



# Guidelines on Writing a Scientific Paper



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Study on chemical communication of  
*Pacifastacus leniusculus*

## **X** Bad Title

- Avoid complicated and technical expressions
- Don not use vague expressions

To signal or not to signal? Chemical  
communication by urine-borne signals  
mirrors sexual conflict in crayfish

## **✓** Good Title

- Only write essential information
- Good jokes only
- Ask questions
- Be clear and informative

# Introduction

## Introduction

Horizontal lines representing the first paragraph of text.

### 1st Paragraph

Theoretical contextualization

Horizontal lines representing the second and third paragraphs of text.

### 2nd & 3rd Paragraph

Connection between theory and your study

Purpose of your study

Horizontal lines representing the fourth paragraph of text.

### 4th Paragraph

Goals

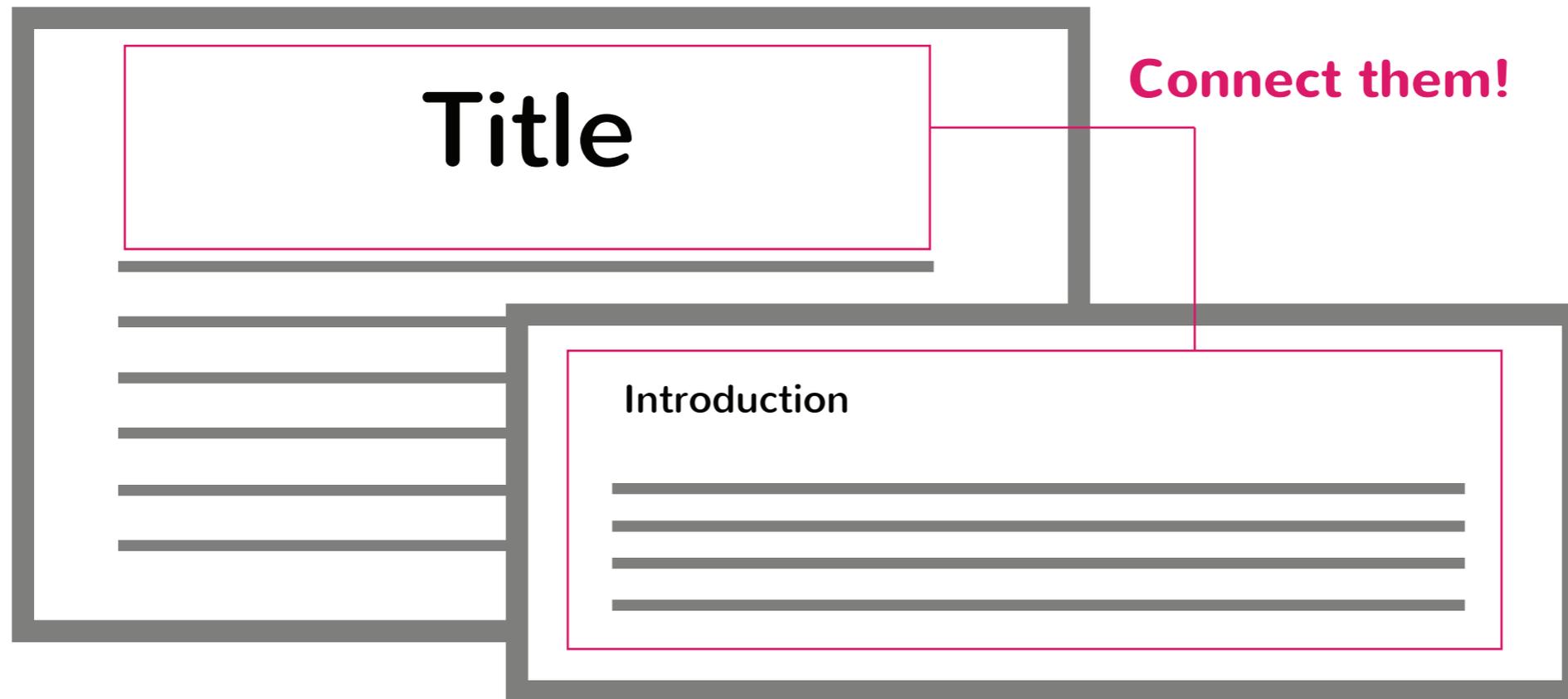
Questions

Hypothesis

Horizontal lines representing the fourth paragraph of text.

# Introduction

Remember!

