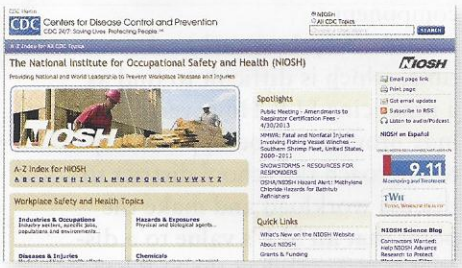
Get Smart About Noise

These apps can turn your smartphone into a sound-level meter.

BY ANGELA ADRIAN

Over the course of eight hours one recent Saturday, my family and I attended a Division 1 NCAA basketball game and later, my son's talent show in his grade school gym. I was prepared for the elevated sound pressure levels and range of frequencies at the game, from crowd noise to the throbbing bass of piped-in music, and recorded sound pressure levels as high as 95 dBA during especially loud moments.

But I was caught off-guard by the noise levels at the grade school production. As the talent show progressed, a soloist took the stage and



belted out what would have been an impressive vocal effort without amplification. Combined with the band's runaway volume and the unforgivingly hard acoustics of the cinderblock gymnasium, I clocked her amplified vocal at a whopping 97 dBA—significantly higher than my highest reading in the basketball arena earlier that day.

I used to carry a traditional sound-level meter to various hearing screening sites, in a suitcase too big to carry onto an airplane. Obviously, it's not feasible to bring such a device to a basketball game or talent show. But after installing a sound meter application on my smartphone, I can objectively measure the sound pressure level in any situation. So what did I do in the gym? I pulled out my phone, of course, and measured the noise.

To determine the risk of noise-induced hearing loss, I considered two important factors: the length of noise exposure and the noise level. The National Institute for Occupational Safety and Health (**www.cdc.gov/niosh**) provides guidelines for length of noise exposure at a given level before there is a risk of hearing loss. Applying the NIOSH standards, I could be exposed to the level of noise in the gym—95 dBA—for a little more than 47 minutes before I was at risk for hearing loss. And now, smartphone apps can help us make that determination.

Many apps simulate a sound-level meter on your smartphone. Here are just a few that have received high ratings:

DECIBEL METER PRO BY PERFORMANCE AUDIO (iOS, $.99, **www.performanceaudio.com/apps**). It has large digital and analog readouts and displays the average, peak and maximum levels. It also features a decibel reference chart.

DECIBEL 10TH BY SKYPAW CO. LTD. (iOS, free, **www.skypaw.com/apps**). This app includes reference text to compare with real-life examples and allows users to record and export the data to e-mail for further analysis.

SOUNDMETER BY FABER ACOUSTICAL, LLC (iOS, $19.99, **www.faberacoustical.com/ios_apps/soundmeter**). Users can measure time-weighted and equivalent sound levels. The time-weighted measurement options include fast, slow and impulse weightings. It also features calibration controls that enable automatic sensitivity calibration (relative to a calibrated sound-level meter) or manual entry of the microphone sensitivity.

SOUNDMETER+ BY AURALWARE, LLC (iOS, $1.99, **http://auralware.com/SoundMeterPlus.html**). This app includes a sound-level meter, noise-exposure meter, spectrum analyzer and professional-grade hearing-safety monitor. It claims to provide a safety screening of sound-emitting toys, appliances, power and hand tools, and kitchen tools.

Smartphone users with these apps gain an increased awareness of sound levels and the risk of noise-induced hearing loss by using a tool they already use daily—and carry everywhere—in a new way.

Just by having these tools available, and understanding a little about what they are doing, we can help our family, friends and clients increase their awareness of the potential for hearing loss. Imagine if the next time you are out and about, the person next to you pulls out a smartphone—not to take a picture, but to measure the noise. I would have to take a picture of that!

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