

# The Little Lip Book



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Because “Inquiring minds want to know!” we thought it would be an excellent idea to create a little book dedicated to lips and lip care. *The Little Lip Book* is the result. We hope that you find it interesting and useful.

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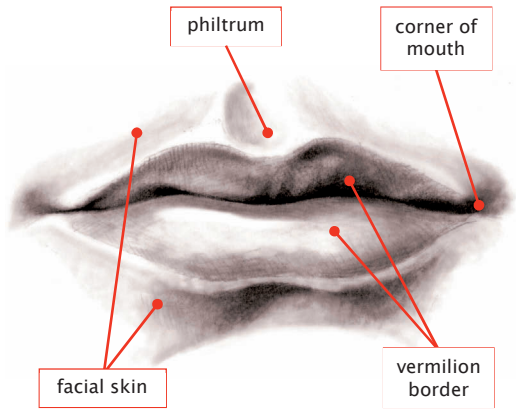
## **Normal Healthy Lips**

The function of all surface tissues on the body, including the lips, is to protect the body from the outside environment. Such protection can only be accomplished if the lips are kept healthy. Healthy, flexible lips help us to smile, whistle, and kiss without discomfort, while protecting us from the harmful effects of the sun and wind.

### **The Lips' Surfaces and Layers**

The lips have three distinct surfaces. The outside surface of the lip is covered with the same kind of skin as on the face. The part that is commonly referred to as the lip is actually the edge of the lip, also known as the vermilion border, and is more darkly or brightly colored than the facial skin. The inside of the lip is a soft

moist surface called the mucous membrane surface. It is made of the same type of tissue that lines the inside of the rest of the mouth.



*Figure 1. Surfaces of the lips, including the corners of the mouth and the philtrum*

All three surfaces have their own special functions and characteristics. The mucous membrane surface is constantly lubricated with saliva, allowing it to move easily without being bitten or torn by food. The facial skin and the vermillion border, like all skin, are keratinized, meaning the surface cells come from living cells at the innermost layer of the skin. As these cells rise from the innermost layer to the surface of the skin, they die and harden to form a tough, protective layer.

This tough, keratin-covered outer surface (referred to as the keratinized layer) protects the delicate underlying growing cells from the harmful effects of the environment, most commonly sun (ultraviolet) exposure, and from drying out. If the keratin layer breaks down and peels, then a person has chapped lips. The “chaps” are the layers of keratin peeling from the surface of the lip.

It should be noted that this protective keratin layer is not perfect. Products such as lip balm are designed to help the skin's natural keratin protect the lips from dehydration and sun damage.

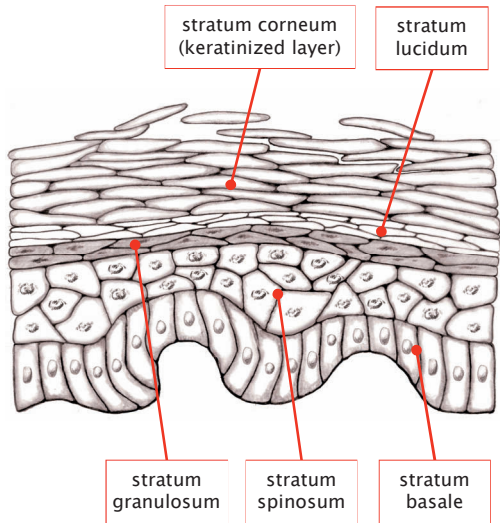


Figure 2. Layers of the skin that protect the lips

## Texture

Lip texture can range from smooth to rough. The surface of healthy lips is smooth to the eye and to the touch. If the surface becomes damaged, thick, or dried out, the texture and appearance become rough.

## Flexibility

Another aspect of healthy lips is that they are flexible as long as they have enough moisture. This flexibility allows them to stretch and move without cracking.

