The Red Face

Basic Dermatology Curriculum

Last updated January 2015

Module Instructions

- The following module contains a number of blue, underlined terms which are hyperlinked to the dermatology glossary, an illustrated interactive guide to clinical dermatology and dermatopathology.
- We encourage the learner to read all the hyperlinked information.

Goals and Objectives

- The purpose of this module is to help medical students develop a clinical approach to the evaluation and initial management of patients presenting with facial redness.
- By completing this module, the learner will be able to:
  - Differentiate red rashes on the face
  - Recommend an initial treatment for causes of the red face
  - Choose a safe topical steroid for the face
  - Determine when to refer to a patient with facial redness to the dermatologist

Red facial rash: differential diagnosis

- Common causes:
  - Seborrhea
  - Eczema
  - Rosacea
  - Lupus
  - and others
- Patients that are systemically ill and/or eruptions that are rapidly progressing should be referred to dermatology

The **morphology and distribution are important clues** to determine the diagnosis
(see table on next slide, try printing it and using it on the following cases)

Differential Diagnosis of Red Facial Rashes

	Morphology	Symptoms	Distribution	Treatment
Seborrhea	Pink-red Greasy white-yellow scale	Often asymptomatic	Scalp, brows, nasal crease, in and behind ears, can involve chest, axilla, areas of facial hair	Topical steroid Topical calcineurin inhibitor Topical antifungal
Eczema	Varies depending on chronicity, acute = bullous, chronic = pink lichenified	Itchy, dry, burning	Variable depending on type, Allergic = areas of allergen exposure Atopic = spares nose/central face	Topical steroid Topical calcineurin inhibitor
Rosacea	Erythema (patches) telangiectasia, +-pink papules and pustules some with rhinophyma	Some have dry, irritated, burning skin Worsened by alcohol, hot or spicy foods, exercise, etc.	Concavities of face: forehead, cheeks, nose, chin also eyes	Topical antibiotics Topical calcineurin inhibitor Oral doxycyline
Acne	Comedones, pink papules, pustules	Social impairment pain, itching	Face, sparing eyelids Shoulders, chest and back	Topical antibiotics topical retinoids Oral antibiotics
Lupus	Pink-Red-Brown, Annular Variable scale Variable Scarring	Tender, warm	Acute (malar): cheeks, without crossing nasolabial fold DLE: Sun-exposed areas and inside ear	Topical steroids Antimalarial
Tinea	Pink annular, patches and plaques with advancing scale	Asymptomatic or itchy	Anywhere with stratified squamous epithelium	Topical or oral antifungal

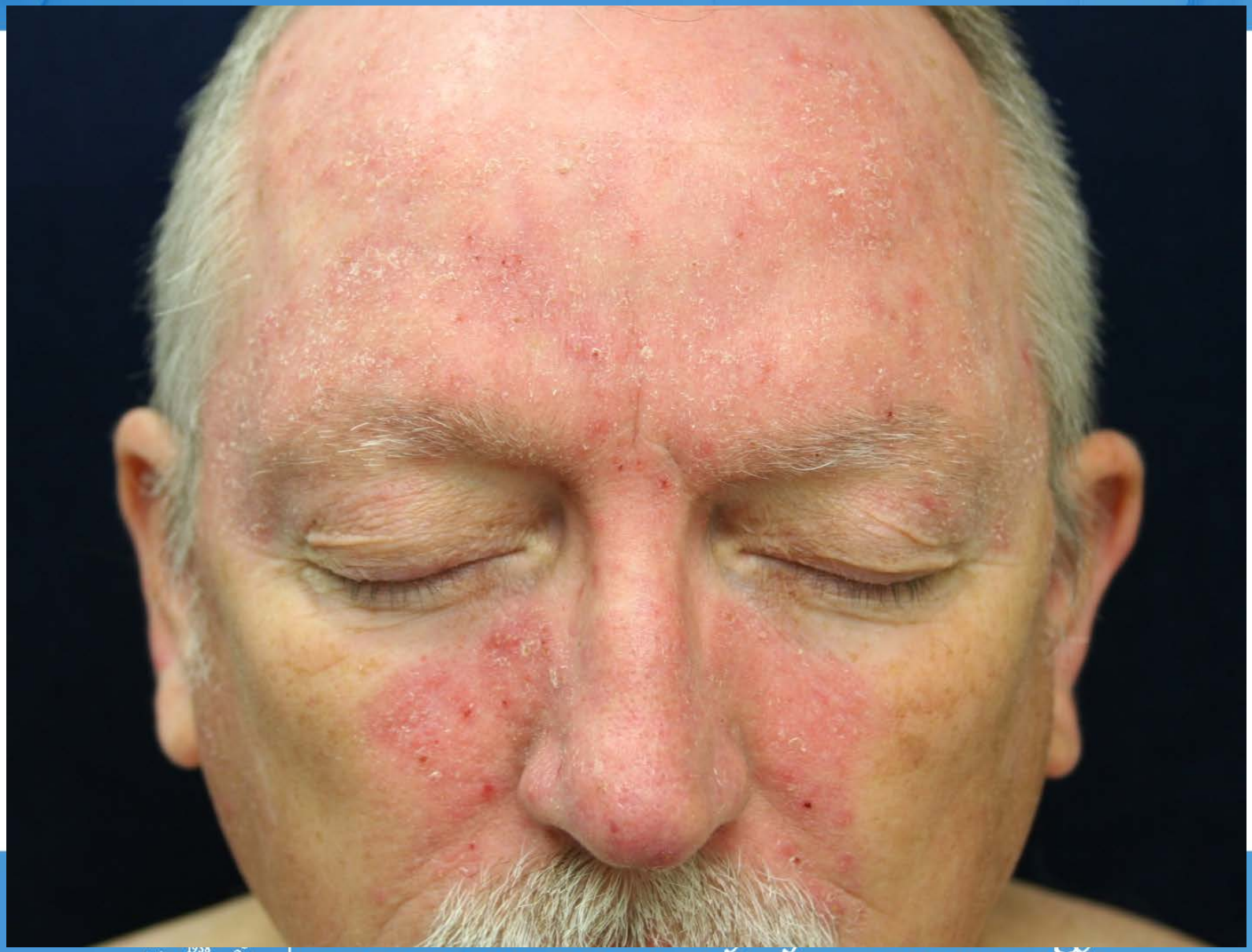
Case One

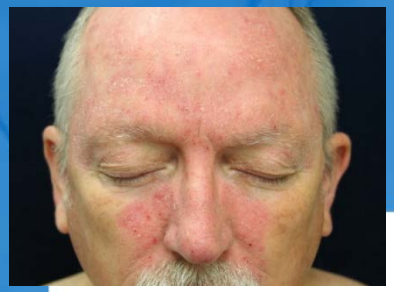
Larry Owens

Case One: History

- HPI: Mr. Larry Owens is a 56-year-old man with several years of redness and scaling on his forehead, eyebrows, and central face. He does not complain of itching but is embarrassed by his appearance. It has not gotten better with moisturizers. It does not worsen with heat, exercise, hot foods or drinks, or alcohol.
- PMH: no major illnesses or hospitalizations
- Allergies: none
- Medications: ibuprofen as needed for headaches
- Family history: noncontributory
- Social history: office manager
- ROS: negative

Case One: Skin Exam

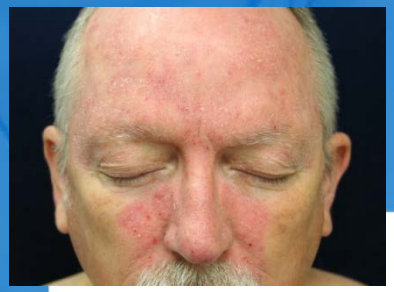




Case One, Question 1

How would you describe the rash on Mr. Owens's face?

a. Rough erythematous macules
b. Pink papules and pustules
c. Thin scaling pink plaques
d. Vesicles and crust

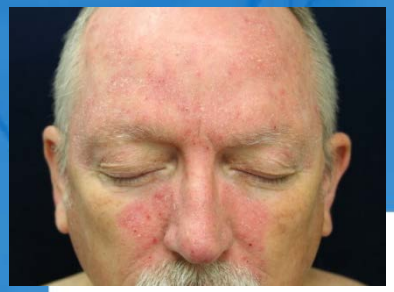


Case One, Question 1

Answer: c

How would you describe the rash on Mr. Owens's face?

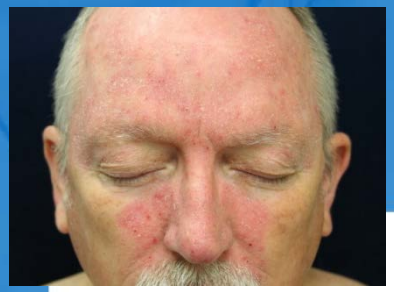
a. Rough erythematous macules
b. Pink apules and pustules
c. Thin scaling pink plaques
d. Vesicles and crust



Case One, Question 2

What is the most likely diagnosis for Mr. Owens?

a. Actinic keratoses
b. Allergic contact dermatitis
c. Atopic dermatitis
d. Rosacea
e. Seborrheic dermatitis



Case One, Question 2

Answer: e

What is the most likely diagnosis for Mr. Owens?

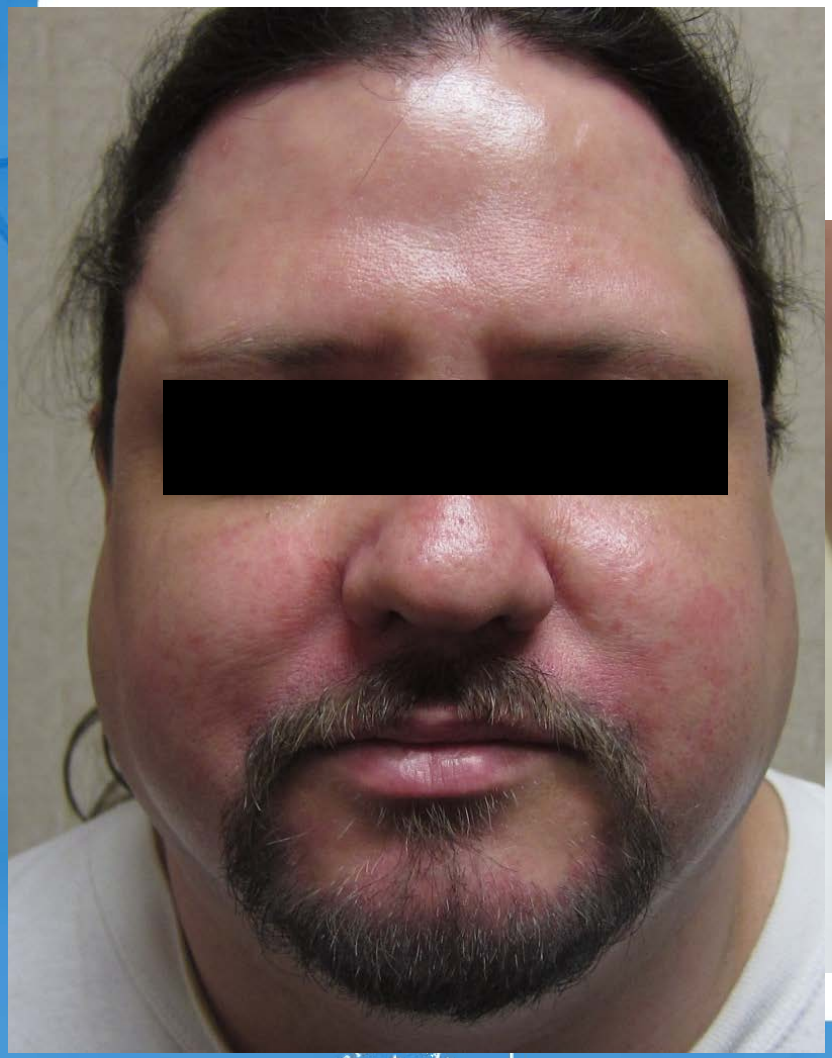
a. Actinic keratoses (scale in AK is keratotic, not greasy)
b. Allergic contact dermatitis (he does not itch)
c. Atopic dermatitis (wrong age; no history)
d. Rosacea (no history)
e. Seborrheic dermatitis

