Your child's surgery to remove a growth of blood vessels (vascular malformation)

This leaflet is about your child's procedure to remove a growth or birthmark called a vascular malformation. It is made up of blood vessels that have not developed correctly. The leaflet explains what you should do before your child's procedure, on the day of the procedure and when you return home.

Your child's condition and procedure

Why does my child need to have the vascular malformation removed and tested?

Your child needs this procedure because they have a vascular malformation. This is a growth or birthmark made up of vessels that did not develop correctly before your child was born.

Vessels are tubes that carry liquid around the body. The main types are:

- arteries, which carry blood away from the heart
- veins, which carry blood towards the heart
- lymph vessels, which carry a liquid called lymph that surrounds all the cells in the body and helps to fight infection

If any of these vessels do not develop in the usual way before birth, the condition is called a vascular malformation. The vessels get larger and develop fluid-filled sacs under the skin that contain blood or lymph fluid.

There are 3 main types of vascular malformations:

- **An arteriovenous malformation**
  This is when there are too many arteries and they do not join correctly with the veins.

- **A venous malformation**
  This is when there are too many veins and they join incorrectly with other veins to make pools of blood within the veins.

- **A lymphatic malformation**
  This is when there are too many lymph vessels and they join to form fluid-filled sacs under the skin containing lymph.

Children are born with vascular malformations. Sometimes they can be seen in babies, but at other times do not become obvious until several years later. Vascular malformations close to the skin often appear as a soft lump or bump. They can affect any part of the body.

Your child is having their vascular malformation removed. This may be:

- because it causes discomfort, swelling or bleeding
- for cosmetic reasons (to improve how the affected area looks)
- for testing

The aim of the procedure is to remove the growth of blood vessels, close the skin and send the growth to be tested in a laboratory. We can then confirm your child's diagnosis.

Are there any other treatment options to this procedure?

The treatment options depend on several different things, including:

- what type of vascular malformation your child has
- the size of their vascular malformation
- where the vascular malformation is on their body
- your child's symptoms and general health

We talk to you about which treatment is likely to be most suitable for your child. If the vascular malformation does not cause problems, it can be monitored and your child might not need treatment. Skin camouflage make-up may help to improve how the affected area looks.

Possible non-surgical treatments include:

- wearing a tight-fitting compression garment to prevent pain or growth of the vascular malformation. The garment needs to be replaced regularly as your child grows
- taking a blood-thinning medicine if there is concern about a large vascular malformation causing blood clotting problems
- having a medicine injected directly into the vascular malformation to shrink the veins and reduce pain. This treatment is called sclerotherapy
- having a minimally invasive procedure called embolisation to block blood flow to the vascular malformation, shrink it and reduce pain
- having laser treatment sessions to improve the appearance of the affected skin. Laser treatment is available on the NHS for some types of vascular malformations on the head and neck areas

We usually only recommend surgery for a vascular malformation that is small or easy to reach. Sometimes, your child has sclerotherapy or embolisation treatment first to shrink the vascular malformation and reduce the chance of bleeding.

Before your child's procedure

What needs to happen before my child's procedure?

We need to see your child at a pre-admission clinic. This clinic may take place face to face or online. We make sure that your child is ready for an anaesthetic, which is a medicine to make them sleep during the procedure, and surgery.

After the pre-admission clinic, our admissions team contacts you by letter, text message or phone. We offer you a date for your child's procedure.

Your child should not eat for 6 hours before the procedure. They can drink water until they arrive at the Evelina London children's day surgery unit. We give you more guidance about this (fasting instructions).

Do I need to get pain medicine ready for my child?

Please make sure that you have a week's supply of paracetamol (a painkiller) and ibuprofen (an anti-inflammatory medicine) at home before the procedure. We do not routinely give these medicines to take home for your child after day surgery.

You can buy paracetamol and ibuprofen from a pharmacy, supermarket or shop. Paracetamol for children may also be called Calpol®. Ibuprofen for children may also be called Calprofen® or Nurofen®. You need the type of medicine that you would give your child if they were unwell with a cold or ear ache. If your child cannot take paracetamol or ibuprofen for any reason, please speak to their healthcare team about other options.

On the day of the procedure

When you arrive at the children's day surgery unit

We give you a time to arrive at the Evelina London children's day surgery unit. It is important that you arrive at the correct time and have followed the fasting instructions for your child. If you arrive late or have not followed the fasting instructions, we may not be able to do the procedure.

