

- Chapter 30

The Child with a Skin Condition

- Objectives
- Recall the difference between the skin of the infant and that of the adult.
- Identify common congenital skin lesions and infections.
- Describe two topical agents used to treat acne.
- Summarize the nursing care for a child who has infantile eczema. State the rationale for each nursing measure.
- Objectives (*cont.*)
- Discuss the nursing care of various microbial infections of the skin.
- Discuss the prevention and care of pediculosis and scabies.
- Differentiate among first-, second-, and third-degree burns: the anatomical structures involved, the appearance, the level of sensation, and first aid required.
- List five objectives of the nurse caring for the burned child.
- Objectives (*cont.*)
- Describe how the response of the child with burns differs from that of the adult.
- Identify the principles of topical therapy.
- Differentiate four types of topical medication.
- Examine the emergency treatment of three types of burns.
- Discuss the prevention and treatment of sunburn and frostbite.
- Skin Development and Function
- Main function is protection
- Acts as body's first line of defense against disease

- Prevents passage of harmful physical and chemical agents
- Prevents loss of water and electrolytes
- Can regenerate and repair itself
- Along with the central nervous system, there are four basic skin sensations
 - Pain
 - Temperature
 - Touch
 - Pressure
- Secretes sebum
- Surface of skin is acidic
 - Protects from pathological microorganisms
- Summary of Integumentary System Differences Between Child and Adult
- Skin Disorders and Variations
- Skin condition may be a manifestation of a systemic disease while others may be congenital
- Skin color is an important diagnostic criterion in certain diseases
- Skin tests can be used to diagnose allergies
- Hair is inspected for color, texture, quality, distribution, and elasticity
 - Condition of hair can change based on nutrition or disease status
 - Hair can change due to medications or medical treatments
- Skin Disorders and Variations (*cont.*)
- The nurse should describe the lesions with regard to:
 - Size

- Color
- Configuration
- Presence of pain or itching
- Distribution
- Generalized or localized
- Condition of skin around lesions

- Skin Disorders and Variations (*cont.*)
- Managing itching is a key component in preventing secondary infection caused by scratching
- Applying skin creams and ointments as prescribed is important, not only in the treatment of skin conditions, but also in the prevention of infections
- Terms Used to Describe Skin Conditions
- Stye
- A stye, or hordeolum, is an inflammation of the sebaceous gland of the eyelid commonly seen in infants and children
- Strawberry Nevus
- Common hemangioma
- Consists of dilated capillaries in the dermal space
- Usually disappears without treatment
- May not be apparent until a few weeks after birth
- Begins flat, but becomes raised, bright red, elevated, and sharply demarcated
- Port Wine Nevus
- Present at birth

- Caused by dilated dermal capillaries
- Lesions are flat, sharply demarcated, and purple to pink
- Different from strawberry nevus in that the lesion darkens as child gets older, it does not disappear
- Skin Manifestations of Illness
- Café au lait macules
 - Light brown, oval patches
 - Multiple macules are associated with neurofibromatosis (a chromosomal abnormality) and tuberous sclerosis
- Hypopigmented macules
 - Whitish oval- or leaf-shaped
 - Multiple macules associated with tuberous sclerosis
- Skin Manifestations of Illness (*cont.*)
- Butterfly rash
 - Over nose and cheeks
 - Associated with photosensitivity
 - May be associated with systemic lupus erythematosus (SLE)
- Scaling skin eruption
 - Around mouth in a horseshoe-shaped distribution
 - Also seen on chin, cheeks, or as a perianal rash
 - Has papules and scales
 - Associated with zinc deficiency in infants, as well as diarrhea and failure to thrive
- Skin Manifestations of Illness (*cont.*)

- Vascular birth mark
 - Resembles a bruise that changes in appearance over the years
 - Hemangiomas around the chin may be associated with airway problems
 - Those appearing around the lumbar region may be associated with spinal problems
- Infections
- Miliaria
 - “Prickly heat” or a rash caused by excess body heat and moisture
 - Sweat is retained in the sweat glands, which become blocked or inflamed
 - Rupture or leakage causes the skin to appear inflamed
 - Appears suddenly as tiny, pinhead-sized, reddened papules
 - May be itchy
 - Often appears in diaper area or skin folds
 - Remove extra clothing, bathing, skin care, frequent diaper changes
- Intertrigo
 - “Chafing”
 - Dermatitis in skin folds
 - Patches are red and moist
 - Aggravated by urine, feces, heat and moisture
 - Prevention consists of keeping affected area clean and dry
- Seborrheic Dermatitis
 - “Cradle cap”
 - Inflammation of the skin that involves the sebaceous glands

