General Books / Book Chapters


Both Finney books are classic treatments of the use and interpretation of studies with responses that are yes/no. Overview of the classic methods, usually involving least squares regression on transformed proportions, to estimate dose-response curves. Lots of discussion of concepts, including tolerance distributions.


Lengthy classic paper on dose-response estimation. Sections on quantal effects apply to our discussions. Quantal responses are responses where you observe yes / no on each individual.


I believe a 2nd ed. is now available. Intermediate level text on logistic regression. Does not discuss overdispersion (at least 1st ed. doesn’t).


Papers originally presented at an invited conference on toxicology science and policy. Source of a couple of the assigned readings.


Compact treatment of properties of overdispersed binomial data. My approach to overdispersion based on section 2.6.


A collection of papers as a memorial for David Williams, who worked in tox statistics. Papers in three areas: design of tox. expts, estimating LC50, and overdispersion. Source of one of the assigned readings.


Compilation of methods, written for non-statisticians. Chapter 4, discusses LC50 estimation; pp 197-199 discuss NOEC and related quantities.
Benchmark Dose and NOEC


Original paper on the Benchmark Dose method.


“This guidance document addresses the computation of the BMDs and benchmark concentrations and their confidence limits; data requirements; dose-response analysis, and recommendations for reporting the results.”


Statistical critique of NOEC.


**Estimating LC$_{50}$** Most of the general books above cover LC$_{50}$ estimation in detail.


“Standard” procedure for estimating LC$_{50}$. Recommends methods that produce ci’s as well as estimates and paying attention to practical considerations in addition to statistical.

**Overdispersion**


**Extrapolation to entire communities**


Given tox information on a subset of species from a community what can be said about effect on all species?


**Hormesis: concepts**


My comment: Ed Calabrese is a persistent advocate of hormesis.

Hormesis: basic models


Miscellaneous discussions of other issues


Recommendations from an international consensus committee on studies using repeated doses of toxicant. Concepts, not details.


Review of a very extensive literature. Each of the three sections (on carcinogenicity, mutagenicity, and dev. tox. presents mathematical models, trend tests (does response increase with dose) and dose-response models.


shows the similarity between a logistic distribution and T distribution with 9 d.f.