

Assessment and Diagnostic Guideline: ENT

Registered Nurses who hold **RN First Call** Certified Practice designation (RN(C)) are authorized to manage, diagnose, and/or treat the following ear, nose, and throat conditions:

- Acute otitis media (adults and children **6 months of age and older**)
- Pharyngitis (adults and children **1 year of age and older**)
- Dental abscess (adult only)

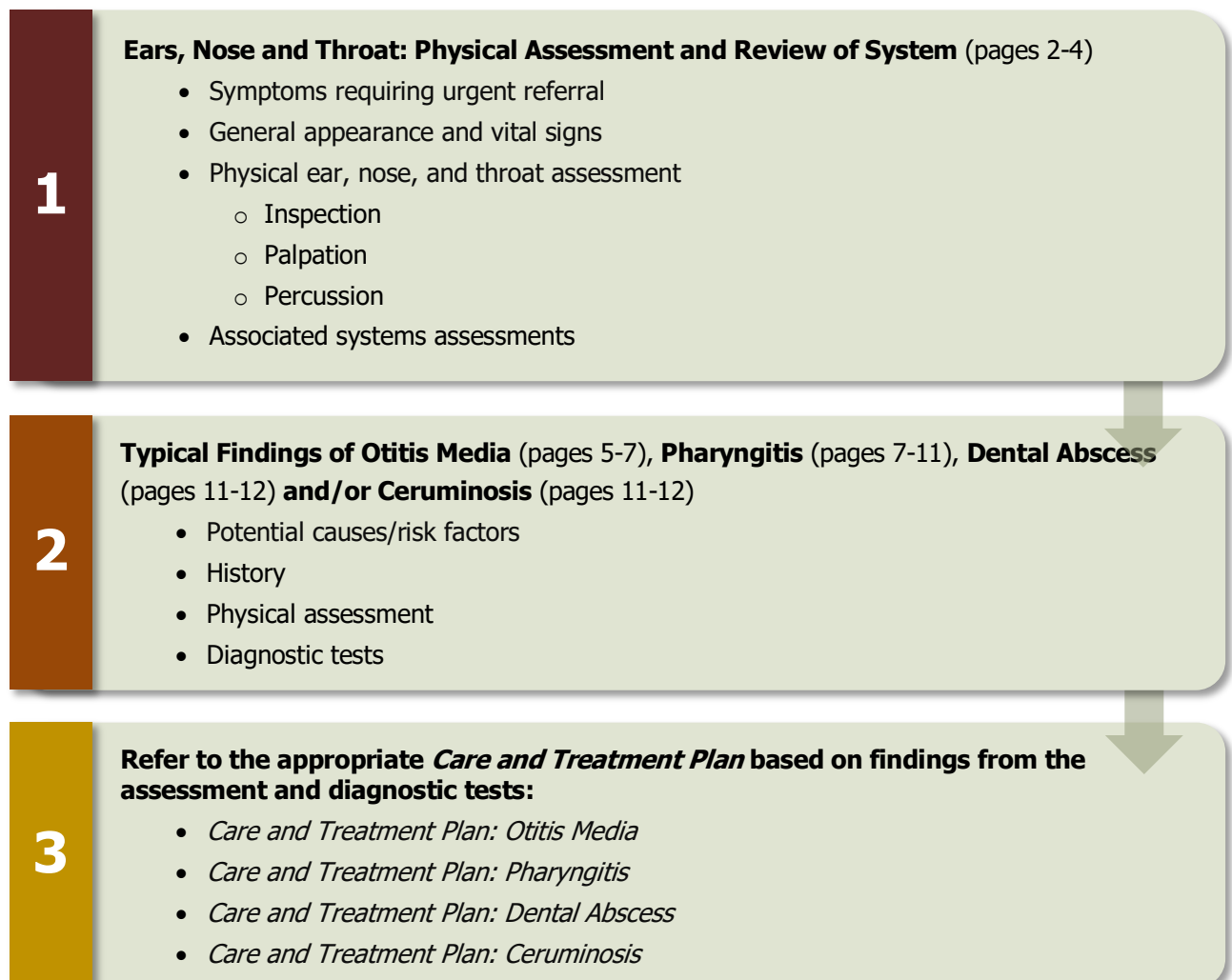
Registered Nurses who hold **Remote Nursing** Certified Practice designation (RN(C)) are authorized to manage, diagnose, and/or treat the following ear, nose, and throat conditions:

- All of the above, and
- Ceruminosis (adult only)

This Guideline is for RN(C)s when conducting assessments and diagnostic tests related to ENT conditions that can be managed and/or treated under the Certified Practice framework. RN(C)s maintain an RN scope of practice which is expanded for the RN(C) to diagnose and treat specific conditions listed above.

