

10



NAIL DISORDERS & DISEASES

LEARNING OBJECTIVES

After completing this chapter, you will be able to:

LO 1

List and describe the various disorders and irregularities of nails.

LO 2

Recognize diseases of the nails that should not be treated in the salon.

LO 3

Perform a hand, nail, and skin analysis on a client.

OUTLINE

WHY STUDY NAIL DISORDERS
AND DISEASES? 208

PINPOINT COMMON
AND UNCOMMON NAIL
DISORDERS 208

RECOGNIZE NAIL DISEASES 214

PERFORM HAND, NAIL, AND SKIN
ANALYSIS 218

To perform professional and responsible service and care, you need to learn about the structure and growth of the nail, as you did in Chapter 9, Nail Structure and Growth. Now you must learn about the disorders and diseases of nails so that you will know when it is safe to work on a client. Nails are an interesting and surprising part of the human body. They are small mirrors into an individual's general health. Certain health conditions may first be revealed by a change in the nails, a visible disorder, or poor nail growth. Some conditions are easily treated in the salon—hangnails, for instance, or bruised nail beds that need camouflage—but some are infectious and cannot be treated by salon professionals. Carefully studying this chapter will vastly improve your knowledge and expertise in caring for nails.

why study NAIL DISORDERS AND DISEASES?

Cosmetologists should study and have a thorough understanding of nail disorders and diseases because:

- > You must be able to identify those conditions on a client's nails and determine if they should or should not be treated in the salon.
- > You must acknowledge infectious conditions that may be present so you can take the appropriate steps to protect yourself and your clients from the spread of disease.
- > You need to be able to recognize conditions that may signal mild to serious health problems that warrant the attention of a doctor.

After reading the next few sections, you will be able to:

LO 1 List and describe the various disorders and irregularities of nails.

Pinpoint Common and Uncommon Nail Disorders

As you now know, a normal, healthy nail is firm but flexible. The surface is shiny, smooth, and unspotted with no wavy ridges, pits, or splits. A healthy nail also is whitish and translucent in appearance, with the pinkish color of the nail bed showing through. In some races, the nail bed may have more yellow tones. A **nail disorder** is a condition caused by injury,

heredity, or previous disease of the nail unit. Most, if not all, of your clients have experienced a common nail disorder at some time in their lives. A cosmetologist should recognize common or normal disorders as well as abnormal nail conditions, understand what to do, and be able to help a client with a nail disorder in one of two ways:

- You can tell clients that they may have a disorder and refer them to a physician if required.
- You can cosmetically improve certain nail plate conditions if the problem is cosmetic and not a medical condition.

It is your professional responsibility and a requirement of your license to know which option to choose. A client whose nail or skin is infected, inflamed, broken, or swollen should not receive services and should be referred to a physician to determine the type of treatment that is required.



figure 10-1
Beau's lines

Common Nail Disorders

Beau's lines (BOWZ LYNEZ), sometimes called *furrows* (FUR-ohs) or *corrugations* (kor-uh-GAY-shuns), are visible depressions running across the width of the natural nail plate (**figure 10-1**). They usually result from major illness or injury that has traumatized the body, such as pneumonia, adverse drug reaction, surgery, heart failure, massive injury, or a long-lasting high fever. Beau's lines occur because the matrix slows down in producing nail cells for several weeks or a month. This causes the nail plate to grow thinner for a period of time. The nail plate thickness usually returns to normal after the illness or condition is resolved.

Blue fingernails, named for the nail bed color, is usually caused by a lack of circulating oxygen in the red blood cells. It may also represent a high level of an abnormal form of hemoglobin in the circulation. If normal color returns upon warming and/or massage, the cause is due to the fingers and nails not getting enough blood supply due to cold, constriction (of the tissues or the blood vessels that supply the tissues), or some other reason. If the fingernails remain blue, then there may be an underlying disease or structural abnormality interfering with the body's ability to deliver oxygenated red blood.

Bruised nail beds are a condition in which a blood clot forms under the nail plate, causing a dark purplish spot. These discolorations are usually due to small injuries to the nail bed. The dried blood absorbs into the nail bed epithelium tissue on the underside of the nail plate and grows out with it. Treat this injured nail gently and advise your clients to be more careful with their nails if they want to avoid this problem in the future. Advise them to treat their nails like jewels, not tools! This condition can usually be covered with nail polish or camouflaged with an opaque nail enhancement.

