Common medicines given to neurology patients on discharge from hospital
This leaflet contains brief information about some of the medicines we commonly supply on discharge to patients who have been admitted for various types of neurological conditions. You will not receive all these medicines; you should check to see which you have been given and then read the information for those medicines only.

**General Information**
For more detailed information about the medicines you have been given, please read the information leaflet in the packet with the medicines. If you have a specific question about the medicines you have been prescribed, please call the pharmacy helpline number given below.

Some of the medicines below may cause drowsiness, and some people may be affected more than others. If you feel drowsy or have difficulty concentrating, you should not drive or operate machinery.

Before starting any other new medication, including medicines you buy, you should check with your doctor or a pharmacist. They will make sure the new medicine can safely be taken as well as the medicines you have received from hospital.

**Pharmacy Medicines Hotline**
Monday – Friday 2-4pm 0151 5293208. This is a direct line into the pharmacy for advice on medicines supplied to you by this hospital. For queries not related to medicines please phone the hospital switchboard on 0151 5253611 and ask for the relevant department.
Co-careldopa / Co-beneldopa (Levodopa based drugs)

(The common brand names for these are Sinemet® and Madopar®.)
These are most commonly used in Parkinson’s disease. Nearly everyone notices a good improvement in symptoms after starting. A low dose is usually started at first. Over time, the dose often needs to be increased to control the symptoms. The main active ingredient of these drugs is levodopa and this is a very effective medicine for the symptoms of Parkinson’s disease.

Side-effects sometimes occur when you first take these medicines but are unusual. Most people have no problems with low doses. Read the leaflet in the medicine pack- et for a full list of possible side-effects. Nausea (feeling sick) is the most common. This is less likely to occur if you take a small dose at first, at meal times, and then gradually build it up. If nausea is a problem, it can usually be eased by adding an anti-sickness drug called domperidone. This is usually only needed for the first few weeks. Excessive daytime sleepiness can rarely occur, so do not drive or operate machinery if you are affected in this way. Compulsive behaviour may also occasionally be a side effect, so excessive gambling or shopping, binge eating or excessive interest in sexual activity can develop. However the link between these problems and levodopa is very uncertain (in contrast to some other Parkinson’s drugs – please see the section on dopamine agonists).

Unfortunately, because Parkinson’s disease is progressive, these medications often work less well over time. Therefore, the dose usually needs to be increased every now and then. Despite this, typically after several years, patients may develop problems due to worsening of the Parkinson’s disease. These include ‘on-off’ effects. This is where you can switch quite suddenly between being ‘on’ and able to move, and being ‘off’ and unable to move freely. Some patients develop uncontrollable jerky movements and other effects (called dyskinesias). These problems related to long-term use can become disabling, tiring and uncomfortable. Neurologists often have to adjust your treatment to deal with these difficulties.

Any medicines used in the treatment of Parkinson’s should not be stopped suddenly, unless advised by your doctor, as problems can occur.
Duodopa®. contains co-careldopa (see previous page), but instead of being in tablet form, it is a gel that can be continually administered directly into the intestine via a tube, using a pump. Duodopa®. is reserved for advanced Parkinson’s disease with severe symptoms. It is tested first with a non-permanent tube from the nose to the intestine, and if a good response to treatment is seen, a permanent tube is inserted.

Any complications with the pump device or the tube should be reported without delay, as this could mean the medicine is not reaching the intestine where it is absorbed into your system. Any medicines used in the treatment of Parkinson’s disease should not be stopped suddenly, unless advised by your doctor, as serious problems can occur.


**Ropinirole / Pramipexole / Rotigotine (Dopamine agonists)**

These medicines are known as dopamine agonists, and are used in the treatment of Parkinson's disease, or sometimes in the treatment of restless legs. Ropinirole and pramipexole come as oral tablets and rotigotine comes as a patch that is changed every 24 hours. Replacement rotigotine patches should be placed on different areas (avoiding using the same area for 14 days).

The possible side-effects when a dopamine agonist is first started are similar to co-careldopa and co-beneldopa (nausea, etc). However, the side-effects tend to ease off over several days or weeks. If nausea is a problem – it is more likely to happen with these drugs than with levodopa—then it can usually be eased by the anti-sickness drug called domperidone.

