

Risks associated with your anaesthetic

Section 4: Damage to teeth, lips and tongue

Summary

This leaflet explains why there might be damage to your teeth, lips or tongue during anaesthesia and what type of damage may occur.

Minor injuries to the lips or tongue are very common. Serious damage to the tongue is rare. The overall risk of damage to teeth is around 1 in 4,500 general anaesthetics. Damage can happen even if the anaesthetist uses an appropriate technique with care. Your anaesthetist will want to see if you have an increased risk for damage to teeth before the anaesthetic starts. This is more likely in people with teeth in poor condition or in people with dental work such as crowns or bridges. A visit to the dentist before a routine operation is advisable if your teeth are not in good condition.

Why does damage happen?

General anaesthesia is a state of controlled unconsciousness. When you are anaesthetised, you become less able to breathe freely through your nose or mouth. As well as keeping you anaesthetised, your anaesthetist's priority is to protect your airway and to keep you breathing; this usually requires an artificial airway or breathing tube to be placed in your mouth or throat – this is called 'intubation'. The devices used are described in more detail in Section 2 in this series of leaflets. The placement and removal of these devices can sometimes cause damage to the teeth or soft tissues of the mouth.

What type of damage may occur?

Minor cuts or bruising to the lips and tongue are very common, probably occurring in about 1 in 20 general anaesthetics.¹ These injuries usually heal very quickly. Sometimes teeth or dental work such as crowns, bridges, implants or veneers may





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be broken, chipped, loosened or completely removed by accident. The most frequently damaged teeth are the top front teeth.^{2,3,4} Damage to a tooth requiring subsequent removal or repair occurs in about 1 in 4,500 general anaesthetics.⁴

Occasionally, pressure from an airway device causes damage to nerves which control movement and feeling in the tongue. This can cause numbness and loss of normal movement of the tongue for a period of time. These changes usually recover over a period of weeks or months.

How does damage to teeth occur?

Intubation is not always a straightforward process. Anaesthetists are trained in the use of airway devices but, even in skilled hands, there may be some difficulty and a certain amount of force may be needed to achieve correct positioning of the devices. This can sometimes lead to damage to teeth, lips or tongue. Damage to teeth, lips or tongue can also occur during the operation or at the end of the operation as the device is removed. This may be due to unexpected biting or other jaw movement. This is more likely if your teeth are already loose.

The surgeon can also damage your teeth, lips or tongue during operations in the mouth or throat. This includes telescope examinations under anaesthetic of the throat, the lungs or the oesophagus (gullet).

What about false teeth?

You will usually be asked to remove false teeth before a general anaesthetic. This is because they may be dislodged or damaged as your anaesthetist places the artificial airway device. Sometimes, your anaesthetist may ask you to leave your false teeth in place. This is most likely if you have teeth of your own amongst the false teeth and your anaesthetist thinks that the false teeth will help protect your own teeth.

Who is at increased risk of damage to teeth?

Anyone undergoing a general anaesthetic is at some risk. Wherever possible, your anaesthetist will assess your airway before the anaesthetic starts. He/she may:

- look in your mouth
- ask you to move your neck
- ask you about your teeth and any crowns, bridges, veneers, implants or loose teeth that you may have.

The following factors mean that damage is more likely:

- reduced mouth opening
- reduced neck movement
- prominent upper teeth or small lower jaw
- certain medical conditions such as rheumatoid arthritis and ankylosing spondylitis



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- people requiring an emergency general anaesthetic
- people who are very overweight
- people with teeth and/or gums in poor condition³ (large amounts of decay, failing dental work, loose teeth). Nearly two thirds of injuries to teeth happen to people with teeth in a poor condition
- people with crowns, bridges, veneers, or implants on their front teeth
- people having an operation or examination of the mouth, neck, jaw or oesophagus (gullet)
- people who need to have a tracheal tube inserted after the operation has started. This is occasionally necessary if the existing airway becomes unsatisfactory during the operation, and insertion of an alternative airway device may be more difficult.

Your anaesthetist will be able to tell you if you have any features described above which could make it more difficult to insert an artificial airway device. However, difficulties can also arise unexpectedly, without a specific risk factor being apparent in advance.

What about orthodontic appliances?

Increasingly, children and adults are benefitting from orthodontic treatment. If you have removable type braces, your anaesthetist will probably ask you to remove them. Fixed orthodontic devices would be left in place, but are vulnerable to damage. Even in skilled hands it is possible that insertion and removal of airway devices, or the removal of secretions from the mouth with suction, may result in dislodgement of brackets, wires or bands. It is important that you talk to your anaesthetist about any orthodontic appliances that you have.

What steps are taken to prevent damage to my teeth?

All anaesthetists are trained to be aware of the potential for damage to teeth. Your anaesthetist will take care during the insertion of airway devices and force will be avoided as much as possible. If you have any features that make it more difficult to have an artificial airway device, your anaesthetist will choose a suitable technique which will allow safe insertion.

Is there anything I can do to prevent damage to my teeth?

If your teeth or gums are in poor condition or any teeth are loose, it is advisable to visit your dentist before a planned operation for a check-up and dental assessment. Please alert the anaesthetist to any loose teeth or dental work before your operation.

