How massage therapists can handle skin conditions, for both themselves and their clients  By Annie Morien

Anatomy and Physiology of Skin

OVERVIEW. The skin is composed of two distinct layers: the epidermis and dermis. The two layers provide protection, strength and elasticity. In addition, skin contains important structures such as hair, sweat glands, oil glands, blood and lymph vessels, and various sensory nerve endings (Figure 1). Let’s explore each major skin layer.

EPIDERMIS. The epidermis is the outermost layer of the skin, and is located superior to (above) the dermis. The epidermis is divided into sub-layers, which are classified according to cell structure, content and function. Epidermal cells originate deep within epidermis, and “mature” in an orderly progression as they move toward the skin’s
The deepest layer of the epidermis is called the STRATUM BASALE (also called stratum germinativum), and is primarily composed of keratinocytes that undergo cell division (mitosis). As the keratinocytes move to the surface of the skin, the cells “mature,” known as keratinization, as they migrate to the top. Certain injuries, such as burns or chronic wounds, result in the loss of keratinocytes in the stratum basale. Loss of these cells may prohibit skin regeneration. Thus, skin grafts are used as reasonable replacement.

The next epidermal layer, the STRATUM SPINOSUM, is superior to the stratum basale. Under the microscope, “spines” are seen around each cell, owing to the name spinosum. The spines are thought to enhance cell-to-cell communication. The cells in this layer produce keratin, a tough fibrous protein which gives skin its strength and protection.

As the cells mature and continue to produce intracellular keratin, they form the STRATUM GRANULOSUM layer. Cells in this layer secrete “lamellar granules” that release a water-repellent substance between cells. The combination of keratin within the cell and sealant around the cell produces a barrier that significantly decreases the entry of foreign microbes, chemicals, and prevents fluid loss.

The most superior epidermal layer, the STRATUM CORNEUM, is characterized by thin, flattened, dead cells that shed or “slough off” over time. This layer also acts as a physical barrier and tough outer covering. It takes approximately four weeks for keratinocytes starting in the stratum basale to reach the stratum corneum.

Most of the skin on our bodies contains these four epidermal layers. However, an additional skin layer called STRATUM LUCIDUM is located in our fingers, palms and soles of our feet. This extra protective layer is located between the stratum granulosum and corneum layers. Epidermal thickness is greater in fingers, hands and soles (approximately 1.5 mm) compared to body areas that lack stratum lucidum, such as eyelids (approximately 0.05 mm).

In addition to keratinocytes, the epidermis contains melanocytes (pigment-producing cells) and Langerhans cells (immune cells). Melanocytes, located deep within the epidermis (Figure 3), produce melanin when stimulated by the sun’s ultraviolet (UV) rays or certain hormones. Melanin is a protein compound that protects skin cells from the damaging effects of UV rays. Naturally dark skin contains more melanin, thus giving more protection against the sun compared to light or fair skin. Therefore, light skin is at greater risk of sun damage and developing skin cancer.

Contrary to popular belief, getting a “tan” does not produce significant protection from UV rays. In fact,

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research demonstrates that in fair-skinned people, tanning provides very little protection, equivalent to applying SPF 3 sunscreen (Agar & Young, 2005). Tanning is the physical evidence of sun damage, and increases the risk of developing skin cancer.

Langerhans cells are found within the stratum spinosum and granulosum epidermal layers. These cells provide a valuable “front line” immune defense by being first to detect foreign entities. Once the foreign invader is found, Langerhans cells take this information to nearby lymph nodes. Thereafter, a systemic immune response is launched against the foreign invader.

**DERMIS.** The dermis is located inferior (below) the epidermis. The thickness of the dermis varies according to body site—for example, 0.3 millimeters on the eyelid to 3 millimeters on the back. The dermis contains two sub-layers, the upper papillary and lower reticular. Both layers contain collagen and elastic tissue, providing strength, elasticity and extensibility of the skin. The dermal layers are fairly “stable” and unchanging, in contrast to the maturation and keratinization of epidermal cells.

Because the epidermis is completely avascular (does not contain any blood vessels), one important function of the dermis is to provide the epidermis with necessary elements. Small dermal blood vessels loop up near the epidermis, providing nutrients and oxygen, while removing carbon dioxide and waste products. In addition, small lymph vessels in the dermis (dermal papillae) loop up near the epidermis, allowing for removal of excess extracellular fluid called “edema” (Figure 4). A therapist’s light touch across the skin stimulates the dermal papillae, and promotes lymphatic drainage from the tissue.

In addition, the dermis contains important immune cells, such as mast cells, histiocytes, lymphocytes and leukocytes. Mast cells release histamine in response to trauma, infection and certain drugs. Histamine, an immune-mediating chemical, appears in some allergies and promotes blood vessel dilation. Histiocytes act as tissue scavengers and destroy foreign material by phagocytosis (cell eating). B and T lymphocytes are involved in a systemic “antibody” immune response. Circulating leukocytes (white blood cells) in the blood stream traverse into the dermis to help combat infection. For example, neutrophils are first to arrive during acute inflammation and undergo phagocytosis of foreign material. Eosinophils and monocytes also destroy foreign pathogens and clean up infections in the skin.

