

‘Making sense of the science’

A visit to the laboratory of Dr Susan Duty (SD) at Kings College, London to hear about her research work on Parkinson’s Disease

Reviewed by Martin Rumsby

<https://www.youtube.com/watch?v=ZLoBF64dasg>

Anyone interested in hearing about some of the latest research into Parkinson’s Disease (PD) will find this visit to Dr Susan Duty’s lab at King’s College, London well worthwhile watching. The session lasts for over two hours and includes talks, demonstrations and questions. The visit is introduced by Liz Nash from Parkinson’s UK. Susan Duty’s research is funded by Parkinson’s UK, the Medical Research Council and other charities. Their research depends heavily on the use of animal models of Parkinson’s in rats and the necessity for the use of animals is explained. SD’s interest in Parkinson’s was partly stimulated by the fact that her Gran had the condition so she has grown up wanting to help solve the problem of why PD strikes certain people and what can be done to cure the condition.

Susan Duty starts off by summarising the basics of PD emphasising how it is the fastest growing neurological condition. Many of the techniques that the researchers use are then described by one of her research staff, Dr Ed Fletcher (ED), who takes viewers on a virtual tour of the labs. SD takes over again to explain that her lab is concerned with solving two of the main unmet needs of Parkinson’s research, namely finding treatments to slow down disease progression and to overcome one of the common non-motor problems that affects between 60-80% of people with Parkinson’s, namely the problem of pain. She then describes one line of work on the problem of an excess of the neurotransmitter glutamate in PD which is released from cells in the subthalamic nucleus area of the brain resulting in the death of dopamine-containing neurones in the substantia nigra. She discusses the exciting work they are doing with a drug that reduces glutamate release and has a disease modifying effect in their animal models of Parkinsons. SD then answers questions.

Next ED discusses his work on repurposing a common asthma drug as a possible therapy in PD. The group have found that a neurotrophic factor known as FGF20 protects dopamine producing neurones in the substantia nigra from dying. So they have the idea that boosting FGF20 levels in the brain could be a therapeutic tool in PD. They have found that Salbutamol used in asthma control increases levels of FGF20 in the brain and has a protective effect in their animal models of PD. He concludes by saying that salbutamol has potential as a therapy for Parkinson’s but he stresses that the work is at a pre-clinical stage.

Finally SD introduces PhD students Yasead and Joana who discuss the problem of pain in Parkinson’s. Yasead discusses his findings that levels of the natural pain reliever met-enkephalin are decreased in the top part of the spinal cord in their animal models of PD while Joana finds that neuroinflammation with activated microglial cells is a feature of their Parkinson’s models. She is now investigating whether the type 2 diabetes drug exenatide blocks neuroinflammation and decreases pain in the animal models they use.

The whole tone of the visit is relaxed and the work discussed is understandable. A well worth while visit which for me helped to make more sense of the science.

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