Parkinson's Disease Society

Information Sheet

Anaesthesia and Parkinson's

Having surgery can be an anxious time for anyone. However, if you have Parkinson's disease you will have additional concerns that may increase your anxiety. You may be concerned about:

- how your Parkinson's will be managed before, during and after the surgery, particularly if you have to be 'nil by mouth' at any time
- how the surgery and the anaesthesia used will affect your Parkinson's or interact with your Parkinson's drugs
- how having Parkinson's might complicate the procedure

You may also have general concerns about being in hospital. This means a change of routine, new people and a new environment, which are all potentially stressful.

It is natural for you to worry, but you should be reassured by the fact that your anaesthetist is a highly skilled doctor with extensive postgraduate training. Furthermore, in recent times, a lot of new anaesthetic drugs and techniques have been introduced that have greatly improved the safety and comfort of anaesthesia. Anaesthetists take pride in their work and are required to continually update their knowledge. They will remain with you throughout your anaesthetic, ensuring that you are safe.

The Parkinson's Disease Society (PDS) information sheet *Going into Hospital* discusses hospital stays in general, highlighting issues to do with medication, communication and mobility. There is also an information sheet, *Hospital Stays and Parkinson's*, for those working in hospital who may be involved in your care.

This information sheet concentrates specifically on issues related to going into hospital for a surgical procedure. It highlights the aspects that you and the hospital staff need to consider in relation to anaesthetics and administration of drugs. Although it focuses on a hospital setting, some of it can also be applied to other settings, such as dental surgeries.

What is anaesthesia?

'Anaesthesia' means any way of relieving your body of sensation, usually pain, for medical purposes. This often means the delivery of drugs to your body via the veins, but can include other techniques such as inhaling gases, or cooling parts of the body to numb them. Anaesthesia works by blocking the signals that pass from nerves in your body to the brain. Although most people will think of anaesthesia as being 'put to sleep', it does not always involve you in being made unconscious. You can be given an anaesthetic in various ways, and to different parts of the body, and you can be conscious without feeling any sensation at all. Different types include:

- **Local anaesthetic**, which numbs a small area of the body, allowing you to remain awake, but pain-free. You might receive a local anaesthetic for dental surgery, for example.
- **Regional anaesthetic**, which works on larger or deeper areas of the body, for example spinal or epidural anaesthetics. Regional anaesthesia also allows you to stay awake and pain-free, although you may still feel sensations such as pushing or movement.
- **General anaesthetic**, which puts you in a state of 'controlled unconsciousness',

Parkinson's
Disease Society

meaning that you can be brought in or out of consciousness when necessary.

Often, different methods are combined, so that a regional anaesthetic may be given as well as a general anaesthetic, to provide better pain relief after an operation. A local or regional anaesthetic can also be given in combination with a sedative, which is a drug used to put you in a relaxed, 'drowsy' state. Sedation is often used for procedures that you may find uncomfortable.

Doctors who specialise in anaesthesia are called 'anaesthetists' and they are responsible for giving your anaesthetic, for ensuring your safety and wellbeing throughout the surgery, and for the management of any pain afterwards. You will usually meet your anaesthetist before the surgery and you will be able to discuss which kind of anaesthetic is most suitable for you. They will also discuss how the anaesthetic will be delivered and what kind of pain relief you will be given after the surgery. If you have had an anaesthetic before, the anaesthetist will want to know how you reacted to it.

How soon before the surgery should I let the hospital know I have Parkinson's?

It is very important that the hospital and surgical teams know that you have Parkinson's, as this will have an impact on the decisions they make with you about your surgery.

Many hospitals have pre-assessment clinics for people who are due to be admitted for surgery or treatment. At these clinics someone (usually a nurse) will record your personal details and medical history, make any routine observations or investigations that need to be done, and discuss the treatment and aftercare you will receive. Your individual needs with regard to your Parkinson's can also be raised here. If the hospital does not have a pre-assessment clinic, then your individual needs should be discussed as part of the hospital's admissions procedure. The pre-assessment nurse works closely with your anaesthetist and will make sure that the anaesthetist is made aware of your special needs. Sometimes, the anaesthetist will see you some days before the surgery. This makes it easier to plan your anaesthetic, allows time for special arrangements to be made if necessary, and is an opportunity for you and your anaesthetist to discuss concerns you may have and agree solutions.

If you are very concerned, you may want to ask your consultant, or Parkinson's Disease Nurse Specialist (if you have one), to work with the hospital at the time of your admission, to make sure that any concerns you or the hospital may have are dealt with quickly and correctly.

