Scratching the Itch: Approaches to Rashes in Oncology Patients

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UNIVERSITY OF TORONTO

SHN
SCARBOROUGH HEALTH NETWORK

SickKids®

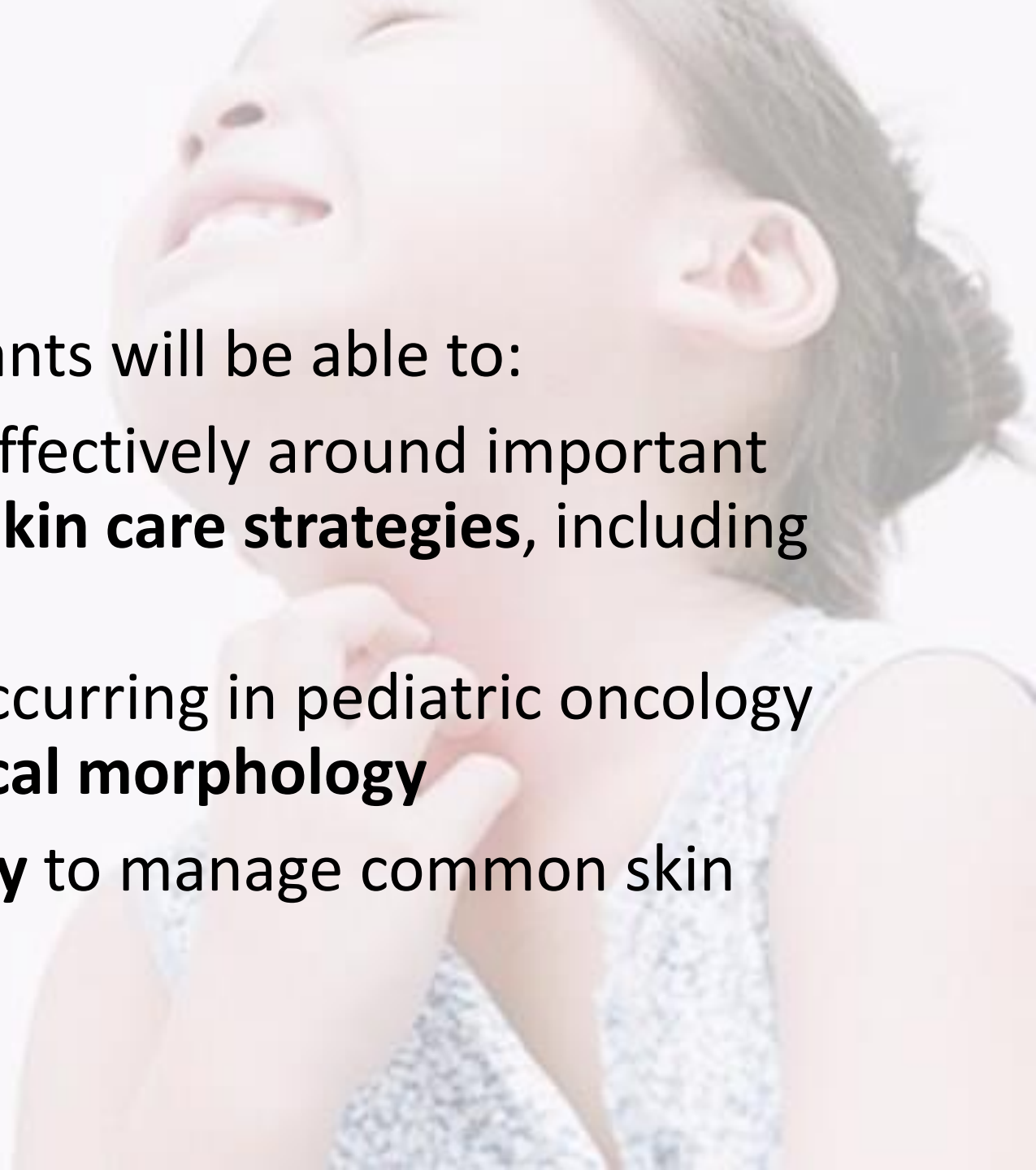
Disclosures

- None to report

Objectives

By the end of this talk, participants will be able to:

1. **Counsel** oncology patients effectively around important **supportive and preventive skin care strategies**, including sun protection
2. **Diagnose** common rashes occurring in pediatric oncology patients based on their **typical morphology**
3. **Initiate** skin-directed **therapy** to manage common skin conditions



Outline

Supportive and Preventive Skin Care Measures

1. Topical care for intact skin
2. Photoprotection
3. Skin surveillance

Management of Common Skin Rashes

1. Diaper dermatitis
2. Facial rashes
3. Common cutaneous infections

Why talk about the skin at a pediatric oncology meeting??

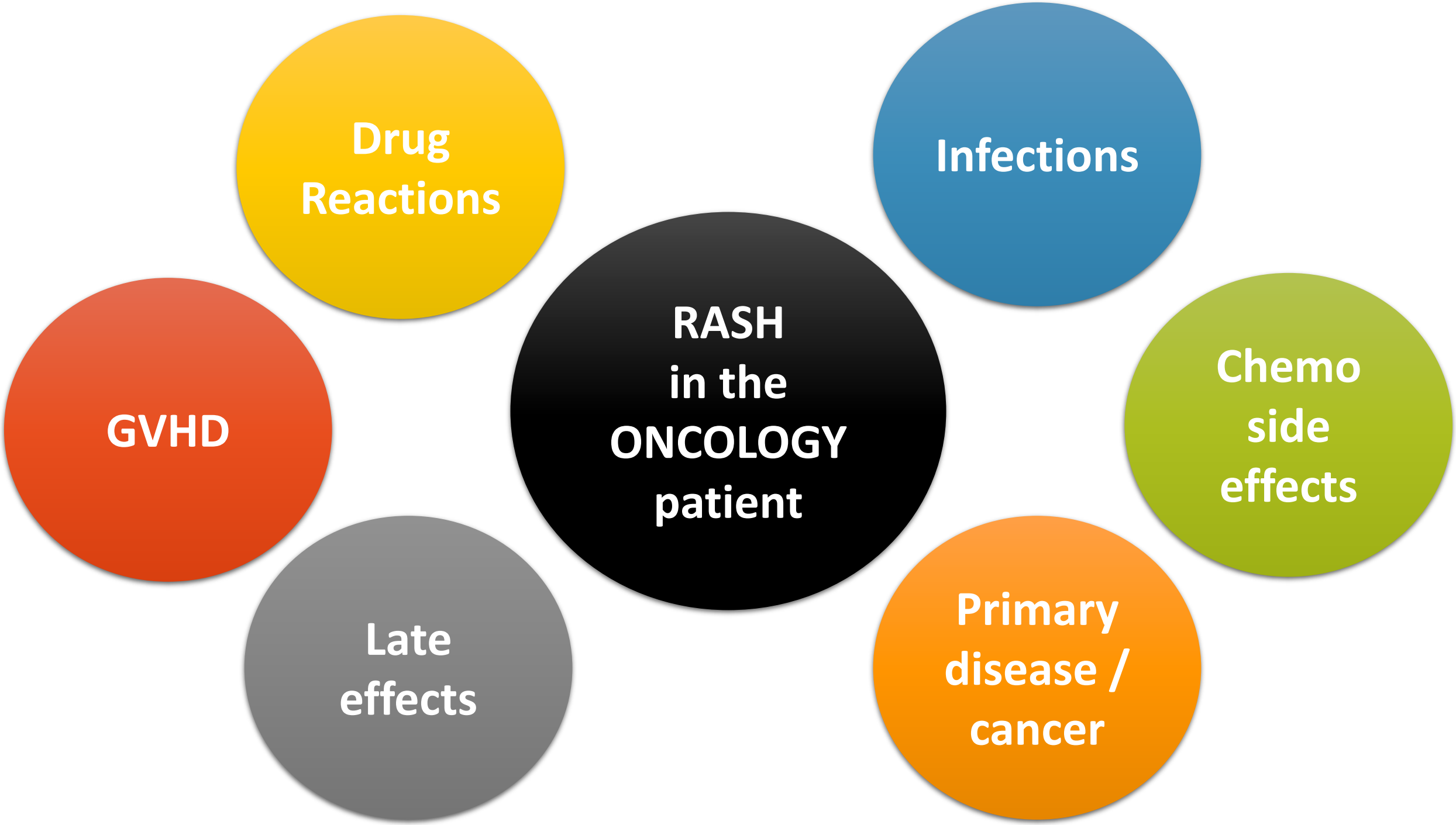

Drug Reactions
Infections
RASH in the ONCOLOGY patient
GVHD
Chemo side effects
Late effects
Primary disease / cancer

TABLE 2 Cutaneous manifestations in pediatric oncology patients according to oncologic diagnoses

	Total (n = 80)		Hematologic malignancies (n = 48)		Solid organ tumors (n = 6)		Bone and soft tissue tumors (n = 15)		Central nervous system tumors (n = 11)	
	n	%	n	%	n	%	n	%	n	%
Anagen effluvium	49	61.3	23	47.9	5	83.3	14	93.3	7	63.6
Xerosis	28	35	20	41.7	0	0.0	3	20.0	5	45.5
Inflammatory dermatoses	41	51.2	28	58.3	2	33.3	4	26.6	3	27.2
Contact dermatitis	1	1.2	1	2.1	0	0.0	0	0.0	0	0.0
Seborrheic dermatitis	8	10	5	10.4	2	33.3	1	6.7	0	0.0
Diaper dermatitis	33	41.2	30	62.5	1	16.7	1	6.7	1	9.1
Perioral dermatitis	1	1.2	1	2.1	0	0	0	0.0	0	0.0
Cutaneous viral infections	4	5	2	4.2	1	16.7	1	6.7	0	0.0
Cutaneous bacterial infections	3	3.7	1	2.1	0	0.0	2	13.3	0	0.0
Cutaneous fungal infections	3	3.7	2	4.2	0	0.0	0	0.0	1	9.1
Exanthematous (morbilliform) drug eruption	3	3.7	2	4.2	0	0.0	0	0.0	1	9.1
Urticaria/Angioedema	1	1.2	1	2.1	0	0.0	0	0.0	0	0.0
Leukocytoclastic vasculitis	2	2.5	2	4.2	0	0.0	0	0.0	0	0.0
Drug-induced hyperpigmentation	5	6.2	2	4.2	0	0.0	2	13.3	1	9.1
Toxic erythema of chemotherapy (TEC)	5	6.2	4	8.3	1	16.7	0	0.0	0	0.0
Nail changes	16	20	9	18.7	0	0.0	5	33.3	2	18.1
Beau lines/Onychomadesis	3	3.7	2	4.2	0	0.0	1	6.7	0	0.0
Transverse ridging of the nails	1	1.2	1	2.1	0	0.0	0	0.0	0	0.0
Nail fragility	3	3.7	2	4.2	0	0.0	1	6.7	0	0.0
Nail pigmentation	7	8.7	3	6.3	0	0.0	3	20.0	1	9.1
Paronychia	2	2.5	1	2.1	0	0.0	0	0.0	1	9.1
Trichomegaly/Hypertrichosis	5	6.2	3	6.3	0	0.0	0	0.0	1	9.1
Acne	2	2.5	2	4.2	0	0.0	0	0.0	0	0.0
Mucositis	13	16.2	9	18.8	0	0.0	2	13.3	2	18.2
Ecchymosis	1	1.2	1	2.1	0	0.0	0	0.0	0	0.0
Telangiectasia	5	6.2	3	6.3	0	0.0	1	6.7	1	9.1

Ped derm 2021;38:58-65

Supportive and Preventive Skin Care Measures

1. Topical care for intact skin

2. Photoprotection

3. Skin surveillance

ELSEVIER

Biology of Blood and Marrow Transplantation

Volume 18, Issue 3, March 2012, Pages 348-371

Guidelines

Recommended Screening and Preventive Practices for Long-Term Survivors after Hematopoietic Cell Transplantation

Navneet S. Majhail [1, 2] ✉, J. Douglas Rizzo [3], Stephanie J. Lee [4], Mahmoud Aljurf [5], Yoshiko Atsuta [6], Carmem Bonfim [7], Linda J. Burns [8], Naeem Chaudhri [5], Stella Davies [9], Shinichiro Okamoto [10], Adriana Seber [11], Gerard Socie [12], Jeff Szer [13], Maria Teresa Van Lint [14], John R. Wingard [15], Andre Tichelli [16], Center for International Blood and Marrow Transplant Research (CIBMTR), American Society for Blood and Marrow Transplantation (ASBMT) ... Andre Tichelli [16]

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Biology of Blood and Marrow Transplantation

Volume 21, Issue 7, July 2015, Pages 1167-1187

Report

National Institutes of Health Consensus Development Project on Criteria for Clinical Trials in Chronic Graft-versus-Host Disease: V. The 2014 Ancillary Therapy and Supportive Care Working Group Report

Paul A. Carpenter [1] ✉, Carrie L. Kitko [2], Sharon Elad [3], Mary E.D. Flowers [1], Juan C. Gea-Banacloche [4], Jörg P. Halter [5], Flora Hoodin [6], Laura Johnston [7], Anita Lawitschka [8], George B. McDonald [1], Anthony W. Opipari [9], Bipin N. Savani [10], Kirk R. Schultz [11], Sean R. Smith [12], Karen L. Syrjala [1], Nathaniel Treister [13], Georgia B. Vogelsang [14], Kirsten M. Williams [4] ... Daniel R. Couriel [2]

1. Topical care for intact skin

Why is regular skin care important?

- ✓ Decreases xerosis → decreases pruritis
- ✓ Maintains skin integrity
- ✓ Supports / maintains skin barrier

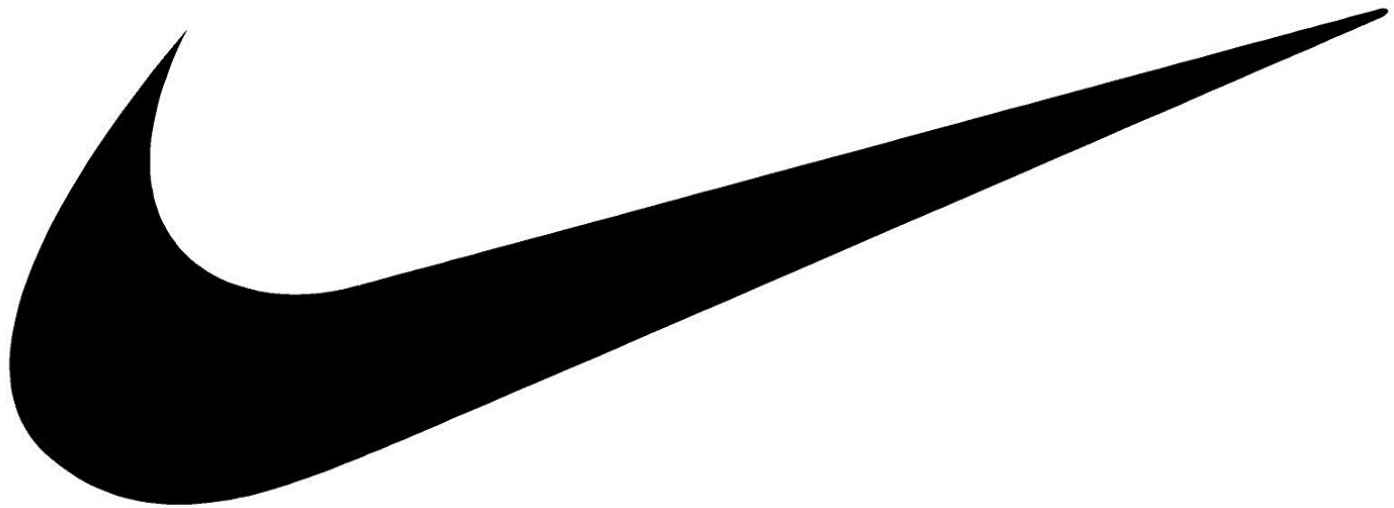
Tips for topical care

- Twice daily (or more) application of emollient
- Ointments and creams >> lotions and oils

But what cream is the best one???

Thick

Unscented



Eczemahelp.ca

THE ECZEMA SOCIETY OF CANADA

is dedicated to meeting the needs of those suffering with eczema by providing support, offering education, raising awareness, and supporting research.

Patient Resources

Want access to our library of resources? Order or download copies of our guides and educational materials.

Order Patient Resources

Healthcare Provider (HCP) Resources

Order copies of our guides and educational resources to help you and your patients.

Order HCP Resources

Treatment

Read about what you can do at home and the steps you can take to treat your eczema.

View Treatment

Products

Find out which skincare products have earned our Seal of Acceptance.

View Products

Tips for topical care

- Twice daily (or more) application of emollient
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- Consider products containing urea (avoid if <2 yrs of age)

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- Twice daily (or more) application of emollient
- Ointments and creams >> lotions and oils
- Consider products containing urea (avoid if <2 yrs of age)
- Daily shower / bath, 5-10 minutes, lukewarm water, moisturize immediately after

2. Photoprotection

Why is it important to protect against environmental UV radiation?

- ✓ Many treatments are associated with reactions in the photosensitivity spectrum
- ✓ Increased risk of melanoma and keratinocyte carcinoma
- ✓ UV radiation can exacerbate cutaneous GVHD

Photoprotection

- Avoidance where possible (especially 10am-2pm)
- Sun protective clothing

UPF = 7
(3 if wet)

UPF = 1700

Photoprotection

- Avoidance where possible (especially 10am-2pm)
- Sun protective clothing
- Sunscreen
  - ✓ All exposed areas
  - ✓ Year-round
  - ✓ Reapplied q2hours, after swimming/sweating
  - ✓ Broad spectrum, SPF30 or higher

Original Investigation

January 21, 2020

Effect of Sunscreen Application on Plasma Concentration of Sunscreen Active Ingredients

A Randomized Clinical Trial

Murali K. Matta, PhD[1]; Jeffry Florian, PhD[1]; Robbert Zusterzeel, MD, PhD, MPH[1]; et al

» Author Affiliations | Article Information

JAMA. 2020;323(3):256-267.
doi:10.1001/jama.2019.20747

- Chemical filters absorbed readily into bloodstream
- Absorption likely even greater in children
- Implications of elevated serum levels remains unknown
- Physical filters (**zinc oxide** / **titanium dioxide**) remain safe options

Photoprotection

- Physical sunscreens:
  Zinc oxide
  Titanium dioxide

- NOT absorbed through the skin

Drug Facts

Active Ingredients — **Purpose**
Titanium Dioxide 4.5%, Zinc Oxide 8.7% — Sunscreen

Uses
Helps prevent sunburn. If used as directed with other sun protection measures (see directions), decreases the risk of skin cancer and early skin aging caused by the sun.

Warnings
For external use only • **Do not use** on damaged or broken skin • **When using this product** keep out of eyes. Rinse with water to remove. • **Stop use and ask a doctor** if rash occurs • **Keep out of reach of children.** If product is swallowed, get medical help or contact a Poison Control Center right away.

