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## Sources of information

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   - 6.2 Journal article with two authors
   - 6.3 Journal article with three to five authors

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6. **Journals, magazines, periodicals**
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12. **Official publications (online)**

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Introduction

You need to reference:

- to demonstrate that you have undertaken research for your academic work.
- to avoid accusations of plagiarism.
- to acknowledge the work of other authors, which can be found in books, journal articles, websites etc.

There are many systems of referencing available; this guide will focus on the American Psychological Association (APA) system which is used for Psychology and Sport and Exercise Science at the University of Lincoln.

This guide provides examples of different information sources: how to cite them within your text and how to include them in your reference list. For more information, please consult the *Publication Manual of the American Psychological Association*, (6th ed., 2nd printing). The APA Manual also provides information about paper formatting and writing style whereas this guide is primarily focused on the referencing aspect.

The APA website (http://www.apastyle.org) also contains information and tips on using the APA style, but do always check with your tutor to ensure you are following their requirements.

Other referencing styles

If you are doing a joint degree with another discipline, you may be required to use a different referencing system such as Harvard for some assignments. If so, please refer to the University of Lincoln Harvard guide.

APA referencing

There are two parts to APA referencing:

1. In-text citation.
2. Reference list.

Double-space your entire paper, including the reference list and any block quotations (unless advised differently by your tutor/lecturer).

In-text citations

All sources of information and data, whether quoted directly or paraphrased, are cited within brackets in the text of your paper. These are called *in-text citations* and provide brief information about the source, sufficient to enable readers to find complete information about the source in the alphabetical list of references that appears at the end of the document. e.g.

Researchers need to skilfully disseminate their findings to enable continued progress for the replacement of questionable therapies (MacKillop, Lisman, Weinstein & Rosenbaum, 2003).

The APA style uses the author-date style in the text. Put the surname of the author followed by the year of publication at the appropriate point in the text, including page numbers for direct quotations.
If you use the author’s name in the sentence, then you need only cite the year of publication in brackets. e.g.

Kessler (2003) found that among epidemiological samples, early onset results in a more persistent and severe course.

It is good academic practice to use both forms of in-text citation in your work (see example assignment on page 12 for further examples).

**Presenting research by other authors**

There are three ways to refer to the works of other authors:

- Paraphrasing
- Quotations
- Summarising

These three ways of incorporating other writers’ work into your own writing differ according to the closeness of your writing to the source writing.

**Paraphrasing**

Paraphrasing involves putting a passage from source material into your own words. A paraphrase must also be attributed to the original source. Paraphrased material is usually shorter than the original passage, taking a broader segment of the source and condensing it. You will be able to demonstrate your understanding of what you have read.

When paraphrasing or referring to an idea from another piece of work, you should provide an in-text citation to acknowledge the source. You do not need to include page numbers when paraphrasing.

Ogilvie, Newman, Todd and Peck (2014) argue that security of attachment in offending populations decreases according to the severity and degree of psychopathology.

**Direct quotations**

Direct quotations should be used sparingly in academic writing. Often, it is better to paraphrase or summarise what you have read.

If you do use a direct quotation, it must be identical to the original, using a narrow segment of the source. It must match the source document word for word and must be attributed to the original author. You must indicate a quotation by using double quotation marks at the beginning and end of the text.

Always give the page number(s) (or paragraph number for non-paginated material) and place double quotation marks around the quotation. The in-text citation comes immediately after the quotation, even when it is not at the end of the sentence. e.g.

Piaget proposed that "infants are born in a state of solipsism", (Mitchell & Ziegler, 2013, p. 52), meaning that they fail to distinguish between self and surroundings.
This quotation is followed immediately with the in-text citation.

If a quotation is 40 words or more, omit quotation marks and use a block format in which the quotation is indented about ½ inch (or 5 spaces) from the left margin and double-space the entire paragraph. e.g.

Example of a quote longer than 40 words:

The chief factors associated with these relationships are parental style and the quality of attachment. The pattern set by early attachment influences the character of subsequent relationships and the concept of the internal working models illuminating in this respect. It is especially useful in understanding the cycle of abuse (Mitchell & Ziegler, 2013, p. 247).

**Summarising**

Summarising involves putting the main idea(s) into your own words, including only the main point(s). Once again, it is necessary to attribute summarised ideas to the original source with an in-text citation. Summaries are significantly shorter than the original and take a broad overview of the source material. You do not need to provide page numbers when summarising.

**Page numbers**

Page numbers are only required for direct quotations in the in-text citation. They follow the author and date in bracketed format separated by commas - e.g. (Cottrell, 2013, p.15). Use the abbreviations p. for a single page and pp. for pages with a space before the number. List the page numbers completely, for example pp.176-179 instead of pp.176-9.

Do not include page numbers in the in-text citation when summarising or paraphrasing - only the author and the date are required.

**Common citation queries**

**How to cite sources with no author**

When a work has no author, cite in the text the first few words of the reference list entry, usually the title and the year. Use double quotation marks around the title of an article or chapter, and italicise the title of a journal, book, brochure, webpage or report. e.g.

Vaccine has revolutionised healthcare (“New Child Vaccine,” 2001).

**How to cite multiple authors**

When a work has two authors, cite both names every time the reference occurs. When a work has three to five authors, cite all the names the first time the reference occurs; in subsequent citations, use the surname of the first author followed by et al. When a work has six plus authors, use the surname of the first author followed by et al. every time the reference occurs in the text. The following table illustrates the citation styles.

Note: Use last names only unless there are different authors with the same last name; in this case, use the initials of the different authors in addition to the last name.
### APA Referencing

<table>
<thead>
<tr>
<th>Type of citation</th>
<th>First citation in text</th>
<th>Subsequent citations in text</th>
<th>Bracketed format, first citation in text</th>
<th>Bracketed format, subsequent citations in text</th>
</tr>
</thead>
<tbody>
<tr>
<td>One work by one author</td>
<td>Fry (2009)</td>
<td>Fry (2009)</td>
<td>(Fry, 2009)</td>
<td>(Fry, 2009)</td>
</tr>
<tr>
<td>One work by two authors</td>
<td>Fry and Jacklin (2009)</td>
<td>Fry and Jacklin (2009)</td>
<td>(Fry &amp; Jacklin, 2009)</td>
<td>(Fry &amp; Jacklin, 2009)</td>
</tr>
<tr>
<td>One work by three authors</td>
<td>Fry, Jacklin and Jones (2009)</td>
<td>Fry et al. (2009)</td>
<td>(Fry, Jacklin, &amp; Jones, 2009)</td>
<td>(Fry et al., 2009)</td>
</tr>
<tr>
<td>One work by four authors</td>
<td>Fry, Jacklin, Pratt and Jones (2009)</td>
<td>Fry et al. (2009)</td>
<td>(Fry, Jacklin, Pratt &amp; Jones, 2009)</td>
<td>(Fry et al., 2009)</td>
</tr>
<tr>
<td>One work by five authors</td>
<td>Fry, Jacklin, Pratt, Jones and Peters (2009)</td>
<td>Fry et al. (2009)</td>
<td>(Fry, Jacklin, Pratt, Jones &amp; Peters, 2009)</td>
<td>(Fry et al., 2009)</td>
</tr>
<tr>
<td>One work by six or more authors</td>
<td>Jacklin et al. (2013)</td>
<td>Jacklin et al. (2013)</td>
<td>(Jacklin et al., 2013)</td>
<td>(Jacklin et al., 2013)</td>
</tr>
<tr>
<td>Groups (readily identified through abbreviation) as authors</td>
<td>British Psychological Society (BPS, 2013)</td>
<td>BPS (2013)</td>
<td>(British Psychological Society [BPS], 2013)</td>
<td>(BPS, 2013)</td>
</tr>
</tbody>
</table>

### How to cite when page numbers are unavailable

If a resource contains no page numbers, as can be the case with electronic sources, then you cannot include a page number in the brackets for direct quotations. However, if the source indicates paragraph numbers, use the abbreviation “para” and the relevant number in the brackets.

If the paragraph number is not visible, cite the heading and the paragraph number following it. e.g.

(Beutler, 2000, Conclusion, para. 1).

[Tip: if your resource is a journal article in html format (and therefore with no page numbers), check to see if the article is available elsewhere as a PDF. Usually, PDFs include page numbers.]
How to cite when you are altering a direct quote

When you need to leave out part of a quotation to make it fit grammatically or because it contains irrelevant/unnecessary information, insert ellipses (three full-stops):

“the overall level of performance of both these clinical groups of children was unexpectedly poor…the expected advantages of the ostensive condition were also not found despite the reduced reliance on joint attention and intention reading within this condition” (Franken, Lewis & Malone, 2010, p. 258).