Take all the relevant information about your condition and current medication whenever you go to hospital. Your anaesthetist, and everyone involved in your treatment, will want to see a full list of drugs, herbal remedies or vitamin supplements that you might be taking for any reason, not just for your Parkinson's. Also, you should inform hospital staff of any allergies you might have. Your GP will probably have sent this information to the hospital before your arrival, but you can also bring a copy of your own. The PDS information sheet *Going into Hospital* includes a form that you can fill in for this purpose, and on which you can include any extra information that you feel is important.

Will I be able to see the anaesthetist before the surgery?

You will always meet your anaesthetist before you have your operation. Often, this will be on the ward before your surgery, but this is not always possible. When you meet your anaesthetist, they will want to go through the questions you have answered in pre-assessment, or if you have not attended a pre-assessment clinic, they will ask you the questions then. They will probably examine you to evaluate your general fitness for the surgery ahead, in particular whether your breathing might be affected. Your anaesthetist will then discuss with you which anaesthetic methods can be used.

It is particularly important for your anaesthetist to be aware of your Parkinson's, because the decisions they make with regard to your care will be based on how to get the best possible outcome from the surgery, with the least inconvenience to your Parkinson's symptoms and treatment. Your anaesthetist will want to work with you and your Parkinson's specialist so that they can decide between them the best course of treatment for you.

What will I need to do before the surgery?

Parkinson's is a very individual condition and it is important to make sure that the most appropriate decisions are made for you. Any arrangements that involve a change to your normal routine should be put in place some time beforehand. Your anaesthetist will want to look at your general symptoms and how they may affect you during surgery. It is very important that the best and most predictable control of your symptoms is managed before, during and after the surgery.

There are some advantages to having your procedure scheduled first on the surgical list for the day. The risk of cancellation is less, for example if other procedures take longer than expected. The timing of drugs will also be easier if the time of the surgery is known in advance. However, the timing of surgery can be very complicated and it will not always be possible to arrange this for you. If not, you can ask what time the surgery is planned for, so you can arrange the timing of your drugs around it.

Can I keep taking my Parkinson's drugs right up to the time of surgery?

The timing of doses of Parkinson's medication can be very important, as abrupt withdrawal of drugs can often cause a very sudden return or even worsening of symptoms, and in some cases can lead to the development of a condition known as neuroleptic malignant syndrome, which can be dangerous. You and your anaesthetist will need to work out a plan so that you can keep taking your medication as close as possible to the time of surgery, and as soon as possible after the surgery.

If you are going to have an operation that requires an anaesthetic, you may be asked to fast (also known as being 'nil by mouth'). Again, it is very important that your anaesthetist knows that you have Parkinson's, as this can cause a difficulty with your medication and you will need to be advised properly. For routine, non-emergency surgery, fasting should be no longer than six hours.

There are two main reasons for being 'nil by mouth' prior to surgery. The first applies to anyone having surgery. Food and milky drinks may remain in the stomach for six hours after

Parkinson's
Disease Society

ingestion. During your anaesthetic, you may vomit or regurgitate this food. If the food passes into your lungs, it can cause serious damage. Water and clear fluid, however, pass out of the stomach much more quickly, which is why they are usually allowed freely up to two hours before surgery. Therefore, although you may be allowed or even encouraged to take your medication, you should not eat or take milky drinks in the six hours before surgery. If you do, your anaesthetist may cancel your operation on the grounds of safety.

The second reason for being 'nil by mouth' is if your guts are not working properly or need to be cleared for bowel surgery. If your guts are not working, you may not absorb the drugs you take.

In the past, because of the need to fast, people were required to stop taking medication up to a day before their operation. Today, anaesthetists encourage their patients to take all essential medication up to the time of operation. Essential medicines include those for Parkinson's and high blood pressure, and steroids. You may take water freely with your medication up to two hours before the operations and in limited quantities if the operation will be in less than two hours. Similarly, you will be encouraged to take your medication as soon as possible after the operation.

If you cannot take your usual Parkinson's medication because it is necessary for you to be 'nil by mouth', your doctor may consider using the dopamine agonist apomorphine (trade name APO-go) for the duration of this period. Apomorphine is given by injection, and so avoids the need to take any drugs via your mouth. The apomorphine treatment may provide you with some relief from your symptoms until you are able to resume your usual drug regimen. If you are already receiving apomorphine, you should be able to continue taking it throughout the period before, during and after your operation.

However, if you are on a complicated drug regimen, it is likely that while apomorphine can provide some control over your symptoms, this will not be at the same level as you are used to. Also, if the decision is taken to give you apomorphine, you may have to be taken into hospital a few days early, in order for your doctor to give you an 'apomorphine challenge', to see whether the drug will help you.

Apomorphine can also cause nausea, but this is usually avoided with the addition of the drug domperidone (Motilium), which acts against nausea and sickness. Domperidone can be delivered by suppository, so it can be used if you are 'nil by mouth'. See the PDS information sheet *Apomorphine* and the booklet *The Drug Treatment of Parkinson's Disease*.