- Characterized by thick, yellow, oily, adherent, crustlike scales on the scalp and forehead
- Resembles eczema, but does not itch
- Seen in newborns, infants, and at puberty
- Treatment is shampooing hair on consistent basis
- Diaper Dermatitis
- Skin irritated by prolonged contact with urine, feces, retained laundry soaps, and friction
- May be seen in response to addition of solid foods, feeding, chemicals, contact with household substances
- Beefy red rash may be indicative of a *Candida* infection
- Prevented by frequent diaper changes with meticulous skin care
- Acne Vulgaris
- Inflammation of the sebaceous glands and hair follicles
 - Sebaceous follicles enlarge at puberty
 - Secrete increased amounts of sebum (a fatty substance)
- Comedo is a plug of keratin, sebum, or bacteria
 - Open—blackhead
 - Closed—whitehead and are responsible for the inflammatory process of acne
- Acne Vulgaris (*cont.*)
- Routine skin cleansing
- Greasy hair products and cosmetics should be avoided
- Excessive cleansing can irritate skin

- Multiple topical and oral treatments available
- Important to stress to teenager to follow medication treatments as prescribed
- Herpes Simplex Type I
- Known as a *cold sore* or *fever blister*
- May feel a tingling, itching, or burning on the lip
- Vesicles and crusts form, takes up to 10 days to heal
- Most communicable in the early phase of the outbreak
- Recurrence is common as virus lays dormant until activated by stress, sun, menstruation, fever, or other causes
- Treatment is with antiviral medications, both oral and topical
- Infantile Eczema
- Atopic dermatitis is an inflammation of genetically hypersensitive skin
 - Local vasodilation in affected areas
- Spongiosis or breakdown of dermal cells and formation of intradermal vesicles
 - Rarely seen in breastfed infants until they begin to eat additional food
 - It is a symptom rather than a disorder
 - Infant is oversensitive to certain substances
- Worse in winter
- Infantile Eczema (*cont.*)
- Lesions easily infected by bacterial or viral agents
- Infants/children with eczema should not be exposed to adults with cold sores because they may develop a systemic reaction with high fever and multiple vesicles on the eczematous skin

- May flare up after immunizations
- Lab studies show increased IgE and eosinophil levels
- Treatment for Infantile Eczema
 - Aimed at relieving pruritus, hydrating the skin, relieving inflammation, and preventing infection
 - Emollient bath, such as a mixture of cornstarch and baking soda or oatmeal is sometimes ordered
 - Bath oil helps keep skin moist and should be added to bath after the child has soaked for a while and skin is hydrated; the oil will help hold the moisture in the skin
 - Medications
 - Corticosteroids
 - Antibiotics
 - Anti-itching medications
- Parent Teaching
 - Ointments should be completely washed off between applications
 - Cortisone creams should be avoided because they do not resolve the underlying cause
 - How to apply topical medications
 - Best absorbed after a warm bath
 - Applied by stroking in direction of hair growth
 - Use proper amount of ointment
 - Elbow restraints can prevent an infant from scratching while allowing freedom of movement
 - Topical steroids should not be used when a viral infection is present
- Nursing Tip
 - Parents should be taught that kissing a wound to “make it better” can introduce organisms that can cause infection
- *Staphylococcal* Infection

- Primary infection may develop in the newborn in the umbilicus or circumcision wound
- May occur while in hospital or after discharge
- Infection spreads readily from one infant to another
- Small pustules on the newborn must be reported immediately
- Antibiotic ointments are used in some situations while in others, intravenous antibiotics are required
- If an infant has MRSA, the child is placed in contact isolation if hospitalized
- Scalded Skin Syndrome
- Caused by *S. aureus*
- Lesions begin with a mild erythema with a sandpaper texture
- Vesicles appear and rupture and peeling occurs, exposing a bright-red surface
- Skin appears scalded and child abuse is often suspected
- Impetigo
- Caused by *staphylococci* or group a beta-hemolytic *streptococci*
 - Bullous form seen in infants usually staphylococcal
 - Nonbullous form is seen in children and young adults
 - Newborns susceptible because resistance to skin bacteria is low
- **Very contagious**
- Treatment is either oral or parenteral antibiotics
- Fungal Infections
- Invade stratum corneum, hair and nails
- Fungi are larger than bacteria
- Tinea capitis—alopecia

- Tinea corporis—oval scaly inflamed ring with clear center
- Tinea pedis—lesions are between toes, on instep and soles; pruritic
- Tinea cruris—“jock itch”
- Pediculosis
- Three types
 - Pediculosis capitis—head lice
 - Pediculosis corporis—body lice
 - Pediculosis pubis—pubic lice, known as *crabs*
- Survival of lice depends on blood extracted from infected person
- Scabies
- Parasitic
- Caused by female mite
 - Burrows under skin and lays eggs, especially between fingers
 - Burrows contain eggs and feces
- Itching is intense, especially at night
- Thrives in moist body folds
- Spread by close personal contact
- Treatment is the application of permethrin
- All family members, including the home and car, require treatment
- Injuries
- Burns
- Leading cause of accidental death between 1 and 4 years of age

