

**AuthorAID in the Eastern Mediterranean**  
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Abbreviations are useful to save space, but too many abbreviations can make the text hard to understand. Journals have many rules about abbreviations and it is important to follow them to make a good impression on the editors and reviewers.

Many of the basic rules that most journals use are explained here. But the rules are not the same for all journals, so it is important to check the Instructions for Authors or Guidelines for Manuscript Preparation of each journal.

Style manuals such as *Scientific Style and Format* and the *American Medical Association Manual of Style* provide detailed lists of abbreviations. If you are not sure what the correct abbreviation is, it is useful to check these manuals.

If you find an abbreviation you do not understand, you may find its meaning at the Acronym Finder website here <http://www.acronymfinder.com/>. Another useful website to discover the meaning of an unfamiliar abbreviation is <http://www.abbreviations.com/>.

You should check your manuscript before you submit it to make sure all abbreviations are used correctly.

**When to use an established abbreviation**

1. Even if you think an abbreviation is so well known that it is not necessary to explain it, it is always better to **explain it the first time it appears in your article**. The only exceptions are very “famous” terms such as DNA.

Although some readers are experts in the subject of your research, other readers may be students or nonexperts who may be confused by an abbreviation that is not explained. If they can’t understand what you are saying because they don’t know what an abbreviation means, they may feel your article is not useful and may ignore it.

2. You should explain each of your abbreviations the first time it appears in the main text. **After the first appearance of the abbreviation, the abbreviation should always be used in the rest of the manuscript instead of the complete term.**

3. However, there are a few places where it is better to avoid abbreviations, as explained below in the section “When *not* to use an abbreviation.”

**4. In general, an abbreviation should be used only if the term appears at least five times in the main text.** (The Abstract doesn't count.) If the term or phrase is used only two, three or four times it should not be abbreviated.

Some journals require a list of abbreviations at the beginning of the manuscript. For some journals this list should be arranged in alphabetical order, but for other journals it should be arranged in the same order in which the abbreviations appear in the text. In some journals this list replaces the explanations of each abbreviation in the text, but other journals still require you to explain the abbreviation the first time it is used in the text.

Some journals provide a list of accepted abbreviations that are considered well known to the journal's readers and that do not need to be explained in the text. These lists apply only to the journal in question and do not apply to other journals.

**5. When you explain or define the abbreviation in the text, do not use capital letters in the complete term except for personal names, names of places and names of institutions.**

Correct: We used analysis of variance (ANOVA) to detect associations between variables.

Incorrect: We used Analysis Of Variance (ANOVA) to detect...

#### **When *not* to use an abbreviation (exceptions to the rules)**

**1. The Abstract.** No abbreviations should be used in the Abstract (except for very "famous" ones such as DNA). The abstract is available separately from the rest of your article in databases, abstracting and indexing resources, so the rules for abbreviations are different for the Abstract and the main text. The abstract should be easy to understand even if the reader is not an expert in the subject of the article. This is the main reason why no abbreviations are allowed in the abstract.

**2. Don't use an abbreviation as the first word of a sentence,** even if the abbreviation appears earlier in the text and has already been explained.

**3. It is better not to use abbreviations in special places readers look at frequently when they are in a hurry to get information from your article.** These places are **section headings and subheadings, table titles and figure legends.**

**4. Don't use an abbreviation if the term or phrase is used less than five times in the main text.**

**5. It is not necessary to give the abbreviation simply to "remind" the reader about it,** even if you think readers will be more familiar with the abbreviation than the original complete term. (However, a few journals such as the *Bulletin of the World Health Organization* permit this type of abbreviation. You should check the Instructions for Authors or Guidelines for manuscript preparation.)

**6. In some disciplines such as molecular biology and immunology, there are so many established abbreviations that if you use all of them, your manuscript will look like a secret coded message and not like a report of a scientific discovery.** A text with **too many abbreviations** is hard to read and understand even for specialists. If your manuscript suffers from too many abbreviations, choose some for shorter terms and phrases and convert them back to the full term or phrase everywhere in the manuscript.