RN(C)s must ensure they complete and document their clinical reasoning through assessments according to regulatory practice standards and their practice setting requirements. Upon arriving at a diagnosis, RN(C)s should consult the relevant *Care and Treatment Plans* to inform the management and treatment of the condition.

Visual Summary of Guideline



1) Ears, Nose and Throat: Physical Assessment and Review of System

*Refer to the Assessment and Diagnostic Guideline: General as needed.

In addition to the health history and review of system questions outlined in the Assessment and Diagnostic Guideline: General, for any client presenting symptoms which affect their ears, nose, and throat, review this list to ascertain any additional signs and/or symptoms which may aid your clinical reasoning when considering conditions that can be treated by one of the DSTs.

Note: The Assessment and Diagnostic Guideline: General does not include the physical assessments.

Symptoms Requiring Urgent Referral

The first step is to determine if the ENT presentation requires an urgent referral to a physician or nurse practitioner or can be managed safely by an RN(C).

The following signs and symptoms require referral to a physician or nurse practitioner:

- Positive Brudzinski sign (chin to chest)
- Pain and fever with mastoid tenderness
- Difficulty with secretions, drooling
- Fever of unknown origin
- Treatment failure after three days for otitis media, strep throat or peritonsillar abscess
- Displaced uvula
- Uncontrollable epistaxis
- Facial fractures
- Sudden onset of deafness
- Recent ENT surgery
- Hoarseness without fever or illness
- Unexplained vertigo
- Pain out of proportion to clinical findings (consider epiglottitis)

Additional Pediatric Considerations

- Tripoding (sitting up and leaning forward)
- Petechiae

ENT Review of System Questions

- See the 'Review of Systems: ENT' section in the Assessment and Diagnostic Guideline: General if not already done.

General Appearance and Vital Signs

- Apparent state of health
 - Acutely or chronically ill
- Match between appearance and stated age
- Appearance of comfort or distress
 - Position of comfort (e.g., tripod, guarding)
 - Diaphoresis
 - Ability to speak in full sentences without stopping to take a breath
 - Skin colour

- Nutritional status
- Hydration status (older adults at risk)
- Hygiene
- Gait and mobility status
- Piercings and tattoos
- Vital signs
 - Temperature
 - Pulse
 - Respiration
 - SpO₂
 - Blood pressure (BP)

Additional Pediatric Considerations

- Appears stated age and within growth parameters
- Degree of consolability and cooperation
- Activity level
- Emotional reaction to caregiver and examiner
- Character of cry (in infants less than six months old)
- Bruising, contusions, abrasions (suggestive of trauma)

Physical Ears, Nose, and Throat Assessment

Safety Tip: For examination, it may be necessary to hold and support a struggling child. For example, lay the child in a supine position and have the parent or caregiver hold the child's arms extended, in a position close to the sides of the head. This will limit side-to-side movements while you are examining ENT structures. Brace the otoscope, and guard against sudden head movements.

Never restrain a child assuming the tripod position (sitting up and leaning forward) for exam purposes. This may add to their anxiety creating severe respiratory distress.

Ears

Inspection

- Pinna: lesions, abnormal appearance/position, skin covering mastoid process, redness/swelling behind pinna, gently pull the pinna forward
- Canal: discharge, swelling, redness, wax, foreign bodies
- Tympanic membrane: colour, light reflex, landmarks, bulging/retraction, perforation, scarring, air bubbles, fluid level
- Assess with whisper test
- If whisper test fails, perform Weber and Rinne tests with a 512-hertz tuning fork

Additional Pediatric Considerations

- Exterior ear: position (in relation to eyes), low set or small, deformed auricles may indicate associated congenital defects
- Tympanic membrane: check mobility using a pneumatic otoscope
- Estimate hearing by producing a loud noise (e.g., by clapping hands) for an infant or young child (which should elicit a blink response) or by performing a watch or whisper test for an older child

- *Clinical tip:* for the best view of the eardrum in an infant or child less than three years old, pull the outer ear upward, outward and backward

Palpation

- Tenderness over tragus or on manipulation of pinna
- Tenderness on tapping of mastoid process
- Size and tenderness of pre, post auricular and occipital nodes

