



ROYAL ADELAIDE HOSPITAL

*Anaesthesia*  
*and*  
*Pain Relief after Surgery*

*DEPARTMENT OF ANAESTHESIA,  
HYPERBARIC MEDICINE AND PAIN MEDICINE*

INFORMATION BOOKLET

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# Anaesthesia

The information in this booklet is intended as a general guide only. Please ask your anaesthetist if you have any questions relating to this information.

You or a member of your family will be having an operation or investigation that might need an anaesthetic. We would like you to read the information below. We believe it will answer some of the questions you may have about your anaesthetic. However, if you do not understand anything or have any other questions, please ask your anaesthetist. If you think you might forget, write your questions down on a piece of paper and bring it to the hospital.

## The Anaesthetist

### *What is an anaesthetist?*

A specialist or consultant anaesthetist is a qualified medical doctor. After becoming a doctor they will have spent several more years training to become a specialist in anaesthesia - an **anaesthetist**. You may be seen and cared for by an anaesthetist or by a qualified medical doctor who is training to become an anaesthetist. Anaesthetists are trained in anaesthesia, pain control and medical emergencies.

### *What do anaesthetists do?*

An anaesthetist will see you at some stage before your surgery. This is for your preoperative assessment. On the day of your surgery an anaesthetist will give you your anaesthetic. They will stay with you and look after you throughout your whole operation. The anaesthetist also checks you in the Recovery Ward after your operation. They often help with pain control at this time and when you are back in your ward.

# Preoperative Assessment

## *Why do I need to be seen by an anaesthetist before surgery?*

Many factors can affect the anaesthetic. These include the patient's medical condition and any medications (including herbal or alternative medicines) or recreational drugs they may be taking. It is therefore very important that the anaesthetist knows your full medical history, including information about any medicines and recreational drugs, so that they can plan the most suitable anaesthetic for you.

This is called the **preoperative assessment**. You will be seen by an anaesthetist before your operation either on the hospital ward or in the **Preoperative Assessment Clinic**.

## *What is the Preoperative Assessment Clinic?*

In the past, most patients came into hospital the night before their surgery. Now, many patients only come to the hospital on the day of their surgery. Some will go home the same day and these patients will be admitted to the **Day Surgery Unit (DSU)**. Others will be admitted as **Day of Surgery Admission (DOSA)** patients and will stay in hospital after their operation.

You will need to be seen by an anaesthetist before you come to hospital on the day of your surgery. This means that you will come to the Preoperative Assessment Clinic several days before your surgery. The anaesthetist will ask you about your medical history. They will also examine you and order any tests that are needed. The anaesthetist will check that any medical condition you have, which may affect the anaesthetic, is as stable as possible.

For your safety, the anaesthetist may sometimes ask another specialist, such as a heart specialist, to see you. This is to make sure you are as fit as you can be before your operation. From time to time operations may need to be delayed so that we can get more tests done or get advice from other specialists. Very rarely surgery is cancelled because of the risks involved.

The types of anaesthetics that may be suitable for your surgery will be explained. The anaesthetist will also tell you about some of the possible risks and benefits of each type of anaesthetic. *This is also the time to discuss any questions or concerns you have regarding your anaesthetic.* You will then be asked to sign an anaesthetic consent form. You will also be given instructions for the day of your surgery. These will include when to stop eating and drinking and which of your regular medicines to keep taking.

The anaesthetist who looks after you on the day of your surgery may not always be the same one who saw you in the Preoperative Assessment Clinic. However they will have reviewed the information from your preoperative assessment. They will also talk to you before your anaesthetic. This gives both of you a chance to go over the details of your anaesthetic. *You should also ask any other questions at this time.*

Occasionally, patients with certain severe medical conditions may be admitted to the hospital one or more days before their operation. This is so that further treatment or investigations can be organised.

Sometimes patients who are young and healthy and are having simple operations in the **Day Surgery Unit** may not need to visit the Preoperative Assessment Clinic. They will be seen by the anaesthetist on the day of surgery.