**7. Do not invent original abbreviations as a strategy to reduce the number of words to make the text fit the journal's word limit.**

The article may already contain many established scientific abbreviations, so adding more abbreviations for nonspecialized words can make the text hard to understand. It can be impossible for readers to remember what so many abbreviations mean.

**8. Do not invent an original abbreviation for phrases that are partly technical and partly nontechnical language, even if they are used frequently in your manuscript.**

For example, even if you mention “risk of recurrence of hypertension” frequently, do not abbreviate the phrase to RRHT. Examples of other frequent phrases that should not be abbreviated are:

differences between groups (DBG, DbG)  
statistical analysis (SA)  
statistically significant difference (SSD).

**When to invent a new, original abbreviation**

The basis rule is, “Never do this”. It is almost always better to use the complete term and not an abbreviation. However...

If the term or phrase refers to one of the variables or outcome measures you are reporting in your article, it may be okay to invent a new abbreviation. Readers will probably remember the meaning of the abbreviation.

For example, if you defined the variable “risk of recurrence of hypertension” in the Methods section and analyzed it with statistical methods, reported the data in the Results section and explained the meaning of the data in the Discussion section, then the abbreviation RRHT would be useful in your article.

A way to decide whether readers will probably remember the meaning of your original abbreviation is to check the Methods section. If the term or phrase is used there to define a variable or outcome measure, it probably appears five times or more in the article and is probably useful enough to deserve an abbreviation.

However, many analytical and diagnostic techniques have an established abbreviation but are mentioned only once or twice in the Methods section, so you should not use an abbreviation for these terms or phrases.

**Types of abbreviation**

1. A long term can be shortened by using the first letter and one or more additional letters.

Sometimes the first letter is capitalized. This does not mean that the original term should be capitalized if you write, for example, “antigen” in the text instead of using the abbreviation “Ag”. In English, capital letters are used only for the names of people, places and institutions.

Ag	antigen (not Antigen)
Neu	neuraminic acid (not Neuraminic Acid)

2. A long term or the name of an institution can be shortened by using the first letter (sometimes the first two letters) of each word. This type of abbreviation uses mostly capital letters.

IU	international unit
DNA	deoxyribonucleic acid (Not DeoxyriboNucleic Acid)
CT	computed tomography
NF $\kappa$ B	nuclear factor $\kappa$ B
WHO	World Health Organization
UN	United Nations
EMRO	Eastern Mediterranean Regional Office (of WHO)

The choice of which letters to use from each word is flexible, because often the purpose of this type of abbreviation is to create an acronym that can be pronounced like a single word.

NSAID	nonsteroid antiinflammatory drug
ANOVA	analysis of variance
MEDLINE	Medical Literature Analysis and Retrieval System Online
PLoS	Public Library of Science
ISAJE	International Society of Addiction Journal Editors

3. Units of measure in the International System of Units are abbreviated in different ways that combine capital letters, small letters and Greek letters (characters). These are often considered symbols rather than shortened forms of the original term. It is not necessary to explain these abbreviations in the text, because they are accepted internationally for all sciences.

m	meter	$\mu\text{m}$	micrometer
kg	kilogram	ohm	$\Omega$
L	liter (also abbreviated as l)	becquerel	Bq
s	second	acceleration	<i>g</i> (in italics)
A	ampere		
mol	mole		
K	kelvin		
cd	candela		

4. Symbols for specialized terms in chemistry, nuclear medicine, physiology, statistics, bibliography, and other specialized disciplines are usually one or two letters, and Greek letters are common. It is not necessary to explain these abbreviations in the text.

et al.	et alii (Latin phrase meaning “and others”)
mmHg	millimeters of mercury (Hg comes from the Latin name of the god Mercury, <i>Hydrargyrum</i> )
<i>P</i> or <i>p</i>	probability
$D_L$	diffusing capacity of the lung
<i>Q</i>	metabolic quotient (in italics)
$\lambda$	decay/disintegration constant, or wavelength

This Greek letter (lambda), like many symbols, means different things in different disciplines. To avoid character conversion errors and misunderstandings, it is better to write the name of Greek letters (alpha, beta, gamma, delta, epsilon, etc.) and not use the special character for the Greek letter.