

Risks associated with your anaesthetic

## Section 8: Awareness during general anaesthesia

**W**hen you have a general anaesthetic, you become unconscious. The anaesthetist decides how much anaesthetic you need to keep you unconscious during your operation. Awareness is when you become conscious during your operation and can remember things that happened. This is an uncommon event, but it can be very distressing. This article tells you more about how it can occasionally happen, what steps are taken to prevent it and what to do if you think it has happened to you.

### What is awareness?

Awareness is becoming conscious during some part of your operation. The majority of patients who are aware do not feel any pain, but may have memories of events in the operating theatre.

Dreaming around the time of an operation is very common (6 in 100) but this is not awareness.<sup>1</sup> Some patients recall events from the recovery room after their operation and mistakenly believe them to be memories from during the surgery.

### How and why does it happen?

You are not receiving enough anaesthetic to keep you unconscious.

Anaesthetics have side effects that increase as more anaesthetic is given. These include falling blood pressure and reduced breathing. Your anaesthetist is present throughout the whole operation. He/she uses clinical judgement and experience to ensure that you are receiving enough anaesthetic to keep you unconscious, but not so much that you suffer serious side effects.

Anaesthetists sometimes use muscle relaxing drugs as part of the anaesthetic. These drugs stop your breathing and your anaesthetist will use a ventilator (breathing machine) to do the breathing

for you. For some operations these drugs are essential as they allow the surgeon access to parts of your body that he/she could not reach without muscle relaxants. These drugs also allow lighter levels of anaesthetic to be used, and this reduces dangerous side effects. Muscle relaxants also prevent movement, and your anaesthetist uses information coming from monitors (heart rate, blood pressure, anaesthetic gas levels etc) to judge whether you are unconscious or not.

Awareness occurs if your anaesthetist misjudges the amount of anaesthetic needed to keep you unconscious. It can also happen if the equipment that delivers the anaesthetic to your body is malfunctioning, or there may be a combination of these.

### How likely is it?

Careful studies, which include interviews with many thousands of patients, have been done. Most studies<sup>1,2</sup> suggest that between 1 and 2 people per 1,000 anaesthetics experience some kind of awareness. Only a third of these people feel pain, although the experience can still be very distressing. However, a recent survey<sup>3</sup> of over 80,000 patients, published in 2007 found that only 1 in 14,000 people having a general anaesthetic experience awareness. Most of the cases they found

happened to people who had certain risk factors. If no risk factor is present, the risk was 1 in 42,000 anaesthetics. Awareness is more likely, (but still rare) if you are having open heart surgery, obstetric surgery (childbirth) or surgery after a major accident.

### **What does it feel like if it happens to me?**

Over half of aware patients recollect sounds and conversations within the operating theatre.<sup>1,2,4</sup> You may be unable to move and have feelings of anxiety and panic.<sup>1,4</sup>

Approximately a quarter of aware patients are aware of the insertion or presence of the endotracheal (breathing) tube in their throats.<sup>1,4,5</sup>

Pain is experienced by about one third of aware patients.<sup>1,2,4,5</sup>

### **Are there any long-term effects?**

Many people who have been aware during a general anaesthetic suffer long-term effects.<sup>2,4</sup> These include anxiety, fear of anaesthesia, sleep disturbances, nightmares, flashbacks and in some cases post-traumatic stress disorder.

### **If I think I have been aware, what should I do?**

Your anaesthetist should be informed as soon as possible. You can ask your nurses, or, if you are already at home, your GP, to contact him/her. Your anaesthetist will want to know about it, and you will benefit from talking about it and understanding how it might have happened.

Studies have shown that some people do not realise that they have been aware until several days later. You can still report the fact that you think you have been aware, even days later.

The anaesthetist who conducted the anaesthetic will talk to you. He/she will ask you to explain exactly what you remember.

