

## ***D053 – Introduction to Academic Writing in Sports Science***

### **Homework tasks:**

*\* Any questions from last session or the homework?*

*\* In pairs, peer review each others homework task: provide comments and feedback on the content and English in the written work.*

*\* Once peer review has been done, check any questions / clarifications on English to the group.*

*\*\* Students who didn't present at seminar 2, please present your homework task to the group.*

### **Unit 3 Writing a Scientific Abstract**

#### **What is an abstract?**

*\* Group to read then discuss*

Is a brief summary of a piece of research. It's aim is to provide an introduction to the research in a very concise fashion. They are always restricted by a word count, usually consist of a maximum of around 250 words, and they are typically prepared as a preface to either a research paper, or an introduction to an event eg. a conference, where the abstract may introduce a poster or presentation. As they are restricted by a word count, abstracts need to be clear, concise, simple and efficient in their purpose.

#### **What is it's purpose?**

An abstract may be a summary of research that is being presented for potential publication to a journal, an application for research work (eg to a university), or a summary of completed research to be presented at a conference. The same abstract can be applied and used in each instance. It's the first thing that is seen by a journal editor or conference coordinator, so It's very important for it to do it's job well. It's purpose is to persuade the reader to read the entire article, or to accept the article for publication or inclusion.

*\* What content should be in a scientific abstract? Discuss with the class.*

## Content of a scientific abstract

An abstract is merely an advertisement for the complete article and must be brief by definition due to the word count restrictions. However, it must include all the relevant information for the article. A typical abstract should contain the *IMRAD* format.

*\* Work with a partner. Match the parts of an abstract to their correct meanings below.*

Introduction                      method                      results                      discussion

The \_\_\_\_\_ outlines simplistically who the study groups and population are, how the data was collected, the duration and time period of the study and any other relevant factors in the data collection.

The \_\_\_\_\_ summarises the findings and relevance of the study, drawing conclusions as to why the work was important.

The \_\_\_\_\_ provides the background to the study which discusses what is known and unknown about the topic. It justifies the reason for the study.

The \_\_\_\_\_ importantly display the basic findings of the study, including statistical values such as probability.

Adapted from: (Grech, V. WASP (Write a Scientific Paper): Preparing an Abstract.)

## Tips for writing a great abstract:

*\* Work alone or with a partner. Read through and complete with the correct article the, a or no article. Then discuss with the group.*

*Length:* Make sure it's \_\_\_\_\_ correct length. If it's longer than \_\_\_\_\_ required word count, then it's highly likely to be rejected by the journal or the organisers of \_\_\_\_\_ conference. If it's too short then it's unlikely to show enough detail about \_\_\_\_\_ study – you will lose valuable marketing messages.

*Content:* Make sure your abstract is \_\_\_\_\_ reflection of your work and study. It should include \_\_\_\_\_ most important aspects and main findings of \_\_\_\_\_ research. Avoid including unnecessary information that provides \_\_\_\_\_ distraction to \_\_\_\_\_ more relevant information, and don't expand too much on \_\_\_\_\_ work of other authors.

*Language and style:* Make sure \_\_\_\_\_ language used in the abstract is clear, academic, formal and avoid using jargon or slang. This will ensure it's easier to follow for \_\_\_\_\_ reader, and it is pitched at the correct audience (other academic readers). Make sure \_\_\_\_\_ writing is clear and concise, using \_\_\_\_\_ proof-reader to check language can often help when English is not your first language.

*Conclusion and Keywords:* Finish with \_\_\_\_\_ strong, clear conclusion – it is \_\_\_\_\_ last thing that the reader will be left with when they finish reading. This should briefly summarise \_\_\_\_\_ importance of the research, and aim to leave \_\_\_\_\_ strong impression. In addition, pick \_\_\_\_\_ most important keywords for your study, so it can be easily found in searches. Include at least several keywords in order to help with this.

(Adapted from: <https://blog.webshop.elsevier.com/tips-for-writing/bad-vs-good-abstract/>)

### **Determine the parts of this abstract**

***\* In pairs, read the following abstract. Locate and note the different sections of it - IMRAD***

***\* Then discuss with the group***

**1** A cross-sectional observational design study was conducted to determine lumbar repositioning error in 15 subjects who had chronic low back pain with a clinical diagnosis of lumbar segmental instability and 15 asymptomatic participants. **2** The aim of the study was to determine whether individuals with lumbar segmental instability have a decreased ability to reposition their lumbar spine into a neutral spinal position. **3** Proprioception of the lumbar spine has been investigated in individuals who have low back pain with variable results. **4** The testing procedure's lack of sensitivity and the non-homogeneity of groups may be responsible for the conflicting findings. **5** Repositioning accuracy of the lumbar spine was assessed using the 3Space Fastrak to determine error in 15 participants with lumbar segmental instability and 15 asymptomatic subjects. **6** The participants were assisted into a neutral spinal sitting posture and then asked to reproduce this position independently over five trials separated by periods of relaxed full lumbar flexion. **7** Lumbosacral repositioning error was significantly greater in participants with lumbar segmental instability than in the asymptomatic group ( $t[28] = 2.48$ ;  $P = 0.02$ ). **8** There also was a significant difference between the groups at each individual sensor. **9** The results of this study indicate that individuals with a clinical diagnosis of lumbar segmental instability demonstrate an inability to reposition the lumbar spine accurately into a neutral spinal posture while seated. **10** This finding provides evidence of a deficiency in lumbar proprioceptive awareness among this population.

(adapted from O'Sullivan et al, *Spine*, 2003 May 15;28(10):1074-9)

Introduction: \_\_\_\_\_

Method: \_\_\_\_\_

Results: \_\_\_\_\_

Discussion: \_\_\_\_\_

## Examples of abstracts – which one is better?

*\* Read the following two sample abstracts of the same study. Which one is the best? Why? Work with a partner and write down your ideas. Then discuss with the group.*

**Sample 1:** This experiment will determine what will make enzymes affective and what will make them ineffective. We tested different samples of enzymes in a spectrophotometer and recorded their absorption rates. Six samples were placed in the spectrophotometer but two contained no enzyme; these acted as blanks for the other samples. The four remaining samples contained Catecholase ranging from 0.5 ml to 1.75 m. The second half of the experiment contained four test tubes with a constant amount of Catecholase, but the pH levels ranged from four to eight. It was found that if the enzyme was present in large amounts, then the absorption rate was high, and if the pH level ranged from 6 to eight then the absorption rate was high. Therefore it can be said that enzymes work well in neutral pH levels and in large amounts.

*Comments on Sample 1:*

**Sample 2:** This experiment was performed to determine the factors that positively influence enzyme reaction rates in cellular activities since some enzymes seem to be more effective than others. Catecholase enzyme activity was measured through its absorption rate in a spectrophotometer, using light with a wavelength of 540 nm. We compared the absorbance rates in samples with varying enzyme concentrations and a constant pH of 7, and with samples with constant enzyme concentration and varying pH levels. The samples with the highest enzyme concentration had the greatest absorption rate of 95 percent compared to the sample with the lowest concentration and an absorption rate of 24 percent. This suggests that a higher concentration of enzymes leads to a greater product production rate. The samples with a pH between six and eight had the greatest absorption rate of 70 percent compared to an absorption rate of 15 percent with a pH of 4; this suggests that Catecholase is most effective in a neutral pH ranging from six to eight.

(Adapted from: <http://writing2.richmond.edu/training/project/biology/abslit.html>)

*Comments on Sample 2:*



