Welcome!

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Welcome to **“Methods in R: A Topic Reference for Biomedical Research and Peer Review”**.

This book is shaped for two readers it expects to serve in the same week: the **author** who has data in front of them and needs to pick a method, run it in R, and write the Methods paragraph; and the **peer reviewer** who has a manuscript on their desk and needs to know what a competent application of that method looks like, which diagnostics should have been reported, and what red flags to flag.

The body covers sixteen topic areas — from foundations and inference through regression, survival, Bayesian methods, machine learning, bioinformatics, and study design — with hands-on labs that consolidate the methods of each area into a single runnable file. Every method page ends with a *For Reviewers* section: the misapplications, the missing diagnostics, the red flags in tables and figures, and the things to verify against the authors’ references and arithmetic. A final part, *Reporting Templates*, gives copy-paste Methods and Results paragraphs tagged by **STROBE / CONSORT / TRIPOD-AI / PRISMA / ARRIVE**.

The book is not a textbook of statistics. It assumes you can read an R session and follow a method already named to you. Where it differs from the existing biostatistics shelf is in being optimised for lookup, not linear reading, and in pairing every method with a concrete review checklist.

Open Source Repository

This book has been built using **{rmarkdown}** and **{bookdown}**. Formulas are rendered using MathJax. All source files are available on **GitHub**: https://github.com/CTTIR/methods-in-r. You are free to fork, share, and reuse the contents under the CC BY 4.0 license.

How To Use The Guide

- **Linear vs. lookup.** If you already know the method, jump to its chapter. If not, start at Find your method and follow the decision tree.
- **Where the code lives.** Code in each method page and lab is display-only in the rendered book; copy it into an R session with the packages cited in that section attached. Reusable helpers are kept in `R/helpers.R` in the source repository.
- **Per-chapter downloads.** Every chapter page offers the chapter as PDF and EPUB below its title.
- **Whole-book PDF and EPUB.** Use the navbar *Download* menu for a single-file PDF or EPUB.
- **Corrections and suggestions.** Open an issue at https://github.com/CTTIR/methods-in-r/issues.

Contributing

Issues and pull requests are welcome — see CONTRIBUTING.md.

Citation

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