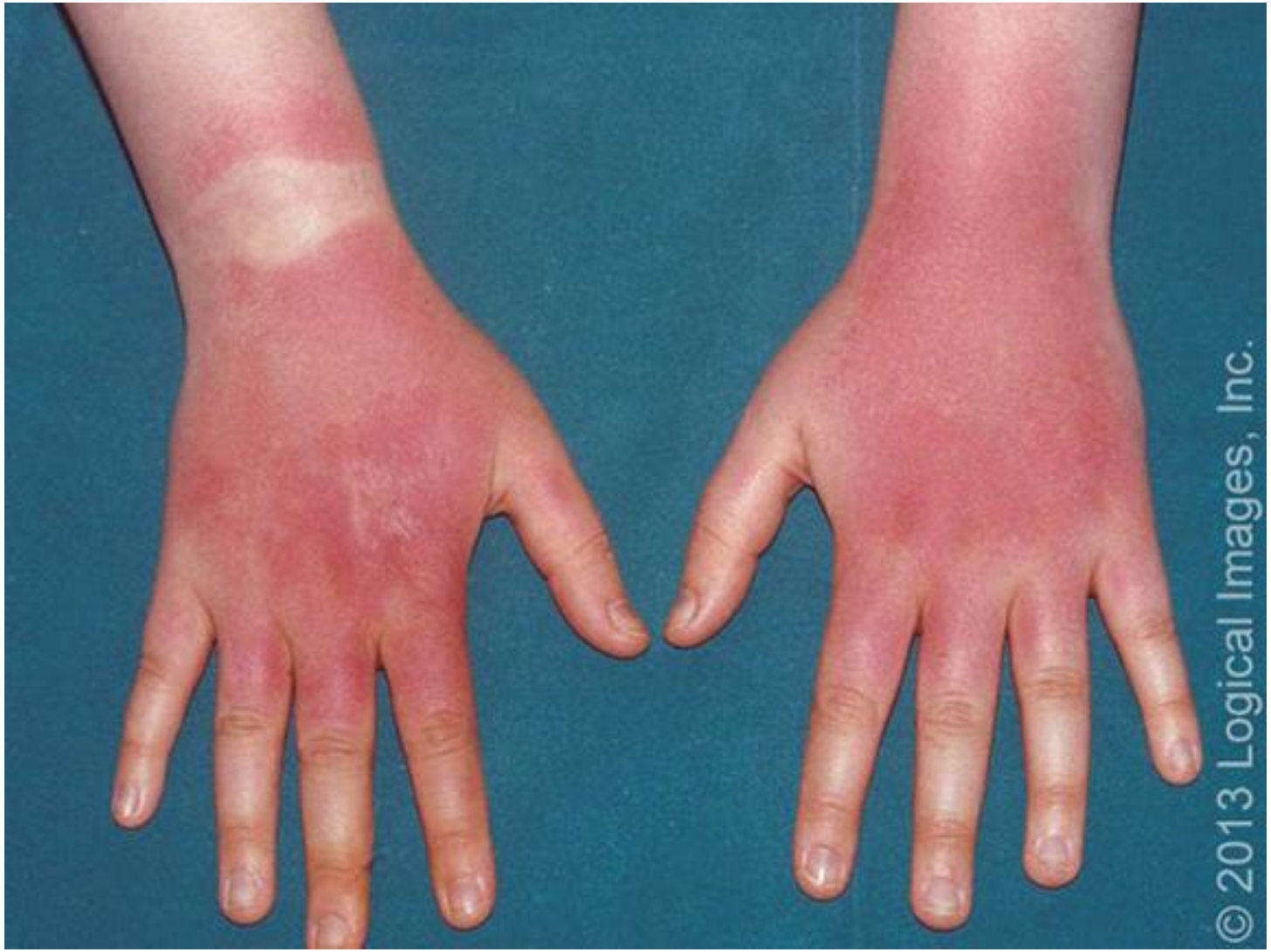
Directions
Apply liberally 15 minutes prior to sun exposure. Reapply after 80 minutes of swimming or sweating; immediately after towel drying; and, at least every 2 hours.
Sun Protection Measures: Spending time in the sun increases your risk of skin cancer and early skin aging. To decrease this risk, regularly use a sunscreen with a Broad Spectrum SPF value of 15 or higher and other sun protection measures including: limit time in the sun, especially from 10 am to 2 pm; wear long-sleeve shirts, pants, hats and sunglasses; children under 6 mos. of age, ask a doctor.

Inactive Ingredients
Water, Caprylic/Capric Triglyceride, Glycerin, Cetearyl Alcohol, Steareth-2, VP/Hexadecene Copolymer, Steareth-21, Dimethicone, Polyhydroxystearic Acid, Aloe Barbadensis Leaf Extract, Camellia Oleifera Leaf Extract, Pleiogynium Timoriense Fruit Extract, Podocarps Elatus Fruit Extract, Terminalia Ferdinandiana Fruit Extract, Adansonia Digitata Seed Oil, Astrocaryum Tucuma Seed Butter, Madacamia Ternifolia Nut Oil, Dipotassium Glycyrrhizate, Alumina, Stearic Acid, Sodium Stearoyl Glutamate, Triethoxycaprylylsilane, Propanediol, Caprylhydroxamic Acid, Disodium EDTA, Xanthan Gum, Caprylyl Glycol, Alcohol Denat., Fragrance (Parfum)

Photoprotection

- Avoidance where possible (especially 10am-2pm)
- Sun protective clothing
- Sunscreen
- Avoidance of photosensitizing agents
  - **Voriconazole**

Phototoxicity



Phototoxic Agents

- Tetracyclines
- Thiazides
- Sulfonamides
- Fluoroquinolones
- NSAIDs
- Phenothiazides
- Psoralens
- Voriconazole
- Retinoids
- Tar compounds
- St John’s Wort
- Sulfonylurea
- Furosemide
- Amiodarone
- Isoniazid

Voriconazole phototoxicity in children: A retrospective review

Johanna Sheu, MS,[a,b] Elena B. Hawryluk, MD, PhD,[a,b] Dongjing Guo, MPH,[c,d] Wendy B. London, PhD,[a,c,d] and Jennifer T. Huang, MD[a,b,d]
Boston, Massachusetts

- Retrospective cohort
- 430 children treated with voriconazole over 10 years
- 20% had phototoxic reactions
- 47% if treated >6 months
- 4 patients (1%) had nonmelanoma skin cancer

Voriconazole phototoxicity in children: A retrospective review

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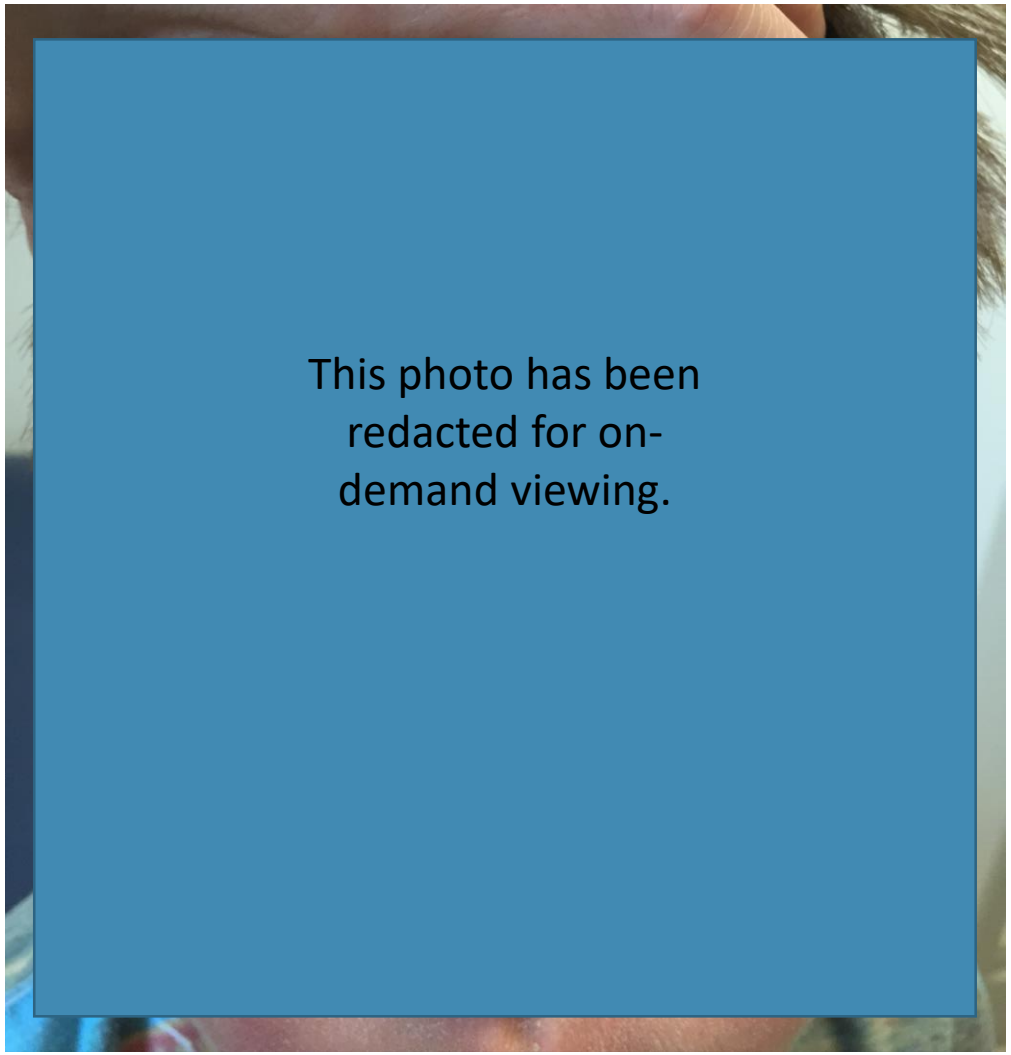
- In patients with phototoxic reactions:
  - Voriconazole discontinued in 5%
  - 6% referred to dermatology
  - 26% received sun protection counselling

Skin tumors and reactions to cancer therapy, Springer 2018

Other Photosensitivity Reactions



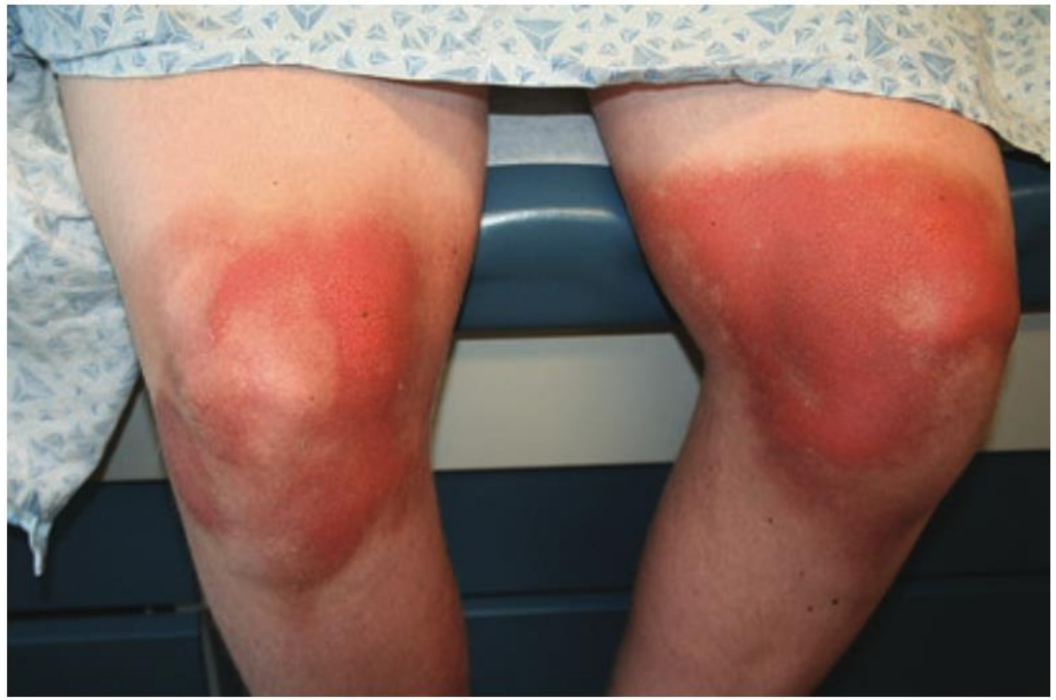


Fig. 7.4 Ultraviolet recall reaction induced by methotrexate (image courtesy of Jennifer T. Huang, MD)

Photorecall (MTX)

Other Photosensitivity Reactions

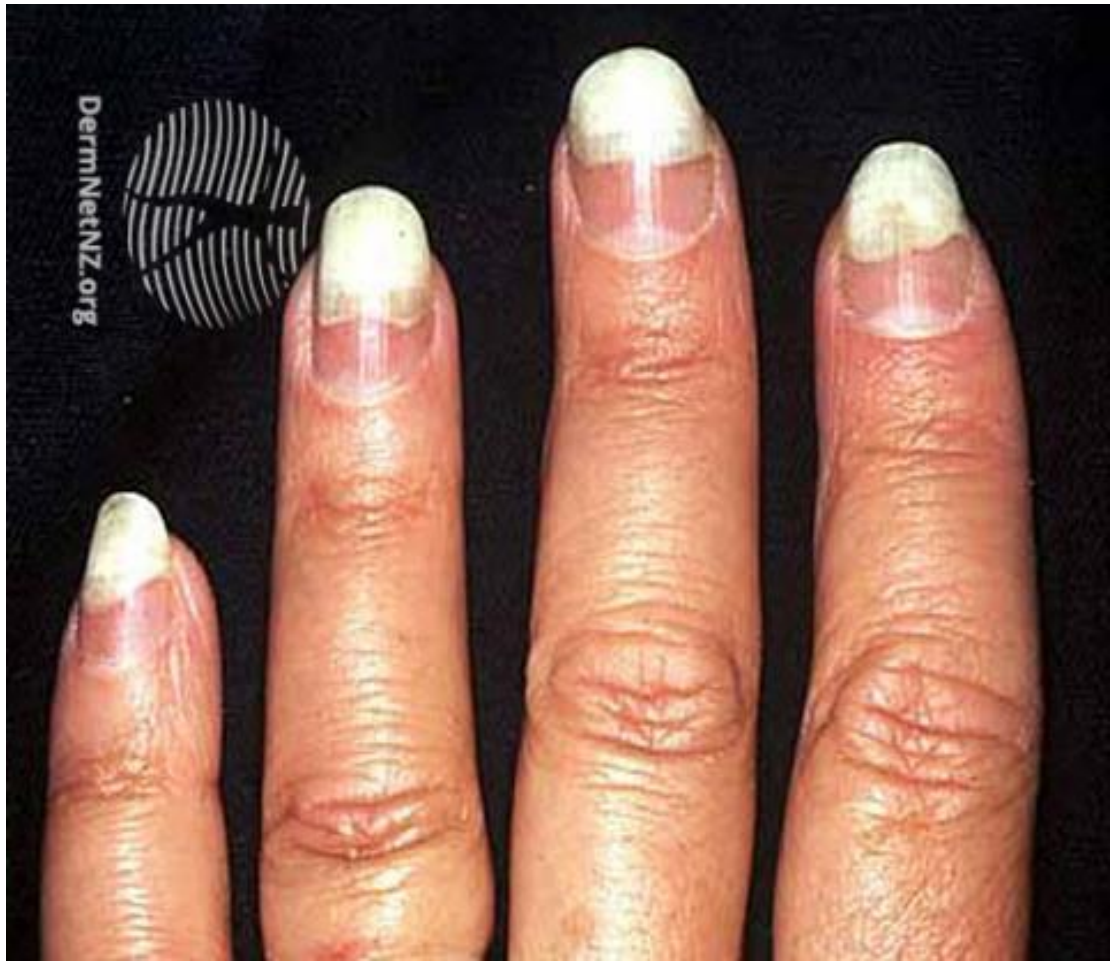


Photo-onycholysis

3. Skin surveillance

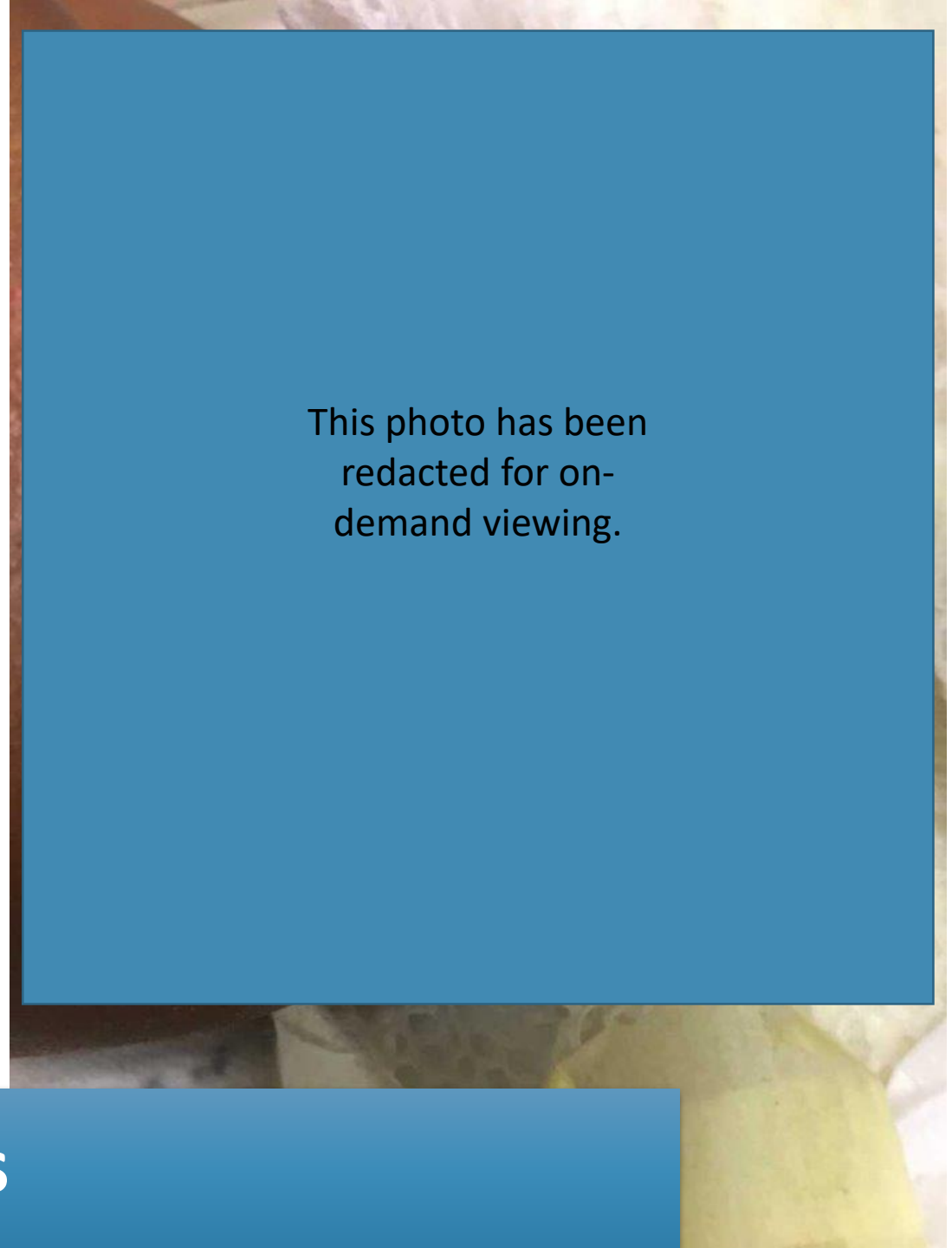
Why is ongoing skin surveillance important?

