction. After optimal management of comorbid conditions, BDET has demonstrated improvement of ET dysfunction through various outcome measures. In some studies, successful BDET resulted in normalized tympanograms and the ability to demonstrate a normal Valsalva maneuver. Long term outcomes are still being evaluated.

B) **Tympanostomy Tubes** placed within the tympanic membrane are used to ventilate the middle ear space and effectively bypass a poorly functioning ET. Although a common and relatively benign procedure, ear tubes in military aviation can present significant challenges. Most will require permanent tubes that must remain patent. This is difficult when working in a rigorous environment where the ear canal is occluded with hearing protection and amplification devices. Common adverse outcomes include; ear tube failures (clogged, extruded), recurrent otorrhea, infections, granulation, and sometimes large central perforations. Another challenge is that subspecialty ENT care is not readily available to manage ear tube issues in the deployed setting. This may adversely affect mission performance. For these reasons, ear tubes are considered a final treatment option for managing OETD in the military aviator. The FS should seek NAMI guidance before the “designated” member proceeds with ear tube placement to ensure all options have been explored.

ICD-10 Codes:

H68.0X Unspecified Eustachian salpingitis
H68.1X Unspecified Obstruction of the Eustachian tube
H69.0X Patulous Eustachian tube
H69.8X Other specified disorder of the Eustachian Tube
H69.9X Eustachian Tube Disorder, unspecified
T70.0 Otic barotrauma
Z96.22 Tympanostomy tube(s) status; history of tympanostomy tubes

6.11 OTOLARYNGOLOGY - HEAD AND NECK SURGICAL PROCEDURES THAT DO NOT REQUIRE A WAIVER

Last Revised: April 2024 Last Reviewed: April 2024

Assuming that recovery is uncomplicated and there are no other significant factors, the following surgical procedures do not require a waiver. If there is any question regarding suitability for aviation duties following one of these procedures, please communicate with NAMI ENT.

NASAL SURGERY

If any of the following procedures are done in conjunction with sinus surgery or balloon sinuplasty (refer to 6.2 and 6.3), then the patient will require a waiver.

Septoplasty with or without inferior turbinate reduction: (any means of reducing the size of the inferior turbinates, such as cautery, debridement, coblation, cryotherapy, radiofrequency ablation, etc.). May return to flight duties when cleared by surgeon. Typically, within two weeks of surgery.

Septorhinoplasty: When postoperative tenderness has resolved so that the nose can be manipulated without discomfort (this can take up to 4-6 weeks) and cleared by surgeon the patient can return to flight duties. There can also be a risk of bleeding that can last up to three weeks or so.

EAR SURGERY

Otoplasty: This procedure will frequently involve placing sutures to hold the auricle in a certain position until it can scar in place and retain that position. The patient should not be manipulating the ears (as would occur when putting on and taking off a helmet) until cleared by the surgeon, which again may take up to six weeks.

Uncomplicated tympanoplasty for an otherwise uncomplicated tympanic membrane perforation: If it is the second (or subsequent) attempt to repair a perforation, or if there is a history of chronic drainage or cholesteatoma, a waiver will be required. If the history is in some way complicated by duration or symptoms, then a waiver will probably be required. As an example of the type of surgery that would not require a waiver is the simple repair of a simple traumatic perforation, such as one caused by a slap injury. When in doubt, contact NAMI ENT.

THROAT SURGERY

Tonsillectomy
Adenoidectomy
Tonsillectomy for benign indications, eg. recurrent tonsillitis or tonsil stones, is NCD.

Uvulopalatopharyngoplasty (UPPP) for primary snoring. [If the patient has obstructive sleep apnea and undergoes pharyngeal surgery, a waiver will be required. See the neurology section of the waiver guide for OSA waiver requirements.]

Palatal stiffening procedures for treatment of primary snoring (cautery, palatal implants, coblation, radiofrequency ablation, etc.). Primary snoring refers to the individual who snores, but does not have any evidence of obstructive sleep apnea. This is considered a "cosmetic" problem and may be a nuisance but does not require a waiver. The surgical procedures to correct it do not require waivers unless there is some sort of complication that has an impact on aviation capabilities.

NECK PROCEDURES

Removal of submandibular salivary gland if there is no malignancy. The marginal mandibular branch of the facial nerve is sometimes injured during this procedure. If it results in no difficulties eating or using a mask this is not disqualifying.

Parotidectomy if there is no malignancy. Again, the facial nerve can be injured in this procedure with potentially significant functional deficits. If this has occurred, it will probably require a waiver and may be permanently disqualifying.

Removal of a branchial cleft cyst if there is no debilitating nerve injury or other complication.

Removal of other embryologic remnants such as a thyroglossal duct cysts**.**

MISCELLANEOUS CONDITIONS

Nasal Fractures typically do not interfere with sinus function and even if the fracture is not reduced, the patient usually retains an adequate airway. As soon as the patient can wear a mask without pain or distraction from tenderness, he/she may return to flight duties. This can take 4-6 weeks.

Isolated fracture of the anterior wall of the maxillary sinus (softball to the face is a common cause). These fractures do not require a waiver as long as the upper medial wall of the maxillary sinus, where the drainage pathway is located, is uninvolved. Again, it may take 4-6 weeks for tenderness to resolve to the point of being able to tolerate a mask or other safety equipment.

Peritonsillar abscess. If the patient chooses not to have an interval tonsillectomy (often done ~6 weeks after drainage of the abscess) he/she may return to aviation duties when free of pain and off medications, typically 2-3 weeks.

Face lift, or other cosmetic procedures (facial nerve injuries can also occur with this procedure and if so, must not interfere with function of masks or other equipment).

ICD-10 CODES:

J36 Peritonsillar abscess

090K0XZ Alteration of nasal mucosa and soft tissue, external approach (rhinoplasty)
090K3ZZ Alteration of nasal mucosa and soft tissue, percutaneous approach (rhinoplasty)
09QM3ZZ Repair nasal septum, external approach
09BM3ZZ Excision of nasal septum, percutaneous approach
09BM0ZZ Excision of nasal septum, open approach
09Q0XZZ External ear, right, external approach

09Q1XZZ External ear, left, external approach
09Q2XZZ External ear, bilateral, external approach
09Q74ZZ Repair right tympanic membrane, percutaneous endoscopic approach
09Q84ZZ Repair left tympanic membrane, percutaneous endoscopic approach
0CBPXZZ Excision of tonsils, external approach
0CBQXZZ Excision of adenoids, external approach
0CB80ZZ Excision of right parotid gland (lesion), open approach
0CB90ZZ Excision of left parotid gland (lesion), open approach
0CBB0ZZ Excision of right parotid duct (lesion), open approach
0CBC0ZZ Excision of left parotid duct (lesion), open approach
0CBD0ZZ Excision of right sublingual gland (lesion), open approach
0CBF0ZZ Excision of left sublingual gland (lesion), open approach
0CBG0ZZ Excision of right submaxillary gland (lesion), open approach
0CBH0ZZ Excision of left submaxillary gland (lesion), open approach
0CBJ0ZZ Excision of minor salivary gland (lesion), open approach
0CQ23ZZ Repair hard palate, open approach
0CQ3XZZ Repair soft palate, open approach
0JB40ZZ Excision right neck subcutaneous tissue and fascia, open approach
0JB50ZZ Excision left neck subcutaneous tissue and fascia, open approach
0JB40ZZ Excision anterior neck subcutaneous tissue and fascia, open approach