

## PULSED DYE LASER TREATMENT

AT CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC, we believe parents and guardians can contribute to the success of this procedure and invite you to participate. Please read the following information to learn about the procedure and how you can help.

### Fast Facts About Pulsed Dye Laser Treatment

- In a pulsed dye laser treatment, a doctor uses a bright laser light to remove birthmarks known as vascular malformations, including port wine stains.
- Your child's procedure will be done at Children's Hospital of Pittsburgh, Children's North or Children's South surgery centers.
- Pulsed dye laser treatment is an outpatient treatment.
- For younger children (usually under the age of 10) the treatment will be done under general anesthesia, which means that your child will be asleep during the procedure.
- Usually children over the age of 10 will only need a topical anesthetic (or numbing) cream applied directly to the birthmark area before the laser treatment begins.
- When general anesthetic is needed, there are special rules for eating and drinking in the hours before the surgery.
- This procedure takes about 30 minutes.

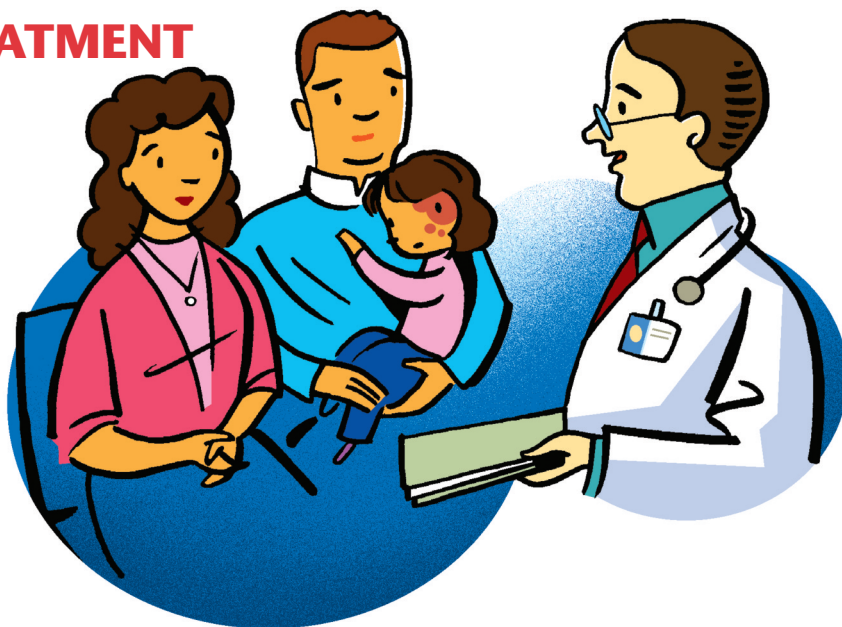
### What Is Pulsed Dye Laser Treatment?

The majority of pulsed dye laser treatments are used to remove capillary (CAP-ill-air-ee) malformations, the red to reddish-purple patches on the skin commonly known as "port wine stains." These are "birthmarks" that can vary in size and tend to become thicker or darker with age. Many parents are concerned how they might affect their child's self-esteem, especially if they occur on the face. In most cases, there is no known cause of port wine birthmarks. They are usually non-genetic (not inherited) and the majority are benign (non-cancerous). They should always be carefully evaluated before treatment.

Other less common conditions that are treated with the pulsed dye laser include spider veins, spider angiomas (*ann-gee-OH-muz*), red blotches on the skin, and sometimes hemangiomas (*ha-man-gee-OH-muz*), thick elevated masses of dilated blood vessels.

During the treatment, the doctor uses a bright light to destroy abnormal blood vessels under the skin.

- During your child's first meeting with the doctor, he will evaluate the area and schedule your child's first pulsed dye laser treatment. Your child will not have a treatment at your first visit with the doctor.
- Most birthmarks are treated in 4 to 8 separate procedures.



