



Certified Pediatric Nurse Review Course: Dermatologic Conditions

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NEMOURS
CHILDREN'S HEALTH

Introduction

- Function of the skin: perception of touch, pain, pressure, heat, and cold
- Largest organ of the body
- Three layers:
 - Epidermis (outer layer): layer that contains cells which provide protein production and initiate immune response
 - Dermis (middle layer): consists of connective tissue, allowing skin to stretch. Helps regulate temperature and blood pressure.
 - Subcutaneous tissue (third layer): connects the dermis to muscle. Insulates the body during cold temperatures

Objectives

- Assess and plan nursing care for the child with common skin conditions.
- Differentiate between contact dermatitis and infectious dermatitis.
- Describe the assessment and nursing interventions for the child with burns.
- Identify the signs and symptoms of an allergic reaction in children.
- Discuss measures to prevent allergic reactions and specific treatment.



Rashes

Overview

- Heat may aggravate most skin rashes and increase pruritus (itching)
 - coolness decreases pruritus
- Most skin rashes are macular, papular, or vesicular
 - Macular rash is a flat rash
 - Papular rash has raised small solid lesions
 - Vesicular rash has small, raised lesions filled with clear fluid

Assessment

Describe the size, shape, type, location, warmth, and color of the rash

- Note whether the rash is dry or oozing
- Does the rash "come and go"?
- Note pain or pruritus
- Check the status of the hair
- Review history of allergies, new foods, new clothes, or medications
- Assess for other signs of illness
- Has the child traveled anywhere recently

Interventions

- Apply cool soaks or give baths with added baking soda, or dab site with calamine lotion
- Administer antipruritics; give antihistamines if the rash is related to an allergy
- Distract the child and provide projects that encourage use of hands to prevent scratching
- Keep the area clean and pat dry; expose the affected area to air
- Prevent the spread of infection
 - Teach good hand hygiene
 - Keep weeping lesions covered



Contact Dermatitis: Diaper Rash

Overview

- Related to the moist, warm environment contained by a plastic diaper lining
- Condition can be caused by:
 - Clothing dyes or soaps used to wash reusable diapers
 - Bubble baths
 - Tight-fitting clothing, or wool or rough clothing
- Acidic urine and stool, or the formation of ammonia in the diaper, can further irritate the rash

Assessment

- Note the characteristic **bright red maculopapular rash** in the diaper area
- The rash is painful and warm, assess for irritability or pain
- Note any bleeding or "weeping"

Intervention

- **Keep the area clean and dry**
 - Instruct caregiver to change the diaper frequently and as soon as child voids or stools
- **When possible, keep the area open to air**
- Apply Vitamin A and D skin cream, or other creams





Contact Dermatitis: Poison Ivy

Overview

- Poisonous oil on the plant leaf causes a delayed hypersensitivity response
- Rash appears 5 to 21 days after the first exposure, but 1 to 2 days after subsequent contact
- Oils remaining on clothes and skin are contagious to others
 - The rash/eruptions are not a source of infection and will not spread the disease

Assessment

- Assess for pruritus
- Observe for red, localized streaks that come prior to vesicles
 - Vesicles break and then the fluids crust

Intervention

- After contact, wash the oils from the skin with soap and water
- Do not touch other body parts until the area is clean
- Wash oil out of clothes
- Apply antipruritics or antihistamines, if ordered
- Prevent secondary infection from scratching





Impetigo

Overview

- A superficial infection of the skin caused by group A β -hemolytic streptococci
 - May also be due to staphylococci
- Highly contagious until all lesions are healed
 - Spread by direct contact
 - Incubation period is 2 to 5 days after contact
- Commonly seen on the face
 - May spread by scratching
- Can be spread by biting and stinging insects
- Common in ages 2 to 5 years

Assessment

- Assess for a macular rash that progresses to a papular and vesicular rash, which oozes and forms a moist, honey-colored crust
- Assess for pruritus
- Ask about bug bites
- Ask if others in the house have a rash

Intervention

- Apply moist soaks to soften lesions
- Remove the crusts gently three to four times a day and wash the area
- Cover the child's hands and cut nails
- Cover lesions
- Administer antibiotics
- Patient should use separate towels and linens



A photograph of four young children sitting on a grassy field. The child in the center is a young boy with curly hair, wearing a white t-shirt and blue pants, smiling and clapping his hands. To his left is a girl with curly hair wearing a striped shirt, also smiling and clapping. To his right is a girl with long dark hair in pigtails, wearing a pink shirt, looking towards the center. On the far right is another girl with dark hair, smiling. The background is a blurred green field with trees.

