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# A Guide to Writing Student Psychology Lab Reports

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# A Guide to Writing Student Psychology Lab Reports

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## General description

A lab report is a document that tells the reader everything that they need to know about a particular piece of research. Psychology students must learn to understand and to produce lab reports. They are used widely in higher education for assessment, for example when students produce theses. They are used by professional psychologists when they publish research in academic journals. The same basic format is usually also used for reports of investigations that may not be published in academic journals, but are used by hospitals, companies, government departments etc. The style described here is more or less the same as used in most universities around the world. It is based on APA 6<sup>th</sup> edition. However, the APA style guide is nearly 300 pages long. So this guide does not include everything the APA require. However, if you follow this guide you will produce a lab report that conforms to the most important issues of structure and format of the APA.

## Sections of a lab report

Experimental studies are the most common research written as lab reports. However, other studies such as correlational or observational studies have more or less the same structure. This is:

- |                 |             |
|-----------------|-------------|
| 1. Title        | See page 4  |
| 2. Abstract     | See page 4  |
| 3. Introduction | See page 5  |
| 4. Method       | See page 7  |
| 5. Results      | See page 9  |
| 6. Discussion   | See page 13 |
| 7. References   | See page 15 |

A good lab report must have all seven of these parts. Some are easier than others to write and they are not always written in sequence. In fact, although these must appear in the above sequence in the report (e.g. the title must be before the abstract, etc.), it is often easier to write them in a different order. When professors grade work they often consider each section individually, giving a grade for each. So it is very important that you include each section. Many students receive poor grades because they miss out whole sections that they find difficult, for example missing out the results section. This is a very bad idea.

### **Length of lab reports**

This can vary a lot. Student lab reports when written in English by native English speakers in undergraduate courses are often around 2,000 words long. Theses may be much longer, 10,000 or 20,000 words. Academic journal articles are usually around 5,000 words. The professor will tell you how long your report should be.

The word count of a lab report should not include references, the tables or appendices. In student projects you are given a length, say 1,500 words. Your report does not have to be exactly the word length given, but it should be within 10% of the suggested length. So for example, if you are asked to write a 1,500 word lab report, the total word count of the Title, Abstract, Introduction, Method, Results and Discussion together should be between 1,350 and 1,650 words. When writing, remember to save space for a 150 word abstract (it's easiest to write the abstract last).

In this guide, a percentage of the total word count is given to each section so that you can apply the idea to laboratory reports of different lengths. This is an estimate based on typical undergraduate research. Your professor will tell you how long each lab report should be. But as a general guide your report should be composed of sections with lengths approximately as shown below.

Abstract	150 words
Introduction	20-30% of the remaining word count
Methods	15-25% of the remaining word count
Results	15-25% of the remaining word count
Discussion	30-40% of the remaining word count

## Format of the document

These points below will help you to produce a more professional looking document.

- Times New Roman, 12 point.
- Double line spacing or 1.5 line spacing.
- Do not use justification of text. This is when the word processor forces lines of text to all be the same length. For example these three lines are justified. But the rest of the text in this document is not. It makes the text look messy, particularly if the text contains long words, e.g. *antidisestablishmentarianism*. So don't do it. It is much better just to have the text aligned to the left.
- Do not use underlining, it looks messy. If you need to emphasize, *italics* is much better.
- Include page numbers.
- Start major sections (i.e. the Method, Results, and Discussion) on a new page.

## Academic English

Lab reports written in English should be written in language that is quite formal and precise. Academic English therefore, usually uses:

- Full forms, not contractions. So for example write *is not* instead of *isn't*. Write *cannot* instead of *can't*.
- No slang or informal words, so for example write *children* instead of *kids*. Write *intelligent* instead of *smart*.
- No sensational language, so write that the participants performed *well*, not that they performed *fantastically*.
- Avoid talking about yourself. Don't write 'I am going to discuss...', just start discussing it. Don't say 'we interviewed 20 participants' say 'the researchers interviewed...'
- Although passive voice is common in academic English, the APA recommends that it be avoided in general. So try not to write: 'participants were interviewed' (passive voice), use instead active voice, e.g. 'the research assistant interviewed the participants'. However, sometimes passive voice is best, e.g. 'the screen was located approximately 60 centimeters away...'
- Language that is sensitive to race, disability, age etc. In particular, it is best to not use words describing nationalities, states of health etc. as nouns for people. So 'people with schizophrenia' is better than 'schizophrenics', 'Japanese people' instead of 'the Japanese'.

