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Information for patients from JNNP

Widening the doors of perception for Parkinson's patients

An ingenious experiment with door size suggests that people with Parkinson's disease who have episodes of 'freezing' (being suddenly unable to walk), may be unable to accurately estimate the amount of space they have to walk through. The finding could open up new ways of treating this common symptom.

What do we know already?

Freezing, where you suddenly find yourself unable to walk or continue walking, is a common and deeply frustrating symptom of Parkinson's disease. Doctors call it freezing of gait, or FOG for short. It tends to happen when someone is under stress, for example when they know someone is waiting for them, and is more common in enclosed spaces and while turning corners. Previously, doctors thought freezing was caused by something blocking the signals sent along the nerves to the muscles, from the brain. But recent research has looked at other factors that may also be important. This includes how well people with Parkinson's disease perceive the space around them. People who experienced FOG caused by Parkinson's disease told researchers in one study that they felt too big to get through a doorway, even though they knew that doorways are designed to be big enough for people to get through.

One difficulty with researching FOG is that people tend not to get it during experiments, perhaps because they are concentrating hard on the task. But we do know that the way people walk changes just before they freeze. They take shorter steps, and their step size varies more from one step to the next. So in this new study, researchers measured step size and speed as people approached three sizes of doorway – one normal size, one double the width, and one narrower than normal (but still wide enough to get through). They compared 16 people with Parkinson's disease who had FOG, with 16 people with Parkinson's disease who'd never had it, but had other problems with walking, with 16 people without Parkinson's disease.

What does the new study say?

As they approached the doorways, people with FOG began to take shorter steps, and their length of step began to vary. At the narrowest doorway, the

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average length of step was 42.5 centimetres, compared to 48.7 centimetres when approaching the double doorway.
Everyone had five goes at walking through the different doors. People with FOG were much more affected by the size of the doorway on their first approach, suggesting that the experience of walking through the door helped them with their next attempt.
The people with Parkinson's disease who'd never had episodes of freezing seemed largely unaffected by the size of the doorway, and those without Parkinson's disease hardly at all.
The results suggest that the surroundings people see ahead of them have a big impact on the way that people prone to FOG walk. Even before they got to the doorway, their walking pattern had changed and they were showing signs that they might be about to freeze.

How reliable are the findings?

Although this is a small study, the researchers took pains to ensure that the conditions were the same for all people taking part, and that the statistics were interpreted carefully so as not to give too much weight to small variations. The results should be reliable.

Where does the study come from?

The study was done by researchers from Ontario, Canada. It was funded by The Natural Sciences and Engineering Research Council of Canada.

What does this mean for me?

Research into why people get episodes of freezing can help doctors get a better understanding of what causes Parkinson's disease. Current medication doesn't seem to help prevent freezing episodes, so a better understanding of why it happens might lead to better treatments.

What should I do now?

It's interesting that people were most affected by narrow doorways on their first approach. If you are anxious about an event where you know that you'll have to go up in a lift, for example, it might be worth seeing if you can visit first for a practice run. That might help you avoid freezing when there are lots of people around and you feel under stress.

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