Drowsiness can occur with dopamine agonists, and it may be severe and affect your ability to drive. Some patients develop sudden sleep episodes. If you develop this side effect you must stop driving and contact your Parkinson's nurse or neurologist. Compulsive behaviour can also be a side-effect and is more common with this group of drugs than with co-careldopa/co-beneldopa. Compulsive behaviour such as excessive gambling or shopping, binge eating or excessive interest in sexual activity can develop over time. Other side-effects can include confusion, hallucinations and ankle swelling. Please report the development of any of these side effects to your Parkinson's nurse, GP or neurologist as it is likely that the dose of dopamine agonist will have to be reduced (or the dopamine agonist stopped). There are other less common side effects. Read the leaflet in the medicine packet for a full list of possible side-effects.

Any medicines used in the treatment of Parkinson's disease should not be stopped suddenly, unless advised by your doctor, as problems can occur.
Apomorphine (dopamine agonist by injection)

Apomorphine is another dopamine agonist, which is used in combination with co-careldopa/co-beneldopa. It needs to be given by an injection under the skin. It is used in people who have Parkinson’s disease in its later stages who have severe 'off' episodes where they become immobile. It can help to reverse these 'off' episodes but its effect only lasts for about an hour, so frequent injections are needed. If very frequent injections are needed, apomorphine may be given as a continuous infusion, using tubing with a needle or cannula at the end that is inserted under the skin so that the drug can flow into your body. Apomorphine is started in hospital under the supervision of a doctor experienced in the treatment of Parkinson’s disease. The anti-sickness medicine domperidone is always needed in the first four to six weeks of apomorphine treatment and needs to be started 48 hours before the first injection is given. Some patients can develop confusion, hallucinations or compulsive behaviours (excessive gambling, shopping, binge eating or increased sexual behaviour), as with other dopamine agonists (see previous page). Skin problems can also occur at injection sites. Please report any of these side effects to your Parkinson’s disease nurse, your GP or your neurologist. Any medicines used in the treatment of Parkinson’s should not be stopped suddenly, unless advised by your doctor, as problems can occur.

Entacapone / Tolcapone / Stalevo®.

Entacapone and tolcapone help to prolong the effect of each dose of co-careldopa or co-beneldopa. These medicines are sometimes advised in addition to co-careldopa or co-beneldopa when symptoms are not well controlled. Stalevo® contains entacapone and co-careldopa in one tablet. Entacapone should be taken at the same time as doses of co-careldopa or co-beneldopa. It may colour the urine reddish-brown but this is harmless. Other people develop too much movement (dyskinesia) which may require a dose reduction. Some patients develop diarrhoea as a side effect of entacapone or tolcapone. If this occurs it will not get better while you are still on the drug. Therefore please contact your Parkinson’s nurse, GP or neurologist as soon as possible as it is very likely that the drug will need to be stopped and an alternative used. Any medicines used in the treatment of Parkinson’s should not be stopped suddenly, unless advised by your doctor, as problems can occur.
Rasagiline / Selegiline

These medicines are alternatives to co-careldopa and co-beneldopa for early Parkinson’s disease. Most people will require co-careldopa or co-beneldopa eventually. However, if you take rasagiline or selegiline, it may delay the need for co-careldopa or co-beneldopa for months or years. Sometimes these medicines are used in combination with co-careldopa or co-beneldopa in the later stages of Parkinson’s disease.

Certain other medicines should be avoided while you are on rasagiline or selegiline, so check with your doctor or pharmacist before you start on any new medicines, especially antidepressants. This includes “over-the-counter” medicines that are not prescribed.

Any medicines used in the treatment of Parkinson’s disease should not be stopped suddenly, unless advised by your doctor, as problems can occur.

Amantadine

Amantadine is added in to other therapies for the management of symptoms in Parkinson’s disease. Some patients find that amantadine can keep them awake at night time. If this happens the dosing times can be changed so the last dose of the day is taken at lunchtime instead of at night. A few patients develop confusion, hallucinations, a rash or ankle swelling.

