

Treating Infantile Hemangiomas in Children

A Review of the Research for Parents and Caregivers



Is This Information Right for Me?

This information is right for you if:

- Your child's health care professional* said that your child has an infantile hemangioma (pronounced IN-fen-tile hee-man-gee-OH-mah) on or under the skin. An infantile hemangioma (IH) on the top layer of the skin used to be called a "strawberry hemangioma" or "strawberry mark."
- Your child's health care professional said that your child's IH may need treatment.

This information may not be helpful to you if:

- Your child's IH is in or on an internal organ. The information in this summary is from research on treatments for IHs on or under the skin.

What will this summary tell me?

This summary will answer these questions:

- What is an infantile hemangioma (IH)?
- How are IHs treated?
- What have researchers found about how well the treatments work?
- What are possible side effects of medicines and laser treatments to treat IHs?
- What should I talk about with my child's health care professional?

* Your child's health care professional may include your primary care physician; pediatrician; skin doctor (dermatologist); ear, nose, and throat doctor (otolaryngologist); eye doctor (ophthalmologist); blood doctor (hematologist); surgeon; nurse practitioner; or physician assistant.

Where does the information come from?

Researchers funded by the Agency for Healthcare Research and Quality, a Federal Government research agency, reviewed studies on medicines and laser treatments for infantile hemangiomas published through June 2015. The report included 148 studies and was reviewed by health care professionals, researchers, experts, and the public. You can read the report at www.effectivehealthcare.ahrq.gov/infantile-hemangioma.



What is an infantile hemangioma?

An infantile hemangioma (IH) is a birthmark that happens when a group of blood vessels and other cells do not grow normally. The mark starts as a small bump or colored patch on the skin and may grow quickly. Its color depends on how deep in the skin the IH is. Often, you cannot see the IH at birth. The mark starts to appear in the first few weeks of life.

- An IH on the outer layer of skin is usually bright red and raised. This type of IH used to be called a “strawberry hemangioma” or “strawberry mark.”
- An IH that grows under the skin may make the skin look blue or may have no color. Tiny red blood vessels may also show up on the skin.
- Sometimes an IH is both on the outer layer of skin and under the skin.

An IH can form anywhere on the body, but it often forms on the head or neck.

An IH can range in size. It may stay as small as the tip of a crayon. Or, it may grow as big as a baseball or larger. The IH may grow very quickly in the first few months of life and may continue to grow until around 1 year of age or older.

Once the IH reaches its largest size, it usually starts to shrink and fade. It often takes several years for the IH to shrink and fade. The IH may not go away completely, or it may leave a scar.

How common is an IH?

- Out of every 100 babies, about 4 to 5 babies have an IH.
- IHs are more common in white babies.
- Girls have an IH more often than boys.
- Premature babies (those born before 37 weeks of pregnancy) have a higher risk of having an IH.

What problems can an IH cause, and when should an IH be treated?

Most IHs go away on their own over several years with no problems. But, an IH may cause problems in some cases.

- An IH may leave a scar or extra skin in some children.
 - » If your child's IH is in a visible place, such as on the face, talk with your child's health care professional about whether you should consider treatment.
- Sometimes, an IH can blister (ulcerate) or become infected.
 - » An infected IH may hurt and could leave a worse scar.
 - » Signs of an infected IH may include pain, redness, crustiness, discharge, or a bad smell coming from the IH. Call your child's health care professional if your child has any of these symptoms.
- An IH near the eyes, nose, or mouth could cause problems with seeing, breathing, or eating. These problems are rare but may be permanent if the IH is not treated early.
 - » For these more severe IHs, your child's health care professional may send your child to a specialist.

If your child's IH does not start to shrink and go away on its own, talk with your child's health care professional about whether treatment may be needed.

Understanding Your Options

How is an IH treated?

Most IHs do not need treatment and will go away on their own. Your child's health care professional may check the IH over time to make sure it is shrinking and is not causing any problems.

