

Risks of cardiac surgery in children

Information for patients, parents and guardians

Cardiac surgery is only undertaken when the risk of operating is less than that of not operating, or when the potential benefits of the operation substantially outweigh these risks.

This factsheet is intended to offer an overview to help parents understand the risks. It is not meant to be comprehensive. Parents should feel free to ask any questions they may have specifically about surgery in their child.

Understanding the risks

As with any major operation, cardiac surgery carries a risk of complications leading to serious injury or death. Complications may occur either during surgery itself or afterwards, in the early post-operative period.

The risks vary from child to child and depend on many factors including:

- the child's age
- the nature of their heart defect
- their health and condition
- the type and extent of surgery required
- other medical conditions they may have
- previous heart surgery

Usually the risk of death for simple defects is around 1% (1 in 100) but for more complicated defects the risks can be higher. Your surgeon will advise the risks based on your child's case.

Sometimes, to provide maximum benefit surgery is performed when the patient is still relatively well, as delay can increase the risks or make surgery impossible. Rarely, the actual type of operation that is needed can only be known once the surgeon has been able to expose and examine the heart and great vessels. A different operation may then be necessary.

Complications

Some of the complications that can occur may be specific to the type of surgery. For example, when operating from the side of the chest or when using cardio-pulmonary bypass (when the function of the heart and lungs is taken over by a machine to allow the surgeon to operate on the heart itself), complications can include:

- **Bleeding** around the area of the surgery requiring transfusion or even re-operation (the need for this is about 2%)
- **Infections** of the surgical site, lungs and bloodstream
- **Fluid collection** in the chest or around the heart requiring drains to be inserted – sometimes for prolonged periods
- **Effects on the heart itself:**
 - poor heart function due to the condition itself, surgery or both
 - damage to heart valves (this is rare)
 - damage to the conducting system which may require insertion of a permanent pacemaker (a small device placed in the chest which sends regular electrical pulses that help keep the heart beating regularly)
- **Kidney failure** – this is infrequent, but more common in newborns, and nearly always recovers though a period of dialysis (a treatment which replicates many of the kidney's functions to filter the blood and rid the body of harmful waste) may be necessary.
- **Brain damage which usually means a stroke** – this is infrequent and children tend to recover better than adults. It can be due to a period of low blood flow to the brain or a blood clot or air bubble. On rare occasions there may be long lasting problems.
- **Intestinal damage** – especially in newborn infants: intravenous feeding (via a tube into a vein) and prolonged antibiotics may be necessary for weeks. In addition it is sometimes necessary to perform intestinal surgery.
- **Damage to the nerves leading to the:**
 - diaphragm (the muscle between the chest and abdomen which is required for normal breathing) – this may cause prolonged dependency on a ventilator or even an operation on the diaphragm itself.
 - vocal chords – rarely a permanent hoarseness or the need for prolonged tube feeding can occur.

These complications can occur together and even one after another. They can prolong the need for intensive care.

Remember that this factsheet is only designed to offer an overview of the risks. Your child's surgeon will be happy to answer any additional questions that you may have.

If you need a translation of this document, an interpreter or a version in large print, Braille or on audio tape, please telephone **023 8120 4688** for help.

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