The Scalp & Hair Triad

Three look-alike pediatric complaints that examiners love to confuse — distinguishing pediculosis, tinea capitis, and the alopecias with the precision the NGN clinical-judgment model demands.

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TEST PLAN · HEALTH PROMOTION
READING TIME · ≈ 8 MIN
VOL. 09 / PEDIATRIC SET

AT A GLANCE	PEDICULOSIS CAPITIS	TINEA CAPITIS	ALOPECIA AREATA*
Cause	Parasitic louse *Pediculus humanus capitis*	Dermatophyte fungus (*Trichophyton tonsurans* most common in U.S.)	Autoimmune T-cell attack on hair follicles
Hallmark	Live lice + nits cemented within ¼ inch of scalp; intense itch	Scaly patch with broken "black-dot" hairs ± boggy kerion	Smooth, well-circumscribed bald patch; "exclamation-point" hairs
Contagious?	YES — DIRECT CONTACT	YES — FOMITES & PETS	NO
First-line Rx	Permethrin 1% (Nix) topical × 2, 7–10 days apart	**ORAL** griseofulvin or terbinafine × 6–12 weeks	Topical / intralesional corticosteroids; minoxidil
School?	MAY ATTEND — no-nit policies are outdated	MAY ATTEND once treatment started	NO RESTRICTION — not infectious

№ 01 Pediculosis Capitis

"head lice" — a parasite, not poor hygiene

PATHOPHYSIOLOGY

Wingless, blood-sucking louse lives on the scalp; female cements **nits (eggs)** to the hair shaft **≤ ¼ inch from scalp**. Spread head-to-head or via shared combs, hats, helmets, pillows.

CLINICAL PICTURE

- **Intense pruritus**, especially behind the ears and at the nape
- Visible **nits** firmly attached to hair shafts (dandruff brushes off — nits do not)
- **Posterior cervical & occipital** lymphadenopathy
- Excoriations → secondary impetigo possible

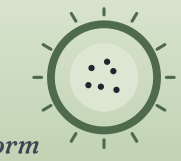
MANAGEMENT

- **Permethrin 1% (Nix)** — first-line OTC; apply to damp hair × 10 min
- **Repeat in 7–10 days** — kills nymphs that hatch from surviving eggs
- Resistant: **malathion 0.5%**, ivermectin lotion, spinosad
- Wet-comb with **fine-toothed nit comb** q3–4 days × 2 weeks

FAMILY TEACHING

- **Not** a sign of poor hygiene or socioeconomic status
- Wash bedding, clothes, towels in **hot water (≥130°F / 54°C)**; dry on high heat 20 min
- Items that can't be washed → **seal in plastic bag × 2 weeks**
- Soak combs/brushes in hot water ≥10 min
- Vacuum carpets, upholstery, car seats — **avoid pesticide sprays**
- Check **all household members**; treat only if infested
- Don't share hats, helmets, hair accessories, headphones

№ 02 Tinea Capitis



"scalp ringworm" — a fungus, not a worm

PATHOPHYSIOLOGY

Dermatophyte fungus invades the hair shaft. **Trichophyton tonsurans** (most common in U.S., person-to-person) and **Microsporum canis** (from cats/dogs). Spread by direct contact, combs, hats, pillows, pets.

CLINICAL PICTURE

- Round, **scaly** patches of alopecia with **"black-dot"** broken hairs at scalp
- **Kerion** — boggy, tender, pus-filled inflammatory mass (immune reaction, NOT bacterial — don't I&D)
- Posterior cervical / occipital lymphadenopathy is a classic clue
- Pruritus, scaling that can mimic dandruff or seborrhea

DIAGNOSTICS & TREATMENT

- Dx: **KOH prep** + fungal culture (gold standard)
- Wood's lamp: **only Microsporum fluoresces** — Trichophyton does NOT (negative ≠ rule-out)
- **ORAL antifungal required** — topicals can't penetrate the hair shaft
- **Griseofulvin** 6–12 wks **take with fatty food (milk, ice cream, peanut butter)**
- Alt: terbinafine; monitor LFTs with prolonged therapy
- Adjunct: **selenium sulfide / ketoconazole shampoo** 2–3×/wk to reduce shedding

FAMILY TEACHING

- **Complete the full course** even after the patch looks healed — fungus persists in the shaft
- Don't share combs, brushes, hats, towels, pillows, helmets
- **Examine pets** for ringworm if Microsporum is suspected; treat the source
- Child **may return to school** once oral therapy has begun
- Hair regrowth follows successful treatment — usually no permanent loss

№ 03 Alopecia in Children

areata · traction · trichotillomania · telogen

THE FOUR PEDIATRIC PATTERNS

- **Alopecia areata** — autoimmune; smooth round patches, **"exclamation-point" hairs**, possible **nail pitting**
- **Traction** — tight braids/ponytails/weaves; loss at hair line & temples
- **Trichotillomania** — body-focused repetitive disorder (hair-pulling); irregular patches, hairs of varying length
- **Telogen effluvium** — diffuse shedding 2–4 mo after illness, fever, surgery, or major stress