If you need to add or slightly change words within a quotation for reasons of grammar or clarity, indicate the change with square brackets.

Original direct quotation:

“Since they carry the continents with them as they move, we refer to this motion as continental drift” (Kutner, 2003, p. 451).

Quoted sentence with added words:

“Since they [tectonic plates] carry the continents with them as they move, we refer to this motion as continental drift” (Kutner, 2003, p. 451).

How to cite two or more references within the same brackets

Order the citations of two or more works by different authors within the same brackets alphabetically in the same order in which they appear in the reference list (including citations that would otherwise shorten to et al.). Separate the citations with semicolons. e.g.

Several studies (Miller, 1999; Shafranske & Mahoney, 1998) show that...

Other useful in-text tips

- If you are simply supporting a statement, put the author name, a comma and date of publication e.g. (Fry, 2009) (this doesn’t have to be at the end of a sentence).
- Where you are citing from more than one text, you can combine them together in a single in-text citation, separated by a semi-colon and ordered alphabetically e.g. (Fry, 2009; Jacklin, 2009).
- Each time you cite a piece of work, you include the names and the year of publication. However, if it is last cited within the same paragraph, you may not need to cite the year again.
- If you include the author’s surname within the text, you only need to add the year (and page number for direct quotations) in brackets, e.g. Wingate (2007) suggests….
- Sometimes authors publish a few studies in the same year. In this case, use letters to differentiate, e.g. Research clearly shows Z equals Y (Fry & Jacklin, 2009a; Fry & Jacklin, 2009b).
Reference list

Your reference list contains the full details of the information sources (books, journal articles, websites, etc.) that you have cited.

You can find the information you need for different sources in a variety of locations. Books have a title page and pages with publisher, published date and edition details. Journals have details on the cover and in the table of contents. In electronic format, you can find all the details you need on electronic databases or on the internet.

The APA reference list structure should be as follows (for an example list, see page 45):

- The reference list appears at the end of the assignment or essay.
- It is headed by the centred title References (in bold).
- The references are double-spaced.
- In APA, the first line of the citation falls on the left margin. Each succeeding line is indented 5-7 spaces. This format is called a hanging indent.
- References cited in text must appear in the reference list and vice versa. The only exceptions to this rule are personal communications and classical works (such as the Bible and Qur’an); they are cited in text only and are not included in the reference list.
- Because the reference list needs to be in alphabetical order, invert all authors’ names (Meridian, H.) Use an ampersand (&) and not the word and to join together the names of two or more authors.
- If the reference list includes two or more entries by the same author(s), list them in chronological order with the earliest first.
- If the author or editor name is unavailable, substitute title for author; then provide date and source e.g. Addiction links [report]. (2000). Retrieved from http://xxxxx
- Where the place of publication is required, for American locations, provide the name of the city and state (abbreviated) - e.g. Boston, MA; for all other locations, provide the city and country (apart from UK publications where only the city is required).
- Arrange reference entries in one alphabetical sequence by the surname of the first author or by title or first word if there is no author. List the authors in the order they are given in the source of information. Ignore the words “A”, “An”, and “The” when alphabetising by title.
- In titles and subtitles of articles, chapters, and books, capitalise only the first letter of the first word and any proper nouns. Use a colon followed by a space to separate titles and subtitles and capitalise the first letter of both the title and subtitle, e.g. Referencing and plagiarism: A complete guide.
- Italicise book titles, journal titles, and volume numbers. Do not italicise issue numbers.
- Use the abbreviations p. (for page) and pp. (for pages) before page numbers for book chapters and newspaper articles, e.g. pp. 132-134. Do not use page abbreviations before page numbers for journal articles, e.g. 176-179.
- When the reference entry includes a URL that must be divided between two lines, break it before a slash or dash or at another logical division point.
- Remember to set your Word preferences to remove hyperlinks from URLs to prevent them appearing with an underline.
Digital Object Identifier (DOI) - Psychology students only

NB: Sport and Exercise Science students are not expected to use DOIs in their reference lists.

If a Digital Object Identifier (DOI) is listed on either a print or an electronic source it must be included in the reference.

• A DOI is a unique alphanumeric string that is used to identify a certain source (typically journal articles).

• It is often found on the first page of an article. DOIs should always be displayed as a full URL link in the form https://doi.org/10.xxx/xxx and should not be preceeded by doi or DOI.

• DOIs are typically found on the top left-hand corner of abstracts, listed in the Table of Contents or printed at the top or bottom of an article.

• You can use a metadata search system called CrossRef.org to look up an article and find the DOI. This site also includes a form which allows you to retrieve a DOI for journal articles, books, and chapters by simply cutting and pasting the reference list into the box.

• Use the APA flowchart at http://blog.apastyle.org/files/doi-and-url-flowchart-8.pdf to determine when to include DOIs, URLs, or database information in your reference citations.

Referencing other materials

This guide contains examples of items in a reference list. Some are straightforward such as books, journal articles, ebooks and dissertations. Other material that you may use in an assignment might be more difficult to define. To help solve this issue, you can utilise a simple template.

The template to use, for materials like this, contains only four pieces of information (author, date, title, and source):


The format description in brackets is used only when the format is something out of the ordinary, such as a blog post or lecture notes; otherwise, it’s not necessary. Some other example format descriptions are listed on p.186 of the APA Publication Manual.

While the Publication Manual provides many examples of how to cite common types of sources, it does not provide rules on how to cite all types of sources. In this situation, APA suggests that you find the example that is most similar to your source and use that format. For more information, see p.193 of the Publication Manual of the American Psychological Association, (6th ed., 2nd printing).

Bibliography

Other disciplines use a Bibliography to list work that is not cited in the paper. In APA a Bibliography is not used at all. The reference list is used and only includes sources that are actually mentioned in the paper.

Plagiarism

Plagiarism is the use of another author’s ideas and words, either intentionally or unintentionally, without acknowledging the source of the information. It is an academic offence and will be treated seriously by the University (see University General Regulations).

Avoid plagiarism by referencing correctly.

Turnitin is software that detects plagiarism and can be used by your tutor to ensure academic integrity. See http://submit.ac.uk for more details.
Secondary referencing

Note: *Secondary quotes should be used rarely.*

Sometimes an author writes about research that someone else has done, but you are unable to track down the original research report. In this case, because you did not read the original report, you will include only the source you did consult in your reference list. The words “as cited in” in the bracketed reference indicate you have not read the original research. e.g.

If Miller’s work is cited in Lister and you did not read Miller’s work, you would provide Lister’s details in the reference list. In the text use this citation:

Miller’s simple definition of social justice (as cited in Lister, 2007) …

And in the reference list:


Help with referencing

The quickest and easiest way to reference your academic work is to:

- record the necessary information at the time of using it.
- be consistent.

Referencing is a very important consideration when submitting a piece of academic work and by following these guidelines you will ensure that you will meet the requirements set out by your tutor.

The Library subscribes to the referencing management software, RefWorks and EndNote, which allow you to gather and organise your references. For more information, go to [http://library.lincoln.ac.uk](http://library.lincoln.ac.uk). There are also a number of websites offering this service free of charge, e.g. Mendeley, Zotero.

If you need help with your referencing, or have any questions, the Library also offers 1-to-1 Learning Development drop-in service.

You can also contact the Subject Librarians responsible for Psychology and Sport and Exercise Science and look at the subject guides at:  
[http://guides.library.lincoln.ac.uk/psychology](http://guides.library.lincoln.ac.uk/psychology)  
[http://guides.library.lincoln.ac.uk/sport](http://guides.library.lincoln.ac.uk/sport)

The University of Lincoln Library holds copies of the following titles to help with the referencing of a wide range of sources:


There are also several online sources which will help with queries relating to a wide range of materials:

The American Psychological Association (APA) has a Style Blog at [http://blog.apastyle.org/apastyle/](http://blog.apastyle.org/apastyle/)

Purdue University have an Online Writing Lab which advises on general format for APA style including many examples at [https://owl.english.purdue.edu/owl/resource/560/01/](https://owl.english.purdue.edu/owl/resource/560/01/)
Can sport be used as a tool to improve the self-esteem, behaviour and social skills in children with ‘hidden disabilities’?

Sport has the power to overcome many problems faced by children with ‘hidden disabilities’ such as autism and ADHD and to overcome issues with self-esteem, behaviour or social skills. When working with a child with a hidden disability, coaches and teachers may not be able to initially see the difficulties faced by a child because, on the surface, they appear to be the same as all the other children. The aim of this assignment is to examine how behaviours, such as aggression, can be managed in these children in order to improve their social skills and prevent them from being disinterested in, or excluded from, sporting activities outside of the educational setting.