Another alternative is to pass a tube through your nose into your stomach. Some of your medicines that can be crushed or are liquid can be given down the tube. This may be useful if you are very drowsy or confused after your operation and therefore cannot swallow easily.

Does my Parkinson's affect the type of anaesthetic I can be given?

The choice of which anaesthetic technique is used may depend on a number of factors. For example, a regional anaesthetic may be preferable in some cases, because it allows you to stay conscious and you can start taking your normal medication again soon after the surgery. However, a regional

anaesthetic is made more difficult because it will not eliminate Parkinson's symptoms such as tremor or rigidity, except in the areas directly affected by the anaesthetic. Tremor, in particular, can interfere with some monitoring devices and make them more difficult to interpret. If the surgery is delicate, the surgeon may want you to be absolutely still.

General anaesthetic has the advantage for the medical team of ensuring that you are completely still for the duration of the operation. However, proper care must be taken with general anaesthetics, as some of the drugs used can cause a worsening in Parkinson's symptoms. Some others may interfere with Parkinson's medication and should be avoided if at all possible. For example, if you are taking selegiline (Eldepryl or Zelapar) for your Parkinson's, pethidine should be avoided. The two drugs can interact badly, causing confusion and rigidity. The references listed at the end of this information sheet will inform your anaesthetist of which anaesthetics should be avoided, or used with caution.

How might my Parkinson's complicate the surgery?

Drooling and breathing

With some operations, it may be necessary during surgery to put a tube down your throat to help you breathe. Very rarely, this procedure can be more difficult for some people with Parkinson's, as the condition will affect the general flexibility of the neck, and may make inserting the tube more difficult. Your breathing can also be affected if you have problems with swallowing, drooling, or clearing secretions from your chest. Your anaesthetist will want to ensure that all your airways remain clear at all times.

Rarely these days, some anaesthetists use drugs to 'dry out' the mouth. Many of these drugs are 'anticholinergic', meaning that they block the action of a brain chemical called acetylcholine. Anticholinergic drugs are sometimes used in people with Parkinson's, but are not generally recommended, as there is an increased risk of confusion or restlessness, particularly for older people, which will interfere with the surgery and the recovery process, as well as causing discomfort to the person with Parkinson's.

Your ability to cough and clear secretions is a matter of great importance if you are having surgery, and can often influence the choice of anaesthetic treatment used in your operation. Also, because they can have difficulties with swallowing, people with Parkinson's are more prone to chest infections before and after the operation. Your anaesthetist may postpone your surgery in order for an acute chest infection to be treated.

You may also require more care after your operation than patients who do not have Parkinson's. Sometimes, your anaesthetist will plan to admit you to a critical care unit where you can receive more intensive treatment. This will be discussed with you and should not be a cause for alarm. Admission to a critical care unit, where there are more doctors and nurses, is a way of increasing your safety and ensuring that your recovery is as prompt as possible.

Involuntary movements

Some people also experience involuntary movements (dyskinesia) of the arms, legs, hands or body as a side effect of their Parkinson's drugs. If you do, discuss this with the hospital staff, as dyskinesia may affect

Parkinson's Disease Society

procedures such as X-rays and scans, where you need to keep still. It may be possible to use techniques such as putting foam wedges in place to help overcome this, but it is important to discuss it in advance. Sometimes, for CT or MRI scans, it may be necessary for you to be sedated or to have a general anaesthetic. See the PDS information sheet *Motor Fluctuations in Parkinson's* for more information on involuntary movements.

If you are having a dental operation, the British Society for Disability and Oral Health, an organisation of dentists who have a special interest in treating people with disabilities, may be able to advise the dentist on ways to overcome this and other problems. See the 'Further information' section at the end of this information sheet for contact details. The PDS booklet *Parkinson's and Dental Health* has more information on dental issues.

What considerations should be made for someone having surgery to treat Parkinson's?

If you are having surgery for your Parkinson's, then other factors must be considered. Some surgical centres divide the operation in stages so that some parts can be performed under general anaesthetic, while other centres perform the whole procedure while you are awake. Usually, at least part of the procedure will be performed under local anaesthetic to monitor your response to surgery and avoid any side effects. A few specialist centres perform the entire procedure under general anaesthetic. Where this is done, it has been found that patients are less exhausted by the procedure. Contrary to what a few surgeons believe, the results are just as good and recovery is as quick, if not quicker, than after electrode placement under local anaesthesia.

If the surgery is performed under general anaesthetic, then the previous considerations about general anaesthetic and Parkinson's will apply, and your anaesthetist and surgeon will be able to discuss the process with you in detail. The surgery itself produces a temporary 'treatment effect', which means that you might find that your need for your Parkinson's drugs is reduced for a few days after the operation.

