

US EPA ARCHIVE DOCUMENT

EPA's Consolidated Human Activity Database (CHAD)

Issue

The study of exposure to chemicals requires two sets of information:

- The amount and distribution of chemicals in an environment, and
- The ways people and animals encounter these chemicals.

Sampling air, soil, water, and residues on food can give scientists a good picture of how chemicals are distributed in the world around us. However, the vastly different ways in which people behave on a daily basis makes mapping their contact with these chemicals a challenge.

EPA scientists have collected data from 19 separate studies in the Consolidated Human Activities Database, known as “CHAD.” These studies collected detailed information on human activity, and together, the data can help researchers understand the patterns of human behavior that influence their exposure to chemicals in their environment.

What's in the data?

The studies compiled in CHAD are detailed diaries of daily behavior — in all, the database contains more than 30,000 individual day entries, broken down by activity type and hour. Study participants indicated when they ate, how long they spent traveling to work, their time spent socializing outside their homes, and when they slept. For each study



day, CHAD also provides an index of relative activity level — a single number that represents how active that person is compared to the rest of the population.

Study participants also included demographic data like age, sex, employment and education level, which allows researchers to confine their area of study to specific groups of people and learn if the kinds of behavior typical to certain populations change their risk of exposure to certain chemicals.

CHAD presents the data from the 19 separate studies in a consistent, searchable format, making it possible for scientists and researchers to create much more robust studies of human activity and exposure.

CHAD's impact

CHAD is regularly used as part of a wide variety of human exposure and health studies. Scientists can use CHAD data as input for exposure and dose prediction models and for statistical analysis — for example, to estimate breathing rates to better understand how air pollution is absorbed across a population.

CHAD has been cited in hundreds of articles on human exposure science, and is used to help EPA develop regulatory guidance.

Data availability

CHAD data are freely available in three formats. CHAD Explorer is an online tool that allows researchers to examine the data and retrieve the elements they need using a web

browser. Users can also download the complete dataset in either a Microsoft Access-compatible version or in a Windows desktop format. The raw data files are also available for the complete CHAD database and for the individual studies that compose CHAD.

For more information, visit EPA's Consolidated Human Activity Database website: www.epa.gov/chadnet1/chad_2003.html

Media Contact:

Emily Smith
EPA National Exposure Research
Laboratory
smith.emily@epa.gov

Technical Contact:

Kristin Isaacs
EPA National Exposure Research
Laboratory
isaacs.kristen@epa.gov