Guide: Writing Lay Summaries for Crohn's and Colitis Canada Grant Applications and Progress Reports

Crohn's and Colitis Canada focuses on the impact of research on the inflammatory bowel disease (IBD) community. During peer reviews, your application will be reviewed by both nurse reviewers and lay reviewers. Nurses and lay reviewers use the lay summary to assess and provide feedback about the grant proposal during our grant review meetings. Additionally, lay summaries provided in the annual reports are important to Crohn's and Colitis Canada for communicating the impact of your research to donors, volunteers, and the IBD community, thereby supporting our fundraising and awareness-building efforts.

Therefore, grant proposals and progress reports must include a lay summary that can be easily understood and contains minimal medical and/or research jargon. Below are some tips and tools to support the development of a good lay summary.

Tips to write a good lay summary

Your summary should answer the essential questions, "Who, What, Where, When" and "So What?" Focus on the relevance, application, and benefits of the research for people living with Crohn's disease and ulcerative colitis.

Structure of the Lay Summary (max 2,500 characters; approximately 400-word summary)

- **Background and Context:** Provide some background and context for the research. What research gap are you trying to fill?
- **Key Terms**: Define key terms critical to understanding your research (e.g., mucosal healing, next-generation sequencing technologies).
- **Relevance:** Predict and cover the "so what?" factor. Why is your research question important for individuals affected by IBD?
- **Key Methodologies and Findings:** Explain one innovative methodology and 1-2 key findings. Follow a logical order, which may not coincide with a temporal order.
- **Conclusion:** Provide one key conclusion in concise, active, first-person language. The purpose is to clearly state the significance of the research findings for a lay reader.
- **Impact:** Explain the current and/or future impact of your work. What is going to change with wider society, in terms of clinical care, biomedical advancement, and/or policy changes?

Tips for clear and effective writing for lay summaries:

- Provide context and examples/ reasonable metaphors whenever possible.
- Write in active voice instead of passive.
    - *For example, "I read this page" instead of "This page was read by me."*
- Use short, clear sentences. Avoid complex grammatical structures and phrases.
- Define any technical terms used.
    - *For example, "Cytokine - A small molecule that directs the movement and actions of cells in the immune system."*
- Refrain from using jargon and use the simplest word that conveys your meaning. For example, "before" instead of "prior to".
- Refrain from using acronyms. If necessary, spell it out in full when first mentioned in the text.
- Read the summary out loud to catch errors or awkward phrases.
- Have someone from outside the field of study read the summary and then revise your text accordingly.
- Use people-first language by focusing on the person, not the disability.
    - *For example, say "people living with Crohn's disease" rather than "Crohn's patients".*

Online tools: Readability

Your lay summary should be at a Grade 9 level on the Flesch-Kincaid score. Below are several free online resources to check the readability of your text. These online tools will analyze your text and calculate the number of sentences, words, syllables, and characters to help you make your content lay-friendly.

- Reading Level on Microsoft Word
- Read-able online
- Readability calculator
- **AI writing tools *(to assess for clarity and flow)***

Lay Summary Example

Scientific Proposal Summary	Lay Summary
Inflammatory bowel diseases (IBD), including Crohn's disease (CD) and ulcerative colitis (UC) are characterized by sustained intestinal mucosa inflammation, caused mainly by excessive macrophage	Inflammation of the gut is common among people living with inflammatory bowel disease (IBD). This is caused by the immune cells in the body. While there are several treatments that reduce inflammation in the

activation and inflammatory T effector cells. Although significant advances have been made in recent years in the treatment of IBD using immunomodulators, a large percentage of patients do not respond to current available therapies and of those who do initially respond, a large number lose responses to therapy over time. In addition, current IBD mediations are associated with significant infectious and possible neoplastic side effects. Thus, development of new therapies with improved safety profiles are required. Empagliflozin (EMPA) is a highly selective sodium glucose cotransporter-2 (SGLT2) inhibitor that is extremely effective in the treatment of type 2 diabetes2. EMPA also has documented antiinflammatory effects that are potentially mediated through metabolic reprogramming of immune cells. We have shown in mouse models that EMPA treatment is highly effective in healing existing colitis in the IL-10-/- mouse and in reducing mortality in a mouse model of LPSinduced sepsis3 (Appendix). These findings suggest that SGLT2 inhibitors could be effective therapy in IBD patients. The studies in this proposal are designed to investigate the mechanisms underlying these highly beneficial results of SGLT2 inhibitors using mouse models and ex vivo human cell culture. Results from these studies will provide evidence and preclinical proof-of-principle that SGLT2 inhibitors such as empagliflozin are beneficial in the treatment of gut inflammation and support the further study of this class of drugs as novel therapeutic agents in the treatment of IBD through immunometabolism.	gut, many patients do not respond well to the treatments. Some of these treatments are also known to cause serious side effects among some people. The development of new treatments with less side effects is needed. Empagliflozin (EMPA) is a drug that is used to treat diabetes. It reduces the levels of glucose in the blood. However, in large clinical trials, it has been shown to reduce inflammation in the heart and kidney by controlling the immune cells. In our previous research, we found that EMPA can heal an inflamed gut in mouse models. We are now planning to explore the effect of EMPA in immune cells from IBD patients. Our results may provide evidence that EMPA could be used to treat IBD in the future.

If you have any questions, please contact Crohn's and Colitis Canada:
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