

THE WALL STREET JOURNAL.

TUESDAY, FEBRUARY 20, 2007

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Device Tests Kids' Ears For Signs of Infection

BY LAURA JOHANNES

For many children, wintertime brings ear infections. One company sells a hand-held ear tester for home use that it says detects middle ear fluid, which commonly accompanies ear infections. The company says the device helps parents decide when to call the doctor. Pediatricians say the device is a useful tool, but caution that it doesn't directly detect ear infections.

Ear infections, one of the most common reasons for pediatrician visits, often begin after a cold when fluid lingering in the ear becomes infected with either bacteria or a virus. Symptoms include ear pain, irritability and sometimes fever. Studies have found 80% to 90% or more of children contract at least one ear infection by the age of 3.

Ear infections are often treated with antibiotics, though some physicians suggest waiting two to three days to see if symptoms clear up on their own, particularly in children over 2 years old.

EarCheck, a hand-held device aimed at the home market, tests for fluid in the ear. The presence of fluid alone doesn't mean the child has an infection, but if there's no fluid, doctors say, the problem is probably something else, such as teething, or pressure caused from an airplane trip, or swimmer's ear.

The device works by bouncing sound waves off the ear drum to determine how likely it is that fluid is present. The device, sold by Innovia Medical LLC of Lenexa, Kan., costs \$50 to \$60, and comes with five disposable tips. Extra disposable tips cost about \$5 for a package of 20.

To use the device, you grasp the outer edge of the ear and pull up and back, which straightens the curve of the ear canal. It can take a few tries to get it right, which can be challenging with a crying, cranky child, physicians say. If you don't do it right, a display symbol suggests you try again. The company is in the process of introducing a smaller model with a smaller tip that's easier to

insert in children's ears. The device makes a chirping sound for a few seconds and then gives a readout of one to five, with five being the highest probability that fluid is present.

A reading of five means there's a 92% chance fluid is present, while a reading of one means there's a 96.6% chance it isn't, the manufacturer says. Innovia suggests you "call a doctor" at a reading of three or more, which represents a 34% chance fluid is present.

Several published scientific studies show that the EarCheck is similar in accuracy to a tympanometer, an expensive device that also tests ear fluid and is used for research and in some physician offices. Some physicians even use the EarCheck in their office to supplement the sometimes unclear results of a visual exam of the ear with an otoscope.

Physicians say the EarCheck can be a very useful test for parents to do before calling the doctor. Parents should tell the pediatrician's office the results on the phone and if an ear infection can be ruled out a doctor's visit can be avoided, says Allan Lieberthal, clinical professor of pediatrics at University of Southern California in Los Angeles. After the infection is gone, EarCheck can be used to monitor whether the fluid is disappearing, which normally takes a few months. Long-lingering middle-ear fluid can cause hearing problems and even learning disabilities.

Email aches@wsj.com