The physical characteristics of some disabilities may not be obvious to the casual observer and are therefore ‘hidden’ (Bodey, 2010). In her research, Bodey (2010) found that children in this situation are often well-known in the educational setting and their teachers have had training, resources and support. In contrast, coaches in the sport setting have not always received the same level of knowledge to give them the understanding needed to support the child.

Specific Learning Disorders (SLD), ASD (Autism Spectrum Disorder) and ADHD (Attention Deficit Hyperactive Disorder) all have a broad spectrum of ability and outward presentation so it is important for practitioners to firstly understand the child, and secondly, employ strategies to engage and retain them. Braune and Braune (2015) suggest that there has been very little focus in the literature on the impact of these disabilities on children within the sport setting and that issues which occur are often misinterpreted as bad behaviour, defiance and lack of motivation. They also discuss ways in which sports practitioners can promote positive sport experiences and utilise various strategies and techniques.

With a focus on ASD, Guest, Balogh, Dogra and Lloyd (2017) examined the impact of a multi-sport camp on thirteen girls with ASD between the ages of 8-11 with the aim of improving motor skills, physical self-perceptions and social skills. The girls were identified as having ASD but Guest et al (2017) also specified some additional exclusion criteria which included aggressive behaviour.
Sources of information
Advertisements

Reference the advertisement according to the style for the source, i.e. an advertisement found in a journal, magazine or newspaper should be treated as much like an article from that source as possible.

1.1 Advertisement: print (magazine)

In-text citation
(The Wine Company, 2013)

Reference list

Reference list example:

1. Advertiser’s name followed by a full stop
2. Year, month, day of publication in round brackets followed by a full stop
3. Title of the advertisement, or strapline or slogan
4. In square brackets put Advertisement followed by a full stop
5. Title of the publication in italics followed by a comma and then page number(s) followed by a full stop


1.2 Advertisement: broadcast

In-text citation
(Audi, 2013)

Reference list

Format:

Company name. (year, month, day of transmission). *Title of the advert (if there is one) or strapline or slogan* [Television advertisement]. City of origin, i.e. where the programme was produced: Name of television channel.
2.1 Artwork

In-text citation
(Hopper, 1925)

Reference list

Reference list example:

1. Artist(s)’ surname, comma, followed by their initials with a full stop after each initial
2. Year of production in round brackets followed by a full stop
3. Title of painting in italics
4. The artwork medium in square brackets followed by a full stop
5. The city (and state or country) where the museum is located followed by the museum or collection name then a full stop


2.2 Art online

In-text citation
(Hopper, 1925)

Reference list

Format:

Artist Surname, Initial(s). (Year). *Title of the work* [Description of the medium]. Retrieved from followed by URL

Notes
When artists assign titles they are italicised. Do not italicise titles that other people have assigned to the work.
3.1 Book with a single author

In-text citation (Paraphrase)
(Cottrell, 2013)

In-text citation (Quotation)
(Cottrell, 2013, p.156)

Reference list

Reference list example:
1. Author’s surname, comma, followed by their initials with a full stop after each initial, or corporate author followed by a full stop
2. Year of publication in round brackets followed by a full stop
3. Title (and subtitle if applicable) of book in *italics*, followed by a full stop (if first edition)
4. Edition (only if not the first edition) in round brackets followed by a full stop
5. Place of publication, followed by a colon
5. Publisher, followed by a full stop


3.2 Book with two authors

In-text citation (Paraphrase with the author(s) in the sentence)
McQueen and Knussen (2006) argue that....

In-text citation (Quotation)
(McQueen & Knussen, 2006, p. 48)

Reference list

Format:

*Author Surname, Initial(s)., & Author surname, Initial(s). (Year). Book title: Subtitle.*

Place of Publication: Publisher.
3.3 **Book with three to five authors**

**Note:** Although the first in-text citation for a work with three to five authors/editors includes all of the names of the authors/editors, subsequent citations include only the first author's/editor's surname, followed by ‘et al.’ and the year.

**In-text citation (Paraphrase)**

(Greig, Taylor & MacKay, 2013)

**Note:** A subsequent citation would appear as (Greig et al., 2013)

**In-text citation (Quotation)**

(Greig, Taylor & Mackay, 2013, p. 57)

**Reference list**

You need to name all the authors in the order they appear on the title page of the book.


**Format:**

Author Surname, Initial(s)., Author Surname, Initial(s)., & Author Surname, Initial(s).

(Year). *Book title: Subtitle.* Place of Publication: Publisher.

3.4 **Book with six or seven authors**

Use only the first author’s name and ‘et al.’ the first time you discuss the research and thereafter.

**In-text citation (Paraphrase with the author(s) in the sentence)**

Bexby et al. (2005) indicate that....

**In-text citation (Quotation)**

(Bexby et al., 2005, p. 57)

**Reference list**

You need to name all the authors in the order they appear on the title page of the book.


**Format:**

Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s).,

Author Surname, Initial(s)., Author Surname, Initial(s)., & Author Surname,

Initial(s). (Year). *Book title: Subtitle.* Place of Publication: Publisher.
3.5 **Book with eight or more authors**

For the in-text citation for a book with eight or more authors, include the first author and then ‘et al.’.

**In-text citation (Paraphrase)**
(Berman et al., 2012)

**In-text citation (Quotation)**
(Berman et al., 2012, p. 59)

**Reference list**
Include the first six authors’ names, then insert three ellipsis points and add the last author name in the reference list.


*Kozier and Erb’s fundamentals of nursing* (2nd Aust. ed.). Frenchs Forest, Australia:
Pearson Australia.

**Format:**

**Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., ... Author Surname, Initial(s). (Year). Book title: Subtitle. Place of Publication: Publisher.**

3.6 **Edited book**

If you are dealing with one editor instead of one author, insert the editor’s name in the place of the author’s, followed by (Ed.) or (Eds.) for more than one editor.

**Reference list**

**Format:**

**Editor Surname, Initial(s). (Ed.). (Year). Book title: Subtitle. Place of Publication: Publisher.**
3.7 Chapter in an edited book

In-text citation (Paraphrase)
(Van de Vijver & Leung, 2011)

In-text citation (Quotation)
(Van de Vijver & Leung, 2011, p.17)

Reference list

Reference list example:

1. Chapter author(s)’ surname, comma, followed by their initials with a full stop after each initial (and comma if more than one) with an ampersand before the last author
2. Year of publication in round brackets followed by a full stop
3. Title of chapter followed by a full stop
4. In, followed by the editors initials followed by a full stop and surnames with Ed. or Eds. in round brackets followed by a comma
5. Book title in italics
6. Page number range in round brackets followed by a full stop
7. Place of publication followed by a colon, space, publisher then a full stop
3.8 Ebook

- The reference list entry for a whole e-book should include elements of author, date, title (with e-reader book type in square brackets, e.g. [Kindle version] if applicable).

- Italicise the title (but not the bracketed material), and source (URL or Digital Object Identifier (DOI)).

- If the book was read through an online library (e.g. Google Books, Dawsonera or MyiLibrary) and not on an e-reader device, omit the bracketed information from the reference.

- Give the commercial URL of the ebook supplier, not the university web address of the database; e.g. the correct URL for Dawsonera titles is http://www.dawsonera.com and for MyiLibrary it is http://www.myilibrary.com

In-text citation (Paraphrase)
(Howitt, 2011)

In-text citation (Quotation)
(Howitt, 2011, p.24)

In-text citation (Quotation) ebook reader
(Gladwell, 2008, Chapter 1, section 2, para. 5)

(In ebook readers there are no page numbers so you should refer to the chapter section and paragraph number (abbreviated where long).

Reference list


Reference list example:

1. Author(s)’ surname, comma, followed by their initials with a full stop after each initial (and comma if more than one) followed by a full stop

2. Year of publication in round brackets followed by a full stop

3. Title (and subtitle if applicable) of book in italics, followed by a full stop

4. Retrieved from followed by the address of the ebook database (you give the commercial URL of the ebook supplier, NOT the university web address of the database)
3.9  **Book with no author**

When a work has no author or editor, cite in the text the first few words of the reference list entry, usually the title and the year, and capitalise all major words. Use double quotation marks around the title of an article or chapter, and italicise the title of a periodical, book, brochure or report, both in the in-text citation and the reference list.

**In-text citation (Paraphrase)**

(Webster’s, 2000)

**In-text citation (Quotation)**

(Webster’s, 2000, p. 3)

**Reference list**


**Format:**

*Book title: Subtitle.* (Year). Place of Publication: Publisher.