## Color

Lip color varies among people. The color of normal, healthy lips is controlled by several factors, including the amount of natural pigment, the thickness of the overlying skin, and the color of the underlying blood. On almost everyone, the reason the lips are redder and, almost

always, darker than the face is because the lip's surface skin is thinner than the facial skin. Therefore, we can see right through the skin of the lips to the blood in the vessels underneath. The thinner and paler the skin, the redder the lips will appear.

There are other reasons the color of the lip can vary, beside skin thickness. For example, blood is only red if it contains a lot of oxygen; as it loses oxygen to the tissue around it, blood turns blue. Therefore, if a person is cold and the blood is not circulating well through their lips, then the lips can appear blue, because of the color of the underlying blood. Think about the appearance of your lips after leaving a cold swimming pool or playing in the snow! The color of a person's lips can also be pale if they don't have enough red blood cells; this is why a person with anemia can have pale or blue lips.

## **Contour**

Lips come in many shapes, but in all cases, the upper and lower lips join at the sides to create the corners of the mouth. The center of the upper lip, directly under the nose and bordered by two ridges, is called the philtrum. The philtrum is where the lips joined together during embryonic development.

## Problems That Can Occur (In Order of Frequency)

### Chapping

The most common lip problem that occurs is chapping, which is the breakdown or cracking of the keratin surface layer. The most common reasons for chapping of lips are frequent licking of the lips, dehydration, and damage from the sun. Specifically, damage is caused by exposure to certain ultraviolet rays from the sun.

Dehydration most commonly occurs in dry environments. It can also occur in a cold climate with artificial heat, with mouth breathing (for all kinds of reasons), and insufficient fluid intake, or excessive fluid loss.



*Figure 3. Dry or chapped lips*

Another common cause of dehydration is frequent licking of the lips, which removes the natural protective oils within the lip tissue, and in turn allows the natural moisture of the lips to evaporate. This moisture loss results in drying and cracking of the lip's surface.

Exposure to the ultraviolet rays of the sun is another reason that lips chap. The sun's ultraviolet rays damage the keratin-producing cells that create the protective

outer layer of the lip. Lips can sunburn and peel just like regular skin. Also just like regular skin, once the cells are damaged, they break apart and fall off.



*Figure 4. Solar damage*

When the lips lose these cells, they become chapped. The chapping will continue until all the damaged cells fall off, and new cells take their place. But, it is important to realize that even the new cells are slightly damaged, so sun damage

to skin cells is permanent and adds up over time.

Now and then, in some people, natural products that come in contact with the lip's surface when eating, such as oil from lemon skins or acid from vinegar, can also cause damage or inflammation.

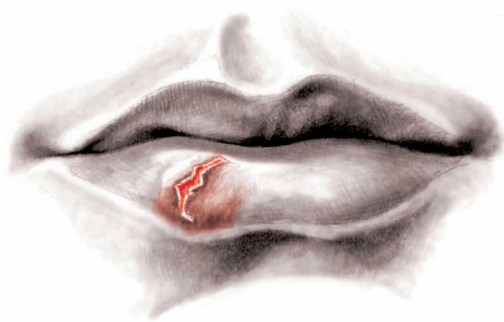
Once the lip's surface is damaged, no matter why it has occurred, the flexibility of the lips is also decreased because moisture is lost. This loss of flexibility will make the lips crack more, because they cannot stretch without breaking.

### **Physical Trauma**

Physical trauma to lips can arise from impact with a hard object. Physical trauma often occurs while playing sports and usually results in swelling or a break in the lip's surface skin. If the lip tissue is kept moist and flexible, the trauma will

usually heal in about one week. Sometimes, physical trauma to the lips can be caused by using a lip product that is too hard and damages the lip when applied.

This is especially true if the lip tissue is already partly damaged and the flexibility of the tissue has been decreased. Trying to apply lip balm that is too hard can tear and crack the lips further.



*Figure 5. Trauma*

## **Allergy**

Another problem that can cause lip damage is an allergic reaction to something that touches the surface of the lips. This is called a contact allergy. Some things, like poison ivy, commonly cause allergic reactions. Less commonly, allergic reactions can also be caused by various substances in foods, dental products, and cosmetics. Allergic reactions to chemical compounds used in different types of skin products, and even in some types of lip balm, are possible.