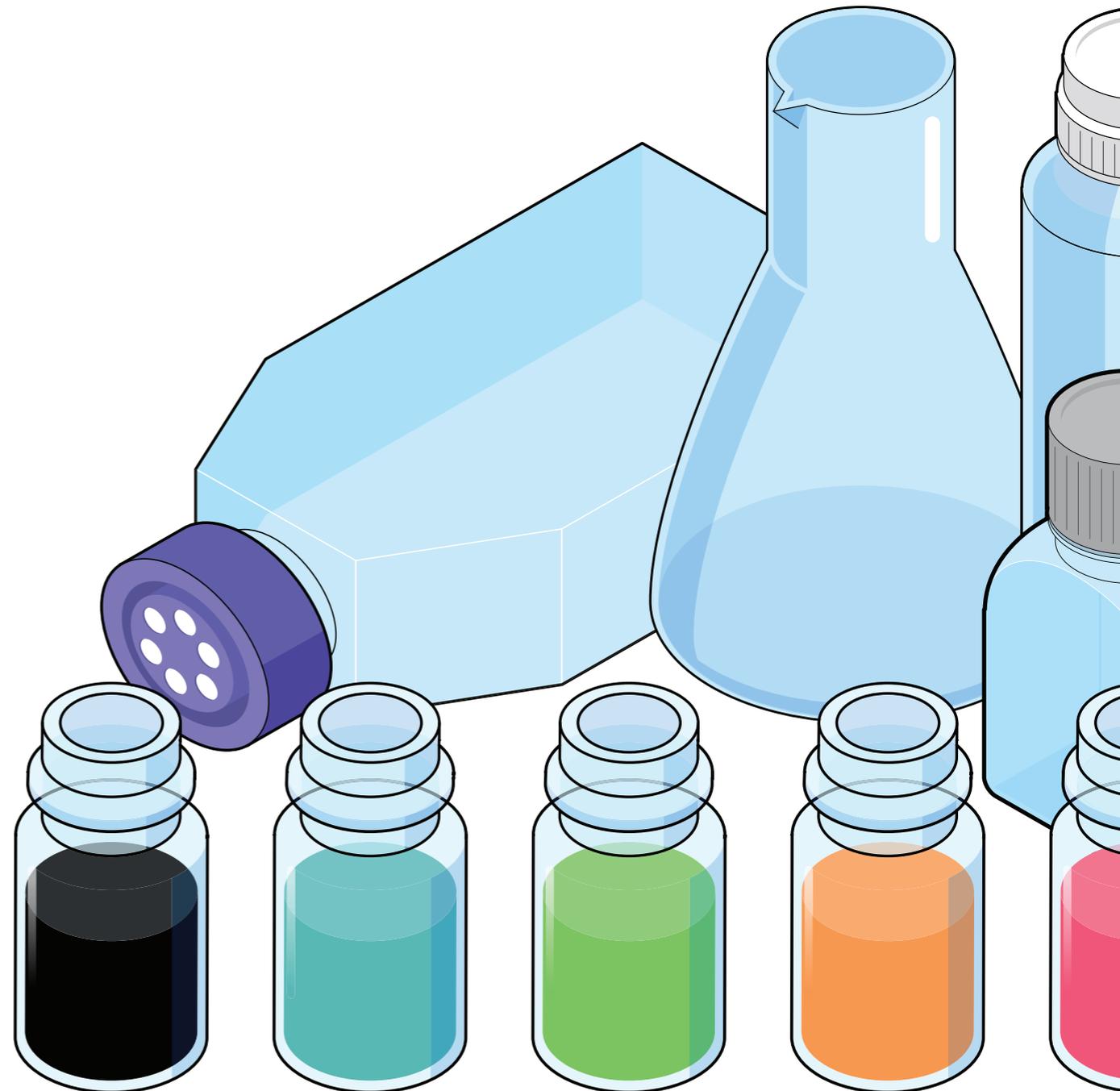


Organize the topics you will write about and make sure they are linked

Never explain more than one idea in the same sentence

# Materials & Methods

- Use active voice
- Describe well your study site
- Anyone should be able to replicate your study with the data and information you provided
- Present your methods and statistics in the same order as your questions or hypothesis