## How to write each section

### 1. The Title

- This should be no more than 12 words long and should give the reader a good idea of what the research is about.
- Avoid 'fun' titles. People used to use these for journal articles in the past, but they don't work well with search engines so they are now rarely used.
- Capitalize the main words, write everything else in lower case.
- Center the title on the page.
- You don't usually say what the methodology was or say that it is a 'study' because that is already obvious. Avoid redundant language. So don't write 'A Study of the Effects of Extroversion on Memory Performance for Verbal and Non-verbal Material'. Just write 'Extraversion and Memory Performance for Verbal and Non-verbal Material'.

### 2. Abstract

This is a summary of the whole lab report, written in sentences. It must be short but contain lots of information. There are two types of abstract. Single paragraph and structured abstracts. In the past, psychologists wrote a single paragraph summarizing the work. Nowadays, structured abstracts are becoming more popular, because the evidence suggests that they are easier to understand. In this guide we will use only structured abstracts as they are also easier for students to learn (although APA do not require this). We will also stay to a 150 word limit. This is a strict limit, you cannot go past it, but you should try and get close to the limit because you want to get as much information into the abstract as possible. A good method is to write the abstract without worrying about the length. Then when you have finished, do a word count and go back and shorten it until it is 150 words or less. This develops concise writing skills. It also usually easier to write the abstract last, after all the other sections.

An abstract contains summaries of all the parts of the whole report, and in the same order as in the report. So it starts with a sentence or two summarizing the introduction section, or giving the most important message from it. Next is a sentence or two about the method. Then a sentence or two about the results, finally a sentence or two giving the most important conclusions from the discussion section. Luckily, if we use a structured format, this is quite obvious. So to write a structured abstract, use these subheadings:

Background:

Method:

Results:

Conclusions:

Examine the abstract below from a medical journal that describes a psychological experiment. This could be written as a single paragraph, but it would contain the same material, in the same order. The abstract for a student lab report doesn't need to be so technical, but should follow the same format: Background, Methods, Results, and Conclusions.

## Decreased Memory Performance in Healthy Humans Induced by Stress-Level Cortisol Treatment

*John W. Newcomer, MD; Gregg Selke, BA; Angela K. Melson, MA; Tamara Hershey, PhD; Suzanne Craft, PhD; Katherine Richards, BA; Amy L. Alderson, MA*

**Background:** Glucocorticoids (GCs) can regulate hippocampal metabolism, physiologic functions, and memory. Despite evidence of memory decreases during pharmacological GC treatment, and correlations between memory and cortisol levels in certain disease conditions, it remains unclear whether exposure to the endogenous GC cortisol at levels seen during physical and psychological stress in humans can inhibit memory performance in otherwise healthy individuals.

**Methods:** Randomized, double-blind, placebo-controlled comparison of 2 fixed oral doses of cortisol (40 mg/d and 160 mg/d using split doses to approximate circadian rhythm) given for 4 days to matched groups of healthy subjects (n = 51). Lower-dose treatment approximated cortisol exposure during mild stress, whereas the higher dose approximated cortisol exposure during major stress. Cognitive testing and plasma sampling were done at baseline, after 1 and 4 days of treatment, and after a 6-day washout period,

hypothesizing dose-dependent decreases in verbal declarative memory.

**Results:** Cortisol treatment at the higher dose produced reversible decreases in verbal declarative memory without effects on nonverbal memory, sustained or selective attention, or executive function. A significant interaction between time and treatment condition for paragraph recall was explained by treatment-induced differences in performance after 4 treatment days, with lower immediate and delayed recall performance during higher-dose cortisol treatment compared with lower-dose treatment and placebo.

**Conclusions:** Several days of exposure to cortisol at doses and plasma concentrations associated with physical and psychological stress in humans can—similar to pharmacological GC treatment—reversibly decrease specific elements of memory performance in otherwise healthy individuals.

