

## Common Mistakes in Writing

### Comparisons

- Comparative terms (higher, greater, lower, less, increase, or decrease) use “than” not “compared to”

**Avoid:** Experimental rabbits had a 28% greater decrease in alveolar phospholipid as compared to control rabbits during normal ventilation.

**Revision:** Alveolar phospholipid decreased 28% more in the experimental rabbits than in the control rabbits during normal ventilation.

- Avoid comparing unlike things

**Avoid:** These results are similar to previous studies.

**Revision:** These results are similar to the results of (or to those of) previous studies.

- Compared to, compared with

- Compare 1 thing or person “with” another to examine similarities or differences in detail. (In science, “with” is usually correct.)

We compared complication rates in patients treated with X drug with those in patients treated with Y drug.

- Compare 1 thing or person “to” another only when describing a single striking similarity or dissimilarity

We compared heart transplant patients to coronary bypass patients in terms of rates of atrial fibrillation.

### Misplaced and Dangling Modifiers

Misplaced modifier: a word or phrase whose placement is illogical or ambiguous

Dangling modifier: a word or phrase that is not attached to any word in the sentence or is attached to the wrong word

**Avoid:** Because it was totally occluded, the surgical team decided to bypass the artery.

**Revision:** The surgical team decided to bypass the artery because it was totally occluded.

**Avoid:** Changing from a standing to recumbent position, the heart expanded noticeably in all directions.

**Revision:** When the patient changed from a standing to a recumbent position, the heart expanded noticeably in all directions.

- Avoid dangling modifiers in titles

**Avoid:** Isolation of Antigens From Monkeys Using Complement-fixation Techniques

**Revision:** Isolation of Antigens From Monkeys by Using Complement-fixation Techniques

**Revision:** Use of Complement-fixation Techniques Antigens to Isolate Antigens From Monkeys

- Keep pronoun antecedents clear

An antecedent is the word a pronoun refers to. If the antecedent is unclear, the reader may not be able to understand the sentence.

**Unclear antecedent:** Tyson et al. abruptly occluded the venae cavae before analyzing the heart beats. As a result of this, the volume of the right heart rapidly decreased.

**Clear antecedent:** Tyson et al. abruptly occluded the venae cavae before analyzing the heart beats. As a result of this procedure [or this occlusion], the volume of the right heart rapidly decreased.

## Personal Pronouns

Personal pronouns replace nouns

- Subject case: I, he, she, we, who, whoever, they
  - Give the award to whoever will benefit most. (Subjective case: the subject of “will benefit”)
- Object case: me, him, her, us, whom, whomever, them
  - Give the award to whomever you prefer. (Objective case: the object of “you prefer”)
  - Whom did you consult? (Objective case: the object of “did consult”)
- When using personal pronouns in questions, choose the correct pronoun by answering the question
  - Who would be the best reviewer for this paper? She would be the best reviewer. (Not her)
  - To whom should I give the award? I should give it to him. (Not he)

## Parallel Structure

Parallel ideas are ideas that are equal in logic and importance. Parallel ideas should be written in parallel form, either as a pair or in series

- We hoped to increase the blood flow and to improve survival.
- Pulmonary blood flow was always greater than renal blood flow.

### Nonparallel items in a series

- **Avoid:** The D225 modification contained 12.5 mg of cysteine HCL, 50 mg of methionine, and had a final volume of 115 mL.
- **Revision:** The D225 modification contained 12.5 mg of cysteine HCL and 50 of methionine; its final volume was 115 mL.

### Word Choice

- Use precise words

- Hemoglobin level
- Prothrombin time
- Pulse rate

**Avoid:** The bilirubin has been increased for several hours.

**Revision:** The bilirubin level has been increased for 4 hours.

**Avoid:** In isolated, perfused dog lungs, infusion of serotonin was associated with an increase in microvascular pressure.