- ✓ Increased risk of melanoma and keratinocyte carcinoma
- ✓ Early identification of individuals with precursor lesions can facilitate more vigilant surveillance and treatment

Management of Common Skin Rashes

1. Diaper dermatitis
2. Facial rashes
3. Common cutaneous infections

Case



1. Diaper dermatitis

POLL: What would be your first-line management for this patient?

a) Topical steroids

b) Topical antifungal agents

c) Silicone-based dressing

d) Effective barrier

POLL: What would be your first-line management for this patient?

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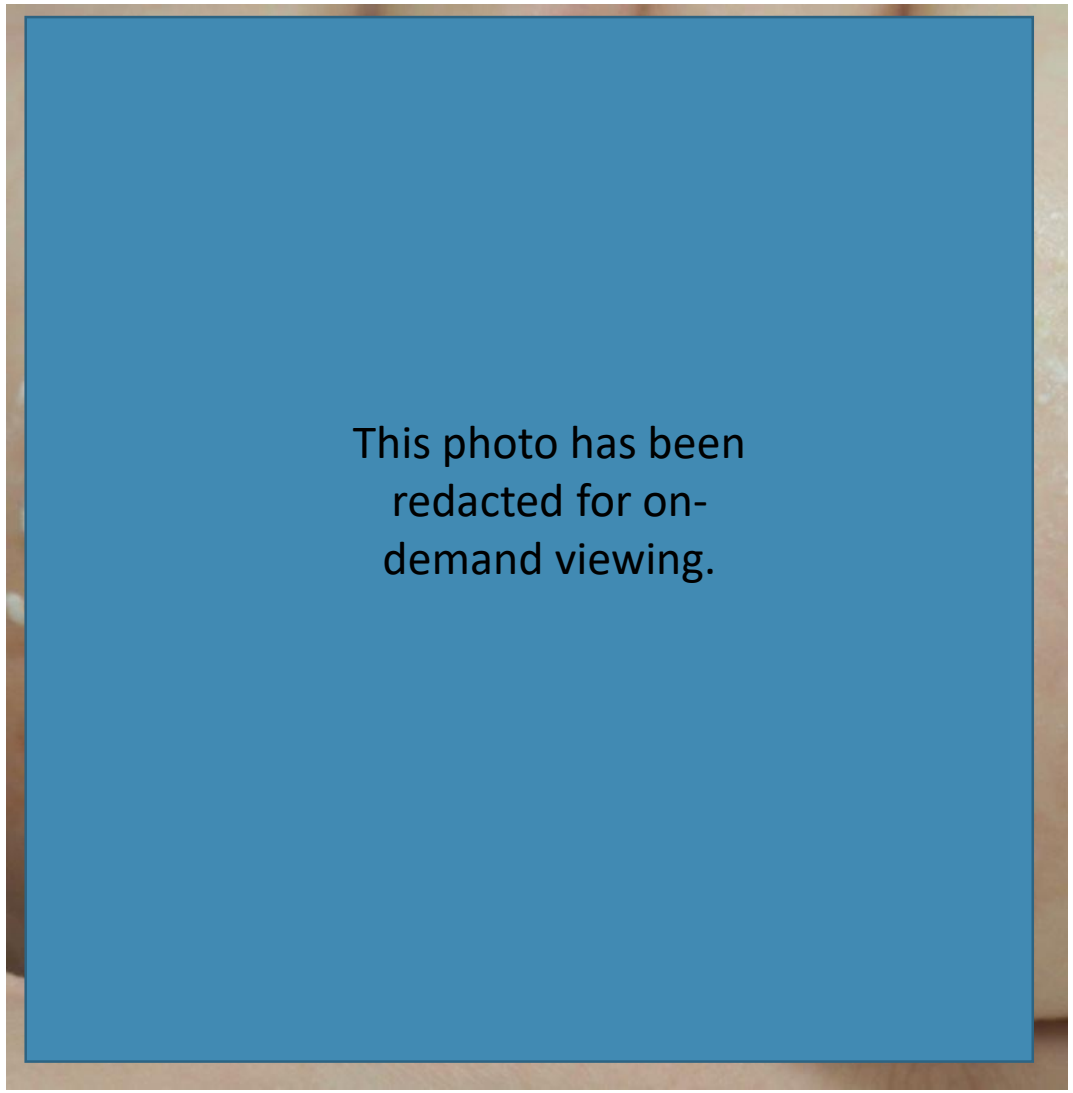
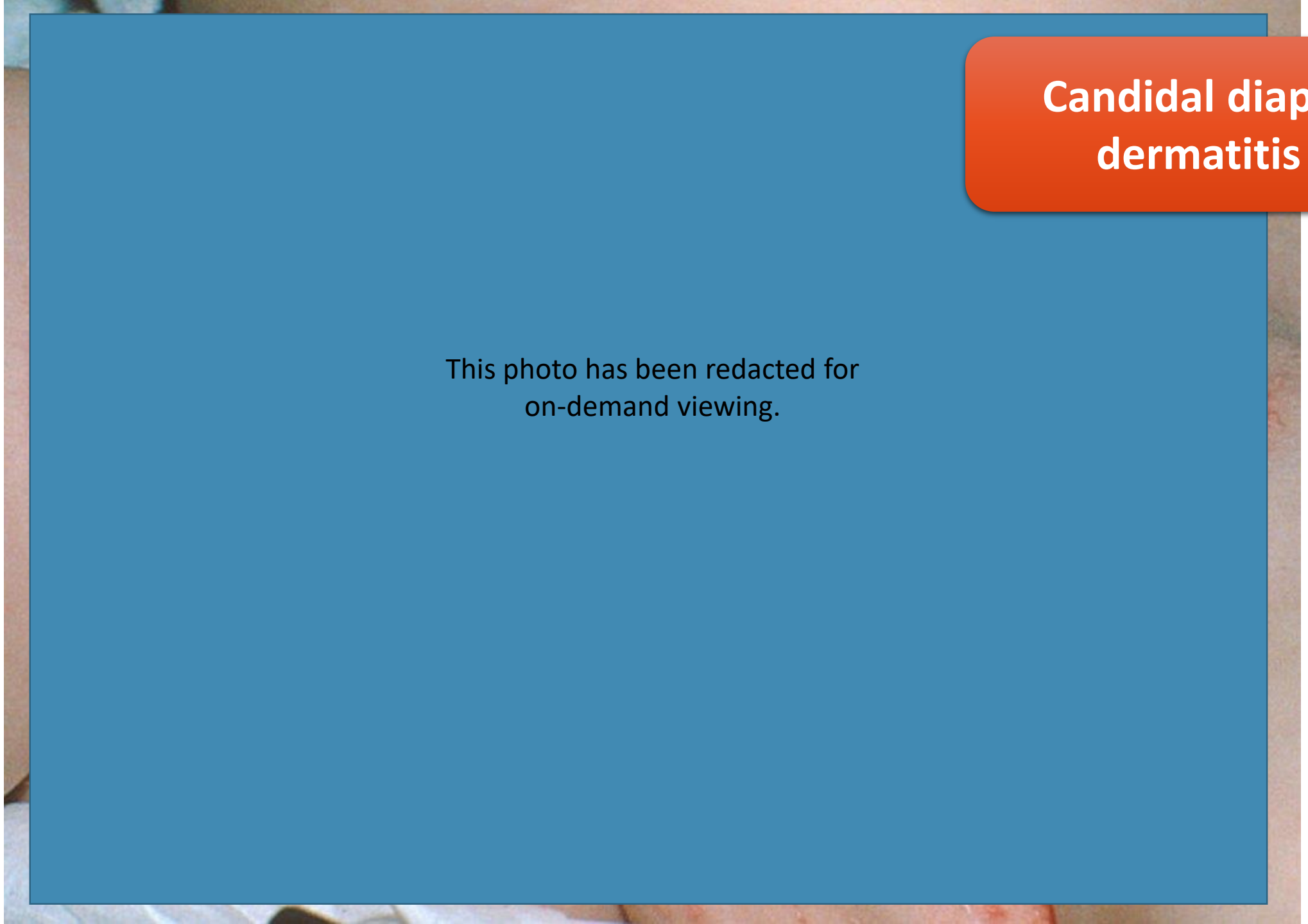
Erosive diaper dermatitis



- Severe form of **irritant contact** dermatitis
- Elevated risk in oncology patients
  - Urinary excretion of toxic drug metabolites
  - Treatment-associated diarrhea

Candidal diaper dermatitis



Management of Erosive Diaper Dermatitis

1) **Limit wiping** unless needed for stools; only wipe away soiled areas

2) **Avoid commercial wipes**; water on cotton pads instead

3) 1% HC twice daily if needed; avoid stronger cortisones

***Clinical Pearl ***

Combine ZINC OXIDE cream with STOMA POWDER to treat severe erosive diaper dermatitis

Ingredients: There are different brand names

25 % Zinc cream or higher

Stoma powder

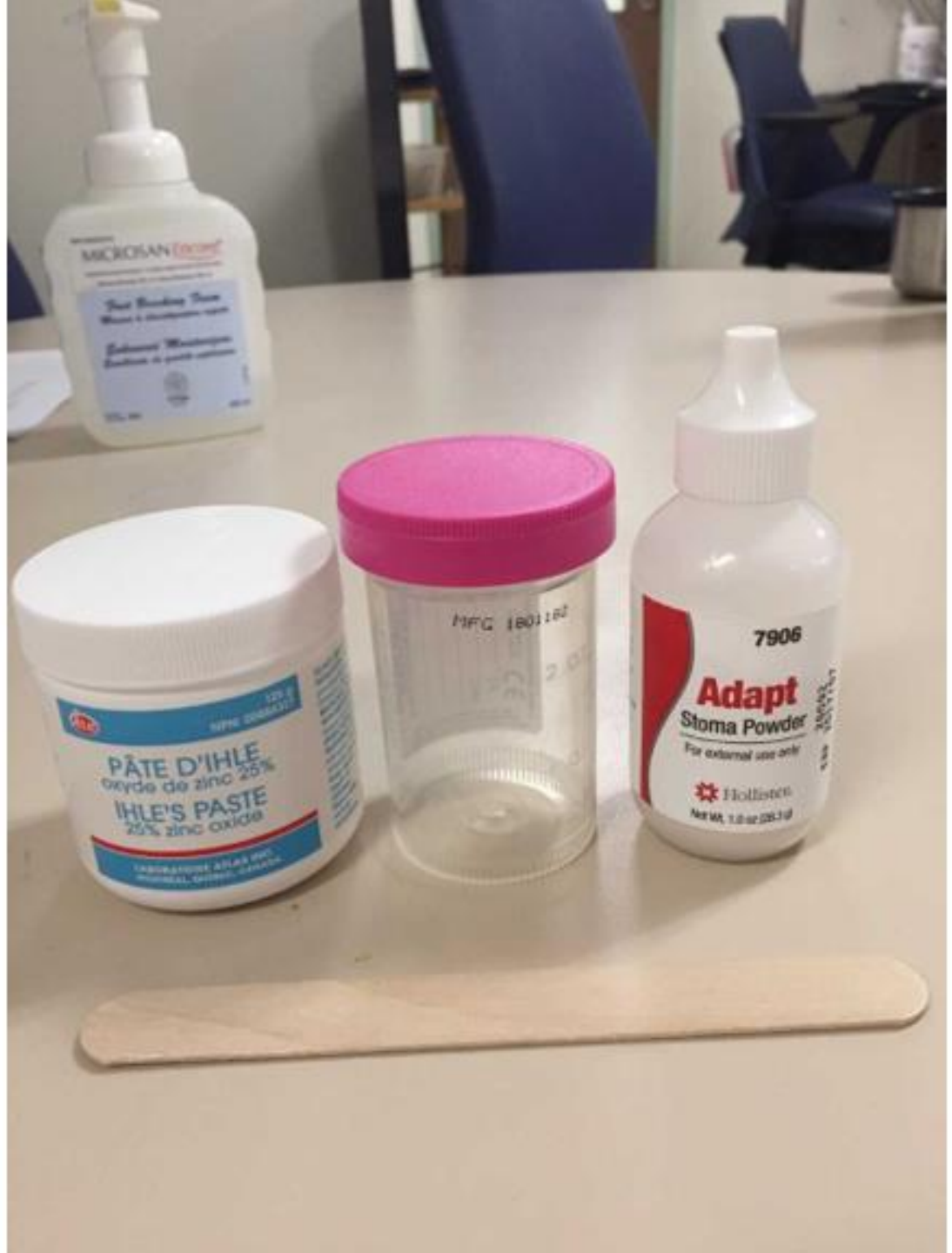
Wound application of mixture

First spray or sprinkle powder on clean wound

1/3 to ½ bottle + one jar

Cleaning

- Dab off soiled parts of mixture with soft cloth or cotton
- NO DIAPER WIPES
  NO MINERAL OIL
- Don't rub off all the paste
- If you see the ulceration, spray more powder onto area and /or into mixture
- If you don't see the wound and it's thinly covered, then reapply mixture
- Once a day when babe is in bath, swish baby's bottom with bath water to remove excess


PÂTE D'IHLE
oxyde de zinc 25%
IHLE'S PASTE
25% zinc oxide
7906
Adapt
Stoma Powder
Hollister

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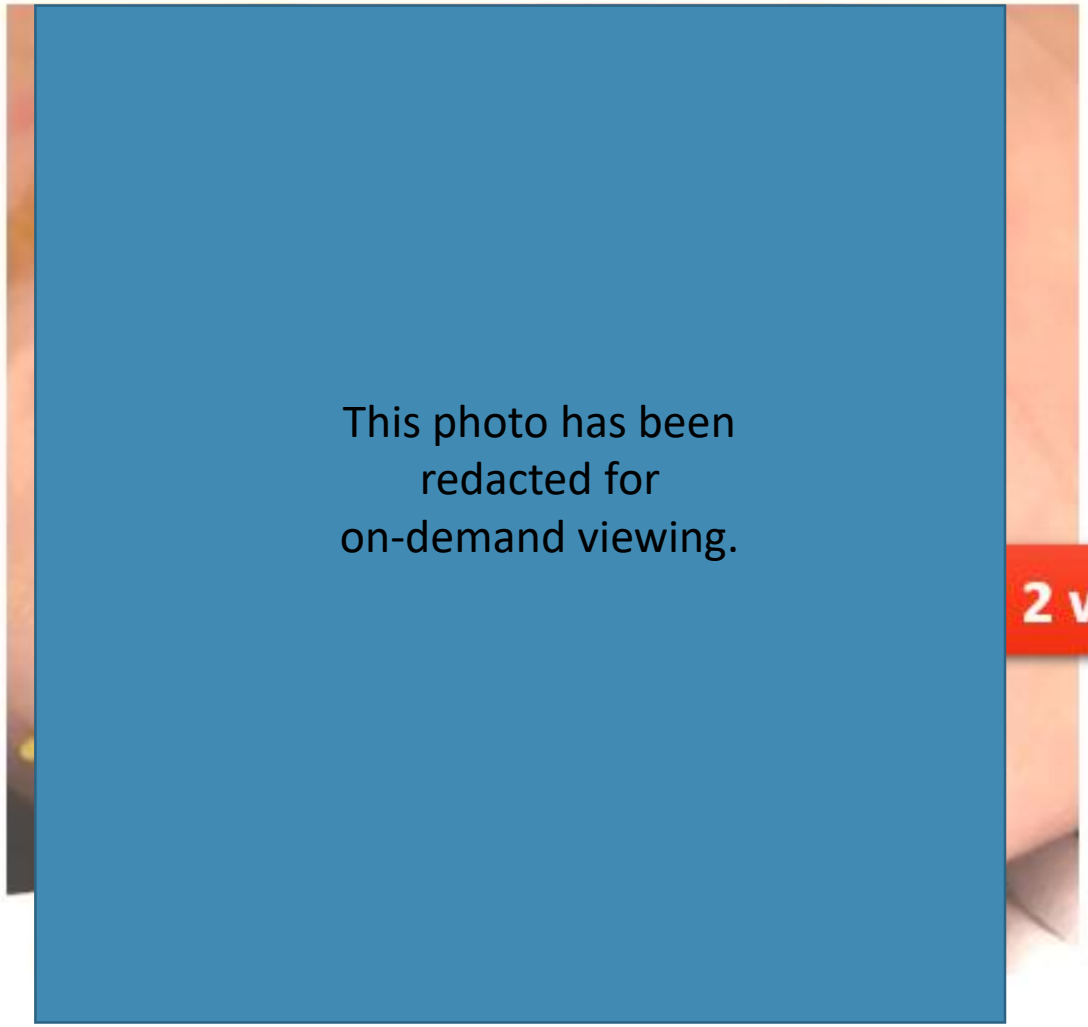

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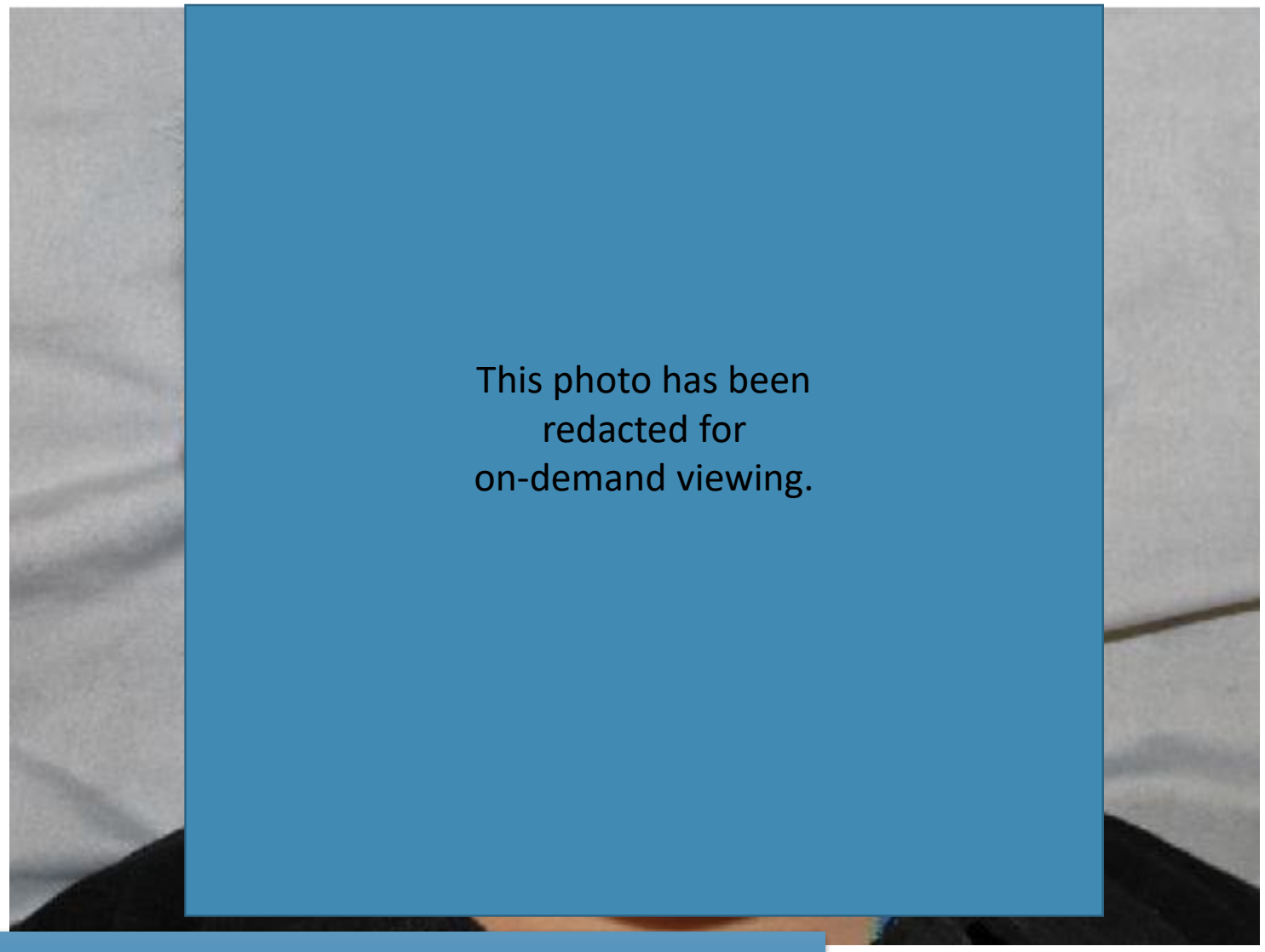
Case



