

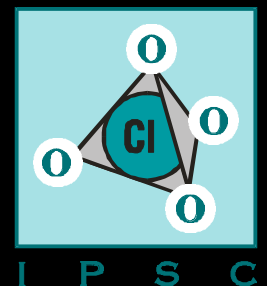
Development of the Revised Reference Dose / Risk Assessment

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U.S. Environmental Protection Agency



Perchlorate Stakeholders Forum
Sponsored by the IPSC
Henderson, NV
19-21 May 1998



Outline

- EPA risk assessment guidelines
- NCEA perchlorate toxicity assessment team
- Revised RfD / risk assessment process

Recommended Studies

- 90-Day subchronic bioassay
- Developmental neurotoxicity study
- Genotoxicity assays
- Mechanistic studies
- ADME - Absorption, Distribution,
Metabolism and Elimination
- Developmental study
- 2-Generation reproductive toxicity study
- Immunotoxicity

EPA Risk Assessment Guidelines

- Principles and procedures to frame the conduct of risk assessments
- Promote consistency and technical quality of scientific inferences
- Flexible, full consideration to all relevant scientific information case-by-case
- Revised as experience and scientific consensus evolve

EPA Risk Assessment Guidelines

- Developmental toxicity (1991)
FR 56(234): 63798 - 63826
- Reproductive toxicity (1997)
EPA No. EPA/630/R-96/009a
NTIS PB97-100093
- Neurotoxicity (1998)
EPA No. EPA/630/R-95/001Fa
NTIS PB98-117831
- Thyroid follicular cell tumors (1998)
EPA/630/R-97-002

EPA Risk Assessment Guidelines

- Proposed revision to carcinogenicity (1996)
EPA/600/P-92/003C
NTIS PB96-157599
- Exposure (1992)
FR 57 (104): 22888 - 22938
- Chemical mixtures (1986) / Proposed 1998

Guidelines Available

- <http://www.epa.gov/ncea>
- EPA ORD publications, Technology Transfer and Support Division, NRML
Phone: 513.569.7562; FAX:
513.569.7566. Need the EPA No.
- National Technical Information Service (NTIS): 703.487.4650; FAX:
703.321.8547. Need the NTIS PB No.

NCEA Perchlorate Toxicity Risk Assessment Team

- | | | |
|---------------------|--------|--|
| • Harlal Choudhury | NCEA | general toxicology / risk assessment |
| • Eric Clegg | NCEA | reproductive toxicology |
| • Kevin Crofton | NHEERL | neurotoxicology |
| • Vicki Dellarco | OW | genetic toxicology |
| • Annie Jarabek | NCEA | general toxicology / dosimetry / risk assessment |
| • Gary Kimmel | NCEA | developmental toxicology |
| • MaryJane Selgrade | NHEERL | immunotoxicology |

Toxicity Study Review and Revised RfD / Risk Assessment

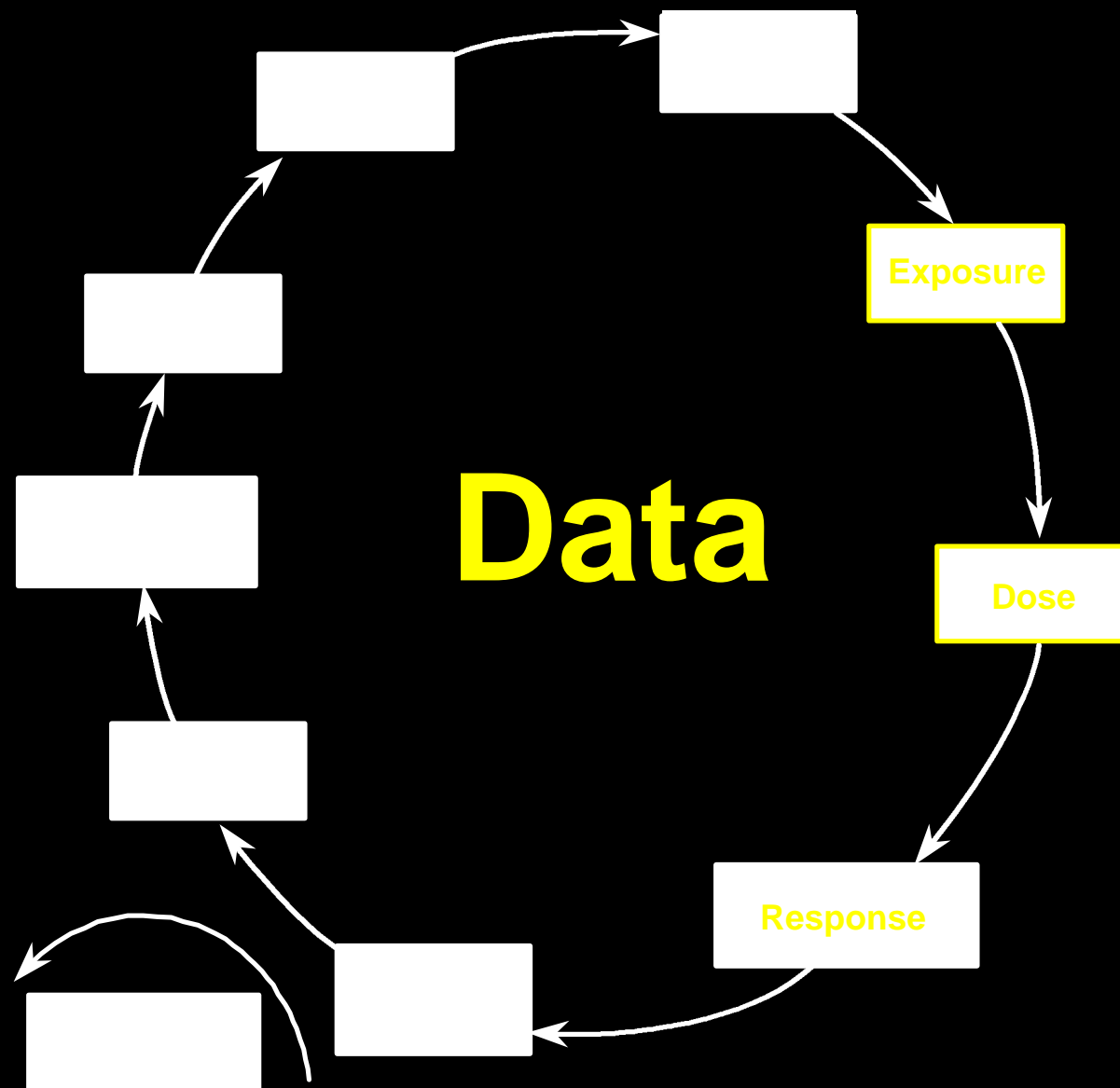
- **Review of existing and new toxicity data**
- **Hazard identification**
- **Dose-response evaluation**
 - **Designation of effect levels (mathematical modeling or NOAEL / LOAEL procedure)**
 - **UF assignment**
 - **Uncertainty characterization - confidence statements**

Revised RfD / Risk Assessment Review Process

- Internal peer review (September 1998)
- External peer review (October 1998)
- Response / revisions subsequent to external peer review (November 1998)
- Submit final revised RfD / risk assessment to Integrated Risk Information System (IRIS) process
- Refine as required with new data

Future Applications of Revised RfD

- Basis for various guidance levels (e.g., Health Advisory, NPDWR, Superfund remediation goals)
- Converted through the use of standard ingestion and body weight parameters (e.g., 2 L / day and 70 kg for adult)



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