

This decision support tool is effective as of October 2016. For more information or to provide feedback on this or any other decision support tool, email [certifiedpractice@crnbc.ca](mailto:certifiedpractice@crnbc.ca)

---

## ADULT ACUTE OTITIS MEDIA

---

### DEFINITION

Acute inflammation or infection of the middle ear. It is less common in adults than children.

### POTENTIAL CAUSES

- Viral
- Bacterial forms due to *Streptococcus pneumoniae*, *H. influenzae*, *Moraxella catarrhalis*, Group A beta-hemolytic streptococcus, staphylococcus aureus
- Chlamydia (uncommon)
- Fungal infections such as candida, aspergillus (uncommon)

### PREDISPOSING RISK FACTORS

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

### TYPICAL FINDINGS OF OTITIS MEDIA

#### History

- Otalgia (throbbing)
- Fever
- General malaise
- Sensation of fullness
- Hearing decreased
- Tinnitus or roaring in ear, vertigo

CRNBC monitors and revises the CRNBC certified practice decision support tools (DSTs) every two years and as necessary based on best practices. The information provided in the DSTs is considered current as of the date of publication. CRNBC-certified nurses (RN(C)s) are responsible for ensuring they refer to the most current DSTs.

The DSTs are not intended to replace the RN(C)'s professional responsibility to exercise independent clinical judgment and use evidence to support competent, ethical care. The RN(C) must consult with or refer to a physician or nurse practitioner as appropriate, or whenever a course of action deviates from the DST.

- History of upper respiratory tract symptoms
- Client may feel mildly or moderately ill

## Physical Assessment

### Refer to end of document, Appendix 1, *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) (appendix 1)
- Bullae seen on tympanic membrane
- Peri-auricular and anterior cervical nodes enlarged and tender
- Wax and other debris should be removed from the ear canal to allow a clear view of the tympanic membrane

## Diagnostic Tests

- Swab any drainage for culture and sensitivity

## MANAGEMENT AND INTERVENTIONS

### Goals of treatment

- Eradicate infection
- Relieve pain
- Prevent complications

### Non-Pharmacological Interventions

- None

### Pharmacological Interventions

- To relieve pain and fever:
  - acetaminophen 325mg, 1-2 tabs po q4-6h prn, or
  - ibuprofen 200mg, 1-2 tabs po q4-6h prn
- Oral antibiotic therapy:
  - amoxicillin 1 gm, po tid for 5 days, OR
  - doxycycline 200 mg PO once, then 100 mg po BID for 5 days

Failure of first line therapy:

Amoxicillin-clavulanate 875 mg po bid for 10 days

In case of allergies to the above antibiotics, previous antibiotic use within a month, or unavailability of the previously listed antibiotics, consult with or refer to a physician or nurse practitioner.

### **Pregnant and Breastfeeding Women**

- Acetaminophen, amoxicillin, and amoxicillin-clavulanate may be used as listed above.
- DO NOT USE ibuprofen or doxycycline.

### **POTENTIAL COMPLICATIONS**

- Perforated tympanic membrane
- Reduced hearing
- Serous otitis media
- Mastoiditis (rare)
- Chronic otitis media
- Meningitis (rare)
- Epidural (brain) abscess
- Cholesteatoma

### **CLIENT INFORMATION AND DISCHARGE EDUCATION**

- Recommend increased rest if febrile
- Counsel client about appropriate use of medication (dosage compliance and follow up)
- Explain disease course and expected outcome
- Recommend avoidance of flying until symptoms have resolved
- Recommend avoidance of swimming or scuba diving until symptoms have resolved.
- Counsel client to stop smoking

### **MONITORING AND FOLLOW-UP**

- Re-examine patients with persistent pain or fever in 24-48 hours
- Return to clinic in three days if no improvement

- Follow up 10-14 days to look for development of serous otitis
- Assess hearing one to three months after treatment if any symptoms persist

## CONSULTATION AND/OR REFERRAL

- No consult or referral needed if uncomplicated and responds to treatment
- If a perforation develops, consult with a physician or nurse practitioner.

## DOCUMENTATION

- As per agency policy

## REFERENCES

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

Alberta Medical Association. (2008). *Guideline for the diagnosis and management of acute otitis media. Toward Optimized Practice*. Edmonton, AB: TOP Alberta Doctors. Retrieved from [http://www.topalbertadoctors.org/download/366/AOM\\_guideline.pdf](http://www.topalbertadoctors.org/download/366/AOM_guideline.pdf)

Anti-Infective Review Panel. (2012). *Anti-infective guidelines for community-acquired infections*. Toronto, ON: MUMS Guideline Clearinghouse.

Blondel-Hill, E., & Fryters, S. (2012). *Bugs and drugs: An antimicrobial infectious diseases reference*. Edmonton, AB: Alberta Health Services.

Canadian Pharmacists Association. (2014). *Therapeutic choices for minor ailments*. Ottawa, ON: Author.

Canadian Pharmacists Association. (2014). *Therapeutic choices* (7th ed.). Ottawa, ON: Author.

Cash, J. C., & Glass, C. A. (Eds.). (2014). *Family practice guidelines* (3rd ed.). New York, NY: Springer.

Chen, Y. A., & Tran, C. (Eds.). (2011). *The Toronto notes 2011: Comprehensive medical reference and review for the Medical Council of Canada Qualifying Exam Part 1 and the United States Medical Licensing Exam Step 2* (27th ed.). Toronto, ON: Toronto Notes for Medical Students.

[DynaMed. \(2015, August 17\). Acute otitis media \(AOM\). Retrieved from http://web.b.ebscohost.com/dynamed/detail?vid=2&sid=0a5d3326-42e3-4c70-9861-b0f58e104cd2%40sessionmgr113&hid=128&bdata=JnNpdGU9ZHluYW1lZC1saXZlJnNjb3BIPXNpdGU%3d#AN=116345&db=dme](http://web.b.ebscohost.com/dynamed/detail?vid=2&sid=0a5d3326-42e3-4c70-9861-b0f58e104cd2%40sessionmgr113&hid=128&bdata=JnNpdGU9ZHluYW1lZC1saXZlJnNjb3BIPXNpdGU%3d#AN=116345&db=dme)

Limb, C. J., Lustig, L. R., & Klein, J. O. (2014). Acute otitis media in adults (suppurative and serous). *UptoDate*. Retrieved from <http://www.uptodate.com/contents/acute-otitis-media-in-adults-suppurative-and-serous>

Ramakrishnan, K., Sparks, R. A., & Berryhill, W. E. (2007). Diagnosis and treatment of otitis media. *American Family Physician*, 76(11), 1650-1658. Retrieved from <http://www.aafp.org/afp/2007/1201/p1650.html>

## **APPENDIX 1**

### **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: 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