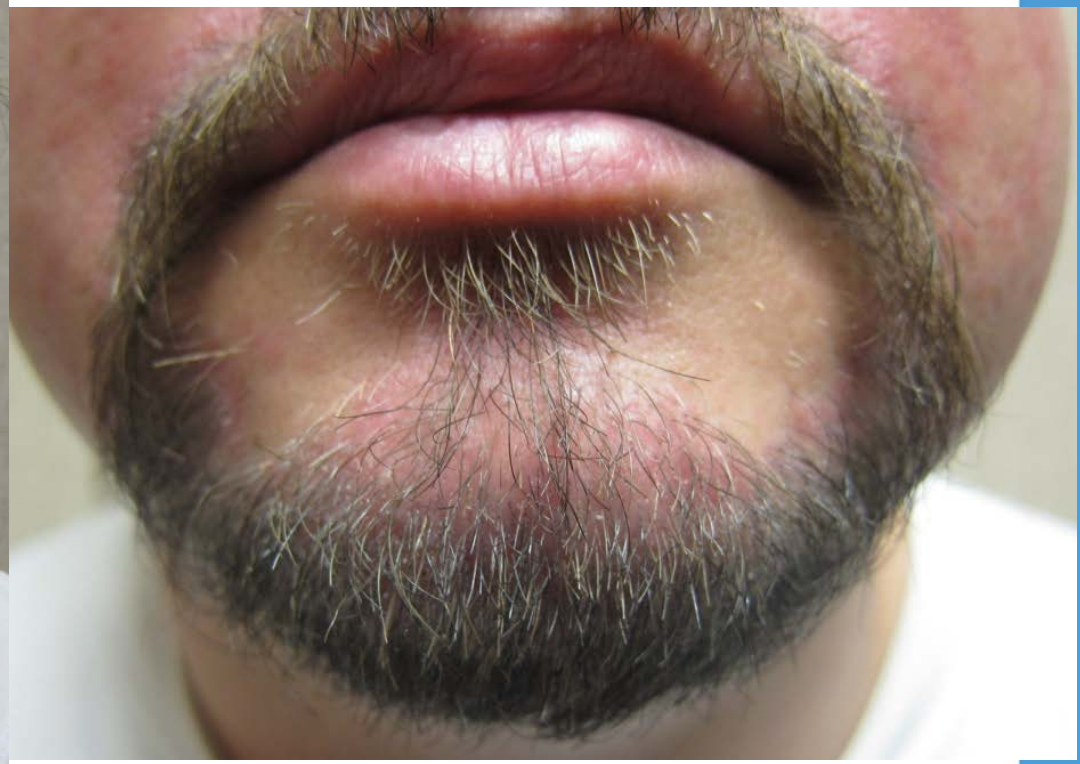
Seborrheic dermatitis

- Seborrheic dermatitis is a very common inflammatory reaction to the *Malassezia* (*Pityrosporum ovale)* yeast that thrives on seborrheic (oil-producing) skin
- It presents as erythematous scaling patches on the scalp, hairline, eyebrows, eyelids, central face and nasolabial folds, or external auditory canals
- In patients with darker skin it can be hypopigmented rather than erythematous
- It can also affect the central chest and axillary folds
- Seborrheic dermatitis is more common and severe in patients with HIV or neurologic disease (e.g. Parkinson's disease or stroke)

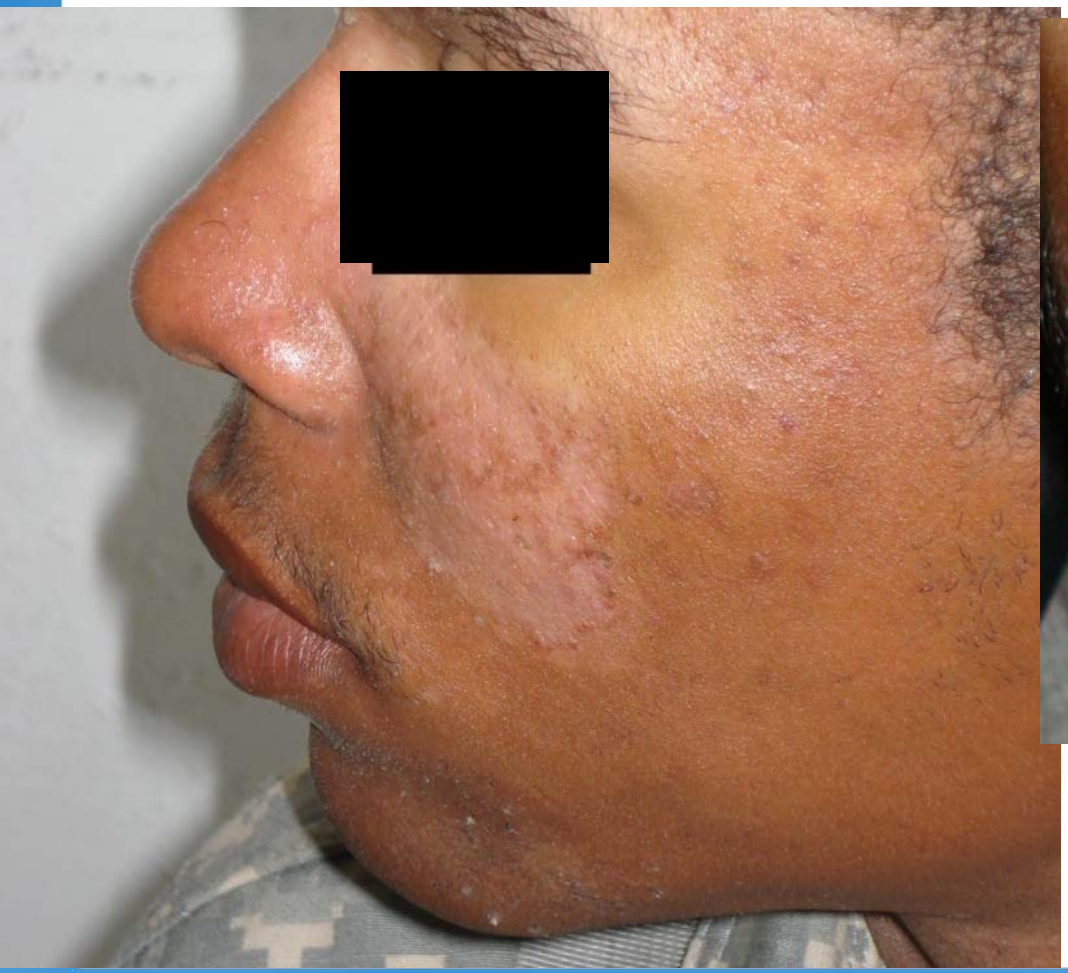
Here are some examples of seborrheic dermatitis