# Types of Anaesthesia

## *What are the main types of anaesthesia?*

The main types of anaesthesia are **general anaesthesia**, **regional anaesthesia** and **local anaesthesia**. The aim of all types of anaesthesia is to allow painless, safe surgery.

## General Anaesthesia

### *What is general anaesthesia?*

Doctors often talk about general anaesthesia as “*sending you off to sleep*”. But anaesthesia is not like a normal sleep. It is a form of temporary unconsciousness. The level of unconsciousness is carefully controlled by the anaesthetist. They do this by using a mixture of anaesthetic drugs. Some drugs are injected through a drip (intravenous line or IV) in your arm. Others are anaesthetic gases that you breathe.

Your anaesthetist is a highly trained doctor who knows a great deal about these anaesthetic drugs and has the special skills needed to look after you while you are anaesthetised. They will give you as much anaesthetic as you require for the procedure that is planned. This may change during the operation and is one of the reasons why your anaesthetist stays with you all the time. They constantly watch over you and control the anaesthetic by controlling the type and amount of drugs given.

They constantly monitor many things such as your heart, breathing and kidney function. They also frequently assess how deeply asleep you are.

### ***Why do I have to fast before an anaesthetic?***

It is important that you follow the instructions you are given about fasting before your surgery. If you take any food or fluid closer to the time of surgery it could still be in your stomach when you have the anaesthetic. That means you could vomit it up at this time. This can be very dangerous.

If you don't follow these instructions your operation may need to be delayed or cancelled. This is for your safety.

### ***What are the risks of general anaesthesia?***

When you first wake from the general anaesthetic you will feel drowsy. You may also have some pain, feel sick, or have a sore throat. *If you have pain or feel sick at any time after your operation it is important to tell the nurse who is looking after you.*

After your anaesthetic you may also notice some dizziness, blurred vision or have problems remembering things. These usually pass quite quickly.

Every anaesthetic carries a risk of other possible complications - some of these are minor and some are serious.

Complications that are infrequent but can occur include:

- bruising
- muscle pain
- pain or other injury at injection sites
- temporary difficulty with breathing
- temporary nerve damage
- wheezing or asthma
- headaches
- being aware during the surgery
- damage to teeth, caps, crowns or false teeth
- injury to lips or tongue

Serious complications from anaesthesia can also occur but it is important to stress that these are *very rare*. The risk may vary according to your health before your surgery and the seriousness of your operation.

These complications can include:

- heart attack
- brain damage or stroke
- lung damage
- permanent nerve damage
- paraplegia or quadriplegia
- damage to the larynx (voice box)
- eye damage
- infection from blood transfusion
- death

To put the risks into perspective you need to compare them with other things that could happen to you. We have included other comparisons of risks in the *diagram on page 11*.

If you have any concerns or questions about any of these risks or complications your anaesthetist will be happy to talk about them with you. *Do not be afraid to ask any question you want to*. No question is silly or unimportant.



# Regional Anaesthesia

## *What is regional anaesthesia?*

With general anaesthesia your whole body “goes to sleep”. With a regional anaesthetic it is possible to put only the part of your body that will undergo surgery “to sleep”. That means we can make it numb temporarily. *However, regional anaesthesia **cannot** be used for every type of surgery.*

This is usually done by the anaesthetist. They will inject a local anaesthetic drug around a nerve or nerves that supply a particular part of your body. The nerves may be blocked (numbed) some distance from the site of surgery. The skin and tissues where the injection is given are also numbed with local anaesthetic so the injection should not be too uncomfortable. *If you are uncomfortable tell the anaesthetist.*

Examples of regional anaesthetics are:

- eye blocks for cataract surgery
- epidural and spinal anaesthetic blocks for prostate or hip operations
- arm blocks for operations on the hand

The advantage of a regional anaesthetic is that it is sometimes safer or has fewer side effects compared with a general anaesthetic. You may remain completely awake if you wish, but your anaesthetist can give you a sedative medicine to make you relaxed and drowsy.

