CENTRUM AKADEMICKÉHO PSANÍ
KABINET STUDIA JAZYKŮ ÚJČ AV ČR, v. v. i.

Scientific Writing Skills Workshop: Activity Sheet

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Activity 1: Assessing the quality of an abstract

Read the following first draft of an abstract for a journal article and answer the following questions:

1) **Is it easy to read? Is it a descriptive abstract or hypothesis-driven abstract?**
2) **What is the study about? Summarize what you have learned from the abstract and discuss in pairs/groups.**

Abstract No. 1: ***Biochemical Parameters of Energy Metabolism in Cerebrospinal Fluid at Defined Cytological Syndromes***

Diseases of the central nervous system (CNS) mean for the human organism a potentially dangerous situation. An investigation of energy metabolism parameters belongs to the urgent measurement of cerebrospinal fluid (CSF), which should promptly provide important information about a character of CNS impairment in the decision-making diagnostic and therapeutic algorithm. The basic test of the energy balance in CSF is a determination of glucose quotient and lactate concentration. A calculation of so-called Coefficient of Energy Balance (CEB) makes possible more exact assessment of actual extent of anaerobic metabolism in the CSF compartment. CEB in significant rate completes the full picture of the fundamental examination of cerebrospinal fluid by the information about the actual function state of present cells and contributes mainly to differential diagnosis of neuroinfections, and also other clinical diagnosis. Results of examination of a large set of CSF samples (n=8 183) from patients with different neurological diseases and the relation between CEB and individual defined cytological syndromes are presented. Statistically highly significant difference of CEB between the group with granulocyte pleiocytosis (GP, n=766), which is a typical cytological picture of purulent neuroinfections of bacterial etiology, and the control group was found ($p < 0.001$) and so the development of a high degree of anaerobic metabolism caused by the oxidative burst of neutrophils is obvious. Similarly the statistically significant difference of CEB between the control group and groups with tumorous oligocytosis plus pleiocytosis (TO+TP, n=152) and monocyte pleiocytosis (MP, n=1 457) was found ($p < 0.001$) because of the oxidative burst of macrophages. CEB has a great importance for diagnosis, differential diagnosis and early therapy of CNS diseases. **(269 words)**

Note: The abstracts in this handout are authentic texts with grammar and stylistic mistakes, which we purposefully left untouched.

Activity 2: Writing about a problem

Now read the second draft of the same abstract and answer the following questions:

1) **What is the study about?**
2) **Underline the passage that poses a problem to be solved.**
3) **Who will benefit from the project? How?**

Abstract No.2: ***Coefficient of Energy Balance: Effective Tool for Early Differential Diagnosis of CNS Diseases***

Urgent examination of cerebrospinal fluid (CSF) provides immediate important information about the character of central nervous system (CNS) impairment. Although this examination includes energy parameters such as glucose and lactate concentrations, it does not commonly use Coefficient of Energy Balance (CEB). In this study, we focused on CEB because it enables more exact assessment of actual energy state in the CSF compartment than glucose and lactate alone. CEB informs about the actual functioning condition of present cells, and it does not require any other analysis or costs. Using Kruskal-Wallis ANOVA, we examined a large CSF sample (n = 8183) and we compared CEB values among groups with different cytological syndromes. We found a statistically significant difference of CEB between the group with granulocyte pleocytosis and the control group. These results indicate a high degree of anaerobic metabolism caused by the oxidative burst of neutrophils. Similarly, we found a statistically significant difference of CEB between the control group and groups with tumorous oligocytosis plus pleocytosis and monocyte pleocytosis. This difference can be attributed to the oxidative burst of macrophages. Our findings suggest that CEB combined with CSF cytology has a great importance for diagnosis, differential diagnosis, and early therapy of CNS diseases. **(198 words)**

Activity 3: Observing rhetorical moves

Examine abstract no.2, think about what the author is doing in each sentence, and break the text down into individual rhetorical moves. Label each move.

