permethrin (per-meth-rin)
Action, Elimite, Nix
Classification: pediculocides
Pregnancy Category B

Indications
• Action: Eradication of Pediculus humanus capitis (head lice and their eggs): Prevention of infestation of head lice during epidemics. 5% cream: Eradication of Xenopsylla cheopis (rat fleas).

Action
Causes repolarization and paralysis in lice by disrupting sodium transport in normal nerve cells. Therapeutic Effects: Death of parasites.

Pharmacokinetics
Absorption: Small amounts (~2%) systemically absorbed. Remains on hair for 10-14 days.
Distribution: Unknown.
Metabolism and Excretion: Rapidly inactivated by enzymes.
Half-life: Unknown.

TIME/ACTION PROFILE (pediculocidal action)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topical</td>
<td>10 min</td>
<td>unknown</td>
<td>14 days</td>
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Contraindications/Precautions
Contraindicated in: Hypersensitivity to permethrin, pyrethrins (insecticides or veterinary pesticides), chrysanthemums, or isopropyl alcohol; Lactation.
Use Cautiously in: OB: Use only if clearly needed; Pedi: Children <2yr (1% lotion); Children <2 mo (5% cream).

Adverse Reactions/Side Effects
Derm: burning, itching, rash, redness, stinging, swelling.
Neuro: numbness, tingling.

Interactions
Drug-Drug: No significant interactions.

Route/Dosage
Head Lice (Treatment and Prevention)
Topical (Adults and Children ≥2yr): 1% lotion applied to the hair, left on for 10 min, then rinsed, for 1 application.

Scabies
Topical (Adults and Children): Massage 5% cream into all skin surfaces. Leave on for 8–14 hr, then wash off.
Topical (Infants ≥2mo): Massage 5% cream into hairline, scalp, neck, temple, and forehead. Leave on for 8–14 hr, then wash off.

NURSING IMPLICATIONS
Assessment
• Head Lice: Assess scalp for presence of lice and their eggs (nits) prior to and 1 wk after application of permethrin.
• Scabies: Assess skin for scales prior to and following therapy.

Potential Nursing Diagnoses
Impaired home maintenance (indications)
Bathing/hygiene self-care deficit (indications)

Implementation
• Topical: For topical application only.

Patient/Family Teaching
• Instruct patient to notify health care professional if scalp itching, numbness, redness, or rash occurs.
• Instruct patient to avoid getting Elimite cream in eyes. If this occurs, eyes should be flushed thoroughly with water. Health care professional should be contacted if eye irritation persists.
• Advise patient that others residing in the home should also be checked for lice.
• Instruct patient on methods of preventing reinfection, all clothes, including out-of-door apparel and household linens, should be machine-washed using very hot water and dried for at least 20 min in a hot dryer. Dry-clean nonwashable clothes.

Commonly associated with:
Common drug name
Genetic Implication:
OPTOS indicate 50-80% occurrence, underline indicate most frequent, discontinued
Brushes and combs should be soaked in hot (130°F), soapy water for 5–10 min. Remind patient that brushes and combs should not be shared. Wigs and hairpieces should be shampooed. Rugs and upholstered furniture should be vacu-ummed. Toys should be washed in hot, soapy water. Items that cannot be washed should be sealed in a plastic bag for 2 wk.

- If patient is a child, instruct parents to notify school nurse or day care center so that classmates and playmates can be checked.
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**Head Lice:**
Instruct patient to wash hair with regular shampoo, rinse, and towel dry. Each container holds enough medication for one treatment. Shake the container well. Thoroughly wet scalp and hair with the lotion. The patient should use as much of this solution as needed to coat entire head of hair, then scrunch remain-
der of solution. Allow lotion to remain on hair for 10 min, then thoroughly rinse hair and towel dry with a clean towel. Comb hair with a fine-toothed comb to re-
move dead lice and nits (not necessary but may be desired for cosmetic effects).

Products are available for removal of nits (Rid Lice Egg Loosener Gel; Step 2). Schools usually require children to be nit-free prior to returning to school.

- Explain to patient that permethrin will protect from reinfection for 2 wk. These effects continue even when the patient resumes regular shampooing.
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**Scabies:**
Instruct patient to massage thoroughly into the skin from head to soles of feet. Treat infants on the hairline, neck, scalp, temple, and forehead. Remove the cream by washing after 8–14 hr. Usually 30 g (1 tube) is sufficient for adults. One application is curative.

**Evaluation/Desired Outcomes**

- The absence of live and eggs 1 wk after therapy. A second application is indicated if lice are detected at this time.
- Prevention of infestation of head lice during epidemics.
- Eradication of scabies following one application.
- If resistance to permethrin develops, malathion may be used.

Why was this drug prescribed for your patient?