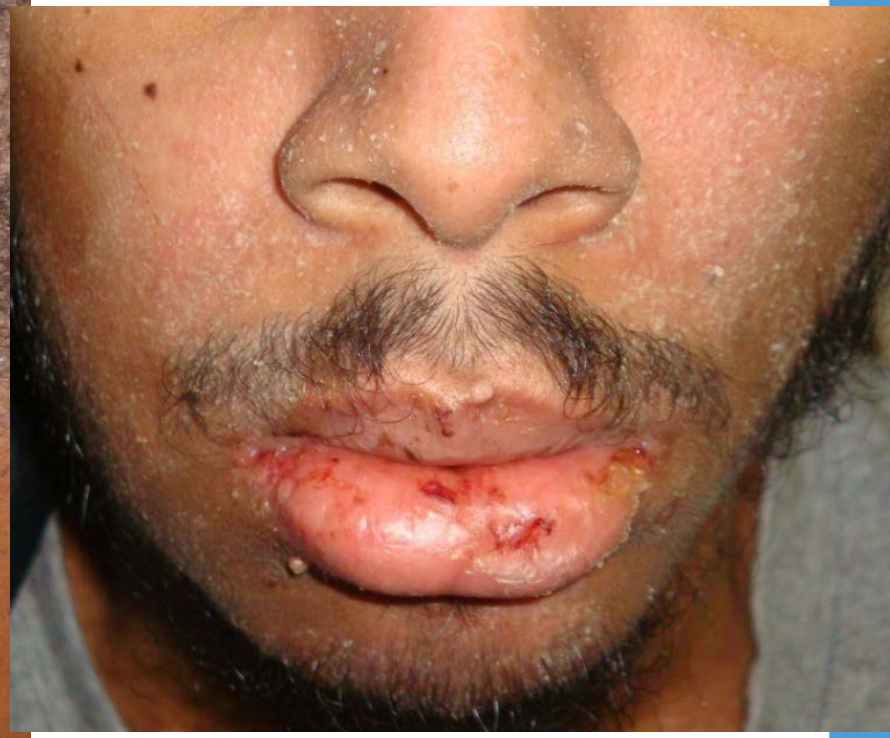
Seborrheic dermatitis





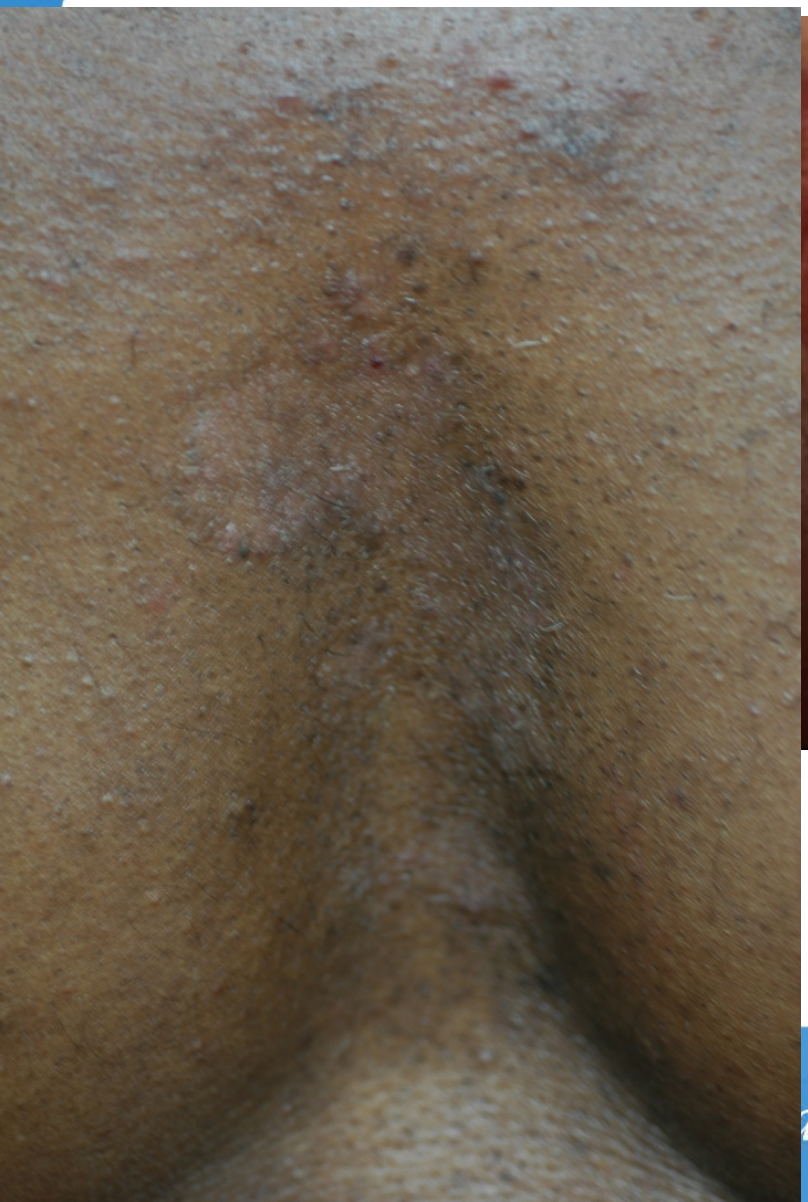
Seborrheic dermatitis

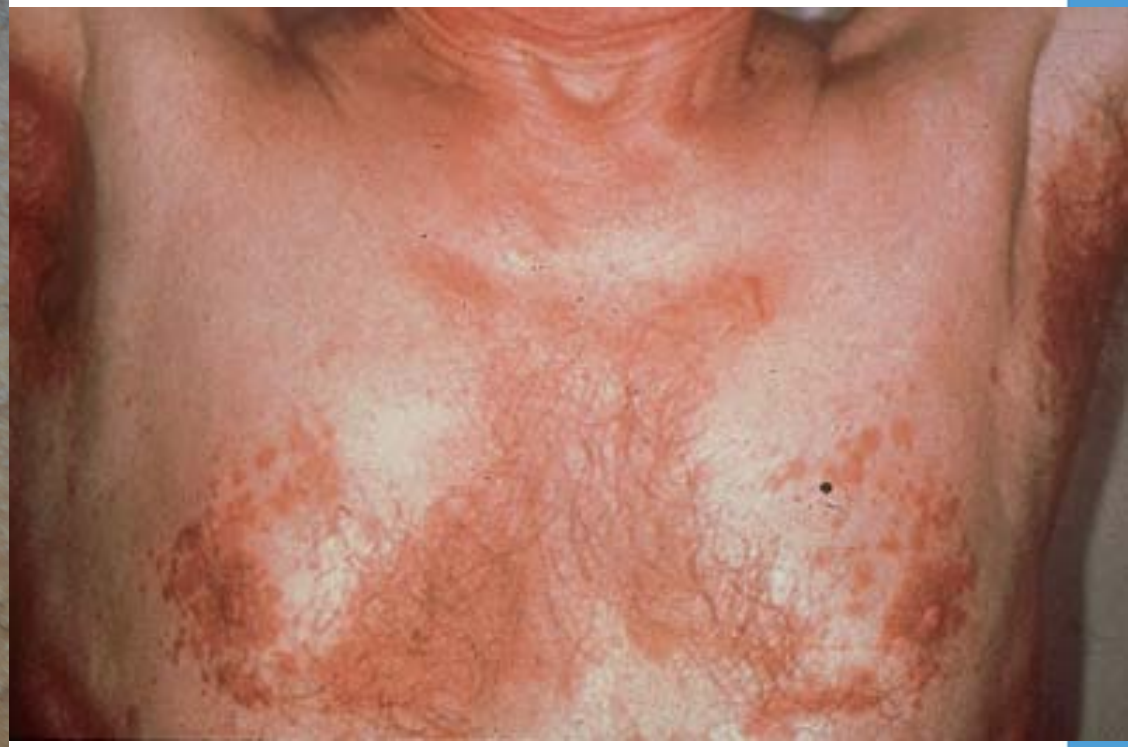




Often hypopigmented in darker skin types

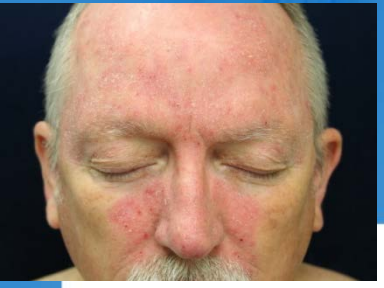
Seborrheic dermatitis





Favors central chest
May be hypopigmented or erythematous

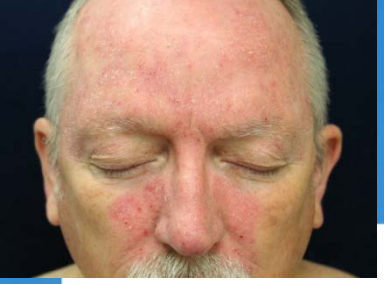
an Academy of Dermatology



Case One, Question 3

Which two of the following would be an appropriate treatment for Mr. Owens?

a. Clobetasol proprionate cream
b. Desonide cream
c. Erythromycin ointment
d. Ketoconazole cream
e. 5-fluorouracil cream



Case One, Question 3

Answer: b or d

Which two of the following would be an appropriate treatment for Mr. Owens?

a. Clobetasol proprionate cream (too potent)

b. Desonide cream

c. Erythromycin ointment (this is not bacterial)

d. Ketoconazole cream

e. 5-fluorouracil cream (for actinic keratoses)

Seborrheic dermatitis treatment

- Low-potency topical steroids (e.g. desonide) are safe to use for flares on the face
  - Use twice daily for 1-2 weeks for flares
  - Can also use topical ketoconazole or ciclopirox, or topical pimecrolimus, in the same manner
- Antidandruff shampoo for the scalp, chest
  - Ketoconazole (Nizoral), selenium sulfide, zinc pyrithione shampoos
  - Lather, leave on 10 minutes, rinse; repeat 3-5x/week
- Refer patients who fail these therapies

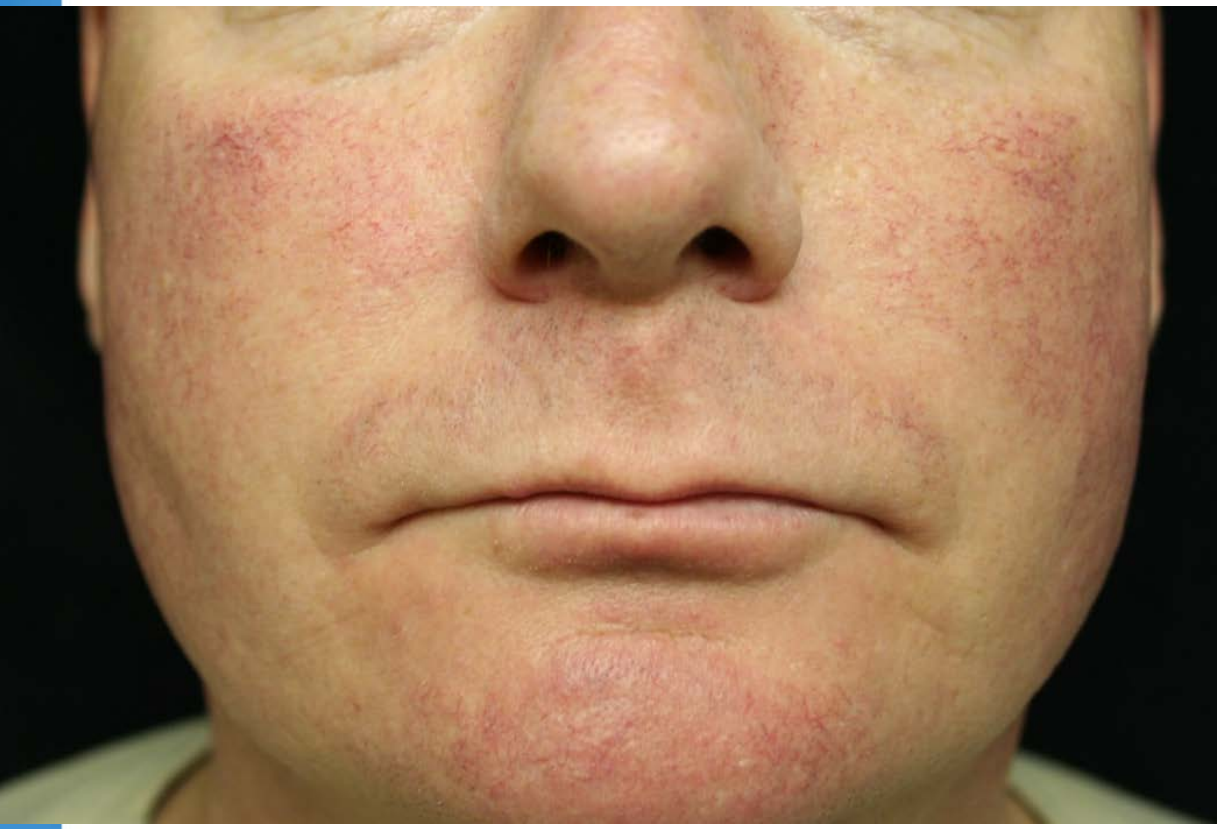
Case Two

Joshua Meffert

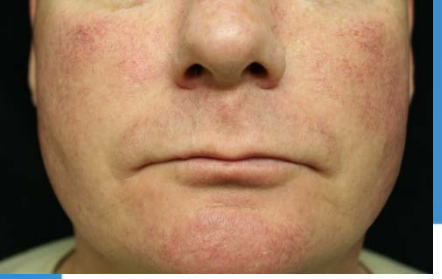
Case Two: History

- HPI: Mr. Meffert is a 47-year-old man who presented to clinic with “red cheeks” for the last 3 years. He reports it is more noticeable with exercise or heat. He “gets really red in the face” when he exercises, gets embarrassed, or drinks red wine.
- PMH: no major illnesses or hospitalizations
- Allergies: none
- Medications: multivitamins
- Family history: noncontributory
- Social history: lives with wife
- ROS: negative

Case Two: Skin Exam



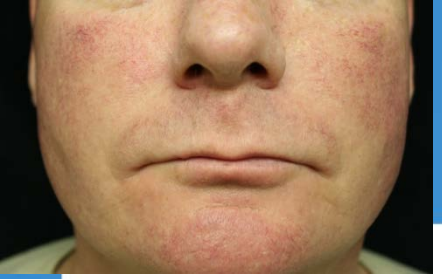
- Facial erythema on the nose and cheeks as well as a few small telangiectasias within the erythema.
- No comedones, papules, or pustules are noted.
- There is no scale.



