Jan Yperman Ziekenhuis

Brochure anaesthesia

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INFORMATION ABOUT YOUR ANAESTHESIA

You will soon undergo anaesthesia for a **surgery** or **examination**. The doctor treating you has already informed you about this.
An anaesthetist (a doctor specialising in anaesthesiology and resuscitation) of the Jan Yperman Hospital will administer your anaesthesia.

This brochure provides you with more information about the various forms of anaesthesia and pain relief techniques. We urge you to read this brochure thoroughly.

If after reading the brochure, you still have questions and/or wish to consult an anaesthetist in advance, you can contact the **preoperative outpatient clinic** at the number **057 35 61 21** between **08:30 and 18:00**.

You will talk with the anaesthetist before the surgery and your definitive approval will be requested for the planned anaesthesia and any additional pain relief techniques. You can sign for this at the back of this brochure. Please bring this brochure with you on the day of the surgery.

THE PREOPERATIVE CLINIC

The **preoperative clinic** (Route 79) will inform you about the anaesthesia. At the clinic, you will discuss your illness and medical history, identify the medication you currently take by completing a questionnaire, and so on. A **preoperative** file will be drawn up based on this information.

Subsequently, you will be asked to **contact your family doctor** so you can undergo a **preoperative clinical examination**. In addition, you will receive a list of **preoperative exams** that must be carried out. These will depend on your age, current medical condition and the type of procedure you will undergo.
The data collected will be collected into your preoperative file for review by an anaesthetist. The review will be carried out at least 24 hours prior to the surgery.
To ensure the file is ready in time, we strongly urge you to provide any missing information as quickly as possible to the preoperative clinic.

You can ask questions at the preoperative clinic to ensure that you are **well informed** and can **accept** (or decline) the type of anaesthesia and pain relief techniques proposed to you by the anaesthetist.

THE ANAESTHETIST

You will be introduced to your anaesthetist prior to your surgery.

He or she is a doctor who specialises in the various forms of anaesthesia, pain management and intensive care during the surgery. The anaesthetist is fully apprised of your illness, your medical history and your current use of medication.

If you so desire or deemed necessary, the anaesthetist will go through everything with you before the surgery. While you are under anaesthesia, the anaesthetist will remain at your side and adjust the anaesthesia as needed. In particular, the anaesthetist will ensure that:

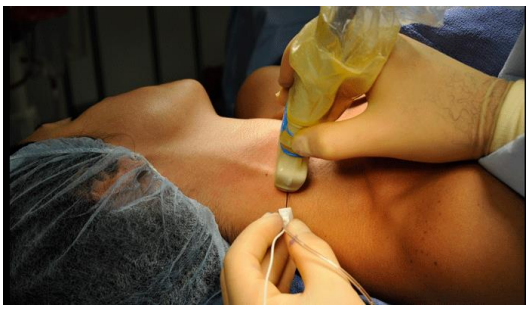
- the pain and stress associated with surgery, obstetric or medical procedures is suppressed
- vital signs (including blood pressure, heart rate, oxygen level in the blood, etc.) are monitored and stabilised
- breathing continues properly or is supported as needed

DIFFERENT TYPES OF ANAESTHESIA

Different types of anaesthesia can be used.

The most well-known form of anaesthesia is **general anaesthesia** where a drug is injected intravenously to artificially put you to sleep and make you insensitive to pain.
Sedation is a much lighter form of general anaesthesia. This is often combined with a local or (loco) regional anaesthesia.

This type of anaesthesia is known as **local anaesthesia** because only that particular 'part' of the skin that will be operated on is anaesthetised, e.g. to stitch a wound. Usually, the surgeon takes care of this.



With **regional of locoregional** anaesthesia, a section of the body, such as an arm, a leg, or the entire lower body is temporarily anaesthetised. In this case, there is a possibility that you may remain awake during the surgery. However, if you so desire and/or it is deemed necessary, you may receive a sleep-inducing drug (i.e. a sedative). For some very specific procedures, you may be allowed to see the surgery take place (e.g. keyhole surgery on the knee). However, this is not possible for most types of surgery.

THE MOST APPROPRIATE ANAESTHETIC FOR YOU

Which anaesthesia is most appropriate for you depends on several factors, including your age, your physical condition and the type of surgery. The option proposed might be a combination of general anaesthesia with an epidural or anaesthesia of the arm or the leg in order to optimise pain relief after the surgery. You can indicate what your wishes are in your visit to the preoperative clinic. The anaesthetist will then take this into account.

PREPARING FOR THE SURGERY

To minimise risks during anaesthesia, it is best to improve your **physical condition** in the weeks prior to the scheduled anaesthesia/surgery, e.g. lose **weight** if overweight, or gain weight if underweight.

Your stomach must be completely empty **before surgery** to prevent vomiting during and after surgery. This means that **you must not eat or drink at least six hours prior to the surgery**. We also advise you not to consume alcohol and/or take recreational drugs at least 24 hours before the surgery because these affect how the anaesthetic drugs work.