# Results

## Results

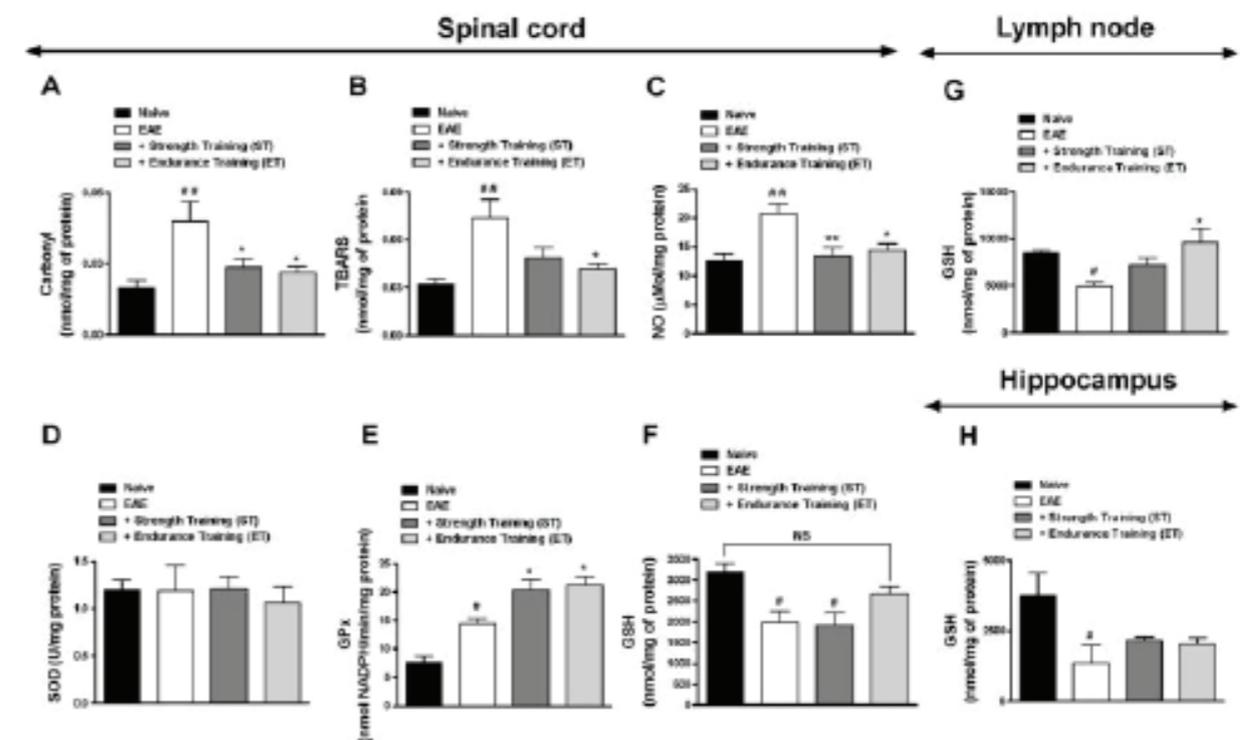
Placeholder text for the Results section, consisting of two groups of horizontal lines. The bottom group of four lines is highlighted in pink.

- Present your results in the same order as your questions or hypothesis
- Only present results that answer your questions or test your hypothesis
- Do not repeat the information from Materials & Methods in the figures
- Highlight the impact of your results

# Graphs & Tables

What your graphs and tables must be:

- Extremely necessary
- Self-explanatory
- Easy to understand
- Consistent with your findings
- Simple and B&W
- Clean
- Subtitled



**Fig. 2** ET and ST inhibit oxidative stress parameters during the development of EAE. Protein damage (carbonyl technique) (a), lipid damage (2-thiobarbituric acid reactive species (TBARS) technique) (b), formation of nitric oxide (c), superoxide dismutase (SOD) activity (d), glutathione peroxidase (GPx) activity (e), and glutathione (GSH) content (f) were estimated in the spinal cord. GSH content in the lymph node (g)

