**Earache**

Pediatric After-Hours Version - Standard - 2015

**DEFINITION**

- Pain or discomfort in or around the ear
- Child reports an earache
- Younger nonverbal child acts like he did with previous ear infection (e.g. new onset of crying and awakening during a cold)
- Includes child who recently FINISHED antibiotics for an ear infection and symptoms of an earache has returned
- Ear pain is not due to a traumatic injury

**PAIN SEVERITY** is defined as:

- **MILD**: doesn't interfere with normal activities
- **MODERATE**: interferes with normal activities or awakens from sleep
- **SEVERE**: excruciating pain, can't do any normal activities, severe crying

**Assessment of Pain Severity**: Base it on the child's current behavior. Ask: "What does the pain keep your child from doing?" Do not ask: "Is the pain Mild, Moderate or Severe?" Reason: Many parents and teens will choose "Severe".

**INITIAL ASSESSMENT QUESTIONS**

1. LOCATION: "Which ear is involved?"
2. ONSET: "When did the ear start hurting?"
3. SEVERITY: "How bad is the pain?" (Dull earache vs screaming with pain)
   - MILD: doesn't interfere with normal activities
   - MODERATE: interferes with normal activities or awakens from sleep
   - SEVERE: excruciating pain, can't do any normal activities
4. URI SYMPTOMS: "Does your child have a runny nose or cough?"
5. FEVER: "Does your child have a fever?" If so, ask: "What is it, how was it measured and when did it start?"
6. CHILD'S APPEARANCE: "How sick is your child acting?" " What is he doing right now?" If asleep, ask: "How was he acting before he went to sleep?"
7. CAUSE: "What do you think is causing this earache?"

- Author’s note: IAQ's are intended for training purposes and not meant to be required on every call.

**TRIAGE ASSESSMENT QUESTIONS**

**Call EMS 911 Now**

Sounds like a life-threatening emergency to the triager

**CA: 50, 7**

**See More Appropriate Guideline**

[1] Diagnosed ear infection within past 10 days (may or may not be on antibiotics) AND [2] symptoms continue

Go to Guideline: Ear Infection Follow-Up Call (Pediatric)
[1] Painful ear canal AND [2] has been swimming
   Go to Guideline: Ear - Swimmer's (Pediatric)

Full or muffled sensation in the ear, but no pain
   Go to Guideline: Ear - Congestion (Pediatric)

Due to airplane or mountain travel
   Go to Guideline: Ear - Congestion (Pediatric)

   Go to Guideline: Crying - 3 Months and Older (Pediatric)

Followed an injury to the ear
   Go to Guideline: Ear Injury (Pediatric)

Go to ED Now
[1] Stiff neck (can't touch chin to chest) AND [2] fever
   R/O: meningitis
   CA: 51, 7

Go to ED Now (or PCP triage)
Long, pointed object was inserted into the ear canal (e.g. a pencil or stick)
   R/O: perforated eardrum, damaged ossicles, FB
   CA: 52, 7

[1] Fever AND [2] > 105 F (40.6 C) by any route OR axillary > 104 F (40 C)
   R/O: serious bacterial infection
   CA: 52, 15, 7

   R/O: serious bacterial infection
   CA: 52, 7

Child sounds very sick or weak to the triager
   Reason: severe acute illness or serious complication suspected
   CA: 52, 7

See Physician within 4 Hours (or PCP triage)
   R/O: severe otitis media, severe headache
   R/O: severe otitis media
   CA: 53, 13, 14, 3, 8, 7

[1] Pink or red swelling behind the ear AND [2] fever
   R/O: mastoiditis
   CA: 53, 2, 8, 7

New onset of balance problem (e.g., walking is very unsteady or falling)
   R/O: associated labyrinthitis
   CA: 53, 8, 7

See Physician within 24 Hours

Fever
   CA: 54, 1, 2, 3, 4, 16, 5, 6, 7

Pus or cloudy discharge from ear canal
   CA: 54, 5, 1, 2, 3, 8, 7

Pus on eyelids
   R/O: otitis-conjunctivitis syndrome with amoxicillin resistant organism
   CA: 54, 20, 2, 3, 4, 16, 21, 22, 8, 7