It is also prudent to **stop smoking** six weeks before the surgery. This is because smoking reduces the supply of oxygen to the organs, which increases the risk of complications during or after surgery. In addition, smokers' respiratory tracts are often irritated, which makes them more susceptible to infections. It can also making coughing extremely painful after the surgery.

Before the surgery, you must take off all **jewellery**, such as watches, rings, bracelets and piercings. Piercings can cause serious injuries (e.g. tears and burns). You are also asked to **not wear make-up and/or nail polish**. If you have **gel nails**, you must remove at least one of them. If you wear glasses, contact lenses or teeth **prostheses**, you must leave these in the nursing department. If necessary, ask the nurse where you can store your valuables in a safe place.

Sometimes, the part of your body that will be operated on must be shaved.

And, instead of pyjamas, you wear a hospital gown.

The nurse will take you on your bed to the surgery department. Prior to surgery, your identity and other details will be checked multiple times (e.g. the site on your body to be operated on, allergies, etc.).

GENERAL ANAESTHESIA

A monitoring device will be connected before you receive the anaesthetic. An adhesive pad will be stuck on your chest to measure your heartbeat. And, a clip will be placed on your finger to check the oxygen level in your blood.
Blood pressure is usually measured on the arm.
A catheter will be inserted (usually) in your arm and a drip will be connected to it. The anaesthetist uses this catheter to inject anaesthetics. Certain drugs may cause a burning and/or painful sensation when they are injected. You will very quickly fall into a deep sleep.

In a lot of cases, prior to the actual surgery, a plastic tube is inserted into the windpipe to monitor breathing while a patient is anaesthetised. You will not notice it at all because of the anaesthetic.

The anaesthetist monitors your body functions and ensures these are working as they should during surgery. The monitoring device determines exactly how your body reacts to the surgery and anaesthetic. Medications will be administered to maintain the anaesthesia and, if necessary, your respiration and blood circulation will be adjusted.

At the end of the surgery, the anaesthetist will wake you by stopping the administration of and/or neutralising the anaesthetic drug.

SIDE EFFECTS AND COMPLICATIONS ARISING FROM ANAESTHESIA

Today, anaesthesia is very safe due to the advances in and availability of monitoring devices, modern medicines and the first-rate training of the anaesthetist and their staff.

However, despite all possible diligence, complications are possible. The occurrence of serious complications due to anaesthesia is partly dependent on the **pre-existing medical conditions** other than those necessitating the surgery, **individual risk factors** such as obesity or smoking and the response to undergoing a **difficult, prolonged and/or urgent surgery**. The more complicated the surgical procedure and anaesthesia, the greater the chance of side effects and/or complications. This is why the anaesthetist will always propose a form of anaesthesia that is most suitable for your current state of health and the planned surgery. He will also explain any possible alternatives.

In this brochure, only the most common and most relevant side effects and complications are listed below. It is simply not impossible to list every possible side effect and complication arising from general anaesthesia. Naturally, if you have any specific questions or concerns, you can contact the preoperative clinic who will then refer you to an anaesthetist.

Common side effects or complications (about 1 in 100)

- **Bruising and pain at the injection site**

Contusions and pain at the injection site for the drip may be caused by the bursting of a blood vessel due to movement or infection. This usually goes away without requiring treatment. In some cases, if you feel too much discomfort, a different insertion site for the drip can be used.

- **Nausea and vomiting**

Different factors may cause nausea and vomiting after a surgery. It is not always due to the anaesthesia. Possible causes are:

- stress
- fear
- pain
- pain medication (e.g. morphine or equivalent drug)
- certain drugs used during the anaesthesia
- specific type of surgery (e.g. keyhole surgery in the abdomen)
- history of motion sickness

Fortunately, we have modern medicines that prevent these unpleasant side-effects and/or complaints. Nausea and vomiting usually goes away within a few hours or days, whether or not with the help of medication.
If you have had earlier experiences when you were easily nauseous and/or vomited after surgery, it is best for you to make this clear during the preoperative interview. This will allow your anaesthetist to administer medication during surgery to (try to) prevent it happening.

- **Sore throat/hoarseness**

If you have a rough or tickling sensation in the back of your throat and/or a hoarse voice, it may be because of the tube inserted in your throat during surgery to regulate your breathing. This irritation will usually go away within a few days. In the meantime, you can take analgesic lozenges if needed.

- **Feeling weak or dizzy**

The anaesthetic or loss of fluid during surgery can cause low blood pressure, which may make you feel weak and/or dizzy. This can be treated by using a drip to administer fluid and/or medication.

- **Cloudy or double vision**

Cloudy or double vision after general anaesthesia may simply be the after effects of the anaesthetics, or it could be caused by the protective ointment used to protect your eyes during the anaesthesia. In both cases, this discomfort will usually go away quickly and spontaneously.