Discolored nails are nails that turn a variety of colors, which may indicate surface staining, a systemic disorder, or poor blood circulation. Although quite common, a discolored nail may be caused by several factors such as surface stains from nail polish, foods, dyes, or smoking. A discolored nail could also be caused by an internal discoloration of the nail plate due to biological, medical, or even pharmaceutical reasons.

? **DID YOU KNOW?**
Clients cannot sign a waiver or verbally give a cosmetologist permission to disobey state or federal rules and regulations.



figure 10-2
Hangnail

Eggshell nails are noticeably thin, white nail plates that are more flexible than normal. Eggshell nails are normally weaker and can curve over the free edge. The condition is usually caused by improper diet, hereditary factors, internal disease, or medication. Be very careful when manicuring these nails because they are fragile and can break easily. Use the fine side of an abrasive board (240 grit or higher) to file them gently, but only if needed. It is best not to file a nail plate of this type. A thin protective overlay of enhancement product can be helpful, but do not extend these nails beyond the free edge.

Hangnail is a condition in which the living skin around the nail plate splits and tears (**figure 10-2**). Dry skin or small cuts can result in hangnails. If there is no sign of infection or an open wound, advise the client that proper nail care, such as hot oil manicures, will aid in correcting the condition. Also, never cut the living skin around the natural nail plate, even if it is dry and rough looking. Other than to carefully remove the thin layer of dead cuticle tissue on the nail plate, you should not cut skin anywhere on the hands or feet. Hangnails can be carefully trimmed, as long as the living skin is not cut or torn in the process. It is against state board regulations to intentionally cut or tear the client's skin and can lead to serious infections for which you and the salon may be legally liable. If not properly cared for, a hangnail can become infected. Clients with symptoms of infections in their fingers should be referred to a physician. Signs of infection are redness, pain, swelling, or pus.

Koilonychia (koyal-oh-NICK-ee-uh) are soft spoon nails with a concave shape that appear scooped out. The depression is usually large enough to hold a drop of liquid. Often spoon nails are a sign of iron deficiency, anemia, or a liver condition known as hemochromatosis, in which your body absorbs too much iron from the food you eat. Spoon nails can also be associated with heart disease and hypothyroidism or other long-term illness.

Leukonychia spots (loo-koh-NIK-ee-ah SPATS), also known as *white spots*, are whitish discolorations of the nails, usually caused by minor injury to the nail matrix. It is a myth that these are caused by a vitamin or mineral deficiency (e.g., calcium or zinc). They appear frequently in the nails but do not indicate disease. As the nail continues to grow, the white spots eventually grow off and disappear (**figure 10-3**).

Melanonychia (mel-uh-nuh-NIK-ee-uh) is darkening of the fingernails or toenails. It may be seen as a black band within the nail plate extending from the base to the free edge (**figure 10-4**). In some cases, it may affect the



figure 10-3
Leukonychia spots



figure 10-4
Melanonychia

entire nail plate. A localized area of increased pigment cells (melanocytes), usually within the matrix, is responsible for this condition. As matrix cells form the nail plate, melanin is laid down within the plate by the melanocytes. This is a fairly common occurrence and considered normal in people of color, but could be indicative of a disease condition in Caucasians.

Onychophagy (ahn-ih-koh-FAY-jee), also known as *bitten nails*, is the result of a habit of chewing the nail or the hardened, damaged skin surrounding the nail plate (figure 10-5). Advise clients that frequent manicures and care of the hardened eponychium can often help them overcome this habit, at the same time improving the health and appearance of the hands. Sometimes the application of nail enhancements can beautify deformed nails and discourage the client from biting the nails. However, the bitten, damaged skin should not be treated by a cosmetologist. If the skin is broken or infected, no services can be provided until the area is healed.

Onychorrhexis (ahn-ih-koh-REK-sis) refers to split or brittle nails that have a series of lengthwise ridges giving a rough appearance to the surface of the nail plate (figure 10-6). This condition is usually caused by injury to the matrix, excessive use of cuticle removers, harsh cleaning agents, aggressive filing techniques, or heredity. Nail services can be performed only if the nail is not split, exposing the nail bed. Nail enhancement product should never be applied if the nail bed is exposed. This condition may be corrected by softening the nails with a conditioning treatment and discontinuing the use of harsh detergents, cleaners, or improper filing. These nail plates often lack sufficient moisture, so twice-daily treatments with a high quality, penetrating nail oil can be very beneficial. Nail hardeners should always be avoided on brittle nails, since these products will increase brittleness.