**SUBCUTANEOUS.** Immediately below the dermis is the subcutaneous layer, also known as the hypodermis, panniculus or subcutis. Although the subcutaneous tissue is not considered part of skin, it is connected to the dermis by connective tissue fibers, and serves as an “anchor” between skin and deep tissues such as bone, muscle and organs. This layer is made of fat cells, nerves, blood vessels, fibrous tissue and fibroblasts, and functions as a
Before starting a massage, survey your client’s skin and make note of the color, texture and elasticity (or lack of). These characteristics are important clues to the health of the client.

Tough pliable cushion for the deep structures.

**Massage and Skin**

Before starting a massage, survey your client’s skin and make note of the color, moisture (dry or wet), temperature (warm or cool), texture (rough or smooth) and elasticity (or lack of). These characteristics are important clues to the health of the client. For example, an unusual localized yellow skin color could indicate a resolving bruise. A pale color and cool skin temperature may indicate decreased circulation (low blood flow) or low oxygenation of the tissue. Moist skin may be due to sweating from heat or anxiety. Warm red skin may indicate inflammation.

Skin texture can range from rough (due to excessive scratching or a psoriatic skin disease) to soft (young, well-hydrated skin or recent moisturizer application). Very elastic or “springy” skin indicates healthy, non-sun damaged skin, whereas skin that has lost its elastic component might be dehydrated or sun damaged.

At the end of the massage, you should again note your client’s skin characteristics. Were there changes in texture or color? Note the type of lubricant used, and whether it was beneficial or irritating. Document current and past skin diseases reported by your client, such as psoriasis, warts and herpes, as well as immune system deficiencies such as HIV or hepatitis. Also note any medications that affect skin, such as biologics used for psoriasis or topical steroids. All of this information gives you significant insight into your client’s condition and needs. Our job as massage therapists is not to diagnose, but rather use a diagnosis as additional information to tailor the treatment plan.

**Common Bacterial Conditions**

**OVERVIEW.** Our skin provides protection against loss of fluids and the entry of foreign material. This protection is lost when skin integrity is compromised, allowing entry of unwanted pathogens and chemicals, for example. Loss of skin integrity occurs with wounds, cuts and abrasions. Additionally, foreign pathogens can accumulate and thrive in hair follicles, causing inflammation and infection.

Infection occurs when bacteria (or fungi and viruses) invade the skin. Bacteria are small unicellular (one cell) microorganisms. Although there are multiple types of bacteria, most skin infections arise from *Staphylococcus aureus* (staph) or *Streptococcus pyogenes* (group A β-hemolytic streptococci or strep). *Staphylococcus aureus* are Gram-positive round “cocci” that occur in grapelike clusters. In contrast, *Streptococcus pyogenes* are Gram-negative, oblong cells that form “chains.” Bacteria are classified Gram-positive or Gram-negative based on the reaction of laboratory stain with the bacterial wall.

In general, *Staphylococcus aureus* is responsible for producing folliculitis, furuncles and impetigo, while *Streptococcus pyogenes* causes cellulitis, erysipelas, and impetigo. (For simplicity, the most common infectious bacterial agent is presented in this course, with the understanding that other bacteria may also be involved.)

Another type of bacteria, *Propionibacterium acnes*, is a common bacterial inhabitant of the skin (specifically in the hair follicle and oil gland), and is implicated in the pathogenesis of inflammatory acne. *Propionibacterium acnes* occur more commonly in teenagers and are influenced by various factors.

Resistant strains of staph—called methicillin-resistant *Staphylococcus aureus*, or, more commonly, MRSA—have caught the attention of the public because of their lethal potential. MRSA was first detected in 1961 in hospital patients, but over time has spread to healthy non-hospitalized individuals (leading to the new name community-acquired or CA-MRSA). Whether in the hospital or community, MRSA can be difficult to treat because antibiotics like penicillin and cephalosporin are losing their ability to destroy the bacteria. MRSA strains produce infection by secreting a specific substance (exotoxin) that destroys neutrophils, making it difficult for a person’s immune system to launch an attack.

**FOLLICULITIS.** Folliculitis is a pustular infection of hair follicles caused by pathogens, chemical infection or physical trauma. Common pathogens include *Staphylococcus aureus* bacteria, superficial fungus and yeast. Chemicals may enter skin through hair follicles, causing...
irritation and infection. In addition, excessive scratching from eczema (atopic dermatitis), bug bites or trauma from surgical wounds may cause folliculitis.

Folliculitis is a common skin condition, and typically occurs without systemic problems, such as fever. Visual inspection reveals multiple small red papules and white pustules, some with a protruding central hair. This condition can occur in any hair-bearing area, but is seen more often on the extremities and scalp. Some people complain of mild to moderate itching. Recurrent episodes of folliculitis may be due to resistant bacteria.