Cutaneous Fungal Infections/Ringworm

Overview

- "Tinea" refers to an infection by fungus
 - Tinea capitis- involves scalp/hair
 - Tinea corporis or ringworm- involves trunk, extremities, and groin
 - Tinea pedis- "athlete's foot"
 - Tinea cruris- "jock itch", not contagious

Assessment

- Tinea corporis
 - Can be spread from other body parts, other people in the house, or from animals
 - Lesions may be annular (ring shaped), indurated, and center of the ring may be clear
- Tinea capitis
 - Organism invades the hair shaft resulting in spotty areas of alopecia
 - Spreads in circular pattern
- Tinea pedis
 - Usually interdigital (between toes)
- Tinea cruris
 - Itching increases with sweat
 - Occurs in crural folds of the groin

Interventions

- Apply oral and topical antifungals medications



A photograph of four young children sitting on a grassy lawn outdoors. They are all smiling and clapping their hands. The child in the center is a young boy with curly hair wearing a white t-shirt. To his left is a girl with curly hair in a striped shirt. To his right is a girl with long dark hair in a pink shirt. On the far right, another girl is partially visible, also smiling. The background shows green trees and a clear sky.

Candidiasis/Thrush

Overview

- Yeastlike fungus
- Grows in moist warm areas
- Often found on mucous membranes or in the folds of skin, commonly seen in obese individuals
- Can be a result of an antibiotic

Assessment

- Child may complain of itching, burning, and irritation
- Thrush, occurring in the mouth, can appear as white plaques, with an underlying bright red surface
 - Lesions may extend to the esophagus
- Skin lesions appear red and moist

Intervention

- Administer oral antifungal suspension for oral thrush (swish and swallow)
- Keep skin areas dry
- Use antifungal creams and ointments





Pediculosis/Lice

Overview

- Caused by a blood-obligate parasite that lives close to the scalp
- Common in school-age children
- Unrelated to hygiene
- Easily transmitted from one person to another, however, lice do not fly or jump



Assessment

- Inspect for lice eggshell cases (nits)
 - Do not flake off like dandruff
- Ask about intense pruritus of the scalp
- Assess for secondary infection from scratching

Intervention

- Use pyrethrins (Rid) or permethrin (Nix/Elimite) shampoo
- Repeat treatment in 7-10 days
- Wash bed linens, hats, brushes
- Avoid head-to-head contact
 - Children do not need to stay out of school due to lice





Scabies

Overview

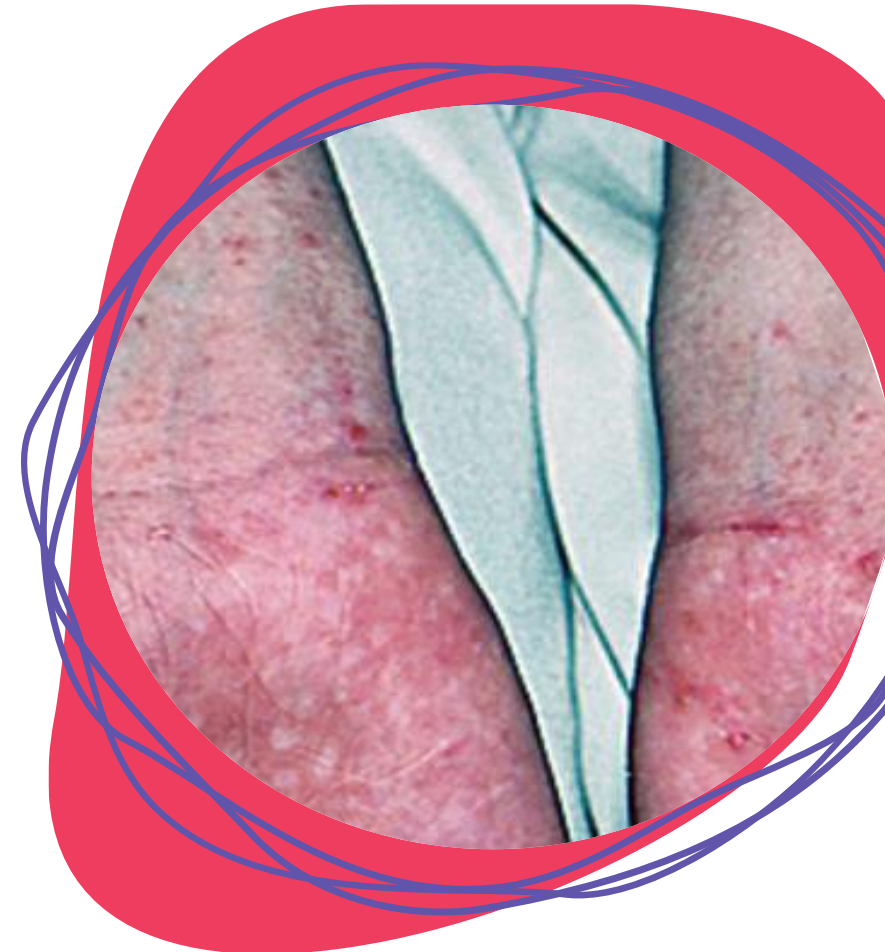
- Contagious mite infestation
- Contracted by close contact with infected individual
- Mites burrow into skin and deposits eggs
 - Eggs hatch over 30 days and travel to skin, incubation is 1-2 months