Plicatured nail (plik-a-CHOORD NAYL), also known as *folded nail*, is a type of highly curved nail plate usually caused by injury to the matrix, but it may be inherited. This condition often leads to ingrown nails (figure 10-7).

Ridges are vertical lines running down the length of the natural nail plate that are caused by uneven growth of the nails, usually the result of normal aging. Older clients are more likely to have these ridges, and unless the ridges become very deep and weaken the nail plate, they are perfectly normal. When manicuring a client with this condition, carefully buff the nail plate to minimize the appearance of these ridges. This helps to remove or minimize the ridges, but great care must be taken not to overly thin the nail plate, which



figure 10-5
Onychophagy or bitten nails



figure 10-6
Onychorrhexis



figure 10-7
Plicatured nail

could lead to nail plate weakness and additional damage. Ridge filler is less damaging to the natural nail plate and can be used with colored polish to give a smooth appearance while keeping the nail plate strong and healthy.

A **splinter hemorrhage** (SPLIN-tohr HEM-err-aje) is caused by physical trauma or injury to the nail bed that damages the capillaries and allows small amounts of blood flow. As a result, the blood stains the bed epithelium tissue that forms rails to guide the nail plate along the nail bed during growth. This blood oxidizes and turns brown or black, giving the appearance of a small splinter underneath the nail plate. Splinter hemorrhages will always be positioned lengthwise in the direction of growth (pointing toward the front and back of the nail plate) because this is how the bed epithelium rails grow. Splinter hemorrhages are normal and usually associated with some type of hard impact or other physical trauma to the fingernail or toenail.

Uncommon or Abnormal Nail Disorders

Onychauxis (ahn-ih-KAHK-sis) refers to the thickening of nails. It is usually observed in both the toenails and the fingernails and may present in a number of different ways. Its treatment is to trim or bring the nails down to size, but if the nails are ingrown it is advisable to ask a doctor for assistance. **Onychogryposis** (ahn-ih-koh-gry-POH-sis), also known as *ram's horn* or *claw nails*, is an enlargement of the fingernails or toenails accompanied by increased thickening and curvature. This condition is usually found on the great toes.

Nail pterygium (NAYL teh-RIJ-ee-um) is an abnormal condition that occurs when the skin is stretched by the nail plate. This disorder is usually caused by serious injury, such as burns, or an adverse skin reaction to chemical nail enhancement products. The terms *cuticle* and *pterygium* do not designate the same thing and they should never be used interchangeably. Nail pterygium is abnormal and is caused by damage to the eponychium or hyponychium.

Do not treat nail pterygium and never push the extension of skin back with an instrument. Doing so will cause more injury to the tissues and will make the condition worse. The gentle massage of conditioning oils or creams into the affected area may be beneficial. If this condition becomes irritated, painful, or shows signs of infection, recommend that the client see a physician for examination and proper treatment.

Nail plates with a deep or sharp curvature at the free edge have this shape because of the matrix; the greater the curvature of the matrix, the greater the curvature of the free edge. Increased curvature can range from mild to severe pinching of the soft tissue at the free edge. In some cases, the free edge pinches the sidewalls into a deep curve. This is known as **pincer nail** (PIN-sir NAYL), also known as *trumpet nail*. The nail can also curl in on itself (figure 10-8), may be deformed only on one sidewall, or the edges of the nail plate may curl around to form the shape of a trumpet or sharp cone at the free edge. In each of these cases, the natural nail plate should be carefully trimmed and filed. Extreme or unusual cases should be referred to a qualified medical doctor or podiatrist.

A brief summary of nail disorders is found in [table 10-1](#).