---

3.10  **Edition of a book other than the first**

Second edition = 2nd ed.
Revised edition = Rev. ed.

**In-text citation (Paraphrase with the author(s) in the sentence)**

Conversely, Buglear (2010) argues that....

**In-text citation (Quotation)**

(Buglear, 2010, p. 39)

**Reference list**


**Format:**

*Author Surname, Initial(s). (Year). Book title: Subtitle (edition).* Place of Publication: Publisher.
3.11 A translation

In-text citation (Paraphrase)
(Castro, 2006/2008)

In-text citation (Quotation)
(Castro, 2006/2008, p. 112)

Reference list

Format:

Author Surname, Initial(s). (Year). Book title: Subtitle (Translator Initial(s). Surname, Trans.). Place of Publication: Publisher. (Original work published Year).

3.12 Entry in a dictionary or encyclopedia

In-text citation (Paraphrase)
(Lindgren, 1994)

In-text citation (Quotation)
(Lindgren, 1994, p. 468)

Reference list
Encyclopedia

Dictionary

Format:


For well-known reference works, it is not necessary to include full publication information.
3.13 Illustrated book/picture book

The APA 6th Publication Manual does not include specific examples for including illustrators.

The following example is a suggestion to be able to include illustrators of picture books.

In-text citation (Paraphrase)
(Ogaz & Shubeck, 2008)

In-text citation (Quotation)
(Ogaz & Shubeck, 2008, p. 6)

Reference list

Format:

*Author Surname, Initial(s)., & Illustrator Surname, Initial(s). (Illustrator). (Year). Book title: Subtitle. Place of Publication: Publisher.*
3.14 Book review

After the author, date, and review title (if there is one), include a descriptive phrase that begins “Review of…”

In-text citation (Paraphrase)
(Hall, 2012)

In-text citation (Quotation)
(Hall, 2012, p. 43)

Reference list

Format:
Review author Surname, Initial(s). (Year). Review title (if there is one) [Review of the book Book title: Subtitle, by Author Initial(s). Surname]. Journal Title, Volume(Issue), page numbers (without page number abbreviations). DOI if from an online source
Proceedings of meetings and symposia can be published in a book or periodical form, or online. To cite published proceedings from a book, use the same format as for a book or a book chapter. To cite proceedings that are published regularly, use the same format as for a journal.

### 4.1 Conference paper in published proceedings (journal format)

**In-text citation**
(Herculano-Houzel, Collins, Wong, Kaas & Lent, 2008)

**Reference list**

**Reference list example:**

- Author(s)’ surname, comma, and each of their initials with a full stop (and comma if more than one) after each initial
- Year of publication in round brackets followed by a full stop
- Title of the conference in italics, followed by a comma
- URL location or DOI
- Title of the conference paper (and subtitle if applicable) followed by a full stop
- Place and country of conference followed by journal issue and page numbers and a full stop
4.2 Conference paper published in book form

In-text citation
(Taylor & Lindsay, 2006)

Reference list

**Format:**

Author Surname, Initial(s). (Year). Title of paper. In Editor Initial(s). Surname (Ed(s.).), *Conference Title: volume number* (if any). *Theme title* (if any) (pp. page numbers). Place of publication: Publisher. DOI if there is one

4.3 Poster sessions

In-text citation
(Adams-Labonte, 2012)

Reference list

**Format:**

Presenter Surname, Initial(s). (Year, Month). *Title of poster*. Poster session presented at the meeting of Organisation Name, Location.
5.1 Film

In-text citation
(Gigliotti, Gordon & Russell, 2012)

Reference list

Format:
Producer Surname, Initial(s). (Producer), & Director Surname, Initial(s). (Director). (Year). Title of film [DVD]. Country of origin: Studio.

5.2 Television: single programme

In-text citation
(Lynch, 2010)

Reference list

Reference list example:

1. Producer(s)’ surname and initial(s), with a full stop after each initial, followed by Producer in round brackets
2. Ampersand then Director(s)’ surname and initial(s), with a full stop after each initial, followed by Director in round brackets and a full stop
3. Broadcast date of year, month, day in round brackets followed by a full stop
4. Programme title in italics
5. Descriptive phrase in square brackets followed by a full stop
6. Place of production followed by a colon then production company followed by a full stop

5.3 **Television: single episode of a television series**

**In-text citation**
(Egan & Alexander, 2005)

**Reference list**

**Format:**

Writer Surname, Initial(s). (Writer), & Director’s surname, Initial(s). (Director). (Date). Title of episode [Television series episode]. In Executive Producer’s Initial(s). Surname (Executive Producer), Episode title. Place of production: Production Company.

5.4 **Radio broadcast**

**In-text citation**
(Hall, 2014)

**Reference list**

**Format:**

Producer Surname, Initial(s). (Producer). (Year, Month, Day of broadcast). Title of broadcast [Radio broadcast]. Place of production: Broadcast channel.
6.1 Journal article with one author

In-text citation (Paraphrase with the author(s) in the sentence)
Middleton (2011) suggests that....

In-text citation (Quotation)
(Middleton, 2011, p. 248)

Reference list

Reference list example:

1. Author(s)' surname, initial(s) and a full stop after each initial (and comma if more than one)
2. Year of publication in round brackets followed by a full stop
3. Title (and colon subtitle if applicable) of article followed by a full stop
4. Title of the journal in *italics* followed by a comma
5. Volume number in *italics* followed by issue number in round brackets, a comma, space and then the page numbers followed by a full stop
6. https://doi.org/xx.xxxxxxxxxx OR Retrieved from URL of the journal home page

6.2 Journal article with two authors

In-text citation (Paraphrase)
(Garofalo & Dupuis, 2013)

In-text citation (Quotation)
(Garofalo & Dupuis, 2013, p. 33)
6.3 Journal article with three to five authors

In-text citation (Paraphrase with the author(s) in the sentence)
Roberts, Lejuez, Krueger, Richards and Hill (2009) identify that....

Note: Subsequent citations for articles with three to five authors only require the first author’s surname - e.g. (Roberts et al., 2009) or Roberts et al. (2009)

In-text citation (Quotation)
(Roberts, Lejuez, Krueger, Richards & Hill, 2009, p. 1320)

Reference list

Format:

Author Surname, Initial(s)., & Author Surname, Initial(s)., & Author Surname, Initial(s). (Year). Article title: Subtitle. Journal Title, Volume(Issue), page numbers (without page abbreviations). https://doi.org/xx.xxxxxxxxxx OR Retrieved from URL of journal home page [if available]

6.4 Journal article with six or more authors

Note: If an article has more than seven authors, list the names of the first six authors followed by ... and then the last author’s name in the reference entry.

In-text citation (Paraphrase)
(Dietz et al., 2007)

In-text citation (Quotation)
(Dietz et al., 2007, p. 1517)
Reference list

Format:
Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., Author Surname, Initial(s)., & Author Surname, Initial(s). (Year). Article title: Subtitle. Journal Title, Volume(Issue), page numbers (without page abbreviations). https://doi.org/xx.xxxxxxxx [if available] OR Retrieved from URL of journal homepage [if available]

6.5 Advance online publications, articles in press
Definitions of advance online publications vary amongst publishers, generally this refers to peer-reviewed work, but the content may not be copyedited or formatted for final production. Publishers will often assign a DOI to identify the record.

In-text citation (Paraphrase with the author(s) in the sentence)
Kappes and Oettingen (2014) predict that....

Reference list

Format:

Notes
• If there is no DOI assigned and you retrieved the article electronically, give the URL of the journal home page.
• Update your references close to the handing in date and refer to the final version of a work if possible.
Legal references should not be included in the APA reference list. However, on the first mention of the Act, Bill, Statutory Instrument or Law (Cases) report, the full citation is given.

### 7.1 Cases (Law Reports)

Refer to cases by their party names and year in the in-text citation.

**In-text citation**

First mention (Pepper v. Hart [1993] AC 593)

Subsequent mentions (Pepper v. Hart, 1993)

**Format: (for first mention)**

(Parties to the case [year] Volume number (if there is one) Abbreviation for the name of report First page of report)

### 7.2 Acts of Parliament (Statutes)


**In-text citation**

In text, give the popular or official name of the Act (if any) and the year.

Mental Health Act 1983
In-text citation
(National Health Service (NHS), 2004)

Reference list

Format:

**Author Surname, Initial(s). or Corporate Author. (Year). Title of brochure [Brochure]. Location: Publisher.**

Notes
- When a leaflet or pamphlet contains clearly presented information, it is cited like a book, with a descriptive title in square brackets.
- When information is missing, use the abbreviations: N.p for ‘No place of publication’, n.p. for ‘no publisher’ and n.d. for ‘no date’.
9.1 CD recording

In-text citation
(Hetfield, 1986)

Reference list

**Format:**

Writer Surname, Initial(s). (Year). *Album title* [Recorded by Artist Initial(s). Surname or Band name (if different from the artist)]. [Medium of recording]. Location: Record label.