Mild superficial folliculitis is treated with moist, warm compresses applied to the area several times per day. Deep or recurrent folliculitis should be evaluated by a medical provider, and may warrant prescription antibiotics.

Massage considerations: Regardless of depth of infection or cause, massage is locally contraindicated because skin integrity is compromised. If there is no indication of systemic infection—fever, nausea, chills—other uninfected body areas may receive massage therapy.

FURUNCLE (BOIL) AND CARBUNCLE. Compared to folliculitis, a furuncle is a deeper infection of hair follicles and nearby dermis, resulting in a walled-off collection of pus (Figure 5). A carbuncle is a collection of multiple, deep-connected furuncles in the dermis and subcutaneous tissue.

Furuncles and carbuncles are typically caused by *Staphylococcus aureus* bacteria. However, there is an increase in the number of people acquiring methicillin-resistant *Staphylococcus aureus* (MRSA). Diabetics, obese individuals, and people with poor hygiene or a poorly functioning immune system are at greater risk for developing these conditions. In addition, certain medication and skin condition, such as scabies and eczema, may increase risk of developing furuncles.

Both problems typically arise in areas prone to friction and sweat, such as the neck, face, armpits and buttocks. A furuncle quickly forms over a few days, and presents as a red, firm, tender, pus-filled bump. Pain becomes more prominent with progression of size and pus accumulation. Most heal within a few weeks, provided no complications arise.

A carbuncle develops more slowly and presents as a large, red, firm, tender bump, or series of bumps, that may or may not contain pus. Unlike furuncles, carbuncles may be accompanied by fatigue, fever and chills. Carbuncles are potentially more serious because they
develop in the dermis and may spread bacteria to underlying tissues. Recurrent furuncles and carbuncles may cause permanent scarring.

Although treatment is beyond the scope of massage therapy, small, early developing furuncle can be treated with warm, moist compresses for some relief. Large or recurrent furuncles and carbuncles need evaluation and treatment by a medical professional. The development of fever, nausea or vomiting warrants immediate medical attention.

**Massage considerations:** Furuncles and carbuncles are painful and may be spread by contact; therefore massage is contraindicated in the infected body area. Clients without systemic signs such as fever, nausea, vomiting and enlarged lymph nodes may receive massage on uninfected body areas.

General whole body massage is contraindicated if systemic signs exist with painful draining furuncles or carbuncles, and clients should seek medical attention. If a “hidden” small furuncle is touched by a therapist, wash hand immediately with soap and warm water. If a furuncle accidentally contaminates sheets, wash linens in hot, soapy water, and dry on hot heat. Wash the entire table with hot soapy water, rinse, and repeat.

**Impetigo.** Impetigo is an acute contagious skin infection more commonly found in children and adolescents (Figure 6). It is caused by bacteria, frequently *Staphylococcus aureus*, or a combination of *Staphylococcus aureus* and *Streptococcus pyogenes*. Children with poor hygiene who are in close contact with others, and live in a warm, moist climate are the most susceptible.

With impetigo, bacteria invade the upper layers of the skin (epidermis), resulting in localized infection. Impetigo is most commonly found on the face (around the nose and mouth), but can affect any body area. It is spread to others by physical contact with infected body areas or objects (toys, toothbrush and eating utensils, for example). Impetigo can develop after a minor skin injury, such as repeated scratching due to eczema or scabies.

There are two types of impetigo: non-bullous and bullous. Non-bullous impetigo is more common, and initially presents as a red patch of skin, progressing to small fluid-filled blisters (vesicles) and pustules (single or multiple pus-filled bumps). The vesicles burst leaving shallow ulcers that develop into honey-colored crusts over a red base.

Bullous impetigo presents as large fluid-filled vesicles (bullae) with very little inflammation. After the large vesicles burst, the remaining thin skin is covered with light brown shiny crusts. Both types may be accompanied by tender lymph nodes and fever. Affected areas are mild to moderately tender and itchy. Symptoms may last for weeks to months, and serious secondary infections (e.g., pneumonia, septic arthritis, acute nephritis) can occur.

Impetigo is usually diagnosed by its clinical signs and symptoms. If necessary, however, a culture of the bacteria can confirm the diagnosis. General treatment by a medical provider includes application of Vaseline or antibiotic cream to soften crusts, and then removing crusts gently using soap and water.

**Massage considerations:** Because this skin condition is contagious, the massage therapist should avoid contact with infected skin. Therefore, local and possible whole body massage is contraindicated. Wash hands immediately if accidently touched, and wash sheets thoroughly in hot, soapy water if contaminated. Bleach is not typically necessary. Wash the entire table and face cradle with warm, soapy water, rinse, and repeat.

**Cellulitis.** Cellulitis occurs after bacteria (or other pathogens) invade the deep dermis and fat layer (subcutaneous). The most common culprits are *Streptococcus pyogenes* and *Staphylococcus aureus*. Any break in the skin, (abrasions, surgical wounds, etc) will allow pathogens to invade the sub-dermal layer. In some cases, there are no apparent skin breaks. In adults, lower legs are most often affected, whereas face and perianal regions are at greater risk in children.