You should never provide any type of nail services to clients with a nail bacterial or fungal infection.



figure 10-8
Pincer or trumpet nail

table 10-1

OVERVIEW OF NAIL DISORDERS

Disorder	Signs or Symptoms
Beau's Lines (BOWZ LYNEZ)	Visible depressions running across the width of the natural nail plate; usually a result of major illness or injury that has traumatized the body.
Blue Fingernails	Blue or purple nail bed, usually from poor circulation.
Bruised Nail Beds	Dark purplish spots, usually due to physical injury.
Discolored Nails	Nails turn a variety of colors; may indicate surface staining, a systemic disorder, or poor blood circulation.
Eggshell Nails	Noticeably thin, white nail plates that are more flexible than normal and can curve over the free edge; usually caused by improper diet, hereditary factors, internal disease, or medication.
Hangnail	Living skin around the nail plate (often the eponychium) that becomes split or torn.
Koilonychia (koyal-oh-NICK-ee-uh)	Also known as <i>spoon nails</i> ; inverted or concave nails.
Leukonychia Spots (loo-koh-NIK-ee-ah SPATS)	Also known as <i>white spots</i> ; whitish discolorations of the nail usually caused by minor injury to the nail matrix. Not related to the body's health or vitamin deficiencies.
Melanonychia (mel-uh-nuh-NIK-ee-uh)	Darkening of the fingernails or toenails; may be seen as a black band within the nail plate extending from the base to the free edge.
Nail Pterygium (NAYL teh-RIJ-ee-um)	Abnormal stretching of skin around the nail plate; usually caused by serious injury, such as burns, or an adverse skin reaction to chemical nail enhancement products or an allergic skin reaction.
Onychauxis (ahn-ih-KAHK-sis)	Thickening of the fingernails or toenails.
Onychogryposis (ahn-ih-koh-gry-POH-sis)	Also known as <i>ram's horn</i> or <i>claw nails</i> ; an enlargement of the fingernails or toenails accompanied by increased thickening and curvature.
Onychophagy (ahn-ih-koh-FAY-jee)	Also known as <i>bitten nails</i> ; chewed nails or chewed hardened skin surrounding the nail plate.
Onychorrhexis (ahn-ih-koh-REK-sis)	Split or brittle nails that have a series of lengthwise ridges giving a rough appearance to the surface of the nail plate.
Pincer Nail (PIN-sir NAYL)	Also known as <i>trumpet nail</i> ; increased crosswise curvature throughout the nail plate caused by an increased curvature of the matrix; the edges of the nail plate may curl around to form the shape of a trumpet or sharp cone at the free edge.
Plicatured Nail (plik-a-CHOORD NAYL)	Also known as <i>folded nail</i> ; a type of highly curved nail plate, usually caused by injury to the matrix, but it may be inherited.
Ridges	Vertical lines running the length of the natural nail plate that are caused by uneven growth of the nails, usually the result of normal aging.
Splinter Hemorrhage (SPLIN-tohr HEM-err-aje)	Physical trauma or injury to the nail bed that damages the capillaries and allows a small amount of blood flow.

After reading the next few sections, you will be able to:

- LO² Recognize diseases of the nails that should not be treated in the salon.

Recognize Nail Diseases

Many disorders are caused by disease. **Onychosis** (ahn-ih-KOH-sis) is any deformity or disease of the natural nail. Since there are several nail diseases that you may come across, it is important to know if they are infectious and cannot be serviced, or if it is noninfectious and can receive a partial or specialized service.

A brief overview of nail diseases is found in [table 10-2](#).

table 10-2

OVERVIEW OF NAIL DISEASES

Disease	Signs or Symptoms
Nail Psoriasis (NAYL suh-RY-uh-sis)	Tiny pits or severe roughness on the surface of the nail plate.
Onychia (uh-NIK-ee-uh)	Inflammation of the nail matrix followed by shedding of the nail.
Onychocryptosis (ahn-ih-koh-krip-TOH-sis)	Also known as <i>ingrown nails</i> ; nail grows into the sides of the tissue around the nail.
Onycholysis (ahn-ih-KAHL-ih-sis)	Lifting of the nail plate from the nail bed, without shedding, usually beginning at the free edge and continuing toward the lunula area.
Onychomadesis (ahn-ih-koh-muh-DEE-sis)	Separation and falling off of a nail plate from the nail bed; can affect fingernails and toenails.
Onychomycosis (ahn-ih-koh-my-KOH-sis)	Fungal infection of the natural nail plate.
Paronychia (payr-uh-NIK-ee-uh)	Bacterial inflammation of the tissues surrounding the nail. Redness, pus, and swelling are usually seen in the skin fold adjacent to the nail plate.
<i>Pseudomonas Aeruginosa</i> (SUE-duh-MOAN-us aye-ru-jin-oh-sa)	Common bacteria that can lead to a bacterial infection that appears as a green, yellow, or black discoloration on the nail bed.
Pyogenic Granuloma (py-oh-JEN-ik gran-yoo-LOH-muh)	Severe inflammation of the nail in which a lump of red tissue grows up from the nail bed to the nail plate.
Tinea Pedis (TIN-ee-uh PED-us)	Also known as <i>athlete's foot</i> ; red, itchy rash on the skin on the bottom of feet and/or between the toes, usually between the fourth or fifth toe.