Nose and Sinuses

Inspection

- External: inflammation, deformity, discharge, or bleeding
- Internal: colour of mucosa, edema, deviated or perforated septum, polyps, bleeding
- Observe nasal versus mouth breathing

Palpation

- Sinus and nasal tenderness (adults, and only in children who can cooperate and provide a response)

Percussion

- Sinus and nasal tenderness (adults, and only in children who can cooperate and provide a response)

Mouth and Throat

Inspection

- Lips: colour, lesions, symmetry
- Oral cavity: breath odour, colour, lesions in buccal mucosa
- Teeth and gums: redness, swelling, cavities, bleeding
- Tongue: colour, texture, lesions, tenderness of floor of mouth
- Throat and pharynx: colour, exudates, uvula, tonsillar symmetry and enlargement, masses

Additional Pediatric Considerations

- Koplik's spots
- A tonsil grade of +2 is normal up to 12 years of age

Neck

Inspection

- Symmetry
- Swelling
- Masses
- Active range of motion
- Thyroid enlargement

Palpation

- Tenderness, enlargement, mobility, contour and consistency of nodes and masses
 - Nodes: Pre- and post-auricular, occipital, tonsillar, submandibular, submental, anterior and posterior cervical, supraclavical

- Thyroid: size, consistency, contour, position, tenderness
- Parotid: tenderness (diffuse versus discrete), enlargement, mobility, contour and consistency of nodes and masses

Associated Systems Assessment

- A complete assessment should include the respiratory system
- Face: inspect for asymmetry, skin changes, masses, or irregularities

Other associated systems

- Fever
- Malaise
- Nausea or vomiting

2) Typical Findings

Otitis Media

Potential Causes

Viral Organisms

- Respiratory syncytial virus (RSV)
- Picornaviruses (rhinovirus, enterovirus)
- Influenza viruses
- Coronaviruses
- Adenovirus
- Human metapneumovirus

Bacterial Organisms

- Streptococcus pneumoniae
- H. influenzae
- Moraxella catarrhalis
- Group A beta-hemolytic streptococcus
- Staphylococcus aureus

Additional Pediatric Considerations

- Pseudomonas aeruginosa
- Streptococcus pyogenes

Less Common Organisms

- Chlamydia (uncommon)
- Mycoplasma
- Fungal infections such as candida, aspergillus (uncommon)

Other Less Common Organisms

Additional Pediatric Considerations

- Immunoreactivity
- Allergic rhinitis



Predisposing Risk Factors

- Eustachian tube dysfunction
- Upper respiratory infection
- Allergies
- Chronic sinusitis
- Cleft palate
- Immunosuppression
- Active or passive smoking

Additional Pediatric Considerations

- Age: most frequent between three months to three years old (most important risk factor)
- Children exposed to cigarette smoke
- Children with Down Syndrome
- Day care environment
- Children of Indigenous origin (eustachian tubes shorter and wider)
- Possibly bottle-fed children, if the child is propped up for feeding or goes to sleep with a bottle of milk at night
- Children who use pacifiers when sleeping at night
- Fall and winter months

History

- Otalgia (throbbing)
- Fever
- General malaise
- Sensation of fullness
- Hearing decreased
- Tinnitus or roaring in ear
- Vertigo
- History of upper respiratory tract symptoms
- Client may feel mildly or moderately ill

Additional Pediatric Considerations

- Otalgia (pain is absent in 20% of children)
- Irritability
- Tugging at ears
- Vomiting or diarrhea may be present
- Restless sleep
- Anorexia

Physical Assessment

Refer to Appendix A, Guidelines for Pneumatic Otoscopy.

- Vital signs: may be febrile
- Tympanic membrane: red, dull, bulging

- Bony landmarks: obscured or absent
- Purulent discharge if drum perforated
- Decreased mobility of tympanic membrane (pneumatic otoscope) (see Appendix A)
- Bullae seen on tympanic membrane
- Peri-auricular and anterior cervical nodes enlarged and tender
- When safe to do so, remove wax and other debris from the ear canal to allow a clear view of the tympanic membrane

Additional Pediatric Considerations

- Weigh until 12 years of age for medication calculations
- May appear acutely ill
- Redness of the tympanic membrane in the absence of other signs may be due to crying, agitation, a common cold, aggressive examination or manipulation of the external ear canal, or serous otitis media with effusion

Diagnostic Tests

- Swab any drainage for culture and sensitivity

Pharyngitis (Sore Throat)

