

# Saving synapses: helping nerve cells stay connected in Parkinson's



Patricia

## Project information

Lead researcher	Professor Patricia Salinas
Location	University College London
Cost	£198,148 over two years
Start date	May 2012
Type of project	Project grant
Project code	G-1204

## Project background

People with Parkinson's don't have enough of a chemical called dopamine because some nerve cells in their brain have died. But we don't understand how or why these particular nerve cells are lost – or crucially how to stop them dying.

Recent studies suggest that dopamine-producing nerve cells make more connections with other nerve cells – called 'synapses' - than other types of nerve cells in the brain. Each nerve cell has thousands of synapses which link it to other nerve cells and allow them to talk to each other.

Synapses are crucial for nerve cells to work properly, but they seem to be lost by the nerve cells that die in Parkinson's. Patricia hopes that studying these connections and how to protect them may lead to new and better treatments for the condition.

- **Patricia's team discovered that a family of proteins called 'Wnts' may be vital for keeping synapses healthy.** They help synapses to form during development and also seem to be important for protecting synapses in the brain area affected by Parkinson's.
- **The team have created a mouse model to help them study Wnts in the brain.** The mice have a genetic change which means the researchers can block Wnts production in the brain area affected in Parkinson's.

## What the researchers are doing

Patricia and her team will use their new mouse model to answer some key questions:

- Can Wnt proteins safeguard synapses in the part of the brain affected in Parkinson's?
- Does decreasing Wnt production make the nerve cells more likely to die?
- Does boosting Wnt production help the nerve cells to survive?
- Can drugs that mimic Wnt proteins protect synapses and prevent nerve cell death?

## How the research will help people with Parkinson's

Patricia's hopes her study will help to develop new ideas for treating Parkinson's that can slow, stop or reverse the death of nerve cells inside the brain – something no current treatment can do.

Ultimately, this project could lead to the development of better treatments for Parkinson's and lead us closer to a cure.

## For more information, please talk to the Research Team

Call	<a href="tel:02079639313">020 7963 9313</a>
Email	<a href="mailto:research@parkinsons.org.uk">research@parkinsons.org.uk</a>
Write	Parkinson's UK, 215 Vauxhall Bridge Road, London SW1V 1EJ