ACTIVITY

Go to a library or use the Internet to research the term *scope of practice* for medical doctors, dermatologists, and podiatrists. You should be familiar with what these professionals do as well as the strict limitations placed on cosmetologists' *scope of practice* so that you'll better understand what you cannot do.

Product manufacturers can always provide you with additional information and guidance. Call them whenever you have any questions related to safe handling and proper use.

Infectious Nail Diseases

Any nail disease that shows signs of infection or inflammation (redness, pain, swelling, or pus) should not be diagnosed or treated in the salon. Medical examination is required for all nail diseases and treatment will be determined by the physician.

A person's occupation can cause a variety of nail infections. For instance, infections develop more readily in people who regularly place their hands in harsh cleaning solutions. Natural oils are removed from the skin by frequent exposure to soaps, solvents, and many other types of substances.

Onychia (uh-NIK-ee-uh) is an inflammation of the nail matrix followed by shedding of the natural nail plate. Any break in the skin surrounding the nail plate can allow pathogens to infect the matrix. Be careful to avoid injuring sensitive tissue and make sure that all implements are properly cleaned and disinfected. Improperly cleaned and disinfected nail implements can cause this and other diseases if an accidental injury occurs.

Onychomycosis (ahn-ih-koh-my-KOH-sis) is a fungal infection of the natural nail plate (**figure 10-9**). When the infection begins at the cuticle it is called *proximal subungual onychomycosis*. A common form is whitish patches that can be scraped off the surface of the nail. Another common form of this infection shows long whitish or pale yellowish streaks within the nail plate. These types of infection often begin with a small separation between the end of the nail and the nail bed. Many fungal infections start as an innocent bang and separation. Soft yellow material gradually builds up in the separation and the nail will thicken and yellow. Untreated, the disease will progress toward the matrix resulting in a partially destroyed nail. It is very important to keep this clean and dry. Do not poke things under your nail to clean it. You should not apply product to a fungal nail until it is healed.

As you learned in Chapter 5, Infection Control: Principles and Practices, fungi are parasites that may cause infections of the feet and hands. Nail fungi are of concern to the salon because they are contagious and can be transmitted through contaminated implements. Fungi can spread from nail to nail on the client's feet, but it is much less likely that these pathogens will cause fingernail infections. Fungal infections prefer to grow in conditions where the skin is warm, moist, and dark, that is, on feet inside shoes.

It is extremely unlikely that a cosmetologist could become infected from a client, but it is possible to transmit fungal infections from one client's foot or toe to another client. With proper cleaning and disinfection practices, the transmission of fungal infections can be easily avoided. Clients with suspected nail fungal infection must be referred to a physician.



figure 10-9
Onychomycosis

CAUTION

Nail infection caused by bacteria and fungi can be avoided by following state board guidelines for proper cleaning and disinfection. Do not omit any of the cleaning and disinfection procedures when performing a nail enhancement service (figure 10-10). Do not perform nail services for clients who are suspected of having an infection of any kind on their nails.



figure 10-10
Always practice strict rules regarding cleaning and disinfecting when working with nails.

DID YOU KNOW?

Infections of the toenails are usually fungus but molds can grow on both fingernails and toenails above and below the nail plate.

The only way to be sure if a nail infection is bacterial or fungal (mold) is to perform a nail biopsy or culture by a physician.

Paronychia (payr-uh-NIK-ee-uh) is a bacterial inflammation of the tissues surrounding the nail. Redness, pus, and swelling are usually seen in the skin fold adjacent to the nail plate. Individuals who work with their hands in water, such as dishwashers and bartenders, or who must wash their hands continually, such as health-care workers and food processors, are more susceptible to paronychia because their hands are often very dry or chapped from excessive exposure to water, detergents, and harsh soaps. This makes them much more likely to develop infections.

Toenails, because they spend a lot of time in a warm, moist environment, are often more susceptible to paronychia infections as well. Use moisturizing hand lotions to keep skin healthy, and keep feet clean and dry.