Cellulitis presents as a hot, red, tender area that may take days or weeks to evolve. The red patch has a non-distinct border (difficult to see and palpate), typically without scale or flakiness. The patient also may have fever, local swelling and tender lymph nodes.

Medical intervention is necessary to rule out other similar diseases, and treat the condition to prevent further problems (i.e., deeper invasion with necrosis). Oral or intravenous antibiotics are likely necessary. Rest and elevation of the affected limb decrease swelling and pain.

**Massage considerations:** Whole body massage is generally contraindicated because this condition is typically
accompanied by general malaise and fever. Once the area is completely healed, light massage and lymphatic drainage may benefit residual edema. However, be aware of sensation changes in and around the once-affected area, as well as residual tender lymph nodes.

**ERYSIPELAS.** Erysipelas is a superficial skin infection typically caused by Streptococcus pyogenes, and there is increased risk of occurrence in people with multiple conditions, such as diabetes, immunosuppression, edema, circulatory disease and lymphatic drainage problems. Similar to cellulitis, erysipelas occurs from minor skin trauma, intense scratching from another skin condition, such as eczema, and healed burn scars, surgery or radiation therapy.

Erysipelas usually starts with sudden onset of fever and chills, joint and muscle pain, and headache before or during the appearance of skin lesions. Skin lesions typically occur on the face and lower legs. Initially, the infected area appears with a red shiny, taut patch that increases in size. Also, the red patch has a sharply-defined, raised border, and there may be red streaking over lymph vessels. Pain, edema and heat are usually present. Some severe infections progress to skin deterioration. Skin pigmentation changes may be evident after the rash heals.

People with erysipelas are typically sick with a fever, chills and joint aches. Some cases resolve without treatment, but typically oral (and possibly intravenous) antibiotics, hydration and bed rest are needed.

**Massage considerations:** Massage is generally contraindicated because of the skin and systemic involvement. Once erysipelas resolves, massage and lymphatic drainage are indicated to decrease edema and promote lymph flow.

**ACNE VULGARIS.** This inflammatory skin condition involves the “pilosebaceous unit,” which is anatomically defined as a hair follicle and attached oil glands. Acne is most often found in body areas that have the greatest number of pilosebaceous units, such as the face, back and chest. Acne is most prominent during adolescence, but can continue throughout adulthood.

The development of acne is multi-factorial. Hormones cause hair follicles to become plugged due to excessive cell sloughing and debris, which leads to pimple formation.

Massage is contraindicated because of the inflammatory nature of acne, though areas without acne can receive massage. Be sure to document any oil sensitivity or post-massage acne breakouts.

In addition, hormone-influenced oil glands secret excessive oil into the follicle, also producing plugging. An overgrowth of skin bacteria (Propionibacterium acnes) in the follicle and sebum promotes irritation, increases pimple size and produces follicular rupture. This leads to the spread of follicular contents into the dermis, producing infection and inflammation in the form of pustules and cysts. Some acne progresses to severe inflammation, resulting in pain and scarring.

Other factors also influence the development of acne. Heredity plays a role, but predicting which family members will develop acne—or the severity of the condition—is not possible. Further, the relationship between acne and stress or diet is not clear. However, we do know that acne is not caused by uncleanness. In fact, scrubbing acne-prone skin worsens the condition, and popping and squeezing pimples can cause scarring.

Acne has various appearances: pimples can be dark (blackheads) or white (whiteheads). Darkheads are open to the skin’s surface, and are comprised of excessive follicular cells and oxidized oil. Whiteheads are “closed” off from the skin’s surface and may contain a small amount of pus from bacteria. Increased acne inflammation leads to red pustules (large inflamed whiteheads), nodules (large semi-hard, painful cysts) and abscesses (small boils). These types of acne are typically painful and can lead to permanent scarring.

**Massage considerations:** Massage is contraindicated because of the inflammatory nature of acne. Body areas without acne can receive massage. Keep in mind that newly developing acne may be exacerbated by heavy, thick massage oils. Document any oil sensitivity or post-massage acne breakouts, and avoid precipitating factors.
in future massages. It may be your oil, or other factors not under your control, such as stress or hormones. Old, healed acne scars may benefit from massage.

ROSACEA. While acne vulgaris is considered an adolescent disease, rosacea is predominantly a disease of adults. Rosacea presents with facial “flushing” or redness, swelling and acne. The cause of rosacea is unknown, but the condition is clearly exacerbated by certain stimuli, such as alcohol, warm food or drinks, spicy food, sunlight, heat and stress.

The facial redness is due to an enhanced vascular reactivity (sensitive blood vessels) that, when stimulated, produces vasodilation that may last for minutes, hours or days. Rosacea is typically chronic, punctuated with invariable periods of inactivity.

In most cases, rosacea progresses from mild to severe. Mild rosacea presents as red flushed face with gradual formation of small spider veins. Moderate rosacea presents with facial flushing, spider veins and acne. Severe rosacea has similar characteristics, in addition to inflamed acne and facial swelling. Some people develop an enlarged red bumpy nose (called rhinophyma). Rosacea can produce facial (or eye) itching, burning or stinging.

