



# A GUIDE TO COMMON RASHES

Strategies for Diagnosis and Management

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# Challenge of Diagnosis Rashes



Dermatology providers are like detectives, piecing together clues to unravel the mysteries of the skin.

# What you can expect to learn...



**Viral Exanthem:** Pediatric Rashes & Pityriasis Rosea



**Tinea** (Corporis, Capitis, Cruris, and Pedis)



**Impetigo**



**Herpes** (Shingles)



**Contact Dermatitis:** Poison ivy, Sumac, Oak



**When to refer to a dermatology provider**

# Understanding Viral Exanthems

## What Is a Viral Exanthem?

Viral exanthems are widespread skin rashes caused by viral infections.

They often occur alongside systemic symptoms like fever, fatigue, and respiratory signs.



## Self-Limiting Nature

Most viral exanthems resolve spontaneously with supportive care (e.g., fever reducers, hydration).



## Examples

- Measles (Rubeola)
- Rubella (German Measles)
- Roseola Infantum
- Erythema infectiosum (Fifth Disease)
- Varicella (Chickenpox)







# Defining Characteristics of Viral Exanthems

- **Onset:** Abrupt, with systemic symptoms
- **Distribution:** Symmetrical, affecting trunk, limbs, and face
- **Morphology:** Maculopapular, vesicular, or lacy
- **Resolution:** Self-limiting

# Measles (Rubeola)

**Definition:** A highly contagious viral illness caused by the measles virus.

## Key Features:

- **Prodrome:** High fever, cough, coryza (runny nose), conjunctivitis (3 C's)
- **Koplik Spots:** White spots on the buccal mucosa, **diagnostic**

**Rash:** Erythematous maculopapular rash starting on the face, spreading downward

## Treatment:

- **Supportive care:** hydration, antipyretics
- **Vitamin A** supplementation reduces severity



## Interesting Fact

Before the introduction of the measles vaccine in 1963, nearly every child in the U.S. contracted measles by age 15, and it was a leading cause of childhood mortality globally.

# Rubella (German Measles)

**Definition:** A mild viral illness caused by the rubella virus

**Key Features:** Low-grade fever, malaise, and lymphadenopathy

**Rash:** Fine, pink maculopapular rash starting on the face, and spreading to the trunk

**Forchheimer Spots:** Petechiae on the soft palate (may occur)

**Treatment:**

- **Supportive care:** antipyretics, hydration, rest
- Preventable by **vaccination** (MMR)



Before widespread vaccination, **20,000 infants** were born with **congenital rubella syndrome** during a U.S. epidemic in 1964-1965, leading to severe birth defects.

# Roseola Infantum

**Definition:** A common childhood illness caused by human herpesvirus 6 (HHV-6)

**Key Features:** High fever for 3–5 days, followed by rash

**Rash:** Rose-pink maculopapular rash, starts on the trunk and spreads to the limbs

- Non-irritating rash that appears after fever subsides

**Treatment:** Supportive care for fever and hydration



By the age of **2 years**, nearly **100% of children** worldwide have been infected with HHV-6, the virus responsible for roseola.



# Erythema infectiosum (Fifth Disease)

- **Definition:** A viral illness caused by parvovirus B19
- **Key Features:**
  - "Slapped cheek" facial rash in children
  - Reticulated/lacy erythematous rash on the trunk and extremities
  - Joint pain or swelling in adults
- **Treatment:**
  - Supportive care; self-limiting condition
  - Avoid exposure in **pregnant women** (risk of fetal anemia)



*About 50-60% of adults have been infected with parvovirus B19 at some point in their lives, often without realizing it.*

# Varicella (Chickenpox)

- **Definition:** A highly contagious illness caused by varicella-zoster virus (VZV)
- **Key Features:**
  - **Rash:** Vesicular ("dew drop on a rose petal"), starts on the trunk and spreads
  - Lesions appear in different **stages** (macules, papules, vesicles, crusts)
  - Fever, malaise, and itching
- **Treatment:**
  - **Supportive care:** antihistamines for itching
  - Antiviral therapy (**acyclovir**) in immunocompromised patients



Before vaccination, chickenpox caused approximately **4 million cases, 10,600 hospitalizations, and 100-150 deaths annually** in the U.S.