If the IH needs treatment, your child's health care professional will probably first suggest a medicine. Laser treatments can be used to treat IHs but are not used as often.

In some cases, surgery to remove the IH may be needed. Usually, health care professionals only suggest surgery if the IH is likely to cause serious problems (such as problems with seeing, breathing, or eating) and if medicines did not work to treat the IH.

Medicines

The chart on the next page gives information about medicines to treat IH. Which medicine your child's health care professional recommends depends on many things, such as your child's age and the size and location of your child's IH. Treatment with medicines taken by mouth or gel drops put on the IH usually lasts about 9 to 15 months.



Medicine (Brand Name)	How It Is Taken	More Information
Beta-Blockers		
Propranolol (Hemangeol™)	Taken by mouth daily	<ul style="list-style-type: none"> ■ Beta-blockers are used to treat many conditions, such as high blood pressure, irregular heartbeat, and migraine headaches. ■ Propranolol (Hemangeol™) is the first medicine to be approved by the U.S. Food and Drug Administration (FDA) for IHS. ■ Timolol (Timoptic-XE®) was made to treat glaucoma (an eye condition). Some health care professionals now use it to treat some types of IHS.* ■ Atenolol (Tenormin®) and Nadolol (Corgard®) were made to treat high blood pressure. Some health care professionals may also use these medicines to treat IHS.*
Timolol (Timoptic-XE®)	Gel drops put on the IH daily	
Atenolol (Tenormin®)	Taken by mouth daily	
Nadolol (Corgard®)		
Steroids		
Methylprednisolone (Medrol®)	Taken by mouth daily	<ul style="list-style-type: none"> ■ Steroids are used to treat many conditions, such as arthritis, asthma, and skin conditions. Health care professionals have also used steroids to treat IHS.*
Prednisolone (Flo-Pred®, Prelone®)		
Triamcinolone (Kenalog®)	Shot given monthly**	

* The FDA approves medicines to treat certain conditions. A health care professional may choose to prescribe a medicine for a condition other than what the FDA has approved it for. This is called “off-label” use, and health care professionals often prescribe medicines this way.

** The number of shots needed to treat an IH depends on the specific type of IH your child has. Talk with your child’s health care professional about how many shots your child may need.

What have researchers found about how well medicines work to treat an IH?

Beta-Blockers

- Propranolol (Hemangeol™) helps treat the IH in at least 9 out of every 10 children.
 - » Fewer than 2 out of every 10 children treated with propranolol (Hemangeol™) needed additional propranolol treatment because the IH started to grow again.
- Timolol (Timoptic-XE®) gel drops may help treat the IH in at least 6 out of every 10 children, but more research is needed to know this for sure.
- Atenolol (Tenormin®) and nadolol (Corgard®) may help treat IHS as well as propranolol (Hemangeol™) does, but more research is needed to know this for sure.

Steroids

- Methylprednisolone (Medrol®) and prednisolone (Flo-Pred®, Prelone®) help treat the IH in at least 4 out of every 10 children.
- Triamcinolone (Kenalog®) may help treat the IH in at least 5 out of every 10 children, but more research is needed to know this for sure.
- The beta-blocker propranolol (Hemangeol™) works better than steroids to treat IHs.

What are the possible side effects of medicines to treat an IH?