The green, yellow, or black discoloration on a nail bed is usually a bacterial infection such as *Pseudomonas aeruginosa* (SUE-duh-MOAN-us aye-ru-jin-oh-sa), one of several common bacteria that can cause a nail infection, or *Staphylococcus aureus*. These naturally occurring skin bacteria can grow rapidly to cause an infection if conditions are correct for growth (figure 10-11). In the past, discolorations of the nail plate (especially those between the plate and nail enhancements) were generally referred to as *molds*, which is a type of fungus. This term should not be used when referring to infections of the fingernails or toenails. A typical pseudomonal bacterial infection on the nail plate can be identified in the early stages as a light-green spot that becomes darker in its advanced stages. Clients with these symptoms should be immediately referred to a physician for treatment. It is illegal for a cosmetologist to diagnose or treat a nail infection. Do not remove the nail enhancement unless directed to do so by the client's treating physician.

Bacterial or fungal infections can be caused by the use of implements that are contaminated with large numbers of these bacteria. Water does not cause infections but can support bacterial and fungal growth. Infections are caused by large numbers of bacteria or fungal organisms on a surface. This is why proper cleaning and preparation of the natural nail plate, as well as cleaning, disinfection, and/or sterilization of implements, are so important. If these pathogens are not present, infections cannot occur.

Pyogenic granuloma (py-oh-JEN-ik gran-yoo-LOH-muh) is a severe inflammation of the nail in which a lump of red tissue grows up from the nail bed to the nail plate.

Tinea pedis (TIN-ee-uh PED-us), also known as *athlete's foot*, is the medical term for fungal infections of the feet. These infections can occur



figure 10-11
Pseudomonas aeruginosa

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on the bottoms of the feet and often appear as a red itchy rash in the spaces between the toes, most often between the fourth and fifth toe. There is sometimes a small degree of scaling of the skin. Clients with this condition should be advised to wash their feet every day and dry them completely. This will make it difficult for the infection to live or grow. Advise clients to wear cotton socks and change them at least twice per day. They should also avoid wearing the same pair of shoes each day, since shoes can take up to 24 hours to dry completely. Over-the-counter antifungal powders can help keep feet dry and may help speed healing (figure 10-12).



figure 10-12
Tinea pedis

Noninfectious Nail Diseases

Nail psoriasis (NAYL suh-RY-uh-sis) is a noninfectious condition that affects the surface of the natural nail plate causing tiny pits or severe roughness on the surface of the nail plate. Sometimes these pits occur randomly and sometimes they appear in evenly spaced rows. Nail psoriasis can also cause the surface of the plate to look like it has been filed with a coarse abrasive, can cause a ragged free edge, or can cause both (figure 10-13). People with skin psoriasis often experience this nail disorder. Neither skin nor nail psoriasis are infectious diseases. Nail psoriasis can also affect the nail bed, causing it to develop yellowish to reddish spots underneath the nail plate, called *salmon patches*. When all of these symptoms are present on the nail unit at the same time, nail psoriasis becomes a likely cause of the client's problem nails and they should be referred to a physician for diagnoses and treatment, if needed.



figure 10-13
Nail psoriasis

Onychocryptosis (ahn-ih-koh-krip-TOH-sis), also known as *ingrown nails*, can affect either the fingers or toes (figure 10-14). In this condition, the nail grows into the sides of the living tissue around the nail. The movements of walking can press the soft tissues up against the nail plate, contributing to the problem. If the tissue around the nail plate is not infected, or if the nail is not imbedded in the flesh, you can carefully trim the corner of the nail in a curved shape to relieve the pressure on the nail groove. However, if there is any redness, pain, swelling, or irritation, you may not provide any services. Cosmetologists are not allowed to service ingrown nails. Refer the client to a physician.



figure 10-14
Onychocryptosis

Onycholysis (ahn-ih-KAHL-ih-sis) is the lifting of the nail plate from the bed without shedding, usually beginning at the free edge and continuing toward the lunula area (figure 10-15). This is usually the result of physical injury, trauma, or allergic reaction of the nail bed and less often related to a health disorder. It often occurs on natural nails when they are filed too aggressively, on nail enhancements when they are improperly removed, or on toenails when clients wear shoes without sufficient room for the toes. If there is no indication of an infection or open sores, a basic manicure or pedicure may be given. The nail plate should be short to avoid further injury, and the area underneath the nail plate should be kept clean and dry. If the trauma that caused the onycholysis is removed, the area will begin to slowly heal itself. Eventually the nail plate will grow off the free edge and the hyponychium will reform the seal that provides a natural barrier against infection (figure 10-16).