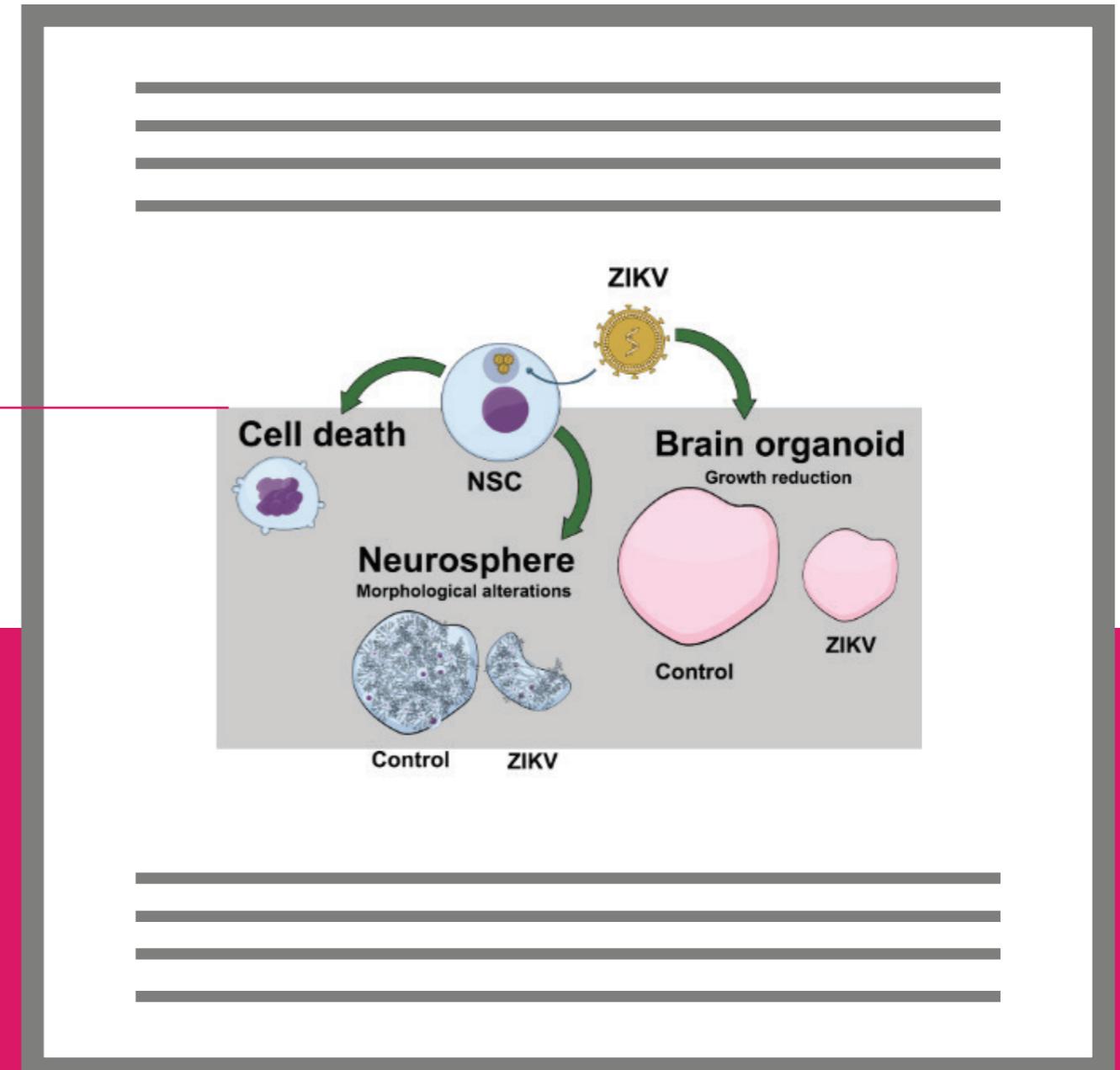
and hippocampus (h) were estimated in the naive, EAE, ST, and ET groups. Data are presented as mean  $\pm$  SEM of four to six mice/group and are representative of three independent experiments ( $n = 12-18$  animals/group), where \* $p < 0.05$  and \*\* $p < 0.001$  vs. the naive group; # $p < 0.05$  and ## $p < 0.001$  vs. the EAE group (one-way ANOVA followed by Newman-Keuls post hoc test)

Souza, P. S. et al, 2016. Physical Exercise Attenuates Experimental Autoimmune Encephalomyelitis by Inhibiting Peripheral Immune Response and Blood-Brain Barrier Disruption. *Molecular Neurobiology* DOI 10.1007/s12035-016-0014-0

# Pictures & Illustration

You can only use pictures and illustrations when:

- If needed to represent information presented in your study
- If it shows something new or never seen before
- If it helps understanding or visualizing a flow of information



This was elegantly done by the group of Dr. Stevens Rehen, an internationally-known researcher in the field of stem cell research and, more recently, cell reprogramming. Two months after the pre-print on PeerJ dated March 2016, the final paper was released and, to our surprise, it was published on Science Magazine, one of the most prestigious scientific journals in the planet.

