# How to Write an Effective Abstract for a Poster Presentation in Neuroscience of Ageing

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The Role of the Abstract in Scientific Communication

✓ The abstract is the **gateway to your research**: it determines whether reviewers, peers, and clinicians will engage with your work.

✓ Functions as a **condensed scientific narrative**, integrating background, hypothesis, methodology, and principal findings.

✓ Must demonstrate **novelty, rigour, and clinical relevance** within stringent word limits.

✓ In Neuroscience of Ageing, clarity is paramount due to the **multidisciplinary readership** (neurologists, geriatricians, computational neuroscientists, exercise physiologists).

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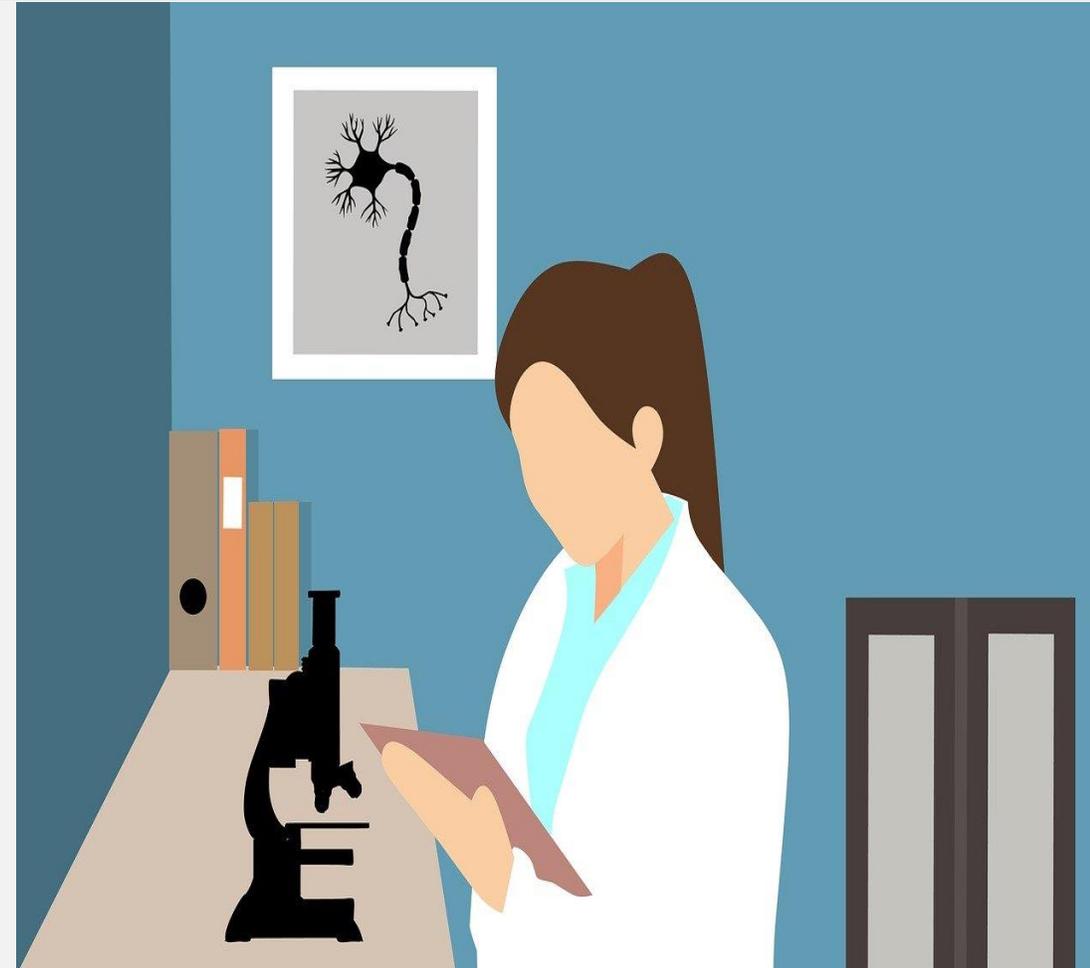
Overarching Principles

- **Precision**: every sentence must add substantive value.
- **Balance**: provide sufficient methodological detail without exceeding scope.
- **Alignment**: ensure that abstract, poster, and oral explanations are coherent.
- **Clinical Translation**: situate findings within the broader context of age-related neurological decline, dementia, and preventative strategies.

Precision

Alignment

Balance

Clinical Translation

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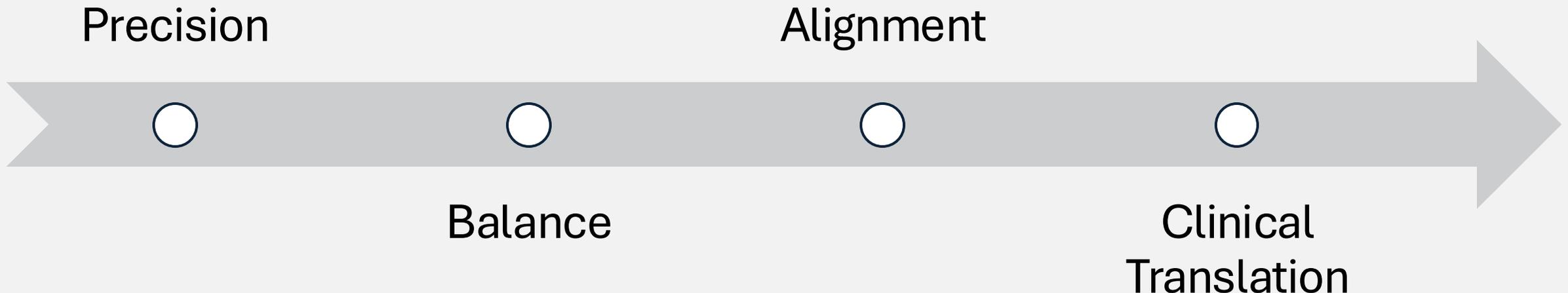
Core Structure of a Biomedical Abstract