If you are having the procedure under local anaesthetic, your surgeon will explain to you when you will need to stop your Parkinson's medication (usually a few hours before surgery so that their effects are not mistaken for an effect of surgery) and what kind of anaesthetic will be given (usually the skin will be numbed by an injection in the area where surgery will take place). More information on this subject is available in the PDS booklet *Surgery and Parkinson's Disease* and the information sheet *Deep Brain Stimulation*.

What will happen after the surgery?

Usually, as the effects of the anaesthetic given during surgery start to wear off, you will begin to feel some discomfort or pain. Your anaesthetist is responsible for the management of your pain after surgery. Some care has to be taken in the choice of painkilling drugs used. For example, strong opioid painkillers such as morphine are often delivered by means of a patient-controlled device, so that the person can manage their own level of pain when necessary. However, control of this device may be difficult for someone with Parkinson's. Also, there is some evidence to suggest that opioid painkillers may sometimes worsen rigidity.

It is also quite common for someone to feel sick or nauseous after surgery. Treatment of this can be straightforward, but many of the drugs used for nausea, such as prochlorperazine (Stemetil or Buccastem), metoclopramide (Maxolon), or cyclizine (Valoid), may interfere with your Parkinson's and should be avoided. The drug domperidone (Motilium), which is often used to treat nausea in people taking apomorphine, may be useful in this situation. Another anti-nausea drug, ondansetron (Zofran), has been used in people with Parkinson's with some success.

Finally, some people may find that they are confused or delirious after their operation. This effect is relatively common and will normally wear off gradually. In some circumstances, it may become necessary to treat this confusion with drugs, although this is not common. If this happens, it is important that the drugs used to treat the confusion are chosen carefully, as some such as haloperidol (Haldol) may interact badly with Parkinson's symptoms. See the PDS booklet *The Drug Treatment of Parkinson's Disease* for more information on drugs that should or should not be used.

What happens if my surgery is not planned?
Most of the information given above is appropriate for surgery that is planned, and for which you and your medical team will be able to prepare in advance. However, if for some reason you require an emergency surgical procedure, this can be more difficult to manage. This is particularly the case with managing your medication, as there may not be time to plan the best possible way of dealing with this. In some cases, a test dose of apomorphine can be given to check that it is tolerated.

Some emergency admissions can be arranged through your GP, who will contact the appropriate hospital doctor to see you in the accident and emergency department. Where this is possible, it will save you from having to see the accident and emergency department doctors first.

In the event of an emergency admission, it is essential that those looking after you are made aware of your condition as soon as possible, to ensure that appropriate treatment is given. It might be a good idea, particularly if you live alone, to use the *Going into Hospital* form to list your drugs and the needs you have, plus any other considerations (such as who to contact in an emergency or the name of your doctor and any other professionals involved in your care) and keep this in an accessible place like a handbag or wallet.

The PDS produces a medication card which many people carry with them in a purse or a wallet. This has space for you to put details of the drugs you are taking and your doctor's and other emergency numbers.

Some people also find it useful to wear a MedicAlert/SOS Talisman bracelet or pendant. These are items of jewellery that provide contact details and medical information if someone is involved in an accident. They will alert people to your particular health issues if you are unable to communicate for any reason. More information is available from:

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1 Bridge Wharf
156 Caledonian Road
London N1 9UU
Tel: 020 7833 3034
Fax: 020 7278 0647

Email: info@medicalert.co.uk
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Further information
www.youranaesthetic.info
This website is a joint project of the Royal College of Anaesthetists and the Association of Anaesthetists of Great Britain and Ireland. It aims to provide comprehensive and up-to-date information on anaesthesia in a format that non-professionals can understand and use. The website has several publications available to download from www.rcoa.ac.uk.

Printed copies can be obtained from Alden Press Ltd, De Havilland Way, Witney, OX29 0YG, tel: 01993 707275.

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References
There have been two important publications in the literature used by anaesthetists that can inform your anaesthetist of any possible difficulties that may arise in the course of your care. They are:

Errington DR et al (2002) 'Parkinson's disease' *British Journal of Anaesthesia*, CEPD Reviews; 2:3,69–73

Nicholson G et al (2002) 'Parkinson's disease and anaesthesia' *British Journal of Anaesthesia*; 89:6,904–16

For information on the use of apomorphine in the case of someone having to stop their regular Parkinson's medication before surgery, your doctor may find the following reference useful:

Gálvez-Jiménez N & Lang AE (1996) 'Perioperative problems in Parkinson's disease and their management: apomorphine with rectal domperidone' *Canadian Journal of Neurological Sciences*; 23:198–203

The PDS is not able to supply these papers, but they should be available through a college or hospital library.

Thanks
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Parkinson's
Disease Society

Information Sheet

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