Case Two, Question 1

What is the most likely diagnosis?

a. Allergic contact dermatitis
b. Atopic dermatitis
c. Rosacea
d. Seborrheic dermatitis
e. Systemic lupus erythematosus



Case Two, Question 1

Answer: c

What is the most likely diagnosis?

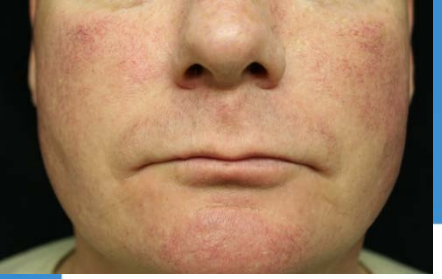
a. Allergic contact dermatitis (no itching)

b. Atopic dermatitis (no itching, ho past history, wrong age)

c. Rosacea

d. Seborrheic dermatitis (erythematous patches with greasy scale on the central face)

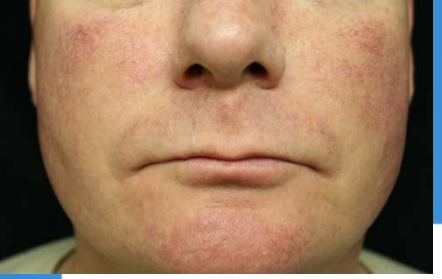
e. Systemic lupus erythematosus (negative review of systems; SLE is not triggered by alcohol)



Case Two, Question 2

Which of the following might worsen Mr. Meffert's rosacea?

a. Alcohol
b. Heat/hot beverages
c. Hot, spicy foods
d. Sunlight
e. All of the above



Case Two, Question 2

Answer: e

Which of the following might trigger Mr. Meffert's rosacea?

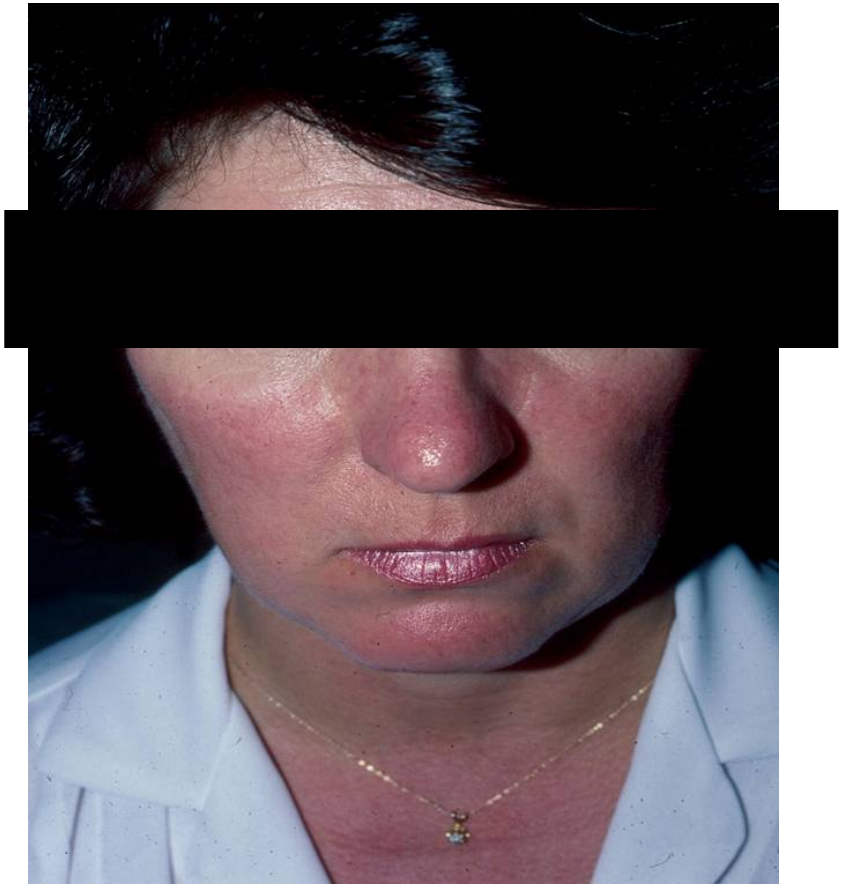
a. Alcohol
b. Heat/hot beverages
c. Hot, spicy foods
d. Sunlight
e. All of the above

Clinical Features of Rosacea

- Rosacea is typically located on the mid face including the nose and cheeks with occasional involvement of the brow, chin, eyelids, and eyes
  - Patients have variable amounts of **erythema**, **telangiectasias, papules** and/or **pustules**
- Rosacea does not have comedones – this helps to distinguish rosacea from acne vulgaris
- Some patients may develop rhinophyma (overgrowth of the dermis and sebaceous glands)
- Patients can have **ocular rosacea**: keratitis, blepharitis, conjunctivitis
  - Artificial tears, oral doxycycline and cyclosporine eyedrops can be effective therapies

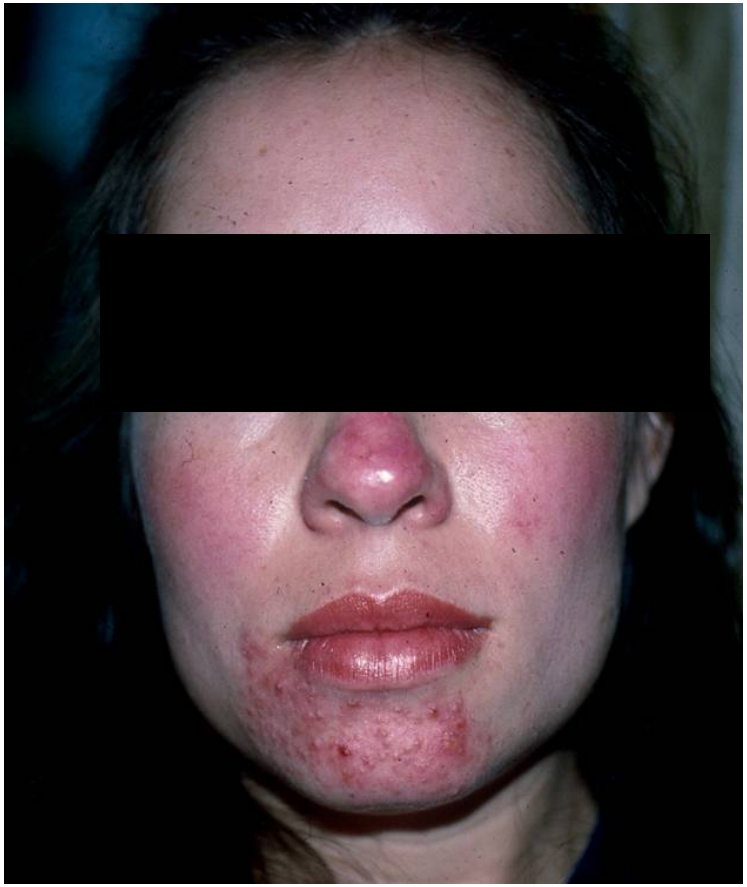
The Following Photos Illustrate Different Types of Rosacea

Erythematotelangietatic Rosacea



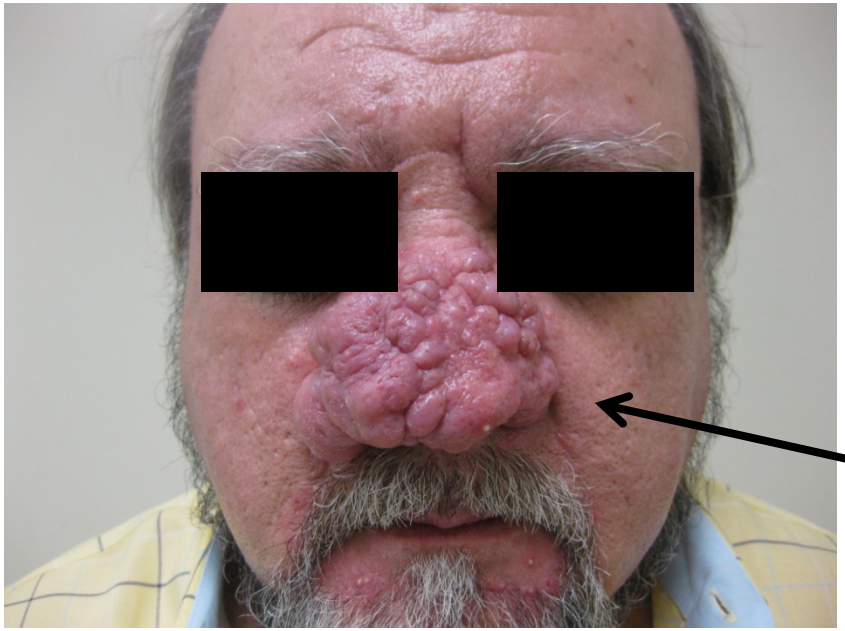
- Erythema and telangiectasias scattered on the nose and cheeks.
- There are no papules, pustules, or comedones present.

Papulopustular Rosacea



- Erythema with papules and pustules on the nose and chin.
- Patient also has erythematous patches on the cheeks bilaterally.

Phymatous Rosacea



- Facial erythema, scattered papules, pustules on the nose, forehead, cheeks and chin. Thickened, highly sebaceous skin.
- This patient also has severe rhinophyma.