- Treatments are typically 1 month apart.
- At the first treatment, your doctor will set the laser on a lower frequency or power so that he can check your child's first response to the laser.
- Usually after the sixth treatment, the area is checked to see if the birthmark is going away.
- Treatments are only done from September through June. They are not done during the summer months because your child is more likely to have sun exposure during this time.

### The Pulsed Dye Laser Treatment

Once your child has been registered, you and your child will be taken to a holding area where his or her vital signs will be taken. You will then meet with the anesthesiologist and your child's doctor. The pediatric anesthesiologist—a doctor who specializes in anesthesia for children—will give the medications that will make your child sleep during the surgery. At this time, you will be asked to sign a consent form and may ask any questions about the procedure.

Once questions are answered and the operating room is prepared, your child will be taken into the operating room and given an anesthetic to make him or her go to sleep. If your child is not having general anesthesia, the doctor will apply the anesthetic cream to the area being treated.

Older children who are not having general anesthesia will be given eye protection similar to goggles so the laser light does not harm their eyes.

Once this is done or when your child is asleep, the procedure will begin.

- While on the operating room table, your child will have a seat belt across his or her lap for safety.

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- The doctor will hold a wand-like instrument against the area being treated.
- The doctor will “pulse” the laser on and off, as if turning a flashlight on and off, at a selected frequency.
- The pulses of the laser might feel similar to having a rubber band snapped against the skin. This feeling is more startling than painful.
- The number of pulses in a treatment depends on the size of the birthmark and varies from patient to patient. Larger areas, such as those involving an entire leg or arm, may receive up to 1000 pulses.

Children’s Hospital of Pittsburgh takes every precaution to make sure your child is safe.

Risks involved in the pulsed dye laser treatment include:

- The laser power being set too high, causing scarring. To avoid scarring, the doctor will set the laser to a low power setting during your child’s first treatment so that he or she can check your child’s reaction.
- After the first treatment, there might not be a change in the appearance of the port wine stain. If this happens, the doctor will change the setting of the laser for the next treatment.



## What Is General Anesthesia?

General anesthesia (*an-es-THEEZ-ya*) makes your child’s whole body go to sleep and is needed for children under 10 years of age for the pulsed dye laser treatment. General anesthesia will take away the fear young children might have during this procedure. Your child’s reflexes will be completely relaxed. General anesthesia makes the treatment easier and safer to do because your child will not feel any pain or have any memory of it.

## Home Preparation

In the 2 weeks before the pulsed dye laser treatment, your child should not have aspirin or Motrin®.

**When general anesthesia is needed, there are important rules for eating and drinking that must be followed in the hours before the procedure.** One business day before your child’s procedure, you will receive a phone call from a nurse between the hours of 1 and 9 p.m. (Nurses do not make these calls on weekends or holidays.) Please have paper and a pen ready to write down these important instructions.

- The nurse will give you specific eating and drinking instructions for your child based on your child’s age. Following are the **usual** instructions given for eating and drinking. No matter what age your child is, you should follow the specific instructions given to you on the phone by the nurse.

### For children older than 12 months:

- After midnight the night before the surgery, do not give any solid food or non-clear liquids. That includes milk, formula, juices with pulp, coffee and chewing gum or candy.

### For infants under 12 months:

- Up to 6 hours before the **scheduled arrival time**, formula-fed babies may be given formula.
- Up to 4 hours before the **scheduled arrival time**, breastfed babies may nurse.

### For all children:

- Up to 2 hours before the **scheduled arrival time**, give only clear liquids. Clear liquids include water, Pedialyte®, Kool-Aid® and juices you can see through, such as apple or white grape juice. Milk is not a clear liquid.
- In the 2 hours before **scheduled arrival time**, give nothing to eat or drink.

## Going To Sleep

Once your child has been registered for the treatment, a member of the anesthesia staff will meet with you to take your child’s vital signs, weight and medical history. As the parent or legal guardian, you will be asked to sign a consent form before the anesthesia is given.