- **Chills and shivering**

Feeling chilly and shivering is caused by heat loss during the surgery, certain drugs and/or stress. This can be treated with a heating blanket (with hot air) and/or medication.

- **Headache**

Headaches may be due to the fasting prior to surgery, the anaesthesia, the surgery, a (relative) lack of fluids and/or stress. Usually, such headaches disappear spontaneously within a few hours. However, if necessary, these can be treated with medication.

- **Itching**

Itching is a side effect of potent painkillers, but can also be caused by an allergic reaction. Both cases can be treated with medication.

- **Backaches and other pains**

Even though great care is taken to place your body in a good position during the surgery, it may not prevent eventual post-surgical pain in the back or in other joints. The pain is caused by the “unnatural” position of your body during the surgery while lying on a hard table for a long time. Such discomfort usually goes away quickly, whether or not with the help of medication.

- **Confusion or memory loss**

Confusion and/or amnesia can occur after anaesthesia, especially with older patients. Light concentration difficulties, blurred vision and coordination difficulties are also possible. This is why you must not drive a vehicle, operate machinery, or make important decisions for at least 24 hours after anaesthesia. These complaints are usually temporary, but occasionally take several days or even weeks to go away.

Uncommon side effects or complications (about 1 in 1000)

- **Lung infection**

The risk of pneumonia is greater for people who smoke. This is why you should stop smoking at least six weeks before surgery. It is also possible that (undigested) food is vomited up into the trachea and then ends up in the lungs. This usually occurs if you did not fast or are overweight. The anaesthetist will take all possible preventative measures, but is prepared to deal with such events.

- **Difficulty with urinating/bladder problems**

It may be difficult to urinate, after some surgeries and anaesthesia, especially after an epidural. This is especially for men, whereas women are more likely to urinate more. Although this inconvenience usually goes away quickly, it is sometimes necessary to insert a urethral catheter as a preventive measure.

- **Muscle pain**

In some cases (e.g. emergency surgery when your stomach is not empty), the anaesthetist must administer a specific type of muscle relaxant, which may cause muscle pain after surgery. This goes away spontaneously.

- **Difficulty breathing**

Some pain medication may cause slowed breathing after a surgery. If muscle relaxants have not yet fully worn off, it may cause general muscle weakness, possibly including the muscles used for breathing. Both forms of discomfort can be treated with medication.

- **Damage to teeth, lips, or tongue**

If you bite down hard when waking up from general anaesthesia, you may damage your teeth, lips and/or tongue.
In addition, teeth may be damaged if the anaesthetist has difficulty inserting a tube in the trachea or the stomach. This is more common with people who have a small mouth opening or lower jaw, a stiff neck or their teeth are in poor condition.
Unfortunately, this cannot always be prevented despite all vigilance and precautionary measures.

- **Waking up during surgery**

The chance that you might “wake up” during surgery greatly depends on your general state of health, your medication and alcohol use, the type of surgery you are undergoing and the type of anaesthetic used. You must inform the anaesthetist beforehand if you believe you have woken up in a previous surgery.

If you are seriously ill, the anaesthetist may opt for a lighter form of anaesthesia because your body could not handle heavy anaesthesia. In these cases, it is quite possible that you may remember certain things.

If you do recall anything during anaesthesia, you should inform a nurse who will inform the anaesthetist. Appropriate support will be provided, including psychological, if needed.

- **Effects on pre-existing illness**

The surgical and anaesthesia team make sure that anaesthesia can be started in optimal conditions. For example, if you ever had a heart attack or stroke before the surgery, it might happen again during the anaesthesia. Other illnesses, such as diabetes and high blood pressure, will also be closely monitored during and after the surgery.

Specific measures are taken for patients suffering from diabetes. In this case, the anaesthetist follows specific procedures described in an internal protocol that is drawn up in consultation with the endocrinologist. Among other things, your blood sugar level will be checked on the morning of the surgery while you are in a state of fasting.

Rare side effects or complications (about 1 in 100,000)

- **Damage to the eyes**

Even though the anaesthetist takes great care to ensure nothing will injure your eyes during anaesthesia (protective eye ointment and taping of the eyes), there is a very small possibility that superficial, even painful damage to the eye (the cornea) can occur. This damage is usually temporary and can be treated with appropriate eye drops and/or ointment (in consultation with an ophthalmologist).

- **Severe hypersensitivity (allergic reaction) to drugs**

During the anaesthesia and the surgery, your body will come into contact with all sorts of substances that are foreign to it: sleep medication, pain medication, muscle relaxants, antibiotics, intravenous fluids, the latex (rubber) of the gloves of the surgeons, and so on. You might be allergic to one of these substances without knowing it.
The reaction may be slight causing problems, such as skin rash, asthma, or a decrease in blood pressure.
However, on rare occasions these substances can cause a severe reaction, called “anaphylactic shock”.
This may be life-threatening.
If this occurs, the anaesthetist will do everything possible to stop an allergic reaction and treat the effects of it.
Prior to the surgery, you must inform the anaesthetist **completely** about any known allergy for yourself and/or a next of kin.
Of course, you can do so during the preoperative consultation.