figure 10-15
Onycholysis



figure 10-16
Onycholysis caused by trauma



Onychomadesis (ahn-ih-koh-muh-DEE-sis) is the separation and falling off of a nail plate from the nail bed. It can affect fingernails and toenails. In most cases, the cause can be traced to a localized infection, injuries to the matrix, or a severe systemic illness. Drastic medical procedures, such as chemotherapy, may also be the cause.

Whatever the reason, once the problem is resolved, a new nail plate will eventually grow again. If onychomadesis is present, do not apply enhancements to the nail plate. If there is no indication of an infection or open sores, a basic manicure or pedicure service may be given.

After reading the next few sections, you will be able to:

LO 3 Perform a hand, nail, and skin analysis on a client.

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Perform Hand, Nail, and Skin Analysis

It is very important to perform a hand and nail analysis on every client before beginning a nail service. This examination will allow a cosmetologist to identify disease, disorders, and conditions including signs of infection which may be identified through pain, redness, swelling, throbbing, and pus. A proper analysis will help to determine not only the needed service, but also if a service should not be performed.

Use these simple steps to perform a hand, nail, and skin analysis:

- Always begin a hand, skin, and nail analysis by cleaning the hands of both the cosmetologist and the client.
- Using the senses of sight and touch, observe the following:
 1. The moisture level of the skin. It should be soft and supple. There should be no signs of dehydration or flaking skin.
 2. The temperature of the skin. Cold skin may indicate poor circulation. Warm skin may indicate infection.
 3. The condition of the skin. Redness may indicate inflammation or infection. It should be free of any disease or disorder.
 4. Tenderness to the touch of the skin. Feel the client's hands and ask if they have any pain. If they have pain, it may require caution or special techniques during massage.
 5. Examine the condition and length of the nails including the shape of the free edge and cuticle and the thickness of the nail plate. Know when to refer the client to a physician—this is why cosmetologists need to study nail disease, disorders, and conditions.

After performing the nail examination, share your findings with your client:

1. Identify any form of onychosis—disease, disorder, or condition.
2. Note the apparent cause—systemic, environmental, etc.
3. Suggest the proper service or refer to a physician.
4. Discuss home maintenance and a future service plan.

REVIEW QUESTIONS

- 1 In what situation should a nail service not be performed?
- 2 Name at least eight common nail disorders and describe their appearance.
- 3 What conditions do fungal organisms favor for growth?
- 4 What is *Pseudomonas aeruginosa*? Why is it important to learn about it?
- 5 What is the most effective way to avoid transferring infections among your clients?
- 6 Can a cosmetologist offer treatment advice for a client who has developed a nail infection?
- 7 Can a cosmetologist treat an ingrown toenail if there is no sign of pus or discharge? Why?
- 8 Name two common causes of onycholysis.

STUDY TOOLS

- **Reinforce what you just learned:** Complete the activities and exercises in your Theory or Practical Workbook, or your Study Guide.
- **Expand your knowledge:** Search for websites about the topics in this chapter and make a list of additional resources.
- **Study and prepare for your quiz:** Take the chapter test in your Exam Review or your Milady U: Online Licensing Prep.
- **Re-Test your knowledge:** Take the Chapter 10 Quizzes!
- **Learn even more:** Look up in a dictionary or search the internet for the definitions of any additional terms you want to learn about.

CHAPTER GLOSSARY

Beau's lines BOWZ LYNEZ	p. 209	Sometimes called <i>furrows</i> (FUR-ohs) or <i>corrugations</i> (kor-uh-GAY-shuns); visible depressions running across the width of the natural nail plate; usually a result of major illness or injury that has traumatized the body.
blue fingernails	p. 209	Named for the nail bed color; is usually caused by a lack of circulating oxygen in the red blood cells.
bruised nail beds	p. 209	Condition in which a blood clot forms under the nail plate, causing a dark purplish spot. These discolorations are usually due to small injuries to the nail bed.
discolored nails	p. 209	Nails turn a variety of colors; may indicate surface staining, a systemic disorder, or poor blood circulation.
eggshell nails	p. 210	Noticeably thin, white nail plates that are more flexible than normal and can curve over the free edge.
hangnail	p. 210	A condition in which the living tissue surrounding the nail plate splits or tears.

