

The Edinburgh Parkinson's Lecture 2012

Occasionally someone really exceptional comes along to make you sit up and wish everyone you knew was at this talk. So if you missed it, here is an attempt at summarising a hugely complex, if brilliantly simplified talk by the Cambridge neuroscientist Professor Roger Barker.

Professor Barker raced us through the history of Parkinson's - from its first formal recognition 200 years ago by Dr James Parkinson, through landmarks like the finding in the 1960s that a loss of the brain chemical dopamine was the culprit, to the explosion of mind boggling research in the last 10 years. And the reassurance that the next decade will bring real progress in how well your Parkinson's is treated. He highlighted one bit of research which showed your illness may well have started years and years before you were aware of it, with symptoms such as, constipation, losing your sense of smell, sleep disturbance while dreaming, or depression. Maybe once we can stop or slow down the progression of the illness it will be worthwhile screening for pre-motor signs of Parkinson's like we do with cancers.

Basically it looks like a particular protein in your body's cells becomes misshapen, folded wrongly so they don't work properly. This starts in your gut and nose, hence the constipation and loss of sense of smell. Why does it happen? Nothing is certain yet but possibly by you being exposed to 'toxins' such as pesticides and industrial solvents, or having a head injury. Lack of smoking and too little coffee has also been shown to slightly increase the risk for Parkinson's. Further research will certainly turn up ever more links to Parkinson's in our highly complex lives. Genetic studies of the DNA from 1000s of people with and without Parkinson's have suggested that a combination of genetic susceptibility and an exposure to several toxins may be critical to developing Parkinson's. What is known is this misshapen protein (scientific name - alpha-synuclein) spreads along your nerves in your gut and nose into your brain. Initially the badly working cells that eventually die are concentrated in the bit of your brain that controls movement and you get tremor and difficulty moving normally. But with time the little protein horrors **can** spread through the rest of your brain, changing how clearly you think and even to dementia.

Professor Barker then stuck his head above the parapet to suggest there are basically two different types of Parkinson's. He did also acknowledge what we sufferers and carers know to our cost that there are as many different sorts of Parkinson's as there are people with it. I still can't get my head round how it varies from person to person so much, as well as from day to day and of course pill to pill. The professor's two types were

- the young group with mostly physical motor symptoms
- the older group who tend to get a lot more mental problems as well because those nasty misshapen proteins have spread widely through their brain.

The average age to be diagnosed with Parkinson's is 70. Professor Barker called for these two groups to be treated differently, the younger group more aggressively with dopaminergic drugs early on and a resurgence of transplant therapy. Two damning double-blind clinical trials in the US in 2003 stopped transplant trials. But, Professor Barker feels that these trials were fraught with flaws and that cell transplantation for Parkinson's needs to be looked at again. This is being done at the moment in the Transeuro study (<http://www.transeuro.org.uk/>) with 150 younger Parkinson's sufferers. He also warned against the proliferation of stem cell transplant therapies available from rogue clinics, which can be easily found on-line. Wait, was his message, for the real thing. It's within sight.

Professor Barker also explained that cell transplantation is unlikely to be effective for the other type of more aggressive and complex Parkinson's. He put forth strongly the idea of disease-modifying

treatments for this group of people. He talked briefly about a new therapy that his lab is working on and has recently published. It involves clever parts of Human Cytomegalovirus and Rabies virus. He assured us that although the components of this new potential treatment sound scary, it is entirely safe.

It's mind boggling what is happening in brain research. Dr Barker's unusual skill was making us feel we understood quite a lot of it. Here's to the researchers!

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