Any medicines used in the treatment of Parkinson’s disease should not be stopped suddenly, unless advised by your doctor, as problems can occur.
There are many medicines used to treat epilepsy. They each come with different brand names. (The brand names are not listed above.) These are all medicines used to treat or prevent seizures (fits). Some of them are also used to treat other conditions such as nerve pain, or to prevent migraines. One of these medicines will be prescribed if you have had one or more seizures, or if your doctor thinks you may be at risk of having a seizure, or alternatively to help control pain or prevent migraines. The following information applies to people who are taking these medicines for any of these reasons. You may be started on a low dose to reduce side effects, and then gradually increase up to a higher dose. Some of the more common side effects are drowsiness, dizziness, nausea, headaches, confusion and difficulty co-ordinating movement. Some of these problems may be worse when starting the medicine or increasing the dose, but then improve as you get used to taking the medicine. If these side effects are causing you problems please speak to your doctor. In a very small number of people more serious side effects can occur, such as allergies or problems with your liver, blood or skin. It is important that you read the leaflet provided with your medicine which warns about the symptoms to watch out for which might indicate these more serious effects.

If you develop a rash, fever, flu like symptoms, swollen glands or feeling ill in any other way within the first few weeks of starting it may be an allergic reaction. You should consult your GP immediately in case the medicine needs to be stopped.

Some of these medicines may reduce the effectiveness of contraceptive pills (‘the pill’ or ‘the mini-pill’) and contraceptive injections, implants and vaginal rings. This could make the contraceptive fail, leading to unwanted pregnancy. Please discuss this with your neurologist or specialist nurse if you are unsure whether this applies to you. Women of child bearing age should also be aware that some of these medicines, if taken during pregnancy, can affect the baby, causing various abnormalities. The risk of this happening, and the type of abnormality possible depends on the exact medicine. You should have been informed about this potential problem. If you would like further information please ask your neurologist or specialist nurse straight away.
It is important to take your medicine as prescribed, particularly if you are taking it for epilepsy. Try to get into a daily routine. Forgetting an occasional dose is not a problem for some people who have epilepsy; however, for others this could lead to breakthrough seizures. One of the reasons why seizures can recur is if the medicine to stop them is not taken regularly as prescribed. **Note:** You should **not** stop taking a medicine suddenly except on medical advice. If you notice a side-effect, you should ask a doctor for advice before stopping the medicine.

### Diazepam / Midazolam

Some people with epilepsy are prescribed a medicine that a relative or friend can administer in emergencies to stop a prolonged seizure. In most people with epilepsy, seizures do not last more than a few minutes. However, in some cases a seizure lasts longer and a medicine can be used to stop it. A doctor or nurse should give instruction on how and when to administer the medicine.

One commonly used medicine for this is diazepam. This can be squirted from a tube into the person’s back passage (‘rectal diazepam’). The medicine is absorbed quickly into the bloodstream and so works quickly. More recently a medicine called midazolam is often used which is easier to administer. It is squirted into the sides of the mouth (‘buccal midazolam’) where it is absorbed directly into the bloodstream. At present, strictly speaking, midazolam is only licensed in children but it is recommended in national epilepsy guidelines and is commonly prescribed for adults.
Pyridostigmine (Mestinon®)

Pyridostigmine is used in the treatment of myasthenia gravis (a disease causing muscle weakness) to improve the strength of the muscles. It often needs to be taken frequently throughout the day to manage symptoms. Possible side effects include nausea (feeling sick) and vomiting, increased saliva production, diarrhoea and abdominal cramps.

Propantheline

Propantheline works in the gut to help to reduce any nausea, vomiting, increased saliva production, diarrhoea and abdominal cramps due to pyridostigmine treatment. It should be taken at least one hour before food or on an empty stomach.
Prednisolone

Steroids such as prednisolone suppress the immune system. Prednisolone can be used in a variety of different diseases where the body's own immune system is harming itself. It is different to the 'anabolic' steroids which some athletes and bodybuilders use, which have very different effects. For many diseases, the benefit of taking steroids usually outweighs the side-effects. However, side effects can sometimes be troublesome. You should read the information leaflet that comes with your medicine packet for a full list of possible side-effects. Prednisolone may cause mood or behavior changes especially at the beginning of your treatment or if you are taking a high dose. If you become confused, irritable or start having worrying thoughts about harming yourself, speak with your doctor as soon as possible. Steroids can also increase appetite, and may cause weight gain. If you have diabetes, be aware that steroids may increase your blood sugar levels. Your diabetes treatment may need adjusting when prednisolone is started, stopped or the dose is changed, so discuss this with your doctor or nurse.

You should usually take the full day's dose of prednisolone in one go, in the morning after breakfast, unless you have been told to take it in a different way.