- The anesthesiologist will meet with you and your child to review your child’s medical information and decide which kind of sleep medication your child should get.
- If your child is very scared or upset, the doctor may give a special medication to help him or her relax. This medication is flavored and takes effect in 10 to 15 minutes.
- If you wish, you may go with your child to the room where the surgery will be done and stay as the sleep medication is given.
  - Younger children will get their sleep medication through a “space mask” that will carry air mixed with medication. Your child may choose a favorite scent to flavor the air flowing through the mask. There are no shots or needles used while your child is still awake.
  - Older children may choose between getting their medication through the mask or directly into a vein through an intravenous (IV) line.
  - When your child has fallen asleep, you will be taken to the waiting room. If it has not already been done, an IV will be started so that medication can be given to keep your child sleeping throughout the procedure.

## While Asleep

While your child is asleep, his or her heart rate, blood pressure, temperature and blood oxygen level will be checked continuously. Your child might have a breathing tube placed while he or she is asleep. If a breathing tube is used, your child might have a sore throat after the procedure.

- To keep your child asleep during the treatment, he or she might be given anesthetic medication by mask, through the IV tube or both. When the treatment is over, the medications will be stopped and your child will begin to wake up.

## PULSED DYE LASER cont'd

### Waking Up

Following the treatment, your child will be moved to the recovery room. You will be called so that you can be there as he or she wakes up.

While your child is in recovery, your doctor will talk to you about the treatment.

- You will be told how to care for your child's treated area before leaving the hospital.
- The treated area will look darker, purple or bruised.
- When your child is awake enough, he or she might be given a Popsicle® or "slushy" to drink in the recovery room. Once the anesthesiologist sees that your child can hold down the drink and his or her pain is controlled, your child may go home.
- Recovery usually takes about 1 hour, but may vary because some children take longer than others to wake up after anesthesia.



### A Parent's/Guardian's Role During the Procedure

We welcome your help and support during the procedure.

- You are encouraged to talk to your child or hold his or her hand before the treatment, while sleep medication is given and while in recovery.
- You may bring along a "comfort" item—such as a stuffed animal or "blankie"—for your child to hold during the treatment.

### At Home

- After your child is discharged and goes home, he or she might still be groggy and should take it easy for the day.
- Once your child is home, he or she may resume a normal diet.
- After 2 or 3 weeks, the port wine stain will get darker before turning lighter.
- Your child should avoid direct contact with sunlight for 1 year.
- Your child should always use a sunscreen with SPF (Sun Protection Factor) of 50 or higher.
- Girls should not wear make-up for 4 weeks after the surgery.
- Your child will have a follow-up visit with his or her doctor 2 to 3 weeks after the treatment.

### Pain Medication

Most children do not require pain medication following the pulsed dye laser treatment. If your child does feel mild pain, you may give him or her over-the-counter Tylenol®.

- You will be given a prescription for antibiotic ointment that your child should use 3 times a day for 10-14 days.
- It is not necessary to use a bandage on the treated area.
- You may lightly wrap the area with gauze to keep the antibiotic ointment from making your child's clothing greasy, if needed.

### Bathing

Your child should keep the treated area dry for 24 hours after the pulsed dye laser treatment. After that, your child can bathe with warm water and a gentle soap, like Johnson and Johnson's Baby Soap. Be careful not to roughly scrub the area.

### Activity

Your child should avoid contact sports and swimming for 3 weeks.

### When To Call the Doctor

You should call your doctor if:

- You see bleeding or drainage from the treated area (this is not a common symptom)
- The area begins to crust or blister

### Special Needs

If your child has any special needs or health issues you feel the doctor needs to know about, please call the Department of Plastic Surgery at Children's Hospital of Pittsburgh **before the treatment** and ask to speak with a nurse. It is important to notify us **in advance** about any special needs your child might have.

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724-933-3700 Surgical Information

**Children's South**  
1300 Oxford Drive  
Bethel Park, PA 15102  
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724-933-3700 Surgical Information

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To see the list of all available patient procedures descriptions, please visit [www.chp.edu/procedures](http://www.chp.edu/procedures).