- **Embolism**

During and/or after a surgical procedure, it is possible to develop **blood clots** in the veins, especially when arms and legs have not been moved for a (long) period of time. An embolism is when a blood clot hinders the flow of blood. This can be dangerous if the blood clot prevents the flow of blood, and thus oxygen, to important organs, such as the lungs or brain. The risk of a blood clot is increased by the following: a history of embolisms, varicose veins, certain cancers, birth control (especially in combination with smoking), obesity, coagulation disorders, etc.
Blood thinners are administered before and/or after surgery to help prevent the formation of blood clots. If an embolism does occur, a higher dose of blood thinners will be administered.
Fat embolisms are also possible. These usually occur in large bones, for instance, with a fractured thigh bone. Such embolisms may be dangerous. Unfortunately, there is no 'fat dissolving' drug. In this case, medication will be administered to support the functioning of the damaged organ.
Other embolisms, such **air or gas embolisms**, are extremely rare, but are especially dangerous when pre-existing heart disease is present.

- **Nerve injury**

The body must be placed in a specific position for certain surgeries, which may cause a nerve and/or blood vessel in the arm or leg to be pinched. Among other things, this may cause temporary tingling and weakness. Very exceptionally, it may cause permanent paralysis and/or permanent sensory disorders.

- **Delayed waking or not waking up after general anaesthesia**

The recovery of consciousness is gradual and is determined by how the anaesthetic drugs wear off. When the administering of modern anaesthetic drugs is stopped, these usually wear off quite quickly. The anaesthetist monitors the quality of the 'recovery of consciousness' and decides when it is best to wake you up.
The most common cause of **delayed** awakening is the prolonged use of anaesthetic drugs or tranquillisers.
Patients who do **not** recover consciousness after general anaesthesia have suffered a serious complication, such as, a stroke or brain damage. The chance of you experiencing this complication during surgery is extremely low and it is certainly not increased because you need general anaesthesia. If you are a patient already at risk of a stroke, surgery may indeed increase this risk, especially when certain procedures are very stressful on the blood circulation in the brain.

- **Death**

The risk of you dying during anaesthesia is extremely low. It depends primarily on your medical history, the disease requiring the surgery and the type and urgency of the surgery.

(LOCO) REGIONAL ANAESTHESIA

With regional anaesthesia, a part of the body is temporarily anaesthetised and made numb and/or motionless, for example, the entire lower body or an arm.
A regional anaesthetic ensures that you experience **no pain** in the area that the surgeon operates on. However, it is not always the case that all **sensation** will disappear. In some cases, you may still feel that you are being touched.
Nerves that feel pain often follow the same path as nerves that cause muscles to move. Anaesthesia also temporarily blocks these nerves. The muscles become temporarily **paralysed** and do not work.

Large nerve bundles run from the spinal cord in your back to the lower body and legs. An **epidural** is used to anaesthetise these nerves. The epidural blocks pain signals being sent to the brain.

It is also possible to anaesthetise a **specific nerve or a nerve bundle**. For example, an arm can be temporarily numbed by injecting an anaesthetic around the nerve bundle (plexus) that goes to the arm in either the armpit or in the neck.

After regional anaesthesia, nerve function gradually **recovers**. Full recovery of function may take hours (with the benefit of longer post-operative pain relief). At a certain moment, you will be able to move the involved part of your body again, sometimes even without the sensation of feeling.
Being able to move the body part does not mean that you have fully regained your strength in it. Before using the leg or arm that was anaesthetised for support, you should first consult with a nurse or a doctor.

A. THE EPIDURAL

Before an epidural (spinal anaesthesia) is given, you will be connected to a monitoring device to measure your blood pressure, heart rate and so on. A thin needle (IV or cannula) is then inserted into the arm.

Usually, the epidural needle is not more painful than a normal injection. When the anaesthetic is administered, you will first notice your legs becoming warm and then tingle. Your legs become numb and limp, as will the rest of your lower body.

Depending on the drug used, it can take one to six hours for the anaesthesia to completely wear off. As the anaesthesia wears off, it is possible you may experience pain. It is best to not wait too long before you ask the nurse for a painkiller.

SIDE EFFECTS DURING AN EPIDURAL

- **Insufficient pain relief**

There is a chance that the anaesthesia will not work sufficiently for you. In this case, the anaesthetist can administer more anaesthetic. In other cases, it is better to use a different form of anaesthesia, such as general anaesthesia. If possible, the anaesthetist will discuss this with you.

- **Low blood pressure and/or slow heartbeat**

A possible side effect of an epidural is low blood pressure and/or slow heartbeat. The anaesthetist is aware of this and will take the necessary preventative and/or treatment measures.

