



CHILDREN'S MEDICAL OFFICE

of North Andover, P.C.

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THE PROBLEM OF "PROBLEM" EARS (OTITIS MEDIA):

INTRODUCTION

After the common cold, middle ear infection (otitis media, OM) is the most common bacterial illness in childhood. The vast majority of children *do outgrow* the tendency toward OM (at ages that vary from 1 year to puberty, average being 2-4y). Many young children have persistent or repeated episodes of OM - either failing to respond to multiple courses of different antibiotics or having the problem recur very soon after stopping them. Much evidence suggests that such children may be at increased risk for hearing loss, speech problems, or even learning disabilities in the future

THE PROBLEM

Infants and toddlers are in a crucial phase of rapid language development. Good hearing is thought to be essential for this process. Indeed, there is ample data to demonstrate that persistent middle ear fluid leads directly to delays in speech development proportional to the total length of time fluid remains in the ears. Data also shows that once the fluid goes away - either of its own accord or as a result of some medical or surgical treatment - hearing returns to normal virtually instantly and speech starts to quickly catch up. Unfortunately, other evidence has established a *statistical association* between chronic OM and later [learning disabilities \(LD\)](#) or behavior problems. Allergies, smoking parents, and socio-economic factors are the things most often mentioned as candidates for this "root cause" and indeed each of these things are also statistically associated with both OM and LD.

WHAT ARE THE SYMPTOMS OF AN EAR INFECTION?

From a practical standpoint kids prone to OM can be separated into two groups:

- **Recurrent OM (ROM, a.k.a. Frequent Acute Otitis)** includes children who, despite many occurrences of fluid accumulation with or without infection, *usually* clear their middle ear fluid completely and for significant intervals between these episodes. These children have periods of [hearing loss](#) alternating with periods of normalcy. They are therefore at *low risk* for long term harm.
 - **Chronic OM (COM, a.k.a. Persistent Serous Otitis)** includes children who *never or hardly ever* clear their middle ear fluid, regardless of how often they may get acute infections. The COM group warrants more concern - they go long periods of time never hearing normally, and are thus at high risk for later disabilities. A particular child may move from one group into another over time spontaneously or in response to treatment.
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WHAT MEDICATIONS ARE USED TO TREAT EAR INFECTION?

A wide variety of possible approaches are available. Many "medical" people (pediatricians) seem to advocate a mainly surgical approach; while many surgeons (ENT specialists) advocate a medical approach!

Our approach is to try ALL the options available - until success is achieved. Our guiding 'philosophy' in developing this hierarchy is the belief that while chronic middle ear fluid and [hearing loss](#) is something which CANNOT be tolerated indefinitely (or even for very long), surgery should be a last resort to which a child is subjected only when all else has failed. In our experience the vast majority of children with COM (perhaps 80%) can be successfully managed without surgery. Implicit in this approach, however, is a responsibility to follow such children closely and aggressively, ensuring that medical treatments are tried in a timely fashion and that those children who do need surgery are not subjected to undue delays.

MEDICAL APPROACHES:

- 1. BEHAVIOR MODIFICATIONS:** A number of behavioral changes within the family can often be all that is needed to put an end to repeated OM.
 - The most common of these is weaning the bottle! Children over 10-12 months age who are still on a bottle *at all* (even just one a day) experience significantly more OM than other kids.
 - Another change worth making is for a smoking parent to quit, or at least stop smoking in the house and car. Allergies can play a role, so steps to control household dust, remove pets, or eliminate possible allergenic foods from the diet (especially if there is a family history of allergy) may also prove beneficial.
- 2. LOW-DOSE ANTIBIOTIC PROPHYLAXIS:** This strategy involves placing a child on long-term antibiotics at roughly half the dose usually used to treat an active infection (usually given once a day). It is started once the acute infection phase is over, when either uninfected fluid is left in the middle ear or the ear is fully clear. The purpose is to prevent re-infection of already present fluid (hopefully giving it time to go away) or of fluid which may re-accumulate should the eustachian tube block again. It is successful 80% of the time!
- 3. EXTENDED FULL-DOSE ANTIBIOTICS:** In theory, once germs in the middle ear space are killed it should make no difference to the remaining fluid whether or not the child is on antibiotics, or at what dose. Despite this, however, certain children with refractory COM have been found to clear their middle ear fluid in response to longer-than-usual (30-45day) courses of full dose antibiotics - especially broad spectrum ones such as Augmentin, Suprax, or Ceclor.
- 4. SHORT COURSE "PULSE" STEROIDS:** It has been reasonably suggested that short course steroids might be an effective way to reduce inflammation in and thereby unblock the eustachian tube. Success of a steroid pulse must be gauged not by initial clearing of fluid, but rather by how long the ears remain clear afterward. Because we can only give such treatment perhaps once every 3-4 months to avoid the side effects of long-term therapy, a "pulse" which "buys" 4 months of clear ears or more is deemed a success.



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- 5. ANTIHISTAMINE/DECONGESTANTS:** These common allergy and cold medications, available in many over-the-counter as well as prescription formulations, have the effect of both shrinking swollen mucous membranes and drying up fluid. As such they might be expected to help in COM. The common side effects of irritability, drowsiness, and blood pressure elevation they can cause must also be taken into account. This is a treatment which can be sustained over a long period of time if it seems to help. If it fails, the fluid thickens, and the hearing gets worse the child should be seeing a surgeon anyway and the fluid will be removed.

SURGICAL APPROACHES:

- 6. SIMPLE MYRINGOTOMY:** Rarely done nowadays because it is not often a long-term solution to the problem, one approach is to simply aspirate the fluid out of the middle ear using a needle through the eardrum. While it doesn't unblock the eustachian tube and the fluid will usually re-accumulate quickly, this procedure is simple, safe, and allows culture of the fluid which may help in choosing a more effective antibiotic.
- 7. EAR TUBES:** Formally called tympanostomy tubes or "pressure equalization" tubes (PET's), this procedure is one of the most frequently performed operations in this country today. It involves making an incision through the eardrum under general anesthesia, and inserting a small bobbin-shaped plastic tube through this opening to maintain a passageway from the middle to the outer ear. PET's are a very fast and simple operation with little short-term risk except for the anesthesia (which itself is much safer than it was just a few years ago), and is generally done as "day surgery" with no overnight stay.
- 8. ADENOIDECTOMY:** The final and most aggressive surgical approach is removal of the adenoids. Adenoids are just like tonsils, but exist higher up in the throat behind the nose where you can't see them. Indeed, the adenoids are right beside the opening of the eustachian tubes, and when they enlarge may block that opening. Many studies have shown that adenoidectomy can end COM in a significant percentage of patients, especially those patients in whom the adenoids are enlarged. One or two night hospital stay is often needed. T&A carries no real long-term risks whatsoever.

Call our office **978-975-3355** during office hours (or in the morning on Sundays/holidays) to arrange for your child to be seen. Even though the earache may be going away, what caused it is probably still there and is likely to need a prescription to ultimately get better.

Links and Resources

[Ear Infections and Children \(Part I Symptoms, Treatment, and Complications\)](#)

American Academy of Pediatrics:

<http://www.mckenzie-pediatrics.com/shop/images/he019301.pdf>

Ear Infection Symptoms

Healthy Children

<http://www.healthychildren.org/English/health-issues/conditions/ear-nose-throat/Pages/Ear-Infection-Symptoms.aspx>