## *What are the risks of regional anaesthesia?*

The main risk is that there could be some injury to the nerve that is being blocked with local anaesthetic. This is not common and is usually temporary (weeks or months).

### ***What are epidural and spinal anaesthesia?***

Epidural and spinal anaesthesia can be used for surgery - usually surgery below the waist. Epidural anaesthesia is also often used in combination with general anaesthesia for major surgery. With these kinds of anaesthesia the local anaesthetic drugs can be placed much closer to where they are needed - near the spinal cord and nerves.

**Epidural anaesthesia** is started by an anaesthetist, usually at the time of the operation. The anaesthetist would insert a needle in your back into a space called the ***epidural space***. A very small and soft plastic tube is then threaded through the needle and the needle is removed. This plastic tube is called the ***epidural catheter***. The epidural catheter is fixed to the skin on your back with tape. The local anaesthetic drugs are injected down the epidural catheter.

**Spinal anaesthesia** is similar but a catheter is not left in place and only one dose of local anaesthetic drug is given.

### ***What are the advantages of epidural anaesthesia?***

We think that it is most likely to be good for patients who are elderly, or have major medical problems, or who are having very major surgery. In these patients very good pain relief may reduce the risk of complications after surgery. The epidural catheter can also be left in place for a few days after your surgery and be used for pain relief.

### ***What are the risks of epidural anaesthesia?***

Complications occasionally occur. Most of these are minor and easily treated. More serious complications may occur but these are extremely rare.

Some of the possible complications are:

- The epidural does not work or work properly. If this happens and the anaesthetists cannot help make it work, you will be given another type of anaesthetic.
- There can be an infection at the site where the epidural catheter goes through your skin. This may be a little red and sore for a few days but usually goes away without needing treatment.
- Your blood pressure may fall. However, after surgery this usually happens when you are also a little dehydrated and it is often a sign that you need more fluid.
- You may get a headache. Sometimes this can happen if the needle that is used to place the epidural catheter goes past the epidural space. However any headache that you get after your surgery is most likely to be due to another cause.
- Nerve damage can occur rarely and in most cases this heals within a few weeks or months.
- Very rarely an abscess or blood clot can develop in the epidural space. It is difficult to get an exact number for the risk but it is likely to be between 1 in every 10,000 to 150,000 patients. If the abscess or blood clot is big enough to press on the spinal cord then permanent nerve damage or paraplegia could occur, especially if treatment is not started as soon as possible.

At the Royal Adelaide Hospital the anaesthetists and the nurses on the ward are aware of the risk, even though it is very rare. The regular monitoring that we use is designed to pick up complications at an early stage.