Abstract No.2 - ***Coefficient of Energy Balance: Effective Tool for Early Differential Diagnosis of CNS Diseases***

(1) Urgent examination of cerebrospinal fluid (CSF) provides immediate important information about the character of central nervous system (CNS) impairment. (2) Although this examination includes energy parameters such as glucose and lactate concentrations, it does not commonly use Coefficient of Energy Balance (CEB). (3) In this study, we focused on CEB because it enables more exact assessment of actual energy state in the CSF compartment than glucose and lactate alone. (4) CEB informs about the actual functioning condition of present cells, and it does not require any other analysis or costs. (5) Using Kruskal-Wallis ANOVA, we examined a large CSF sample (n = 8183) and we compared CEB values among groups with different cytological syndromes. (6) We found a statistically significant difference of CEB between the group with granulocyte pleocytosis and the control group. (7) These results indicate a high degree of anaerobic metabolism caused by the oxidative burst of neutrophils. (8) Similarly, we found a statistically significant difference of CEB between the control group and groups with tumorous oligocytosis plus pleocytosis and monocyte pleocytosis. (9) This difference can be attributed to the oxidative burst of macrophages. (10) Our findings suggest that CEB combined with CSF cytology has a great importance for diagnosis, differential diagnosis, and early therapy of CNS diseases.

Activity 4: Understanding rhetorical moves

Now read and analyze abstract #1.

1) **The underlined section signifies that there is something wrong in the section. Which rhetorical move does the section represent and what's the issue there?**
2) **Examine the introduction. Where does it end? How much space does it take in proportion to the whole abstract? What do you think about it?**

Abstract No.1 - ***Biochemical Parameters of Energy Metabolism in Cerebrospinal Fluid at Defined Cytological Syndromes***

Diseases of the central nervous system (CNS) mean for the human organism a potentially dangerous situation. An investigation of energy metabolism parameters belongs to the urgent measurement of cerebrospinal fluid (CSF), which should promptly provide important information about a character of CNS impairment in the decision-making diagnostic and therapeutic algorithm. The basic test of the energy balance in CSF is a determination of glucose quotient and lactate concentration. A calculation of so-called Coefficient of Energy Balance (CEB) makes possible more exact assessment of actual extent of anaerobic metabolism in the CSF compartment. CEB in significant rate completes the full picture of the fundamental examination of cerebrospinal fluid by the information about the actual function state of present cells and contributes mainly to differential diagnosis of neuroinfections, and also other clinical diagnosis. Results of examination of a large set of CSF samples (n=8 183) from patients with different neurological diseases and the relation between CEB and individual defined cytological syndromes are presented. Statistically highly significant difference of CEB between the group with granulocyte pleiocytosis (GP, n=766), which is a typical cytological picture of purulent neuroinfections of bacterial etiology, and the control group was found ($p < 0.001$) and so the development of a high degree of anaerobic metabolism caused by the oxidative burst of neutrophils is obvious. Similarly the statistically significant difference of CEB between the control group and groups with tumorous oligocytosis plus pleiocytosis (TO+TP, n=152) and monocyte pleiocytosis (MP, n=1 457) was found ($p < 0.001$) because of the oxidative burst of macrophages. CEB has a great importance for diagnosis, differential diagnosis and early therapy of CNS diseases.

Activity 5: Examining titles

Compare the titles in the two abstracts. What makes the difference?

(1a) ***Biochemical Parameters of Energy Metabolism in Cerebrospinal Fluid at Defined Cytological Syndromes***

(1b) ***Coefficient of Energy Balance: Effective Tool for Early Differential Diagnosis of CNS Diseases***

Compare also the following sets of sentences and note the differences in the level of explicitness:

(3a) Statistically highly significant difference of CEB between the group with granulocyte pleiocytosis (GP, n=766), which is a typical cytological picture of purulent neuroinfections of bacterial etiology, and the control group was found ($p < 0.001$)

(3b) We found a statistically significant difference of CEB between the group with granulocyte pleocytosis and the control group.

