

Keywords: Risk assessment; Combined chemical exposure; Cumulative effects; Synergistic interaction; Environmental health; Public policy

Introduction

Chemical exposure in modern society is highly diverse, involving multiple chemical pathways, such as food, and consumer products. While risk assessment has traditionally focused on individual chemical exposures, the evaluation of human exposure to multiple chemicals [1], which can interact in complex ways. Understanding the risks associated with combined chemical exposure

Epidemiological Studies

Epidemiological studies play a crucial role in understanding the health effects of combined chemical exposures in human populations [4].

- **Cohort and Case-Control Studies:** These studies can identify associations between exposure to chemical mixtures and health outcomes, providing valuable evidence of risk.

- **Meta-Analyses:** Aggregating data from multiple studies can help clarify the overall impact of combined exposures on health.

Case Studies Highlighting Combined Chemical Exposures

Air Pollution and Health

Respiratory health problems associated with air pollution, such as particulate matter (PM), nitrogen oxide (NO_x), and volatile organic compounds (VOC), can lead to significant health risks, including asthma and cardiovascular disease [5].

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