**Massage Considerations:** Caution is advised when working with clients with rosacea. Because massage enhances blood flow and increases skin temperature, it’s likely to exacerbate the condition. Be aware that thick, heavy oils may exacerbate rosacea. Massage is contraindicated in moderate and severe rosacea because of the inflammatory acne component. Document any oil sensitivity or post-massage acne breakouts, and avoid precipitating factors in future massages.

**Common Viral Conditions**

**Overview:** Viruses are small protein particles that produce various diseases in humans by entering or injecting genetic instructions into the cell and hijacking the cell’s genetic machinery. Some viruses may live undetected inside cells for long periods of time, while incorporating genetic instructions into host cells. These viruses do not immediately cause disease.

Viruses evade detection (and destruction) by the immune system by a number of clever mechanisms, including hiding from immune cells within host cells, or blocking the immune cells ability to detect the virus. Many enter the human body through anatomical openings, breaks in the skin, or through the lungs. Subsequently, the virus may spread to the bloodstream. Although viruses produce a wide variety of diseases, here we’ll review only the most common skin conditions seen by massage therapists: warts, molluscum contagiosum, herpes and shingles.

**Warts.** Warts are common, contagious skin lesions, arising from inoculation of skin and mucous membrane epithelium with the human papilloma virus (HPV). As with most viruses, HPV can be classified by the cytological makeup of the virus, or the clinical appearance.

Scientists have identified more than 120 HPV subtypes, some of which are associated with the development of cancer (Table 1). Typically, warts that arise on the hands and feet are subtype 1, and cervical cancer is associated with subtypes 16 and 18. As with all things in nature, however, there are exceptions, and wart subtypes are not confined to a particular body area.

In addition to wart subtype, the clinical appearance of a wart is influenced by the anatomical location (Table 1). For example, warts on our palms differ slightly compared to genital warts. In people lacking a strong immune system, wart appearance and subtype may vary widely (compared to immune-competent people) due to the person’s inability to combat the virus.

**Palmar/Plantar Warts.** Palmar warts occur on palms of hands and plantar warts occur on the soles of feet (Figure 8). Frequently, warts arise on weight-bearing areas of the foot, which makes it difficult for the clinician to distinguish a wart from a callus. Clinicians look closely at the skin lines because warts tend to disrupt skin lines and calluses do not.

**Common Warts.** Common warts initially start as small, smooth, fleshy or slightly pink papules, and then grow
into large, raised, thick, rough brown, gray or pink growths with “black dots.” Although the myth still persists, these are not “seeds” and warts do not have “roots.” The black dots are small blood capillaries that have been cut or traumatized. Common warts grow anywhere on the body, but the hands are most often affected. Warts around fingernails are called periungual, and under nails are subungual.

**FLAT WARTS.** Flat warts are small, flat-topped, pink papules typically found on the legs, face or arms. They can be easily spread by scratching or shaving.

**Massage considerations:** All warts are contagious, and they can spread easily by direct contact with other people or to oneself. Some warts cause itching and irritation, thus increasing the likelihood of spread through scratching or picking. Therefore, massage is contraindicated on body areas with known warts.

Massage therapists with warts on the hand or elbow should cover affected areas. In situations where the therapist inadvertently makes contact with a wart, immediate hand washing with warm, soapy, water is adequate to prevent spread. Wash contaminated sheets in hot, soapy, water and dry on high heat. Clean table and face cradle with diluted bleach water, rinse, and repeat.

**MOLLUSCUM CONTAGIOSUM.** This common skin condition is caused by a virus from the Poxviridae family. As the name implies, the condition is contagious, and easily spread by direct contact or by self-inoculation. Children develop the condition after physical contact with infected children or toys. Adults contract the virus after contact with infected children, and proceed to infect others or self-inoculate (by shaving, for example).

Molluscum contagiosum is characterized as single (individual), small, flesh-colored dome-shaped papules. Some papules may have a slight central dip or depression. Molluscum are typically found on the face, trunk, arms and legs in children, and more often in pubic or genital areas on adults. Lesions may or may not be itchy.

**Massage considerations:** Molluscum is contagious and easily spread from infected skin and, possibly, linens. So, massage is contraindicated until the papules disappear. In situations where the therapist inadvertently makes contact with molluscum papules, immediate hand washing with warm, soapy, water is adequate to prevent spread. Wash contaminated sheets in hot, soapy