**Revision:** After serotonin infusion, microvascular pressure increased 10% in isolated, perfused dog lungs.

- Use simple words

- Use men and women, not males and females (except as adjectives [e.g., male donor, male children] or when children and adults are mixed [females, aged 12 to 25])
- Use died, not expired or passed
- Use euthanized (AMA style: humanely killed) for animal studies, not sacrificed
- Use vs utilize
  - To utilize something is to put it to a new or unusual use
    - Because there are no quality-of-life questionnaires specifically designed for adults with congenital heart problems, we utilized one designed for patients with congestive heart failure.
  - For any other purpose, use is best

- Use data, criteria, and media with plural verbs

- Data is the plural of datum
- Criteria is the plural of criterion
- Media is the plural of medium
  - The data were analyzed by the statisticians.
  - The criteria were developed by the committee.

- Use shorter words when possible
  - Use before, not prior to
    - Before (not prior to) writing my review, I read everything I could find on the topic.
  - Use after, not following
    - After (not following) his head injury, Phineas Gage's behavior changed drastically.
- Avoid jargon
- Avoid nonstandard abbreviations
  - Using nonstandard abbreviations makes the text difficult to read.

*Examples of nonstandard abbreviations*

- IBCBB, in vitro cell-based bioassays
  - PK, pharmacokinetic
  - TK, toxicokinetic
- Make sure the subject and verb make sense together
  - Avoid:** The appearance of nondialyzable <sup>35</sup>S in the luminal bath was measured.
  - Revision:** The appearance of nondialyzable <sup>35</sup>S in the luminal bath was noted. OR, the amount was measured.
- Do not omit helping verbs
  - Avoid:** The tissue was minced and the samples incubated.
  - Revision:** The tissue was minced, and the samples were incubated.

### Commonly Misused Words

- Acute, chronic
  - Use in reference to the duration (not severity) of symptoms, conditions, and diseases
    - Chronic heart disease
    - Acute renal failure
  - Do not use in reference to patients, treatment, or medication
    - Long-term treatment
    - Long-term marijuana user
- Affect, effect
  - Affect is a verb meaning to act on or a noun meaning emotional state or expression

- Verb: How smoking affects health is still a matter of concern to physicians.
- Noun: The schizophrenic patient had blunted affect.
- Effect is a noun meaning a resultant condition or a verb meaning to bring about or to cause.
  - Noun: We studied the effect of epinephrine on glucose kinetics in rats.
  - Verb: The students hoped to effect change in the antiquated system.
- Can, may, might
  - Can: ability to do something
    - Homogeneous cell lines of short duration can be achieved with cloning techniques.
  - May: possibility or permission
    - This mechanism may also contribute to the ozone effect.
  - Might: smaller possibility
    - Our findings might one day lead to a better treatment.
- Compose, comprise
  - Comprise means “to be composed of”
    - The “quack” medication comprised several highly toxic ingredients.
    - The “quack” medication was composed of several highly toxic ingredients.
- Dose, dosage
  - Dose: quantity to be administered at one time, or the total quantity administered
  - Dosage: a regimen; the regulated administration of individual doses, usually expressed as a quantity per unit of time
    - The patient received an initial dose of 50 mg and, thereafter, a dosage of 25 mg 3 times a day for 1 week.
- Due to, because of
  - Use “due to” only when you could substitute “caused by”
    - **Incorrect:** The study was halted due to a loss of funding.
    - **Correct:** The study was halted because of a loss of funding.
    - **Correct:** The false result was due to an error in the statistical analyses.
- Ensure/assure/insure
  - Ensure: to make certain
  - Assure: to inform or convince someone that something is true
  - Insure: to guarantee against (financial) loss

- Etiology/cause
  - Etiology: the study of the causes of disease; or all the possible causes, separate or related, of a given condition or disease
    - The etiology of cancer is a maze of unknowns.
  - But—
    - The cause of his heart failure was acute myocardial infarction.
  - Other abused “-ology” words: pathology, morphology, histology, symptomatology
- Examine, evaluate
  - Patients are examined
  - Conditions or diseases are evaluated
    - Incorrect: We evaluated the patient for signs of heart disease.
    - Correct: We examined the patient for signs of heart disease.
- Show, reveal, demonstrate
  - Show: indicate something by evidence
    - The data showed that clotting times vary widely.
  - Reveal: make known something previously unknown
    - Differential staining revealed 3 types of cells.
  - Demonstrate: show by reasoning and experiments
    - By dropping objects from the Leaning Tower of Pisa, Galileo demonstrated that bodies of different masses fall with equal velocities and with a uniform acceleration.