Allergic reactions may appear as blisters, redness, or cracking of the lip's surface. If a person has an allergy to a specific chemical, then they cannot use a product that contains that chemical on their lips.

The best way to figure out whether you have an allergy to a product is to stop using it, allow the area to heal, and then

reapply the suspected product. If your lips again start to become irritated or red, then you know that you can no longer use that product.



*Figure 6. Allergy*

If you seem to react to a lot of different products, you may be allergic to a common ingredient that is found in many lip balms or cosmetic products. If you are not able to find a product that you are not allergic to, then you should consult with a dermatologist or allergist who can test you for common contact allergies.

## **Infections**

Lips can sometimes become infected. Infections can be caused by a virus, a fungus, or, very infrequently, bacteria.

### *Herpes Simplex (Viral Infection)*

The most common infection that occurs on lips is a viral infection, usually due to the herpes simplex virus. The sore from a herpes simplex infection is commonly called a cold sore or fever blister. Studies document that seventy to ninety percent of the U.S. population has been exposed to the herpes simplex virus, usually in childhood.

After the first infection, the virus lives in the nerves where it first entered the body. This is why cold sores always seem to come back in the same location.

Recurrent herpes lip sores are most commonly triggered by sunlight (ultraviolet

radiation) exposure, but can also be caused by trauma and other factors, such as stress or diet.



*Figure 7. Viral infection (fever blisters)*

No matter what starts a recurrent herpes attack, or outbreak, people often first notice a tingling sensation on the face or lip. The lip will then turn red and blister, and pain will occur. The blisters break, leaving a crusted sore that usually lasts about five to seven days.

It is important to protect the crusting sore or scab to help the healing process. Use of a soft lip balm such as pure petrolatum or vitamin E oil, may help.

Some people get a recurrent herpes lip sore once every few years, in others, they may occur much more frequently. If you get frequent herpes outbreaks, you should see your dentist or physician. They can prescribe a medication that may prevent or shorten the attacks and decrease the duration of the pain.

#### *Angular Cheilitis (Fungal Infection)*

The second most common infection of the lip is a fungal or yeast infection. A fungal infection most commonly appears as cracking in the corners of the mouth, and is referred to as angular cheilitis. (Angular, from the Latin *angulus*, meaning corner. Cheilitis, from the Greek *cheilos*, meaning lip.) Yeast organisms prefer to grow in

moist environments, and too much moisture at the corners of the mouth can allow the area to become and remain infected. Some possible causes of angular cheilitis are drooling at night and frequent licking of lips, which can keep the area too moist.



*Figure 8. Angular cheilitis*

The most appropriate treatment for such an infection is the use of topical anti-fungal medications. If you have recurrent or persistent cracking in the corners of your mouth, you should contact your

dentist or dermatologist, who may choose to prescribe an antifungal cream.

## **Cancer**

Cancer occurs, rarely, on the lip (most often the lower lip). The most common cancer is called squamous cell carcinoma and is thought to be caused by damage from ultraviolet rays of the sun and other risks, like tobacco use. Before a cancer develops, the tissue on the lip, which is normally pink to red, will usually become thicker, firmer, and whiter. Bleeding and an open sore that will not heal are the most common features of lip cancer.



*Figure 9. Cancer*

The best ways to prevent lip cancer from developing are to avoid the use of tobacco and to make sure the lips are protected from the sun by using a sunscreen. The sunscreen needs to be applied frequently and thickly to ensure adequate protection. Certainly, if you have a persistent sore or white area on your lip, you should see your dentist, dermatologist or physician to make sure that it is not a cancer. The sooner lip cancer is identified, the easier it will be to treat.

## Proper Care of Lips

Now that you understand normal lips and the various problems that can occur, it is time to develop an understanding of appropriate lip care.

If you are having any of the lip problems listed in this book, you should consult your dentist, dermatologist or physician for advice. But, as with most things, the best approach to any lip problems is to prevent them from occurring in the first place.

