



**Parkinson's**  
Disease Society

## Muscle Cramps and Dystonias

People with Parkinson's disease often find that they are prone to a variety of aches and pains. For example, muscular rigidity and a reduction in, or absence of, movement (akinesia) can lead to cramps, which are often quite distressing and which may not be relieved by ordinary painkillers. Occasionally, people with Parkinson's may experience severe muscle spasms or dystonias that are different from ordinary muscle cramps and have different causes and treatments. This information sheet aims to describe the different types of muscle cramps and dystonias that may occur in Parkinson's and what treatments may be available for them.

### What is dystonia?

Dystonia is a, sometimes, painful condition similar to cramps but which may not respond as well to the treatments mentioned below for relieving cramps. Dystonia is a movement disorder characterised by a sustained involuntary contraction of the muscles causing the affected part of the body to go into spasm. While it can occur as a separate condition in itself, referred to as 'primary' dystonia, it can also be associated with a number of other conditions, including Parkinson's. In such cases, it is often referred to as 'secondary' or 'symptomatic' dystonia.

Although more common in young-onset Parkinson's, dystonia can affect anyone and can be prolonged and very painful. The contractions and spasms that are the primary symptoms may lead a person to mistake dystonia for muscle cramps caused by the rigidity found in Parkinson's. However, dystonia and cramping are very different; both make the muscles hard, but in rigidity muscles become 'less elastic' while in dystonia the hardness comes from the muscles contracting without relaxing.

### What can be done to help muscle cramps?

Some cramps may respond to vigorous massage and the application of a heat pad or hot water bottle. Simply moving around may also help, or a physiotherapist

can advise you on a number of stretching exercises that may help relieve the stiffness and soreness (see the PDS information sheet on *Physiotherapy and Parkinson's* for more information). If these treatments are not effective, the cramping may respond to drugs such as quinine or muscle relaxants (see the section on 'other drugs' later in this information sheet for more details). You should discuss this option with your doctor. For further information, see the PDS information sheet *Pain in Parkinson's*.

### Why does dystonia occur in Parkinson's?

Dystonia in Parkinson's is commonly associated with the 'wearing off' of the effects of levodopa (Sinemet or Madopar), in which the drug treatment becomes less effective before the next dose is due. This effect is known as 'off' dystonia and can often occur in the morning on waking up. A person can experience painful muscular spasms and may be unable to get out of bed until the morning's dose of medication begins to take effect. 'Off' dystonia can sometimes be managed by taking a controlled-release levodopa preparation which releases the drug over a four to six-hour period at night, but you should discuss this possibility with your GP or specialist.

This is not the only situation in which dystonia can occur in Parkinson's and it can also be associated with the action of levodopa itself as the medication reaches its peak effectiveness. This is known as 'on' dystonia and is caused by too much dopamine in the brain overstimulating the muscles.

Finally, dystonia in Parkinson's may be unrelated to the dose of levodopa and can occur as a feature of the condition itself. This can happen at any time of the day, but is usually briefer than dystonias related to levodopa.

### What parts of the body are affected by dystonia?

Dystonia is usually worse on the side of the body where the Parkinson's symptoms are more pronounced. It can



be localised to a single muscle or to a group of muscles, but in people with Parkinson's it is most commonly seen in the feet. Spasms in the calf muscles can cause the toes to curl into a claw-like position. The foot may also turn in at the ankle and sometimes the big toe can stick up (hyperextend). This can be very uncomfortable, especially for people who try to fit their feet into tight-fitting shoes. For more details, see the PDS information sheet on Foot Care in Parkinson's.

Although most common in the feet, dystonia can occur in other parts of the body. Other less frequent dystonic effects found in Parkinson's include the following:

- A spasm of the hand, often provoked by tasks requiring fine motor control such as handwriting. For this reason it is known as 'writer's cramp' and can often begin as a tremor of the hand.
- 'Cervical dystonia' or 'spasmodic torticollis', which is a sustained turning of the head to one side, bending forward or, more rarely, backward.
- 'Blepharospasm', meaning intermittent or sustained eyelid closure caused by the contraction of the eyelid muscles. This can begin in one eye, but will usually continue on to the other eye. Symptoms of this condition include excessive blinking, irritation, a burning sensation in the eyes photophobia, an abnormal intolerance to light. These symptoms can be aggravated by stress, looking up or down, reading, driving or bright lights. For more information on eye-related problems in Parkinson's, see the PDS information sheet *Parkinson's and Eyes*.
- 'Spasmodic dysphonia' or a spasm of the vocal cords.
- Hemimasticatory or hemifacial spasm, a spasm affecting one side of the jaw area or one side of the face.