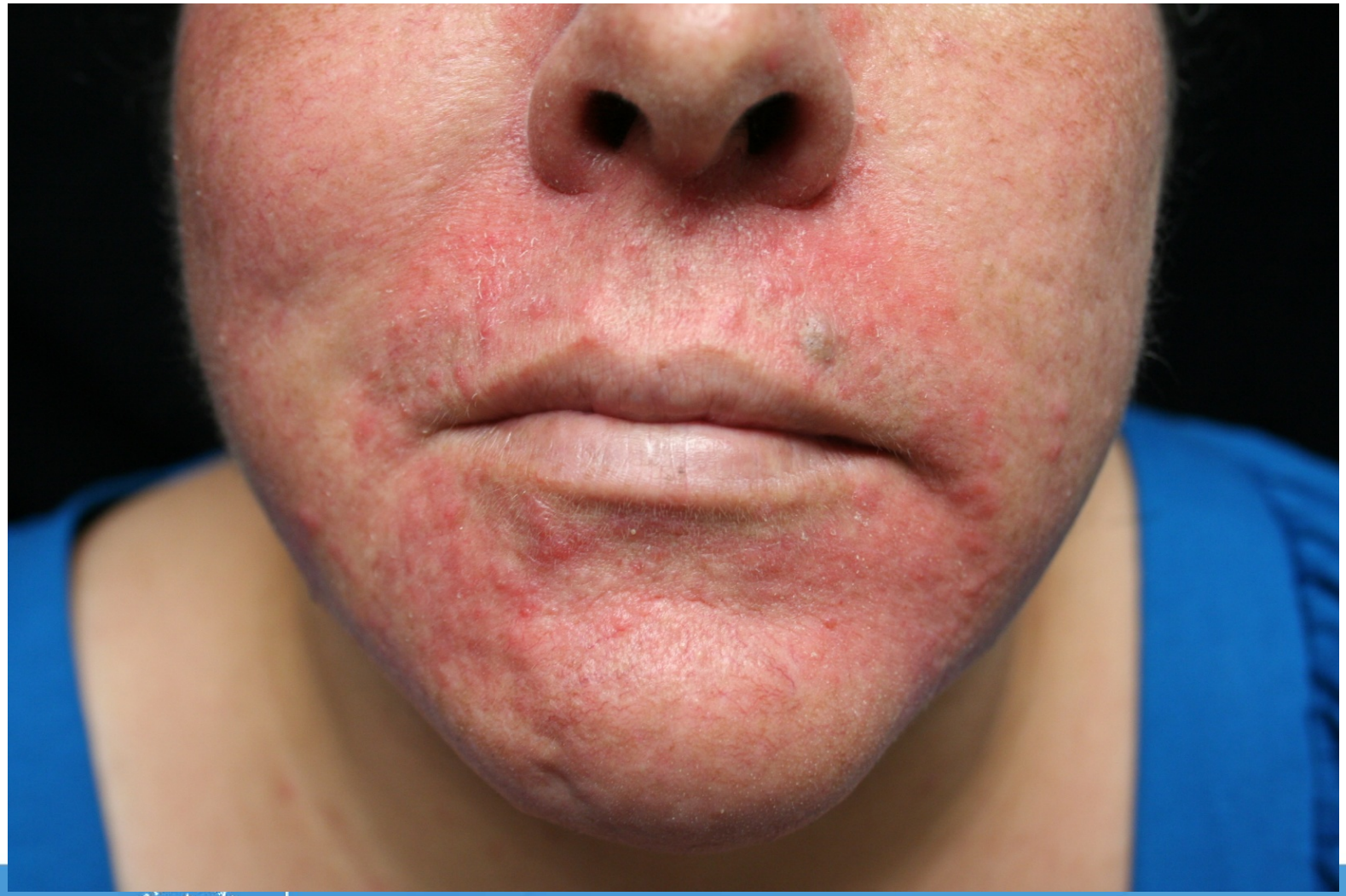
Rosacea Treatment

- Therapy is often long-term
- Most treatments are directed at specific findings manifested by rosacea patients
- Types of treatment include:
  - Topical products: metronidazole, sodium sulfacetamide, azelaic acid, sulfur cleansers
  - Oral antibiotics for pustular and papular lesions
- Avoidance of factors that exacerbate
- Refer patients who do not respond to topical treatments or antibiotics to dermatology

Caution about steroids on face

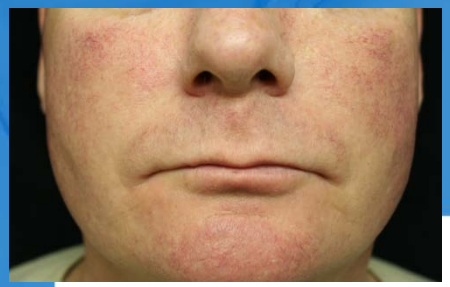
- Use of powerful topical steroids on the face can cause an eruption of papules around the mouth
  - This is called **perioral dermatitis**
- Ask patients with rosacea or perioral dermatitis about topical steroid use.

Perioral Dermatitis



Perioral Dermatitis

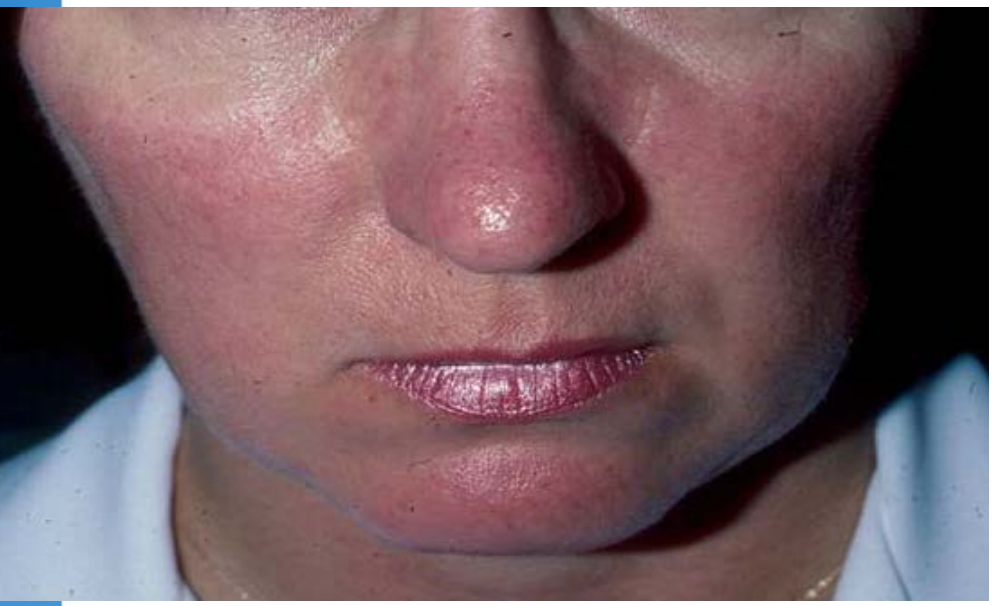
- Presents as perioral erythema and papules sparing the area near the vermilion border
- Idiopathic or iatrogenic due to use of topical steroids
- Need to wean off steroids, decrease inflammation
- Treatment:
  - Doxycycline, minocycline, or erythromycin x 1-3 months
  - Topical antibiotics: metronidazole, clindamycin
  - Pimecrolimus cream or tacrolimus ointment BID for 2-3 months



Rosacea vs. Malar rash of lupus erythematosus

- His internist referred him because she was concerned about systemic lupus erythematosus (SLE)
- While rosacea may affect the cheeks similar to lupus, the history differentiates them:
  - Ask about triggers for rosacea
  - Rosacea patients do not meet SLE criteria

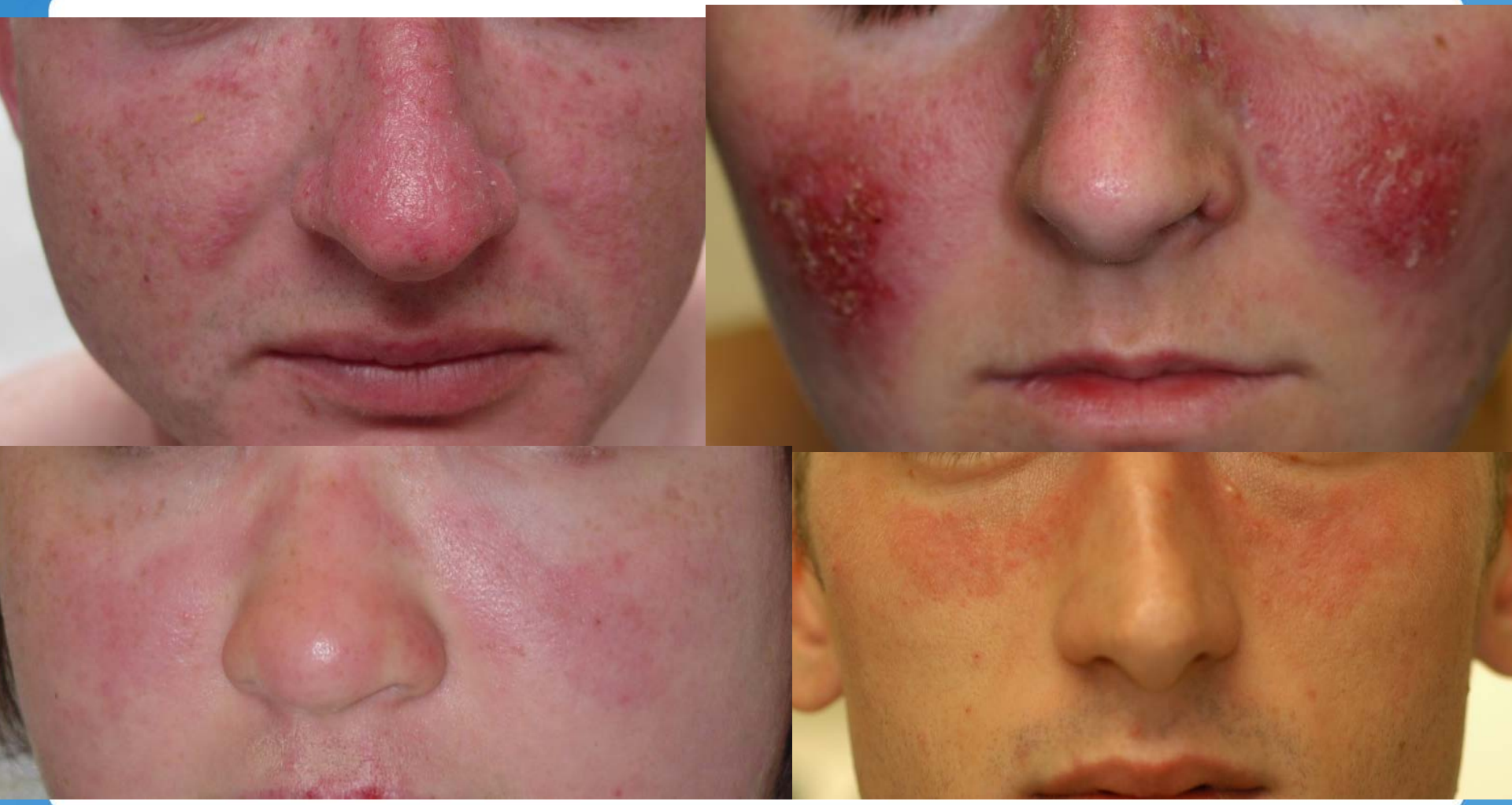
The “butterfly” rash



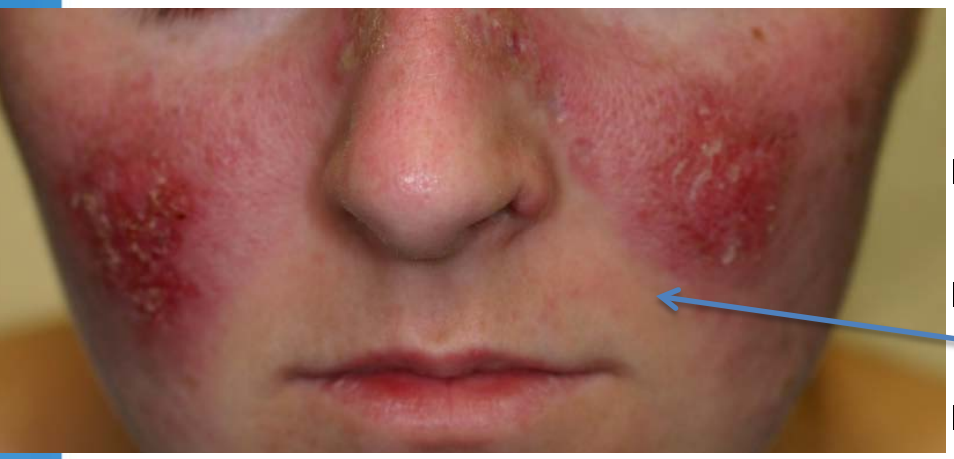
Butterfly rash: this patient has rosacea, not the malar rash of acute cutaneous lupus