9.2 Music track

In-text citation
(Winehouse, 2006, track 1)

Reference list

**Format:**

Writer Surname, Initial(s). (Year). Title of song [Recorded by Artist Initial(s). Surname or Band name (if different from writer)]. On *Title of Album* [Medium of recording]. Location: Record label.
If you paraphrase or quote specific, retrievable information from social media, you will need to provide an in-text citation (with the author and date) and a reference list entry (with the author, date, title, and source URL).

### 10.1 Blogs

**In-text citation**

(Hagon, 2009)

**Reference list**


**Reference list example:**

1. Author(s)' surname, comma and each of their initials with a full stop after each initial or author screen name as it appears followed by a full stop
2. Year followed by a comma, month and day in round brackets followed by a full stop
3. Title of specific post
4. Web log post in square brackets followed by a full stop
5. Retrieved from URL of specific post

**Notes**

- If no author is named on the item you are trying to reference, move the title to the start of the reference and follow that by the year of publication. Do not use Anon. or Anonymous unless the publication actually says that.
- If the author's name is not available, provide the screen name.
- If it is the original blog post use [Web log post]; if it is a reply or comment made to the original post, use [Web log comment].
- Do not italicise title of posts.
10.2 Facebook

In-text citation
(APA Style, 2011)

Reference list

Format:

Author Surname, Initial(s). OR corporate author. [Individual author’s first name]. (Year, Month, Day). Title [Facebook status update]. Retrieved from web address

Notes
• For individual authors, provide their full first name in square brackets after their initial as this is their social media identity information.
• For the title, provide the name of the page or the content or caption of the post (up to the first 40 words).
• Do not italicise the titles of status updates.

10.3 Video sharing websites (YouTube)

In-text citation
(American Psychological Association, 2013)

Reference list

Format:

Author Surname, Initial(s). [Author screen name if different from author]. (Year, Month, Day). Title of video [Video file]. Retrieved from URL

Notes
• As users post videos under their screen name on YouTube, provide this in square brackets after the author details.
• If only the screen name is known, provide it without the square brackets (in place of the author’s real name).
10.4  Twitter

In-text citation
(Gates, 2013)

Reference list

Format:

Author Surname, Initial(s). [Author’s screen name]. (Year, Month, Day). Title [Tweet].
Retrieved from URL

Notes
- Provide the author’s screen name in square brackets after their proper name.
- If only the screen name is known, provide it without the square brackets (in place of the author’s real name).
- Provide the content of the tweet (up to the first 40 words) as the title.
- Do not italicise the title of tweets.

10.5  Podcasts, vidcasts, vodcasts

In-text citation
(Van Nuys, 2007)

Reference list

Format:

Surname of primary contributor, Initial(s). (Role of primary contributor, e.g. Producer, Director). (Year, Month, Day). Title [Audio podcast] or [Video podcast]. Retrieved from URL
Newspaper articles

In-text citation (Paraphrase with the author(s) in the sentence)
Morris (2007) infers that....

Reference list


Reference list example from an online source


psychology. uknews

Reference list example:
1. Author(s’) surname, comma, and each of their initials with a full stop after each initial (and comma if more than one) 
2. Year, comma, the month and day in round brackets followed by a full stop 
3. Title (and subtitle if applicable) followed by a full stop 
4. Abbreviation(s) for page number followed by full stop, space, page number and full stop 
5. Title of newspaper in italics, followed by a comma


Notes
• Italicise the title of the newspaper.
• Precede page numbers for newspaper articles with p. or pp.
• If an article appears on discontinuous pages, give all page numbers, and separate the numbers with a comma (e.g. pp. 1, 3, 5).
In-text citation
(Department of Health, 2014)

Reference list

Reference list example:

1. Department’s name followed by a full stop
2. Year in round brackets followed by a full stop
3. Title (and subtitle if applicable) of paper in italics, followed by a full stop
4. Retrieved from followed by the web address
13.1 Telephone calls

Do not include personal communication in your reference list as this type of information is not considered ‘recoverable’. Instead, in brackets, cite the communicator's name, the phrase ‘personal communication’, and the date of the communication in the main body of the text.

In-text citation
(C. Byers, personal communication, February 7, 2014)

13.2 Emails

In-text citation
As above

13.3 Personal interviews

In-text citation
As above
References are not necessary for standard software and programming languages, such as Microsoft Word, Java, Adobe Photoshop and SPSS. In the text, give the proper name of the software, along with the version number – e.g. IBM SPSS Statistics for Windows, Version 21.0.

Do provide reference entries for specialised software or computer programmes with limited distribution.

14.1 Software

In-text citation
(Alloway, Wilson & Graham, 2005)

Reference list

Reference list example:

1. Software author(s)’ surname, a comma and each of their initials with a full stop after each initial (and comma if more than one)
2. Date of software release in round brackets followed by a full stop
3. Title of computer software followed by version number in round brackets
4. Source of software (e.g. computer programme, language etc) in square brackets followed by a full stop
5. Location and name of organisation who produced the work followed by a full stop
14.2 Apps

In-text citation
(NASA, 2013)

Reference list

Format:
Author Surname, Initial(s). (Year). Title of software or programme (Version number) [Mobile application software]. Retrieved from URL

Notes
• Do not italicise the title of software.
• The rightsholder may be an individual, a group or a company.
• If an individual has proprietary rights to the software, name them as the author; otherwise, treat such references as un-authored works.
• The date is the year the version you used was released, even though previous versions may have been released in different years.
15 Tests and measures

15.1 From a website

In-text citation
“In this study, we used Cooper, Taylor, Cooper and Fairburn (1987) Body Shape Questionnaire rather than Franzoi and Shield (1984) Body Esteem Scale.”

Reference list

Format:
Author Surname, Initial(s). (Date). Title of Measurement [Format]. Retrieved from URL

15.2 From the University of Lincoln Psychology collection (or other paper source):


Reference list example:
1. Test author surname(s), a comma and each of their initials with a full stop after each initial (and comma if more than one)
2. Year published in round brackets followed by a full stop
3. Title of test, scale or measurement
4. Description (test, measurement or scale) in square brackets followed by a full stop
5. Publisher details followed by a full stop
16.1 Unpublished dissertation/thesis

In-text citation
(Aggrey, 2012)

Reference list

Reference list example:

1. Author(s)’ surname, a comma, followed by each of their initial(s) with a full stop after each initial (and comma if more than one)
2. Year of publication in round brackets followed by a full stop
3. Title of thesis/dissertation in italics
4. Description in round brackets followed by a full stop
5. Institution and place where thesis/dissertation is held followed by a full stop


16.2 Published dissertation/thesis

A published dissertation is a book and should be cited accordingly.
It is always important to validate a website before using it in your academic work. For more information visit [http://guides.library.lincoln.ac.uk/learningdevelopment](http://guides.library.lincoln.ac.uk/learningdevelopment)

- If a website does not have an obvious author, you can often find more information in the ‘About us’ section.
- The year of publication for a website is usually when the website was last revised or updated and is often found at the bottom of the page.
- If you refer to an entire professional website, you do not need to include an entry in the reference list. You must identify the title of the source clearly in the text of your paper (capitalised but without special punctuation) and provide the electronic address in brackets.
- However, when you cite a particular document or piece of information from a website include both a reference list entry and an in-text citation.
- Where a website has no date, use (n.d.)

**Individual web site**

**In-text citation**

(BBC, 2013)

**Reference list**

BBC. (2013, February 3). *All human behaviour can be reduced to ‘four basic emotions’*. Retrieved from [http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26019586](http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26019586)

**Reference list example:**

1. Website author or corporate author followed by a full stop  
2. Year, month and day in round brackets followed by a full stop  
3. Title of website in italics, followed by a full stop

BBC. (2013, February 3). *All human behaviour can be reduced to ‘four basic emotions’*. Retrieved from [http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26019586](http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26019586)

4. Retrieved from followed by URL

**Note:** When possible, include the year, month, and date in references. If the month and date are not available or if the website is not updated regularly, use the year of the publication only.