2. Facial rashes

POLL: What would be the most appropriate first-line therapy?

a) Mid-potent topical corticosteroid (ie: betaderm 0.05% ung)

b) Topical calcineurin inhibitor (ie: tacrolimus 0.03% ung)

c) Increase dose of oral steroids

d) Topical antifungal (ie: ketoconazole 2% cr)

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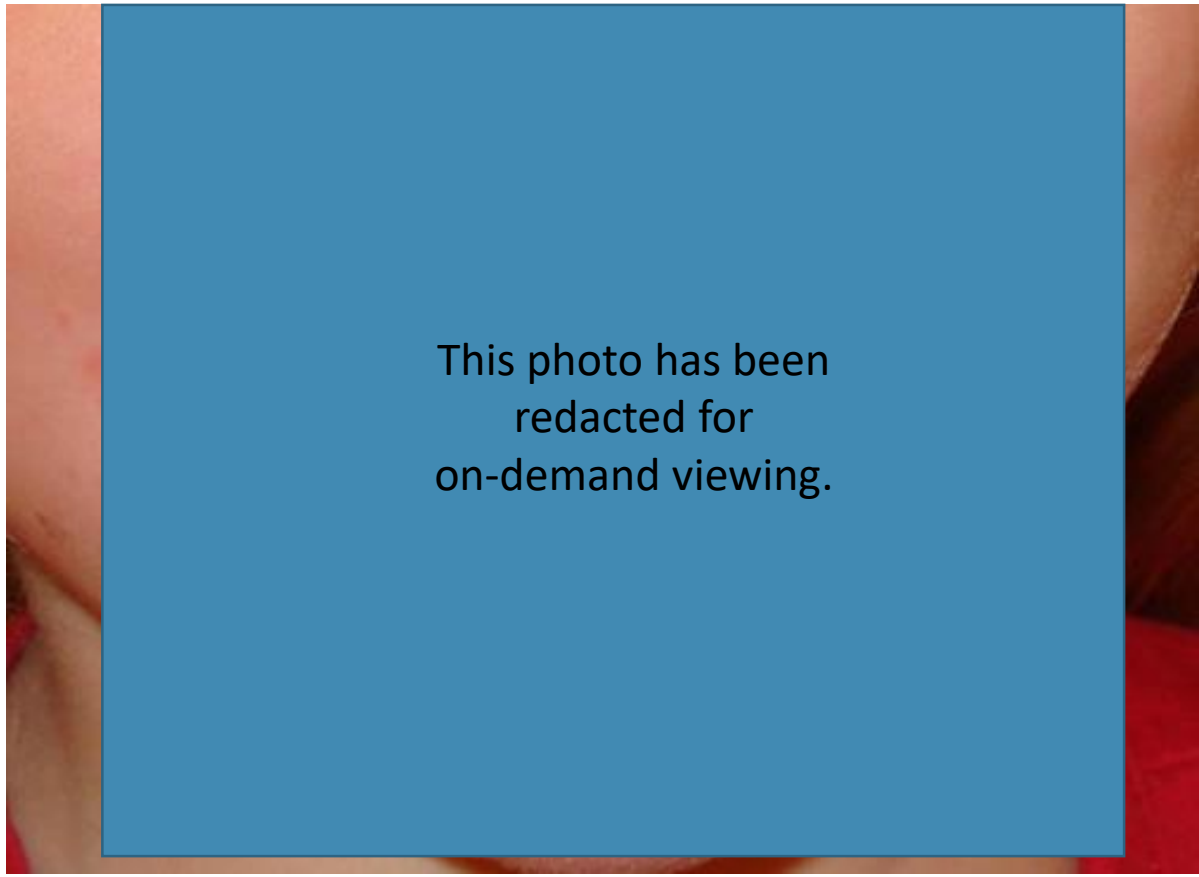
Perioral dermatitis

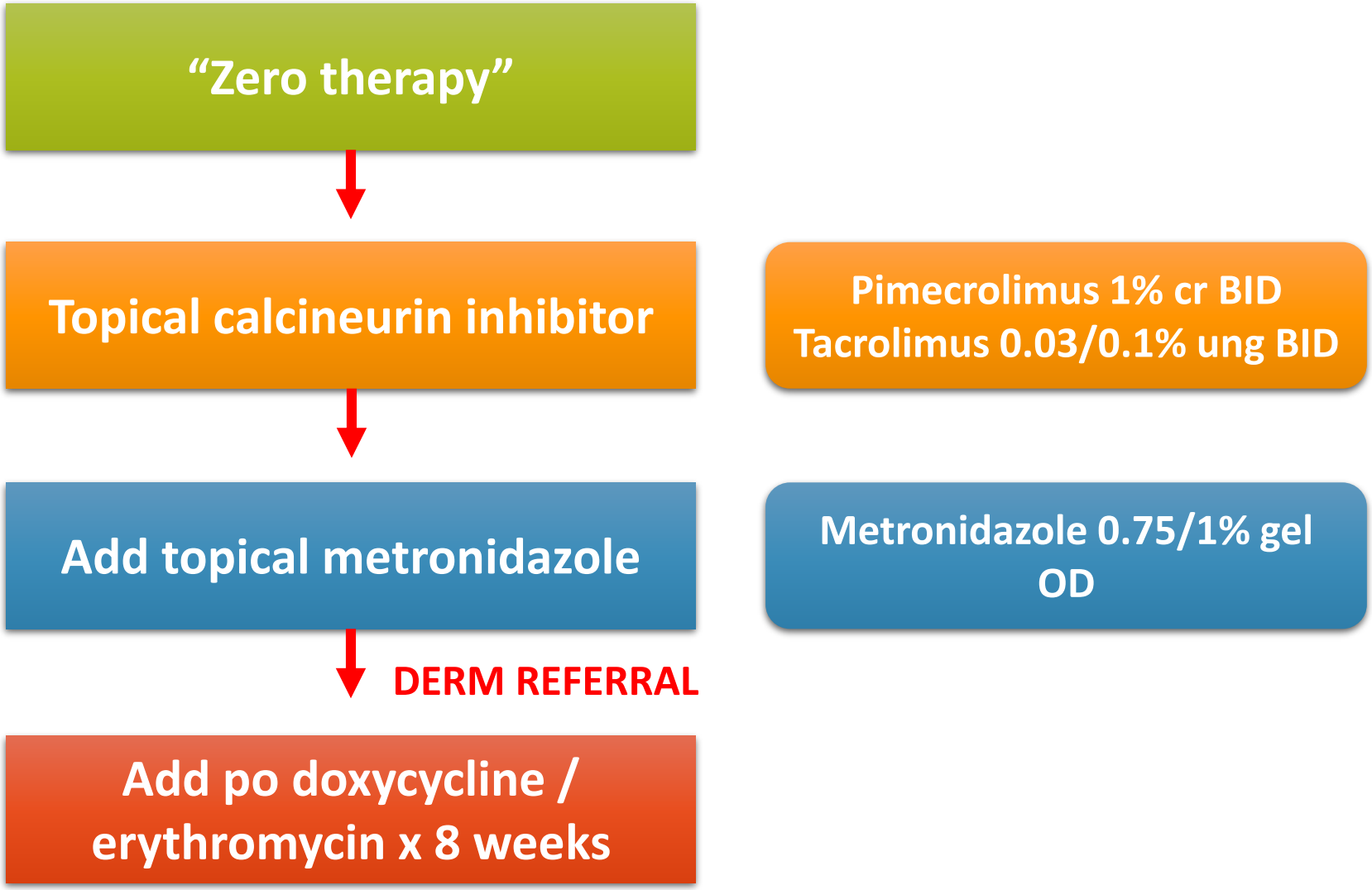
- Inflammatory papules + pustules to perioral +/- perinasal, periborital
- **Spares vermillion border** of the lip

- Pathogenesis poorly understood
  - Steroid use (top, inh, syst)
  - Barrier dysfunction
  - Other irritants



JAAD 2020;82(6):1409

Perioral dermatitis: Management



JAAD 2020;82(6):1409

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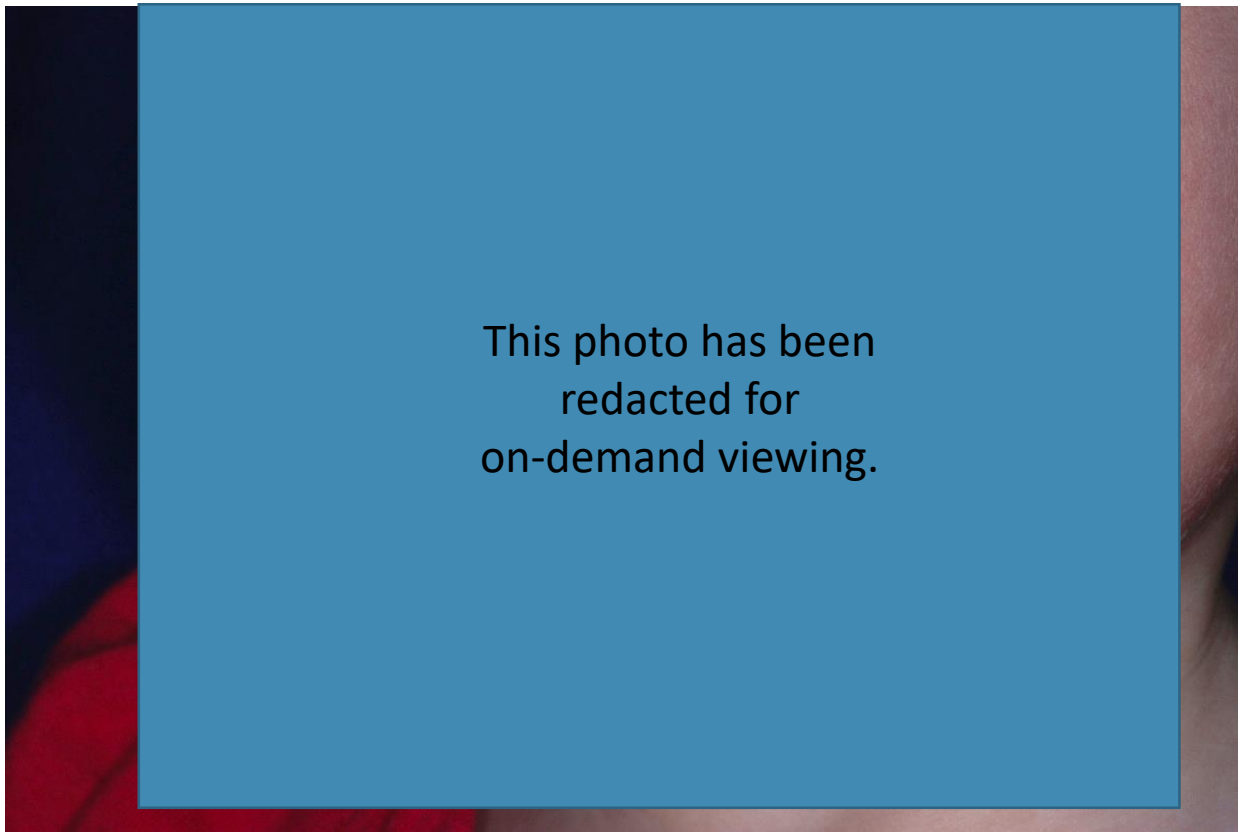
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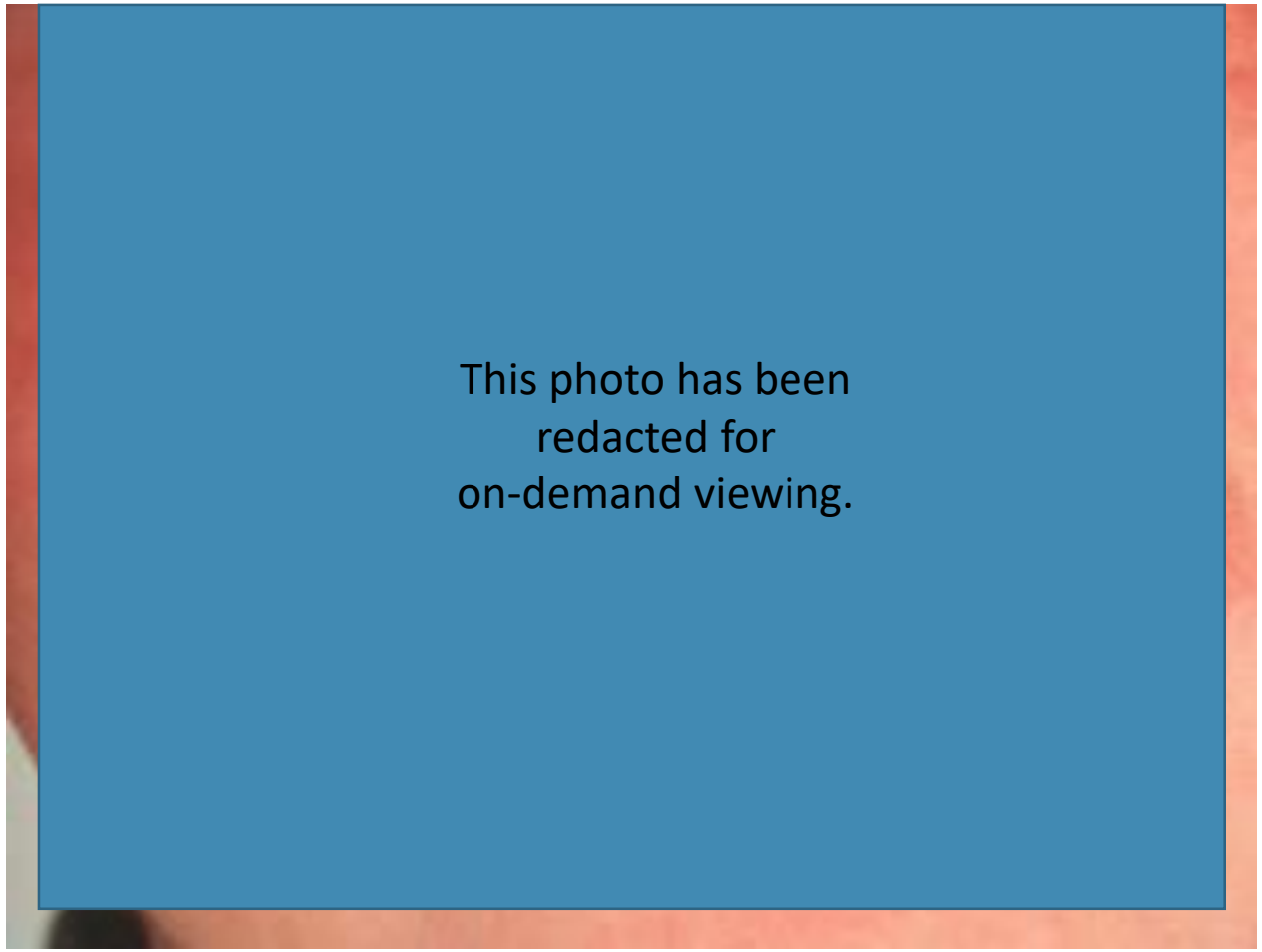
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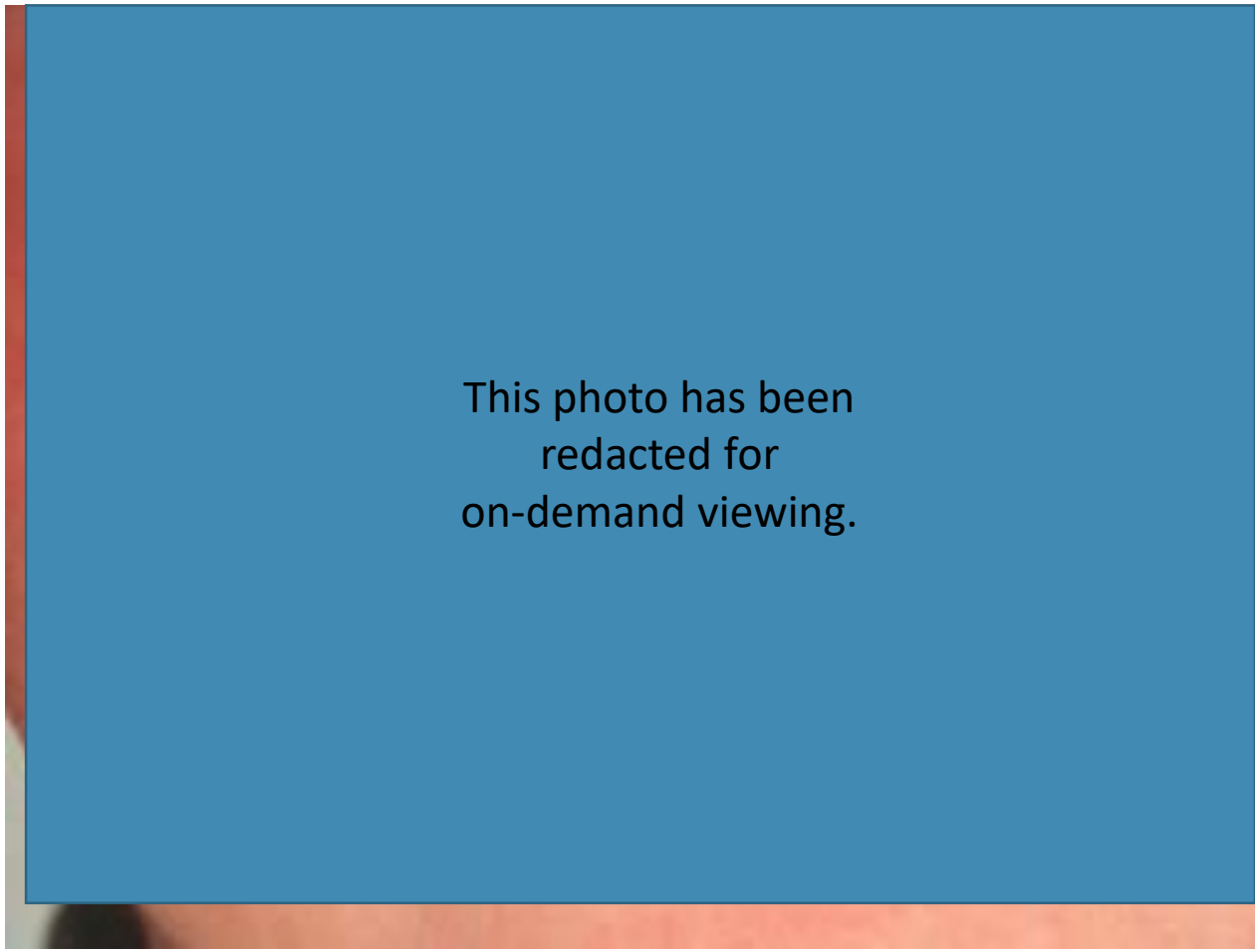
Lip Licker's Dermatitis