You and your child meet the surgical and anaesthetic teams on the admissions ward before the procedure. We explain what will happen during the surgery and confirm that you have given your permission (consent) for the procedure. You can ask us any questions that you may have.

During the procedure

We give your child a general anaesthetic. This is a medicine that makes your child sleep and stops them feeling any pain during the procedure. You can stay with your child until they are asleep. Please see our separate leaflet called "Your child's general anaesthetic" for details.

The procedure depends on your child's specific condition and the affected vessels. During the procedure, the surgeon cuts and removes all (if possible) or some of the incorrectly formed vessels. They also remove the tissue around them. We explain this before you have given your consent for the procedure.

After removing the vascular malformation, the surgeon closes the wound with stitches and covers it with a dressing. Depending on the technique used, your child may have dissolvable stitches or stiches that need to be removed later. We send the growth to a laboratory, where it is examined in detail under a microscope. It usually takes about 2 weeks to get the results. We call you when they are ready.

Are there any risks to my child's procedure?

Every procedure has some risks of complications. To reduce these risks, we make sure that your child is well at the time of the procedure. We talk to you about the risks in the clinic and before the procedure when we confirm that we have your consent.

The specific risks of this procedure are:

- bleeding
- an infection that needs to be treated with antibiotics
- scarring. Your child has a permanent scar after the procedure, but this may be small and usually fades with time
- damage to nearby structures, such as nerves, other blood vessels and muscles
- the vascular malformation growing back in future if it is not removed completely

After your child's procedure

How will my child look and feel after their procedure?

Your child may feel drowsy after their surgery and sleep for a while. They may be restless (agitated) and upset for up to an hour after waking up from the procedure. Some children may have pain and feel or be sick (vomit), but this is not common.

During the procedure, we may give your child painkillers, fluids, anti-sickness medicines and a local anaesthetic. The local anaesthetic is medicine to make the area around the wound numb.

After the procedure, your child has a dressing on the wound where we have removed the vascular malformation. We use a medical dressing that seals the wound and surrounding skin from air, fluids and germs. This is called an occlusive dressing. Your child may have some temporary soreness, swelling or bruising at the wound site.

Will my child be in pain after their procedure?

Your child usually has a local anaesthetic medicine during their procedure. This medicine gives them pain relief for several hours after they wake up.

When your child is awake, we may give them paracetamol, ibuprofen or both medicines. You can continue to give your child these medicines as needed when they are at home. The nurses can guide you when the next amount (dose) of pain medicine is due.

When can my child eat and drink or feed after their procedure?

Your child should be able to eat and drink or feed as usual within 1 to 2 hours of the procedure.

Do we see the surgeon after my child's procedure?

Yes, the surgeon comes to check your child after their procedure. They update you about the surgery and answer any questions that you may have.

When can my child go home?

Your child can go home on the same day as their procedure when they:

- feel comfortable
- can manage (tolerate) their usual food and drink
- are not feeling sick (nausea) or being sick (vomiting)
- are behaving as they usually do

Please supervise your child carefully on the journey home. According to the sudden infant death syndrome (SIDS) guidelines, it is best to avoid long car journeys for babies under 1 year of age. If you travel home by car, it is important that:

- you stop for frequent breaks to feed your baby and change their position
- an adult sits with the baby in the back of the car

After you go home

How do I care for my child's wound after the procedure?

After the procedure, the surgeon or a member of their team gives you specific instructions about your child's wound and dressings. They explain how to look after your child's wound while it heals and what follow-up care you can expect.

Your child's wound usually takes about 2 weeks to heal after the procedure. The wound is covered with a medical dressing to protect it from air, fluids and germs (an occlusive dressing).

Your child needs to wear the dressing for 1 week until we see them again at a dressing clinic. We can then check if the wound is healing well. It is important to keep the area clean and dry until the wound check in the clinic.

If your child's dressing falls off before the wound check, you can use the spare dressings that we have given you. Please contact the plastic surgery team from Monday to Friday, 9am to 5pm if you are concerned or unsure what to do. You can find the contact details at the end of this leaflet. Outside of working hours, you can go to your nearest emergency department (A&E) for the dressing to be replaced.

We tell you if your child's stitches dissolve by themselves or need to be removed. Before you go home, we prepare a written document called a discharge summary. This document explains the care that your child needs after the procedure.