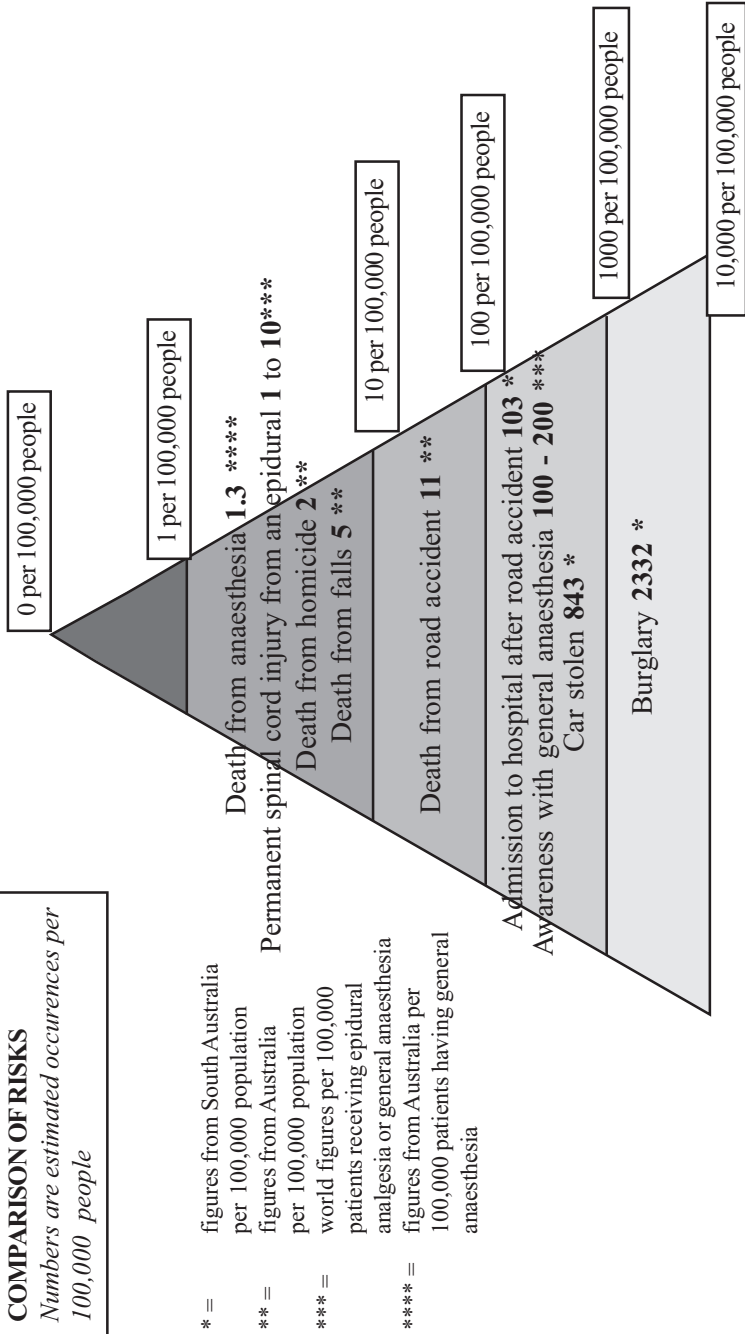
The risks of **spinal anaesthesia** are similar.

## **Local Anaesthesia**

This is when a local anaesthetic is injected into the skin at the site of surgery. An example of this is numbing an area of skin before having a cut stitched.

## COMPARISON OF RISKS

*Numbers are estimated occurrences per 100,000 people*



\* = figures from South Australia per 100,000 population

\*\* = figures from Australia per 100,000 population

\*\*\* = world figures per 100,000 patients receiving epidural analgesia or general anaesthesia

\*\*\*\* = figures from Australia per 100,000 patients having general anaesthesia

# Pain Relief after Surgery

People used to think that they had to put up with severe acute pain but this is not true. Good pain control can help you feel more comfortable and maybe even get well faster.

There are many reasons why people get acute pain. In the information below we will look mainly at the treatment of acute pain after surgery or accidents.

## ***How can I be involved in my pain control?***

You can talk to your doctors about how much pain you might get after your surgery. With your doctors *you can help decide on a pain control plan* before your operation.

*You can be involved in reporting your pain.* The nurses and doctors will often ask you about your pain. They will usually get you to score your pain from 0 to 10. This means that you have to imagine that 0 is no pain and 10 is the worst you could ever imagine. Then you tell the nurse or doctor what your pain is on that scale. There is no right or wrong answer. Everyone is different. We can use your pain scores to guide pain treatment. If you find pain scores difficult to use you can just say if you are comfortable or not.

Pain medicines will often not get rid of *all* your pain. Instead, we aim for enough pain relief to make you *comfortable*. It is harder to ease pain once it has become severe. *So, you should ask for pain relief when you first start to feel uncomfortable.* If you are uncomfortable but the pain medicine is making you very sleepy, it may not be safe to give more of some kinds of pain-relieving drugs, such as morphine. In this case your nurse will contact your doctor.