He/she will talk to you about your memories and try to work out if you have been aware or if your memories are dreams or relate to things that happened while your anaesthetist is allowing you to wake up. If you have been aware when you should not have been aware, your anaesthetist will explain to you how this might have happened. You will be offered counselling. Help is available on the internet.<sup>6</sup>

### **How can awareness be avoided totally?**

If you do not have a general anaesthetic, then you cannot have unintentional awareness. Some operations can be carried out using a local or regional anaesthetic to numb part of the body. You will not need a general anaesthetic and you will be awake during the operation. You can find out more about these anaesthetics in the booklet 'Anaesthesia Explained' on the Royal College of Anaesthetists website ([www.rcoa.ac.uk](http://www.rcoa.ac.uk)). Your anaesthetist will be able to tell you if these anaesthetics are suitable for you.

You can choose to have sedation with a local or regional anaesthetic. Sedation is medicine that makes you drowsy and mentally relaxed, but not unconscious. You will probably remember events in the operating theatre.

### **How is awareness prevented during a general anaesthetic?**

At the start of the day, your anaesthetist will check all equipment to ensure it is functioning properly. Misconnections and disconnections of the breathing tubes can cause awareness. All anaesthetists are trained to spot these problems, hopefully before awareness occurs.

Before the start of your anaesthetic you will be connected to a monitor that tells the anaesthetist how you are responding during the operation. Another monitor

will usually be used which shows the amount of anaesthetic in your body. This monitoring equipment helps the anaesthetist judge whether you are having the right amount of anaesthetic.

Monitors, which try to detect awareness by analysing brain activity, have been developed. These have been studied in a number of trials of varying size and quality.<sup>7,8</sup> The results of the different trials do not agree. At the present time these monitors are not in routine use in British hospitals nor are they generally recommended for routine use in America.<sup>9</sup>

### **If I have had an episode of awareness, is it more likely to happen during my next anaesthetic?**

Yes, you are at a slightly increased risk during your next anaesthetic. It is very important you tell your anaesthetist about your previous episode of awareness. He/she will try to ensure that you receive adequate doses of anaesthetic throughout surgery. If available, he/she may make use of additional monitors that help to decrease the likelihood of awareness. Many hospitals in this country do not yet provide this kind of equipment.

### **Are there any circumstances in which awareness is more or less likely?**

If you are very ill, awareness is more common.<sup>1</sup> Very ill patients have a low blood pressure and anaesthetics can decrease the blood pressure further which may cause harm (e.g. heart attack or stroke). The anaesthetist may use a lighter general anaesthetic to reduce the risks to you. However, the risk of you being aware of what is going on is increased.

If you take certain medications you will require more anaesthetic. These include alcohol (prolonged, heavy use), some

types of sleeping tablets and morphine-like drugs. It is very important that you inform the anaesthetist of all your regular medications.

Some types of general anaesthetic are more likely to be associated with awareness than others. There is not usually any choice in which kind of anaesthetic you have – it depends on what operation you are having and on your general health. Most cases of awareness leading to serious psychological upset occur in people who have received muscle relaxants. Only one study in the last 50 years has shown awareness in people who were breathing for themselves.<sup>2</sup> None of these people suffered serious psychological upset as a result.

In some types of surgery the side effects of anaesthetic drugs may be particularly dangerous to you (or, if you are pregnant, to your unborn child). The risk of awareness is increased because your anaesthetist may need to use less anaesthetic. For example:

- ▶ cardiac surgery (the risk may be 1 in 100)
- ▶ emergency surgery for major trauma (1 in 20)
- ▶ emergency Caesarean section under a general anaesthetic (4 in 1,000).<sup>5</sup>

### **Is there anything I can do to prevent it from happening?**

Ask your anaesthetist if it is possible to avoid having a general anaesthetic and have your operation performed with a local anaesthetic. You can have sedation as well to help you feel drowsy and mentally relaxed.

Tell the anaesthetist about all your regular medications or drugs, especially those mentioned above, and about your alcohol intake. Also tell him/her if you think you may have been aware during any previous anaesthetic.

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