Assessment

- Assess for intense itching, worse at night
- Assess for rash between fingers, wrists, genitals, waist, buttocks, knees, elbows; does not usually affect the face
- Ask about family members having the same condition
- Observe skin for "burrows" that may be linear, curved, or S-shaped

Intervention

- Apply scabicide for 8-12 hours
- Household contacts should also be treated
- Wash all clothing and linens in hot water



A photograph of four young children sitting on a grassy field. The child in the center is a young boy with curly hair, wearing a white t-shirt and blue shorts, smiling broadly and clapping his hands. To his left is a girl with curly hair wearing a striped shirt, also smiling and clapping. To his right is a girl with long dark hair in pigtails, wearing a pink shirt and blue overalls, looking towards the center. On the far right is another girl with dark hair, smiling. The background shows green trees and a clear sky. A semi-transparent dark blue rectangular box is overlaid on the bottom half of the image, containing the word 'Acne' in white text.

Acne

Overview

- Most common among adolescents related to hormonal stimulation and increase in sebaceous gland activity
 - The channel between the gland and the surface becomes plugged with sebum
 - The follicles expand into comedones (pimples)
- Acne is not caused by foods or poor hygiene, but these can be factors to exacerbate the condition
 - Other causes of exacerbation can be menses, sweating, and cosmetics
- Most common on the face, chest, and back

Assessment

- Assess for characteristics of noninflammatory whiteheads and blackheads
- Assess for signs of inflammation
- Inquire about skin routine or how the youth cares for their acne

Intervention

- Advise to wash face daily with soap and water
- Apply topical benzoyl peroxide
- Discourage any picking or tweezing to prevent scarring
- Promote self-esteem
- If Accutane (Isotretinoin) is ordered, females need a pregnancy test
 - Both males and females must participate in the iPLEDGE program to be celibate while on the medication due to its teratogenic properties





Burns

Overview

- Most burns in pediatrics occur in children under the age of 5
- Under the age of 3, the majority of burns are a result from contacts with hot liquids or electricity
- Older children are most commonly burned by flame
- **The rule of nines is not accurate for children.**

Assessment

- Assess for degree of burn:
 - First-degree burn (partial thickness)
 - Dry, painful, red skin with edema
 - Looks like sunburn
 - Second-degree burn (partial thickness)
 - Moist weeping blisters with edema
 - Very painful
 - Third-degree burn (full thickness)
 - Dry, pale, leathery skin
 - Avascular without blanching or pain



Assessment

- Assess for fluid shift from intravascular to interstitial compartments
- Assess for hypovolemia and shock from fluid shift
- Assess for infection
- Assess for diuresis 2 to 5 days post burn, as fluid shifts back



Interventions

- For an immediate burn:
 - Stop the burning process
 - Remove burning and hot clothing or jewelry
 - Do not put anything on the burn other than cool water; do not put ice on the burn
 - Cover with clean sheet to avoid heat loss
- Relieve pain; do not give medications intramuscularly because of inconsistent absorption



