Scientists Reveal New Data That Explores the Connection Between Air Pollution Exposure With Increases in Risk Factors for Diabetes and Obesity

Phoenix, Ariz.; March 26, 2014 — Is air pollution connected with increases in obesity, diabetes, and chronic kidney disease? Researchers are providing insight into that question today at the Society of Toxicology (SOT) 53rd Annual Meeting and ToxExpo in Phoenix, Ariz.

More than 30 percent of the US population has metabolic syndrome, which is the name for a group of factors that increase the sufferer’s risk of heart disease, diabetes, stroke and other health problems. While researchers have connected high-calorie, high-fat diets and sedentary lifestyles to the increase in metabolic syndrome in developed countries, others are looking into whether or not air pollution is also contributing to the epidemic.

“While our knowledge of how air pollution might be contributing to the metabolic syndrome epidemic is still primitive, the experimental evidence that does exist provides a potential causal relationship between air pollution and a number of metabolic processes, including glucose intolerance, insulin resistance, and body fat inflammation,” says Urmila P. Kodavanti, PhD, DABT, US Environmental Protection Agency (EPA), co-chair of the “Exploring the Interface Between Air Pollution and Metabolic Syndrome: The Bittersweet Dilemma” session.

Today’s session addresses the toxic interface between diet, metabolic homeostasis, and air pollutant exposure through presentations by:

- James R. Sowers, MD, University of Missouri, who is discussing integrated approaches to studying the constellation of factors involved in insulin resistance and associated cardiorenal metabolic disease.
- Robert Brook, MD, University of Michigan, who is describing the results of his team’s experiments on short-term human exposure to fine particle air pollution, which revealed a worsening in the body’s ability to respond to insulin.
- James G. Wagner, MBA, PhD, Michigan State University, co-chair of session, who is revealing the results of his studies that are the first to show adverse cardiovascular responses in animals with metabolic syndrome.
- Stephanie A. Shore, PhD, Harvard School of Public Health, who is presenting her research into the effects of ozone exposure when combined with obesity, which showed an increased sensitivity in obese mice to ozone-induced effects.
- Dr. Kodavanti, who is discussing the results of her research into the effect of ozone exposure on metabolic processes.

“This research is just the beginning, as much more research is needed to establish whether exposure to air pollution might contribute to diabetes and obesity,” says Dr. Wagner, “but because
of the large prevalence of metabolic syndrome, any incremental adverse health effect caused by air pollution could have a huge impact on health care and economic costs, as well as quality of life.”

To speak with a topic expert from the “Exploring the Interface Between Air Pollution and Metabolic Syndrome: The Bittersweet Dilemma” session, please contact:

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**About SOT**

Founded in 1961, the Society of Toxicology (SOT) is a professional and scholarly organization of more than 7,700 scientists from academic institutions, government, and industry representing the great variety of individuals who practice toxicology in the US and abroad. SOT is committed to creating a safer and healthier world by advancing the science of toxicology. The Society promotes the acquisition and utilization of knowledge in toxicology, aids in the protection of public health, and has a strong commitment to education in toxicology and to the recruitment of students and new members into the profession. For more information about SOT and toxicology, visit the Society online at [www.toxicology.org](http://www.toxicology.org), follow us on Twitter [@SOToxicology](https://twitter.com/SOToxicology), and like us on [Facebook](https://www.facebook.com).