



## Jackson Rees Department of Anaesthesia

### Consent for General Anaesthesia

#### Information for parents and carers

This leaflet aims to provide you with the information you need when deciding whether or not to give consent for general anaesthesia.

#### Benefits of general anaesthesia

General anaesthesia allows a vast number of painful or uncomfortable operations and investigations to be performed in a safe and acceptable way. Under general anaesthesia a child is unconscious and has no awareness of the procedure. Another important function of general anaesthesia is pain relief.

The anaesthetist will monitor a child's condition throughout the anaesthetic to ensure their safety.

#### Alternatives to general anaesthesia

There are a small number of operations or investigations that can be done under local anaesthetic. The surgeon or physician will be able to advise you if this is an option.

For most children's operations or investigations done under general anaesthesia the only alternative is not to have the operation or investigation.

#### Common side-effects following general anaesthesia

- **Feeling or being sick (vomiting)**

About ten children out of every 100 who have had a general anaesthetic will feel sick or vomit <sup>(1)</sup>. Medicines can be given to treat this. The risk is higher in older children.

- **Confusion and agitation on waking up**

About ten children out of every 100 who have had a general anaesthetic will be very restless and confused on waking up <sup>(2)</sup>. With this restlessness and confusion they may cry and be difficult to comfort. This usually only lasts for a few minutes (less than 10 minutes) <sup>(2)</sup>, but it can last for several hours.

- **Sore throat**

About 12 people out of every 100 who have a general anaesthetic will have a sore throat that lasts more than 24 hours <sup>(3)</sup>.

- **Headache**

About 17 people out of every 100 who have had a general anaesthetic will have a headache <sup>(4)</sup>.

- **Dizziness**

About 18 people out of every 100 who have a general anaesthetic will feel dizzy after waking up <sup>(4)</sup>.

- **Pain**

Between five and ten people out of every 100 who have had a general anaesthetic for surgery will have severe pain after the operation despite medicines given to prevent this <sup>(5)</sup> <sup>(6)</sup>. If this is the case for a patient the nursing staff and doctors will take steps to try and treat the pain.

## Risks and complications of general anaesthesia

The following information describes the rare but serious complications of general anaesthesia.

### Death

Very rarely a complication of general anaesthesia causes the death of a person. For every million anaesthetics, about ten people die directly as a result of an anaesthetic complication<sup>(7)(8)(9)</sup>. The risk of death is *ten in-a-million*. These numbers are averages for large groups of patients of all ages having an anaesthetic.

There are many complications of general anaesthesia that can result in the death of a person.

Recent studies have shown the commonest reasons are:

- a failure to adequately replace blood lost through bleeding,
- injury to the lungs caused by stomach acid coming up the food-pipe (oesophagus) and then going down the wind-pipe (trachea) and into the lungs,
- failure to get enough oxygen into the blood because of a blocked airway, and
- failure to breathe adequately because of the effect of medicines given to the person (often to relieve pain)<sup>(7)(8)</sup>.

### Cardiac Arrest

Cardiac arrest means that the heart is not pumping blood to the rest of the body. It may be possible to treat this and get the heart pumping again. The risk of cardiac arrest due to an anaesthetic problem is *100 in-a-million*<sup>(9)(10)(11)</sup>.

A study of anaesthesia related cardiac arrest in children found that 61% recovered without injury, 5% suffered permanent harm, and 28% died<sup>(12)</sup>.

There are many anaesthetic complications that may result in cardiac arrest. The most common causes are

- failure to adequately replace blood lost through bleeding,
- blockage of the airway caused by spasm of the vocal cords,
- very high levels of potassium in the blood after blood transfusion or certain anaesthetic medicines,
- the direct effect of anaesthetic medicines on the heart<sup>(12)</sup>.

### Unplanned admission to the Paediatric Intensive Care Unit (PICU)

Some complications of anaesthesia may require admission to PICU for further treatment. This may involve a patient being kept asleep and supporting their breathing with a breathing machine (ventilator).

The risk of an unplanned admission to PICU following an anaesthetic complication is *370 in-a-million*<sup>(13)</sup>.

The causes of unplanned admission to PICU as a result of anaesthetic complications include;

- overdose of anaesthetic medicines,
- other anaesthetic medicine related errors, and
- injury to the lungs caused by stomach acid going down the wind-pipe into the lungs<sup>(13)</sup>.

Many anaesthetics require a plastic tube be placed in the wind-pipe (trachea) to support breathing. There may be narrowing of the wind-pipe due to swelling after the plastic tube is removed. This may also require unplanned admission to the PICU<sup>(14)</sup>.

### **Aspiration of stomach contents**

This is when the stomach juices (acid) and partially digested food from the stomach has come up the food-pipe (oesophagus) and gone down the wind-pipe (trachea) and into the lungs. This can injure the lungs and make it difficult to get enough oxygen into the blood.

The risk is *780 in-a-million*<sup>(11)</sup>. However, the risk of death, brain damage or unplanned intensive care admission due to aspiration of stomach contents is *eight in-a-million*<sup>(15)</sup>.

