Preclinical and translational research

What are preclinical studies?

Preclinical studies are the first step before testing treatment in humans. Scientists use lab data, cell cultures, and sometimes animals to better understand how a disease works, identify potential drug targets, and check if treatment is likely to be safe and effective.

What are animal models?

Animal models are animals used in scientific research to help study diseases and biological processes in place of humans. By observing how an animal's body responds, researchers can gain valuable insights that may lead to better treatments and improved health care for humans.

Why are preclinical studies important for neurodegenerative diseases?

Neurodegenerative diseases such as Alzheimer's, Parkinson's, and amyotrophic lateral sclerosis (ALS) involve complex changes in the brain and nervous system. Preclinical studies allow researchers to investigate the underlying causes of these conditions and identify possible targets for treatment.

What does “translational research” mean?

Translational research is the “bridge” between lab discoveries and treatments for patients, helping to show whether a new treatment is likely to be effective.

What challenges exist in preclinical and translational studies for neurodegenerative diseases?

Animal limits: animal models can’t fully mimic human neurodegenerative diseases.

Time and cost: developing safe treatments takes many years and is very expensive.

Why are animals used in preclinical research?

Because they share important biology with humans, animals can show how new treatments might work in humans, for example, how a drug is absorbed, metabolised, and whether it causes side effects. Scientists also use cell cultures and computer models to get the most complete picture before human trials.

How can people with experience of neurodegenerative diseases and their caregivers contribute to preclinical and early translational research?

People living with neurodegenerative diseases and their caregivers play a vital role in shaping preclinical and translational research by offering insights that researchers might otherwise miss. They can:

Highlight unmet needs: Lived experiences reveal everyday challenges that can help researchers focus on what truly matters to patients and families.

Guide research priorities: Their input helps identify which symptoms or problems should be targeted when developing new treatments.

Raise awareness and support: Personal stories can increase public understanding and help attract funding for research.

Co-create solutions: Collaborating with researchers ensures that new treatments or technologies are practical, relevant, and meaningful for those affected.

REBALANCE

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