*Arch Gen Psychiatry. 1999;56:527-533*

### 3. The Introduction

This section should be about 20-30% of the total length of the report. It should provide background information about the topic and should finish by stating a hypothesis or hypotheses. Generally in this kind of writing you should start the text with some very general fact, and as you write, make the statements, facts etc. more specific. So for example, a lab report on memory could start with a sentence such as 'Psychologists

have been studying memory processes experimentally for over 100 years'. The final sentence, in the hypothesis, might be 'Therefore, it is hypothesized that participants given gum to chew during the learning stage will perform better on a recall task than participants not given gum'. The introduction is not about the methods you use or the results. So unless you are using some special method, you don't discuss methods at all in this section. Note that although the introduction is written after the research is done, it is written as if you don't know the results yet. The introduction section must stay focused on the issue being investigated in the lab report. It is not a literature review that discusses anything associated with the topic. It must be a logical flow from the opening sentence to the hypothesis at the end.

The introduction must contain citations (see section 7 on page 13). The tenses used when writing will vary depending on what you want to say. If you are describing existing results from research, you will need to write in the past tense, e.g. 'Ebbinghaus (1885) described several studies...' If you are giving a general fact that is believed to be true, then write in the present tense, e.g. 'Recall is more difficult than recognition (Tulving, 1975)'.

It is important that the introduction lead the reader logically to the hypothesis. The hypothesis is simply a statement of what you expect to find, or the thing that the experiment is trying to prove. It is an expectation, so it is written in the future tense. E.g. 'it is hypothesized that participants given gum to chew during the learning stage will perform better on a recall task than participants not given gum'. This is called an experimental hypothesis.

In theory, we should actually write the null hypothesis, this is for logical and statistical reasons that we don't need to discuss here. The null hypothesis is simply that there will be no difference or no effect. (e.g. 'participants given gum to chew during the learning stage will not perform any differently on the recall task to participants not given gum to chew'. In reality psychologists usually just give the experimental hypothesis because it is easier to understand, and really, if you know one of them, you know what the other one is too. In your reports just give the experimental hypothesis.

## 4. Method

In this section you write about what was done to collect data. It is therefore almost entirely in the past tense. It is written completely in sentences, no lists. It should use up about 15-25% of the word count. The method section is used by the reader to find out exactly how the research was done. Therefore it needs to contain lots of detail. In theory, there should be enough detail for the reader to recreate the experiment if they wanted.

It is important to use subheadings in the methods section. There are three that you must have in any experiment: Participants, Materials and Procedure. Below are details about each of these.

The **Participants** subsection should say how many participants there were, how many were male/female, and their average (mean) age. That is the minimum amount of information needed. Usually you need to give more than that. For example you should say if they were students or if they were recruited from elsewhere. It depends on the type of research that you are doing. If it is cognitive psychology, then it is assumed that people in general have the same kinds of minds. So number, male/female, age is usually enough. But if it were a clinical study, of say people who attempt suicide, you would have to give much more information about exactly who the participants were. Information about how participants were recruited is also important and can either be put in this section, or in the procedure section.

In some reports, the word 'subjects' is used instead of 'participants'. The APA allow either form, however some other organizations (such as the British Psychological Society) advice against calling people studied in research 'subjects', as the alternative is more respectful of their active participation. The word 'subjects' should be used for animals in research.

The **Materials** subsection is sometimes also called Apparatus. It is where you describe anything that you used to collect the data with. Usually in experimental psychology this will be about the stimuli that you used, for example lists of words. If you used any machinery, it should be described here too. For example, if images were displayed on a computer screen, give the name of the screen manufacturer and the size, e.g. 'all images were presented on a Samsung 17 inch PC monitor'. However you don't need to give very banal details, such as 'a pencil and a piece of paper were used to write down the participants age'.

The **Procedure** subsection is where you say what was done. This is in the logical time order that things actually happened. So you start with what the participant did first, and finish with the last thing that they did. Often in experimental psychology participants are tested one at a time. So to write about that describe the typical procedure, e.g. 'each participant was first asked to read words presented on the computer screen...'. If group testing is done, you would say, e.g., 'Participants were tested as a group, all were asked to read words presented on a projector'. In many psychology experiments, timing is important. So these are given here in the procedure section too. So you could say for example, 'the participant was given 2 minutes to read all of the words, and then immediately asked to recall, then had 90 seconds to recall'.