✓ **Background / Rationale**

  – Situate your study within existing literature.
  – Identify gaps in understanding, particularly within ageing neuroscience.

✓ **Objective(s)**

 – Explicit and measurable, grounded in pathophysiological rationale.

✓ **Methods**

  – Concise yet sufficiently detailed: population, tools (MRI, biomarkers, computational models), statistical approach.

✓ **Results**

  – Focus on the most impactful findings, quantified with p-values, confidence intervals, or effect sizes.

✓ **Conclusion**

  – Integrate findings with implications for understanding, prevention, or treatment of age-related neurodegeneration.

Background → Objective → Methods → Results → Conclusion → Background

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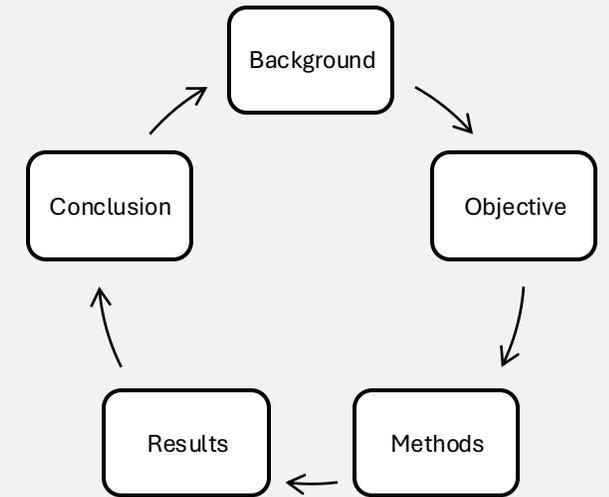
Writing Style

- ✓ Use **concise, scientific language.**
- ✓ Prefer active voice where appropriate.
- ✓ Avoid unnecessary jargon, but retain **technical precision**.
- ✓ Maintain logical flow (Background → Aim → Methods → Results → Conclusion)
- ✓ Word limit: typically **250–300 words.**

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Detailed Background Strategies

✓ Avoid a generic introduction; immediately contextualise within **cerebral ageing, neuroinflammation, oxidative stress, glymphatic dysfunction**.

✓ Justify why your investigation is critical at this point in the field's development.

✓ Link to **translational potential**: e.g., non-invasive imaging biomarkers, exercise interventions, or pharmacological strategies targeting neurovascular health.

| Background | Objective | Methods | Results | Conclusion |

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Objectives: How to Formulate Them Scientifically

- Should answer the **specific research gap** identified.

- Must be **testable** and **clinically meaningful**.

- Example in ageing neuroscience:
  "To evaluate whether DTI-ALPS index can serve as a biomarker of glymphatic dysfunction in older adults and its association with vascular risk factors and executive function."

Background → Objective → Methods → Results → Conclusion

UnB

Methods: Writing with Brevity yet Authority

✓ Define cohort characteristics (sample size, age distribution, inclusion/exclusion criteria).

✓ Specify methodologies without exhaustive protocols.

✓ Highlight **advanced tools**: neuroimaging pipelines, computational modelling, or biomarker assays.

✓ Include **statistical sophistication**: regression models, correction for multiple comparisons, machine learning classification where appropriate.

| Background | Objective | Methods | Results | Conclusion |

UnB

Results: Demonstrating Impact

✓ Present findings with **quantitative accuracy** (means, SDs, correlations, regression coefficients, confidence intervals).

✓ Avoid vague statements such as *"**significant** correlation observed"*.

✓ Example phrasing:

"Reduced ALPS index was associated with impaired executive performance (β = –0.41, 95% CI –0.62 to –0.20, p < 0.001), independent of age and sex."

| Background | Objective | Methods | Results | Conclusion |

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Conclusions: Beyond Restating Results

- Integrate findings with broader **pathophysiological mechanisms of ageing**.

- Highlight potential **biomarker validity, clinical application, and translational prospects**.

- Acknowledge limitations briefly but focus on **future directions**.

- Example:

  "Our findings support the utility of DTI-ALPS as a non-invasive biomarker of impaired glymphatic clearance, offering novel avenues for early identification of individuals at risk for neurodegenerative disorders."

Background → Objective → Methods → Results → Conclusion

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A **structured**, **scientifically** rigorous abstract is the cornerstone of successful poster communication in Neuroscience.

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It should combine **clarity**, **conciseness**, and **clinical impact** to effectively position your research within the broader landscape of Biomedical Science.

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