You should tell your nurse or doctor if any pain medicine they give you does not seem to be working, or working well enough. You need to remember that some medicines may take about one hour to have an effect.

Also tell your nurse or doctor if you have any side effects that you think might be due to the pain medicines. This includes nausea, vomiting, itching, or any strange feelings or dreams. These side effects are quite common after surgery and are not always caused by the pain medicines. However, your nurses or doctor can often treat these side effects whatever the cause.

### ***How is acute pain treated?***

We often use the word **analgesia** when we talk about pain relief. **Analgesia** means “painlessness” or “no pain”. The medicines that are used to treat pain are called **analgesics**.

The type of analgesia you will need and how it is given will often depend on the kind of surgery you are having and the amount of pain that is expected. It may also depend on your age and general fitness. Some types of pain relief may be especially useful in patients who are elderly or who have had major surgery.

If you need tablets or injections for the treatment of your pain, these will usually be supervised by your ward doctors and nurses. However for the treatment of some types of acute pain you may be offered a more advanced method of pain relief. Here at the Royal Adelaide Hospital the two most commonly used methods are **patient-controlled analgesia (PCA for short)** and **epidural analgesia**. These are **not** needed for pain relief after most types of surgery.

### ***What pain-relieving medicines are used?***

A number of different kinds of pain medicines may be used. Some may be better for some types of pain than others as all pain is not the same. *Please let your doctor or nurse know if you have tried some pain medication before and they did not agree with you, or you were allergic to them.* Some of the common types of pain medicines are:

- **Paracetamol:** this is commonly ordered either by itself or with other stronger pain medicines. It can be very useful especially if taken on a regular basis. There is a maximum number of tablets that can be taken safely each day. It may not be safe to take paracetamol if you have liver disease or drink a lot of alcohol.
- **Anti-inflammatory drugs:** such as aspirin and other medicines commonly used for treating arthritis pain. Examples include Nurofen, Brufen and Celebrex.
- **Opioids:** these are pain-relieving medicines like morphine. They include morphine, hydromorphone, fentanyl and oxycodone. These are the strongest pain medicines and will not be needed for all types of pain.

### ***How do the nurses monitor the effects of pain medicines?***

They will check you at regular intervals. As well as asking your pain scores, they will also check for any side effects of the pain medicines. This is done for your safety as well as comfort, so it means that they may need to check you during the night. Hopefully your sleep will not be too disturbed.



### ***Can I get addicted to morphine-like medicines?***

When pain-relieving drugs like morphine and other morphine-like drugs (see above) are used to treat acute pain, like the pain that happens straight after operations or accidents, the risk of addiction is negligible. It is very important *not* to let the fear of addiction stop you from using enough of the medicine to be comfortable or to stop you from moving or coughing.

### ***If I have high pain scores, will I always get more pain medicine?***

Usually, but not always. If you are very sleepy the nurses are not allowed to give more pain medicine. More would not be safe until you are more awake. There are also some kinds of pain that are not easily treated with strong pain-relieving drugs such as morphine. In these cases, it is not sensible to give bigger doses because this could lead to side effects from the drug. It may be that other kinds of pain medicine are needed.

If you usually need to take strong pain-relieving medicines at home, such as morphine or oxycodone, it can also be a little more difficult to treat pain because your body is used to the medicine. This is especially so if you have been needing high doses at home. This does not mean that we will not try to get good control of your pain. It is just that finding the dose that is right for you may be more difficult and take more time. It can also sometimes be very difficult to treat pain if you take some kinds of recreational drugs.

### ***What are patient-controlled analgesia and epidural analgesia?***

Patient-controlled analgesia or epidural analgesia are **not** needed for pain relief after most types of surgery. Your anaesthetist will talk to you about these methods of pain relief, if they could be useful after your operation.