In a procedure section you should also give details of the testing location. As this is a lab report, ideally the situation should be controlled, laboratory conditions. So experiments should usually be performed in quiet, well-lit rooms. However, be truthful about where the experiment was actually conducted.

At the end of any experimental session, it is good professional practice to debrief the participant. This is simply explaining to them what they have just done, asking how they feel and if they have any questions. You should also thank them for participation. If the participants were paid, or received course credits for participation (common in the USA), you should say so here in the procedure section. So for example, a simple last sentence to the procedure section could be, 'Finally, all participants were debriefed about the nature of the research and thanked for their participation.'

***A note on research ethics:*** If your project has been reviewed by a research ethics committee or IRB, you probably have to take informed written consent from each participant. If so, say in the procedure that written consent was obtained and that the research protocol had been approved. However, classroom based research projects are usually except from this committee approval. Nevertheless it is good practice to take written consent even in classroom based research and to mention this in the procedure section.

In your procedure section you may use additional subheadings, for example Design, Setting, or Statistical Analysis. But the very least is that you have Participants, Materials and Procedure.

## 5. Results

The results section is written in the past tense. It should be of a similar length to the methods section, about 15-25% of the total length. The results section is where you summarize the findings of the research and describe how you analyzed it. It is a summary, it contains average scores etc. Don't put individual participants' raw data in the results section. If you did it would be difficult to interpret and violate ethical principles of anonymity.

So the results section usually contains data that is analyzed statistically. There are two types of statistics used in experimental psychology reports: *descriptive* and *inferential*.

### *Descriptive statistics*

Descriptive statistics just describe the data. All experiments have at least two conditions, so it is normal to give the mean average of the scores in each condition. Even correlational studies have at least two variables, so the mean scores should still be given. The mean average is the mathematical name for what most people already understand by the word 'average', for example the mean of 5,7 and 8 is 6.7 ( $(5+7+8)/3$ ). In addition to a mean average, you should give some idea of the distribution of scores, this could be the range (the lowest and the highest number). So in the example of the mean given above, you could write 'The recall group scored a mean average of 6.7 words (range = 5-8). However, usually it is best to give the standard deviation (SD). This statistic is available whenever analysis is done by computer, for example with SPSS or Minitab. So you could write 'they scored a mean average of 6.7 (SD=1.5).

If you only have a small number of descriptive statistics, then it is easier to write them as sentences. However, if you have several, it may be best to put them in a table. In addition, if there is a natural trend to the data, such as the more chewing gum people have, the better their recall, you might want to show this in a graph.

If you use a graph think carefully about what you want to show. Line graphs shows trends in data, the categories having a natural order, for example age group. Bar charts show differences that could be presented

in any order, for example conditions that participants were randomized to. Note that pie charts look nice but are very rarely used in academic work. Leave them for the salesmen trying to impress their bosses.

If you use a Table or a Figure (graph) each must have a title and a number. For example:

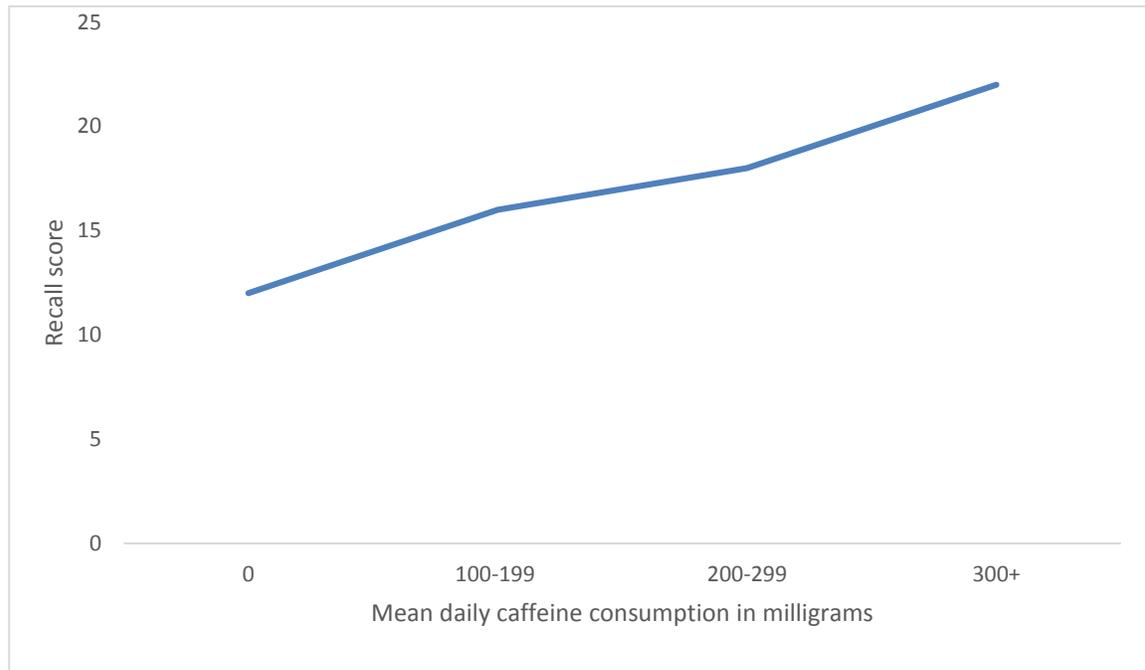


Figure 1: The relationship between daily caffeine consumption and recall performance

**Table 1:** Means (+ standard deviations) for different types of memory retrieval in the gum chewing and control conditions

Condition	Gum	Control
Simple recall	12.4 (1.7)	11.0 (1.9)
Cued recall	14.3 (2.3)	12.2 (2.1)
Recognition	16.8 (3.2)	13.9 (3.4)

Note that usually the title for a figure goes below it, but the title for a table goes above it.

When you refer to table or figures, these sorts of phrases are common:

As we can see in Table 1....

The data are shown in Figure 2 were we can see

The results are summarized in Table 2..

Finally, when reporting descriptive statistics, think about how many decimal places is actually useful to know about. Is it really useful to know that Group A made on average 14.6781 errors? Really all you need to know is that they scored 14.7 errors on average. Although if it is very low number, 0.68 might be better than just 0.7. Just be sensible with it.

### *Inferential statistics*

Inferential statistics are those that go beyond the data and tell us something else. Usually in experimental psychology the big issue is whether or not any difference in average scores that you have found is real or just pure chance. These issues are usually dealt with by correlational analyses, t-tests,  $\chi^2$  tests, ANOVAs etc. These are the tests where we talk about  $p$  values and significance. There is no space to explain the theory behind these tests here. However, if possible, you should report inferential statistics in your lab report. The way to explain these is to write them in sentences at the same time as you are giving the descriptive statistics. You should not cut and paste tables from SPSS or any other statistical package into your results section. Never. However, in this document some SPSS output is included so that you can see the relationship between the test used, what to include in your lab report and how to actually write it in sentences.

The standard way to write out inferential statistics is like this, the first example given is for an independent groups design t-test. The SPSS output for this is given below:

Test used	Information to be given	How to write it in sentences
t test	t(degrees of freedom)= value of t, p=Value of p*	t <sub>(39)</sub> =-1.858, p=.071.

\*This is shown as 'Sig. (2-tailed)' in the SPSS output.

Group Statistics

	Group 1=UK 2=Japan	N	Mean	Std. Deviation	Std. Error Mean
Number of years of education	UK	25	9,72	2,777	,555
	Japan	16	11,44	3,054	,764

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of years of education	Equal variances assumed	1,140	,292	-1,858	39	,071	-1,718	,924	-3,587	,152
	Equal variances not assumed			-1,819	29,846	,079	-1,718	,944	-3,646	,211

So when writing the results in sentences, combining descriptive and inferential statistics we could write 'In terms of years of education, the sample of participants from the UK reported a mean of 9.7 (SD=2.8) years, which is somewhat lower than the participants from Japan who reported 11.4 (SD=3.1) years. However, this difference was not statistically significant ( $t_{(39)}=-1.858$ ,  $p=.071$ ).'

