

*TESH:*  
*Dermatology for School Nurses Part 2:*  
*Fungal, Viral, and Pests*  
*April 10, 2012*

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## Dermatology for the School Nurse Part 2: Fungal, Viral & Pests

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### Objectives

- Describe assessment approaches for the RN for dermatological conditions.
- Describe skin care and comfort measures for the child with a skin condition resulting from a fungal, viral or pest.
- Discuss current medical management approaches for three common skin conditions of children. (fungal tinea, viral warts, or pests: lice, scabies, bed bugs)
- Discuss current medical management approaches for common fungal, viral and pest skin conditions of children.

### Review Skin pathophysiology

- Largest organ system
- Indispensable to human life
- Protector and barrier between internal organs and external environment
- Regulate body temperature
- Barrier against foreign body intrusions
- Child exposed to unknown irritants and unable to tell others of changes

### Skin changes caused by:

- Infectious agents
- Toxic chemicals: skin irritation
- Physical trauma: burns, lacerations, friction
- Hereditary factors
- External factors: allergens, environmental
- Pathogens: fungal, viral
- Medications

### Disorders that are Fungal, Viral, or pests:

• Tinea capitis, cruris and corporis	• Lice
• Warts	• Scabies mites
• Herpes (simplex, zoster).	• Bed bugs
• Molluscum contagiosum	

### Pediatric Skin Assessment to determine secondary infection

- Involves inspection & palpation
- Color, texture, temp, moisture, turgor
- Determine skin turgor – best indicator for dehydration

### Assessment framework - OLDCART

- Onset
- Location
- Duration
- Characteristics
- Aggravating factors
- Referred pain (radiates)
- Treatment tried (did it work)

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### Onset

- Sudden –bacteria or allergic reaction, new bug bites
- Gradual – viral or long term irritant, warts, small bites that are not irritating
- Chronic – long term irritant

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### Location

- Systemic disease will have more locations:
  - Viral tends to be trunk and face
- Bacterial can be anywhere, often in area of rubbing
- Mites (Scabies) – linear burrow
- Bugs – bed bugs, chiggers usually jump around
- Lice – live in areas with hair
- Warts- anywhere
- Herpes: simplex- oral; zoster – cluster along nerve line

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### Characteristics

- Type of pain
  - Sharp/stabbing –Bacterial
  - Itching – irritant in skin related to bug's bite

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### Aggravating factors

- Clothing
- Exposure to air
- Warm/cool

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### Treatment tried

Creams – calamine  
Cool washcloth  
Bath

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### General Assessments

- Dehydration
- Scratching which leads to open lesions and secondary infections

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### General treatment at school

- Cleansing
- Cool cloth
- Distraction -- cover it

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### Skin communicable diseases

- Lice - itching, eggs and nits
- Scabies - itching with linear trails
- Bed bugs - itching, scattered scabs
- Warts - asymptomatic and symptomatic depends on location
- Ringworm (tinea)- circular lesion with central clearing

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### Pediculosis, Bugs etc

- Lice - pediculosis humanus, phthirus pubus
  - See as live louse or nits (eggs) mature in 7-10 days
  - Do not spread disease
- Scabies - sarcoptes scabiei burrows
  - Intense itching - eggs laid in burrow
- Bed bugs

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### Lice Treatment

- Pediculocide (permethrin 1%, pyrethrin) shampoo, fine-tooth comb, reapply in 7-10 days
  - Malathion organophosphate (Ovide)
  - Lindane organochloride - CNS side effects
- Environment- examine family
  - Cleansing - sheets, towels, headgear, plastic bag for 2 weeks if cannot clean, hot dryer
- Alternatives - herbal or essential oils to occlude
- Hot air - LiceBuster

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### Lice continued

- Return to school policy
  - AAP feels "no nits" policy is controversial

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### Scabies treatment

- Scabicides - on 8-14 hrs, rinse off, repeat in 1 week
  - Permethrin 5% lotion (Elimite)
  - Lindane 1% - caution with CNS effects
  - Crotamiton 10% - daily 5 days
- Antihistamine for itching
- Environment - check family, wash items, hot dryer, plastic bags for non-washables

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### Bed bugs

- Thrive in dark, narrow spaces
- Bite as move



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### Treatment

- Monitor healing
- Antihistamine for itching
- Rooms
  - Inspect
  - Cleansing
  - High heat

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- Hints on Bugs from you?