# Discussion

- Do not repeat your results
- Discuss your results in the same order as your questions or hypothesis
- Highlight what is trending about your work in the beginning or in the end of the discussion



Overall

Finding Implications

Finding Implications

Conclusions and next steps

# References

## Read, read, read, read.

- Search for good references for your work
- If the information you have came from someone else's work, cite them
- Standardize all references



# Abstract

## Abstract

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15% introduction  
+ goals

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30% materials  
+ methods

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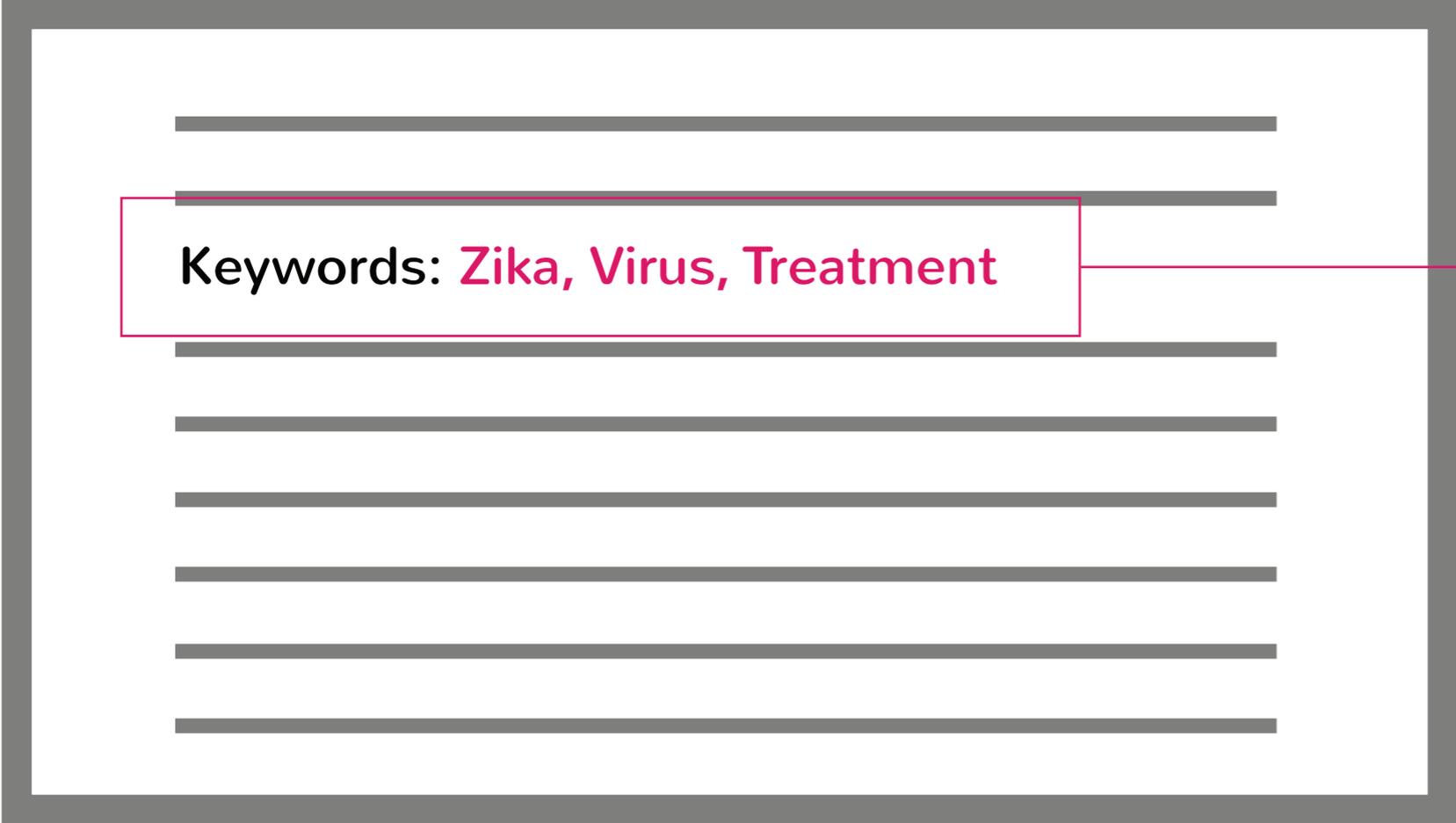
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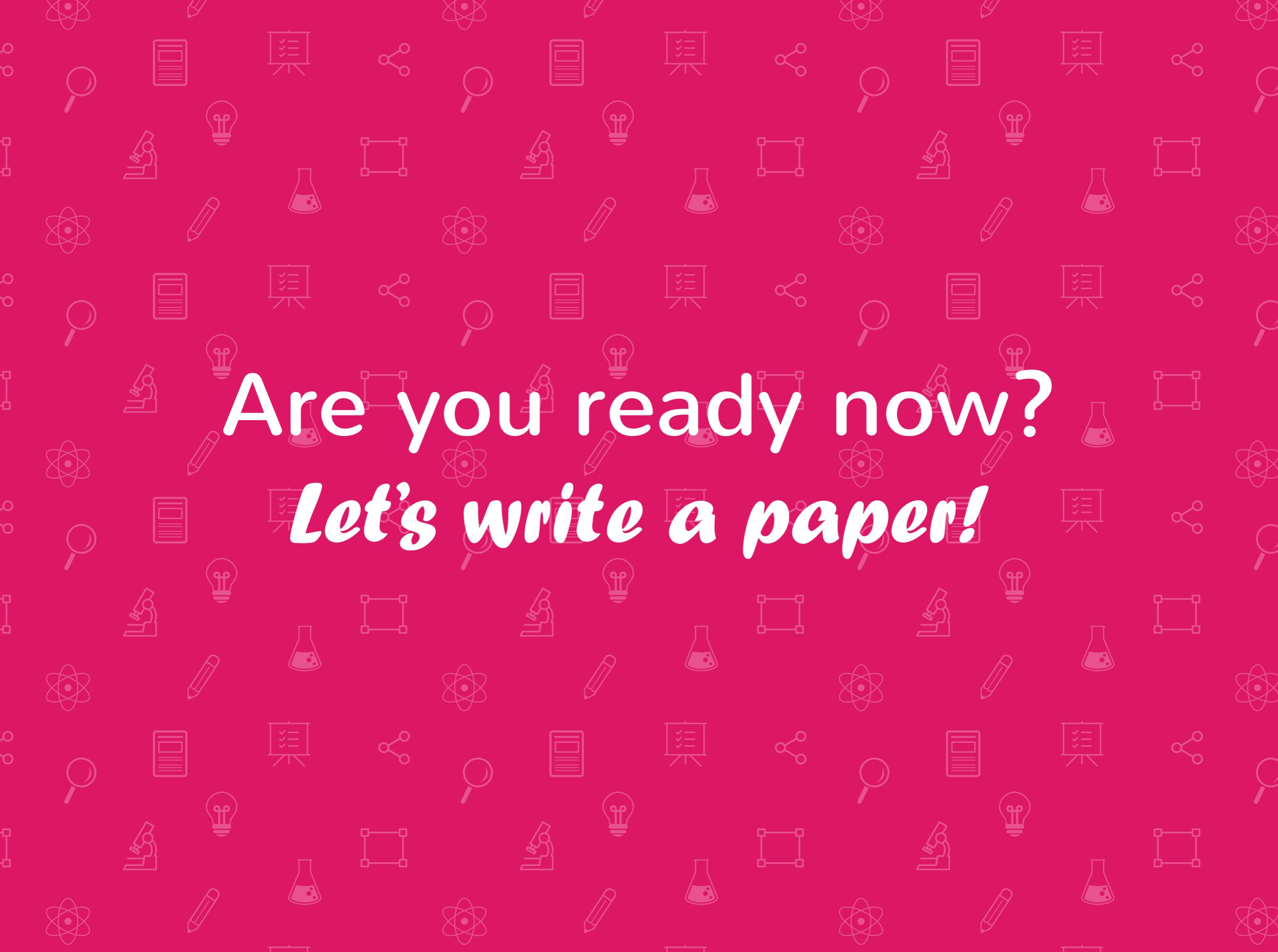
15% discussion

# Keywords



**Keywords: Zika, Virus, Treatment**

- Never repeat words from the title
- Use only relevant words to your research
- Avoid words that are too specific



**Are you ready now?**  
***Let's write a paper!***



Unify, Simplify, Beautify

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[www.mindthegraph.com](http://www.mindthegraph.com)