For a correlation, the SPSS output would look something like this:

Correlations

		Impulsivity score	Alcohol test score	Age in years
Impulsivity score	Pearson Correlation	1	,714**	-,085
	Sig. (2-tailed)		,006	,782
	N	13	13	13
Alcohol test score	Pearson Correlation	,714**	1	,270
	Sig. (2-tailed)	,006		,372
	N	13	13	13
Age in years	Pearson Correlation	-,085	,270	1
	Sig. (2-tailed)	,782	,372	
	N	13	13	13

\*\* . Correlation is significant at the 0.01 level (2-tailed).

This, would be written something like this: 'the analyses revealed a significant positive correlation between scores on the impulsivity measure and scores on the assessment of alcohol abuse,  $r=.714$ ,  $p=.006$ '.

Note that when reporting inferential statistics it is best to give the full numbers, so  $t=1.858$ , you don't change it to 1.9. Also you should give the exact  $p$  value (e.g.  $p=.071$ ). In the past psychologists just reported  $p>.5$  or  $p<.05$ , because they couldn't calculate the exact value. Nowadays we can, so we should report it.

## 6. Discussion

In this section you evaluate the results. The discussion section should usually be the longest section of the lab report, about 30-40% of it. You should start by summarizing the findings and report whether or not they support your hypothesis or hypotheses. If your results do support your hypotheses, then you can explain how they contribute to understanding, for example supporting the theories that you wrote about in the introduction. If your results do not support your hypotheses, then you can offer alternative explanations for what you found. Be careful not to be too negative in this section. If you have a null result, for example, no significant difference between groups, this doesn't mean the experiment was a failure. In fact you have still proven something, you have proven that one thing (the independent variable) doesn't have an effect on another thing (the dependent variable). Null results may sound boring, but you can still interpret them. For example if some theory predicts a difference, and you find that there isn't one, maybe the theory is wrong.

The discussion is the place where you put the results in context and suggest how they may be important. The writing in the discussion can be speculative, suggesting new ideas, practical applications, suggesting ideas for future research etc. You should still cite sources in the discussion.

The discussion section should also include some evaluation of the limitations of the research. If there were any potential confounding variables, you should mention them here. You could also discuss the generalizability of the results. For example if all the participants were female, you could say that they may not be representative of the whole population. However, again, try not to be too negative. You can use 'however', 'nevertheless', 'despite' etc. to put a positive light on the research. For example, '...despite the possible confounding effect of noise on the experiment, we found a large difference between groups, suggesting that there is a real effect of chewing gum on recall.'

End the discussion section with a concluding paragraph that discusses the importance of your findings.

## 7. Citations and references

### i. Citations

Citations are notes given in the text to indicate further reading, a citation has two parts, the family name of the author or authors, and the year that the work was published. They are given in one of two ways, Name (year) or (Name, year). For each citation in the text, there should be a full reference given in the reference list. An example of a piece of text containing two citations is given below.

Behavioral evidence shows that people can later come to misattribute false information that they themselves generated and that they knew at the time was false (Ackil & Zaragoza, 1998). Hassabis and Maguire (2007) compared memory for recent autobiographical memories with recent *constructed* fictitious experiences (mental experiences that the participants

Note that the citation putting everything within parentheses, e.g. (Ackil & Zaragoza, 1998), is used when the citation is extra information that isn't part of the actual sentence. It is the most common way to cite, because generally the names of the researchers are not important to the meaning of the sentence. However, if you wish to use the authors' names as part of the sentence, use the other form: 'Hassabis and Maguire (2007) compared...'

How you cite is dependent on how many authors there are.

**1 author**, that's easy, whenever you want to use the citation, it's always the same, just the name and the year, e.g. Pluck (2004), or (Pluck, 2004)

**2 authors**, again that's easy, it's always both names and the year, Pluck and Brown (2002), or (Pluck and Brown, 2002).

**3,4 or 5 authors**. The first time you cite them, you give all the names, e.g. (Lee, Jones, Vega and Brown, 2013). However, every time you cite them again in the same text, you use the first author's name + et al. e.g. (Lee et al., 2013). 'et al' simply means 'and others'.

**6 or more authors**, give the first author's name + et al. Even if it's the first time you cite them, you can use et al. from the start to save ink. E.g. (Lee et al., 2013).