**TABLE 1. HUMAN PAPILLOMA VIRUS SUBTYPES, ASSOCIATED WARTS AND CLINICAL APPEARANCE**

<table>
<thead>
<tr>
<th>HPV SUBTYPE</th>
<th>ASSOCIATED WART</th>
<th>CLINICAL APPEARANCE</th>
</tr>
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<tbody>
<tr>
<td>1, 2, 3, 4, 27, 29, 57</td>
<td>PALMAR/ PLANTAR WART</td>
<td>SINGLE OR MULTIPLE COALESCE FLAT PAPULES; SOME WITH “BLACK DOTS”</td>
</tr>
<tr>
<td>1, 2, 3, 4, 27, 57</td>
<td>COMMON WART</td>
<td>SMALL TO LARGE PINK OR BROWN RAISED THICK PAPULES; MAY HAVE “BLACK DOTS”</td>
</tr>
<tr>
<td>3, 10, 28</td>
<td>FLAT WART</td>
<td>SMALL FLAT-TOPPED FLESHY OR PINK PAPULES</td>
</tr>
<tr>
<td>6, 11 (AND OTHERS)</td>
<td>GENITAL WART (CONDYLOMA)</td>
<td>SINGLE OF MULTIPLE GROWTHS; RAISED WITH CAULIFLOWER SHAPE</td>
</tr>
</tbody>
</table>

**TABLE 1.** Human papilloma virus subtypes, associated warts and clinical appearance. Ref: Habif, Mosby, 2010
bleach water and dry on high heat. Clean table and face cradle with dilute bleach water, rinse and repeat.

HERPES (HSV1, HSV2). The Herpesviridae family contains two viral types: herpes simplex virus 1 (HSV1) and herpes simplex 2 (HSV2). Although the virus can infect any body region, HSV1 occurs more commonly on the face and lips, and HSV2 is commonly found on and around the genitals.

The virus is contagious and passed between people, or with self-inoculation. Herpes virus can spread through respiratory means (cough, sneeze), physical contact with the rash, and contact with bodily secretions (saliva, genital secretions). Although less common today, "vertical transmission" between mother and baby can occur.

Herpes simplex is a contagious skin condition, and the virus can be passed from individuals that lack the obvious signs and symptoms of a herpes infection. In addition, the virus can be spread to other body areas of the infected person (self-inoculation). HSV is a common infection worldwide, and it's estimated that between five and 24 people in North America and Europe have blood indicators of HSV-2, but may not know they are infected.

HSV infection is classified as “primary” and “recurrent.” During the primary infection (the first time infecting the body), the individual may experience a tingling or burning sensation in the affected area. The rash typically erupts three to seven or more days after inoculation, presenting with fluid-filled blisters on a red patch of skin. The blisters eventually burst and form crusts before healing. The rash lasts about two to four weeks. In contrast, some primary infections produce no or very mild symptoms.

During the primary infection, the herpes virus is located within the epidermis. Soon after, the virus travels to and resides in sensory nerve ganglia. HSV1 tends to reside in cranial nerve ganglia, whereas HSV2 prefers the lumbar-sacral ganglia. The virus remains dormant in these areas (possibly for years) until reactivated.

When the herpes virus is reactivated, called recurrent infection, the virus travels along the sensory nerves and into skin or mucous membrane neurons, where it multiplies. Tingling and burning sensation may precede the eruption of grouped, fluid-filled blisters on a red patch of skin. Over the next week or so, the blisters burst, then form crusts and craters. Various triggers can prompt the reactivation of the virus, such as an upper respiratory infection, sun exposure, stress, dental procedures, hormone changes, fever and fatigue.
Massage considerations: Because the herpes virus is contagious, massage is contraindicated until well after the rash has healed. In situations where the therapist inadvertently makes contact with herpes, immediate hand washing with warm, soapy, diluted bleach water should prevent spread.

If the therapist has herpes on the fingers, postpone the massage until completely healed. Wear gloves when removing contaminated sheets and wash all linens in hot, soapy, bleach water, and dry on high heat. Clean table and face cradle with diluted bleach water, rinse, and repeat.

VARICELLA “CHICKENPOX”/HERPES ZOSTER “SHINGLES”.
Typically occurring in children, the initial infection with the varicella zoster virus (VZV) causes chickenpox. Chickenpox is highly contagious, passed by physical contact as well as respiratory means (coughing, sneezing). Similar to HSV, the chickenpox rash consists of fluid-filled blisters that burst, leaving red spots all over the infected person’s body. After the rash resolves, VZV travels to the neural ganglion and remains dormant for years.

In 10 to 20 percent of the population (immunocompromised or stressed), the virus is reactivated and travels down sensory nerve axons to cause viral infection of the skin innervated by that particular nerve. This painful skin eruption is known as shingles (Figure 9). Shingles may produce fever, chills and tender lymph nodes several days before the rash erupts. Some may experience tingling and burning sensation in the dermatome, followed by painful red raised patches, then fluid-filled blisters. Similar to HSV, the blisters burst and form crusts. The rash tends to occur on one side of the body, and may affect adjacent dermatomes.

Shingles is more likely to occur in older people, as risk increases with age. Although the rash usually heals within two to four weeks, some people have residual nerve pain for months or years, called “post-herpetic neuralgia.”

Massage considerations: Most clients with shingles do not feel well and will likely cancel the massage appointment. In the event the client has early undiagnosed shingles and receives massage, the risk of spread to the therapist is minimal provided the therapist already had chickenpox (not shingles). In general, it’s safest to postpone massage until the client is feeling well and the rash has resolved. Keep in mind that pain or altered sensation may occur after the rash has healed. The client may have sensitive skin for months to years after the shingles rash has healed.

