Molecular underpinnings of early changes relevant to dementia

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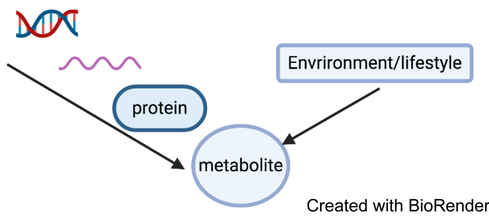
Background

- No disease modifying treatments currently exist for dementia, but risk factors extend across the life course.
- Metabolites are the products of biological events and reflect what is encoded by the genome and influenced by external factors.



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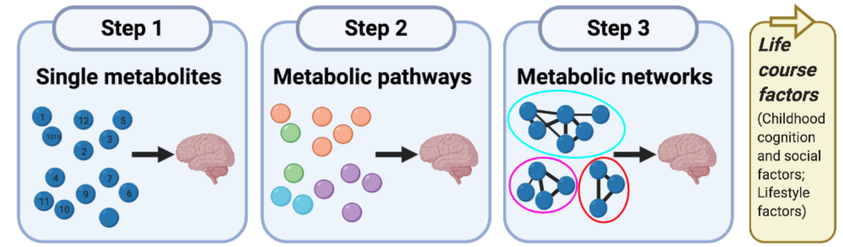
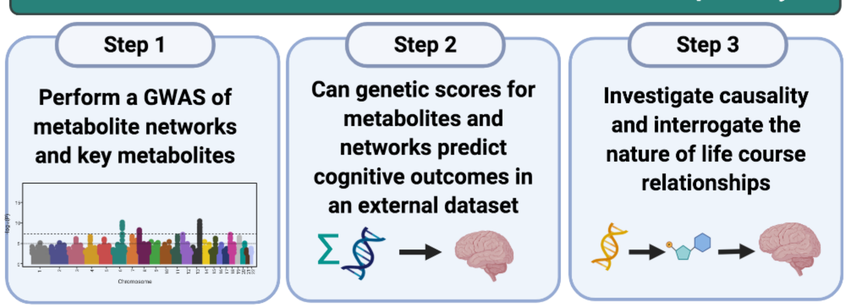
- Investigating associations between metabolites and late midlife cognitive outcomes could identify **potential markers** and **mechanisms** of early dementia.
- Evaluating these in the context of life course factors and interrogating causality could reveal precise opportunities to intervene.

Research questions

Aim 1: Linking blood metabolites to cognitive outcomes in the MRC 1946 British birth cohort & explore influencing life course factors



Aim 2: Ascertain whether associations lie on the causal pathway



Aim 3: Do other phenotypes have overlapping molecular underpinnings?

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Findings

Aim 1: 35 metabolites were highly connected in their module and associated with outcomes → marker candidates?

Findings suggest a role of medium and long chain acylcarnitines ↓🧠, modified nucleotides and amino acids ↓🧠,and vitamin A and C metabolites ↑🧠.

Aim 2:
In progress.

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