Scaly Dermatoses
Differentiation of Conditions

• Affected cell turnover rate
  • 13 – 15 days for dandruff (2 times normal)
  • 9 – 10 days for seborrheic dermatitis (and greatest sebaceous gland activity)
    • Look for involvement of intertriginous areas!
  • 4 days for psoriasis
Non-pharmacologic

Psoriasis
- Avoidance of triggers, NON-medicated emollients
- Lubricating bath products, tepid water for bathing

Cradle cap (infant seborrheic dermatitis)
- NON-medicated shampoos, soften and remove scales
Pharmacologic Products
Anti-Malassezia Agents

**MOA:** inhibits a scalp specific fungus, known as *Malassezia globosa*, which causes scaling and erythema.

Ex:

**Anti-fungal**
- Ketoconazole 1% (Nizoral®)

**Cytostatic**
- Pyrithione zinc 2% (Head & Shoulders®)
- Selenium sulfide 1% (Selsun Blue®)
Pyrithione Zinc Anti-Malassezia

- OTC only; combo available Rx
- Absorption increases with contact time
- Acts slower than selenium sulfide
- **Adverse effect:** Contact dermatitis when used on broken or abraded skin
- Avoid contact with eyes to prevent stinging
<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Trade Name</th>
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</thead>
<tbody>
<tr>
<td>Pyrithione Zinc 1%</td>
<td>Head &amp; Shoulders Dandruff Shampoo Zincon Shampoo</td>
</tr>
<tr>
<td>Pyrithione Zinc 2%</td>
<td>Denorex Everyday Shampoo DHS Zinc Shampoo Sebulon Shampoo ZNP Cleansing Bar</td>
</tr>
<tr>
<td>Pyrithione Zinc 1%, salicylic acid 2%</td>
<td>X-Seb T Shampoo</td>
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</tbody>
</table>
Selenium Sulfide Anti-Malassezia

- OTC/Rx
  - OTC 1% vs Rx 2.5% lotion
- Frequent use leaves a residual odor and oily scalp
- Toxic if ingested; do not apply to broken skin
- May increase scalp oiliness or worsen seborrhea
- Avoid contact with eyes due to potential for irritation
Selenium Sulfide Anti-Malassezia

- Counseling points
  - More effective with longer contact time
  - Rinse hair thoroughly or discoloration may result
  - Shake well before use
  - May damage jewelry; remove before treatment
  - Do not apply to broken skin

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<tr>
<td>Selenium Sulfide</td>
<td>Head &amp; Shoulders Intensive Treatment Shampoo</td>
</tr>
<tr>
<td>1%</td>
<td>Selsun Blue Medicated Treatment Shampoo</td>
</tr>
</tbody>
</table>

- Selsun Blue Medicated Treatment Shampoo
Ketoconazole 1% Shampoo
Anti-Malassezia

- OTC/Rx
- Antifungal but effective Malassezia yeast
- Used for dandruff and seborrheic dermatitis
- OTC shampoo: Nizoral AD (ketoconazole 1%)
  - Contact time is crucial
  - Apply twice a week x 4 weeks, with at least 3 days between each treatment. Once controlled, use once weekly or once every other week to prevent relapse
- **Adverse effects:** Hair loss, skin irritation, abnormal hair texture, dry skin, burning sensation, pruritis
- Avoid contact with eyes due to irritation
Coal Tar cytostatic

- **OTC/Rx**
- **MOA:** Cross-links with DNA
- Available in 0.5-5% as creams, ointments, pastes, lotions, bath oils, shampoos, soaps, and gels
  - → attempt to develop products that masks the odor, color, and straining properties of crude coal tar
- Disorder may worsen on exposure to coal tar→ **use topical corticosteroids to reduce inflammation BEFORE using coal tar**
- **Adverse effects:** Folliculitis (axilla and groin area), staining of skin and hair, photosensitivity, contact dermatitis
Coal Tar Cytostatic

• **Counseling**
  - Apply at bedtime then bathe in the morning to remove residual coal tar and loosen psoriatic scales
  - May stain skin and clothing. Wash thoroughly
  - Avoid sun exposure for 24 hours after application