(4a) CEB has a great importance for diagnosis, differential diagnosis and early therapy of CNS diseases.

(4b) Our findings suggest that CEB combined with CSF cytology has a great importance for diagnosis, differential diagnosis, and early therapy of CNS diseases.

Activity 6: Identifying rhetorical moves in an introduction

What is missing in the following introduction?

Methane clathrate, also known as methane hydrate, methane fire, or fire ice, is a crystalline, cement-like solid that consists mainly of methane and water. Deposits of methane clathrate can accumulate within and on top of ocean sediments (Kvenvolden,1995; Hoffman, 2006). Methane hydrates are thought to form when methane from decaying organic matter on the ocean floor combines with seawater under appropriate conditions of low temperature and high pressure.

High-resolution, deep-tow multichannel seismic data, together with coring and sampling, were used to assess the presence of methane clathrates along the ocean floor

of the Blake Bahama Outer Ridge. Based on the evaluation of the seismic data and geochemical evidence, we were able to identify several deposits of methane clathrates at depths of 500-1000 m, above a bottom simulating reflector (BSR).

Activity 7: Formulating your research topic and problem

1. **What's the topic of your research? What's the background information that the readers should know?**

2. **What's the problem that you're trying to solve with your research?**

3. **Now ask yourself: So what? What about it? Why should others care? How will you persuade them that they should care?**

Activity 8: Discussion do's and don'ts

Look at the advice below for writing Discussion sections. Decide whether the pieces of advice should go under 'Do' or 'Don't'.

State whether you confirmed your hypothesis	Claim significance for your work	Mention previous research
End the Discussion by stating that further studies are needed	Include unexpected findings	Write mainly in the 3rd person and use the passive form frequently
Make sure you cover all the results of your study	Use the same sentences as you used in the Introduction	Present new data, which wasn't mentioned in the Results section
Apologise for your study's limitations	Briefly restate the methods used	Discuss alternative interpretations of your results

Activity 9: Compare two first and two concluding paragraphs of a discussion and decide which one is better and why.

Opening paragraphs of a discussion about a preventative measure against malaria.

Version A: We trapped and counted the number of mosquitoes within the urban environment of the city of Kumasi using conventional carbon dioxide traps. Nearly 70% more adult A. *gambiae* were caught in communities near moist urban agricultural establishments than in rural locations or in locations without irrigated urban settlements. When we evaluated malaria episode reports from people living in various parts of the city, we found that 18% of malaria cases in all seasons were reported by those near urban agricultural sites, whereas only 2% of the control groups reported incidences of malaria per year.

Version B: The results of this study show that open-space irrigated vegetable fields in cities can provide suitable breeding sites for A. *gambiae.* This is reflected in higher numbers of adult A. *gambiae* in settlements in the vicinity of irrigated urban agricultural sites compared to control areas without irrigated urban agriculture. Moreover, people living in the vicinity of urban agricultural areas reported more malaria episodes than the control group in the rainy as well as dry seasons. Apparently, the informal irrigation sites of the urban agricultural locations create rural spots within the city of Kumasi in terms of potential *Anopheles spp* breeding sites.

Concluding paragraphs of a discussion about desert frogs.

Version A: In conclusion, the study shows that desert frogs can avoid death by desiccation by maintaining a high body water content and water storage in their urinary bladder and by rapid hydration when water is available. These measures may be employed in combination with behavioural adaptations such as burrowing and change in pigmentation to minimise stresses tending to dehydrate the animals.

Version B: A limitation of this study was the small number of animals, a single species of frogs, and the location of the study area, which took place in only one oasis in the Mojave desert. Future studies should be extended to other species, a larger number of animals, and to a greater diversity of locations.