Potential Causes

Infectious

- Viruses
 - Adenovirus
 - Influenza virus
 - Parainfluenza virus
 - Epstein-Barr
 - Coronavirus
 - Rhinovirus
 - Enterovirus
 - Respiratory syncytial virus
 - Metapneumovirus
 - Herpes simplex virus
- Bacterial
 - Group A beta-haemolytic strep (streptococcus pyogenes)
 - Group C and G streptococci
 - Chlamydia pneumoniae
 - Diphtheria
 - Mycoplasma pneumonia (10% of adolescents)
 - *Neisseria gonorrhoea* or *chlamydia trachomatis* (related to sexual activity)
- Fungal
 - *Candida albicans* (immunocompromised)

Non-Infectious

- Allergic rhinitis
- Sinusitis with postnasal drip
- Mouth breathing
- Trauma
- GERD (gastroesophageal reflux disease)

Predisposing Risk Factors

- Previous episodes of pharyngitis or tonsillitis
- Smoking, exposure to cigarette smoke
- Overcrowding
- Immunocompromised
- Steroids, oral or inhaled
- Diabetes mellitus
- Oral sex

Refer to *Appendix B* for pathogens and clinical appearance of tonsils.

Note: Always consider the potential for epiglottitis and airway obstruction when a severely sore throat is out of proportion to the findings of the oropharyngeal exam.

Additional Pediatric Considerations

Note: Always consider the potential for epiglottitis and airway obstruction. If symptoms of airway distress, tripodding, stridor, dysphagia, drooling and anxiety exist, do not exam the child's mouth or throat, but immediately consult with or refer the client to a physician or nurse practitioner.

History – Bacterial

- Abrupt/acute onset of sore throat
- Pain with swallowing
- Absence of cough
- Fever or chills
- Malaise
- Headache
- Anorexia
- May have nausea, vomiting and abdominal pain

Additional Pediatric Considerations

- Absence of cough and coryza

Physical Assessment – Bacterial

- Fever
- Pulse elevated
- Client appears ill
- Posterior pharynx red and edematous
- Tonsils enlarged, may be asymmetric
- Purulent exudate may be present

- Tonsillar and anterior cervical nodes may be enlarged and tender
- Erythematous “sandpaper” rash of scarlet fever (may be present with streptococcal infection)
- Liver/spleen enlargement +/- tenderness (e.g., mononucleosis)

Additional Pediatric Considerations

- Weigh until 12 years of age for medication calculations
- Tachycardia
- Pharyngeal and tonsillar erythema
- Significant fever
- Petechiae of soft palate
- Tonsillar exudate (particularly with streptococcal infection, diphtheria, or mononucleosis)
- Erythematous rash (particularly if child is receiving amoxicillin)
- Lymphadenopathy with splenic enlargement in children with mononucleosis
- Koplik spots

History – Viral

- Slow progressive onset of sore throat
- Mild malaise
- Cough
- Nasal congestion

Additional Pediatric Considerations

- Acute sore throat combined with symptoms consistent with a viral upper respiratory tract infection (rhinorrhea, cough, and hoarseness)

Physical Assessment – Viral

- Temperature elevated
- Posterior pharynx red and swollen
- Purulent exudate may be present
- Tonsillar and anterior cervical nodes may be enlarged and tender
- Petechiae or purple colour on palate (mononucleosis)
- Vesicles (if herpes)

Additional Pediatric Considerations

- Fever (low-grade to significant)
- Tachycardia
- Weigh until 12 years of age for medication calculations
- Pharyngeal and tonsillar erythema and swelling
- Petechiae of soft palate
- Tonsillar exudate similar to that occurring with bacterial infection may be present, particularly in adenovirus pharyngotonsillitis
- Anterior cervical lymphadenopathy
- Vesicles and ulcers may be present with coxsackievirus infection or herpes

- Hepato- and splenomegaly

Note: It is often impossible to distinguish clinically between bacterial and viral pharyngitis. Most pharyngitis is due to viruses (up to 70% in the pediatric population and 90% in the adult population) and does not require treatment with antibiotics. For this reason, it is important to utilize a sore throat score and diagnostic testing as available.

