



HEALTHIER WORKPLACES | A HEALTHIER WORLD

# Sensors Talking Points for the OEHS Professional

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## What is it?

Sensors are small, wearable electronic devices that can detect changes in temperature, pressure, humidity, noise, radiation, and air pollutant concentrations. Additionally, sensors have health uses, such as measuring vital signs and blood-oxygen levels. A sensor consists of one or more detectors, a wireless internet interface, and a battery. Real-time measurements from the sensor are transmitted to a cloud database for further assessment.

Sensors are an important element in *Total Worker Health* (TWH) practice. TWH seeks to advance worker well-being by integrating protection from workplace health and safety hazards with illness and injury prevention programs. Total Exposure Health (TEH) informs this effort through the study of the multiple stressors—chemical, physical, biological, psychosocial, physiological—to which an individual may become exposed in both occupational and nonoccupational settings. Sensors are an important part of TEH practice, as they enable OEHS practitioners to collect personal exposure data cost-effectively and unobtrusively on many different stressors with high resolution in space and time.

## Why should you care?

Fully characterizing the occupational exposures of some individuals may involve studying their nonoccupational exposures. Standard methods of personal exposure monitoring may not be sufficient, resulting in the need for a wearable sensor. One example is the use of sound measurement apps downloaded onto smartphones creating the opportunity for integrating occupational and nonoccupational exposures.

Sensors are becoming commonplace in modern living. Commercially available sensors are increasingly being used for environmental monitoring. As exposure scientists, OEHS practitioners can become subject matter experts on sensor technology. With this expertise, practitioners can talk with the public about sensor applications, devices, data interpretation and data quality issues, limitations, and data privacy considerations.

Sensors hold the promise of revolutionizing personal exposure monitoring. OEHS practitioners need to advance their competencies in sensors along with the associated topic of “big data” as these become integrated into standards of practice for exposure monitoring.

## What can you do about it?

Sensors are part of a constellation of topics such as big data and the Internet of Things (IoT), which are becoming more prominent in OEHS practice. Sensors are an emerging technology; therefore, a standard of practice is evolving. For now, there are limited examples that can be followed by OEHS practitioners. Sensors have been made a content priority by AIHA in response to this need. A resource guide is provided below to help OEHS professionals with getting started.

If you have advanced competencies in these topics, consider volunteering with AIHA to conduct at PDC, give a platform talk, or present a webinar.

## Want to know more?

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