Child with cochlear implant
   R/O: ear infection
   CA: 54, 1, 2, 3, 4, 16, 5, 6, 7

   R/O: ear infection
   CA: 54, 1, 2, 3, 4, 16, 5, 6, 7

   Reason: recognizes child too young to report earache
   CA: 54, 1, 2, 3, 5, 8, 7

Call PCP within 24 Hours

[1] Child has frequent ear infections AND [2] caller insists prescription for antibiotic be called in
   CA: 60, 19, 2, 3, 4, 18, 7

See PCP When Office is Open (within 3 days)

   CA: 55, 17, 13, 3, 18, 7

Recurrent transient ear pain
   CA: 55, 10, 11, 8, 7
Home Care


*Reason: probably due to a blocked eustachian tube or cold weather

CA: 58, 9, 10, 11, 12, 7

**CARE ADVICE (CA) -**

1. **Reassurance:** Your child may have an ear infection, but it doesn't sound serious. Diagnosis and treatment can safely wait until morning if the earache begins after office hours.

2. **Pain Or Fever Medicine:** For pain relief or fever above 102 F (39 C), give acetaminophen (e.g., Tylenol) every 4 hours or ibuprofen (e.g., Advil) every 6 hours as needed. (See Dosage table.) Ibuprofen may be more effective for this type of pain.

3. **Local Cold for Ear Pain:**
   - Apply a cold pack or a cold wet washcloth to outer ear for 20 minutes to reduce pain while pain medicine takes effect.
   - Note: Some children prefer local heat for 20 minutes.
   - **Caution:** Cold or hot pack applied too long could cause frostbite or burn.

4. **Analgesic Eardrops:** (Requires PCP prior approval)
   - **Caution:** Do not use if there is ear discharge, ear tubes or hole in eardrum.
   - **Warning:** If severe pain or earache unresponsive to oral pain medicine, call in a prescription for generic analgesic eardrops (antipyrine/benzocaine otic or generic A/B otic).
   - **Warning:** Instil 3 drops every 4 hours as needed.
   - **Canada:** Use Auralgan eardrops for severe pain. Available OTC in Canada.

5. **Ear Discharge:**
   - If pus or cloudy fluid is draining from the ear canal, this means the eardrum has a small tear in it caused by the pressure.
   - This usually heals nicely after the ear infection is treated.
   - **Warning:** Wipe the discharge away as it appears.
   - **Warning:** Avoid plugging with cotton. (Reason: retained pus can cause infection of the lining of the ear canal.)

6. **Call Back If**
   - Severe pain persists over 2 hours after analgesic eardrops and oral pain medicine
   - **Warning:** Your child becomes worse

7. **Care Advice** given per Earache (Pediatric) guideline.

8. **Call Back If**
   - **Warning:** Your child becomes worse

9. **Recent-Onset Earache (Less Than 20 Minutes) Reassurance:** It could be a mild earache from a blocked eustachian tube. Let's see what happens.
10. **Increase Swallowing and Chewing:**
   - Assume the cause is a blocked eustachian tube.
   - Help your child swallow water while the nose is pinched closed. (Reason: creates a vacuum in the nose that helps open up the eustachian tube.)
   - After age 4, can also use chewing gum.

11. **No Meds:** Don't give pain medicines. (Reason: if earache persists, needs to be seen within 24 hours.)

12. **Call Back If**
   - Pain recurs

13. **Pain:** Continue acetaminophen every 4 hours or ibuprofen every 6 hours, until seen. (See Dosage table.)

14. **Ear Drops:**
   - Continue analgesic ear drops, 3 drops every 4 hours as needed for pain until seen.
   - Caution: Do not use any kind of ear drops for ear discharge, ear tubes or hole in eardrum.

15. **Fever:** To bring down fever, give acetaminophen every 4 hours or ibuprofen every 6 hours (See Dosage table).

16. **Olive Oil Eardrops:**
   - Caution: Do not use any kind of ear drops for ear discharge, ear tubes or hole in eardrum.
   - If the caller can't obtain analgesic eardrops or PCP doesn't approve the prescription, recommend 3 drops of plain olive oil. Another option is plain mineral oil (baby oil).
   - Instill 3 drops every 4 hours as needed.

