Current and Future Trends in Exposure Science

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Abstract

Despite what many believe Europe is becoming a safer healthier place. In most parts of the continent air pollution concentrations are decreasing, the concentration of chemical pollutants in rivers and lakes has decreased over the last 20 years, and the use of hazardous chemicals in society is less than in the past. Exposure science plays an important part in the identification and management of the health risks from environment and workplace hazards. Currently, exposure science research is mostly focussed on chemical and aerosol contaminants, which we investigate using biological monitoring, analysis of contaminants in environmental media and mathematical models. What does the future hold? The world will be deceptively similar to today – we will live in the same types of homes, go to work in a vehicle, and spend leisure time with friends and family. However, in many other ways society will be very different. We will see greater use of artificial intelligence, greater use of electricity as a power source, more use of biotechnology and everything will be much more connected. The future environmental challenges to health will also differ from our current concerns; some of the trends are apparent now. Global warming will impact human health through changing patterns of exposures, changes in the relationships between work and home and between employers and workers will make employment more precarious, social interactions may become fractured and increasingly stressful. It is clear that the environmental stressors of tomorrow will be very different from now and exposure science needs to change to continue to be relevant to society. One trend for the future will be the increasing ability to document the exposome and the genome, and use this information to better understand health risks. This is the key to the future of exposure science.