- **Expanding upwards**

Occasionally, the area that is anaesthetised will expand upwards more than was intended. You will notice this by a tingling in your hands. You might find it more difficult to breathe. If needed, the anaesthetist will take measures to assist you in breathing.

SIDE EFFECTS AND COMPLICATIONS AFTER AN EPIDURAL HAS WORN OFF

In this brochure, only the most common and most relevant side effects and complications are listed below. It is practically impossible to list every possible side effect and complication arising from an epidural. Naturally, if you have any specific questions or concerns, you can contact the preoperative clinic who will then refer you to an anaesthetist.

Common side effects or complications

- **Back pain**

After an epidural, you might experience back pain. However, this has nothing to do with the epidural itself. It is due to such factors as the position you were lying in during the surgery. Your body is placed in an 'unnatural' position so that the surgeon has a good view and access to the area to be operated on. Moreover, the back muscles are completely relaxed during the anaesthesia (both after an epidural and after general anaesthesia). This leads to abnormal curvature of the spine, which can cause back pain. The back muscles also completely relax with general anaesthesia. So abnormal curvature of the spine is a possibility, which can cause back pain. Back complaints usually disappear within a few days.

- **Headache**

After an epidural, you might have a headache. This headache is different than an 'ordinary' headache because the pain will lessen if you lie down and worsens when you stand up.
This headache usually goes away spontaneously within a week. If this complaint is so severe that you have to stay in bed, you should contact the anaesthetist. He will discuss what options are available to speed up your natural recovery.

- **Itching**

Itching is a side effect of injected drugs, but it can also be caused by an allergic reaction.
Both cases can be treated with medication.

Uncommon side effects or complications

- **Hypersensitivity reactions**

Occasionally, a person will be hypersensitive to the anaesthetics used. This can manifest as a feeling of tightness in the chest and/or as a rash and/or low blood pressure. It is usually quite possible to treat these complaints.

- **Toxic reactions**

The nerves that need to be anaesthetised often pass near small and large blood vessels. The anaesthetic may enter the bloodstream. You will notice this by experiencing a metallic taste, tingling around the mouth, feeling sleepy, cardiac arrhythmias, twitching and possibly unconsciousness. It is usually quite possible to treat these complaints.

- **Difficulty urinating**

The anaesthetic in an epidural also reaches the bladder. This may make it more difficult to urinate. This may make it necessary to use a catheter to empty the bladder.

- **Temporary neurological symptoms**

After an epidural, you may experience temporary back pain that radiates into your buttocks and/or legs. Such complaints can easily be treated with medication.

Rare side effects or complications

- **Infection**

On rare occasions, even though an epidural is performed under surgically sterile conditions, an infection may occur at the site where the epidural was inserted or even in the central nervous system (e.g. epidural abscess, meningitis, etc.). The consequences depend on the severity of the infection and the type of pathogen.

- **Nerve damage**

Nerve damage caused by directly puncturing the nerve during an epidural is very rare. Symptoms will vary, ranging from tingling, skin sensitivity disorders, nerve pain or even paralysis of the limb innervated by the nerve (bundle).
The nerve damage is usually temporary. Only in rare cases, is it permanent.

- **Death**

The risk of you dying due to an epidural is extremely low. It depends primarily on your medical history, the disease requiring the surgery and the type of surgery.

B. ANAESTHETISING A SPECIFIC NERVE OR NERVE BUNDLE (PERIPHERAL NERVE BLOCK)

The arm or leg (or a part of the limb) can be numbed by injecting an anaesthetic around the nerve or nerve bundle (plexus) that goes to the arm or leg. The injection is given in either the armpit, in the neck, at the back of the knee, in the groin area, and so on, depending on which nerve (bundle) needs to be anaesthetised.

The anaesthetist will ask you specific questions that are important for deciding whether a particular nerve block is suitable for you.
These questions are about whether you have coagulation disorders (e.g. take blood thinners or have a blood clotting disorder), lung problems, diabetes, pre-existing nerve disorders, paralysis or sensitivity disorders, etc.

The nerve block is performed while you are awake. This allows you to indicate whether you experience pain during the injection or during the administration of anaesthesia. If necessary, the anaesthetist will administer a mild sedative, so that you will be comfortable when the nerve block is administered.

Moreover, for this type of anaesthesia, the anaesthetist uses a nerve stimulator and/or an ultrasound device. The nerve stimulator stimulates the nerve with a low electric current. You notice that the affected body part moves involuntarily (e.g. arm, hand, leg or foot). When the needle is in the right place, the anaesthetist will inject the anaesthetic. The anaesthetic needs 15 to 30 minutes to achieve the optimal effect. You will notice that the body part begins to tingle and feel warm. Feeling will disappear and you might not be able to move the anaesthetised body part.

When the anaesthesia wears off, movement and feeling will return. Depending on the drug used, it can take a few hours for the anaesthesia to completely wear off. As the anaesthesia wears off, it is possible you may experience pain. It is best to not wait too long before you ask the nurse for a painkiller.