17. **Reassurance:**
   - Children over 2 years of age with Mild earaches and no fever usually have viral ear infections that heal on their own.
   - Since 2004, the AAP has recommended that these children do not need antibiotics.
   - They usually do fine just with treatment for pain and other symptoms.
   - This approach also reduces the rate of antibiotic resistance.
   - Your child's PCP can check the ears during regular office hours.

18. **Call Back If:**
   - Fever occurs
   - Pain becomes worse
   - Your child becomes worse

19. **Reality Check:**
   - Inform caller that PCPs rarely call in antibiotics without examining the ear.
   - Reassure that ear pain can be controlled with pain medicine and eardrops.
   - Reassure that examining child within 24 hours is quite safe.
20. **Reassurance:**
- Your child may have an ear infection, but it doesn't sound serious.
- Diagnosis and treatment can safely wait until morning if the earache begins after office hours.
- The antibiotic given for the ear infection should also clear up the eye infection.

21. **Remove Pus:**
- Remove the dried and liquid pus from the eyelids with warm water and wet cotton balls every hour as needed.
- The pus is contagious, so dispose of it carefully.
- Wash your hands after contact with the drainage.
- Once you have antibiotic eyedrops, they will not have a chance to work unless the pus is removed first, each time before they are put in.

22. **Contacts:**
- Children with contact lenses need to switch to glasses temporarily
- Reason: To prevent damage to the cornea
- Disinfect the contacts before wearing them again (or discard them if disposable).

50. **Call EMS 911 Now:** Your child needs immediate medical attention. You need to hang up and call 911 (or an ambulance). (Triager Discretion: I'll call you back in a few minutes to be sure you were able to reach them.)

51. **Go To ED Now:** Your child needs to be seen in the Emergency Department immediately. Go to the ER at ___________ Hospital. Leave now. Drive carefully.

52. **Go To ED Now (or PCP Triage):**
- If No PCP Triage: Your child needs to be seen within the next hour. Go to the ER/UCC at ___________ Hospital. Leave as soon as you can.
- If PCP Triage Required: Your child may need to be seen. Your doctor will want to talk with you to decide what's best. I'll page him now. If you haven't heard from the on-call doctor within 30 minutes, or your child becomes worse, go directly to the ER/UCC) at ___________ Hospital.

53. **See Physician Within 4 Hours (or PCP triage):**
- If No PCP Triage: Your child needs to be seen. Go to ______ (ED/UCC or office if it will be open) within the next 3 or 4 hours. Go sooner if your child becomes worse.
- If PCP Triage Required: Your child may need to be seen. Your doctor will want to talk with you to decide what's best. I'll page him now. If you haven't heard from the on-call doctor within 30 minutes, call again. (Note: If PCP can't be reached, send to ED/UCC or office.)

54. **See Physician Within 24 Hours:**
- If Office Will Be Open: Your child needs to be examined within the next 24 hours. Call your child’s doctor when the office opens, and make an appointment.
- If Office Will Be Closed And No PCP Triage: Your child needs to be examined within the next 24 hours. Go to ______ at your convenience.
- If Office Will Be Closed And PCP Triage Required: Your child may need to be seen within the next 24 hours. Your doctor will want to talk with you to decide what's best. I'll page him now. (Exception: from 10 pm to 7 am. Since this isn't serious, we'll hold the page until morning.)
BACKGROUND INFORMATION

Cause

- Usually due to an ear infection (otitis media)
- Ear infections can be caused by viruses or bacteria. Usually, your child’s doctor can tell the difference by looking at the eardrum.
- Ear infections peak at age 6 months to 2 years
- The onset of ear infections peak on day 3 of a cold

Ear Infections: 2013 AAP Clinical Practice Guideline for Children 6 Months through 12 Years of Age

- This important Guideline contains 17 Key Action Statements (evidence-based recommendations). The following are ones that mainly apply to telephone triage and advice:
- Diagnosis of AOM requires visualization of the TM and should not be attempted by telephone alone. Diagnostic criteria for AOM are discussed in depth. Bulging of the TM must be present. The diagnostic specificity of other symptoms and signs is carefully documented.
- Severe AOM is defined as ear infection with moderate or severe otalgia (ear pain) OR fever equal to or higher than 39 C (102.2 F).
- Mild AOM is defined as mild otalgia AND fever < 39 C (102.2 F). Importance: Mild AOM can be watched for natural resolution versus worsening of symptoms.
- Treatment of Pain (Otalgia): The treatment of pain should never be overlooked. Antibiotic therapy does not provide pain relief during the first 24 hours after antibiotics are started. Therefore, pain
management should be addressed regardless of the use of antibiotics.

