Spinal Deformity Service

Adolescent Idiopathic Scoliosis – information about surgery

The information sheet has been prepared to help you understand as fully as possible about the operation for scoliosis. Please read this information carefully and if you have any further questions do not hesitate to ask.

Scoliosis is a deformity of the spine which is quite rare, affecting about one in 2000 children. It usually occurs in girls, but can occur in boys as well. It can occur at any time from birth until the end of growth. The most common type develops in teenage years and may cause a visible deformity of the back. It often becomes worse as the child grows, but at the end of growth this deterioration largely stops. Sometimes this deformity is very unsightly and sometimes it is barely noticeable. Surgery is considered in cases where there is risk of the curve progressing beyond 40 degrees.

Occasionally deformities become so severe that they do cause serious problems such as interference with the lungs and movement of the spine. This only occurs in children where the condition starts in early childhood. In this situation there is a definite reason for surgery to prevent such problems.

The surgery which is required to correct a scoliosis deformity of the spine is very major. It is important to be aware of the risks involved and that although the end result should be an improved appearance, the spine will still be far from normal and there may be further problems in the future.

The operation normally involves attaching the curved part of the spine to one or two metal rods and fusing the vertebrae in that part of the spine so that they eventually join together. The operation may be done on the front of the spine through the side of the chest, or on the back of the spine through an incision down the middle of the back, or sometimes both approaches are necessary. The operation itself normally takes four to five hours. The patient may however be in the operating theatre for the greater part of the day which includes the time it takes to set the patient up for surgery.

Risks of surgery

The main risk, of which you should be aware, is the possibility of damage to the spinal cord. If this happens it can result in paralysis of the legs and loss of control of the bowels and bladder. Fortunately this complication is rare. Worldwide it occurs in about 0.5 per cent of cases. Special precautions are taken to protect the spinal cord. In particular spinal cord monitoring is used so that any problems can be detected as early as possible to minimise the risk of paralysis.

The other risks are those which exist with any big operation. These include damage to the important blood vessels, particularly if the operation is done through the chest. Damage to one of the main blood vessels near the spine could result in life-threatening bleeding.

Wound infections can occur and these sometimes do not become apparent until several months or even years later. If this occurs then it may be necessary to remove the metalwork from the spine.

There will always be a large scar on the back or round the side of the chest which may be a bit unsightly, though it fades with time. Sometimes the skin around the scar can feel numb or tender.

Treatment after the operation

After the operation, patients will be looked after on the Intensive Care Unit for a day or two in most cases and may be kept anaesthetised with a tube down the throat. There will also be a variety of wound drainage tubes and a tube in the bladder. The patient will usually be transferred back to the normal ward the following day. The various tubes will be removed over the course of the next few days.

It should be possible for the patient to get out of bed after three to four days, sometimes earlier and then gradually get more mobile on the ward. It may be necessary for a spinal brace to be worn for a few weeks. Patients are normally ready to leave hospital about one to two weeks after their surgery.

After discharge from hospital the patient should be able to do all everyday activities at home and should be able to return to school in four to eight weeks. It takes a few months for the intervertebral fusion to take place and the spine has to be considered somewhat weaker than normal until it is fused. The patient should be able to finally resume all everyday activities at about six months and sport after a year.

It is most important that you fully understand the nature of the operation which you are about to have. If you have any further questions after reading this leaflet the team will be only too happy to discuss them with you.

Paediatric Orthopaedic team

- Consultant Paediatric Orthopaedic Spinal Deformity Surgeon – Mr Conlan
- Consultant Orthopaedic Spinal Surgeon – Mr J Crawford
- Specialist Registrar
- Senior House Officer (SHO)
- Consultant Anaesthetist
- Superintendent Physiotherapist
- Physiotherapist covering ward D2
- Secretary to Mr Conlan – 01223 216854
- Secretary to Mr J Crawford - 01223 217211
- Play Specialist

Decision making process

- Counselling about scoliosis surgery
- MRI
- Lung function testing
- Medical risk assessment

Following these assessments and counselling session the patient will have an appointment with the Consultant, if the decision is made to proceed with surgery at this point, the case will be put forward for discussion at a multi disciplinary meeting. If the team are agreed that no further investigations are necessary prior to surgery the patients name will be placed on the waiting list for surgery.

Before the operation

When we have a potential date for your surgery you will be asked to attend the clinic for a few hours for a 'pre-operative assessment'. During this visit the following tests are likely to be done to help plan the operation and make sure that you are fit for surgery:

X-rays	of your spine to help plan the operation
Medical Photography	of your spine to help plan the operation for comparison after surgery
ECG (electrocardiograph)	to assess your heart
Blood tests	also form part of the assessment of fitness for surgery. Blood will be crossmatched in case you should need a blood transfusion during surgery
Spinal Cord monitoring	which will be used during surgery – this will be assessed in the neurophysiology department.