# Viral Exanthem: Pityriasis Rosea

Common, self-limiting skin condition characterized by the appearance of a **herald patch** followed by a widespread rash in a "**Christmas tree**" distribution along skin tension lines.



## Common Causes

### **Viral Association:**

Thought to be linked to the reactivation of certain **herpesviruses**, particularly **human herpesvirus 6 (HHV-6)** and **human herpesvirus 7 (HHV-7)**.

### **Non-Contagious:**

It is not contagious and outbreaks are rare, suggesting **environmental** or **genetic** predispositions may also play a role.

### **Triggers:**

In some cases, **stress, medications, or immune system changes** might contribute to its development.



# Key Features of Pityriasis Rosea

- **Herald Patch:** Single, oval, scaly lesion on the trunk
- **Christmas Tree Distribution:** Secondary rash following skin tension lines
- **Natural Course:** Self-limiting resolution within 6-8 weeks
- **Symptomatic Relief:** Antihistamines or topical corticosteroids for itching





**Tinea  
corporis**



**Tinea  
cruris**



**Tinea  
pedis**



**Tinea  
unguium**

## The Tinea Family of Fungal Infections

- Tinea corporis (ringworm)
- Tinea capitis (scalp)
- Tinea cruris (jock itch)
- Tinea pedis (athlete's foot)





# Tinea Corporis (Ringworm)

- **Appearance:** Circular, scaly patches with raised borders
- **Contagious:** Spreads through direct contact
- **Diagnosis:**
  - Visual examination of characteristic lesions
  - Microscopic examination of skin scrapings (KOH prep) to identify fungal elements
  - May fluoresce with certain fungal infections using Wood's Lamp Test
  - Fungal culture for confirmation

# Tinea Corporis Management

## Topical Antifungals:

- Clotrimazole, terbinafine, or miconazole applied twice daily for 2–4 weeks.

## Oral Antifungals:

- Terbinafine or itraconazole for widespread, recurrent, or unresponsive cases.

## General Measures:

- Keep the affected area clean and dry.
- Avoid sharing personal items (e.g., towels, combs).
- Treat infected pets or contacts if applicable to prevent recurrence.





# Tinea Capitis (The Scalp Infection)

## Common in Children:

- A fungal infection of the scalp and hair shafts.
- Often causes patchy hair loss and broken hairs, with areas of scaling and inflammation.

## Symptoms:

- Scalp scaling, redness, and itching.
- May present with black dots or kerion.





# What would be your next diagnostic step?

## Clinical Examination:

- Observation of hair loss and scalp scaling.

## Laboratory Testing:

- **KOH Preparation:** Fungal hyphae visible under the microscope.
- **Fungal Culture:** Confirms diagnosis and identifies fungal species.
- **Wood's Lamp Test:** May fluoresce with certain fungal infections (e.g., *Microsporum species*).

# Tinea Capitis Management

## Oral Antifungals:

- Griseofulvin or terbinafine are the first-line treatments.
- Treatment duration is typically 6–12 weeks.

## Adjunctive Therapy:

- Use of antifungal shampoos (e.g., selenium sulfide, ketoconazole) to reduce spore transmission.

## Prevention:

- Avoid sharing personal items like combs or hats.
- Treat household contacts if symptomatic.





# Tinea Capitis: Things to Know

Tinea capitis is treated primarily with **oral antifungal therapy** due to poor penetration of topical agents into hair follicles.

Adjunctive measures (e.g., antifungal shampoos) help **reduce fungal spore shedding** and **transmission**.

# Tinea Capitis Treatment Plan: Pediatrics

## First-Line Treatment

### Griseofulvin (FDA-Approved for Children):

- **Dosage:** 20–25 mg/kg/day (microsize) or 10–15 mg/kg/day (ultramicro size), divided once or twice daily.
- **Duration:** 6–12 weeks.
- Best absorbed with a fatty meal (e.g., milk, peanut butter).

### Terbinafine (Off-Label but Commonly Used):

- **Weight-Based Dosage:**
  - <20 kg: 62.5 mg/day.
  - 20–40 kg: 125 mg/day.
  - 40 kg: 250 mg/day.
- **Duration:** 4–6 weeks.



