Animal models of Alzheimer's get diverse

Alzheimer's disease is a growing burden, and a number of clinical failures to treat the neurodegenerative disease have basic and preclinical scientists thinking about how best to actually model such a complicated condition in animals. Many clinicians and researchers are starting to recognize that there's likely not one definition of Alzheimer's disease in people and as such, there likely won't be one best animal model either.

Our September feature story considers some new approaches, from introducing genetic diversity into what have traditionally been rather homogenous mouse studies, to watching our closest relatives as they age naturally for signs and symptoms that might translate to humans, to looking beyond mammals entirely for drug and target screening.

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How many animals does that study need again?

Calculating how many subjects a study requires is critical: too few and there won't be enough statistical power in the study's results while too many risks wasting animals. A power calculation is one way to determine and justify sample size, but it's not the only option researchers might want to consider—particularly for studies that are not testing a specific hypothesis.

Penny Reynolds from the University of Florida discusses the Fermi estimation method as an additional check on sample size calculations in a new Comment this month. She details the steps involved and provides several examples to illustrate Fermi estimation in action.

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