Extracellular vesicles: uncovering the secrets of cell-to-cell communication in the ageing brain

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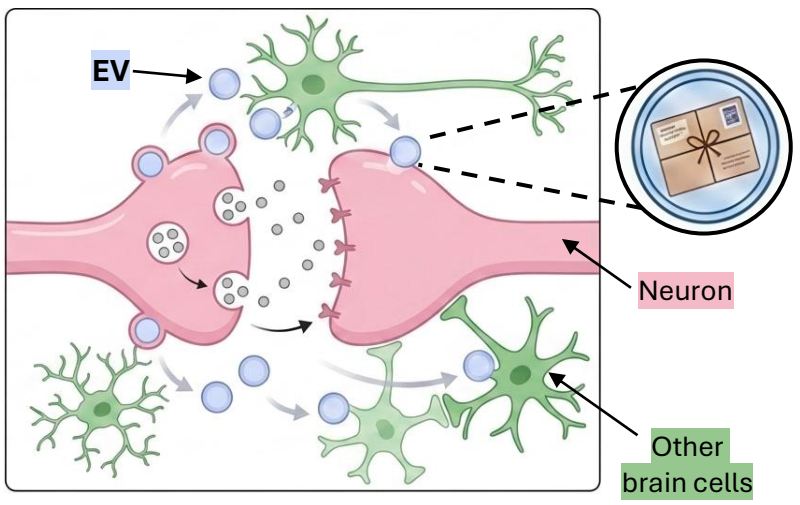
citizens of science

Background



What are extracellular vesicles?
Extracellular vesicles (EVs) are tiny packages, about 100 times smaller than a cell, that cells release. They carry proteins and genetic material.

What do they do?
EVs are one of the ways cells communicate with each other. When a package reaches another cell, it can change how that cell behaves.

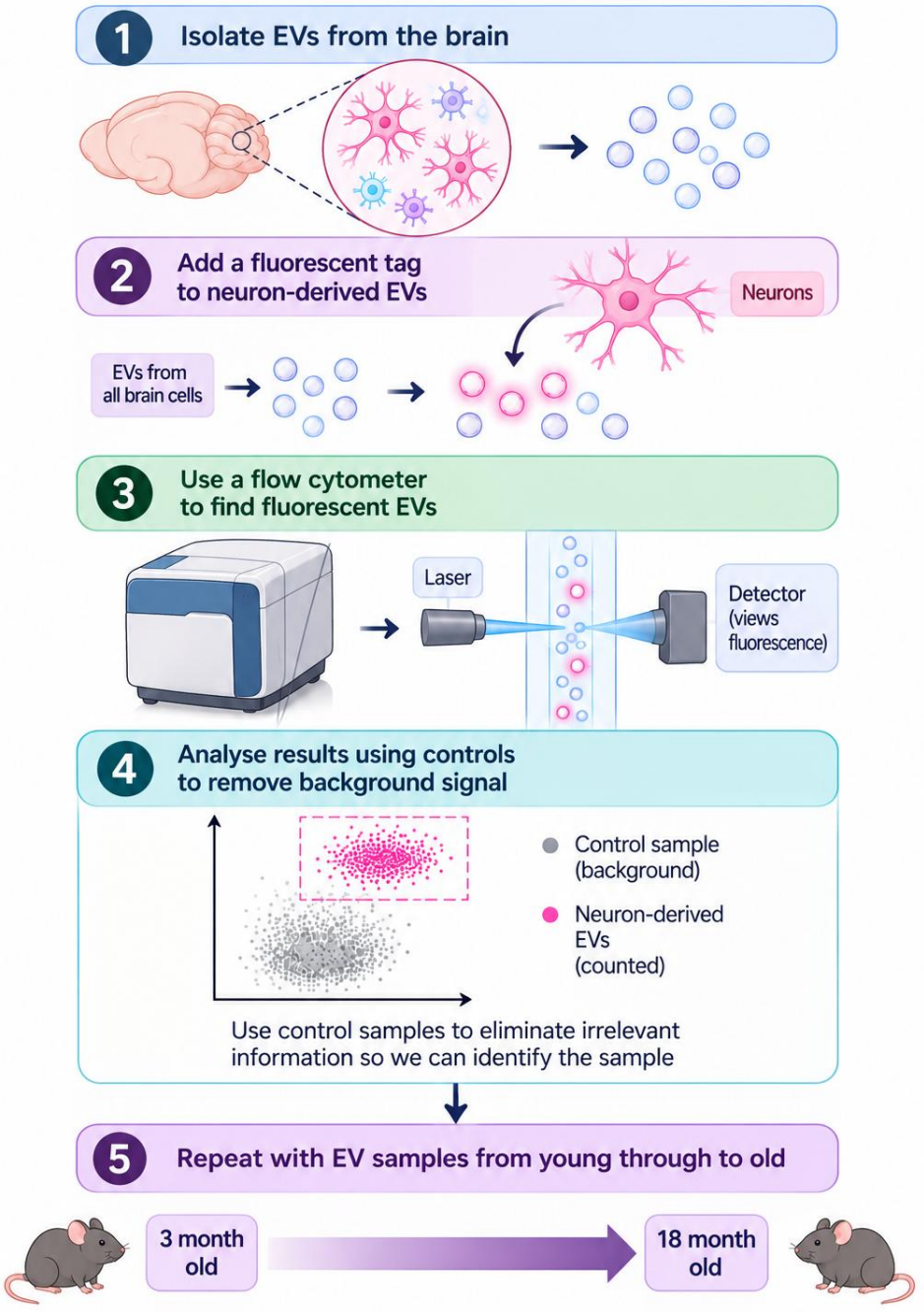
Why do we care?
In a healthy brain, this communication is helpful, but it can also help spread disease. Studying how it changes with age helps us understand what happens as the brain ages.