## Pulse Dosing

### Itraconazole (Pulse Therapy):

- **Dosage:** 5 mg/kg/day for 1 week/month, repeated for 2–3 months.
- May be preferred for non-compliant patients due to shorter dosing duration.

# Tinea Capitis Treatment Plan: Adults

## First-Line Treatment

### Terbinafine:

- **Dosage:** 250 mg/day
- **Duration:** 4–6 weeks.

### Griseofulvin:

- **Dosage:** 500–1000 mg/day (microsize) or 375–750 mg/day (ultramicro size).
- **Duration:** 6–12 weeks.
- Higher doses may be required for adults compared to children.



## Pulse Dosing

### Itraconazole (Pulse Therapy):

- **Dosage:** 200 mg twice daily for 1 week/month, repeated for 2–3 months.
- Shorter dosing periods improve adherence.



# Tinea Cruris (Jock Itch)

**Definition:** Fungal infection of the groin

**Symptoms:** Red, scaly, itchy rash with a well-defined border

**Risk Factors:** Warm, moist environments (e.g., athletes, obese individuals)

**Topical Antifungals:**

§ Terbinafine or clotrimazole applied 1–2 times daily for 2–4 weeks.

**Hygiene Tips:** Keep the area clean, and dry, and wear loose-fitting clothing.





# Tinea Pedis (Athlete's Foot)

**Definition:** Fungal infection of the feet

**Symptoms:** Itchy, peeling, or scaling skin, thickened skin, painful blisters

**Risk Factors:** Warm, humid environments and contaminated surfaces

**Management:**

§ *Topical Antifungals:* Terbinafine or clotrimazole applied 1–2 times daily for 2–4 weeks.

§ *Oral Antifungals:* Consider terbinafine or itraconazole for severe or recurrent cases.

**Hygiene Tips:** Keep feet dry, use antifungal powders, and wear moisture-wicking socks.





# Commonalities Between Tinea Cruris and Tinea Pedis

## Fungal Growth Factors:

- Thrives in warm, moist environments.
- Spread through direct contact or contaminated surfaces.

## Prevention Tips:

- Practice good hygiene:
  - Dry thoroughly after bathing.
  - Use separate towels for the body and feet.
- Avoid sharing clothing, towels, or footwear.



# Defining Characteristics of Impetigo

- Contagious **bacterial** skin infection (*Staphylococcus aureus* or *Streptococcus pyogenes*)
- **Common in Children:** Affects individuals of all ages
- **Non-Bullous Impetigo:** Honey-colored crusts on erythematous skin
- **Bullous Impetigo:** Fluid-filled blisters, often on the trunk and diaper area
- **Transmission:** Direct contact or contaminated surfaces, common in warm, humid climates and crowded living conditions

# Impetigo Diagnosis and Management

## Clinical Assessment:

- § Characteristic honey-colored crusts are often diagnostic.
- § Laboratory Testing (if needed): Bacterial culture for recurrent or severe cases to determine antibiotic sensitivity.

## Management:

- § **Topical Therapy (Mild Cases):** Mupirocin or retapamulin applied 2–3 times daily for 5–7 days.
- § **Oral Antibiotics (Extensive Cases):** Dicloxacillin or cephalexin for MSSA. Clindamycin for suspected MRSA.

**Hygiene Tips:** Encourage frequent handwashing. Avoid sharing towels, clothing, or personal items. Keep nails trimmed to reduce skin scratching.







# Defining Characteristics of Herpes (Shingles)

- **Varicella-zoster virus** reactivation
- Painful, blistering rash in a **dermatomal** pattern
- **Systemic symptoms:** Fever, chills, headache, fatigue
- **Post-herpetic neuralgia:** Persistent pain after rash resolves

# Herpes Zoster (Shingles) Treatment Essentials

## Antiviral Therapy:

- § Initiate within 72 hours of rash onset
- § **Medications:** Acyclovir, Valacyclovir, Famciclovir
- § **Goal:** Suppress viral replication, alleviate symptoms, speed healing

