

## FEATURES

### 18 **Kawasaki disease: Genetics, pathology, and a need for earlier diagnosis**

Determining the etiology of Kawasaki disease has been a vexing problem in pediatrics. Some research points to an undiscovered viral agent, but because Kawasaki disease has a significant effect on coronary arteries, early diagnosis and treatment are essential.

*Anne H Rowley, MD*

### 32 **When to get anxious about social anxiety disorder**

For some adolescents, excessive shyness can lead to debilitating anxiety. Routine screening can help clinicians identify afflicted teenagers and get them referred to appropriate mental health specialists for help.

*Marcy Burstein, PhD*

### 49 **Our picks for the best new tech products of the year**

Here is our annual review of the very best new products for pediatricians, presented by someone in the trenches. We're sure that you'll find many of these products helpful for your practice.

*Andrew J Schuman, MD*

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*James Lue, MD*



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**NEW! Beginning January 2013**

**PEDIATRICS V2.0** Pediatrics V2.0 is our new department of monthly articles covering topics that busy pediatricians will find interesting and useful in their daily practices. Written by Andrew Schuman, MD, author of our annual year-end review of new products (see this issue), Pediatrics V2.0 will deliver news and reviews on all manner of new technology, resources, and practice management tips that every pediatrician needs to know to be successful. **Why wait for year's end to find out what's happening?** Start reading Dr Schuman every month, beginning this January.

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depending on the listening environment. Buttons on the control interface let users toggle between bell and diaphragm mode, adjust volume, mute all sounds, and switch between regular acoustic mode and an amplification mode that can enhance sound 50-fold. The stethoscope includes cables to transfer auscultated sounds to a computer or mobile device.

The SensiCardiac software directs the user to input patient data, and the software listens at 4 locations on the chest corresponding to the areas of auscultation associated with the aortic, pulmonary, mitral, and tricuspid valves. One minute later, the software indicates whether the murmur is normal (innocent) or pathologic. Pathologic murmurs need further



evaluation by a pediatric cardiologist. The software was developed to aide pediatricians in identifying murmurs in need of evaluation—these are class 1 murmurs as characterized by the American Heart Association and the American College of Cardiologists. This is particularly important because up to 80% of children have heart murmurs, but only 10% of children referred to pediatric cardiologists have pathologic cardiac disease.<sup>3</sup> The software can be used in young infants because it works with heart rates up to 180 beats per minute.

A recent study showed that SensiCardiac software correctly identified structural heart disease in a pediatric population with a specificity of 94% and sensitivity of 91%.<sup>4</sup>

Now that all newborns are

screened for critical congenital heart disease before discharge from the hospital, it is possible that the SensiCardiac software will eventually prove useful in further investigating the newborns that fail the screen or those babies who are noted to have a loud murmur in the nursery.

The software sells for \$350, and the Thinklabs Medical electronic stethoscope sells for \$220. They can be purchased together for \$550 from Diacoustic Medical Devices directly.

### Video otoscopy: See what I see

In my experience, parents and patients are more compliant with treatment recommendations regarding otitis media when you actually can show parents the appearance of their child's tympanic membrane. To accomplish this, I have parents look over my shoulder as I try to hold the otoscope still. This process can be made much easier when you use current technology to perform your “show and tell.”

Firefly Global is marketing new digital video otoscopes that are not only extremely well constructed with superb optics but also are extremely affordable as well. Two versions, wired and wireless, are available, and both use LED lighting and multilayered glass lenses to produce either images or videos of the ear canal and tympanic membrane.

The \$300 wired version, called the model **DE500 Digital Video Otoscope**, connects the handheld device to a Windows notebook computer's USB port via a 4-foot cord. The included software facilitates the capture of images with the click of a button, and dials on the unit adjust brightness and focus. Once captured, the image can be stored on the computer and incorporated into your

patient's EHR. The device can be used for 3 hours continuously before recharging is required.

The DE500 boasts 150-times magnification and produces 1280×1024 pixel high-resolution images and records videos at 30 frames per second.

If you would prefer a wireless model, the \$350 **DE550 Video Otoscope** uses proprietary wireless technology that won't interfere with nearby Bluetooth devices or with your office wireless network. A small video receiver is plugged into a laptop, and the image or video is transmitted to the Firefly software.



Maximum image resolution with the wireless unit is 720×480, slightly less than with the wired unit but still high quality. The wireless model has 4-channel wireless operation, so you can use the video otoscope with up to 4 separate computers.

Patients really appreciate their pediatrician demonstrating the anatomy of otitis media or otitis externa when presented on a video screen. Both units attach to disposable speculums in 3-mm, 4-mm, and 5-mm sizes and sell for about \$35 per box of 192.

Another nice feature of these digital images is that you can show patients the progress you are making at subsequent visits, and if you see a curious finding, you can email an image to your friendly ear, nose, and throat consultant to ask for advice.

### Advances in pulse oximeter technology

Last year I described the Masimo Pronto-7 device as a game-changing