A stronger grant starts with a sharper question.

FICTIONAL EXAMPLE | [^{18}F]CAE and SENY are invented. This is not a submitted or funded proposal.

01 THE SCIENTIFIC QUESTION

A fictional aim proposes to show that SENY loss causes cognitive decline and establish a diagnostic biomarker using [^{18}F]CAE PET. It combines measurement validation, causation and diagnostic utility. **What single question can the proposed study answer convincingly?**

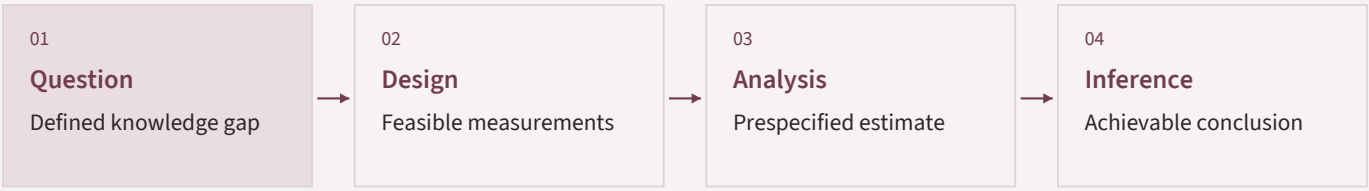


Figure 1. A proposal's reasoning chain. The inference must follow from the design.

02 ASSUMPTIONS TO EXAMINE

A testable revision. Test whether baseline [^{18}F]CAE binding in a prespecified region is associated with 12-month change in a defined memory composite, accounting for baseline performance, age and regional atrophy.
Measurement readiness. This aim assumes established selectivity, repeatability and quantification. If those are missing, prioritize feasibility or validation.
Design and analysis. Use repeat assessments, blinded image quality control, a prespecified longitudinal model, a missing-data strategy and a justified sample size. State the precision or effect the study is designed to estimate. [1,2]

03 IMPLICATIONS FOR INTERPRETATION

The revised aim could estimate a longitudinal association and its uncertainty. It would not establish causation or diagnostic utility. A claim about prediction needs validation in unseen data. In this invented example, any proposed direction of association remains a hypothesis about fictional biology.

04 RECOMMENDED NEXT STEPS

1. Align the knowledge gap, hypothesis, primary measure and intended contribution.
2. Show the dependencies between validation and the scientific aim.
3. Explain what a null or imprecise result would contribute, and check the specific funder's current instructions. [1]

A strong aim connects an important question to an achievable and interpretable result.

SELECTED EVIDENCE | Sources support principles, not the fictional scenarios.

[1] NIH: advice on application sections
[2] Innis et al. PET binding nomenclature (2007)