If you have been taking prednisolone for more than 3 weeks, you must not stop taking it suddenly. If you need to stop treatment, speak with your doctor who will advise you on how to reduce your dose gradually. If you become ill or come into contact with anyone who has measles, shingles or chicken pox (or suspects they might have them) you must see your doctor as soon as possible. If you have been given a steroid treatment card, carry it with you at all times. Prednisolone tablets are often used in the treatment of myasthenia gravis. A low dose, often on alternate days, is usually enough for people where symptoms only affect muscles around the eye. Higher doses may be needed to prevent symptoms if muscles elsewhere in the body are affected. Patients on steroids for more than a few weeks often need additional medicines to protect them from osteoporosis (bone thinning), which can occur with steroid treatment.
Azathioprine

An immunosuppressant medicine such as azathioprine may be advised in addition to a steroid medicine. These medicines work by suppressing the immune system. You will need regular blood tests and your doctor here will advise you and your GP about this. There are certain side effects you should watch out for. If you experience any of these speak with your doctor immediately or go to your local accident and emergency department without delay. These side effects include unexplained bruising or bleeding, a high temperature or other sign of an infection, signs of an allergic reaction such as extreme tiredness, dizziness, being sick, diarrhoea, fever, muscle pain or stiffness, skin rash or kidney problems such as a change in the amount or colour of your urine.

Methotrexate

Methotrexate is an anti-cancer medicine which is also used in other conditions to suppress your immune system. When being used for these other conditions, methotrexate must only be taken **once weekly**, on the same day each week. Never take it more often than this. You should have been given an information leaflet about methotrexate. If you have not, please tell your nurse, doctor or pharmacist. You should also read the manufacturer’s information leaflet in the packet. You will need regular blood tests and your doctor here will advise you and your GP about this. You should also be given another tablet called folic acid to take regularly while you are on methotrexate. This can help prevent some side effects of methotrexate. If you have not been given folic acid, please ask your doctor about this.
**Cyclophosphamide**

Cyclophosphamide is an anti-cancer medicine that is also used in other conditions to suppress your immune system. If you have been started on cyclophosphamide you should have been given an information leaflet. If you have not, please tell your nurse, doctor or pharmacist. You will need regular blood tests and your doctor here will advise you and your GP about this. You should also read the manufacturer’s information leaflet in the packet.

**Calcium and colecalciferol (Adcal D3®)**

There are various brands of calcium and colecalciferol tablets, and we usually use Adcal D3®. Colecalciferol is a form of vitamin D. Calcium and vitamin D are important for bone health. Your body needs adequate supplies of vitamin D in order to absorb (take up) the calcium that you eat or drink in your diet. If you are taking steroid tablets you may be given Adcal D3® to help prevent osteoporosis (thinning of the bones). The usual dose is one tablet twice daily. The chewable tablets should be sucked or chewed, not swallowed whole. Dispersible tablets are also available and these should be dispersed in water before taking.
Alendronic Acid (Alendronate)

Alendronic acid is used to prevent or treat osteoporosis (thinning of the bones). It can help to restore some lost bone, and help to prevent further bone loss. If you are taking steroid tablets you may be given alendronic acid to help prevent osteoporosis as a side effect of the steroid.

Read the information sheet that comes with the tablets, and carefully follow the instructions on how to take them. The majority of patients will be started on alendronic acid 70mg tablets. These are taken as a once weekly dose (one tablet each week) that should be taken on the same day every week. You need to take alendronic acid tablets whilst you are sitting up and with plenty of water, as they can cause irritation of your oesophagus (gullet). This can lead to indigestion-type symptoms such as heartburn or difficulty swallowing. After you have taken the tablet, remain sitting up or standing (do not lie down) for at least half an hour. Other side-effects may include diarrhoea or constipation. You should NOT take alendronic acid at the same time as food or milk. It is best to take the tablet first thing in the morning (once weekly only) on an empty stomach, and wait at least half an hour before eating, drinking milk or taking calcium tablets.

A rare side-effect from alendronic acid is a condition called osteonecrosis of the jaw. This condition can result in severe damage to the jaw bone. So, if you take alendronic acid, if you experience pain, swelling or numbness of the jaw, a heavy jaw feeling or loosening of a tooth, you should tell your doctor. You should also brush and floss your teeth regularly and go for regular dental check-ups whilst taking alendronic acid. Tell your dentist that you are taking it.