koilonychia koyal-oh-NICK-ee-uh	p. 210	Soft spoon nails with a concave shape that appear scooped out.
leukonychia spots loo-koh-NIK-ee-ah SPATS	p. 210	Also known as <i>white spots</i> ; whitish discolorations of the nails, usually caused by injury to the matrix area; not related to the body's health or vitamin deficiencies.
melanonychia mel-uh-nuh-NIK-ee-uh	p. 210	Darkening of the fingernails or toenails; may be seen as a black band within the nail plate, extending from the base to the free edge.
nail disorder	p. 208	Condition caused by an injury or disease of the nail unit.
nail psoriasis NAYL suh-RY-uh-sis	p. 217	A noninfectious condition that affects the surface of the natural nail plate causing tiny pits or severe roughness on the surface of the nail plate.
nail pterygium NAYL teh-RIJ-ee-um	p. 212	Abnormal condition that occurs when the skin is stretched by the nail plate; usually caused by serious injury, such as burns, or an adverse skin reaction to chemical nail enhancement products.
onychchauxis ahn-ih-KAHK-sis	p. 212	Thickening of nails.
onychchia uh-NIK-ee-uh	p. 215	Inflammation of the nail matrix followed by shedding of the natural nail.
onychocryptosis ahn-ih-koh-krip-TOH-sis	p. 217	Also known as <i>ingrown nails</i> ; nail grows into the sides of the tissue around the nail.
onychogryposis ahn-ih-koh-gry-POH-sis	p. 212	Also known as <i>ram's horn</i> or <i>claw nails</i> ; an enlargement of the fingernails or toenails accompanied by increased thickening and curvature.
onycholysis ahn-ih-KAHL-ih-sis	p. 217	Lifting of the nail plate from the nail bed without shedding, usually beginning at the free edge and continuing toward the lunula area.
onychomadesis ahn-ih-koh-muh-DEE-sis	p. 218	The separation and falling off of a nail plate from the nail bed; affects fingernails and toenails.
onychomycosis ahn-ih-koh-my-KOH-sis	p. 215	Fungal infection of the natural nail plate.
onychophagy ahn-ih-koh-FAY-jee	p. 211	Also known as <i>bitten nails</i> ; result of a habit of chewing the nail or chewing the hardened skin surrounding the nail plate.
onychorrhaxis ahn-ih-koh-REK-sis	p. 211	Split or brittle nails that have a series of lengthwise ridges giving a rough appearance to the surface of the nail plate.
onychosis ahn-ih-KOH-sis	p. 214	Any deformity or disease of the natural nails.
paronychia payr-uh-NIK-ee-uh	p. 216	Bacterial inflammation of the tissues surrounding the nail. Redness, pus, and swelling are usually seen in the skin fold adjacent to the nail plate.
pincer nail PIN-sir NAYL	p. 212	Also known as <i>trumpet nail</i> ; increased crosswise curvature throughout the nail plate caused by an increased curvature of the matrix. The edges of the nail plate may curl around to form the shape of a trumpet or sharp cone at the free edge.
plicated nail plik-a-CHOORD NAYL	p. 211	Also known as <i>folded nail</i> ; a type of highly curved nail usually caused by injury to the matrix, but may be inherited.

<i>Pseudomonas aeruginosa</i> SUE-duh-MOAN-us aye-ru-jin-oh-sa	p. 216	Common bacteria that can lead to a bacterial infection that appears as a green, yellow, or black discoloration on the nail bed.
pyogenic granuloma py-oh-JEN-ik gran-yoo-LOH-muh	p. 216	Severe inflammation of the nail in which a lump of red tissue grows up from the nail bed to the nail plate.
ridges	p. 211	Vertical lines running through the length of the natural nail plate that are caused by uneven growth of the nails, usually the result of normal aging.
splinter hemorrhage SPLIN-tohr HEM-err-aje	p. 212	Hemorrhage caused by trauma or injury to the nail bed that damages the capillaries and allow small amounts of blood flow.
tinea pedis TIN-ee-uh PED-us	p. 216	Also known as <i>athlete's foot</i> ; medical term for fungal infections of the feet; red, itchy rash of the skin on the bottom of the feet and/or in between the toes, usually found between the fourth and fifth toe.