**ii. References**

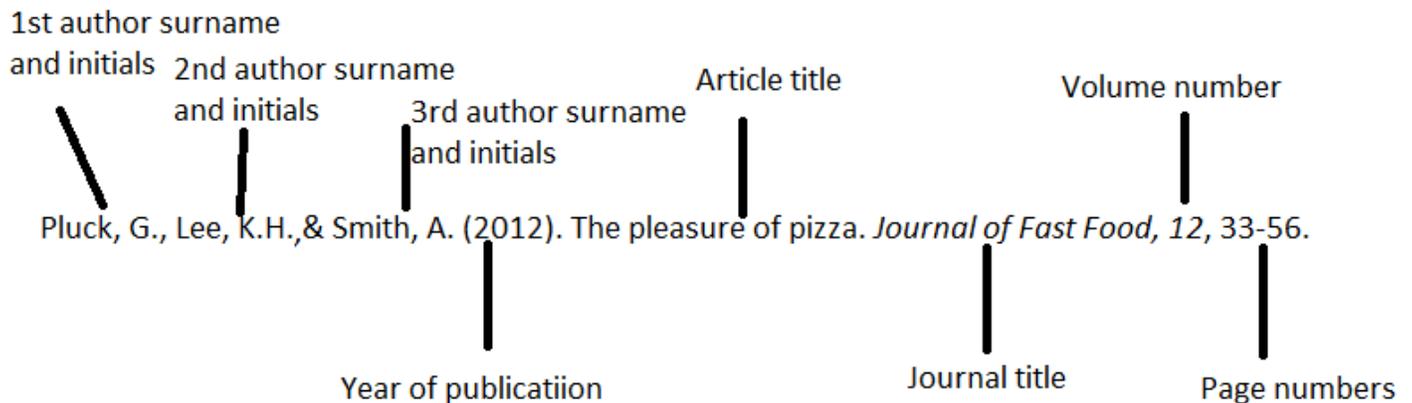
Lab reports should have a reference list, not a bibliography. A reference list is the details of all the citations form the text. So every citation must be detailed in the reference section. Also, all references must also be cited in the text.

The reference list should be alphabetical by the first author name, so Abramovich comes before Zulanga. An example of the first part of a reference list is shown below:

References

Achim, A. M., & Weiss, A. P. (2008). No evidence for a differential deficit of reality monitoring in schizophrenia: A meta-analysis of the associative memory literature. *Cognitive Neuropsychiatry*, *13*, 369–384.  
 Ackil, J. K., & Zaragoza, M. S. (1998). Memorial consequences of forced confabulation: Age differences in susceptibility to false memories. *Developmental Psychology*, *34*, 1358–1372.  
 Addis, D. R., Moscovitch, M., Crawley, A. P., & McAndrews, M. P. (2004). Recollective qualities modulate hippocampal activation during autobiographical memory retrieval. *Hippocampus*, *14*, 752–762.  
 Aggleton, J. P., & Brown, M. W. (1999). Episodic memory, amnesia, and

*The format for references to journal articles is shown below:*



✓ If there is just **one author**, a reference to a journal article would look like this:

Pluck, G. (2013). Cognitive abilities of 'street children': a systematic review. *Chuo Journal of Policy Sciences and Cultural Studies*, *21*, 121-133.

✓ If there are **two authors**, a reference to a journal article would look like this:

Pluck, G., & Brown, R.G. (2000). Personality correlates of visual attentional processing. *Journal of Psychology and the Behavioral Sciences*, 14, 36-49.

- ✓ If there are **three to seven authors**, the reference would look like this:

Pluck, G., Lee, K. H., David, R., Macleod, D. C., Spence, S. A., & Parks, R. W. (2011). Neurobehavioural and cognitive function is linked to childhood trauma in homeless adults. *British Journal of Clinical Psychology*, 50, 33-45.