If you know there have been difficulties with placing a tube in your airway or you have had damage to your teeth during a previous anaesthetic, it is important to tell your anaesthetist. It may be necessary to find your previous anaesthetic records to find out exactly what happened. It is helpful if you tell the surgical and anaesthetic team caring for you as early as possible. Your GP could do this for you, or you can tell the surgeon or the nurses at the pre-assessment clinic.



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If your anaesthetist tells you that there were difficulties, it is very helpful if you know what the difficulties were. If you are not sure, ask your anaesthetist to write them down so that you can show the letter to anaesthetists in the future. If you have been given such a letter in the past please bring it to any hospital consultations.

What happens if my teeth are damaged during an operation?

Your operation should proceed as planned. If a tooth has become completely dislodged it must be secured or removed before you wake up. If a tooth is chipped or cracked, any fragments will be removed and the anaesthetist will record the damage. You will be informed when you have recovered.

Immediate treatment will involve pain relief, if required, and an explanation of what has happened. The tooth may require repair, re-implantation or extraction depending on the nature of the injury and pre-existing health of the tooth.⁵ Damage to veneers, crowns, implants, bridges or fixed orthodontic appliances may require repair.

If you are being treated in an NHS hospital with a dental department, it may sometimes be possible for you to be assessed by a dental surgeon. It may be possible for this dentist to repair the damage. However, it is more usual for the treatment to be done by your own dental practitioner, as he/she is in overall charge of your dental care.

How likely is damage to teeth, lips and tongue?

Minor injuries to the lips or tongue are very common and are usually unreported which means accurate figures do not exist. A small study of 404 patients suggests that minor injuries occur in about 1 in 20 patients.¹

Damage to a tooth which requires subsequent repair or extraction happens in about 1 in 4,500 general anaesthetics. This figure comes from a large study of just under 600,000 patients.⁴

Nerve damage to the tongue due to pressure from airway devices is reported, but accurate figures do not exist. It is likely to be rare or very rare.

References

- 1 Fung BK, Chan MY. Incidence of oral tissue trauma after the administration of general anaesthesia. *Acta Anaesthesiol Sin* 2001;**39**(4):163–167.
- 2 Chadwick RG, Lindsay SM. Dental injuries during general anaesthesia. *Br Dental J* 1996;**180**(7):255–258.
- 3 Owen H, Waddell-Smith I. Dental trauma associated with anaesthesia. *Anaesth Inten Care* 2000;**28**(2):133–145.
- 4 Warner ME et al. Perianesthetic dental injuries: frequency, outcomes, and risk factors. *Anesthesiol* 1999;**90**(5):1302–1305.
- 5 Dental Trauma During Anaesthesia. RCoA, London 2016.



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Further information

Anaesthetists are doctors with specialist training who:

- discuss the type or types of anaesthetic that are suitable for your operation. If there are choices available, your anaesthetist will help you choose what is best for you
- discuss the risks of anaesthesia with you
- agree a plan with you for your anaesthetic and pain control
- are responsible for giving your anaesthetic and for your wellbeing and safety throughout your surgery
- manage any blood transfusions you may need
- plan your care, if needed, in the intensive care unit
- make your experience as calm and pain free as possible.

Common terms

General anaesthesia – This is a state of controlled unconsciousness during which you feel nothing and may be described as ‘anaesthetised’.

Regional anaesthesia – This involves an injection of local anaesthetic which makes part of your body numb. You stay conscious or maybe sedated, but free from pain in that part of your body.

You can find out more about general and regional anaesthesia in the patient information booklet *Anaesthesia explained*, which is available from the College website via:

rcoa.ac.uk/documents/anaesthesia-explained

Risks and probability

In modern anaesthesia, serious problems are uncommon. Risk cannot be removed completely, but modern drugs, equipment and training have made anaesthesia a much safer procedure in recent years.

The way you feel about a risk is very personal to you, and depends on your personality, your own experiences and often your family and cultural background. You may be a ‘risk taker’, a ‘risk avoider’, or somewhere in between. You may know someone who has had a risk happen to them, even though that is very unusual. Or you may have read in the newspapers about a risk and be especially worried about it.



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People vary in how they interpret words and numbers. This scale is provided to help.



Your anaesthetist will give you more information about any of the risks specific to you and the precautions taken to avoid them. There are some rare risks in anaesthesia that your anaesthetist may not normally discuss routinely unless they believe you are at higher risk. These have not been listed in this leaflet.

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This leaflet has been reviewed by the RCoA Patient Information Group which consists of patient representatives and experts in different areas of anaesthesia.

Disclaimer

We try very hard to keep the information in this leaflet accurate and up-to-date, but we cannot guarantee this. We don't expect this general information to cover all the questions you might have or to deal with everything that might be important to you. You should discuss your choices and any worries you have with your medical team, using this leaflet as a guide. This leaflet on its own should not be treated as advice. It cannot be used for any commercial or business purpose.

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Information for anaesthetic departments on printing this leaflet

Please consider the visual impairments of patients when printing or photocopying this leaflet. Photocopies of photocopies are discouraged as these tend to be low quality prints and can be very difficult for patients to read. Please also make sure that you use the latest version of this leaflet, which is available on the RCoA website: rcoa.ac.uk/patientinfo/risk-leaflets

Tell us what you think

We welcome suggestions to improve this leaflet. Please complete this short survey at: surveymonkey.co.uk/r/testrisk. Or by scanning this QR code with your mobile:



If you have any general comments, please email them to: patientinformation@rcoa.ac.uk

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