

Understanding Parkinson's - Timing of medication - Evidence base list (from course review on 8 December 2020)

Topic identified	Relevant excerpt	Original source of excerpt (ie Parkinson's UK resource or external resource?)	Link to original evidence source/reference	Relevant excerpt within internal/ external source
<p>The importance of medication timing</p>	<p>Why is it important that people with Parkinson's get their medication on time, every time? If people with Parkinson's are unable to take their Parkinson's medication at the right time, the balance of chemicals in their body can be severely disrupted. This leads to their Parkinson's becoming uncontrolled – increasing their care needs considerably. This will mean that staff will need to do more for the person with Parkinson's than would otherwise have been necessary. It can take someone with Parkinson's a long time to get back to normal after this. Understandably, people with Parkinson's may be very anxious about getting their drugs on time. These</p>	<p>Get it on Time report (page 4)</p> <p>Section: Importance of medication</p> <p>If people with Parkinson's don't get their medication on time it can seriously impact their health. They may not be able to move, get out of bed, swallow, walk or talk. Some people may never recover and may permanently lose their ability to walk, talk or worse. Even a delay in taking medication of 30 minutes can lead to serious health implications for someone living with Parkinson's. In 2017, NICE recognised the importance of levodopa admission as an area for quality improvement within the Parkinson's NICE quality standard.²</p>	<p>https://www.nice.org.uk/guidance/qs164/chapter/Quality-statement-4-Levodopa-in-hospital-or-a-care-home</p>	<p>NICE quality standard - statement 4 Adults with Parkinson's disease who are in hospital or a care home take levodopa within 30 minutes of their individually prescribed administration time.</p> <p>Rationale: Serious complications can develop if levodopa is not taken on time. These include acute akinesia and, if delays are significant, neuroleptic malignant syndrome. These complications can lead to increased care needs and increased length of stay in hospital or a care home.</p>

	<p>times will differ from person to person and may not fit in easily with drug rounds.</p> <p>Parkinson's UK run a campaign called 'Get It On Time' to highlight the importance of people with Parkinson's getting their medication on time, every time. Further information is available on the Parkinson's UK Get It On Time webpage</p>			
<p>Neuroleptic malignant syndrome</p>	<p>If any of the drugs used for treating Parkinson's need to be stopped, it is important this is done gradually. Abrupt withdrawal of certain drugs can result, albeit rarely, in neuroleptic malignant syndrome. This is a very serious condition that may cause death from complications of the respiratory, cardiovascular or renal system. This is rare, but it does emphasise the importance of the Get It On Time message.</p>	<p>Berman B. D. (2011). Neuroleptic malignant syndrome: a review for neurohospitalists. <i>The Neurohospitalist</i>, 1(1), 41–47. https://doi.org/10.1177/1941875210386491</p>	<p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3726098/</p>	<p>Causative Agents The abrupt cessation or reduction in dose of dopaminergic medications such as levodopa in Parkinson disease may also precipitate NMS.²⁷ The rapid switching from one type of dopamine receptor agonist to another in such patients has also been associated with NMS.²⁸ and there may be some risk of NMS associated with the abrupt</p>

				<p>withdrawal of Parkinson medications that are not known to have direct dopaminergic activity such as amantadine²⁹ and tolcapone.³⁰ Neuroleptic malignant syndrome has also been rarely associated with a number of other medications not known to have any central antidopaminergic activity such as lithium,³¹ desipramine, trimipramine, dosulpin,³² and phenelzine (Table 2).³³</p> <p>Prognosis</p> <p>Initial reports of mortality rates from NMS were over 30%, but increased physician awareness and introduction of newer neuroleptic medications over the last few decades have helped reduce them to closer to 10%.⁷¹ When recognized early and treated aggressively,</p>
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				<p>NMS is usually not fatal and a majority of patients will recover completely between 2 and 14 days.3,7 But if diagnosis and treatment are delayed, resolution can require several weeks or longer, and surviving patients may have residual catatonia or parkinsonism, or significant morbidity secondary to renal or cardiopulmonary complications.10,13,34 When death does occur, it is usually attributable to arrhythmias, DIC, or cardiovascular, respiratory, or renal failure. Thus, early recognition and initiation of therapeutic measures by physicians remain paramount to reducing the number of severe cases of NMS and limiting this significant source of morbidity and mortality among patients receiving antipsychotics.</p>
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<p>Dopamine agonist withdrawal syndrome</p>	<p>Dopamine agonist withdrawal syndrome (DAWS) happens when a person's dopamine agonist treatment is stopped or reduced. This could be when a person is experiencing impulsive or compulsive behaviour as a side effect and needs to stop taking (or reduce the amount of) the medication causing the behaviour. Stopping or reducing treatment should always take place in consultation with the person's specialist.</p> <p>Symptoms of DAWS can include anxiety, panic attacks, depression, insomnia, irritability and drug cravings. To avoid this, people with Parkinson's must get help from a healthcare professional and withdrawal must be done gradually.</p>	<p>Rabinak CA, Nirenberg MJ. Dopamine agonist withdrawal syndrome in Parkinson disease. Arch Neurol. 2010 Jan;67(1):58-63. doi: 10.1001/archneurol.2009.294 . PMID: 20065130.</p>	<p>https://pubmed.ncbi.nlm.nih.gov/20065130/</p>	<p>Abstract (results): Symptoms of DAWS resembled those of other drug withdrawal syndromes and included anxiety, panic attacks, agoraphobia, depression, dysphoria, diaphoresis, fatigue, pain, orthostatic hypotension, and drug cravings.</p>
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<p>Dopamine dysregulation syndrome</p>	<p>Dopamine dysregulation syndrome is an impulsive and compulsive behaviour when people start taking more medication than they need to control their Parkinson's.</p> <p>If someone is taking too much levodopa, this can lead to further side effects, such as severe involuntary movements (dyskinesia). If this is suspected, you should get help from a healthcare professional.</p>	<p>1 Averbeck BB & O'Sullivan SS et al (2014) 'Impulsive and compulsive behaviors in Parkinson's disease'; Annu Rev Clin Psychol; 10:553–80</p>	<p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3465018/</p>	<p>Abstract DDS is characterised by an addictive or compulsive overuse of dopamine replacement therapies. Patients with DDS take larger amounts of their dopaminergic medication than are necessary to adequately control their motor symptoms in order to avoid "off" periods. The excessive use often leads to adverse consequences such as dyskinesia, which is accompanied by dysphoria accompanied by dysphoria.</p>
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