Stevens Johnson Syndrome

Overview

- Considered a dermatologic emergency
- Cause is unknown; medications, especially antibiotics and sulfa drugs, can initiate
- Thought to be a hypersensitivity complex affecting the skin and mucous membranes
- Cell death causes epidermis to separate from the dermis

Assessment

- Symptoms start with a fever, sore throat, and fatigue
- Ulcers and other lesions appear on mouth and lips
 - Can occur in genital and anal regions, and conjunctiva
- A painful red or purplish rash develops throughout the body, the rash blisters, causing the top layer of skin to die and shed

Intervention

- Stop all medications, except those to treat mycoplasma infection
- Treat similarly to burn patients: IV fluids, nasogastric or parenteral feedings
- Magic mouthwash for mouth ulcers
- Prevent sepsis
- Attention to eye care, via lubrication



Knowledge Check

A nurse is caring for an infant, diagnosed with contact dermatitis to the diaper area. Which action should the nurse include in the plan of care?

- A. Avoid using name brand absorbent diapers
- B. Change the diaper immediately after urination and bowel movement
- C. Administer antifungal medication
- D. Remove all crusted lesions with sterile gloves

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Rationale: Nursing management of contact dermatitis located in the diaper area includes removal of irritant, urine, and stool as soon as possible. Urine and bowel movements increase risk for irritation, redness of skin, and skin breakdown caused by increased pH and ammonia. The use of absorbent diapers is recommended. Antifungal medications are prescribed for fungal infections, and crusted lesions occur with impetigo.

Knowledge Check

A 3-month-old infant is being breast fed. The primary care clinician notices white patches in the oral mucosa. What is the priority nursing education for the mother?

- A. Instruct hand hygiene with only alcohol-based products
- B. Rinse all pacifiers and bottles with warm water
- C. Instruct use of oral nystatin and application of nystatin to nipples
- D. Instruct family members to not share towels and bedding sheets

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Rationale: Mothers who are breastfeeding will need to treat the baby and self with nystatin as ordered; additionally, good hand and body hygiene that utilizes soap, water, and friction is required to decrease the transmission of the fungal infection. Pacifiers and bottles must be properly sterilized. Separating towels and bedding is not required for oral candidiasis.

Knowledge Check

A nurse is caring for a child with a deep partial thickness burn. The child reports severe pain. What is the nurse's best action?

- A. Administer IV morphine sulfate
- B. Administer meperidine intramuscular (IM) route
- C. Keep the child close to the nurses' station to continuously evaluate
- D. Speak to the social worker for a psychiatric evaluation

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Rationale: Burn pain is associated with severe levels of pain due to the association of nerve damage and exposure of nerve endings after severe heat associated with dermatologic damage, associated with traumatic burn injury. Pharmacologic treatment is necessary to adequately treat the pain associated with burns. All opioids should be administered via the IV route to avoid delayed absorption of medication associated with IM injections. The IM injection route is contraindicated. Close observation of the child will not adequately address the child's pain needs, nor will providing social service interventions to initiate a psychological evaluation to properly manage the child's report of pain.

Knowledge Check

A school-aged child is diagnosed with pediculosis capitis (head lice). Which instruction should the nurse include when teaching the parents about effective management?

- A. Use a medicated lice shampoo and repeat in 7-10 days
- B. Wash the child's hair daily with regular shampoo for one week
- C. Treat all family members with prescription lice medication immediately
- D. Vacuum carpets and discard the child's stuffed animals

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Rationale: Lice treatment typically includes applying a pediculicide shampoo and repeating treatment in 7-10 days to kill any newly hatched lice. Regular shampoo is not effective in eliminating lice or nits. Family does not need to be treated, only those infested should be treated, prophylactic treatment is not recommended. Washing stuffed animals is helpful, but they do not need to be discarded. Items can be sealed in a plastic bag for 2 weeks if not washable.

References

- Fitzgerald, M., & Jack, D. (2023). *Pediatric Nurse Certification Review*. Springer Publishing Exam Prep.
- Jakubik, L., & Selekman, J. (2023). *Pediatric Nursing Certification Review* (5th ed.). Society of Pediatric Nurses.