SIDE EFFECTS AND COMPLICATION FROM ANAESTHETISING A SPECIFIC NERVE OR NERVE BUNDLE

Common side effects or complications

- **Insufficient pain relief**

There is a chance that the anaesthesia will not work sufficiently for you. In this case, the anaesthetist can administer more anaesthetic. In other cases, it is better to use a different form of anaesthesia, such as general anaesthesia. If possible, the anaesthetist will discuss this with you.

Uncommon side effects or complications

- **Hypersensitivity reactions**

Occasionally, a person will be hypersensitive to the anaesthetics used. This can manifest as a feeling of tightness in the chest and/or as a rash and/or low blood pressure. It is usually quite possible to treat these complaints.

- **Toxic reactions**

The nerves that need to be anaesthetised often pass near small and large blood vessels. The anaesthetic may enter the bloodstream. You will notice this by experiencing a metallic taste, tingling around the mouth, feeling sleepy, cardiac arrhythmias, twitching and possibly unconsciousness. It is usually quite possible to treat these complaints.

- **Nerve damage**

Peripheral nerve injuries after regional anaesthesia are very rare. The frequency of such occurrences is strongly dependent on the type of peripheral nerve block. The risk of a nerve injury increases if you suffer from certain diseases, such as diabetes, or if you consume alcohol (excessively).

In order to prevent nerve damage as much as possible, the anaesthetist uses a nerve stimulator and/or ultrasound to locate the nerve (bundle) and inject the anaesthetic. Despite these safety measures, there is a chance of nerve damage. Symptoms will vary, ranging from tingling, skin sensitivity disorders, nerve pain, loss of strength or even paralysis of the limb innervated by the nerve (bundle).

Most symptoms/injuries are temporary and full recovery can take a few days to months.
According to the medical literature, permanent nerve damage only occurs in 0.015% to 0.09% of all cases. The risk of permanent nerve damage when using a catheter (to anaesthetise the nerve (bundle) for several days) is also extremely low (0.21%).

- **Damage to surrounding structures**

Sometimes, the structures located in the vicinity of the nerve (bundle) to be anaesthetised are punctured (e.g. blood vessels, muscles, etc.). This may cause some discomfort, such as, muscle stiffness or a bruise at the site of injection. These complaints are usually temporary in nature.

Rare side effects or complications

- **Infection**

The risk of infection after a single anaesthetising of a nerve (bundle) is very small because the anaesthetist always uses surgical sterility measures (at least a cap, mask, sterile gloves, sterile disinfection of the skin and sterile covering of the site of injection). The risk of infection when using a catheter (to anaesthetise the nerve (bundle) for several days) is also extremely low (0% - 3.2%). This risk is even lower if the catheter is in place for less than 72 hours.

- **Pneumothorax**

A pneumothorax might occur with certain types of peripheral nerve blocks of an upper limb when the anaesthetised nerve (bundle) is close to the pulmonary membranes in a lung. Depending on severity, it may or may not be necessary to insert a drain between the lung membranes.

- **Death**

The risk of you dying due to a peripheral nerve block is extremely low. It depends primarily on your medical history, the disease requiring the surgery and the type of surgery.

AFTER SURGERY

WAKING UP IN THE RECOVERY ROOM

After surgery, you will be taken to the **recovery room**. This is a separate room near the operating room. You remain connected to the monitoring device and under the supervision of your anaesthetist and a team of specialised nurses until the anaesthesia has sufficiently worn off. Usually, you receive extra oxygen supplied via a mask or nose prongs (i.e. a nasal cannula).

A stomach or bladder catheter may be necessary for some surgeries. Such catheters are removed when your organs are functioning normally again.

Shortly after the surgery, you may still feel sleepy and occasionally doze off. This is completely normal. Once the anaesthetic has worn off, you may feel pain at the site of the surgery. Of course, pain medication can be administered as needed.

Many people are thirsty after surgery. If you are allowed to drink, do so carefully. If you are not allowed to drink, the nurse can wet your lips to make you feel as comfortable as possible.

Once you are sufficiently awake, or the epidural or peripheral nerve block has sufficiently worn off, you will be taken back to your room on the ward. To prevent falls, you must not get out of bed without the help of a nurse.

If you are allowed to go home on the same day, make sure you are accompanied by an adult and that you are not left alone at home. Organise transport by taxi, or your car, but do not drive yourself! Take it easy at home for the first 24 hours after the surgery. Eat and drink easily digestible foods. Do not smoke or drink alcohol. Do not operate machinery and make no major decisions for at least 24 hours after receiving an anaesthetic.