How should I look after my child at home after their procedure?

If your child appears to be in any pain at home, we recommend giving them paracetamol and ibuprofen. Please remember to buy these medicines before the day of your child's procedure. It is also important to make sure that your child drinks plenty of fluids.

It is safe to give the 2 medicines at the same time, ideally with food. This is easier to plan and the medicines work in different ways. You can give your child:

- 1 recommended amount (dose) of paracetamol every 4 to 6 hours and no more than 4 doses in 24 hours
- 1 dose of ibuprofen every 6 to 8 hours and no more than 3 doses in 24 hours

You may find the following chart helpful to keep track of your child's medicines.

Home medicine chart for parents

Medicine	**Time to give**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**
Paracetamol								
Ibuprofen								

Do I need to look for any symptoms after my child's procedure?

Contact a GP or the plastic surgery team if you feel that your child is unwell, or you notice:

- bleeding
- signs of infection, such as pain, severe swelling, hardening or thickening of the skin, redness that spreads on the skin, a bad smell from the wound and leaking yellow-green liquid called pus or watery fluid
- a high temperature (fever)
- your child is not eating or drinking well

On white skin, the area around the wound can appear red if it is infected. On brown or black skin, the area can appear red or purple but it may be more difficult to notice the redness. An infected wound site may feel warm or hot to touch on any skin colour.

If you are very concerned or notice these symptoms outside of working hours (Monday to Friday, 9am to 5pm), call 999 or go to A&E.

Do you see my child again after their procedure?

We may give you a date for a follow-up appointment while you are still in the children's day surgery unit. It is most likely that you will get a phone call from our team in the next few days.

A laboratory examines the growth that we have removed and sends us the results. This usually takes about 2 weeks. We call you when the results are available.

All vascular malformations need long-term monitoring, even if your child has surgery. If the vascular malformation cannot be removed completely during the procedure, there is a chance that it may return in future. Hormone changes during puberty (when your child develops into an adult) can make a vascular malformation grow.

We can monitor your child at Evelina London Children's Hospital until they are 18 years old. After this, we may sometimes transfer them to adult healthcare services.

Contact us

If you **cannot keep your appointment**, contact our admissions team, **phone** 020 7188 9098, **email** gst-tr.paediatricadmissions@nhs.net

If your child has a **cough, cold or high temperature** in the 2 weeks before the procedure, contact our pre-assessment team, **phone** 020 7188 7188 extension 58209

If you have any **concerns during working hours (Monday to Friday, 9am to 5pm)** about your child's surgery, call the paediatric plastic surgery clinical nurse specialist, **phone** 07747 204 489

If you have any **concerns outside working hours (Monday to Friday, 5pm to 9am or at the weekend)** about your child's surgery, contact the on-call plastic surgery doctor through the main switchboard, **phone** 020 7188 7188 and ask for bleep 0155

If you have any **concerns from 24 hours after surgery** about your child's health, contact your child's specialist surgical team or GP surgery, or **phone** NHS 111

If you are concerned that your child is **seriously unwell** at any time, go to your nearest A&E or **phone** 999

For more information on conditions, procedures, treatments and services offered at our hospitals, please visit **web** www.evelinalondon.nhs.uk/leaflets

Evelina London Medicines Helpline

If you have any questions or concerns about your child's medicines, please speak to the staff caring for them or contact our helpline, **phone** 020 7188 3003, Monday to Friday, 10am to 5pm **email** letstalkmedicines@gstt.nhs.uk

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS), **phone** 020 7188 8801 **email** pals@gstt.nhs.uk. To make a complaint, contact the patient resolution team **phone** 020 7188 3514 **email** complaints2@gstt.nhs.uk

Language and accessible support services

If you need an interpreter or information about your child's care in a different language or format, please get in touch, **phone** 020 7188 8815 **email** languagesupport@gstt.nhs.uk

NHS 111

This service offers medical help and advice from fully trained advisers. They are supported by experienced nurses and paramedics, **phone** 111 (24 hours a day) **web** www.111.nhs.uk

NHS website

This website gives information and guidance on all aspects of health and healthcare. It can help you to take care of your child's health and wellbeing, **web** www.nhs.uk

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A list of sources is available on request

Our values: **Put patients first** | **Take pride in what we do** | **Respect others** | **Strive to be the best** | **Act with integrity**