

Motor Fluctuations in Parkinson's (On/off, Wearing Off, Dyskinesias and Freezing)

WHAT ARE MOTOR FLUCTUATIONS?

The term 'motor fluctuations' means that after a number of years of levodopa treatment, people may find that the smooth and even control of symptoms that their medicines once gave them is no longer dependable. The most common motor fluctuations experienced in Parkinson's are "On/Off", "Wearing Off", Dyskinesias and Freezing.

As Parkinson's progresses, people may find that their symptoms can reappear quickly and unexpectedly, a sensation that some have described as being like a light switch being turned on and off (this is known as the 'On/Off' phenomenon).

Wearing off is a term used to describe when a person with Parkinson's feels that the benefit of their levodopa medication has begun to fade away, and does not last until the next dose of medication.

Some people find that they start to develop involuntary movements, known medically as 'dyskinesias', which occur initially when the level of levodopa in the bloodstream is at its peak, but may appear at any time later on.

Many people with Parkinson's will experience freezing at some point. "Freezing" is used to describe the experience of briefly stopping suddenly while walking or when initiating walking and being unable to move forward. People feel as though their feet are stuck to the ground. It also commonly occurs when trying to turn in small spaces or when walking through doorways. Freezing can be most common in times of stress or anxiety.

Why do motor fluctuations occur?

The best explanation for these complications is that as dopamine-producing cells in the brain are gradually lost in Parkinson's, the remaining cells must work overtime to compensate for the dopamine loss. As Parkinson's progresses, and more cells are lost, their capacity to produce dopamine, even with the help of levodopa, is exhausted more quickly (this would explain

wearing off). When levels of dopamine are increased temporarily by taking levodopa, this has the effect of over-stimulating the part of the brain concerned with motor control, and involuntary movement results (this would explain dyskinesias).

The explanation of 'On/Off' swings is more complicated. In the early stages of Parkinson's, 'Off' periods appear to be related to Wearing Off, as they occur before the next dose of levodopa is due. However, as Parkinson's progresses, 'On/Off' fluctuations become less closely related to the timing of the levodopa dose, and more unpredictable. It is thought that these fluctuations are related to other processes in the brain, and are sensitive to other factors as well as to medication. This second type of 'On/Off' fluctuation is more difficult to manage.

Freezing often happens when something interrupts or gets in the way of a sequence of movement. It is still not known exactly what causes freezing.

Because they are related to levodopa treatment, motor fluctuations can be difficult to treat – reducing the dose of levodopa might mean less fluctuation, but it can also mean the return of other symptoms, such as tremor, rigidity or slowness of movement. More detailed information on these common motor fluctuations – early wearing-off, the On/Off phenomenon, dyskinesias and freezing – and methods that can be used to treat these fluctuations is provided in separate leaflets.

What can people with Parkinson's do to help themselves?

There is some evidence that the chances of developing the motor fluctuation complications of Parkinson's are reduced by taking dopamine agonists at reasonable doses from early on in treatment.

When people begin to experience 'wearing-off' and 'On/Off' fluctuations, it is important that their regime be managed to maximise 'on' time. This becomes much more complicated if a person also

begins to experience dyskinesias, as they then have to decide on a compromise between more 'On' time with dyskinesias, or more 'Off' time with other Parkinson's symptoms. Many people tend to prefer more 'On' time, even with the dyskinesias, but this will vary between individuals and should be discussed with your Doctor or PDNS.

Motor fluctuations are common in Parkinson's disease, but can be effectively treated and managed by you and your doctor or PDNS.

Acknowledgements:

Parkinson's Association of Ireland would like to thank Brian Magennis, RGN, Parkinson's Disease Nurse Specialist at The Dublin Neurological Institute at The Mater Hospital, Dublin, for endorsing this Information Leaflet.

Other Relevant Information Sheets:

- M1.2: Wearing Off in Parkinson's Disease
- M1.3: The On/Off Phenomenon in Parkinson's Disease
- M1.4: Dyskinesias in Parkinson's Disease
- M1.5: Freezing in Parkinson's Disease

DISCLAIMER – The information on these pages is not intended to be taken as advice. No changes to your treatment should be made without prior consultation with your doctor or allied health professional.

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M1.1 March 2012