- Many facial rashes are described as “malar” or “butterfly” rashes
- Most “butterfly” rashes are seborrheic dermatitis or rosacea, not lupus, which is classically described as “malar” or “butterfly”

Malar or “butterfly rash” of lupus



Key elements of facial lupus rash



- Photodistributed
- Often scaly, scarring
- Spares nasal creases (unlike seborrheic dermatitis)
- May mimic rosacea
- Refer these patients

Four SLE criteria are dermatologic:

1. Photosensitivity
2. Discoid lesions
3. Oral ulcerations
4. Malar rash

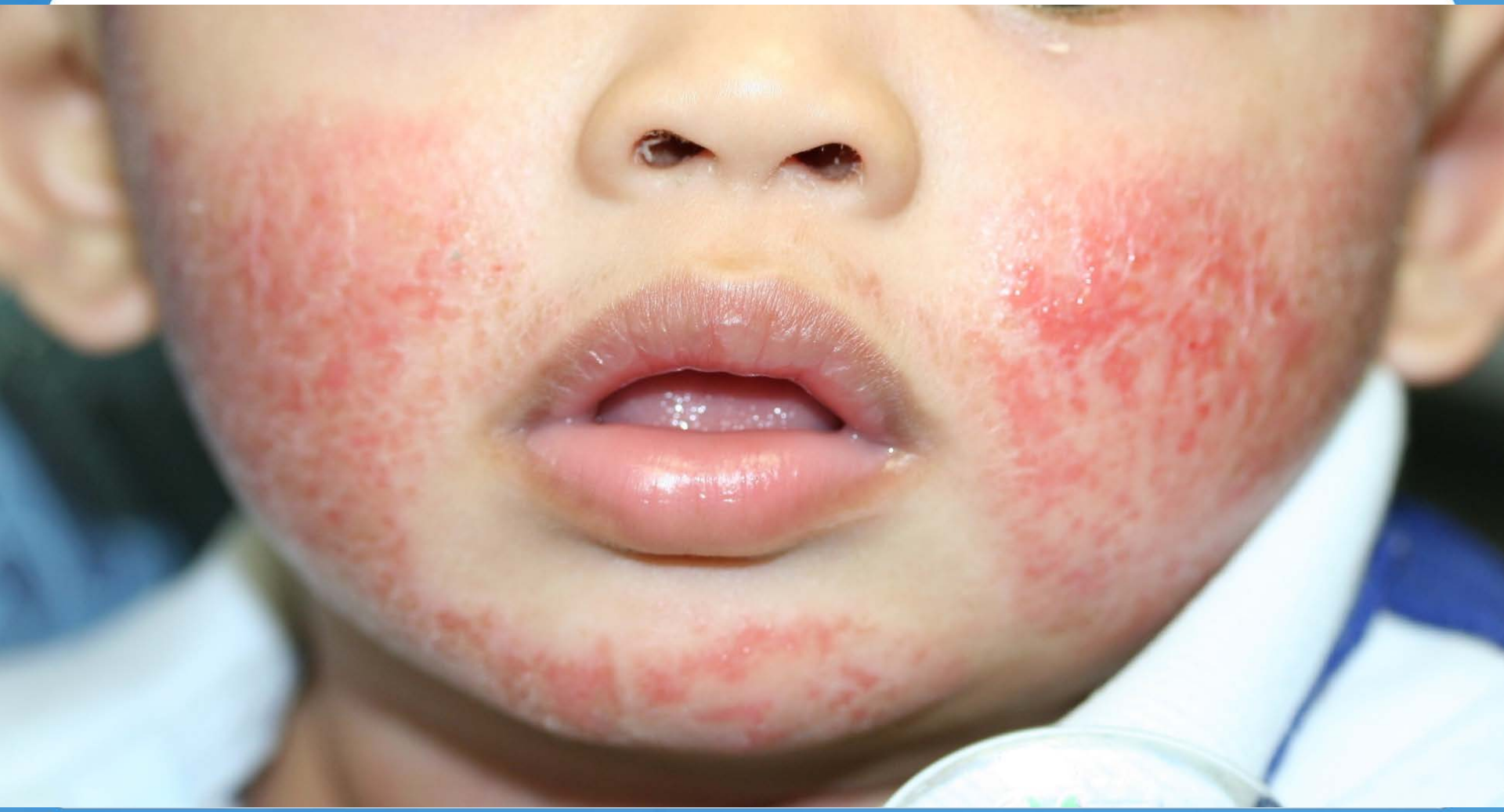
Case Three

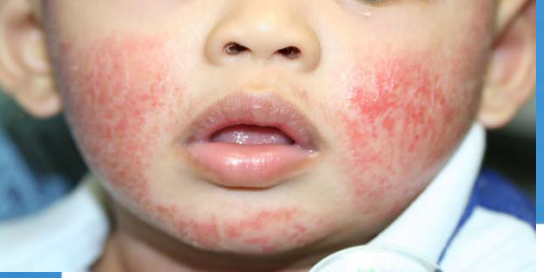
Casey Hodson

Case Three: History

- HPI: Casey Hodson is a healthy 5-month-old boy whose mother reports a scaly rash on the face that she says he scratches. She wants to make sure it's not infected.
- PMH: normal birth history
- Allergies: none
- Medications: none
- Family history: brother with asthma, mother with seasonal allergic rhinitis
- Social history: lives at home; does not attend daycare
- ROS: negative

Case Three: Skin Exam

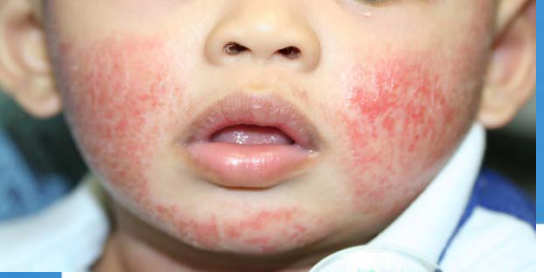




Case Three, Question 1

What is the most likely diagnosis?

a. Atopic dermatitis (eczema)
b. Bacterial cellulitis
c. Neonatal lupus
d. Tinea faciei
e. Seborrheic dermatitis



Case Three, Question 1

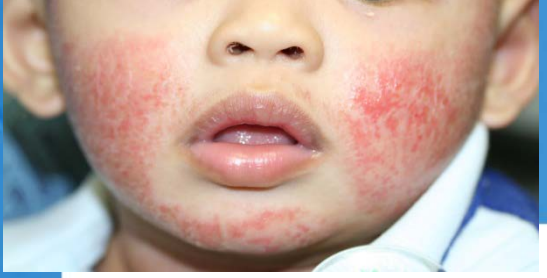
Answer: a

What is the most likely diagnosis?

a. **Atopic dermatitis (eczema)**
b. Bacterial cellulitis (more indurated and tender, not usually itchy or bilateral)
c. Neonatal lupus (erythematous annular patches and plaques, usually periorbital)
d. Tinea faciei (rare in infants, not symmetric)
e. Seborrheic dermatitis (wrong distribution)

Eczema Basics

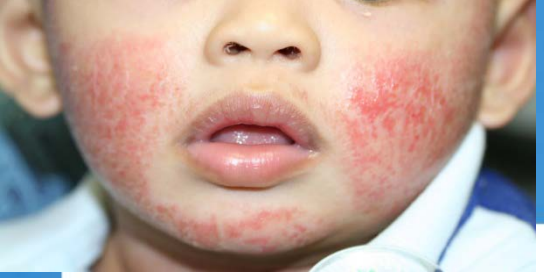
- This patient has atopic dermatitis, a form of chronic, eczema
  - Patients may have the “atopic triad” includes seasonal allergic rhinitis, asthma, and atopic dermatitis
  - Patients have a higher rate of eyelid and hand eczema
- Itch is the primary symptom of eczema
- A potassium hydoxide mount can distinguish from tinea facei
- Distribution of eczema varies by type of eczema
  - See Red Scaling Rashes for more information



Case Three, Question 2

Which of the following treatments would you recommend to Casey's parents?

a. Astringent facial scrubs
b. Clindamycin gel
c. Hydrocortisone valerate ointment
d. Ketoconazole cream
e. Tretinoin cream



Case Three, Question 2

Answer: c

Which of the following treatments would you recommend to Casey's parents?

a. Astringent facial scrubs
b. Clindamycin gel
c. Hydrocortisone valerate ointment
d. Ketoconazole cream
e. Tretinoin cream

Treatment for Eczema

- Topical corticosteroids are the first-line treatment for eczema, even for the face
  - Topical calcineurin inhibitors are effective for long-term maintenance for patients that flare after short-term (2-3 weeks) steroid therapy treatment
  - Emollients (moisturizers) are helpful for soothing dry, itchy, or irritated skin
- Patch testing can be used if an allergic contact dermatitis is suspected or if the eczema is recalcitrant