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Product Name</th>
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<tbody>
<tr>
<td>Coal tar 0.5%</td>
<td>DHS Tar Shampoo/DHS Tar Gel Shampoo</td>
</tr>
<tr>
<td></td>
<td>Neutrogena T/Gel Shampoo</td>
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<tr>
<td></td>
<td>Polytar Shampoo/Polytar Cleansing Bar</td>
</tr>
<tr>
<td>Coal tar 1%</td>
<td>MG217 Medicated Tar Lotion</td>
</tr>
<tr>
<td></td>
<td>Neutrogena T/Gel Extra Strength Therapeutic Shampoo</td>
</tr>
<tr>
<td>Coal tar 2%</td>
<td>Ionil T Plus Shampoo, Neutrogena T/Gel Shampoo</td>
</tr>
<tr>
<td></td>
<td>MG217 Medicated Tar Ointment</td>
</tr>
<tr>
<td>Coal tar 2.5% in mineral oil</td>
<td>Balnetar Bath Oil</td>
</tr>
<tr>
<td>Coal tar 3%</td>
<td>MG217 Medicated Tar Shampoo and ointment</td>
</tr>
<tr>
<td>Coal tar 5%</td>
<td>Pentrax (unavailable), Neutrogena T/Derm Body Oil</td>
</tr>
</tbody>
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Keratolytic Agents

- **MOA:** Dissolves the “cement” that holds epidermal cells together → loosens and lyses keratin aggregate and helps in its removal from scalp

- Effectiveness based on vehicle composition, contact time, and concentration

- Very slow acting; weeks to months for improvement

- **Adverse effects:** Concentration-dependent irritant effects, especially mucous membranes and conjunctiva of eye
Salicylic Acid
Keratolytic

• OTC (1.8-3%) , Rx (6%)
• **MOA:** Decreases skin pH → increases hydration of keratin → facilitates its loosening and removal
• Useful for thick scales

**Counseling**

- **Do not apply over extensive areas** → potential systemic toxicity (tinnitus, otoxicity, N/V, dizziness, lethargy, hyperpnea, diarrhea, psych disturbances)
- For body: soak area in *warm* water for 10-20 minutes before application to enhance keratolytic activity
- Extended use can alter hair appearance
- Avoid drug exposure to eyes, nose, mouth, or broken/injured skin
Salicylic Acid
Keratolytic

*Keratolytic effect in 7-10 days

**Adverse effects:** Burning sensation, erythema, pruritis, stinging

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<tr>
<th>Ingredients</th>
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</table>
| Salicylic acid 1.8% | • Neutrogena Healthy Scalp Anti-Dandruff Shampoo  
|                | • Sebucare Lotion |
Sulfur
Keratolytic

- OTC only, Rx in combination
- **MOA:** Increases sloughing of cells
- **Adverse effects:** Contact dermatitis, skin irritation, local eye irritation, respiratory tract irritation
- **Counseling:**
  - Do not consume.
  - May cause diarrhea, nausea, sulfhemoglobinemia, and metabolic acidosis

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<tbody>
<tr>
<td>Sulfur 2%</td>
<td>Sulfoam Medicated Antidandruff Shampoo</td>
</tr>
<tr>
<td></td>
<td>Sulray Dandruff Shampoo</td>
</tr>
<tr>
<td>Sulfur 5%</td>
<td>Sulray Cleansing Bar</td>
</tr>
</tbody>
</table>
Hydrocortisone
1%

OTC/Rx
- OTC 0.5-1%
- Rx- 2-2.5%

FDA approved for temporary relief of itching associated with minor skin irritations, inflammation, and rashes caused by psoriasis and seborrheic dermatitis; NOT indicated for dandruff

Apply BID x 7 days

Adverse effects: Local atrophy after prolonged use, aggravation of certain cutaneous infection, impaired skin healing

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<tbody>
<tr>
<td>Hydrocortisone 1%</td>
<td>Cortaid,</td>
</tr>
<tr>
<td>cream/lotion/ointment</td>
<td>Cortizone</td>
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</table>
# Hydrocortisone 1%

## Vehicle selection

<table>
<thead>
<tr>
<th>Potency</th>
<th>+</th>
<th>++</th>
<th>+++</th>
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</thead>
<tbody>
<tr>
<td>Components</td>
<td>Powder in water</td>
<td>Oil in 20-50% water</td>
<td>Water suspended in oil</td>
</tr>
</tbody>
</table>
| Pros | • Useful in hairy and larger areas  
      • Provides cooling and drying effect when lotion evaporates | Cosmetically appealing | Enhanced medication absorption |
| Cons | Must shake before each application | | Greasy, not useful in hairy areas |