## Pain Management:

- § **Acute Pain:** NSAIDs, Acetaminophen, short-term opioids (if needed)
- § **Postherpetic Neuralgia:** Gabapentin, Pregabalin, Lidocaine patches, Capsaicin cream

## Complications:

- Monitor for ophthalmic involvement (zoster ophthalmicus)
- Treat secondary bacterial infections





# Prevention Strategies for Herpes Zoster

**Vaccination: Shingrix** (recombinant zoster vaccine)

- Recommended for adults  $\geq 50$  years
- 2-dose series;  $>90\%$  efficacy in preventing shingles and PHN

**Why Vaccinate:**

- Reduces disease burden and long-term pain (PHN)
- Essential for immunocompetent and at-risk adults





# Contact Dermatitis

- A skin reaction caused by **direct contact** with an irritant or allergen.
- **Types:**
  - **Irritant:** Non-immune response; caused by repeated exposure
  - **Allergic:** Immune-mediated response to an allergen
- **Common Triggers:**
  - **Plants:** Poison Ivy, Sumac, Oak
  - **Chemicals** (detergents, solvents), **metals** (nickel), cosmetics, & fragrances.

# Irritant vs. Allergic Contact Dermatitis

Feature	Irritant Contact Dermatitis	Allergic Contact Dermatitis
Cause	Non-immune reaction to irritants.	Immune response to allergens.
Onset	Immediate or within hours.	Delayed (24–48 hours after exposure).
Symptoms	Redness, dryness, burning, cracking.	Itching, swelling, vesicles, oozing rash.
Common Triggers	Soaps, detergents, solvents, acids.	Poison Ivy, nickel, fragrances, latex.
Location	Site of direct contact.	May spread beyond the site of contact.

# Poison Ivy, Sumac, and Oak: Identifying & Treating

**Characteristics:** Linear streaks, blisters, itching, redness

**Immediate Actions:** Wash skin with soap and water, clean clothing and tools used

**Symptom Relief:** Topical corticosteroids, calamine lotion, oatmeal baths, and oral antihistamines





# Contact Dermatitis Management

**Topical Steroids:** Reduce inflammation and soothe irritation. Apply a thin layer of hydrocortisone or triamcinolone 1-2 times daily.

**Antihistamines:** Relieve itching and prevent scratching. Diphenhydramine or loratadine can be helpful.

**Skin Care:** Moisturize regularly to hydrate the skin and support the healing process. Avoid hot water and harsh soaps, which can further irritate the skin.

**Prevention:** Identify and avoid known irritants or allergens (e.g., poison ivy, metals, chemicals). Wear protective clothing and gloves when necessary.

# Referral Guidelines: When to Seek a Dermatology Expert

## Chronic, Severe, or Non-Responsive Rashes

- Persistent symptoms despite appropriate treatment
- Severe cases impacting quality of life
- Rashes that worsen or fail to improve after 2-4 weeks of therapy

## Unclear Diagnosis

- Atypical presentation or overlap of multiple conditions
- Concern for rare or serious skin conditions (e.g., autoimmune diseases, skin cancer)

## Systemic Involvement

- Associated fever, fatigue, joint pain, or other systemic symptoms.
- Rash with signs of infection (e.g., oozing, severe swelling, or redness extending beyond the rash)



## When in Doubt:

Refer early if uncertain about management or if advanced diagnostics are required (e.g., biopsies, patch testing)

# Putting the Pieces Together

Use the Clues in Front of You, Every rash is a piece of the puzzle.

## Common Rashes Discussed

- **Viral Exanthem:** Identify patterns of systemic illness and viral triggers.
- **Tinea:** Recognize characteristic ring-shaped lesions; confirm with KOH prep.
- **Impetigo:** Look for honey-colored crusts; treat with topical or oral antibiotics.
- **Herpes:** Identify vesicles in clusters; manage with antivirals and address pain.
- **Contact Dermatitis:** Differentiate irritant from allergic causes; focus on prevention and symptomatic care.

**Key Message:** Accurate diagnosis and timely treatment prevent complications and improve outcomes. Be the "skin detective" who solves the case efficiently.

In dermatology, every solved case is not just a diagnosis but a step toward improving a patient's **quality of life.**

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