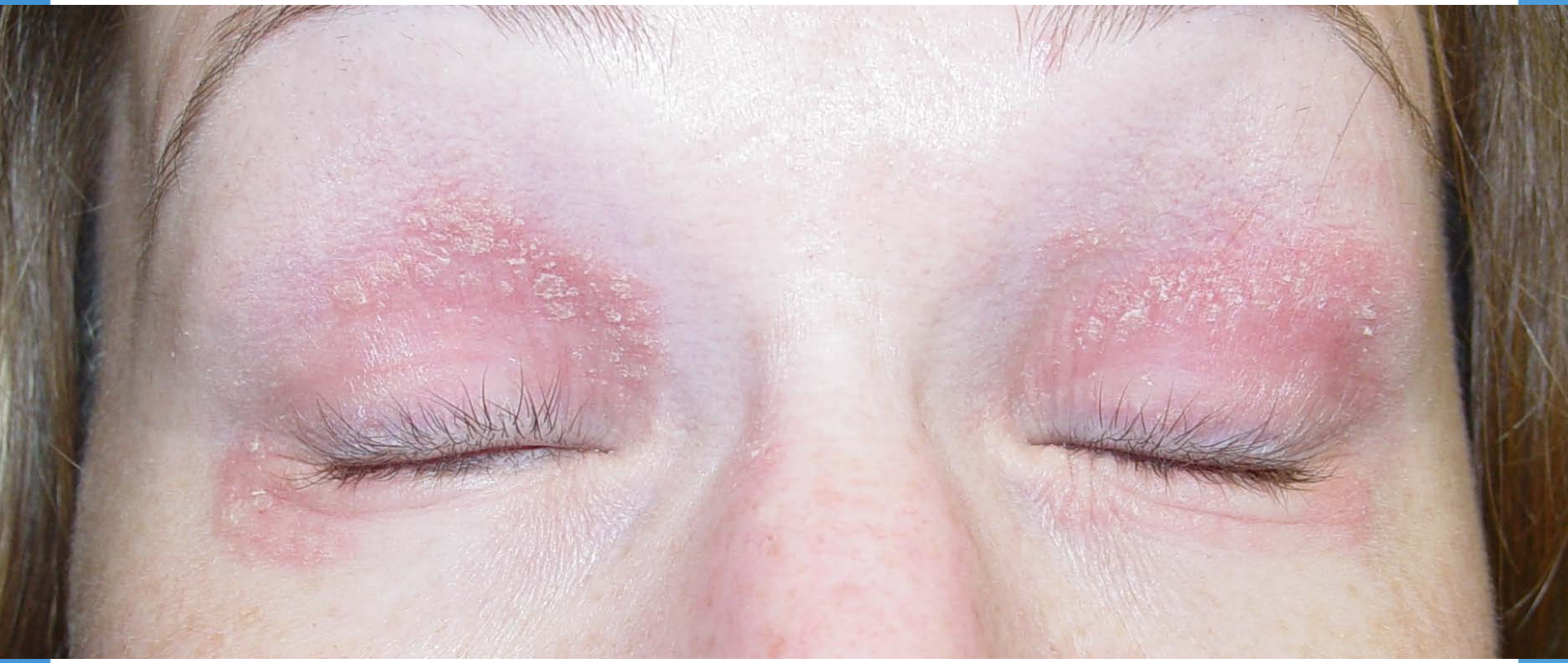
Case Four

Barbara Elston

Case Four: History

- HPI: Barbara Elston is a 32-year-old woman who presents with three months of severe itching, redness, and scaling on her eyelids. She has tried aloe vera and tea tree oil products, but they haven't helped.
- PMH: no history of asthma, hay fever or childhood eczema
- Allergies: shellfish
- Medications: birth control pills
- Family history: noncontributory
- Social history: single; works as a bank teller
- ROS: negative

Case Four: Skin Exam



Case Four, Question 1

Ms. Elston has a bilaterally-symmetric, pruritic, eczematous eruption on her eyelids. What is the most likely diagnosis?

a. Allergic contact dermatitis
b. Dermatomyositis
c. Rosacea
d. Psoriasis
e. Seborrheic dermatitis

Case Four, Question 1

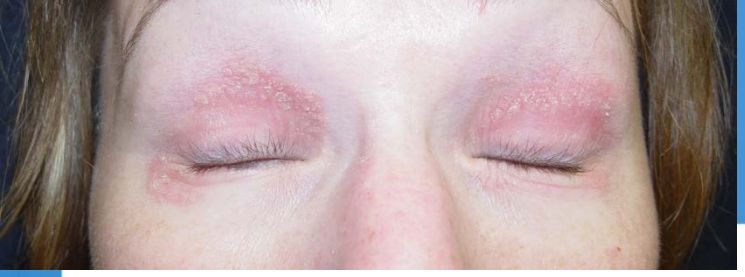
Answer: a

Ms Elston has a bilaterally-symmetric, pruritic, eczematous eruption on her eyelids. What is the most likely diagnosis?

a. **Allergic contact dermatitis**
b. Dermatomyositis (not itchy, shawl rash on trunk)
c. Rosacea (usually not itchy)
d. Psoriasis (not usually limited to the eyelids)
e. Seborrheic dermatitis (usually not itchy)

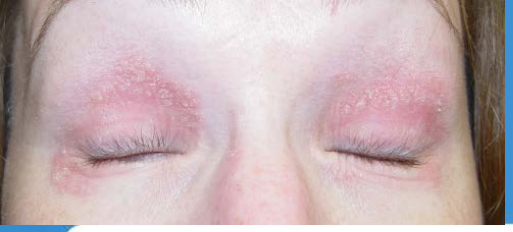
Allergic contact dermatitis

- Allergic contact dermatitis (ACD) is a delayed-type hypersensitivity reaction
  - Poison ivy (rhus dermatitis) is the prototypic allergic contact dermatitis
  - Patients become sensitized to an allergen in contact with their skin
- ACD is pruritic or burning/irritated
- The distribution of the rash mirrors the area of exposure



Eyelid dermatitis

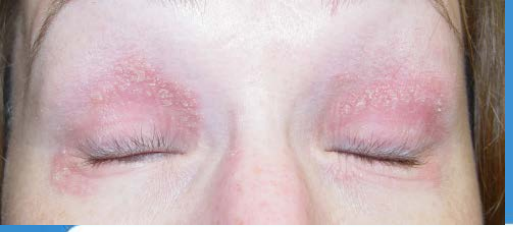
- Differential diagnosis: atopic dermatitis, ACD, dermatomyositis, seborrhea
- Dermatomyositis is an autoimmune disease
  - Patients often have a violaceus rash of eyelids and “shawl” rash on the upper chest, shoulders, and back
  - Skin biopsy and blood work can establish the diagnosis



Case Four, Question 2

On further questioning, Ms Elston recently changed her eye shadow and moisturizer. What treatment would you recommend other than avoidance?

a. Desonide cream
b. Clobetasol ointment
c. Fluocinonide gel
d. Ketoconazole cream



Case Four, Question 2

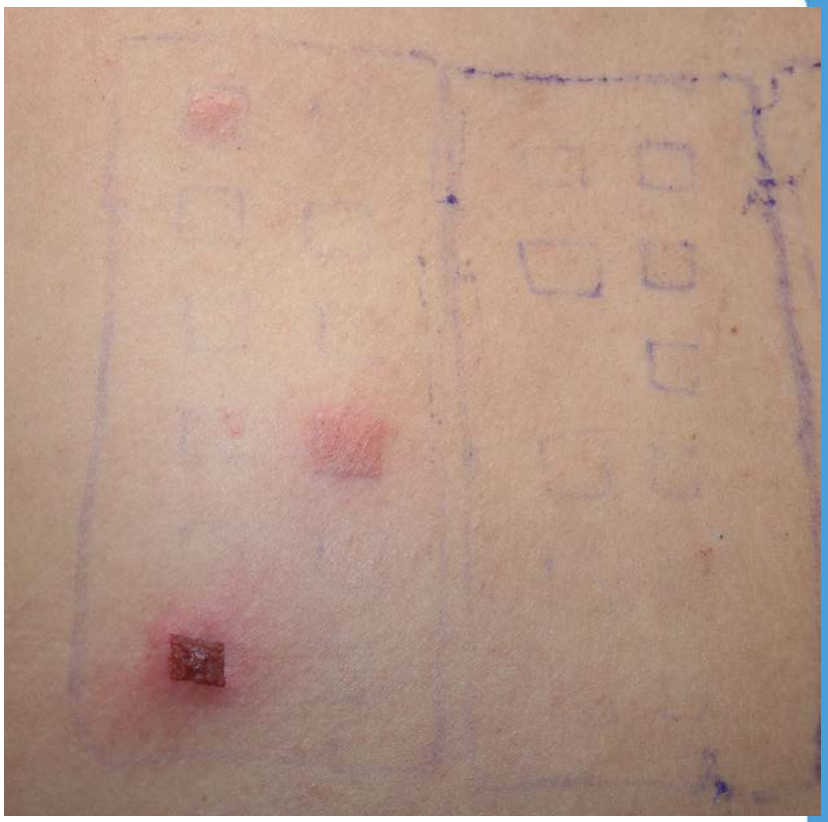
Answer: a

On further questioning, Ms Elston recently changed her eye shadow and moisturizer. What treatment would you recommend other than avoidance?

a. **Desonide cream**
b. Clobetasol ointment (too potent, Class I)
c. Fluocinonide gel (too potent, Class 2)
d. Ketoconazole cream (fungal cream, not effective)

Patch Testing

- This patient underwent patch testing for ACD
- There were three positive reactions on day 4
  - Nickel, Balsam of Peru, and Fragrance
- Avoidance of these allergens should improve her rash
- Refer patients to a dermatologist or allergist who can perform patch testing when the dermatitis is chronic or recalcitrant