Common Superficial Fungal Conditions
OVERVIEW. Fungi are living, unicellular organisms. Many of the common superficial skin infections are caused by a group of microscopic fungi—called dermatophytes—that are found on animals, humans and in the soil.

Dermatophytes live on keratin skin cells within the top layer of the epidermis but not on moist mucosa. Certain dermatophytes preferentially invade the skin, hair or nails. Contrary to popular belief, superficial fungal infections do not circulate in the bloodstream.

Some superficial infections are caused by a subset of the fungal family Candida, known as yeast. Some types of yeast are normal inhabitants of mucous membranes in the mouth, vagina, GI tract and skin. Skin yeast infections (Candidiasis) occur when certain conditions (pregnancy, disease, medications and humidity, for example) allow or promote yeast overgrowth, resulting in a red rash that can be indistinguishable from a fungal infection.

Overgrowth typically occurs on skin that is warm and moist, such as the groin, under large skin folds of the abdomen, armpits and under breasts. Overgrowth in the mouth results in thrush.

TINEA. These superficial fungal infections are very common. Tinea infections are classified by combining tinea with the anatomical location of the rash (zzz). For example, combining tinea with “capitis” indicates a fungal infection of the scalp.

These infections can spread by contact with the infected person’s shedding cells, such as via a comb, clothing, shower surface or pool area. In general, treatment of tinea infections by a medical provider is dependent upon several factors: the body location, the duration of the disease, and the level of immunity and health of the client.

TINEA CAPITIS. Tinea capitis (Figure 10) is more prevalent in young children living in crowded, poor communities. The fungus is easily spread between children by direct contact, or after exchange of infected clothing or accessories, like hats, headphones and combs. This fun-
Dermatophytes of tinea capitis invade skin and hair shafts, producing a variable pattern of infection, scale and hair loss. In some cases, small circular scaly patches appear, while at other times, the entire scalp is infected. Itchiness is common, and some children develop an inflamed, soft, weepy nodule, accompanied by tender and enlarged neck lymph nodes. Tinea capitis is typically treated with oral antifungals because it does not respond well to topical treatments.

TINEA FACIEI/TINEA BARBAE. This infection of the face (cheeks, nose, around the eyes, chin and forehead) results in tinea faciei. [Note: in some texts, this is considered tinea corporis]. The fungal rash can occur at any age, however many cases are linked to children, perhaps because of the frequency of contact with animals. Tinea faciei has various clinical appearances: red, scaly plaques without central clearing, or a snakelike pattern with red vesicles or crusts. Tinea on the face can be treated with oral or topical prescription medications.

Dermatophyte infection of the neck, beard and mustache region is called tinea barbae. This infection is uncommon in the United States. It tends to occur in adolescent and adult males living in hot, humid climates. The rash was more prevalent in barber shop patrons because of non-sterile equipment, thus passing the infection from one person to the next. Disposable razors have significantly decreased the risk and number of new cases.

Typically, trauma from shaving initiates the fungal infection. Tinea barbae is similar to tinea capitis in that the fungus invades hair follicles, sometimes resulting in a deep infection that causes extensive inflammation and pain. The rash is typically unilateral and itchy. Depending on the extent of the rash, tinea faciei or barbae may be treated with topical or oral antifungal medicines.

TINEA CORPORIS. Occurring on the general body areas—trunk, arms, and legs (Figure 11)—Tinea corporis may be transmitted by direct (animal or human) contact or, rarely, via soil. The skin condition occurs more commonly in warm, humid climates, and affects all ages. The rash has a variable appearance, depending on the type of dermatophyte and the immunity of the host. It may develop as a single isolated red scaly ring, spreading outward while clearing centrally. This pattern, known as “ring-worm” (which is not caused by a worm), is the classic description of tinea corporis. However, the rash can appear intensely inflamed as a solid red scaly plaque, with red bumps or fluid-filled blisters. Itching is variable. Depending on the extent of the rash, tinea corporis may be treated with topical or oral antifungal medicines.

TINEA CRURIS. Commonly known as “jock itch,” tinea cruris presents in the groin, adjacent medial upper thigh and buttocks crease. Precipitating factors include a warm and moist environment, tight clothing and obesity. Men are affected more often than women, and children are rarely affected.

The affected areas appear as a red plaque with a distinct scaly border. The rash appears as a “half-moon” extending from the groin, typically scaly at the edge with small pustules within the border. The area within the border may be less scaly, red-brown and show signs of “clearing up.” In men, the scrotum is typically not affected. Patients often complain of burning or itching. Tinea cruris can be treated with oral or topical prescription medications.

