E-learning video tools: promoting refined animal welfare and good experimental design in an *in vivo* non-human primate model of Parkinson's disease

S. Rose[1], J. Hall[2], J. Clark[3], M. Prescott[4], M. Jackson[1], L. Lincoln[1], R. Fisher[1]. [1]Neurodegenerative Diseases Research Group, King's College London, London, UNITED KINGDOM, [2]Department of Pharmacology and Therapeutics, King's College London, London, UNITED KINGDOM, [3]British Heart Foundation Research Excellence Centre, King's College London, London, UNITED KINGDOM, [4]Research Management and Policy, NC3Rs - National Centre for the Replacement, Refinement and Reduction of Animals in Research, London, UNITED KINGDOM.

Background and Aims*:* The evolutionary close proximity of non-human primates (NHPs) to humans makes them essential in the search for novel disease-treatment strategies, particularly in the areas of biologics, immune response to infections and CNS disorders [1]. However, there is poor public understanding of the benefits of well-designed NHP studies and recent welfare improvements (https://www.nc3rs.org.uk/refinement-rearing-practices-marmosets). We use both normal and 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP)-treated common marmosets to investigate the motor and non-motor symptoms of Parkinson's disease [2]. Specialised welfare considerations are required for parkinsonian monkeys as well as optimal study design to refine and reduce animal use. We aimed to create two videos to raise awareness of the unique welfare and legal challenges involved in using NHPs in pharmacology research, emphasising how suffering can be minimised and wellbeing improved.

Summary of work and outcomes: We have produced two educational films and linked interactive e-learning tools addressing refinements to improve welfare, stringent study design, data gathering and reuse in NHP research. They are suitable for stand-alone use in lectures/flipped classroom scenarios, and as part of self-directed blended learning for undergraduate and postgraduate teaching, in particular on courses covering neuroscience and *in vivo* drug testing. Importantly, they highlight the importance of the incorporation of the 3R principals in care regimes. The different welfare considerations for MPTP-treated marmosets compared to non-treated animals are considered and awareness of the welfare and legal issues that arise from using NHPs in pharmacology research is emphasised.

Discussion: These educational videos and related e-learning tools will be used to educate students without first-hand experience of *in vivo* experiments about the specific welfare considerations required for *in vivo* research using common marmosets, and can be used to enhance their continued professional development. They will also be used to educate the wider community on the use of NHPs in research and the importance of welfare in the outcome of these studies, and can be incorporated in outreach programs and on-line educational resources.

Conclusion: These videos will help students put the science they learn into a research and animal welfare context, and promote the Concordat on Openness on Animal Research (http://www.understandinganimalresearch.org.uk/policy/concordat-openness-animal-research/). We acknowledge the funding from the BPS, NC3Rs and KCL Teaching Fund. 1. Roelfsema PR and S Treue (2014). Neuron **82**(6): 1200-4 2. Tayarani-Binazir KA et al (2010). Mov Disord **25**(3): 377-84