

Guidelines for Application of Data-Derived Uncertainty Factors in Risk Assessment

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Health Canada

And

U. S. Environmental Protection Agency

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The opinions expressed in this text are those of the authors
and do not necessarily represent the views of the sponsors.

Acknowledgments

Since the early 1980s several scientists have published improvements to methods by which the risks are assessed from the noncancer toxicity. Their efforts, which have often been instrumental to the overall improvement of this area of science, are not always directly acknowledged in this report. The work described here not only builds on these previous efforts, but can be viewed as only a small contribution to the overall effort. The reader is directed to the bibliographies of the full text references enclosed at the end of this text for additional work.

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Abbreviations

ADI	Acceptable Daily Intake
ADME	Absorption, Distribution, Metabolism, and Excretion
ATSDR	U.S. Agency for Toxic Substances and Disease Registry
AUC	Area Under the Curve
BMD	Benchmark Dose
C_{\max}	Maximum Concentration
ECNC	Estimated-Concentration-of-No-Concern
ED ₁₀	Effective Dose, 10 th Percentile
ED ₅₀	Effective Dose, 50 th Percentile
EPA	U.S. Environmental Protection Agency
IPCS	International Programme on Chemical Safety
LOAEL	Lowest-Observed-Adverse-Effect-Level
MRL	Minimal Risk Level
NAS	National Academy of Sciences
NOAEL	No-Observed-Adverse-Effect-Level
NOEL	No-Observed-Effect-Level
PBPK	Physiologically-Based Pharmacokinetic
RfC	Reference Concentration
RfD	Reference Dose
RIVM	Netherlands National Institute of Public Health and Environmental Protection
TC	Tolerable Concentration
TDI	Tolerable Daily Intake
TI	Tolerable Intake
UF	Uncertainty Factor
UF _{AD}	Animal to Human Toxicodynamic Uncertainty Factor
UF _{AK}	Animal to Human Toxicokinetic Uncertainty Factor
UF _{HD}	Intrahuman Toxicodynamic Uncertainty Factor
UF _{HK}	Intrahuman Toxicokinetic Uncertainty Factor
UMDNJ	University of Medicine and Dentistry of New Jersey
WHO	World Health Organization