- ✓ If there are **more than 7 authors**, some names are not given. The ones that you do give are the first six and the last one. The rest are replaced by three dots '...'. So for example, the reference information from a publishers website given below:

**A randomized controlled trial with 4-month follow-up of adjunctive repetitive transcranial magnetic stimulation of the left prefrontal cortex for depression**

A. Mogg<sup>a1</sup>, G. Pluck<sup>a1</sup>, S. V. Eranti<sup>a1</sup>, S. Landau<sup>a2</sup>, R. Purvis<sup>a1</sup>, R. G. Brown<sup>a3</sup>, V. Curtis<sup>a4</sup>, R. Howard<sup>a1</sup>, M. Philpot<sup>a5</sup> and D. M. McLoughlin<sup>a1 c1</sup>

*Psychological Medicine* / Volume 38 / Issue 03 / March 2008, pp 323-333

Would be referenced as:

Mogg, A., Pluck, G., Eranti, S. V., Landau, S., Purvis, R., Brown, R. G., ... & McLoughlin, D. M. (2008). A randomized controlled trial with 4-month follow-up of adjunctive repetitive transcranial magnetic stimulation of the left prefrontal cortex for depression. *Psychological Medicine*, 38, 323-333.

- ✓ Some publications only exist on-line, if this is the case they may not have volume numbers or page numbers. If so they will usually have a DOI number (see below). You should give that instead. So the format would be:

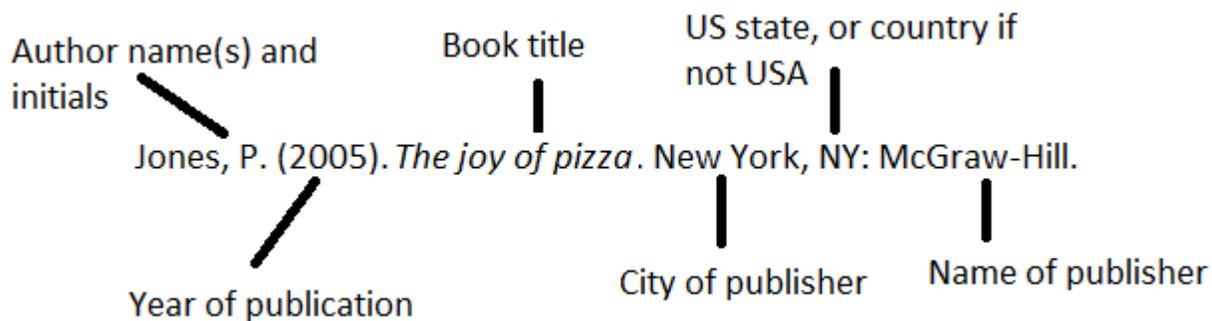
Pluck, G., & Brown, R. G. (2011). Cognitive and affective correlates of temperament in Parkinson's disease. *Depression Research and Treatment*. doi:10.1155/2011/893873

However, if page numbers and volume numbers are available, you should give them. APA 6<sup>th</sup> edition says that DOI's should be given for all references. A DOI is a digital object identifier, most journal articles have one, it is a unique number for each article. However, for student lab reports these are not necessary, unless there are no other details such as volume and page numbers.

*Things to note about APA reference format:*

- The article title is not capitalized.
- The name of the journal is capitalized.
- The name of the journal and volume number are italicized.
- Sometimes people also give the issue number in ( ) after the volume number, but for student lab reports, this is not necessary.
- Do not include the letters 'Vol' or 'pp' or 'pages'.

*The format for referencing books is given below:*



*Things to note:*

- ✓ The book title is not capitalized, but it is italicized.
- ✓ Author names are presented in the same way as for journal articles.

*Other points about reference lists:*

- There are other types of references (e.g. chapters in books). Check online resources or the APA manual for how to reference those.
- Even if you read a journal article online, e.g. the PDF, if it has a real existence, with page numbers etc., you should reference it as above, including the page numbers etc.
- The only time you need to give a URL is for documents that only exist on-line and that do not have a DOI number, i.e. websites.
- If you can give page numbers, etc., then you don't need to give a URL. Most journal articles do not need a URL.

- If you do cite and reference a website, then you need to give an access data, but only if it is something likely to change, such as a Wikipedia page. If it probably won't change, you don't need an access date.
- A quick way to do APA references is to search for the article on Google Scholar, and then click on 'cite'. However, Google often misses parts out, so you still need to know what should be in the reference.

### **Source materials**

As this is university level work, you should be using academic materials. So the reference list should contain mainly journal articles. Maybe some books too. Although it is possible to give APA citations and references for blogs, for newspaper articles etc., you should usually avoid using such materials. It is important for students' academic development that they become familiar with reading journal articles.