- Oral analgesics: Acetaminophen or ibuprofen have proven benefit (evidence-based).
- Topical analgesic eardrops (such as lidocaine or benzocaine) compared to saline eardrops provided reduced otalgia at 10 and 30 minutes. Duration of benefit unknown.
- Oil eardrops: "may have limited effectiveness, but no control studies"
- External application of heat or cold: "may have limited effectiveness, but no control studies"
- Note: Because the latter home remedy may have placebo value and is harmless, it remains in the guideline as an intervention to be used until oral pain killers take effect.
- Antibiotic Treatment: Bacterial AOM remains the most common condition for which antibiotics are prescribed for children in the U.S. Amoxicillin remains the first line drug for most cases. If the child also has purulent conjunctivitis, Augmentin is recommended as the initial drug of choice. Average duration of antibiotic recommended: age less than 2 years: 10 days, 2-5 years: 7 days, and 6 years and older: 5 days.

- Observation (watchful waiting) Option: Some clinicians recommend close observation and close follow-up for selected patients with AOM. Those patients must be 6 months of age or older, have a fever less than 39 C (102.2 F) and have mild otalgia for less than 48 hours. The only change from the previous AAP guideline is the cutoff previously was 2 years or older. Research supports the safety of this change in age range. In studies using Observation with pain management, 70% of patients had natural resolution of symptoms without the need for antibiotic therapy.
- When Observation is used, antibiotic therapy should be started if "the child worsens OR fails to improve within 72 hours of onset of symptoms". Two additional triage questions were added to the Ear Infection Follow-Up guideline to cover these follow-up outcomes. One allows the triage nurse to approve filling or starting the prescription the parent already has. The other places the call back to the PCP to request a prescription.

- Summary: As AAP Clinical Practice Guidelines go, this one is extremely helpful. It is 30 pages long, but worth reading. If implemented in daily practice, it will prevent significant over-diagnosis and over-treatment of ear infections.

- Reference: Pediatrics 2013; 131: e964-e999

**AAP (2004 Guideline): Treating Mild Otitis Media With Analgesics Rather Than Antibiotics**

- Because of rising antibiotic resistance, past AAP clinical practice guidelines (2004) for the management of otitis media discourage the use of antibiotics for nonsevere cases (called the "observation option").
- "Nonsevere otitis" is defined as MILD ear pain and fever < 39 C (or no fever). The safest age group for observation is children over age 2 years.
- If all 3 criteria are present, these children can be offered symptomatic care and safely observed for 48 to 72 hours.
- In follow-up, ear symptoms improved in 60% by 24 hours and resolved spontaneously in 75% by 7 days.
- This approach assumes that all children with ear pain are examined but the AAP does not give a timeline.
- If the children over age 2 years with mild earache and no fevers were seen within 72 hours during office hours (rather than within 24 hours), many weekend ED referrals could be prevented.
- Since 2008, the Earache guideline has used these recommendations to defer visits of low-risk children with earache until office hours. Again, the 3 low risk factors used in the guideline are: age > 2 years, MILD otalgia (earache) and no fever (rather than the AAP cutoff of fever < 102 F or 39 C).

**Analgesic Eardrops**

Analgesic eardrops are helpful for relieving severe pain (Hoberman 1997). Generic analgesic eardrops are recommended over Auralgan eardrops (both are prescription drugs in U.S.) because of cost savings. The ingredients are identical (antipyrine and benzocaine). In 2008, Deston
Therapeutics, the company that makes Auralgan, changed the formulation and increased the price to $140/bottle. Therefore, in the U.S., only call in a prescription for the generic equivalent. CANADA: Use Auralgan eardrops for severe pain. Available OTC in Canada.

Return to School

• An earache or ear infection is not contagious. No need to miss any school or daycare.

REFERENCES


SEARCH WORDS

BLOCKAGE OF EUSTACHIAN TUBES
BLOCKED EUSTACHIAN TUBES
EAR