



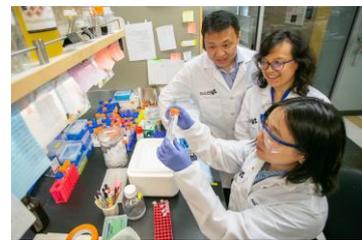
European Animal  
Research Association

## EARA News Digest 2019 - Week 37

Welcome to your Monday morning update, [from EARA](#), on the latest developments in biomedical science, policy and openness in animal research in Europe and around the world.

### Research

## Mouse models help understanding of Alzheimer's



September is World Alzheimer's Month (#WorldAlzMonth) and two research studies from the US have added new insights into our understanding of the disease (AD).

Research from the [University of Texas at Dallas](#) (pictured) has found evidence linking a hormone produced in the stomach, which regulates hunger, with AD.

It was shown that amyloid beta, protein fragments considered to be a major contributor to AD, block the hormone ghrelin from its receptor, preventing it combining with dopamine receptors which together act to maintain signalling between brain cells.

This was demonstrated in AD mice, where artificially activating both receptors improved cognition and memory.

"I'm starting to think of Alzheimer's as a systemic

disorder, and that we should pay more attention to the metabolic and hormonal path of the disease," said Heng Du, corresponding author of the [study](#).

In another major advancement, also using mice models, scientists at [Lewis Katz School of Medicine at Temple University](#) observed and then demonstrated, how poor regulation of calcium in neurons can cause cell damage and also showed AD symptoms in mice, such as impaired memory. [Read more.](#)

## Policy



### Call for more emphasis on lab animal well-being, by Dutch professor

A leading Dutch scientist has highlighted the importance of welfare improvements as a crucial part of the use of laboratory animals in research.

In an [article](#), that first appeared in the 3Rs-Centre Utrecht Life Sciences [newsletter](#), Jan Langermans, Professor 'Welfare of Laboratory Animals' at [Utrecht University](#) and also deputy director of [Biomedical Primate Research Centre](#), Netherlands, listed the most critical steps for lab animal welfare improvement.

He also emphasised that refinement as part of the 3R's, did not just mean reducing pain and discomfort, but also the introduction of positive aspects that improve the welfare and well-being of animals.

"In those fields of research where we cannot move forward without laboratory animals, we have to invest in the highest possible welfare standards," he said.

## Research

### Parkinson's Disease: from gut to brain



A team of European scientists [has found](#) evidence suggesting that Parkinson's Disease originates in the gut.

The study led by researchers from [Aarhus University](#), Denmark, in collaboration with other institutions in Austria and Germany, used genetically modified rats which produce too much alpha-synuclein – a protein linked to Parkinson's Disease – and injected this protein into their gut.

In the [results](#) published in the journal *Acta Neuropathologica*, the team revealed that alpha-synuclein then spread from the gut to the brain of rats.

[Per Borghammer](#) of Aarhus, said: "With this new study, we've uncovered exactly how the disease is likely to spread from the intestines of people. We probably cannot develop effective medical treatments that halts the disease without knowing where it starts and how it spreads."

## Research



## Breeding sheep to fight a brain disorder in children

Researchers at the [The Roslin Institute, Edinburgh University](#), UK, [are testing](#) new treatments on sheep that carry the gene for a childhood brain disease.

Using the gene-editing technique CRISPR, scientists recreated Batten disease in the sheep - a rare disorder that causes dementia and early death in children.

The [findings](#) published in the journal *Scientific Reports* show that the progress of the disorder in sheep is very similar to its development in children.

“Large animals such as sheep can help bridge the gap between understanding disease in small species such as flies or mice and how it affects humans,” said [Tom Wishart](#) of the Roslin Institute.

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**Our mailing address is:**

European Animal Research Association

Abbey House

74-76 St John Street

London EC1M 4DZ

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