Dr Naomi Hartopp

Tell me about your research
I look at the interactions between endoplasmic reticulum and mitochondria, two tiny parts of our cells. In healthy cells the membranes of the endoplasmic reticulum and mitochondria are linked, which helps them to communicate and carry out other functions which are particularly important to nerve cells.

In diseases such as Alzheimer’s, motor neurone disease and Parkinson’s disease, we think the link between the membranes is broken. I’m looking at cells in spinal cords to confirm this and also trying to figure out how the link is broken.

What motivates you?
My granddad had Alzheimer’s around the time I was studying biochemistry and finding neuroscience interesting. The interest and the personal connection combined to motivate me. I spent a year working in industry on neuroscience medicine and saw the progress being made and the potential to make more progress through little steps.

Are there any myths about your work which bother you?
There is a myth that dementia is just ageing, a natural process, but it is actually caused by diseases, and so there is the possibility to prevent or treat these diseases with continued research.

In an ideal world, where do you see your work in the future?
In an ideal world our work would help to develop a treatment for Alzheimer’s, motor neuron and Parkinson’s disease. I think this will most likely be a combination of drugs which slow the progress of the disease, but in an ideal world it would be a treatment that prevents them developing in the first place.

About the artwork
Naomi’s page shows a zooming in, from the spinal cord on the left to the nerve cells in the middle to the mitochondria and endoplasmic reticulum. The chain around the border represents the link which Naomi studies - Hana.

This design & profile were created based on interviews conducted in late 2019 & early 2020. They are made available under a CC BY-NC-ND 2.0 UK license. Visit hanaayoob.co.uk/dementia for more information.

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