

# Writing a good protocol






The purpose of a protocol is simple: to make experiments easier to perform, easier to share, and easier to build on. However, a good protocol is more than just a record of how something is done. Good protocols directly improve reproducibility, efficiency, and collaboration. They also reduce mental clutter and make space for creative thinking (Anderson, 1982; Sweller et al., 1998).

Here you'll find practical tips for writing protocols that age well. The advice is format-agnostic: whether you write in Markdown, structured XML, or word-processor documents, the same discipline applies.

*This is a bench card. Full protocol available online.*

## Procedures

### >> **Writing a protocol**

- (1.) Sketch the structure first. At minimum: a unique identifier, a name, an abstract, a changelog, and one or more procedures. Add safety, analysis, or troubleshooting advice where applicable. 
- (2.) Write each step as a single action in active voice.
- (3.) Be deliberate:
  - Name equipment, reagents, and durations a new reader would need to execute the step without asking you. Assume nothing about prior knowledge — including your own, two years from now.
  - Parameterize quantities, volumes, and ratios so the procedure scales. A protocol is not a lab notebook. Leave room for the next user to adjust without rewriting it.
  - When an action is non-obvious or grounded in experience, attach a one-sentence rationale. 
- (4.) *Critical:* Mark critical steps and decision points so they are visually distinct from routine ones. Readers scan; the moments that matter most should be impossible to skim past.
- (5.) Track changes:
  - Maintain a changelog. Append one line per substantive edit with the date, your full name, and a one-sentence summary of what changed. 
  - Version the filename. For incompatible changes, create a new file with an incremented version number and leave the retired version intact for reproducibility.
  - *Optional:* Commit changes through version control  SOP0101. 
- (6.) Give credit:
  - Audit AI-assisted content. If a language model drafted or revised any section, verify every factual claim and citation before publishing. Remove anything that can't be confirmed.
  - Do not copy-paste copyright-protected material without permission or a compatible license. If you adapt content from another protocol, cite it and confirm its license is compatible with the one you intend to publish under.
- (7.) Review protocols regularly with users and collaborators. A second reader catches assumptions the writer is blind to.

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### List of references

- J.R. Anderson, *Psychol. Rev.* **89**(4), 369–406 (1982).  
J. Sweller, J.J.G. van Merriënboer, and F.G.W.C. Paas, *Educ. Psychol. Rev.* **10**(3), 251–296 (1998).

📖 Notes (available online)

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