

Intersection of Science & Policy

Americans deserve to know that high quality science is the foundation of government regulations



When agencies rely on questionable science, they undermine public confidence in government decision-making. Bad science can lead to unwarranted restrictions or product de-selection, unfounded public alarm and unnecessary costs for consumers and businesses.

Government policy must require that regulators' decisions are risk-based, based on the best available science, incorporate a weight of the evidence approach to evaluating data, consider research integrity and ensure that studies have undergone a balanced peer review.



RISK-BASED DECISION-MAKING

When science is used to assess the safety of substance or behaviors and then used as the basis of regulation, scientific analysis should support risk-based decisions. While frequently confused, risk and hazard are actually very different. Hazard is the ability of a substance to cause harm under any circumstance. **Risk** is the probability that a substance or behavior will cause harm based on a substance's **hazard**, a substance's **use**, and the **exposure** to humans or the environment that is created through that use. A science-based evaluation of risk is a more sophisticated and more appropriate way to consider safety.



BEST AVAILABLE SCIENCE

Information must be evaluated based on its strengths, limitations, relevance, and reliability before being integrated into decision-making. Regulators must consider whether scientific information has undergone a credible peer review, whether the study was conducted in accordance with sound and objective practices, and if the data were collected by accepted methods or best available methods. To ensure transparency, assumptions and methods must be described and documented. Issues including variability, uncertainty and independent verification must be addressed.



RESEARCH INTEGRITY

All research must be judged on its merits through the application of consistent criteria regarding quality, relevance, reliability, and transparency. Each study should be evaluated independent of the affiliation, gender, religion, political beliefs, etc., of the investigators and independent of the funding source (e.g., academia, government, NGO, or industry). For transparency, investigators' affiliations and all sources of funding of the research should be disclosed.



WEIGHT OF SCIENTIFIC EVIDENCE

Regulators must systematically review streams of evidence according to a pre-established protocol that promotes objective, transparent, and consistent evaluation of data. The systematic review takes into account strengths, limitations, and relevance of each study and then integrates them into decision-making, giving the greatest weight to the strongest, most relevant studies.



BALANCED AND RIGOROUS PEER REVIEW

To be credible studies must undergo a third-party, independent evaluation that reviews the underlying assumptions, methodology, criteria, and conclusions. Peer review panels must include a wide range of perspectives of qualified scientific and technical experts. Reviewers must respond to public comment and be free of conflicts of interest. The most robust peer reviews are those that strive to reach consensus.