Throat Score

| Criteria | Points |
|---|--------|
| Temperature > 38°Celsius | 1 |
| Absence of cough | 1 |
| Swollen, tender anterior cervical nodes | 1 |
| Tonsillar swelling or exudates | 1 |
| Age 3-14 years | 1 |
| Age 15-44 years | 0 |
| Age 45 years and over | -1 |

| Total Score | Risk of Streptococcal Infection (%) | Suggested Management |
|--------------------------------------|-------------------------------------|---|
| -1 to 1 or 0 to 1 (<i>peds</i>) | 1-10% | No culture or antibiotic required |
| 2 to 3 | 11-35% | Perform culture or rapid strep test. Treat only if test is positive (+) |
| 4 or more | 51-53% | Start antibiotic therapy if patient situation warrants (e.g., high fever or clinically unwell). If culture or rapid strep test performed and negative, discontinue antibiotic. |

Note: Treatment with antibiotics may be warranted regardless of the score if there are concerns such as:

- Household contact with streptococcal infection
- A community epidemic of streptococcal infection
- A client history of rheumatic fever, valvular heart disease, or immunosuppression
- A population in which rheumatic fever remains a problem

Additional Geriatric Considerations

- Treatment may also be warranted if client is 65+ years with acute cough and 2 or more of the following criteria, or 80+ years with acute cough and one or more of:
 - Hospitalization in the past year
 - Diabetes Mellitus
 - Congestive Heart Failure (CHF)
 - On glucocorticoids

Diagnostic Tests

- Throat swab for culture and sensitivity (C&S)
- Rapid strep test (where available)

Additional Pediatric Considerations

- If the child is greater than two years old, culture the throat before treatment or do rapid strep antigen test (if available); if negative, do throat culture
- Monospot if suspect viral

Dental Abscess

Potential Causes

- Progressive dental decay causing pulpitis from gram-positive anaerobes and *Bacteroides*, *Streptococcus viridans*

Predisposing Risk Factors

- Dental caries
- Poor dental hygiene
- Dental trauma

History

- Localized, constant, deep, throbbing pain
- Pain worsens with mastication or exposure to extreme temperatures
- Tooth may be mobile
- Gingival or facial swelling and tenderness (or both) may be present
- Fever (rare but possible)

Diagnostic Tests

- If uncomplicated, none

Ceruminosis

Symptoms Requiring Urgent Referral or Consultation

- New onset of the following signs and/or symptoms require immediate emergency care and referral to a physician or nurse practitioner:
 - Ear pain, drainage, and/or bleeding

History

- Tinnitus
- Ear fullness
- Hearing loss
- Vertigo
- Cough
- Discharge
- Odour
- Hearing aid feedback or malfunction
- Itching

Physical Assessment

- Hardened cerumen in canal
- Red and swollen canal
- Obscured tympanic membrane
- Partial or complete obstruction of ear canal by cerumen

Diagnostic Tests

- Greater than 80% obstruction of an ear canal on otoscopy

References

More recent editions of any of the items in the References List may have been published since this DST was published. If you have a newer version, please use it.

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Appendix A

Guidelines for Pneumatic Otoscopy

Anyone can learn pneumatic otoscopy, but practice is needed. This method consists of applying air pressure to the tympanic membrane and watching the resultant movement.

- Tools required: a battery-operated bright light with a well-charged battery and a hermetically sealed otoscope with pneumatic attachment.
- Client must remain still during the examination (it may be necessary to restrain a child).
- Apply positive pressure (by squeezing a full bulb) and negative pressure (by releasing the bulb) and observe any movement of the eardrum.
- Lack of movement implies the presence of fluid in the middle ear or chronic stiffness of the tympanic membrane.

Appendix B

Review of Pathogens that Cause Tonsillitis

| Pathogens | | Clinical Appearance of Tonsils |
|--------------------|--|---|
| Viruses | Rhinovirus, adenovirus, influenza virus, parainfluenza virus, etc. | Enlarged, erythematous |
| | Coxsackie virus (herpangina) | Aphthous-like ulcers on tonsillar pillars |
| | Epstein-Barr virus (mononucleosis syndrome) | Very large, swollen, and dirty-grey appearance |
| Bacteria | Streptococcus pyogenes and other streptococcal species | Enlarged, erythematous, with yellowish-white spots; may have membrane or purulent exudate |
| Aerobic | Neisseria gonorrhoeae | Acute purulent exudates |
| | Corynebacterium diphtheriae | Exudative pharyngotonsillitis with thick pharyngeal membrane |
| Anaerobic | Bacteroides species | Enlarged, erythematous |
| Yeast | Candida species | White plaques with raw undersurface |
| Spirochetes | Treponema pallidum (syphilis) | Oral chancres of the lip, tongue, tonsil and palate; Superficial greyish patches of mucous membrane with reddish border |
| | Spirochaete denticolata and treponema vincentii (Vincent's angina) | Membrane on tonsil with underlying ulcer |

Source: Campisi and Tewfik (2003) Tonsillitis and Its Complications.