Clues:

- Dry, cracking
- Involvement of vermillion border

Management:

- **BARRIER**! (petroleum jelly QID ++)
- Discourage licking behavior
- Mild potency topical steroid or topical calcineurin inhibitor as needed



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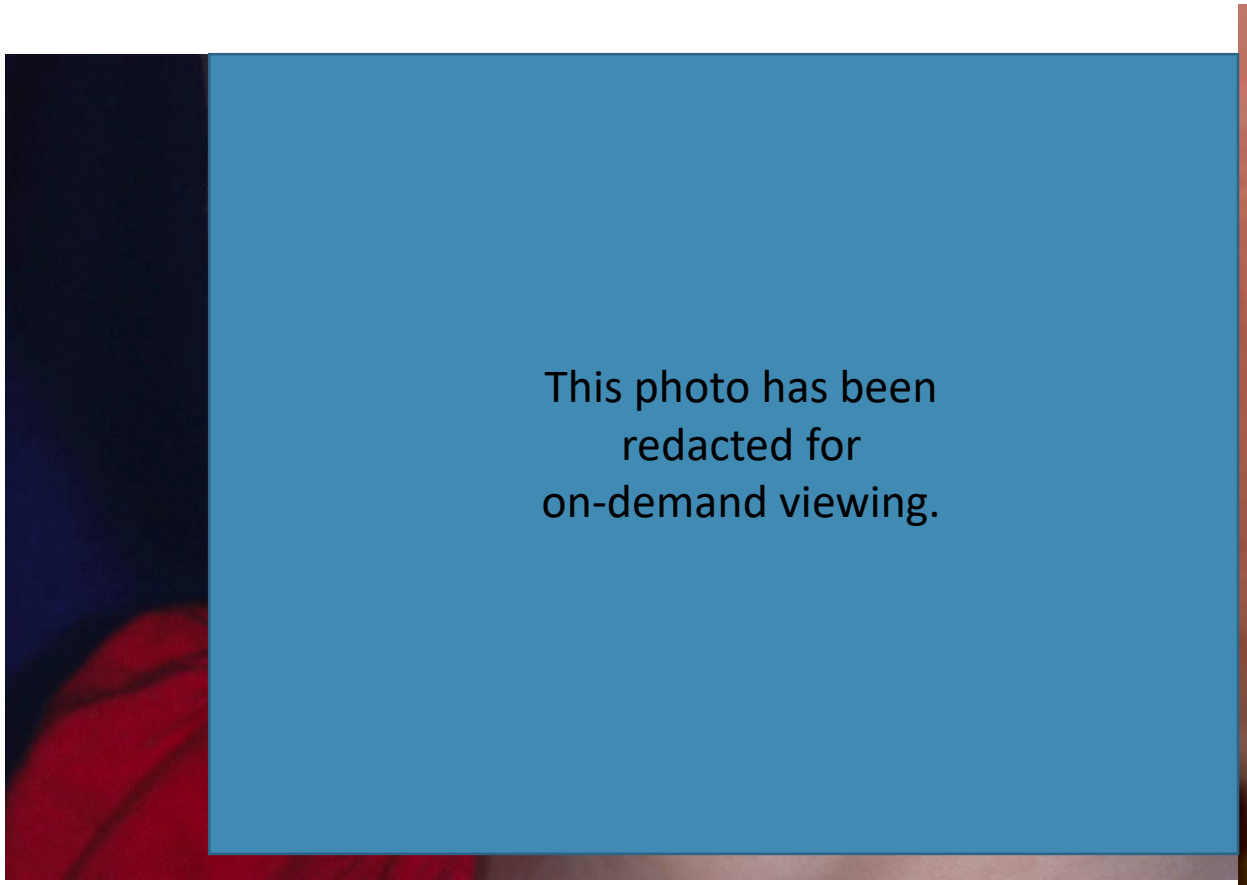
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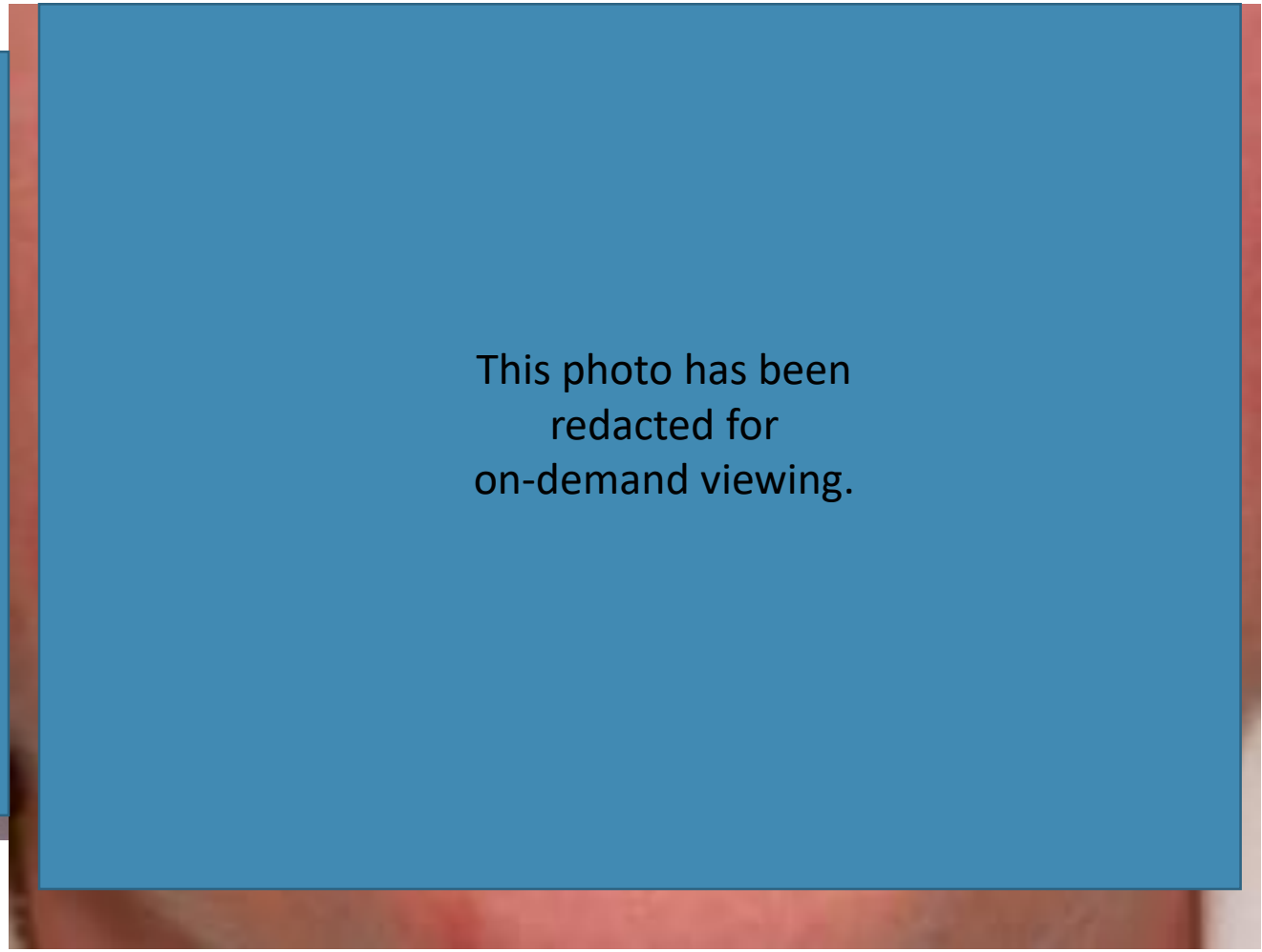
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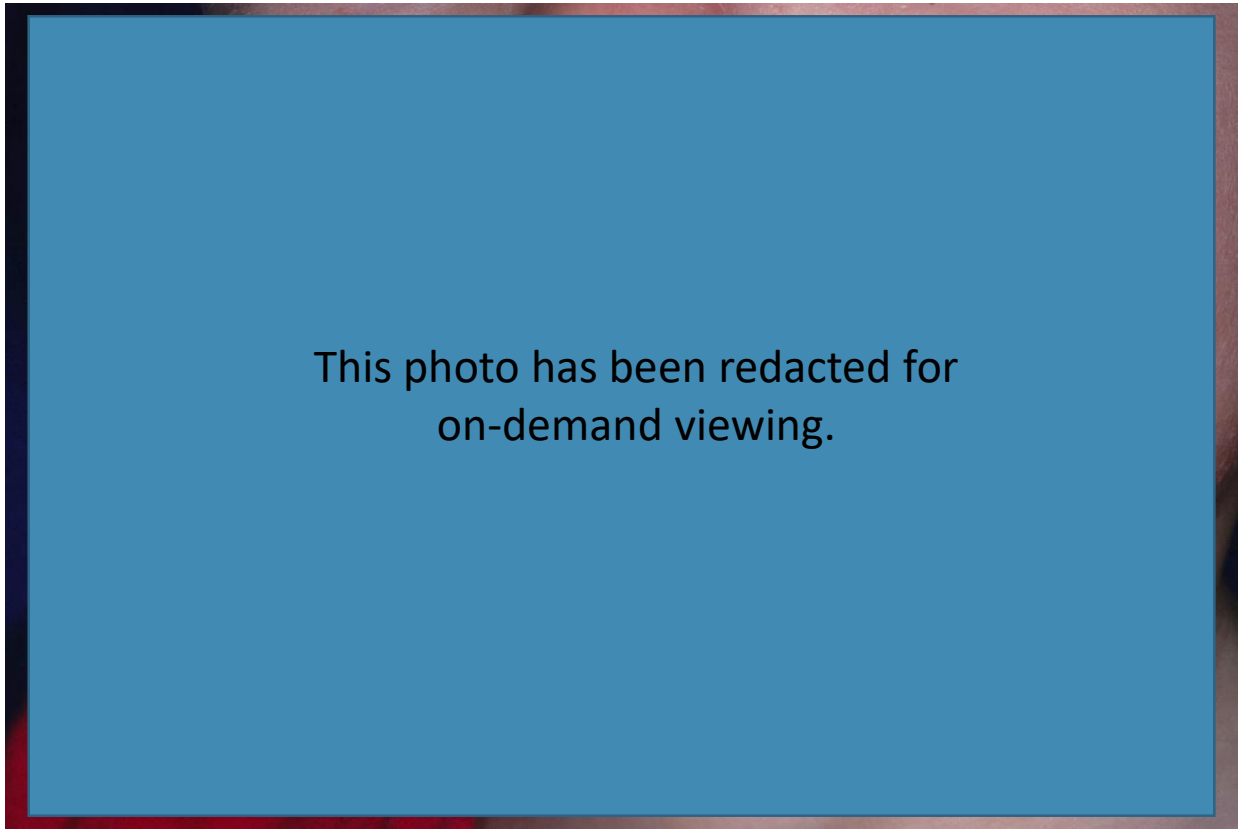
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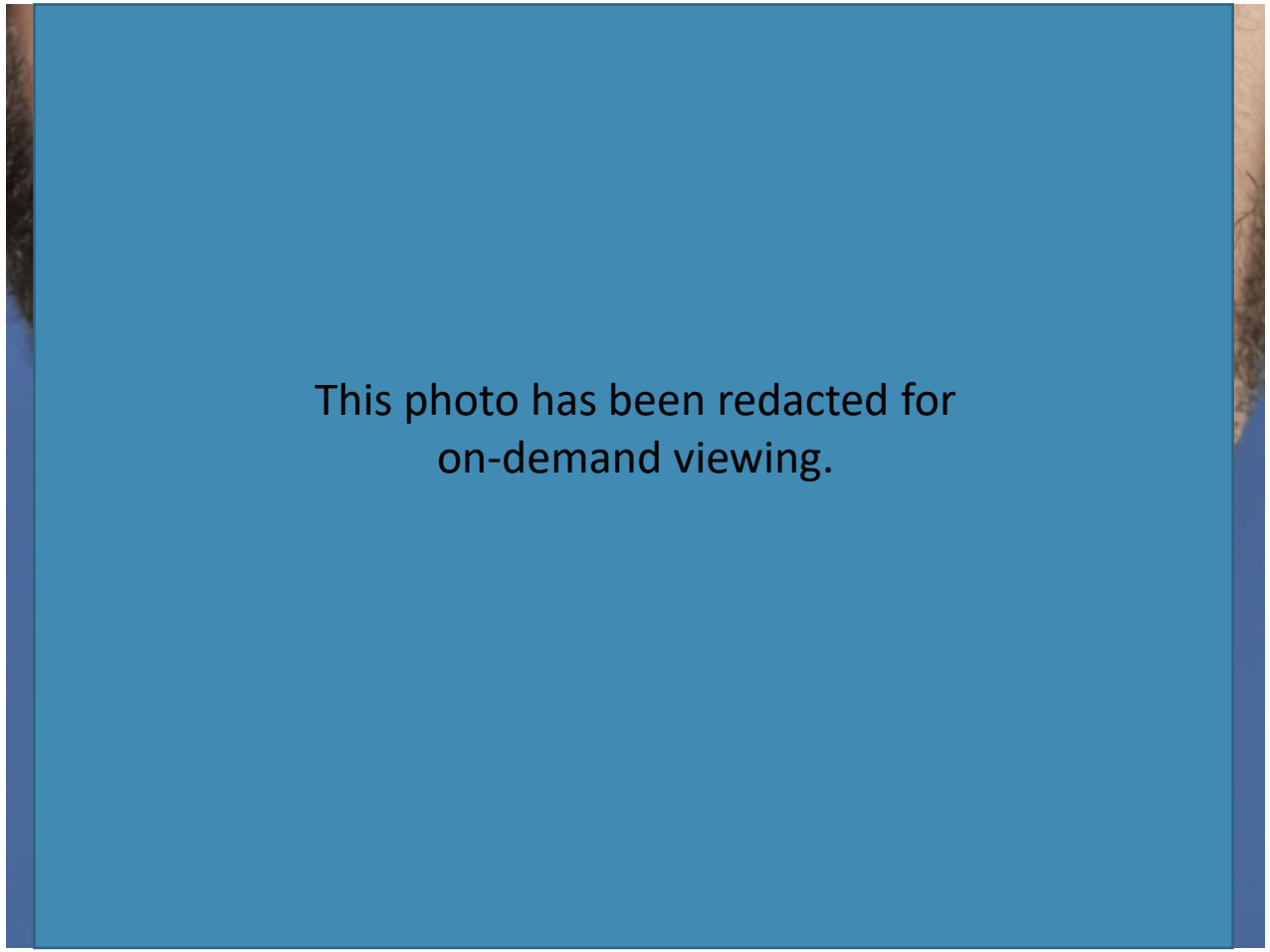
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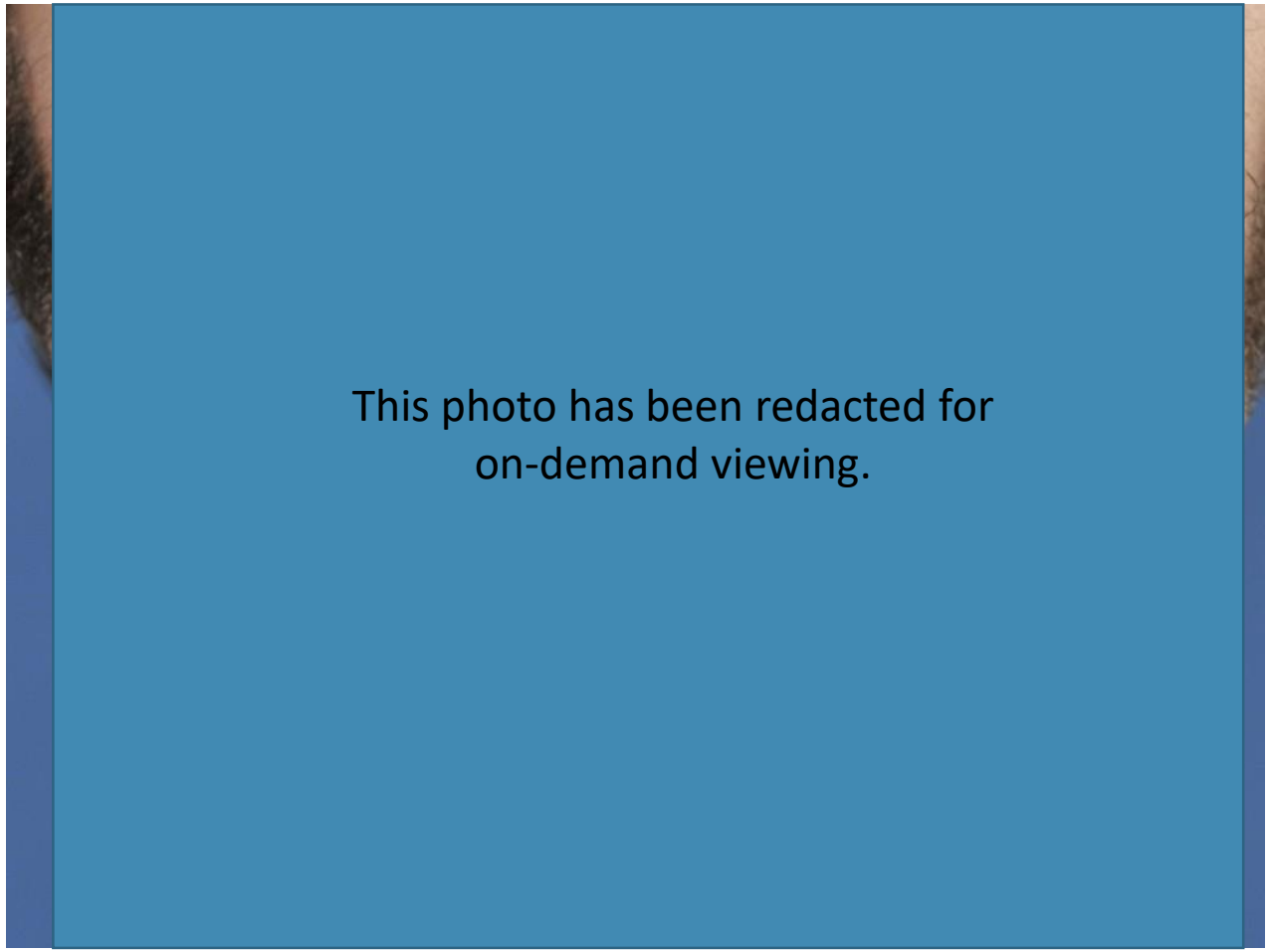
Seborrheic Dermatitis

Clues:

- Nasolabial fold, eyebrow, scalp, flexural involvement
- Greasy scale

Management:

- Topical ketoconazole 2% cream BID +/- mild TCS



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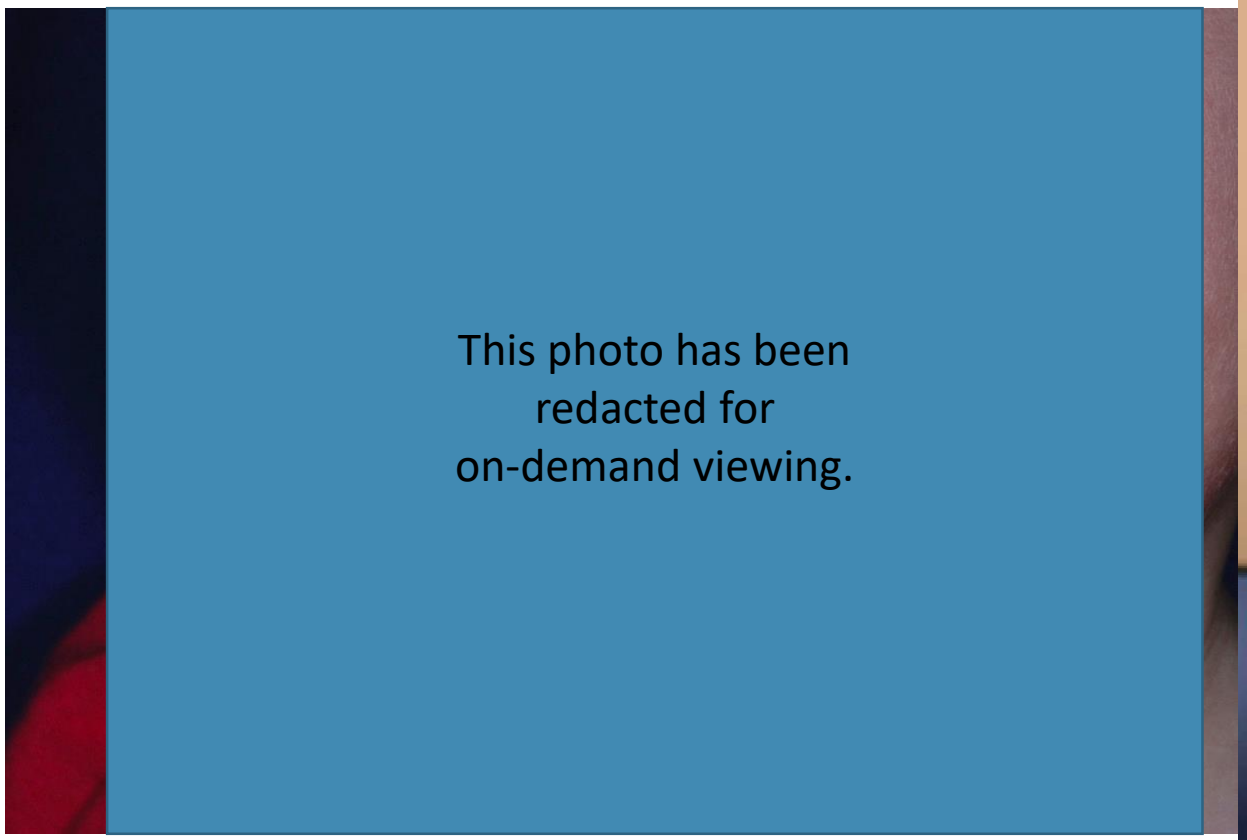
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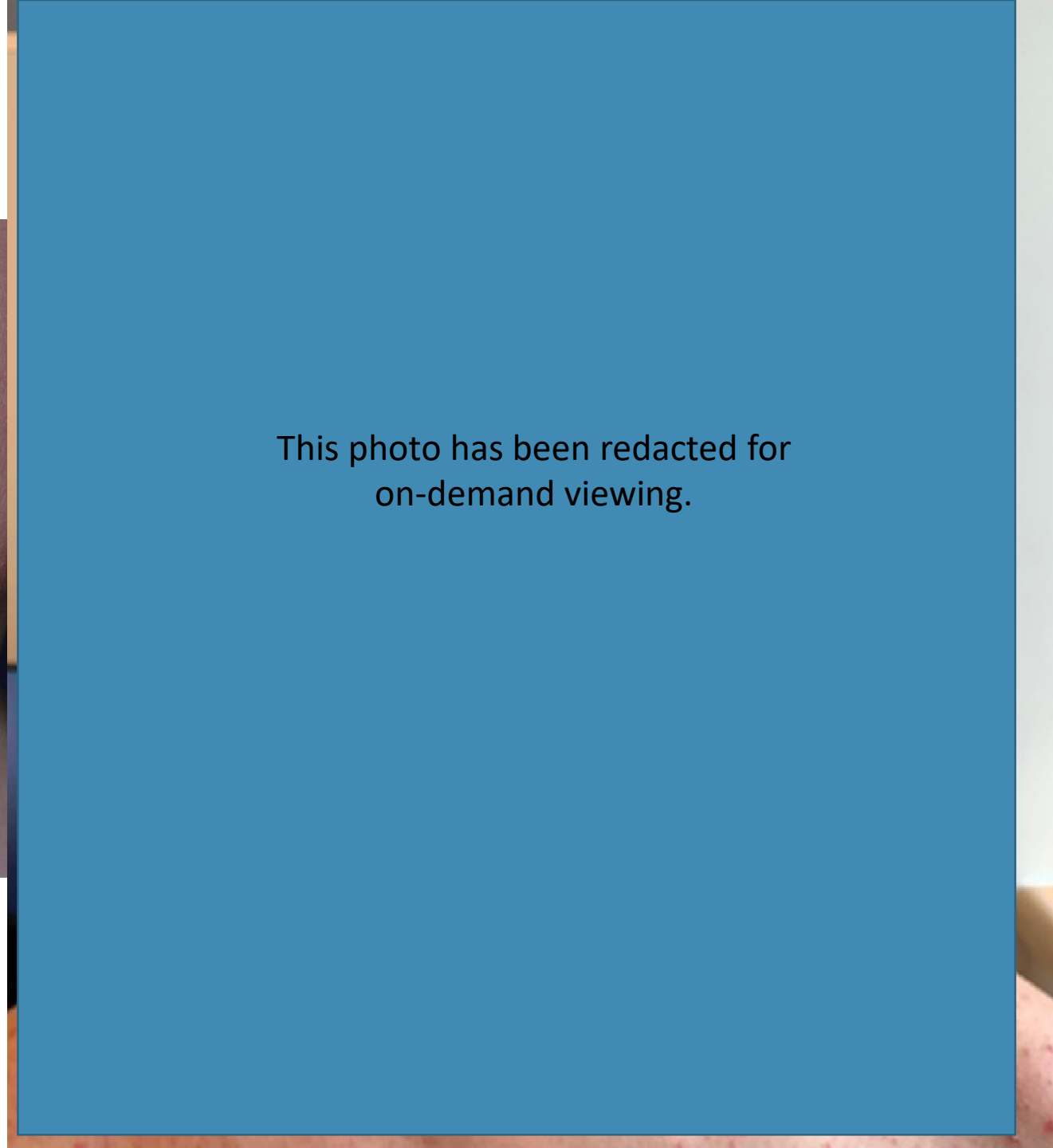

This photo has been redacted for
on-demand viewing.

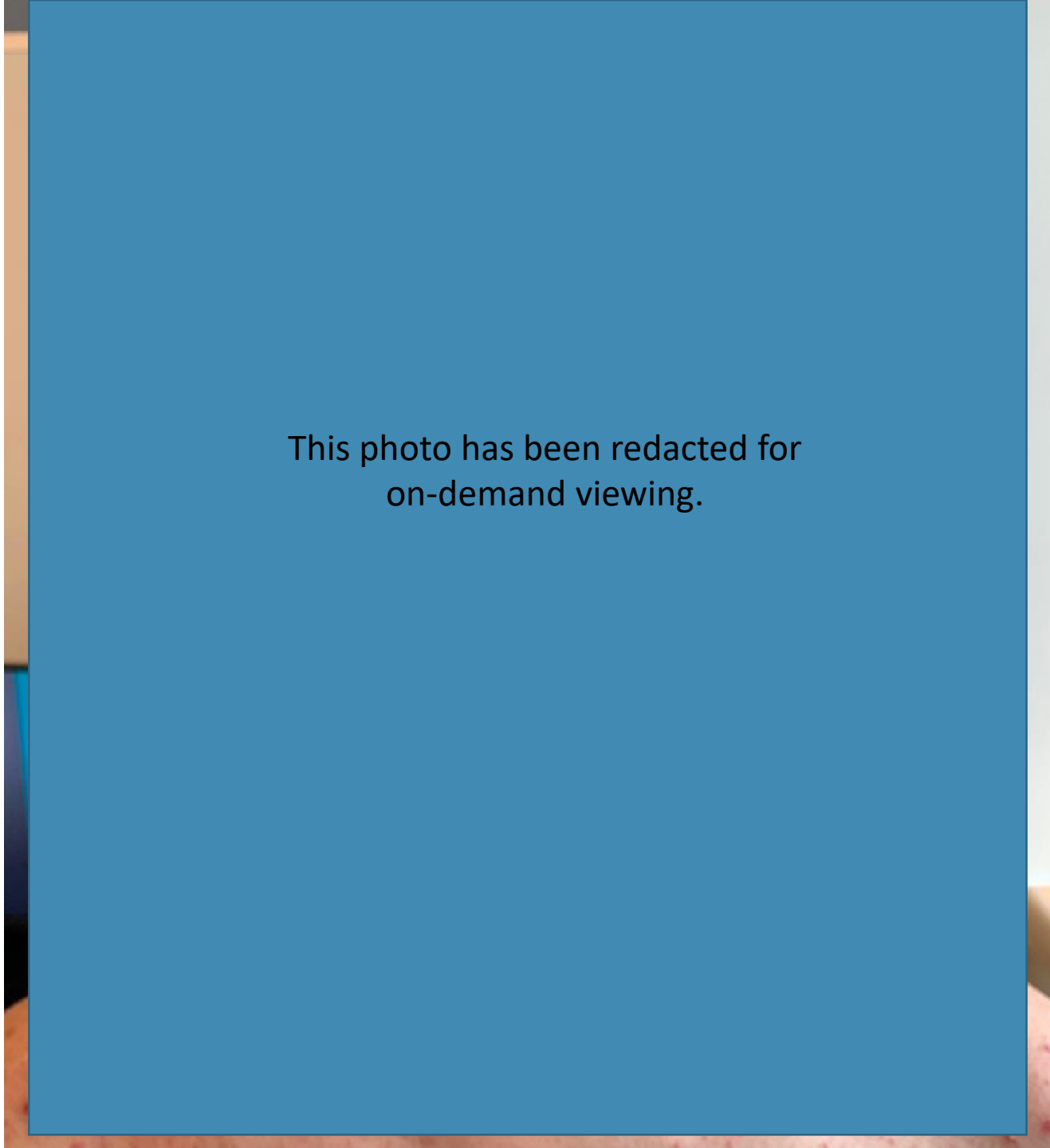
Acneiform drug reaction

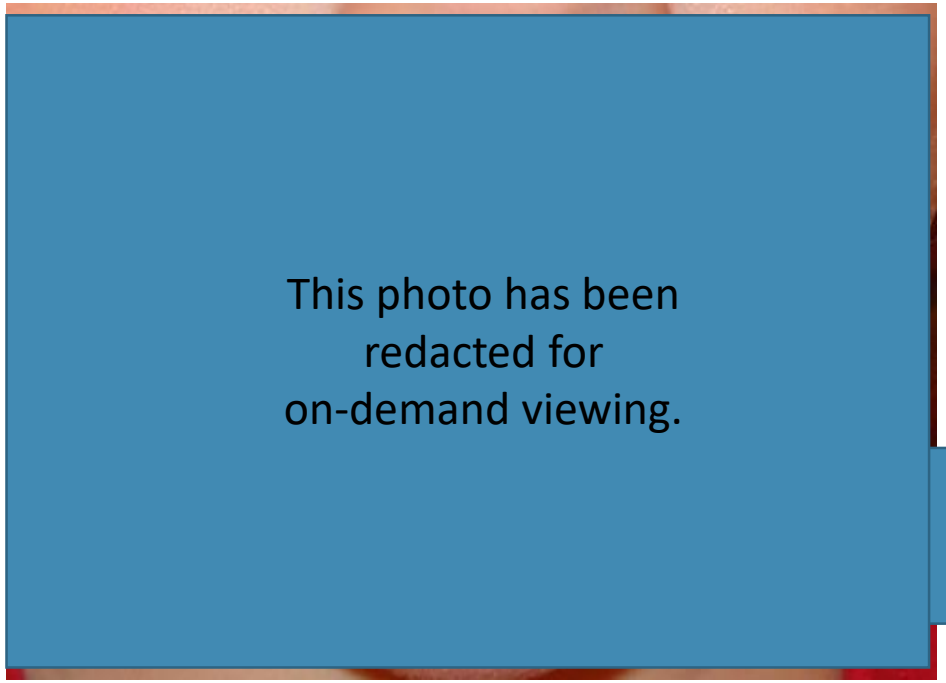
Clues:

- Papules, pustules (no comedones)
- Causative drug (MEKi, EGFRi)

Management:

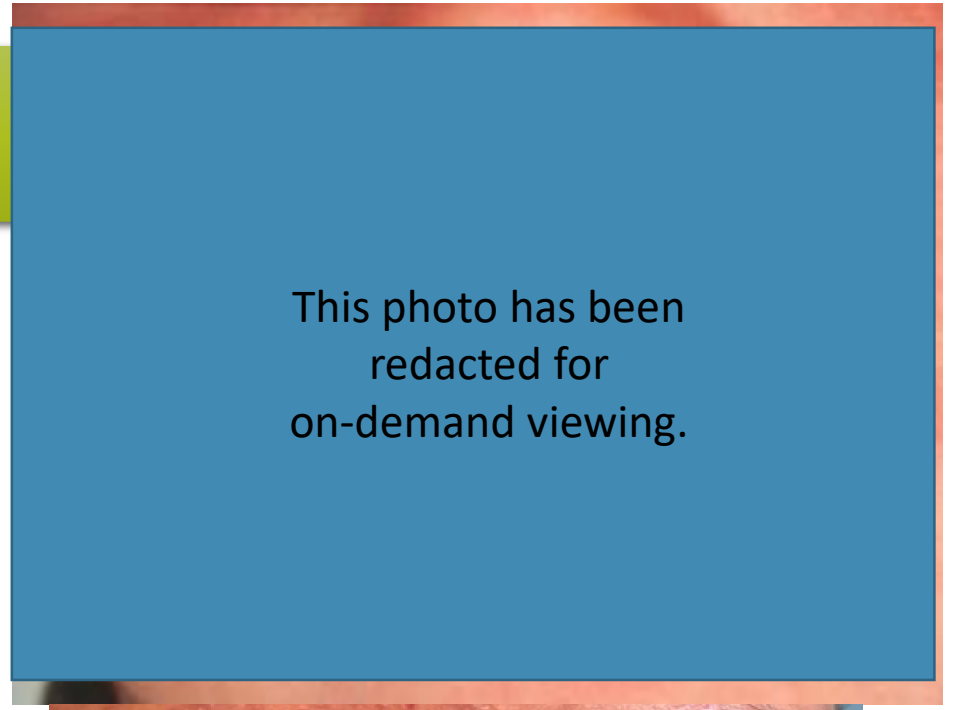
- Gentle skin care (preventative)
- Topical steroid + topical clindamycin
- +/- po doxycycline, low dose isotretinoin

