



Title and Abstract: Your Paper in a Nutshell

The title and the abstract always appear at the beginning of an article, but they are usually written last, after the rest of the paper is complete. This is the stage where the paper will be clearly organized, and can be compressed into a few sentences. These sections act like a book jacket, inviting the reader to look further.

I. The Title

The title is a short phrase, rarely a complete sentence. It should be clear, informative, and detailed, but not contain unnecessary details. It should contain the key words that define your topic. It should emphasize subjects or findings that are unique to your study.

Purpose: The title conveys the key points of your study to a reader glancing through a citation index, database, or references page.

Examples of Titles:

Too Vague:

Effects of pH on the growth of bacteria

Revision:

Effects of pH variance on growth of Pseudomonas aeruginosa

Too Detailed:

Effects of pH variance from 4.0 to 9.0 on the growth of prokaryotic Pseudomonas aeruginosa bacteria (strain 142) in minimal media under aerobic conditions

Revision:

Acidic pH increases growth rate of Pseudomonas aeruginosa

II. The Abstract

The abstract is a condensed version of your paper. An effective abstract will not refer to figures or information in the text, abbreviate unknown terms, or contain too much or too little detail. It will convey the relevance of the topic to the reader, and summarize the approach to answering the question, the major supporting data, and the major conclusions reached by performing the study.

Purpose: Similar to a title, the abstract provides the reader with key points about the study and entices one to read further.

Technique: An abstract can be constructed by taking the topic sentences from each section and rewording them to flow well in one paragraph. However, your abstract should never repeat the sentences from your text.

Please refer to the back of this handout for examples of abstracts.



Examples of an Abstract:

Too Vague:

Ecdysone, is a major steroid hormone of *Drosophila melanogaster*. Heterozygous flies have a greater life span and resist stress with a greater ability. A mutant is involved in the biosynthesis of ecdysone and doesn't have effects when it eats ecdysone. This shows the importance of ecdysone in regulating life.

Too Detailed:

Ecdysone is the major steroid hormone of the fruit fly *Drosophila melanogaster*. Steroids are well known for their role in development and reproduction in all life forms. The chemical structure of Ecdysone is C₁₀H₂₃N₂O₅. Flies that are heterozygous for mutations of the ecdysone receptor, which is coded on the third chromosome and consists of five proteins (alpha, beta, gamma, sigma, and hepa domains), exhibit increases in life-span and resistance to various stresses, with no apparent deficit in fertility or activity. A mutated fly, also lacking wings and the melanin gene, involved in the biosynthesis of ecdysone displays increased life span and stress resistance without lack of fertility and activity (figure 3). These effects are suppressed by feeding ecdysone droplets, at a concentration of 0.6mM, to the flies. These observations demonstrate the importance of the ecdysone hormonal pathway, a new player in regulating longevity.

Revised:

Ecdysone, the major steroid hormone of *Drosophila melanogaster*, is known for its role in development and reproduction. Flies that are heterozygous for mutations of the ecdysone receptor exhibit increases in life-span and resistance to various stresses, with no apparent deficit in fertility or activity. A mutant involved in the biosynthesis of ecdysone displays similar effects, which are suppressed by feeding ecdysone to the flies. These observations demonstrate the importance of the ecdysone hormonal pathway, a new player in regulating longevity.

This example was taken and adapted from Simon, A. F. et al. 2003. "Steroid Control of Longevity in *Drosophila melanogaster*." *Science* 299(5611): 1407-1410