### How can dystonia be treated?

As some ordinary muscle cramps can respond well to simple techniques such as massage, moving around or

heat, some people find temporary relief from dystonic spasms by using 'sensory tricks'. These usually mean touching the affected body part before or while making a movement known to trigger a dystonic spasm. This appears to inhibit or shorten the spasm by giving the brain a distracting sensation to process or attend to. Other techniques may be used – spasmodic dysphonia in the vocal cords, for example, can sometimes be helped by yawning or sneezing. Some people with blepharospasm in the eyes have found relief in talking, lying down, singing, yawning, laughing, chewing or putting pressure on the eyebrows.

For medical treatment of dystonia, the first step is to identify the underlying cause. In Parkinson's, levodopa-related dystonias should respond to alterations in the type or timing of the regimen. It is often useful for the person with Parkinson's or their carer to keep a 'motor diary' to determine how the dystonia relates to the timing of the doses. A sample diary and suggestions on how to use it are available with the PDS information sheets *Keeping a Diary: People with Parkinson's* and *Keeping a Diary: for Carers*.

People who experience early-morning 'off' dystonia may benefit from taking a controlled-release dose of their medication at night, or from taking their first dose of the day crushed to speed up the effect. However, Stalevo should not be crushed before taking it. Alternatively, a 'dispersible' Madopar preparation, which is a tablet that is put in water before taking, is quicker to take effect (but shorter acting) than a standard L-dopa tablet. (It is only necessary to drink the clear liquid and not the white residue.) Your doctor may recommend a combination of a standard tablet and a dispersible one for the first dose of the day if early morning 'off' dystonia is a problem. Other people have found that more frequent dosing, or the addition of a COMT inhibitor or dopamine agonist to prolong the effectiveness of the levodopa, have helped. For more information on any of these drugs, see the PDS booklet *The Drug Treatment of Parkinson's disease*.



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However, while some people have claimed benefit from these treatment options, not everyone will experience the same effect.

For this reason, any change to your medication regimen should be discussed thoroughly with your doctor or Parkinson's specialist before proceeding.

### Other drugs

For dystonia that does not respond to alterations in the Parkinson's drug regime, a number of other drug treatments are available. These include:

- Muscle relaxants or benzodiazepines such as diazepam (Valium) and clonazepam (Rivotril) which reduce communication between cells in the nervous system and the brain. These drugs can also be used in the treatment of cramp.
- Baclofen (Lioresal) which reduces the release of neurotransmitters in the spinal cord that stimulate muscle activity. Baclofen can also be used in the treatment of cramp.
- Anticholinergics such as benztropine (Cogentin) and biperiden (Akineton) which block the release of the chemical messenger acetylcholine.

Any change in your drug regime or the addition of extra medications must be discussed thoroughly with your doctor or Parkinson's specialist. Drug regimens in Parkinson's are highly individual and some of the treatments listed here may not be appropriate. Your doctor will be able to discuss possible treatments in relation to your own circumstances.

### Botulinum toxin

A doctor may also be able to advise on the addition of other medications, such as muscle relaxants at bedtime, or injections of botulinum toxin (Botox, Dysport or NeuroBloc) into the affected area of the body. Botulinum toxin is a powerful nerve toxin (or poison) that is sometimes used to treat dystonia. Used in small doses in a purified form, botulinum toxin is injected into the affected muscles and blocks the release of the chemical messenger

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acetylcholine. Blocking this release prevents the nerves from signalling the muscles to contract. As a result, the injected muscles are paralysed or weakened and the spasms caused by dystonia are lessened. This treatment needs to be repeated every two to three months.

### Surgery

Surgery for dystonia is not common, but may be considered in some cases where a person is not responding to drug treatment. Surgical procedures such as thalamotomy, pallidotomy, and deep brain stimulation already used for Parkinson's have also been found to be beneficial for dystonia. You should discuss this option with your doctor. For information on surgery, see the PDS booklet *Surgery and Parkinson's*.

### Further information

The Dystonia Society offers support to all people with dystonia and has a range of information on the different forms of the condition and the treatments available. It also has a number of local branches throughout the UK, details of which can be found on the website. You can contact the Dystonia Society at:

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Camelford House, 89 Albert Embankment  
London SE1 7TP  
Tel: 0845 458 6211  
Helpline: 0845 458 6322  
Email: [info@dystonia.org.uk](mailto:info@dystonia.org.uk)  
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