Prior to your admission you are welcome to visit the ward to familiarise yourself with the set up and visit intensive care accompanied by a member of the nursing staff.

Admission

Children under the age of 16 will be looked after on Ward D2 (Tel. 01223 217549). Each patient's bed has a 'pull out' bed bedside it that a parent/carer or friend can stay on.

Relatives can also stay on site at: Pemberton House (Tel. 01223 868300) or Acorn House (Tel. 01223 586806 www.sickchildrenstrust.org)

You will be admitted to the ward the day before your operation. You will stay on the hospital site, either on the ward or in accommodation on the hospital grounds, called Elsworth House, the night before your operation.

Patients are routinely cared for in the Paediatric Intensive Care Unit (PICU) for the first 24-48 hours after surgery.

Surgery will only proceed on the morning of surgery if the intensive care bed is available. Unfortunately if there are unforeseen emergencies, there is a chance that your operation may be cancelled.

Day of the operation

Pre operative checks are carried out and you will be taken to the operating theatre and anaesthetised.
The operation will take most of the day, and then you will be transferred to the intensive care unit in the evening. Observations will be done hourly and pain relief will be monitored.

After the operation

Day one

Drips and drains	You will be attached to drips and drains including a chest drain and catheter
Pain control	You will be attached to a special pain controlling system called PCAS (Patient controlled analgesia system) which allows you to control the amount of painkillers that you receive.
Physiotherapy	Breathing exercises – huffing & coughing Circulation - foot and ankle exercises - static muscle exercises

You will be assisted to roll in bed for the first 24-48 hours until you can turn yourself.

Day Two

Drips and drains	These will gradually be removed as you recover
Physiotherapy	Breathing and circulation exercises continue. Leg and trunk control exercises.

Day two onwards

Once trunk control has been achieved you will be helped out of bed to stand. Patients often feel a little unsteady at first and so this may not be achieved at the first attempt.
You will be able to start sitting for short periods for functional activities such as toileting and eating.
Progress varies from patient to patient.
Once you are able to stand for short periods, a check x-ray of the spine will be performed to ensure that everything is still correctly in place.

Day three

Start to mobilise (walk) around the ward with assistance. Walking little and often and gradually increase time sitting. On occasions it may be appropriate to use a plaster jacket or brace for approximately three months when walking around.

Day Seven - Eight

Mobilising out of the ward and practising stairs prior to discharge

Once safety and comfort allow, you will be discharged home.

Two to six weeks

- Gradually increase the frequency and length of time spent sitting, standing and walking. Decrease the amount of time spent lying and resting.

If your back becomes more uncomfortable then you are probably doing too much.
You will probably benefit from lying down for a rest in the early afternoon.

Six weeks

- Return to school part time (for example: half days or every other day)
- Attend outpatient physiotherapy/hydrotherapy if required

Two to three months

- Return to school full time.

After three months

- Increase time and distance walking, increase pace as able
- Aim to increase fitness
- Return to college or work full time.
- Can go swimming and cycling

Six months

- Increase time and distance walking, increase pace as able
- Aim to increase fitness.
- Non-competitive swimming for example lengths of a pool
- Cycling/riding/jogging increasing to running.
- Acceleration/deceleration and turning
- No contact sport

12 months

- Competitive contact sport

Patients have regular follow up in the clinic with x-rays for a minimum of three years.

Useful organisations

Scoliosis Association UK (SAUK) – leaflet from clinic 6 or www.sauk.org.uk

Scoliosis Research Society – www.srs.org click on patient/public information

The British Scoliosis Society – www.britscoliosissoc.org.uk

If you would like to be put in touch with a patient who has had scoliosis surgery, please contact Mr Conlan's secretary. (Tel 01223 216854)

We are currently working towards a smoke-free site. Smoking is only permitted in the designated smoking areas.

For advice and support in quitting, contact your GP or the free NHS Stop Smoking helpline on 0800 169 0 169

Help with this leaflet:

If you would like this information in another language, large print or audio format, please ask the department to contact Patient Information: 01223 216032 or patient.information@addenbrookes.nhs.uk

Document history

Authors	Spinal Deformity Service
Department	Cambridge University Hospitals NHS Foundation Trust, Hills Road, Cambridge, CB2 0QQ www.cuh.org.uk
Contact number	01223 216854
Publish/Review date	May 2011/May 2014
File name	Adolescent Idiopathic Scoliosis – information about surgery
Version number/Ref	2/PIN2318