

# Writing a Methods Section

What are Some Goals of a  
Methods Section?

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- Present the **experimental design**.
- Give enough detail for readers to **replicate** your work.
- Provide enough detail to allow readers to **interpret your results** (virtual witnessing).

# “Experimental Section”

## According to Paradis and Zimmerman

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Source: Paradis, James G. and Muriel L. Zimmerman. *The MIT Guide to Science and Engineering Communication*. 2nd ed. Cambridge, MA: MIT Press, 2002. ISBN: 0262661276.

# What are Some Pitfalls of a Methods Section?

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- Providing **too little or too much** information.
- **Reiterating** published methods rather than citing them.
- Writing strictly in **chronological order** (alternatives: most important first, most fundamental first, etc.) **or in the order of your specific aims.**
- Methods and results don't **correspond** (you have to provide methods for all the experiments you report).
- **Forgetting to use visual organizers** that direct readers to specific aspects of the methods section, e.g., subheads, illustrations.
- Writing a **protocol instead of a methods section.** Methods are written in narrative form in **past tense.**

# NEJM Example: Overall Structure

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Source: Caffrey, S. L., et al. "Public Use of Automated External Defibrillators." *N Engl J Med* 347 (2002): 1242-1247.

# NEJM Example

## Structure: Subheads, Topic Sentences

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Source: Methods section in Caffrey, S. L., et al. "Public Use of Automated External Defibrillators." N Engl J Med 347 (2002): 1242-1247.



# Things to Avoid in your Methods Sections

- Over use of “then.”
- Over use and misuse of “using.”
  - Alternatives: “with,” “by using,” “by means of”
  - Misuse: e.g., *Using a fiberoptic bronchoscope, dogs were immunized with sheep cells.*
- Over structuring
  - e.g., one sentence paragraphs with subheads

# PNAS Example Methods

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Source: Materials and Methods section in Clemens, J. C. et al. "Use of double-stranded RNA interference in Drosophila cell lines to dissect signal transduction pathways." Proc Natl Acad Sci U S A. 2000 Jun 6;97(12):6499-503.

# JCR Methods

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Source: Methods section in Zimmermann, K. C., et al. "The role of ARK in stress-induced apoptosis in *Drosophila* cells." J Cell Biol. 2002 Mar 18;156(6):1077-87.

# Introduction and Methods

## Due Dates

Burge and Sabatini: Friday, March 19

(that's NEXT WEEK)

Please get drafts to me no later than the

**MORNING OF Thursday, March 18**