

Description

We hope that by now you are familiar with number conventions in formal writing. You can refer to Part 1 and Part 2 in this series, for a quick recap.

In this post, we will provide a simple rule of thumb and some exceptions for our biomedical authors.

While the style of literary texts is to spell out most numbers, that of scientific text is to use numerals when a degree of accuracy is intended. The modern scientific number style treats numbers more consistently by extending the use of “numerals” to most 1-digit whole numbers (1 to 9) that were previously expressed as words (one to nine). This style allows all quantities to be expressed in a similar manner. In addition, numerals have greater visual distinctiveness than words; it increases the profile of quantities in running text.

This article covers guidelines on scientific number style as recommended by the two predominant style guides in life sciences and medicine:

1. *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers* (CSE)
2. *American Medical Association Manual of Style: A Guide for Authors and Editors* (AMA)

In actual application of these guidelines, however, when common sense or editorial judgment says a guideline is a poor choice for a specific document, follow sense or judgment.

Rule of Thumb

In a scientific text, Arabic numerals should be used in preference to words when the number designates anything that can be counted or measured.

For example,

- The authors detected VEGF in 12 of 12 samples from patients with NVG.
- We started the experiment with just 5 books (see Figure 1).

The rest of this article discusses six exceptions to this rule.

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Exception 1: Beginning a Sentence, Title, Heading

Numerals are not used to begin a sentence, title, or heading. If logic calls for a number to begin a sentence, title, or heading, then spell out the number. If possible, reword so that the number appears elsewhere or connect the sentence to the previous or next sentence.

- Avoid: 35 cm is the preferred minimum operational snow base. However, ski areas in the study region produced a thicker snow base (usually 50?75 cm) early in the ski season.
- Spell out: Thirty-five centimeters is the preferred minimum operational snow base. However, ski areas in the study region produced a thicker snow base (usually 50?75 cm) early in the ski season.
- Reword: Although 35 cm is the preferred minimum operational snow base, ski areas in the study region produced a thicker snow base (usually 50?75 cm) early in the ski season.

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Spelling Tip!

When spelling out numerals, hyphenate numbers from *twenty-one* through *ninety-nine* when these numbers occur alone or as part of a larger number. When numbers greater than 100 are spelled out, do not use commas or "and" (e.g., one hundred forty-four).

Exception 2: Adjacent Numbers

When two numbers are adjacent, spell out the number most easily expressed in words and leave the other as a numeral, or reword the sentence to separate the numbers. In general, retain the numeral that occurs with a unit of measurement.

- Avoid: The fat content of the lesions could be identified on 3 10-mm sections.
- Spell out: The fat content of the lesions could be identified on three 10-mm sections.
- Reword: The fat content of the lesions could be identified on three sections of 10 mm each.

Exception 3: Zero (0) and One (1)

For these numbers, applying consistent logic (numerals for quantities and words otherwise) may make decisions about correct usage more difficult as they are also used in ways that are more like figures of speech than precise quantifications ("in one of the subjects…," "zero-point energies").

Express the whole numbers zero and one as numerals only when:

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- they are connected to a unit of measure (1 year, 1 mm, 0 A, etc.)
- they are used as assigned or calculated values (when $z = 0$, a mean of 1)
- are part of a series or are closely linked with numbers other than 0 or 1 (0, 1, 5, and 9 were…, between 0 and 2)

Otherwise, spell out zero and one:

- …compared to the standard one (one used as a pronoun)
- one of the doctors (when “one” can be replaced with “a” or “a single”)
- on the one hand (transition phrase)
- zero-based budgeting (terms)
- one of whom could have been the leader (when emphasis on the quantity (0 or 1) would be confusing)

Exception 4: Accepted Usage/Idiomatic Expressions

When a number is used idiomatically or within a figure of speech, spell out the word; however, like jargon, figures of speech may be inappropriate for scientifically oriented writing because they may not be readily understood by readers whose first language is not English. Recasting the phrase is generally the better option.

- Avoid: We logged his sessions to learn a thing or 2, and warn his subsequent targets.
- Spell out: We logged his sessions to learn a thing or two, and warn his subsequent targets.
- Reword: We logged his sessions to learn some moves, and warn his subsequent targets.

Exception 5: Ordinal Numbers

In general, spell out single-digit ordinals (corresponding to the numbers 1 to 9), whether adjectives or adverbs.

- for the ninth time but for a 10th time
- were first discovered
- the third test run but the 98th test run

When there is a mix of single-digit and larger ordinals and double-digit ordinals, the express single-digit ordinals in the numeric form:

- Avoid: These correspond to daily values between the first and 15th of August 2003.
- Numeric Form: These correspond to daily values between the 1st and 15th of August 2003.

Exception 6: Common Fractions

In general, common fractions should be spelled out in running text.

- half of the books
- nearly three-quarters of the sample

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- a two-thirds majority

When the precise value must be conveyed, the decimal or percent form is preferred.

Would you like to try out a quick quiz to test your number knowledge? Check out these easy and fun exercises from GrammarBook: Exercise 1 and Exercise 2

Comment below to let us know how you fared! All the best!

Category

1. Journal Guidelines
2. Reporting Research

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