BBC. (2013, February 3). *All human behaviour can be reduced to ‘four basic emotions’*. Retrieved from: http://www.bbc.co.uk/news/uk-scotland-glasgow-west-26019586


Guide on reporting statistics in APA style
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   7.18 Chi-square test of independence (association)
   7.19 Chi-square goodness of fit test
1. General Guidance

1.1 Rounding

In general, APA guidelines recommend reporting numbers to two decimal places, including statistics such as correlations, $t$, $F$, chi-square and $p$ values. However, in certain circumstances where extra precision is necessary (for example, with small $p$ values) more decimals may be reported.

1.2 Leading zero

Use the zero before a decimal point only if the number has the potential to exceed 1. Do not use the leading zero if a value can never exceed 1, for example, for $p$ values or correlations.

Examples:

The averages were 0.45 and 1.2, respectively.

Otters’ weight and singing ability were shown to be strongly correlated ($r=.82$)

1.3 Reporting $p$ values

APA guidelines recommend reporting the exact $p$ value (for example, $p = .089$), unless the $p$ value is less than .001. In this case report $p < .001$.

If reporting the exact $p$ value, state early in the results section the alpha level used as a cut-off point for significance in your test. For example, “an alpha level of .05 was used for all statistical tests”.

1.4 Reporting differences

When reporting a significant difference between two conditions, indicate the direction of this difference, i.e. which condition was more/less/higher/lower than the other condition(s).
2. Statistical terms

Material for this section was adapted from the APA Style Blog:

http://blog.apastyle.org/apastyle/

When reporting your results in APA style, it is important that you correctly use statistical terms within the text, ensuring that you follow the formatting rules indicated by APA guidelines. The APA publication manual provides extensive guidance on the use of statistical terms.

For a summary of the most common statistics written in their singular, plural, extended and abbreviated form, see the link below from the APA Style Blog:


2.1 Italicics

- All statistical symbols, except Greek letters, should be italicised.
- Superscript numbers are not italicised

An example:

$R^2$

2.2 Plural forms

To make plural abbreviated forms add a non-italic lowercase “s”. Do not use an apostrophe plus an “s,” an italic “s,” or a capital “S.”

Examples:

Correct:
$p$s < .05; $M$s = 3.70 and 4.22; degrees of freedom.

Incorrect:
$p$s < .05, p’s < .05; Ms = 3.70 and 4.22; Means = 3.70 and 4.22; degree’s of freedom.
2.3 Symbols versus written-out form

The written-out form of the variable is used in prose, the symbols are used when in conjunction with all mathematical operators, for example with the equals sign or the greater than/less than signs.

Examples:

Chronbach’s alpha was calculated as a measure of reliability of the scale.

The introversion subscale was found to have high reliability (Cronbach’s α = .83)

2.4 Identifiers

Identifiers can be superscript or subscript words, letters or numbers. These are used to identify, for example, different groups. They are not italicised.

An example:

$M_{\text{caffeine}} = 5.60, M_{\text{placebo}} = 4.2$
3. Tables

The APA manual deals extensively with the designing and formatting of tables.

3.1 Deciding to use tables

Tables should be used for crucial data in your paper and with the aim to simplify text that would otherwise be too dense with numbers. Consider carefully whether there is a genuine need for a table.

Data that cannot be summarised because it is too detailed or that is only loosely related to the core points of the paper should be presented in the appendix.

3.2 Designing and formatting tables

The aim of a table is to effectively communicate the main results of a piece of research. If a table is effective, it should help the reader to understand and compare data within it.

Tables should not duplicate the text, but complement it. In the text you should limit your description of the table to the most important elements, not every item within it.

Tables should have a title which is brief but at the same time clear and explanatory.

Clarity is essential: identify the units of measurement used in the table (for example, number of correct responses, scores on a questionnaire, body fat percentage...).

Explain any abbreviations and special symbols, except in the case of standard statistical abbreviations such as \( M, SD, df \).

Use of lines (borders) in a table should be limited: only use lines which are necessary for clarity. Use horizontal rather than vertical lines. When using spacing and lines, aim to maximise clarity and readability.

3.3 Numbering tables

All tables should be numbered with Arabic numerals in the order in which they are first mentioned in the text.

The paper should not contain tables that have not been referred to in the text. Refer to a table by its table number and, when doing so, ensure that the word Table begins with a capital T.

Example:

Correct: “As can be seen in Table 3...”
Incorrect: “As can be seen in the table below/ above...”
### 3.4 Permission

If you are reproducing all or part of a copyrighted table, ensure that you give full credit to the copyright owner in the table notes and that you have obtained written permission for reuse.

**Example table in APA style**

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average figure skating scores before and after juggling therapy for smoking and non-smoking otters</strong></td>
</tr>
<tr>
<td><strong>Juggling therapy</strong></td>
</tr>
<tr>
<td><strong>Before</strong></td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td><strong>Smokers</strong></td>
</tr>
<tr>
<td><strong>Non-smokers</strong></td>
</tr>
<tr>
<td><strong>Marginal means (juggling therapy)</strong></td>
</tr>
</tbody>
</table>

APA recommends two decimal places, but large numbers may need fewer and smaller numbers (<1) may need more.
4. Figures

The APA manual deals extensively with the designing and formatting of figures.

4.1 What is a figure?

A figure in an APA-style paper is any type of illustration other than a table. This can be, for example, a chart, graph, photograph, drawing or other depiction.

4.2 Deciding to use figures

Consider carefully whether there is a genuine need for a figure. Figures should not duplicate text but complement it and be useful in condensing discussion or description that would otherwise be too lengthy.

4.3 Designing and formatting figures

An effective figure should be clear, simple and free of unnecessary detail.

Data should be plotted accurately and axis scales should be correctly proportioned.

All abbreviations and symbols should be explained.

As there are different types of figures, select the figure most appropriate to the information being presented.

Common types of figures are:

(i) Scatter plots
(ii) Line graphs
(iii) Bar graphs
(iv) Pie graphs
(v) Boxplots

4.4 Numbering figures

All figures should be numbered with Arabic numerals in the order in which they are first mentioned in the text.

The paper should not contain figures that have not been referred to in the text. Refer to a figure by its figure number and, when doing so, ensure that the word Figure begins with a capital F.

Example:

Correct: “As can be seen in Figure 3...”
Incorrect: “As can be seen in the figure below/ above...”
4.5 Permission

If you are reproducing or adapting figures from another source, enclose written permission for print and electronic reuse and give proper credit in the figure caption.

Example table in APA style

![Example figure in APA style](image)

*Figure 1*: Mean figure skating scores of smoking and non-smoking otters before and after juggling therapy. Error bars represent 95% confidence intervals of the mean.
5. Descriptive statistics

APA guidelines recommend including descriptive statistics alongside inferential statistics. This is so that the reader can understand the nature of the effects being reported. Useful descriptive statistics include, for example, sample size for each cell of the design, means and standard deviations.

When providing point estimates such as a sample mean, it is important to also include a measure of variability (e.g. standard deviation) or precision (e.g. standard error). Confidence intervals for a parameter such as the mean are also useful (see Confidence intervals section).

Descriptive statistics are often best summarised in a table or figure (see Tables and Figures sections). In this case, there is no need to repeat them in the text, although it may be helpful to highlight particular data in the narrative.

If you are listing a series of similar statistics, it may be helpful to use words such as “respectively” and “in order” to avoid confusion.

An example:

Otters’ mean figure-skating scores (with standard deviations in parentheses) before juggling therapy, after juggling therapy and after a one-week follow-up were 3.21 (0.92), 3.32 (0.94) and 2.69 (0.87), respectively.
6. Confidence intervals and effect sizes

6.1 Confidence intervals

What to report

APA guidelines strongly recommend the use of confidence intervals. These provide information about the limits within which the population value for a given parameter might fall and can be used to make inferences on statistical significance levels. For this reason, they are considered “an extremely effective way of reporting results” and referred to as “the best reporting strategy” (American Psychological Association, 2001, p.22). When reporting confidence intervals, indicate which confidence interval size is being used (for example 95% or 99%) and report the values using brackets in the format [lower bound, upper bound].

An example

On average, otters’ figure skating scores increased after juggling therapy, \( M = 3.32, 95\% \text{ CI} [2.87, 3.76] \), compared to before, \( M = 3.21, 95\% \text{ CI} [2.78, 3.64] \).
6.2 Effect sizes

What to report
As part of results of statistical tests, APA guidelines recommend reporting effect sizes (American Psychological Association, 2001). These are a measure of the magnitude of the effect observed and will greatly improve the reader’s understanding of the effect obtained. This is because *p* values alone do not “directly reflect the magnitude of an effect or the strength of a relationship” (American Psychological Association, 2001, p.25). Report the effect size appropriate for a given statistical test (see Table 2).