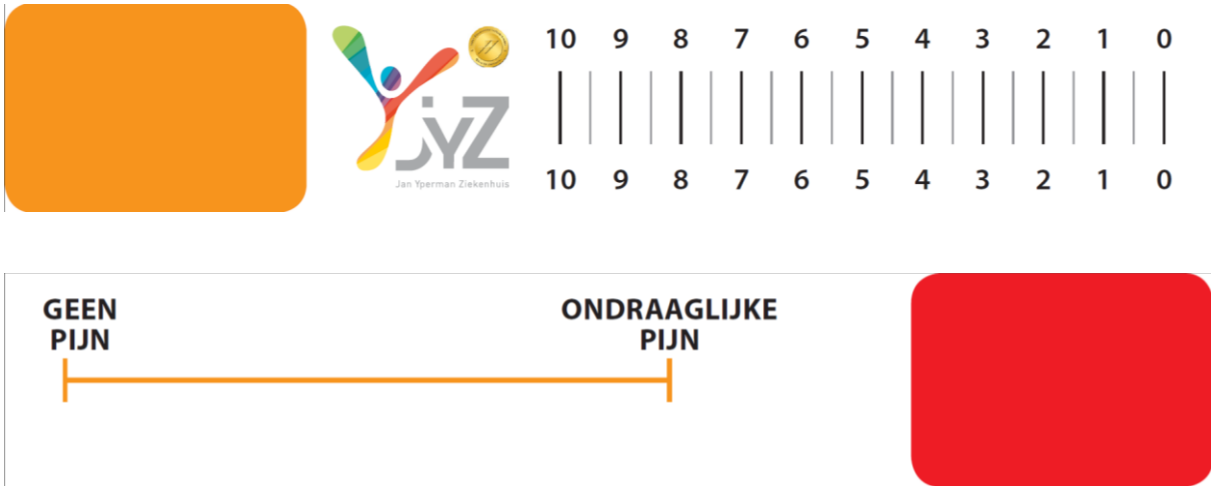
It is quite normal to not feel fit after surgery. This is not just from the anaesthesia. Surgery has a significant impact on the body. The body needs to recover in its own time. Recovery takes time.

INTENSIVE CARE

In some cases, you may need to remain connected to a special monitoring device because the nature of the surgery requires a **longer period of intensive care** (e.g. after major surgery, or because of a condition that increases the risk of complications). In this case, you will be taken to the intensive care unit where anaesthetists and a team of specialised nurses will closely monitor your recovery.

POST-OPERATIVE PAIN RELIEF

You may experience pain after surgery, which of course we will try to lessen. A pain scale is used to estimate the severity of the pain. '0' means no pain and '10' means the worst pain possible.



You can choose between two methods of pain relief:

1. Pain medication that you take orally (by mouth) or pain medication injected into a muscle or via an IV (a thin needle known as a cannula).

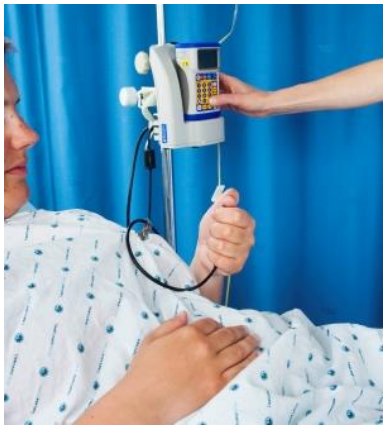
2. Pain relief via a pain pump (PCA = "patient controlled analgesia"). In this form of pain relief, the pain medication is administered via a pain pump that you can operate within the preset safety limits. You do not have to wait for the nurse or the doctor to administer painkillers. This system can be used during your recovery to allow you to control your pain anaesthetic quickly and more precisely.

   There are three types of pain pumps, which depend on the method of administration:

   - PCIA (patient-controlled intravenous analgesia): here, the pump is connected to the existing drip (at the arm or neck).

   - PCEA (patient-controlled epidural analgesia): here, the pump is connected to a thin catheter that was inserted under local anaesthesia in the epidural space (via the epidural) before you received the general anaesthetic.

   - PCRA (patient-controlled regional analgesia): here, the pump is connected to a thin catheter that has been inserted under local anaesthesia, before the general anaesthetic, at the site of the nerve or nerve bundle that would transmit the pain from the surgery to the brain (for example, in the neck, armpit, groin, back of the knee, etc.).



Ahead of time, the anaesthetist will determine the dosage (amount) of pain medication and the time interval at which it can be given in advance to prevent an overdose.

A simple press of a button will allow you to administer a dose of the pain medication.

Keep in mind that the effect (pain relief) can take 5 to 15 minutes to go into effect. So it is best not to wait until the pain is too severe to press the button.

You should also not be afraid that you will receive too much pain medication. Remember that the pump is set up so that an overdose is not possible.

Moreover, a member of the “pain team” will visit you each day and check whether the pain is controlled sufficiently. If not, the anaesthetist will be informed, who can adjust the pain medication as needed. Of course, the nurses in the ward will monitor your pain and need for pain relief.