Medicine (Brand Name)	Possible side effects listed by the FDA include:	
Beta-Blockers		
Propranolol (Hemangeol™) by mouth	<ul style="list-style-type: none"> ■ Trouble sleeping ■ Cold hands and feet 	<ul style="list-style-type: none"> ■ Low blood pressure ■ A slow heartbeat
Timolol* (Timoptic-XE®) gel drops	<ul style="list-style-type: none"> ■ Diarrhea 	<ul style="list-style-type: none"> ■ Trouble breathing, such as wheezing
Atenolol (Tenormin®) by mouth	<ul style="list-style-type: none"> ■ Nausea 	<ul style="list-style-type: none"> ■ Low blood sugar (may also keep symptoms of low blood sugar from showing up)
Nadolol (Corgard®) by mouth	<ul style="list-style-type: none"> ■ Vomiting 	
Steroids		
Methylprednisolone (Medrol®) by mouth	<ul style="list-style-type: none"> ■ Mood changes ■ Problems with growth ■ Roundness of the face ■ Increased appetite 	<ul style="list-style-type: none"> ■ Changes in the way the body uses glucose (sugar) ■ High blood pressure ■ Increased risk of infection
Prednisolone (Flo-Pred®, Prelone®) by mouth	<ul style="list-style-type: none"> ■ Weight gain 	The triamcinolone (Kenalog®) shot can also cause: <ul style="list-style-type: none"> ■ Changes in skin color ■ Thinning of the skin
Triamcinolone (Kenalog®) shot	<ul style="list-style-type: none"> ■ Fluid retention (body tissues hold extra water) 	

* Because timolol (Timoptic-XE®) is put on the skin instead of taken by mouth or as a shot, it may cause fewer side effects.

Note: It is important to talk with your child's health care professional about the safety of medicines to treat your child's IH. According to the FDA:

- » Beta-blockers should not be taken by children who have:
 - Wheezing or other breathing problems
 - A slow heartbeat
 - Certain heart problems
- » Propranolol (Hemangeol™) should not be taken by children who:
 - Weigh less than 4.5 pounds
 - Have low blood pressure
- » The steroid shot triamcinolone (Kenalog®) should not be taken by children who are younger than 3 weeks old.

Laser Treatments

Your child's health care professional may suggest laser treatments. Laser treatments use focused light energy to help treat the IH.

Possible side effects of laser treatments include:

- A scar
- Changes in skin color (light spots or dark spots*)
- Thinning of the skin
- Bleeding
- Blistering
- Infection

*Researchers found that light spots are more common than dark spots.

What have researchers found about how well laser treatments work to treat an IH?

- Laser treatments appear to help treat IHs, but more research is needed to know this for sure.
- More research is needed to know how laser treatments compare with medicines to treat IHs.



Making a Decision

What should I think about when deciding?

There are several things to think about when deciding whether to treat your child's IH, and if so, which treatment might be best. You may want to talk with your child's health care professional about:

- If treatment is needed or if the IH will likely go away on its own without any problems
- If the IH is treated, which treatment may be best for your child
- The possible side effects of treatment
- The cost of the treatment

Ask your child's health care professional

- Do you recommend treating my child's IH or letting it go away on its own?
- How long might it take for the IH to go away on its own?
- Do you think my child's IH could cause any problems if it is not treated?
- Is the IH likely to leave a scar?
- If we decide to treat my child's IH, when should treatment begin?
- Which treatment might be best? Why?
- If a medicine might help my child, which one do you think may be best?
- How long might my child have to take the medicine?
- What short-term and long-term side effects should I watch for?
- Might laser treatments help my child?
- How many laser treatments might my child need?
- What are the possible benefits and side effects of laser treatments?
- Might my child need surgery?
- What are the possible benefits and risks of surgery?

Other questions:

Write the answers here:

Source

The information in this summary comes from the report *Diagnosis and Management of Infantile Hemangioma*, January 2016. The report was produced by the Vanderbilt University Evidence-Based Practice Center through funding by the Agency for Healthcare Research and Quality (AHRQ).

For a copy of the report or for more information about AHRQ, go to www.effectivehealthcare.ahrq.gov/infantile-hemangioma.

Additional information came from the MedlinePlus® Web site, a service of the National Library of Medicine and the National Institutes of Health. This site is available at www.medlineplus.gov.

This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX. Parents and caregivers of children with infantile hemangiomas reviewed this summary.