An example

There was no significant difference in the figure skating scores of smoking and non-smoking otters, $t(18) = -.05$, $p = .96$. The effect size was small, $d = 0.02$.

Table 2:
Recommendations for common estimates of effect size for different statistical tests

<table>
<thead>
<tr>
<th>Statistical test</th>
<th>Recommended effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired-samples <em>t</em>-test</td>
<td>Cohen’s <em>d</em> (or Pearson’s <em>r</em>)</td>
</tr>
<tr>
<td>Wilcoxon signed-rank test</td>
<td>Pearson’s <em>r</em></td>
</tr>
<tr>
<td>Binomial sign test</td>
<td>Proportion of participants with increases</td>
</tr>
<tr>
<td>Independent <em>t</em>-test</td>
<td>Cohen’s <em>d</em> (or Pearson’s <em>r</em>)</td>
</tr>
<tr>
<td>Mann-Whitney U test</td>
<td>Pearson’s <em>r</em></td>
</tr>
<tr>
<td>ANOVA</td>
<td>Eta squared (or partial eta squared or omega squared)</td>
</tr>
<tr>
<td>Kruskal-Wallis test</td>
<td>Report effect sizes for post-hoc tests instead</td>
</tr>
<tr>
<td>Friedman’s ANOVA</td>
<td>Report effect sizes for post-hoc tests instead</td>
</tr>
<tr>
<td>Pearson’s <em>r</em> correlation</td>
<td>Correlation coefficient</td>
</tr>
<tr>
<td>Spearman’s rho correlation</td>
<td>Correlation coefficient</td>
</tr>
<tr>
<td>Regression (simple and multiple)</td>
<td>Adjusted R square</td>
</tr>
<tr>
<td>Logistic regression</td>
<td>Odds ratio</td>
</tr>
<tr>
<td>Chi-square test of independence (association)</td>
<td>Phi (for 2x2 cross tabulation), Cramer’s V (for greater than 2x2 cross tabulation), odds ratio</td>
</tr>
<tr>
<td>Chi-square goodness of fit test</td>
<td>Odds ratio, Cohen’s <em>d</em></td>
</tr>
<tr>
<td>Proportion test</td>
<td>Proportion</td>
</tr>
</tbody>
</table>

*Note: effect sizes for post-hoc tests instead are recommended.*
7. Statistical tests

7.1 Normality tests

What to report
Report the test statistic, the degrees of freedom, and the p value.

Please note that, like all other significance tests, normality tests are a measure of evidence against a null hypothesis, therefore a non-significant normality test (especially on a small sample) does not guarantee normality but, instead, indicates insufficient evidence to reject normality.

Interpret the results with caution and consider them in conjunction with other ways of assessing the distribution of your data such as histograms, P-P or Q-Q plots, and values of skewness and kurtosis.

Two common normality tests are the Kolmogorov-Smirnov test and the Shapiro-Wilk test. An example for the Shapiro-Wilk test is provided below.

An example

The normality of stoats’ singing ability scores was assessed. The Shapiro-Wilk test indicated that the scores were normally distributed, $W(16) = 0.927, p = .219$. 
7.2 Paired-samples t-test

Does juggling therapy improve figure skating scores in otters?

What to report

Report the t statistic, the degrees of freedom and the p value. Means and standard deviations should also be reported, and confidence intervals and effect sizes are recommended.

An example

(Effect sizes are omitted here as they are not easily obtained directly from SPSS)

Otters’ figure skating scores were compared before and after juggling therapy. On average, otters performed worse before ($M = 3.21, SD = 0.92$) than after juggling therapy ($M = 3.32, SD = 0.94$). This improvement, $0.12$, $95\% \text{CI} [0.07, 0.14]$, was statistically significant, $t(19) = 5.69, p < .001$. 
7.3 Wilcoxon signed-rank test

Does juggling therapy improve figure skating scores in otters?

What to report
Report the $T$ test statistic, the corresponding $z$ score and the $p$ value. The APA manual recommends reporting a summary of the raw data with nonparametric analyses (American Psychological Association, 2001). The median for each condition can be useful in this case. Effect sizes are also recommended.

An example

Otters’ figure skating scores were compared before and after juggling therapy.

On average, otters performed worse before ($Md_n = 3.3$) than after juggling therapy ($Md_n = 3.4$). A Wilcoxon signed-rank test indicated that this difference was statistically significant, $T = 120$, $z = -3.52$, $p < .001$. 
7.4 Binomial sign test

Does juggling therapy improve figure skating scores in otters?

What to report

Report the number of participants with an increase (or, alternatively, a decrease) out of total participants. Also report the number of participants with zero increase as “ties”, if there are any. Finally report the \( p \) value.

An example

A binomial sign test was used to assess whether juggling therapy improves figure skating scores. Out of a total of 20 otters, figure skating scores increased for 15 otters after juggling therapy. The median increase in figure skating scores, 0.1, was statistically significant, \( p < .001 \).

7.5 Independent-samples t-test

Is there a difference in the figure skating scores of smoking and non-smoking otters?

What to report

Report the \( t \) statistic, the degrees of freedom and the \( p \) value. Means and standard deviations should be reported, and confidence intervals and effect sizes are recommended.

An example

(Effect sizes are omitted here as they are not easily obtained directly from SPSS)

Figure skating scores of smoking and non-smoking otters were compared. On average, non-smoking otters \((M = 3.45, SD = 0.67)\) performed better than smoking otters \((M = 2.65, SD = 0.97)\). This difference, 0.8, \(95\% CI [0.47, 1.13]\), was statistically significant, \( t(98) = 4.78, p < .001 \).
7.6 Mann-Whitney U test

Is there a difference in the figure skating scores of smoking and non-smoking otters?

What to report

Report the U test statistic, the value of z and the p value. The median for each condition and sample size are also recommended. The mean ranks can be reported and they are more useful in some cases. The APA manual recommends reporting a summary of the raw data with nonparametric analysis (American Psychological Association, 2001). In the case of Mann-Whitney U, the sample size for each group is needed for an understanding of the test statistic. The median for each group is also recommended. Mean ranks can be reported and they are more useful in some cases. The effect size and confidence intervals should be reported when possible. However, for the Mann-Whitney test, these could be outside the scope of an undergraduate course.

An example

Figure skating scores of non-smoking otters ($Mdn = 3.5$) were higher than those of smoking otters ($Mdn = 2.6$). A Mann-Whitney test indicated that this difference was statistically significant, $U(N_{non-smoking} = 51, N_{smoking} = 49) = 609.00, z = -4.42, p < .001$. 
7.7 ANOVA: One-way between-subjects (with optional post-hoc)

Does food eaten by an otter affect how good looking they are?

What to report

For each effect report the F statistic, the degrees of freedom and the p value. Group means and standard deviations should also be reported (in a table or in the main body of text), as well as effect sizes and confidence intervals, when possible. Report results of post-hoc tests, if relevant.

An example

There was a significant effect of food eaten on how good looking an otter is, $F(2, 17) = 5.25, p = .009, \eta^2 = .42.$

Eating frog, on average, increased good looks compared to eating crab. Post hoc comparisons using the Tukey HSD test revealed that this difference, 3.82, 95% CI [0.78, 6.86], was statistically significant, $p = .013.$ Otters who preferred frog were also significantly more good looking by 3.78 points, 95% CI [0.65, 6.9], $p = .017$ than those who preferred crayfish. However, the difference in good looks, 0.04, 95% CI [-2.72, 2.81] between otters who preferred crayfish versus crab was not statistically significant, $p = .999.$
7.8 Kruskal-Wallis test (with optional post-hoc)

Does food eaten by an otter affect how good looking they are?

What to report

Report the $H$ (chi-square) statistic, the degrees of freedom and the $p$ value. The median for each condition is also recommended. The mean ranks can be reported and they are more useful in some cases. Report results of post-hoc tests, if relevant. The effect size and confidence intervals should be reported, when possible. However, for the Kruskal-Wallis test, these could be outside the scope of an undergraduate course.

An example

A Kruskal-Wallis test showed that food eaten by otters significantly affects how good looking they are, $H(2) = 7.09$, $p = .03$. Otters who preferred frog ($Mdn = 7.12$) were more good looking than otters who preferred crayfish ($Mdn = 3.25$) or crab ($Mdn = 2.87$). Post-hoc Mann-Whitney tests using a Bonferroni-adjusted alpha level of .017 (.05/3) were used to compare all pairs of groups. The difference in attractiveness between otters who preferred crab and crayfish was not significant, $U(N_{crab} = 8, N_{crayfish} = 7) = 27$, $z = -.012$, $p = .91$. None of the other comparisons were significant after Bonferroni adjustment (all $ps > .019$).
7.9 ANOVA: two-way mixed

Does smoking interact with the effect of juggling therapy in improving otters’ figure skating scores?