Since dehydration is a common reason for the cracking and chapping of lips, applying a lip balm or salve that prevents dehydration is the first step. There are a variety of compounds that are effective. A common one is petrolatum. Other effective natural compounds include cocoa butter, beeswax, lanolin, and shea butter. The

primary function of all these compounds is to seal the natural moisture in the lips, thereby preventing them from drying out.

Another common cause of lip damage is exposure to ultraviolet radiation from the sun, i.e. sunburn. Protecting your lips from the sun with compounds that block the sun or absorb the harmful rays is an important aspect of lip care.

### **Common Lip Balm Ingredients**

The term *lip balm* is commonly used to describe preparations that are applied to the lips. However, *balm* is an older term used to describe aromatic (scented) ointments. An ointment is a semi-solid preparation (usually containing a medicine or an active ingredient) applied externally as a healing remedy or to soothe an irritation.

There are many ingredients that make a lip balm effective. These are listed below, along with their purposes.

#### *Prevent Drying*

- Lanolin
- Cocoa butter
- Shea butter
- Vegetable oils (olive oil, coconut oil, palm oil)
- Beeswax
- Petrolatum

#### *Prevent Solar Damage*

- Zinc oxide
- Titanium oxide

The above compounds are white. They physically block the sun's rays, shading the lip tissue underneath.

- Octocrylene
- Oxybenzone
- Avobenzone

- Octinoxate
- Padimate

These chemicals are clear. They absorb the harmful rays of the sun.

The ability to block or absorb the sun's rays, thereby preventing solar/ultraviolet damage, is an important component of many skin care products, including lip balms. Scientists use the Sun Protection Factor (SPF) value as one measure of a product's effectiveness against harmful ultraviolet rays. Sunscreens with an SPF value greater than 15 and labeled "Broad Spectrum"- meaning protection against both UVA and UVB rays- help reduce the risk of skin cancer, early skin aging, as well as sunburn. A generous amount of sunscreen should be applied to your lips at least 15 minutes before sun exposure, and the same amount should be reapplied at least every two hours. In addition to frequently applying sunscreens to your lips, you can best protect your lips by

limiting your time in the sun, especially from 10 a.m.-2 p.m, and wearing hats.

#### *Relieve Discomfort*

- Menthol
- Camphor

#### *Lubrication*

- Lanolin
- Butters (cocoa butter, aloe butter, shea butter, vegetable oils)
- Petrolatum
- Vitamin E

In addition to preventing lips from drying, these ingredients also provide a lubricating effect, thereby keeping the lips flexible.

#### *Smooth Chapped Lips/Remove Dead Skin*

- Salicylic acid (loosens the keratin layer and allows the chaps to fall off)
- Phenol



### *Cosmetic or Aesthetic Ingredients*

- Coloring agents
- Essential oils and fragrances (Essential oils are oils from plants like mint, lavender, or eucalyptus trees that have a good essence, a good smell.)
- Glossing compounds (These compounds make the lips look shiny and moist.)

## Summary

That's it; you are now a lip master. You now know more about lips than most people on the planet. You know the surfaces of a lip, problems that occur on the lip and, most importantly, how to care for your lips.

Smile, kiss and be happy!

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To Readers of The Little Lip Book:

Carma Laboratories, Inc. has been in the lip care business for nearly 75 years. A few years ago we recognized that while we knew how to make great lip care products we wanted a group of scientists to advise us from an unbiased scientific standpoint. We created a Scientific Advisory Committee. The Committee's charge is:

The mission and sole purpose of the Scientific Advisory Committee is to provide independent, unbiased, evidence-based advice to Carma Laboratories regarding lip balms and related products.

The Little Lip Book is one product of the Scientific Advisory Committee's fine work. We hope that you find this book to be interesting and helpful from a scientific as well as a personal standpoint.

A handwritten signature in blue ink that reads "Paul Woelbing". The signature is written in a cursive style with a long, sweeping tail on the final letter.

Paul Woelbing  
President

## Got Questions?

Send me any lip questions you have. The Little Lip Book team will find the answer and send it back to you.

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