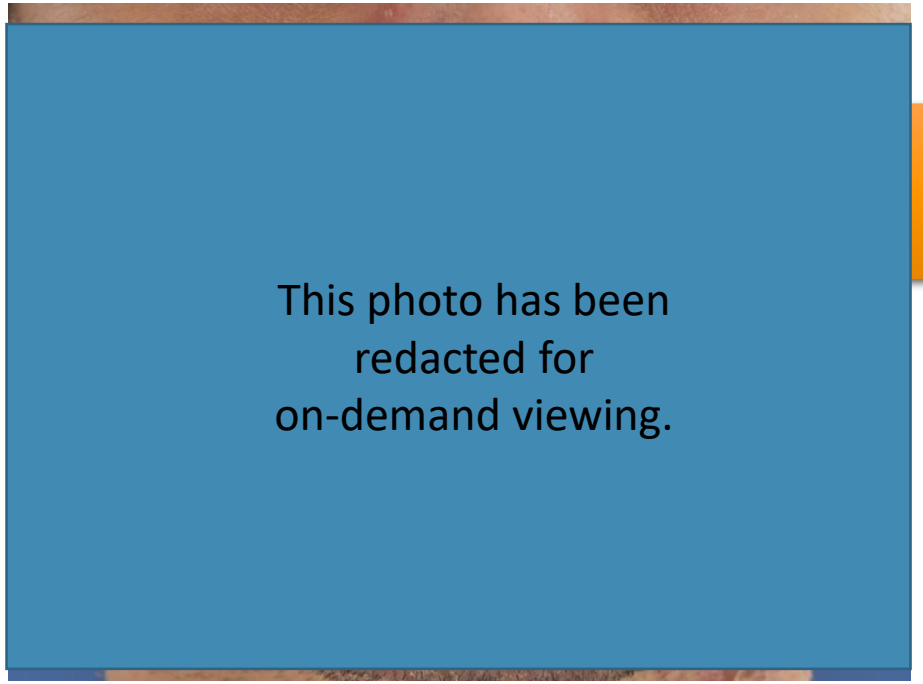




Perioral dermatitis

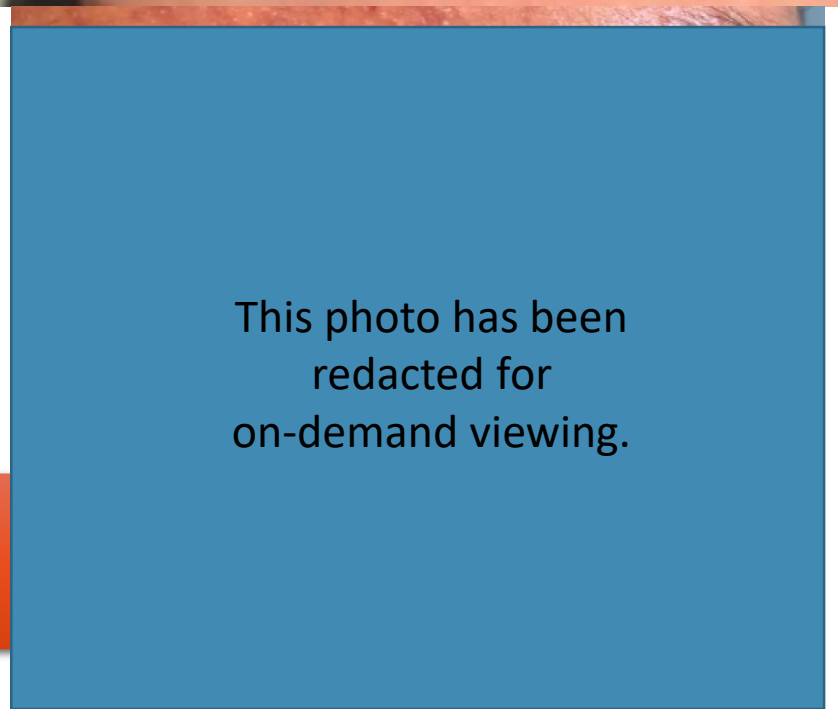
Lip licker's dermatitis



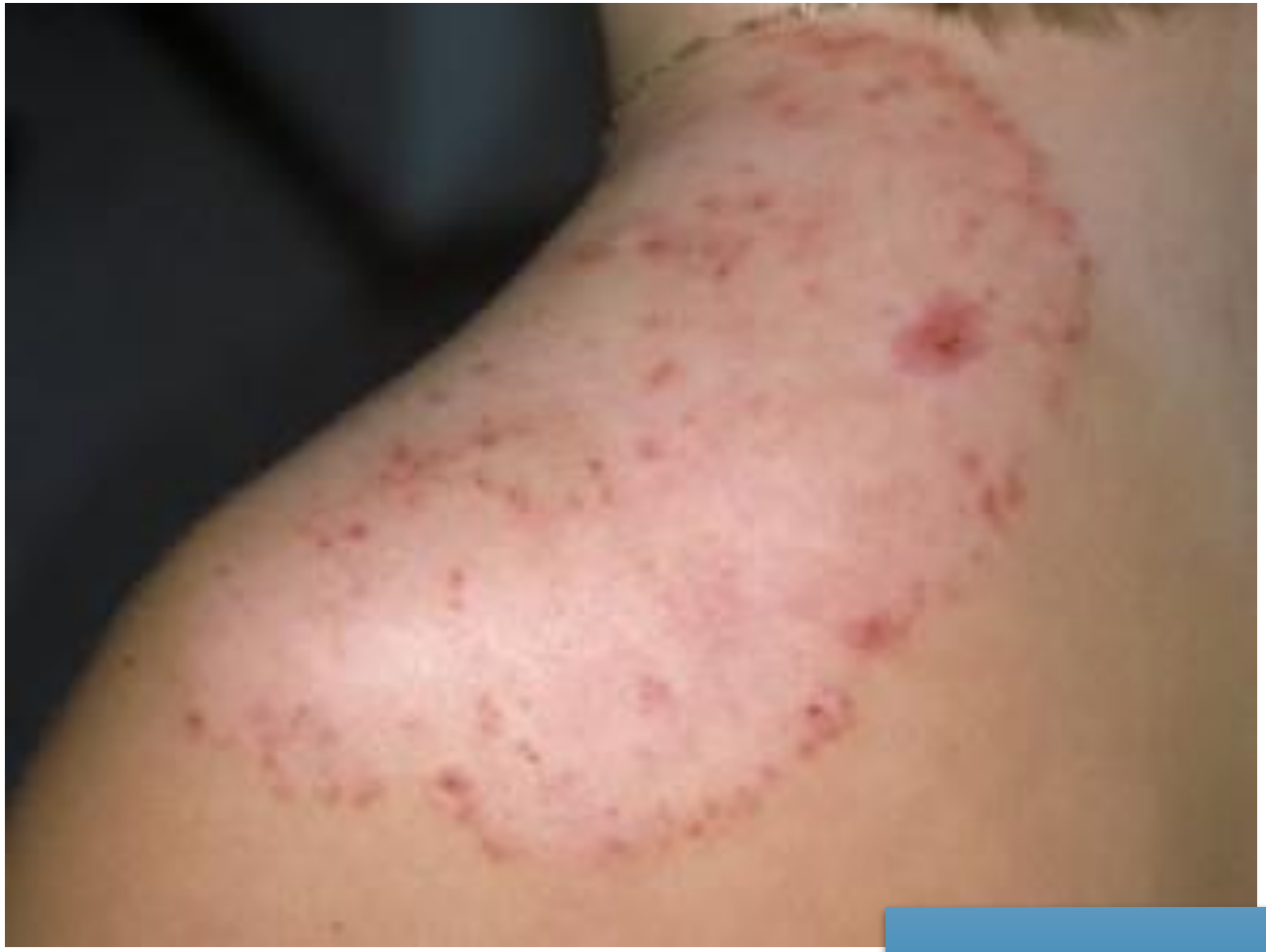


Seborrheic dermatitis

Acneiform drug reaction



Tinea Corporis



Due to dermatophytes

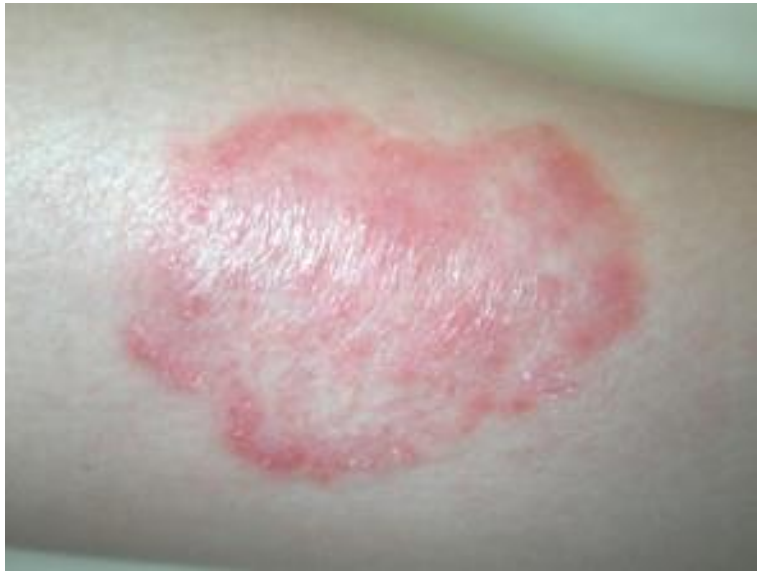
Spread via direct contact

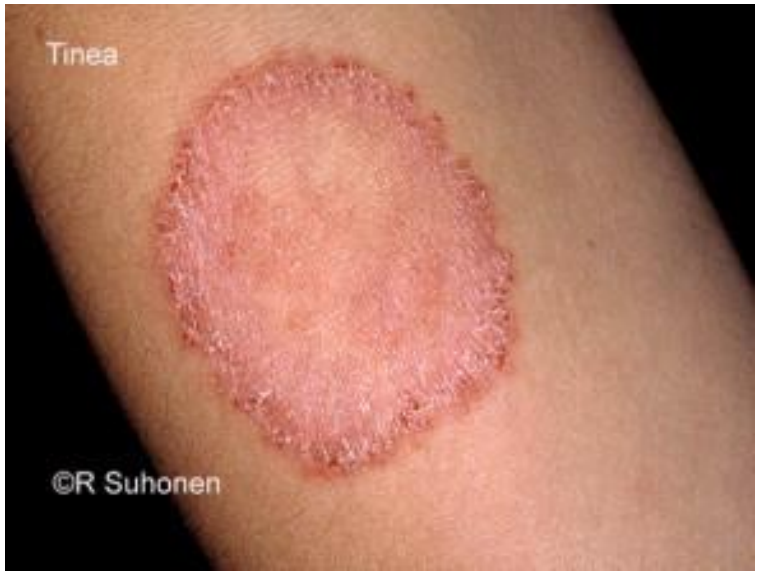
Ix: skin scraping for fungal culture (*black paper*)

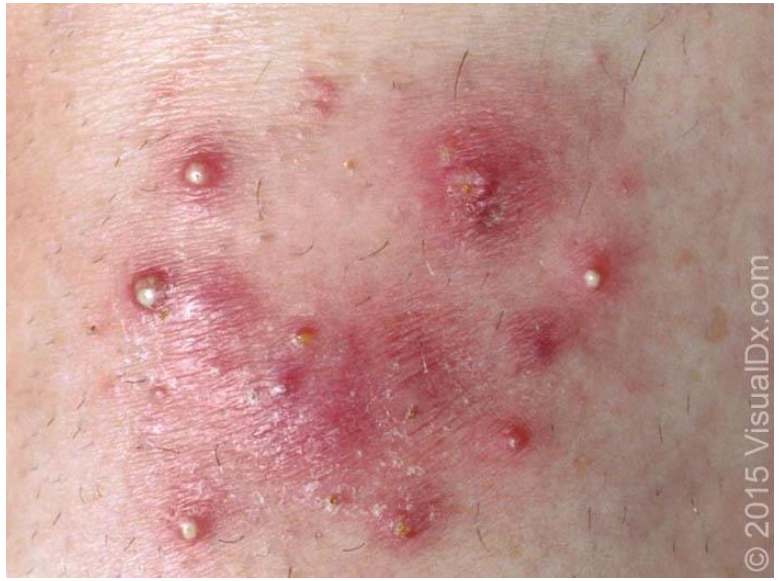
Rx: topical antifungal – i.e. terbinafine cream BID until clear

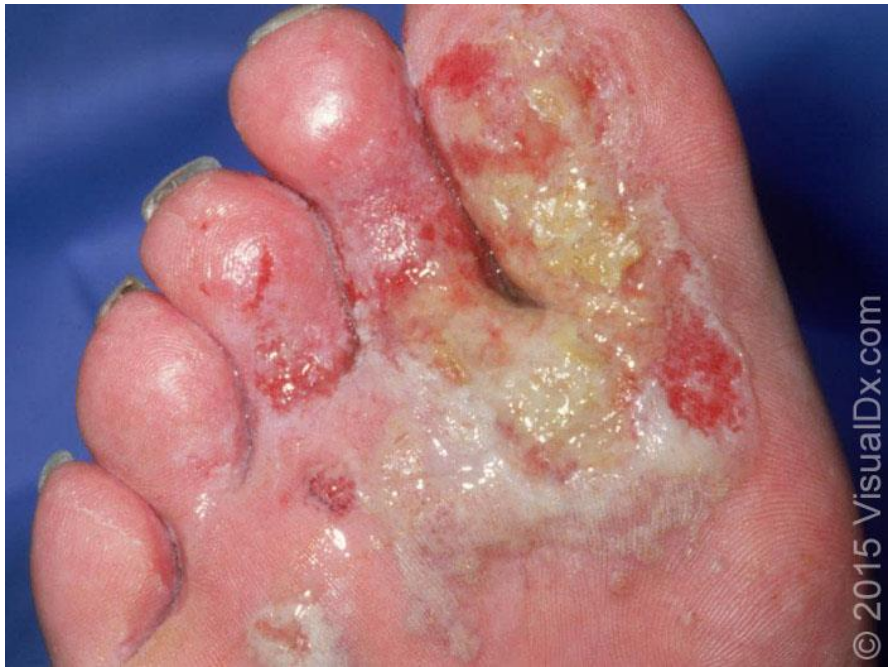
3. Common infections

Tinea Infections

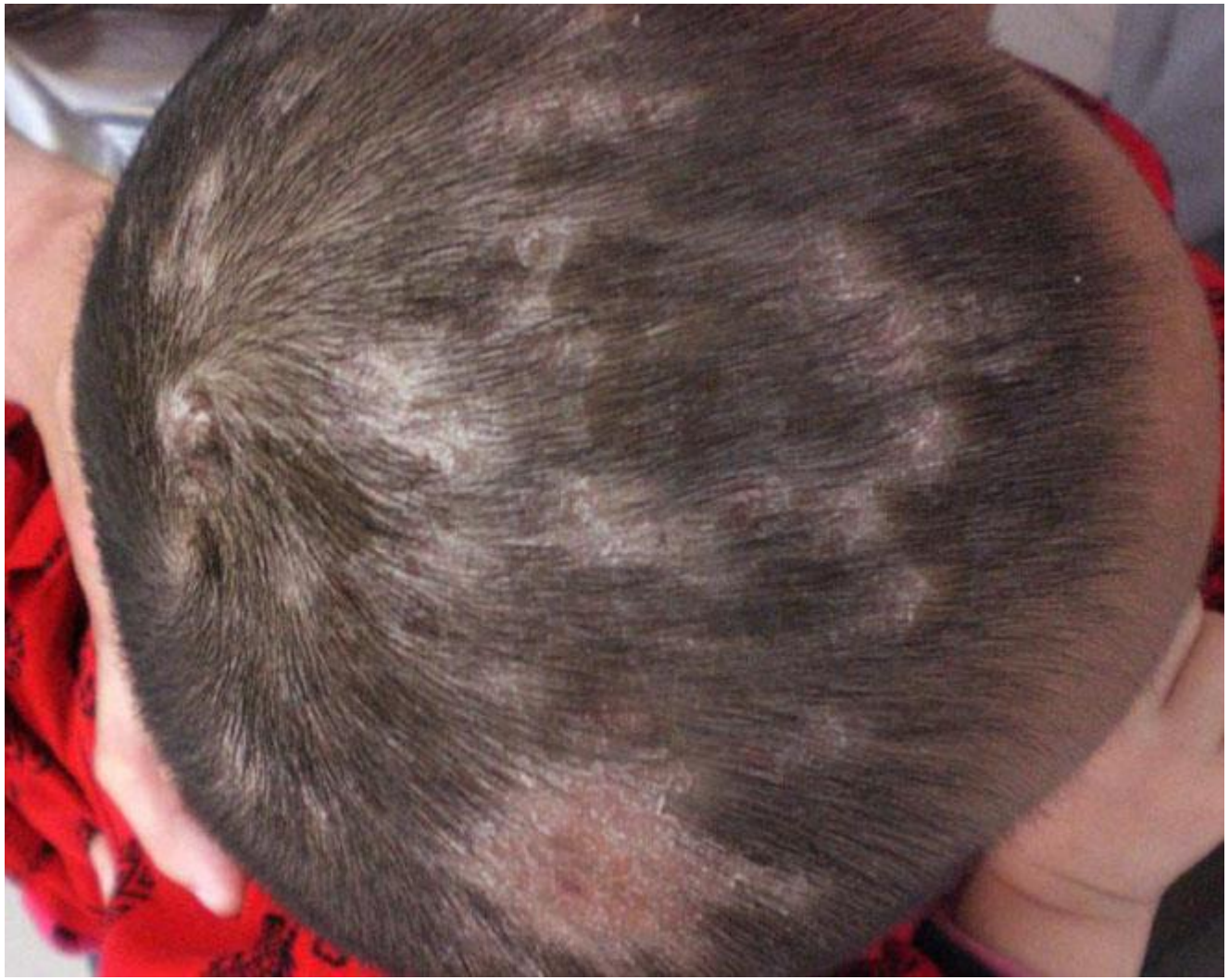








Tinea Infections

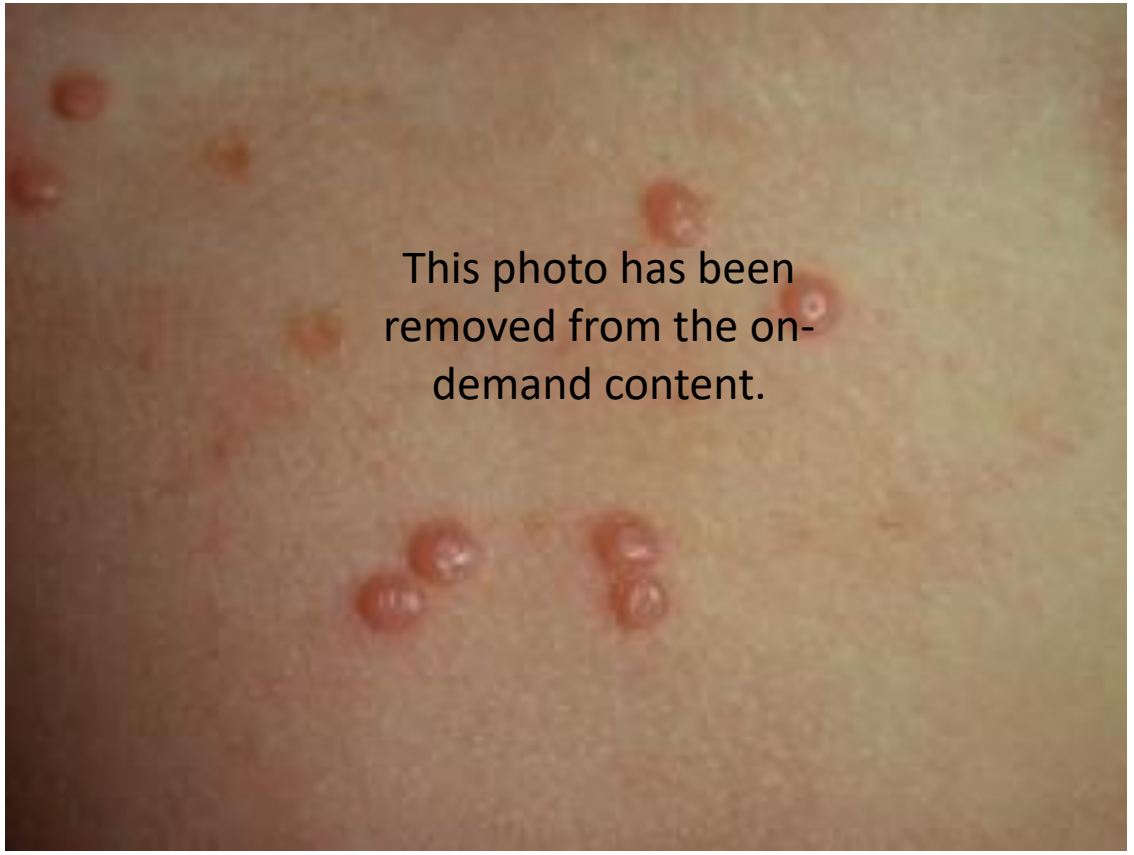


Ix: skin scraping for fungal culture (*black paper*)

Rx: **oral** terbinafine x 6wks (or more)