- Sometimes result of child abuse or neglect
- Most likely to occur in early morning in house before parents awaken and after school
- Burns (*cont.*)
- Types of burns include
 - Thermal—due to fire or scalding vapor or liquid
 - Chemical—due to corrosive powder or liquid
 - Electrical—due to electrical current passing through the body
 - Radiation—due to X-rays or radioactive substances
- Burns (*cont.*)
- Can involve skin or mucous membranes
- If burned near face, flames may have been inhaled
- Assessing for patent airway is a priority
- Body Surface Area of a Child
- Child Burn Size Estimation Table
- Children's Response to Burns
- Skin is thinner, leads to more serious depth of burn with lower temperatures and shorter exposures
- Immature response systems in young children can cause shock and heart failure
- Large body surface area of child results in greater fluid, electrolyte, and heat loss
- Increased BMR results in increased protein and calorie needs
- Children's Response to Burns (*cont.*)

- Smaller muscle and fat content in the body results in protein and caloric deficiencies when oral intake is limited
- Skin more elastic, causing pulling on the scarring areas and resulting in formation of a larger scar
- Children's Response to Burns (*cont.*)
- Immature immune system predisposes child to developing infections that complicate burn treatment
- Prolonged immobilization and treatment required for burns adversely affects growth and development
- Burns
- Moderate
 - Partial-thickness burns involving 15% to 30% of body surface
 - Full-thickness burns involving less than 10% of body surface
- Major
 - Partial-thickness involving 30% or more of body surface
 - Full-thickness burns involving 10% or more of body surface
- Both types are considered open wounds that have the added danger of infection
- The 6 Cs of Burn Care
- Clothing
- Cooling
- Cleaning
- Chemoprophylaxis
- Covering
- Comforting (pain relief)

- Electrical Burn
- Child should be assessed for entry and exit lesions
- Indicates path of electricity through the body
- Muscle damage can occur
- Mechanism of Electrical Injury
- Emergency Care of Burns
- Stop the burning process
- Evaluate the injury
- Cover the burn
- Transport to hospital
- Scalded Burns
- Emergency Care
- Establish an airway
 - Cyanosis, singed nasal hair, charred lips, and stridor are indications that flames may have been inhaled
 - An endotracheal tube may be inserted to protect the airway
- Establish an intravenous line
- Obtain blood and other body fluids for laboratory testing
- A nasogastric tube may be inserted to empty stomach and prevent complications
- Wound Care
- Wound Care (*cont.*)
- Wound Care (*cont.*)

- Wound Care (*cont.*)
- Can be painful; pain medications should be given in advance of the treatments to ensure adequate pain control is achieved
- Cleansing and debridement
- Loss of skin increases threat of infection and fluid loss caused by evaporation can be significant
- Nursing Care
- Protective isolation is instituted
- All instruments are sterile
- Ointments are applied with a sterile gloved hand or sterile tongue depressor
- Care must be taken to avoid injury to granulating tissue
- Nursing Care (*cont.*)
- Immediately report signs of infections
- Observe for fluid overload
- Burn victims have an increased demand on metabolism, require high-protein diet; additional vitamins and minerals may also be required
- Prevention of contractures is important
- Providing emotional support to the child and family is essential
- Sunburn
- Common skin injury due to overexposure to sun
- Can be minor epidermal burn to serious partial-thickness burn with blisters
- Goal of treatment
 - Stop exposure

- Treat inflammation
- Rehydrate skin
- Sunscreen and Sunblock
- Sunscreen
 - Topical partially *absorbs* UV light
 - Have an SPF rating to evaluate effectiveness in blocking sun rays
- Sunblock
 - *Reflects* sunlight
 - Zinc oxide and titanium dioxide are effective
- Frostbite
- Results from freezing of a body part
 - Chilblain: a cold injury with erythema and formation of vesicles and ulcerative lesions that occur as a result of vasoconstriction
 - In exposure to extreme cold, warmth is lost in the periphery of the body before the core temperature drops
- In extreme cases, the head and torso should be warmed before the extremities to ensure survival
 - A deep purple flush appears with the return of sensation, which is accompanied by extreme pain
- Can result in necrosis and may require amputation of the affected extremity
- Question for Review
- What safety measures must the nurse take when providing wound care management to a child with severe burns?
- Review
- Objectives

- Key Terms
- Key Points
- Online Resources
- Review Questions