If you have one of these forms of pain relief, you will be seen at least once a day by an anaesthetist and nurse from the ***Acute Pain Service (APS)***, in addition to the doctors and nurses on your ward. The **APS** is part of the Department of Anaesthesia at the Royal Adelaide Hospital. Anaesthetists are the doctors who look after you during your anaesthetic, but they also specialise in pain relief. The **APS** also has an anaesthetist on-call 24 hours a day to help with pain control.

## **Patient-Controlled Analgesia**

**Patient-controlled analgesia (PCA for short)** means that you have control over your own pain relief. A machine called a PCA pump can be used to give you a small dose of a strong pain-relieving drug, such as morphine or fentanyl. Usually this machine will be attached to the drip (intravenous line or IV) in your arm. If you are uncomfortable, you press a button and the machine will pump a small dose of the drug into your drip. You can do this whenever you are uncomfortable – you do not need to tell the nurse first. The amount of pain medicine delivered by the machine each time you press the button, as well as other settings on the machine, will be ordered by the anaesthetist from the **APS**. The PCA machine will be programmed by your nurse according to these orders.

### ***How often can I press the button?***

You can press the PCA button whenever you feel uncomfortable. Once the button has been pushed and the PCA machine has delivered the dose, built-in timers in the machine will prevent you getting another dose for a short time (a few minutes). This means that if you push the button within this time, the PCA machine will not deliver another dose. This is so that you have time to feel the effect of one dose of pain relieving drug before getting another dose. Remember, the aim is to make you comfortable – it is not always possible to be completely pain free.

### ***Who is allowed to press the PCA button?***

*The patient is the ONLY person allowed to press the button.*

Do not allow ANY hospital staff, relatives or friends to do so.

### ***Will the pain-relieving drug work immediately?***

**No.** These drugs need to get to the brain and spinal cord so it may take 5 minutes or longer to get the full effect. If you are about to do something that you know will hurt, like coughing or moving, press the PCA button about 5 minutes *before* doing it.

### ***What if the pain medicine doesn't work?***

If you are pressing the PCA button quite frequently and are still uncomfortable, tell your nurse. They will firstly check that the IV is running properly. As long as you are not having problems staying awake, your nurse may increase the amount of pain medicine you get when you press the button. If necessary, your nurse will contact the **APS**.

### ***Can I overdose?***

PCA is probably one of the safest ways of giving strong pain-relieving medicines. The dose that you get with each press of the button is very small. If you were getting just a little too much you would feel sleepy. This means that you would not press the button again. Your nurse would also notice this and would reduce the amount of drug delivered with each push of the button and, if necessary, treat the sleepiness.

### ***How long will I use PCA for?***

When your doctors on the ward allow you to drink it means that your IV may soon be removed. The PCA will usually stop at this time. You will be ordered other pain-relieving medicines should you need them.

# Epidural Analgesia

**Epidural analgesia** is often used to treat pain during childbirth. It can also be used to treat acute pain after some operations and accidents. Most pain-relieving medicines work by acting on the brain and spinal cord. They are usually carried there in the blood stream. With epidural analgesia, the pain-relieving drugs can be placed much closer to where they are needed - near the spinal cord.

You would usually have epidural analgesia for pain relief after your surgery if you also had it during your surgery. This means it would be started by an anaesthetist, generally at the time of the operation. The anaesthetist would insert a needle in your back into a space called the *epidural space*. A very small and soft plastic tube is then threaded through the needle and the needle is removed. This plastic tube is called the *epidural catheter*. The epidural catheter is fixed to the skin on your back with tape. It is then connected to a machine which slowly pumps the pain-relieving medicines into the epidural space. From here it is easy for the pain medicines to get to the spinal cord and nerves.

## *What are the advantages of epidural analgesia?*

Epidural analgesia can give the best pain relief of all, but is not necessary after all operations or accidents. We think that it is most likely to be good for patients who are elderly, or have major medical problems, or who are having very major surgery. In these patients very good pain relief may reduce the risk of complications after surgery.