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### Viral - Warts

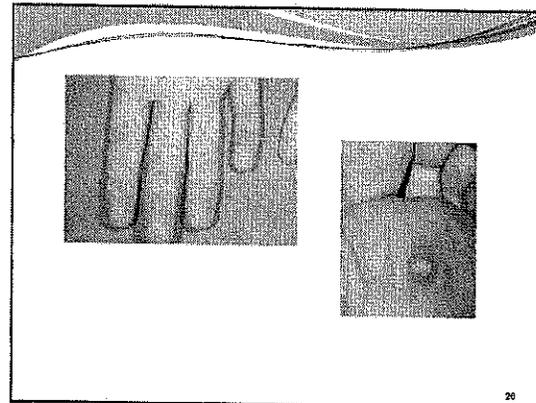
- Human papilloma virus
- 5% of children by age 11
- 65% resolve on own after 2 years
- Spread at: Swimming pools, Public showers, Locker rooms, Public Common Rooms, Bathrooms

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### Types

- Common - (verruca vulgaris) elevated flesh-colored papules, black thrombosed blood vessels
- Periungual - around cuticles
- Plantar - weight-bearing surface, grow inward
- Filiform - narrow stalk on face, lips, nose, eyelids, neck
- Flat - (verruca plana) small, slightly elevated papules
- Condylomata acuminata - genital, cauliflower-like

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### Wart Treatment

- No single treatment, can watch and wait
- Keratolytics - peel away slowly
  - Salicylic acid 20% as liquid & as plaster 40%
  - Retinotic acid gel for flat warts
  - Duct tape occlusion
- Destructive - necrosis and blisters
  - Cryotherapy - liquid nitrogen
  - Cantharidin, podophyllum
- Immunotherapy - cimetidine, imiquimod cream

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### Other

- Can leave scars
- Spread of teens with shaving

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### Hints on Warts from you?

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### Fungal - tinea

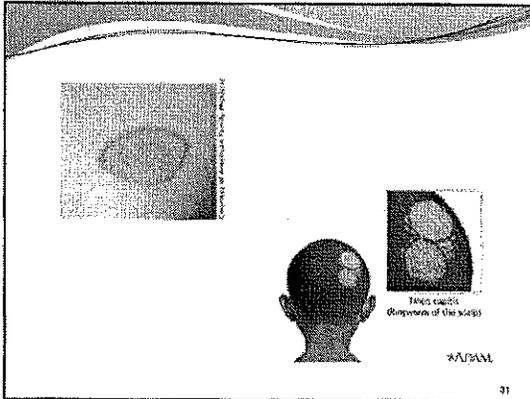
Trichophyton tonsurans, microsporum canis, epidermophyton floccosum

- Corporis - circular, raised border, central clearing
- Capitis - circular, raised border, broken hairs
- Cruris - scaly, raised border
- Pedis - vesicles, erosions, fissures

Malassezia furfur, malassezia ovalis

- Versicolor - scaly, discrete, pigment changes

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### Diagnosis

- Fungal culture
- Scrape area and apply KOH

### Tinea treatment

- Corporis/cruris– topical antifungals
  - Miconazole/clotrimazole 1% BID up to 4 wks
- Capitis – Griseofulvin orally for 4-8 wks
  - Caution with liver concern
- Pedis – also antifungal powders
- Versicolor – selenium 2.5% lotion or 1% shampoo applied for 30 minutes, then wash away

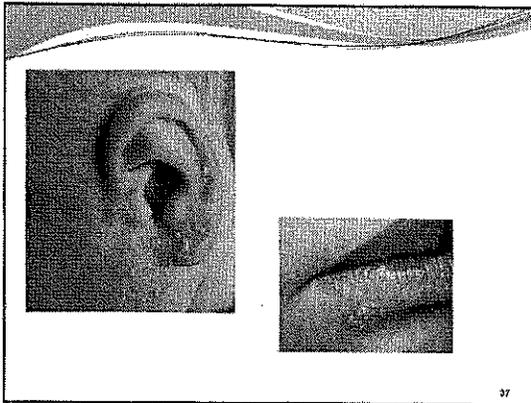
### Prevention etc.

- Contagious until 24 hours of treatment
- Cover areas to avoid spread
- Cotton underwear and socks changed frequently
- Dry well after showers & swimming
- Support through long treatment

### Tinea hints from you?

### Other similar skin conditions

- Molluscum contagiosum – benign papules of poxvirus
- Acne – teen, most on face, back and chest
- Folliculitis – infection of follicles
- Cellulitis – spread of infection, needs urgent referral for antibiotics
- Herpes simplex– viral clusters, serous fluid, painful. Topical medications expensive



What are your experiences with infectious skin lesions?

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**Case**

- 6 year old girl who comes to you at lunch time because her head itches.

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What else do you want to know?

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- She tells you that it started last night. It woke her up once last night.

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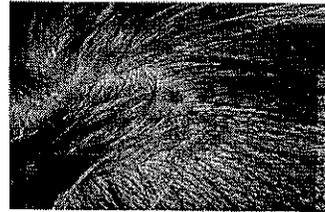
**Other info**

- No one else is scratching at home that she knows.
- She is afebrile.
- She is on no medications and has no allergies.

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What would you do next?

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### Care

- Assess hair area to visualize lice or any rash present
- Notify parents
- Isolate
- Help parents understand treatment (may need two) and return to school policy

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### Other discussion

- Seborrhea – cradle cap/dandruff; treat with shampoo left on area 5-10 min; oil on crusts
- Pityriasis rosea – herald spot 1-30 days before generalized macular rash; supportive care; caution with sun
- Psoriasis – thick silvery scales; familial; topical steroids; emollients; keratolytic shampoo; vitamin D; tazaroe for plaques; UV light therapy; remissions/exacerbations

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Questions and comments



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