DIAGNOSTICS

- Largely **clinical**; KOH if fungal cause suspected
- **Hair-pull test** — >10% extracted = active shedding
- Inspect nails (pitting in alopecia areata)
- TSH, ferritin, vitamin D if unexplained shedding

MANAGEMENT BY CAUSE

- **Areata:** topical / intralesional **corticosteroids**, topical minoxidil, JAK inhibitors in select cases
- **Traction:** change the hairstyle — looser braids, no daily heat, avoid extensions
- **Trichotillomania: habit-reversal therapy / CBT**; SSRIs only if comorbid anxiety/OCD
- **Telogen effluvium:** reassurance — regrowth in 6–12 mo once trigger resolved

FAMILY TEACHING

- **Psychosocial impact is real** — body image, bullying, self-esteem; offer support resources
- Hats, scarves, wigs are healthy coping tools — affirm the child's choice
- **Sun-protect** exposed scalp (SPF, hat) — risk of burn & long-term skin damage
- Areata course is unpredictable — patches may regrow, recur, or progress
- Trichotillomania: **non-judgmental** approach; refer to mental-health provider, not punishment
- Avoid traction styles; introduce protective, looser styling

MNEMONIC · 01

L·I·C·E

- **L** — **Look** for nits cemented to the shaft (≤ ¼ inch from scalp)
- **I** — **Itching** at nape & behind ears = classic
- **C** — **Comb** wet hair with fine nit comb q3–4 days × 2 wks
- **E** — **Eradicate** & repeat — permethrin × 2, 7–10 days apart

MNEMONIC · 02

F·U·N·G

- **F** — **Fatty food** with griseofulvin to absorb
- **U** — **Use ORAL** antifungals — topical alone fails
- **N** — **Nodes** (occipital LAD) + black-dot hairs = classic
- **G** — **Go the distance** — 6 to 12 weeks of therapy

MNEMONIC · 03

H·A·I·R

- **H** — **Hairstyle** review (traction) — loosen braids/ponytails
- **A** — **Autoimmune** areata → exclamation hairs + nail pitting
- **I** — **Image & identity** — psychosocial support is nursing priority
- **R** — **Refer** trichotillomania to mental health, not discipline

One Look-Alike, Three Diagnoses

A patchy scalp on a 7-year-old can be any of these. The discriminator hides in the question stem.

POINTS TO PEDICULOSIS

Itching is the dominant complaint. White specks on hair shafts that **do not flick off**. School outbreak. Family members itching too.

POINTS TO TINEA CAPITIS

Round scaly patch with broken stubs ("black dots") or boggy kerion. Posterior occipital lymph nodes. Recent contact with cat / kitten.

POINTS TO ALOPECIA AREATA

Patch is **smooth and non-scaly**. Hairs at the edge taper to a point ("!"). **Nail pitting**. No itch, no scale, no contagion.

⚠ NGN CLICK-TRAP ALERT

The wrong answers *they* hope you'll pick.

01 *"Treat tinea capitis with topical antifungal cream."*
NOPE. Topicals can't penetrate the hair shaft. You need an **oral** antifungal — griseofulvin or terbinafine — for 6–12 weeks.

02 *"Negative Wood's lamp rules out tinea capitis."*
FALSE. Trichophyton tonsurans — the **most common U.S. cause** — does **not** fluoresce. Only Microsporum lights up. Always confirm with KOH/culture.

03 *"Take griseofulvin on an empty stomach."*
WRONG. Griseofulvin is **fat-soluble** — give with a fatty meal (whole milk, ice cream, peanut butter) for absorption.

04 *"One permethrin treatment is enough for lice."*
NO. Permethrin is not fully ovicidal — eggs hatch into nymphs. **Repeat in 7–10 days.** Counsel families that one application = treatment failure.

05 *"Exclude the child from school until all nits are gone."*
OUTDATED. The CDC and AAP **no longer support no-nit policies.** Lice are not a public-health hazard — child can return after the first treatment.

06 *"A child pulling out hair needs to be told to stop."*
HARMFUL. Trichotillomania is a **body-focused repetitive behavior**. Refer to a mental-health provider for habit-reversal therapy / CBT — never shame or punish.

07 *"Spray the house with pesticides to kill lice."*
DON'T. Pesticide sprays are toxic to children and pets and not needed. **Vacuum, hot-wash, or 2-week bag** is the answer the NGN wants.

08 *"Incise & drain the boggy mass on the scalp (kerion)."*
NEVER. A kerion is an **immune reaction**, not an abscess. Incision worsens scarring. Treat with oral antifungal ± short course of oral steroids.