Antifungal shampoo

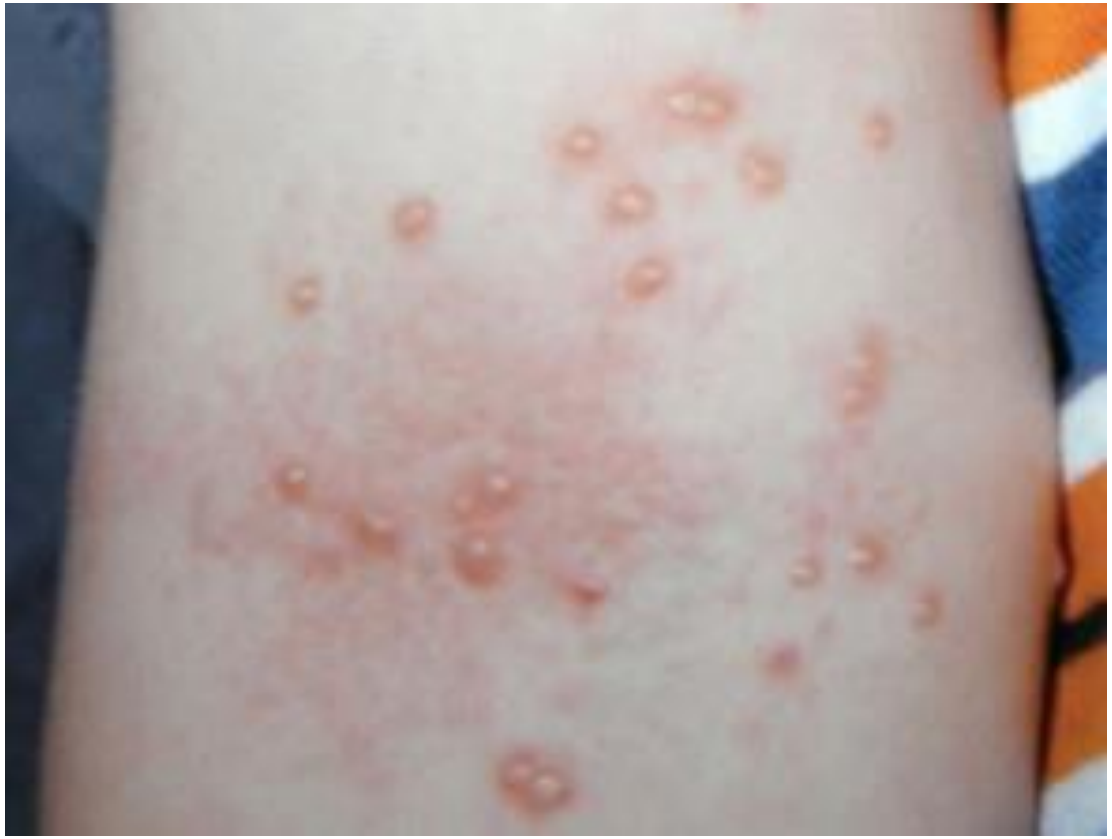
Molluscum Contagiosum



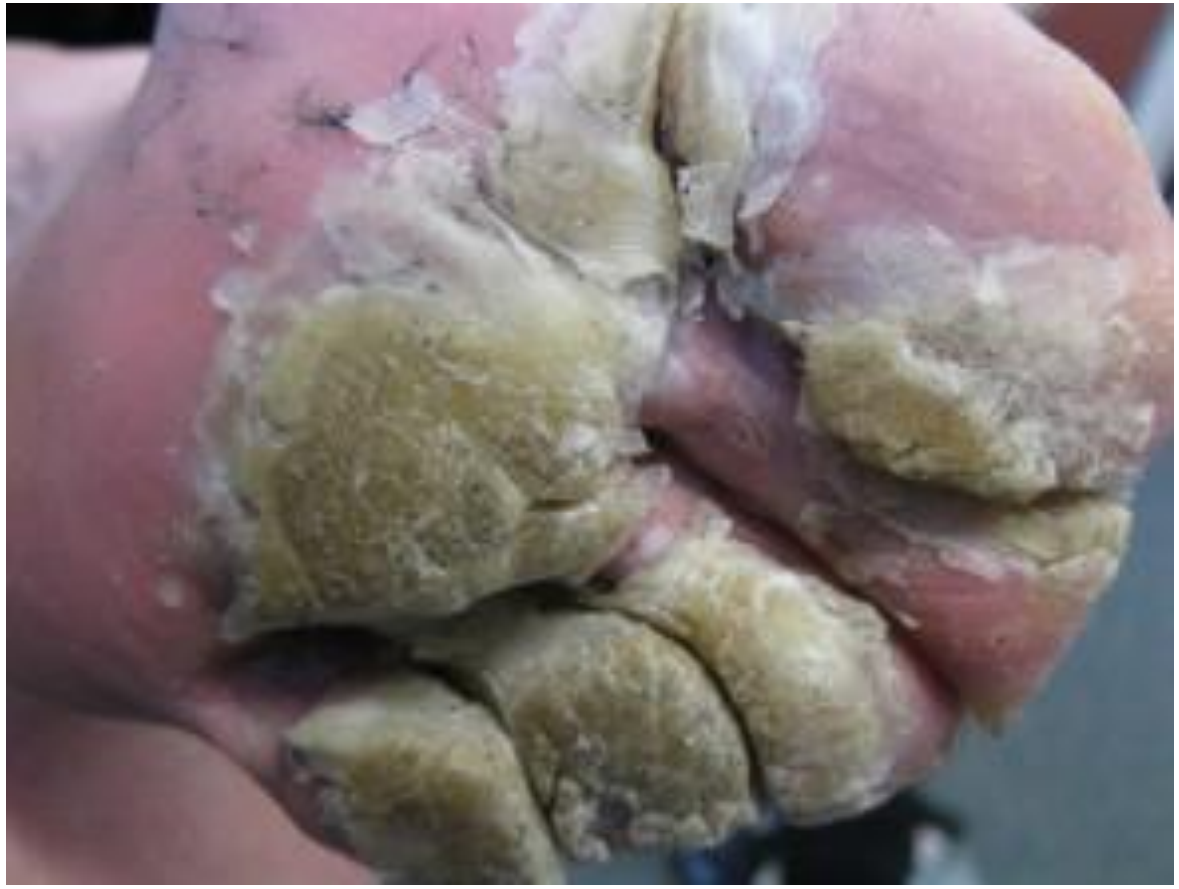
- DNA poxvirus
- Spread via contact
- Majority will self-resolve (months – years)

Molluscum

- Tx optional for immuno-competent
- Immunosuppressed: more widespread & persistent disease
- Caution with scarring / destructive measures



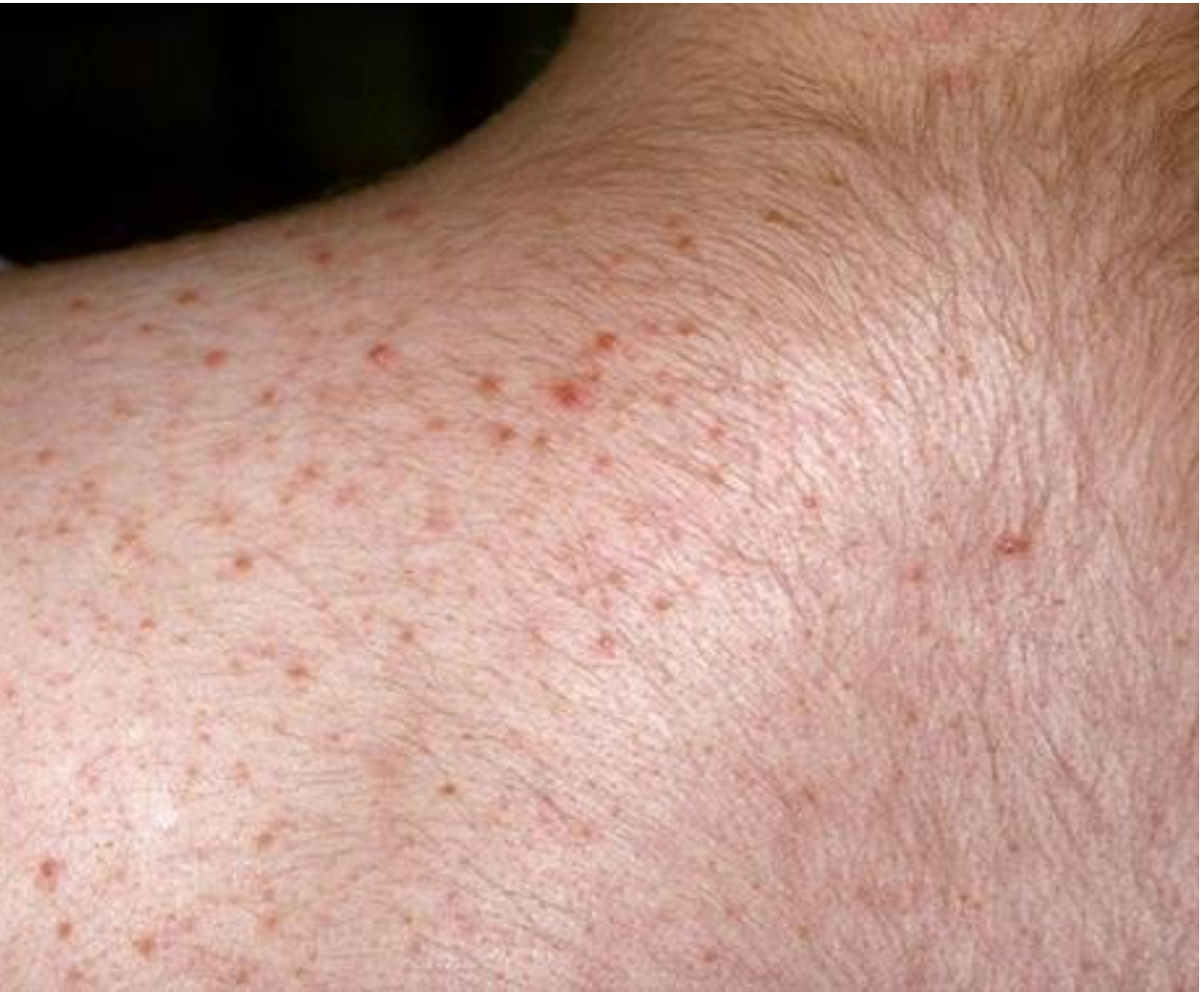
Warts



- Soak nightly
- Pare with emery board or pumice stone
- OTC salicylic acid under occlusion (Compound W, Soluver plus)

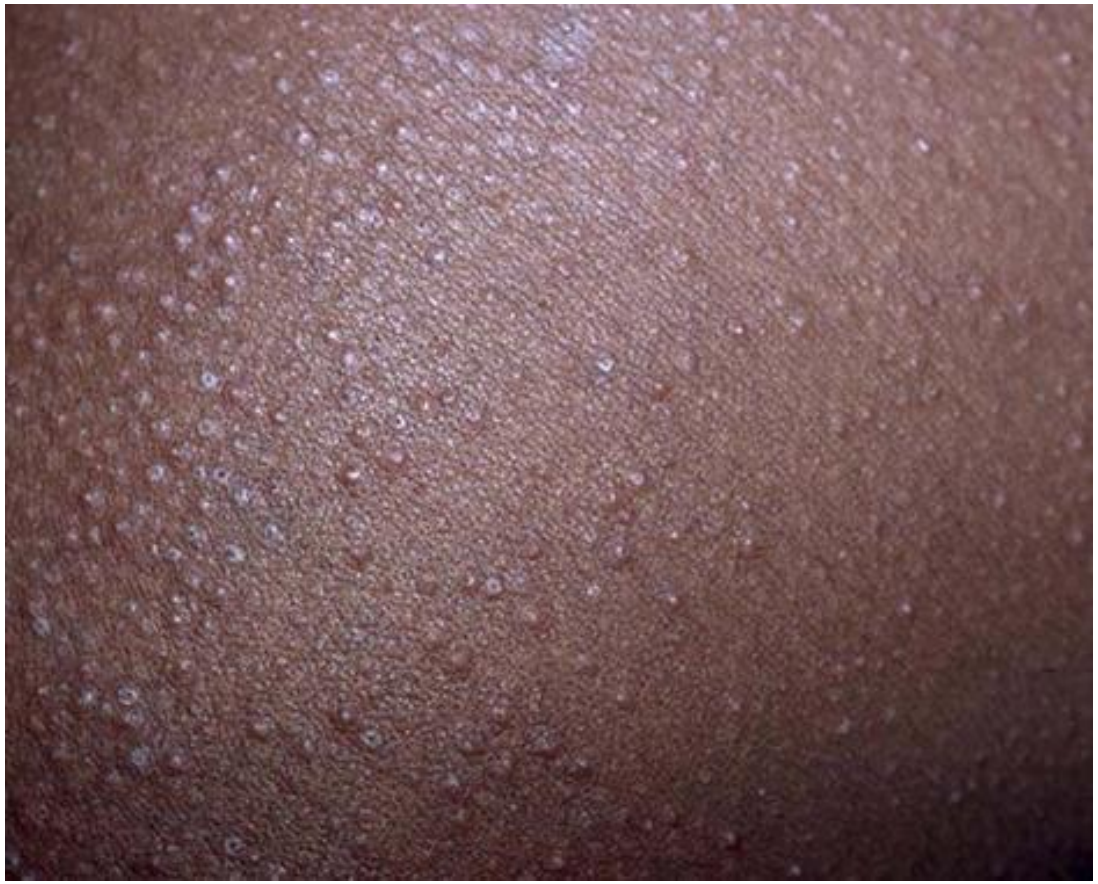
Refer to derm if persistent despite above x 3mo

Malassezia (pityrosporum) folliculitis

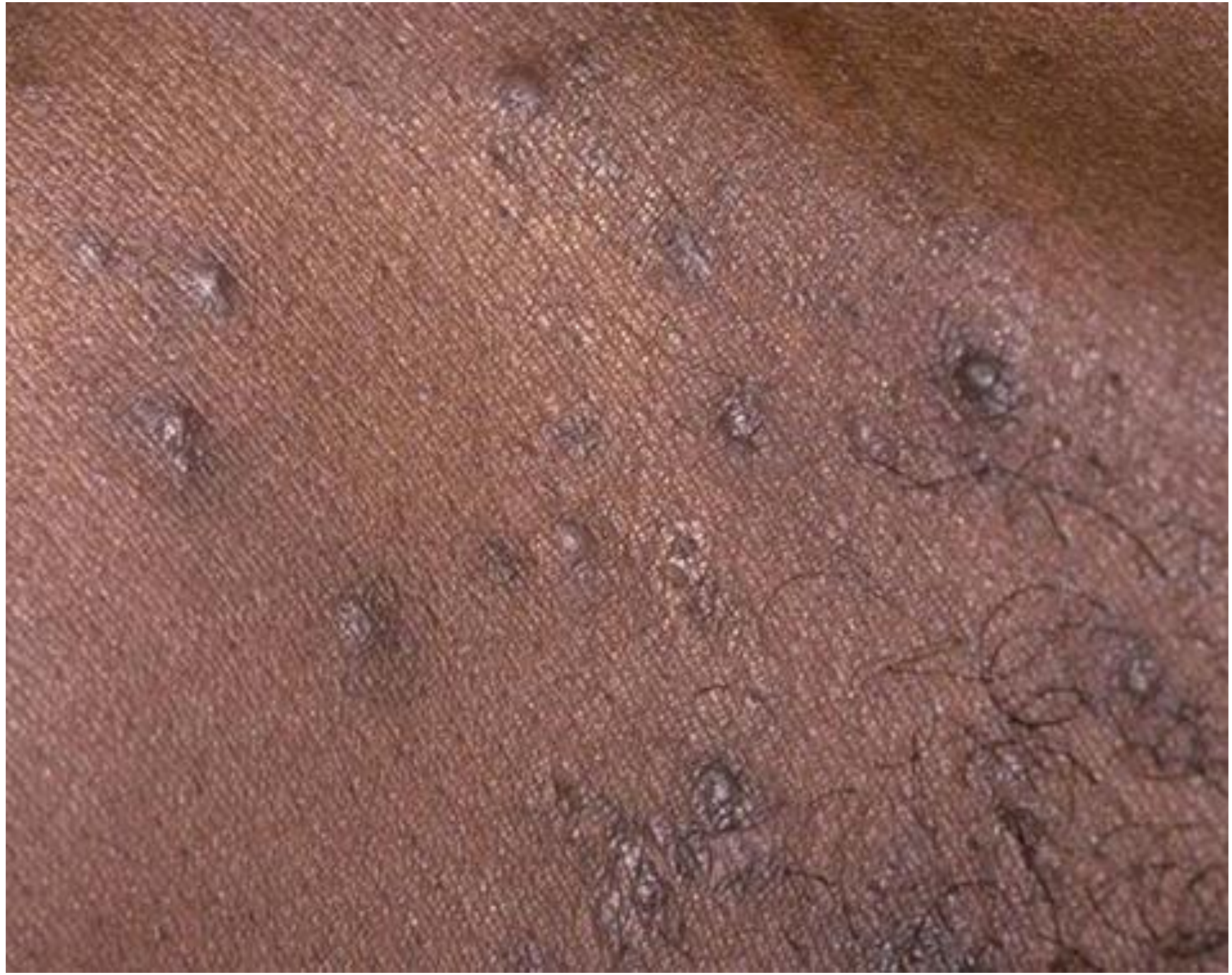


- Monomorphous, pruritic, follicular papules/pustules
- Chest & back
- *Malassezia* species present in normal skin flora
- RFs: males, teens, hot climate, immunosupp, abx / steroid use

Malassezia (pityrosporum) folliculitis



- Confirm diagnosis by deroofing pustule, sending for KOH/fungal culture
- Tx: topical or systemic azoles



Outline

Supportive and Preventive Skin Care Measures

1. Topical care for intact skin
2. Photoprotection
3. Skin surveillance

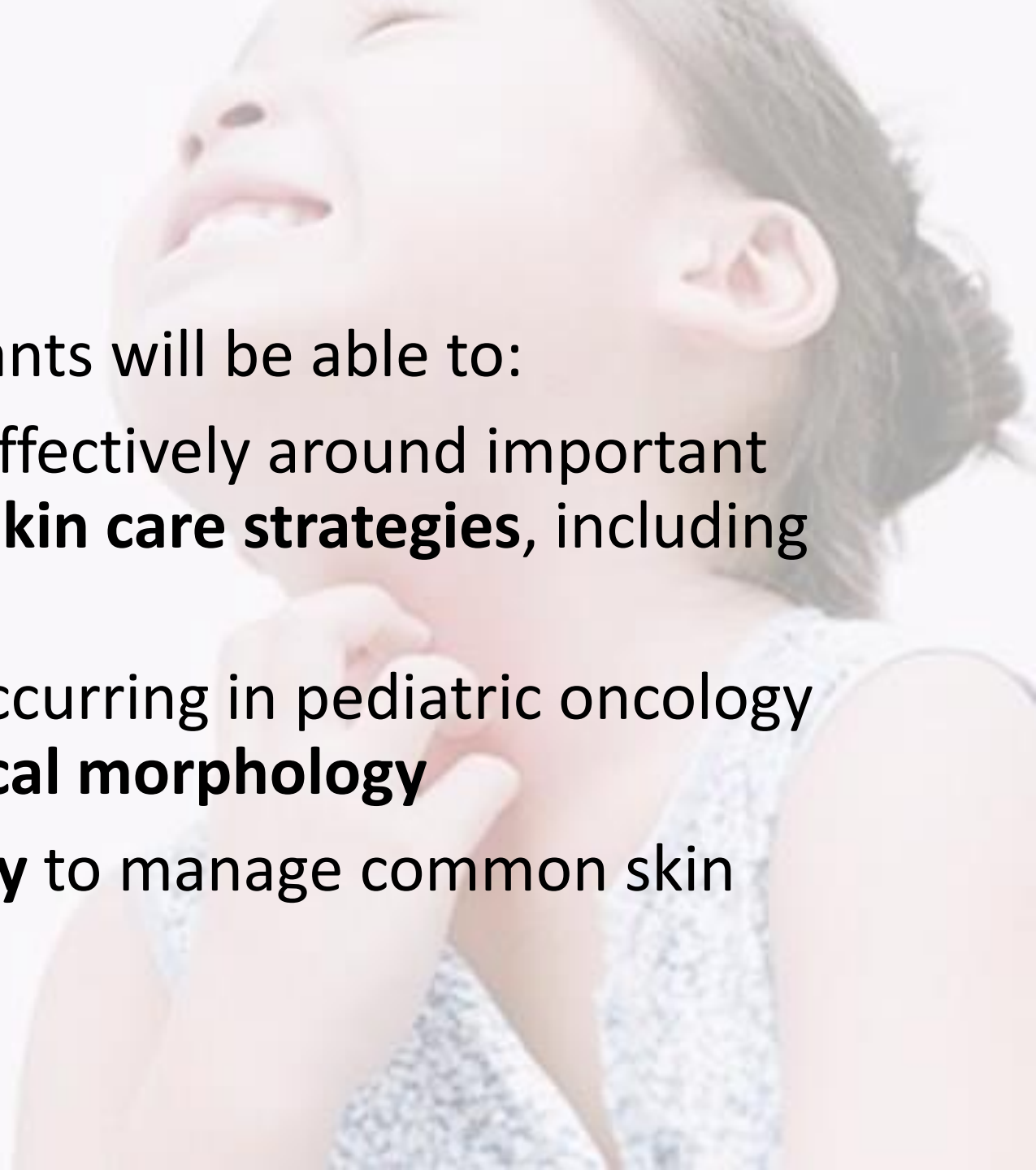
Management of Common Skin Rashes

1. Diaper dermatitis
2. Facial rashes
3. Common cutaneous infections

Objectives

By the end of this talk, participants will be able to:

1. **Counsel** oncology patients effectively around important **supportive and preventive skin care strategies**, including sun protection
2. **Diagnose** common rashes occurring in pediatric oncology patients based on their **typical morphology**
3. **Initiate** skin-directed **therapy** to manage common skin conditions



THANK YOU!

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