ACC's Principles for Improving Chemical Hazard and Risk Assessments

Design

Data and Methods

Communication

Review and Accountability

Assessments should focus on understanding the inherent properties of substances in order to determine the likelihood of harm from a specific exposure. The public, businesses and regulators look to government assessments for reliable information about the potential hazards and risks associated with chemicals.

Identify Key Science Issues Prior to Initiation of Assessment

- Discuss the purpose, scope and technical approaches
- Engage stakeholders

Apply Objective Criteria

- Develop and apply consistent criteria for selecting and evaluating a study, before an assessment begins
- Evaluate all studies to determine their quality, relevance and reliability

Ensure Assessments are Transparent

- Disclose key information and assumptions used to develop assessments and reach conclusions
- Make materials, including important data sets, publicly available

Conduct Scientific Peer Review by Independent Experts

- Ensure peer reviewers are fully independent from the program office issuing the assessment
- Evaluate peer review panels for conflicts of interest; ensure panels contain a balance of perspectives and appropriate technical expertise

Use Modern Science and Tools

- Use relevant data
- Consider how chemicals act in the body
- Evaluate chemicals at relevant exposure levels

Integrate Evidence

- Give the greatest weight to information from the highest-quality and most-relevant studies
- Transparently and objectively integrate evidence to make realistic determinations of hazards and risks; consider all types of evidence

Characterize Hazards and Risks Fully and Accurately

- Present hazards and risks in an easy-to- understand manner to stakeholders and risk managers
- Present a range of plausible values, including central estimates when going beyond a screening level assessment

Improve Accountability

- Use an independent accountability procedure to verify that revised assessments are accurate and responsive to scientific and peer review

RESULT: Public Trust in High-Quality Risk Assessment

Data and Methods

Formaldehyde Assessments Must Properly Evaluate and Integrate All Available Evidence

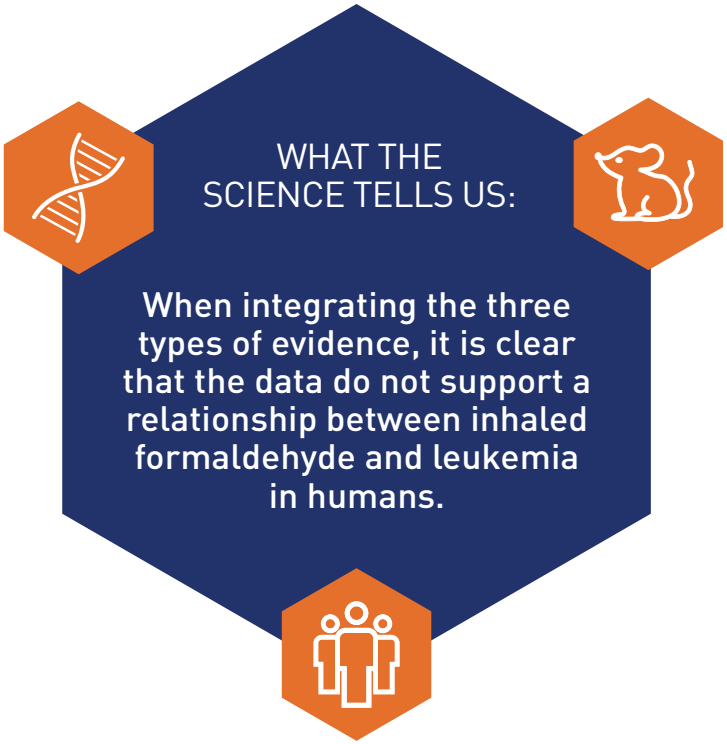
A fully integrated chemical assessment requires that all available scientific evidence is evaluated for quality and relevance, then analyzed together to make an informed decision.

Mechanistic Data

(Studies about what a chemical does in the human body and how it does it)

Compelling evidence shows that inhaled formaldehyde does not reach bone marrow (Swenberg et al. 2011).

There are no reliable, high-quality mechanistic data available to support speculation that formaldehyde causes leukemia.



Animal Data

(Experimental data from animal lab studies)

The best-available studies show that inhaled formaldehyde has no effect on blood or bone marrow.

A recent NTP study on two strains of mice genetically predisposed to develop leukemia to high doses of inhaled formaldehyde and confirmed no leukemia effects.

Epidemiological Data

(Studies of select human populations)

Extensive and detailed critical reviews of epidemiological literature do not support a causal relationship between formaldehyde exposure and leukemia.

When data from three large, high-quality studies are combined, the number of leukemia cases in the studied occupationally-exposed populations is essentially the same as what is expected in the U.S. population (152 v. 153), indicating there is no appreciable risk for developing leukemia.