Aim & Hypothesis

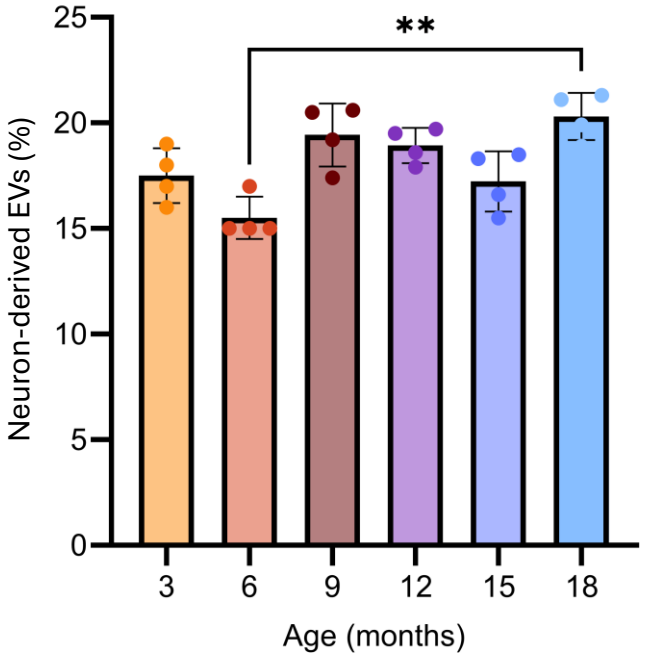
Aim: To measure how the number of EVs released by neurons changes with age.

Hypothesis: The production of EVs by neurons will change in the ageing brain.

Method



Results



y axis (vertical): how many EVs were made by neurons, as a percentage

x axis (horizontal): each sample, labelled by age in months

** → this indicates statistically significant difference.

Key Takeaways

Younger brains (particularly at 6 months of age) contain fewer EVs made by neurons than older mice.

The number of EVs from neurons increases with age.

This may mean that as neurons age, they send more messages through this route of communication