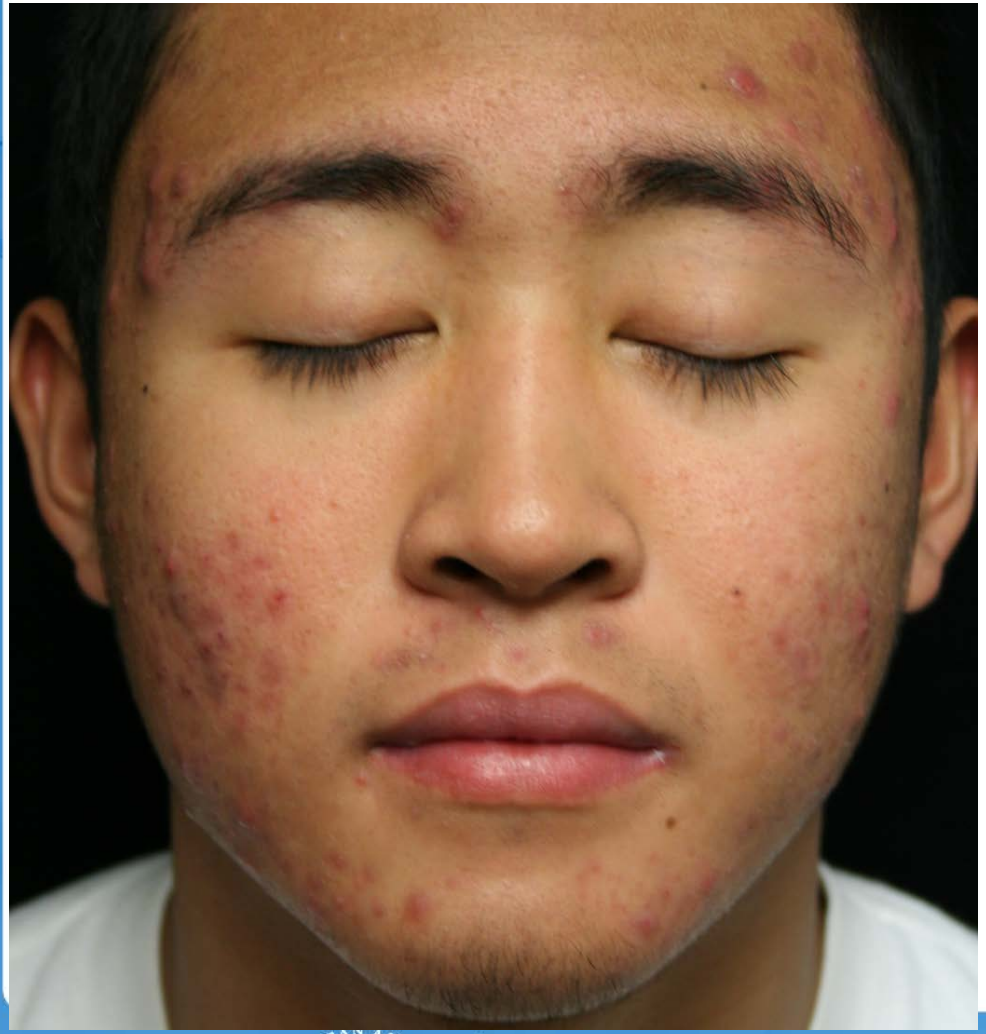
Case Five

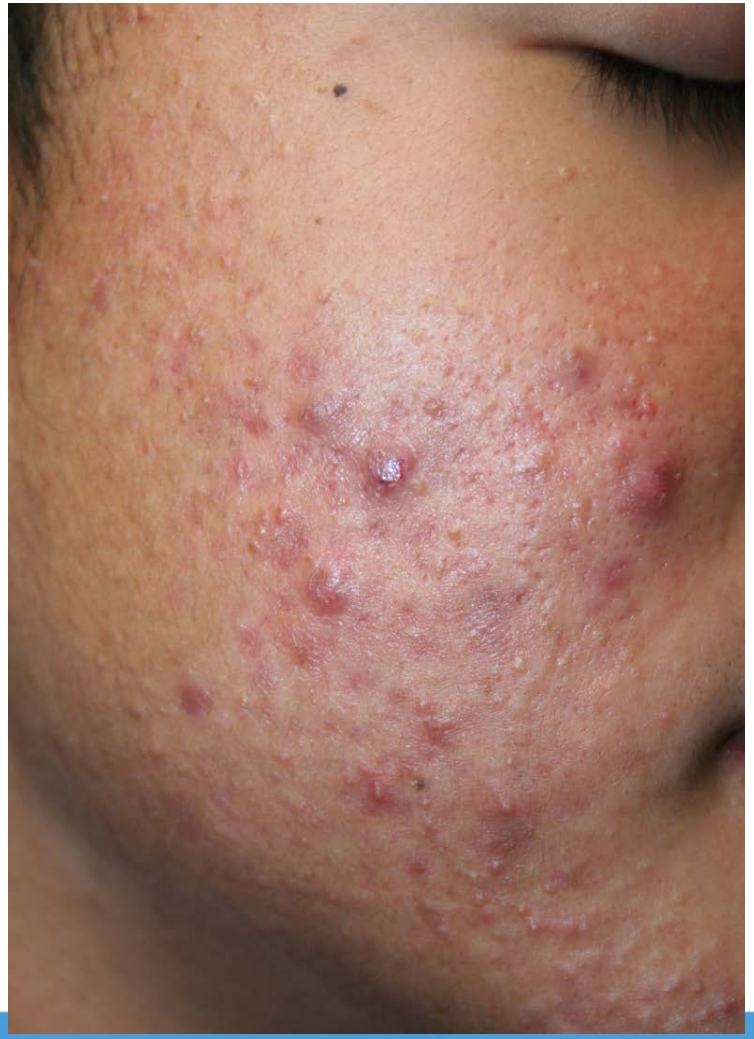
Eric Davis

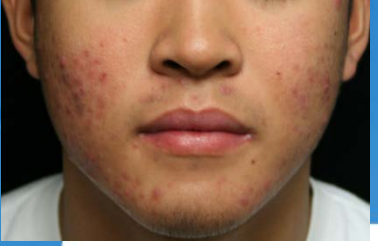
Case Five: History

- HPI: Eric Davis is an 18-year-old man who presents with 4 years of acne on his face and chest. He has been taking oral minocycline 100 mg BID, topical tretinoin, and a combination of benzoyl peroxide and clindamycin for 18 months without much improvement.
- PMH: none
- Allergies: Sulfa (rash)
- Medications: no other medicines
- Family history: both parents had acne
- Social history: high school senior in three Advanced Placement courses

Case Five: Skin Exam



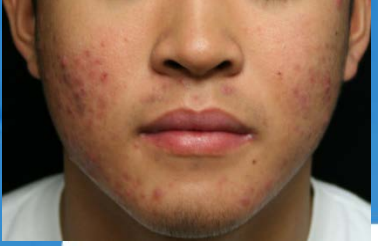




Case Five, Question 1

Eric has acne vulgaris with papules, nodules and some early scarring. What is the next appropriate therapy?

a. Change from minocycline to cephalexin
b. Change from minocycline to doxycycline
c. Glycolic acid peels
d. Isotretinoin



Case Five, Question 1

Answer: d

Eric clearly has acne vulgaris. He has nodules and some early scarring. What is the next appropriate therapy?

a. Change from minocycline to cephalexin (cephalexin is not likely to be much more effective and has more risk of causin bacterial resistance)

b. Change from minocycline to doxycycline (doxycycline is not stronger than minocycline)

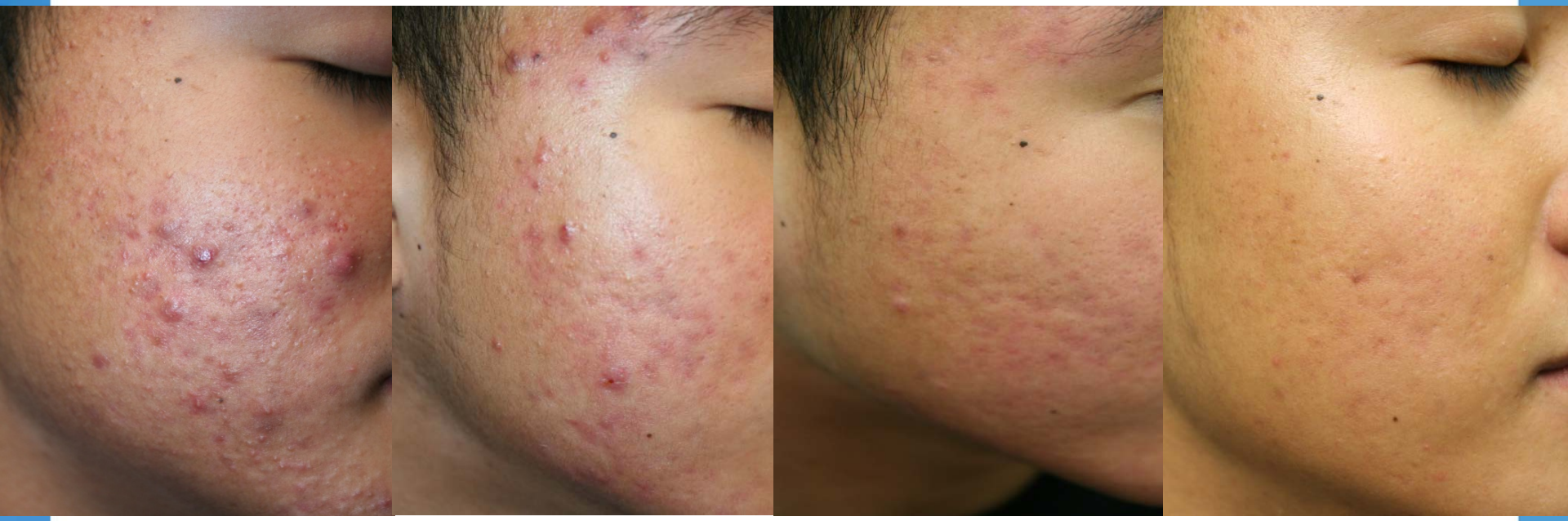
c. Glycolic acid peels (may help mild acne, but need oral therapy for more severe acne seen in this case)

d. Isotretinoin

Oral Isotretinoin

- Indications:
  - Nodular cystic acne
  - Moderate to severe acne refractory to oral antibiotics
  - Scarring acne
- Providers and patients must register in iPLEDGE program to use isotretinoin
- Refer to experienced provider for consideration of isotretinoin therapy

Eric’s response to isotretinoin



Before therapy

2 months of isotretinoin

4 months of isotretinoin

After therapy

Take Home Points: Likely causes by age

Red rashes on the face are common throughout life, but the causes differ by age

- In infants, atopic dermatitis is more likely
- In adolescents, acne vulgaris is very common
- Acne rosacea presents in the 30s-40s
- Seborrheic dermatitis occurs at any age

Take Home Points

- Atopic dermatitis in infants often involves the face
- Allergic contact dermatitis itches and mirrors the source of exposure
- Acne vulgaris typically arises in puberty; see acne module for detailed management recommendations
- Butterfly rash of connective tissue disease is most frequently seen in flares of SLE and often has other manifestations of lupus at that time

Differential Diagnosis of Red Facial Rashes

	Morphology	Symptoms	Distribution	Treatment
Seborrhea	Pink-red Greasy white-yellow scale	Often asymptomatic	Scalp, brows, nasal crease, in and behind ears, can involve chest, axilla, areas of facial hair	Topical steroid Topical calcineurin inhibitor Topical antifungal
Eczema	Varies depending on chronicity, acute = bullous, chronic = pink lichenified	Itchy, dry, burning	Variable depending on type, Allergic = areas of allergen exposure Atopic = spares nose/central face	Topical steroid Topical calcineurin inhibitor
Rosacea	Erythema (patches) telangiectasia, +-pink papules and pustules some with rhinophyma	Some have dry, irritated, burning skin Worsened by alcohol, hot or spicy foods, exercise, etc.	Concavities of face: forehead, cheeks, nose, chin also eyes	Topical antibiotics Topical calcineurin inhibitor Oral doxycyline
Acne	Comedones, pink papules, pustules	Social impairment pain, itching	Face, sparing eyelids Shoulders, chest and back	Topical antibiotics topical retinoids Oral antibiotics
Lupus	Pink-Red-Brown, Annular Variable scale Variable Scarring	Tender, warm	Acute (malar): cheeks, without crossing nasolabial fold DLE: Sun-exposed areas and inside ear	Topical steroids Antimalarial
Tinea	Pink annular, patches and plaques with advancing scale	Asymptomatic or itchy	Anywhere with stratified squamous epithelium	Topical or oral antifungal

Acknowledgements

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- Revisions: Patrick McCleskey, MD, FAAD, Joslyn Kirby MD, MS, FAAD. Last revised March 2015.

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To take the quiz, click on the following link:

https://www.aad.org/quiz/the-red-face-learners