## *What are the risks of epidural analgesia?*

Complications occasionally occur. Most of these are minor and easily treated. More serious complications may occur but these are extremely rare. Some of the possible complications are:

- The epidural does not work or work properly. If this happens and the anaesthetists cannot help make it work, you will be given another kind of pain relief.
- There can be an infection at the site where the epidural catheter goes through your skin. This may be a little red and sore for a few days but usually goes away without needing treatment. The APS will see you every day until it is healing.
- Your blood pressure may fall. However, after surgery this usually happens when you are also a little dehydrated and it is often a sign that you need more fluid.
- You may get a headache. Sometimes this can happen if the needle that is used to place the epidural catheter goes past the epidural space. Most often, however, any headache that you get after your surgery is likely to be due to another cause. If the headache worries you let your nurse know and they can contact the APS.
- Nerve damage can occur rarely and in most cases this heals within a few weeks or months.
- Very rarely an abscess or blood clot can develop in the epidural space. It is difficult to get an exact number for the of risk but it may be between 1 in every 10,000 to 150,000 patients. If the abscess or blood clot is big enough to press on the spinal cord then permanent nerve damage or paraplegia could occur, especially if treatment is not started as soon as possible.

At the Royal Adelaide Hospital the **APS** and the nurses on the ward are aware of the risk, even though it is very rare. The regular monitoring that we use is designed to pick up complications at an early stage. We also have strict protocols for looking after patients with epidural analgesia that we believe may lower the risk of these complications.

### ***What pain relieving drugs are used with epidural analgesia?***

We often use a mixture of local anaesthetic and fentanyl (a morphine-like pain medicine) or just local anaesthetic by itself.

### ***Can I move around or walk when I have epidural analgesia?***

**Yes.** It is important to move around after surgery. When your surgeon says you can get out of bed or walk, it is important that you do this as well. This can help reduce the risk of chest infections or blood clots in your legs. You can walk with an epidural catheter in your back. However, you should ask your nurse before starting. At first, you will walk with 2 nurses, just to make sure that you don't faint or lose your balance. When you get out of bed do it very slowly, just in case you become dizzy.

### ***What if the epidural analgesia doesn't work?***

If you are uncomfortable tell your nurse who will check the epidural catheter. They may increase the amount of pain medicine that you are getting or give you an extra dose. If necessary, the **APS** will be contacted.

### ***Will my legs feel numb, weak or heavy?***

If you are having an operation, the epidural will often be used as part of the anaesthetic as well as for pain relief afterwards. A strong local anaesthetic may be given during the operation. This means that your legs may feel numb and heavy immediately after the operation. This will wear off in a few hours. The local anaesthetics that we use for epidural analgesia after the operation will not be as strong, so your legs should feel virtually normal. When you are back in your ward, your nurse will regularly ask you if you have any numbness anywhere, or if your legs feel weak. They will also ask you to lift your knee up to your chest.

**If you notice any numbness or weakness, let your nurse or doctor know straight away.** The aim is to keep you comfortable but still able to move around in bed, sit out of bed and even walk, when your doctors allow it.

### ***Will my legs be numb, weak or heavy when I leave hospital?***

No. **We need to know if this happens**, even if you had your epidural weeks ago. In the unlikely event that you have gone home and noticed any numbness, heaviness or weakness in your legs, have trouble passing water, or have a pain in your back that is getting worse, **you should immediately telephone the Royal Adelaide Hospital and ask to speak to the anaesthetist on duty for the APS.** The phone number is **(08) 8222 4000.**

We hope this booklet has helped you understand more about your anaesthetic and pain relief after surgery.

Do not forget to ask your anaesthetist if you have any questions.



# Notes

# Notes

*Royal Adelaide Hospital contact telephone number:  
Mon-Fri 9am-5pm: (08) 8222 5472*

***DEPARTMENT OF ANAESTHESIA,  
HYPERBARIC MEDICINE AND PAIN MEDICINE***

*Please refer any questions about the information in this booklet to your  
anaesthetist.*

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