What to report
For each effect report the F statistic, the degrees of freedom and the p value. Group means and standard deviations should be included (in a table or in the main body of text), as well as effect sizes and confidence intervals, when possible. Report results of post-hoc tests, if relevant.

An example

There was a significant main effect of juggling therapy on otters’ figure skating scores, $F(1, 18) = 30.18, p < .001, \eta^2_p = .63$. Figure skating scores were significantly better after juggling therapy ($M = 3.32, SE = 0.22, 95\% CI [2.86, 3.77]$) than before ($M = 3.21, SE = 0.21, 95\% CI [2.76, 3.66]$). The main effect of smoking was non-significant, $F(1, 18) = 0.002, p = .97, \eta^2_p = .00$, nor was the interaction between juggling therapy and smoking, $F(1, 18) = 0.06, p = .81, \eta^2_p = .003$, failing to prove that the effect of juggling therapy was different for smokers and non-smokers.
7.10 ANOVA: One-way repeated-measures (with optional post-hoc)

What are the effects of juggling therapy on otters’ figure skating scores on immediate assessment and after a one-week follow up?

What to report
For each effect report the F statistic, the degrees of freedom and the p value. Group means and standard deviations should be included (in a table or in the main body of text), as well as effect sizes and confidence intervals, when possible. You may also want to report the results of Mauchly’s test (see Mauchly’s test section). Report results of post-hoc tests, if relevant.

An example

There was a significant main effect of juggling therapy on otters’ figure skating scores, $F(1.03, 19.84) = 21.571, p < .001, \eta^2_p = .53,$ Bonferroni-adjusted pairwise comparisons showed that figure skating scores after juggling therapy ($M = 3.32, SE = 0.21$) were higher than scores before juggling therapy ($M = 3.21, SE = 0.21$). This improvement was statistically significant ($p < .001$). However, scores after a one-week follow-up ($M = 2.69, SE = 0.19$) were significantly lower than scores before ($p = .001$) and after ($p < .001$) juggling therapy.
7.11 Friedman’s ANOVA (with optional post-hoc)

What are the effects of juggling therapy on otters’ figure skating scores on immediate assessment and after a one-week follow up?

What to report

Report the chi-square test statistic, its degrees of freedom and the p value. The median for each condition is also recommended. The mean ranks can be reported and they are more useful in some cases. The effect size and confidence intervals should be reported when possible. However, for the Friedman test, these could be outside the scope of an undergraduate course.

An example

A Friedman’s test showed that there was a significant difference between otters’ figure skating scores measured before juggling therapy, after juggling therapy and after a one-week follow-up, \( \chi^2(2) = 21.88, p < .001 \). Post-hoc tests using a Wilcoxon signed-rank test with a Bonferroni-adjusted alpha level of .017 (0.05/3) showed that figure skating scores after juggling therapy (Median = 3.4) were higher than scores before juggling therapy (Median = 3.3). This improvement was statistically significant, \( T = 120, z = -3.54, p < .001 \). However, scores after a one-week follow up (Median = 2.75) were significantly lower than scores before (\( T = 21, z = -2.71, p = .007 \)) and after (\( T = 120, z = -3.45, p = .001 \)) juggling therapy.
7.12 Mauchly’s test of sphericity

What to report
Report the results of Mauchly’s test of sphericity: the chi-square approximation, the degrees of freedom, the p value and the Greenhouse-Geisser estimate (epsilon). In this example we have addressed the violation of sphericity by reporting Greenhouse-Geisser-corrected results.

An example

Mauchly’s test indicated that the assumption of sphericity had been violated for the main effect of juggling therapy, $\chi^2(2) = 49.27, p < .001$, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ($\varepsilon = .52$).

The main effect of juggling therapy on otters’ figure-skating scores was significant, $F(1.03, 19.64) = 21.571, p < .001, \eta^2_p = .53$. 
7.13 Bonferroni adjustment

What to report
Report the Bonferroni-adjusted level of alpha and the calculation for the Bonferroni adjustment.

An example

Three Pearson correlation tests between an otter’s age, height and lovability were carried out and tested against a Bonferroni-adjusted alpha level of .016 (0.05/3). Age and height were significantly correlated, \( r = .54, p = .014, N = 20 \). However, correlations between height and lovability, \( r = -.46, p = .04, N = 20 \) and between age and lovability, \( r = -.35, p = .13, N = 20 \) were not significant.

7.14 Correlation: Pearson’s r

Is there a relationship between stoats’ weight and their number of whiskers?

What to report
Report the correlation coefficient, the sample size (N) and the \( p \) value. Confidence intervals are also recommended.

An example

The relationship between a stoat’s weight and his/her number of whiskers was assessed. A Pearson correlation test showed that the two were not significantly related, \( r = .25, 95\% \text{ BCa CI } [-.154, .599], p = .36, N = 16. \)
7.15 Correlation: Spearman’s Rho

Is there a relationship between stoats’ weight and their number of whiskers?

What to report
Report the correlation coefficient, the sample size (N) and the p value. Confidence intervals are also recommended.

An example

Spearman’s rho correlation coefficient was used to assess the relationship between a stoat’s weight and his/her number of whiskers. There was no significant correlation between the two, \( r_s = .22 \), 95% BCa CI \([-0.31, 0.70]\], \( p = .42 \), \( N = 16 \).

7.16 Simple linear regression

Does number of whiskers predict stoats’ singing ability?

What to report
Report information about the overall fit of the model. This includes R Square, adjusted R Square, and ANOVA results. Information about the regression coefficients (unstandardized and standardized) is also important to quantify the degree of the relationship between the predictor and the outcome.

An example

A simple regression was used to predict a stoat’s singing ability from his/her number of whiskers. Number of whiskers did not explain a significant amount of the variance in singing ability, \( F(1, 14) = 2.97 \), \( p = .107 \), \( R^2 = .18 \), \( R^2_{\text{adj}} = .12 \). The regression coefficient (\( B = -5.52 \), 95% CI \([-12.39, 1.35]\)) indicated that an increase in one whisker corresponded, on average, to a decrease in singing score of 5.52 points.
### 7.17 Multiple linear regression

**Do weight and number of whiskers predict stoats’ singing ability?**

**What to report**

Report information about the overall fit of the model. This includes R Square, adjusted R Square, and ANOVA results. The coefficients (standardized and unstandardized) and their associated significance (t-tests) are also important for an assessment of the individual contribution of predictors. Confidence intervals around $B$ are recommended.

**An example**

A multiple regression with enter method was used to predict a stoat’s singing ability from his/her weight and number of whiskers. The model explained a statistically significant amount of variance in singing ability, $F(2, 13) = 6.50, p = .011, R^2 = .50, R^2_{\text{adjusted}} = .42$. Whiskers was a significant predictor of singing ability, $\beta = -.56, t(13) = -2.78, p = .016$. An increase in one whisker corresponded, on average, to a decrease in singing score of 7.43 points, $B = -7.43, 95\% \text{ CI} [-13.19, -1.66]$. Weight also significantly predicted singing ability, $\beta = .59, t(13) = 2.91, p = .012$. For each extra kilogram of body weight, a stoat’s singing score increased by 1.22 points, $B = 1.22, 95\% \text{ CI} [0.31, 2.13]$. 

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**ANOVA result**

(see simple regression section)

**R Square**

adjusted $R^2$

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**standardized regression coefficient**

unstandardized regression coefficient

**t-test results**

(see t-test section)

**confidence interval around $B$**

optional
7.18 Chi-square test of independence (association)

Does smoking affect favourite food in otters?

What to report
Report the value of the chi-square statistic, the degrees of freedom and the p value. Reproducing the contingency table is also recommended. The odds ratio can be reported as a useful measure of effect size.

An example

Using a chi-square test, a significant association was found between an otter’s favourite food and whether or not he/she is a smoker: $\chi^2(2) = 7.24, p = .027$.

7.19 Chi-square goodness of fit test

Do otters have a preference for a particular food type?

What to report
Report the chi-square statistic, the degrees of freedom and the p value. Reporting frequencies in a table or in the main body of text is also recommended.

An example

Food preference was investigated in 20 otters. Eight otters preferred crab, five preferred frog and seven preferred crayfish. A chi-square goodness of fit test was used to assess whether a particular food type was more preferred. There were no statistically significant differences in the number of otters who preferred a certain type of food, $\chi^2(2) = 0.70, p = .71$. 
Referencing Handbook

APA 2nd edition
Includes a section guide on reporting statistics in APA style

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