The pain pump and the catheter will be removed when the pain is sufficiently reduced and can be treated with simpler analgesics. The pain nurse or doctor knows from their training and experience how long it is best to use the PCA pump. In addition, attention is given to individual differences and needs.

SIDE EFFECTS AND COMPLICATIONS DUE TO A PCIA, PCEA OF PCRA

In this brochure, only the most common and most relevant side effects and complications are listed below. It is practically impossible to list every possible side effect and complication due to pain pumps. Naturally, if you have any specific questions or concerns, you can contact the preoperative clinic who will then refer you to an anaesthetist.

The following side effects or complications are possible when using a PCIA:

- **Nausea and vomiting**
- **Itching**
- **Dizziness, fatigue**
- **Low blood pressure or slow heartbeat**
- **Difficulty with breathing**

The following side effects or complications are possible when using a PCEA:

- **Itching**
- **Headache**: If you experience a bad headache mainly located in the front and back of your head when getting up from a lying position, possibly also with ringing in your ears, double vision, nausea and vomiting, it is best to contact the preoperative clinic who will inform the anaesthetist. He will contact you and propose a suitable treatment.
- **Numbness and/or muscle weakness in the lower limbs**
- **Back pain:** The cause of this is not always clear. In any case, the back muscles relax with an epidural. So abnormal curvature of the spine is a possibility, which can cause back pain.
- **Systemic toxicity:** If local anaesthetic is accidentally injected into a blood vessel (instead of in the epidural space), you may experience a metallic taste, feel generally unwell and in the worst case, experience convulsions. However, this occurs very rarely.
- **Nerve damage**: this may include persistent tingling, muscle weakness or paralysis of the lower limbs.

The following side effects or complications are possible when using a PCRA:

- **Itching**
- **Numbness and/or muscle weakness in the anaesthetised limb**
- **Systemic toxicity:** If local anaesthetic is accidentally injected into a blood vessel (instead of in the nerve or nerve bundle), you may experience a metallic taste, feel generally unwell and in the worst case, experience convulsions. However, this occurs very rarely.
- **Nerve damage**: this may includes persistent tingling, muscle weakness or paralysis of the anaesthetised limb.

COST OF AN ANAESTHETIC

Detailed information about the cost of an anaesthetic can be found on our website www.yperman.net. Or, you can contact the billing department of the Jan Yperman Hospital.
You will find the reception area near the general reception.

Please sign the last page and bring it with you on the day of the procedure.

INFORMED AGREEMENT - anaesthesia

Name: .....

PATIENT STICKER

Date of birth: .....

I, the undersigned.....

Address .....

.....

give my consent to the anaesthesiologist to use anaesthesia.

- I confirm that I have received the 'Anaesthesia' patient brochure.
- I confirm that I could speak to an anaesthesiologist before the operation.
- I understand that on the day of the operation, the anaesthetist may decide to use another anaesthetic technique for medical reasons and after consultation with the patient.
- **I know that it is not permitted to eat or drink at least 6 hours before the examination, operation and/or anaesthesia.**
- I confirm that I have been already advised to stop smoking now.
- I understand that rings, jewellery, piercings, dentures, eyeglasses, contact lenses and hearing aids must be removed prior to surgery.
- I understand that the operation may be postponed to another date.

Additional agreements for day hospital patients:

- I will not drive a vehicle (car, motorcycle) or ride a bike in the first 24 hours after my operation, nor operate machines or sign important forms.
- I will not drink any alcoholic beverages for 24 hours after the treatment.
- Upon discharge, an adult will pick me up and someone will be present at my home during the first 24 hours after the operation.
- I will be able – after being discharged from the hospital – to contact my family doctor or the hospital (by telephone).
- I agree that I may have to stay overnight or an even longer period of time in the hospital, if this should be required on medical grounds.

- I **give / do not give* my permission for my medical records to be passed on to my family doctor or his / her substitute. *(*cross out as appropriate)*

Planned anaesthetic technique:

❑ General anaesthesia
❑ Neuraxial block
❑ Peripheral nerve block

Other:❑ ……

Pain technique:

❑ Patient-controlled intravenous analgesia (PCIA)
❑ Patient-controlled epidural analgesia (PCEA)
❑ Peripheral nerve block single shot analgesia
❑ Patient-controlled neural anaesthesia (PCRA) plexus catheter
❑ ……

Date: …… / …… / …….. **Time [4]:** ……

Name of the patient or legal representative: ……

The undersigned is (*tick as appropriate):

□ patient
□ appointed by the patient representative[1]
□ legal guardian[2]
□ cohabiting partner
□ adult child
□ parent
□ adult brother / sister
□ doctor[3]

Signature

date: …../…../….

Time[4]: ……

Doctor's name/signature:

[1] Is in possession of a written mandate.

[2] Can present an authorisation from the justice of the peace.

[3] In urgent cases or if one of the above is missing.

[4] Time must be filled in if IC is obtained on the day of the procedure.