TINEA MANUS/TINEA PEDIS. Dermatophyte infection of the palm and sole result in tinea manus and pedis, respectively. Hand and foot infections arise from physical contact with infected people, animal or the soil. Hand fungus has a variable appearance, such as a few isolated red vesicles, fine diffuse scale or large, inflamed ringlike plaques (similar to the “ring-worm” appearance of tinea corporis). The rash is typically itchy.
TINEA PEDIS, also known as athlete's foot, appears on the sole of the foot, and in extensive cases, on the sides and top of the foot. Similar to tinea manus, the appearance of tinea pedis is variable. Some cases display fine scale over pink patches, whereas others have extensive blisters, redness and thick scale. Most cases are moderately to severely itchy. Because toe web spaces trap moisture, dermatophytes can cause infection in these areas, presenting as white, soggy, peeling (macerated) skin.

Tinea pedis is the most common dermatophyte infection, and occurs more often in adults living in hot, humid climates. Other causes include wearing ill-fitting (too small) or sweat-producing (too hot) footwear. Tinea manus and pedis can be treated with oral or topical prescription medications.

TINEA UNGUIUM. Also called onychomycosis, tinea unguium is a fungal infection of fingernails and toenails (Figure 12). Most infections involve toenails rather than fingernails, likely as a result of toes spending more time enclosed in a warm, nonbreathable shoe or in ill-fitting (cramped) footwear. That said, improper use of artificial fingernails significantly increases the risk for development of fingernail fungus.

Tinea unguium typically presents as thickened, yellow, brittle nails. Most fungal infections start at the distal end of the nail, typically due to trauma. While most superficial fungal infections tend to get worse during summer, tinea unguium tends to be worse in the winter, and may be accompanied by hand and/or foot fungal infections. Nail fungus is typically treated with oral antifungals.

Massage considerations: All the various types of tinea caused by dermatophytes can be spread to others, therefore massage is contraindicated until the condition has completely healed. In situations where the therapist inadvertently makes contact with an undiagnosed rash, immediate hand washing with warm, soapy, diluted bleach water should be adequate to prevent spread.

If a client with tinea pedis and/or unguium requests a foot massage, the therapist is within his/her bounds to deny the massage. However, if the therapist does elect to massage infected feet and toes, immediate hand washing after the massage should be adequate. Wash sheets in hot, diluted bleach water and dry on high heat. Table and face cradle can be washed with warm, soapy water, rinse, and repeat.

TINEA VERSICOLOR. Tinea versicolor (also known as pityriasis versicolor) is a common skin condition caused by an overgrowth of yeast rather than dermatophytes. The yeast is a normal part of human skin and hair follicles, and prefers inhabiting oil-rich body areas such as the neck, upper chest and back. Overgrowth of the yeast produces tinea versicolor, resulting in pink, fleshy or light-brown patches. The rash results in uneven skin color, fine scaling and sometimes itchiness.

Tinea versicolor is more common in adolescents and young adults. Heat, humidity and application of oils increase risk of developing tinea versicolor. Many patients seek medical attention because the rash is cosmetically bothersome. Treatment by a medical provider consists of prescription topical or oral antifungal medications. Some over-the-counter products may reduce or eliminate recurrence.

Massage considerations: It’s not clear whether tinea versicolor is contagious. Some professionals believe it’s unlikely spread because the yeast is commonly found on skin. Massage is contraindicated if the diagnosis is unknown.

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Yeast infections are unlikely spread by direct contact, but massage is locally contraindicated because the skin is tender and prone to secondary bacterial infections.

unknown or unclear, and if the infection is severe. Be aware that your lubricant may exacerbate the condition by blocking oil glands.

**CANDIDIASIS.** “Candidiasis” refers to a group of diseases caused by various yeasts from the *Candida* species, the most common being *Candida albicans*. Candidiasis occurs most frequently in warm, moist body folds, as well as in wounds and ulcers in skin, and in the diaper area in infants. Prolonged moisture trapped in body folds or from cloth covering softens the damp skin, and friction damages the epidermis. Once the skin is disrupted, the yeast will adhere, colonize and grow.

Body folds, such as abdomen, armpits, groin and toe-web spaces are most susceptible to yeast overgrowth and infection. The condition typically presents as bright red glossy plaque with a rim of scale. Some cases have red pustules just outside of the plaque. Smaller skin folds, such as in finger or toe-web spaces, may present with painful, eroded and peeling white areas. Candidiasis in toe-web spaces frequently coexists with tinea pedis.

Treatment by a medical provider consists of prescription topical (applied to the skin) and oral antifungals, cool compresses and education (avoid prolonged contact with sweat or water). Drying powders help maintain skin dryness. Cornstarch, however, should be avoided because it can provide nourishment for yeast growth.

**Massage considerations:** Candidiasis is unlikely spread by direct contact. Macerated, open skin is tender and prone to secondary bacterial infection, therefore massage is locally contraindicated. Wash sheets in warm, soapy water and dry. Clean table and face cradle with warm, soapy water, and rinse.

Annie Morien is a dermatology physician assistant and licensed massage therapist. She has extensive clinical experience in evaluating and treating patients with various skin diseases. She received her PhD in Physiology, and teaches Pathophysiology, A&P, and Research courses, as well as Skin Disease Workshops for Bodyworkers, and can be contacted at dr.annie@yourCEplace.com.

**REFERENCES**