### **Pulmonary Oedema**

Pulmonary oedema is fluid in the lungs which makes it difficult to get oxygen into the blood. It may be seen after an obstruction (blockage) of the airway (passages that carry air from the mouth or nose to the lungs) has been removed. Such a blockage may be caused by spasm of the vocal cords (voice-box). We call this laryngospasm.

The risk of this post-obstructive pulmonary oedema is *five in-a-million*<sup>(15)</sup>.

### **Irregular or slow heartbeat (arrhythmia)**

The risk of an abnormally slow or irregular heart beat is *600 in-a-million*<sup>(10)</sup>. The anaesthetist will be monitoring your child's heart rate and rhythm throughout the operation and has been trained to manage problems with heart rate and rhythm.

### **Coma (failure to regain consciousness)**

This complication is the result of severe injury to the brain and is not due to the anaesthetic medicine itself. It may be the result of the brain not getting enough oxygen or glucose (blood-sugar). The risk of persistent coma with failure to wake up at 24 hours after the anaesthetic is *50 in-a million*<sup>(7) (16)</sup>.

### **Allergic reaction**

Allergic reactions can occur to medicines, latex (often used for surgical gloves), or the solutions used to clean the skin before surgery. Allergic reactions can be life-threatening. The anaesthetist is trained to recognise and treat these reactions. The risk of a severe allergic reaction (called anaphylaxis) is *160 in-a-million*<sup>(11)</sup>.

### **Malignant hyperthermia reaction**

Malignant hyperthermia is a very rare genetic condition (it runs in families). When a person with malignant hyperthermia receives certain anaesthetic medicines their muscles heat up tremendously. The muscle cells may be damaged. The result of the heat and muscle damage can be life-threatening. The anaesthetist is trained to recognise this and treat it. For those who are known to have this condition it is possible to avoid the anaesthetic medicines that trigger the reaction. The risk of this reaction is *13 in-a-million*<sup>(17)</sup>.

### **Awareness**

Awareness describes the situation where a patient who is intended to be unconscious under general anaesthesia is awake. The vast majority of anaesthetics do not require medicines that relax the muscles and make it impossible to move. Your child's anaesthetist will also be monitoring how much anaesthetic medicine is being given to ensure that awareness is very unlikely. The risk of awareness is *51 in-a-million*<sup>(18)</sup>.

### **An error in giving a medicine**

It is possible to make mistakes when giving medicines. The wrong medicine may be given, a necessary medicine may not be given, or the wrong dose may be given. Medicine may be given by the wrong route (for instance a medicine that should have been used as a local anaesthetic to

numb a nerve could be given into a vein). The outcome of such an error can vary from no harm to life-threatening. The risk of such an error is *500 in-a-million*<sup>(11)</sup>.

### **Equipment failure**

It is possible for a piece of equipment to malfunction and fail. Essential equipment is checked on a daily basis before giving an anaesthetic. The risk of equipment failure is *1300 in-a-million*<sup>(10)</sup>.

### **Eye injury**

Fewer tears are produced when people are anaesthetised and not everyone's eyes are completely shut when they are anaesthetised. The sensitive lining at the front of the eyeball (cornea) can dry out and get injured. We take great care to protect the eyes and tape them shut. For some long procedures we also put a lubricating ointment in the eye. The risk of eye injury is *560 in-a million*<sup>(19)</sup>. The risk of loss of vision (partial or complete blindness), that is still present 30 days after an anaesthetic for an operation that did not involve the eyes or brain, is *8 in-a-million*<sup>(20)</sup>.

### **Damage to the teeth or dental work such as crowns or bridges**

Your anaesthetist will take great care to protect your child's teeth. Nevertheless teeth and dental work can be damaged. Your child may need a plastic tube in the airway or wind-pipe to help with breathing when they are anaesthetised. Teeth can be damaged either as this tube is put in or taken out. It may be safest to remove very loose milk teeth when your child is anaesthetised. Your anaesthetist will ask about loose teeth and discuss this with you. The risk of damaging the teeth is *100 in-a million*<sup>(10)</sup>.

### **Nerve injury**

Nerves may be injured by pressure or stretch. This may be more likely for very long operations when a patient is lying in one position for a very long time. Great care is taken to position a child avoid these injuries. The operating team will also place padding to avoid injuries from pressure (pressure sores). In adult patients, the risk of this sort of injury, involving the ulnar nerve that runs behind the elbow, is *4660 in-a-million*<sup>(21)</sup>. The risk appears to be less in children.

### **Summary**

Most children can be safely anaesthetised. However, complications do happen.

Your child's anaesthetist is highly trained to:

- deliver the safest possible anaesthetic,
- avoid complications where this is possible, and
- detect and treat complications should they occur.

Your child's anaesthetist will also try to prevent or treat the side effects of anaesthesia and surgery such as vomiting and pain.

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This fact sheet only gives general information. You must always discuss the individual treatment of your child with the appropriate member of staff. Do not rely on this leaflet alone for information about your child's treatment.

This information can be made available in other languages and formats if requested.

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PIAG 6