Calcium and vitamin D supplements are usually prescribed by your doctor as well as alendronic acid, unless they are sure that you are already getting adequate intake in your diet.
Omeprazole / Lansoprazole / Ranitidine

These medicines all reduce the production of stomach acid, and are used as a treatment for indigestion, heartburn or stomach ulcers. They are also used to prevent such problems developing as side effects from other medicines such as steroids or anti-inflammatory painkillers. If you have been prescribed them just as a preventative while taking medicines such as prednisolone, diclofenac, or ibuprofen, then when these medicines are stopped, you should also stop taking the omeprazole / lansoprazole / ranitidine.

Riluzole

Riluzole is a medicine which has been shown to have a beneficial effect on the survival of people with amyotrophic lateral sclerosis – motor neurone disease. It can slow down the progression of the disease. You will need regular blood tests while taking this medicine. Your doctor here will advise you and your GP about these.

Propranolol

Propranolol is used to prevent migraine attacks. It belongs to a group of medicines called beta blockers and it can also lower blood pressure and heart rate. Propranolol can cause tiredness, coldness of the extremities (fingers, toes and nose), disturbed sleep, nightmares, upset tummy, skin rashes (including worsening of psoriasis) or dry eyes. It may not be suitable if you have asthma or heart disease. You should report any shortness of breath or wheezing to your doctor. Beta blockers should not be stopped suddenly unless on the advice of a doctor.
Verapamil

Verapamil is often used by neurologists as a first-line treatment for cluster headache. Please note cluster headache will not be mentioned in the manufacturer’s leaflet in the box, since verapamil is not formally licensed for cluster headache. It is more commonly used for various heart problems, but its use by neurologists for cluster headache is well established. Verapamil can cause constipation, and may lower blood pressure and heart rate. High doses are sometimes needed to manage cluster headache, so a heart trace known as an ECG may be required when starting treatment or when the dose is increased.

Amitriptyline

Amitriptyline is a type of antidepressant but it is often used in the treatment of nerve pain. It may ease the nerve pain within a few days, but it may take two to three weeks. It can take several weeks before you get maximum benefit. Some people give up on their treatment too early. It is best to persevere for at least four to six weeks to see how well it is working.

Amitriptyline can sometimes cause drowsiness as a side-effect. This often eases over time. To try to avoid drowsiness, a low dose is usually started at first, and then built up gradually if needed. Also, the full daily dose is often taken at night because of the drowsiness side-effect. A dry mouth is another common side-effect. Frequent sips of water may help with a dry mouth. Blurred vision and sweating can also occur. See the leaflet that comes with the medicine packet for a full list of possible side-effects. Amitriptyline can cause problems with driving or operating machinery – please do not do these things if you experience drowsiness or blurred vision. Alcohol is best avoided with amitriptyline unless specifically advised otherwise by your doctor.
Baclofen

Baclofen is used to relieve muscle spasms in conditions which affect the nervous system. These include multiple sclerosis, motor neurone disease, cerebral palsy and long-term injuries to the head or back. In these conditions the muscles may cramp or tighten causing spasms. Baclofen works by causing the muscles to relax which reduces pain and discomfort. This can also cause the muscles to feel a little weaker than usual. If your muscle spasms increase after taking baclofen, or if your muscles become weak so that you have difficulty doing things, let your doctor know as your dose may need adjusting.

Baclofen should be taken exactly as your doctor tells you and you should read the manufacturer’s printed information leaflet in the packet. Try to take baclofen at the same times each day, with or after food where possible to avoid missing any doses. If you do forget to take a dose, take one as soon as you remember unless it is nearly time for your next dose, in which case skip the missed dose. Do not take two doses at the same time to make up.

Common side effects of baclofen include drowsiness, nausea and lightheadedness. These may be worse to start with and lessen as you continue taking baclofen. Do not stop taking this medicine without speaking to your doctor first as stopping suddenly may cause unwanted side-effects. If your doctor decides you should stop taking baclofen, your dose will be reduced gradually to prevent these from occurring. If your muscle spasms increase after taking baclofen, or if your muscles become weak so that you have difficulty doing things, let your doctor know as your dose may need adjusting.
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For practical advice our Customer Care Team provide a (PALS) service. Contact Customer Care Team on 0151 529 6100, email customer.careteam@thewaltoncentre.nhs.uk or visit www.thewaltoncentre.nhs.uk

Alternatively, log on to: www.neurosupport.org.uk or call; 0151 298 2999 for advice and information for people with neurological conditions and their carers.