Common Dermatology Problems

• Red face (Rosacea vs Lupus)
• Red scaly rash (Eczema vs Tinea vs Psoriasis)
• Red legs (Cellulitis vs Stasis dermatitis)
• Dry skin (Atopic dermatitis vs Xerosis)
• Moles (Common vs Cancer)
• Anti-aging (Effective vs Hype)
Marc Rothko
“Colour Field”
Red Face

A 50 year old female presents with redness on her face involving her nose and cheeks. On physical exam, the presence of erythema and fine telangiectasias are noted in a “butterfly” pattern with no note of any pimples.
The most likely diagnosis for this patient is:

A. Lupus Erythematosus
B. Acne Rosacea
C. Erysipelas
D. Fifth Disease
## Epidemiology

<table>
<thead>
<tr>
<th></th>
<th>Acne Rosacea</th>
<th>Systemic Lupus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US Incidence</strong></td>
<td>1 in 20</td>
<td>1 in 20,000</td>
</tr>
<tr>
<td><strong>Age of onset</strong></td>
<td>30-60</td>
<td>20-30</td>
</tr>
<tr>
<td><strong>Female to male</strong></td>
<td>3:1</td>
<td>7:1</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Northern European</td>
<td>4B:W females</td>
</tr>
</tbody>
</table>
Criteria for the diagnosis of Systemic Lupus Erythematosus

- Malar rash
- Discoid rash
- Photosensitivity
- Oral ulcers
- Arthritis
- Serositis
- Renal disorder
- Neurologic disorder
- Hematologic (anemia, leukopenia, lymphopenia, thrombocytopenia)
- Immunologic (anti-DNA, Anti-Sm, or antiphospholipid antibodies.)
- Antinuclear Antibody titer

4 or more of the above criteria are needed
Don’t test ANA sub-serologies without a positive ANA and clinical suspicion of immune-mediated disease.

Tests for anti-nuclear antibody sub-serologies are usually negative if the ANA is negative.

Broad testing of autoantibodies should be avoided; instead the choice of autoantibodies should be guided by the specific disease under consideration.
Malar Rash
Malar Rash
Facial Erythema
Rosacea vs. Lupus
Rosacea Treatment Options
Rosacea Treatment Options For Acne Component

• Antibiotics (doxycycline or minocycline)
  – Traditional dosing
  – Anti-inflammatory dosing

• Topicals
  – Metrogel (0.75% bid or 1% daily)
  – Sodium Sulfacetamide products
  – Finacea gel (azelaic acid 15%)
  – Soolantra (ivermectin)
Erythema Treatment Options

- Azelaic acid 15% gel (Finacea)
- Brimonidine gel (Mirvaso)
- Pulsed dye laser
Erythema Treatment Options
Brimonidine Gel (Mirvaso)

• Received FDA approval August 2013.
• Alpha adrenergic agonist indicated for the topical treatment of persistent erythema.
• Apply a pea size amount every morning.
• Effects noticeable within an hour and last all day.
Mirvaso
Erythema Treatment Options
Pulsed-dye laser
A 13 y/o male on the 8th grade wrestling team is brought in by his father for evaluation of a lesion on his left arm. It has been there for a few weeks and has been getting bigger. Dad needs you to sign forms so his son can participate in the wrestling championship.
The clinical findings are consistent with:

A. Eczema
B. Psoriasis
C. Tinea
D. Squamous Cell Carcinoma in situ
Tinea

- Non-pruritic
- Defined advancing scaly edge
- Not symmetrical
- Lesions often have central clearing
Eczema

- Pruritic
- Can be solitary, but often multiple areas
- Scaly throughout lesion, lack of central clearing and ill-defined borders
Craquele
Psoriasis
Psoriasis
Psoriasis and Auspitz sign
Psoriasis and Auspitz sign
Psoriasis
Treatment of Tinea Corporis

• Topical:
  – Azoles: econazole, ketoconazole, clotrimazole, miconazole, oxiconazole, sulconazole, sertaconazole, luliconazole
  – Allylamines: naftifine, terbinafine

• Systemic:
  – Griseofulvin
  – Azoles: fluconazole, itraconazole, ketoconazole
  – Terbinafine
Lotrisone

Clotrimazole and Betamethasone Dipropionate Cream USP, 1%/0.05%

For topical use only. Not for ophthalmic, oral or intravaginal use. Not recommended for patients under the age of 17 years and not recommended for diaper dermatitis.

Rx only

TARO

Keep this and all medications out of the reach of children.
Common Side Effects with Lotrisone Cream
When can the patient return to wrestling?

- When there are no active lesions
- On appropriate therapy for a minimum of 72 hours for skin infections and 14 days for scalp infections and
- When no longer contagious the area should be covered with a bio occlusive dressing.

Barnett Newman: *Vir Heroicus Sublimis*
60 year old male admitted through the ER with worsening SOB over several days with a history of atrial fibrillation. He also complains of an itchy rash on his legs for several months. He has received 2 courses of antibiotics as an outpatient with minimal improvement.
The findings are most consistent with:

A. Cellulitis  
B. Stasis Dermatitis  
C. Psoriasis  
D. Atopic Dermatitis
Stasis Dermatitis

• Arises from underlying venous disease
• Pruritic eruption occurring on lower legs
• Often worse in hot weather and after prolonged standing
• Most common cause of “bilateral cellulitis”
Stasis dermatitis

- Pitting edema
- Varicose veins
- Hemosiderin deposition due to leaky RBCs
- Atrophie blanche due to micro thrombi
- Venous ulcers
- Lipodermatosclerosis
Stasis Dermatitis Treatment

- Avoid standing for long periods of time
- Exercise
- Elevate your feet when sitting
- Compression stockings
- Topical steroids
- Treat underlying varicosities
- Systemic steroids if severe
Cellulitis
Cutaneous Findings of Cellulitis

• Unilateral erythema, edema, heat, pain/tenderness.
• Initially the erythema is blanchable due to the dilated vessels.
• Areas are well defined with irregular borders.
• Edema produces smooth, taut, shiny skin or peau d’orange findings. Sub epidermal vesicles and bulla can also be seen.
• Pain and tenderness with palpation.
• Streaks of erythema associated with inflamed lymphatics can extend proximally.
• Often have associated positive lymph nodes.
Systemic Findings of Cellulitis

- Fever (22-72%)
- Chills
- Tachycardia
- Hypotension
- Confusion
- Leukocytosis
- Elevated ESR
- Elevated C-reactive protein
- Positive blood cultures in less than 5% of patients
Cellulitis Studies

- 2011 British Journal of Dermatology article looked at 635 patients referred for enrollment into a cellulitis study and of the patients referred 210 (33%) had a different diagnosis.

- 2016 JAMA Dermatology looked at ED diagnosis of LE cellulitis and found 30.5% were incorrectly diagnosed resulting in unnecessary hospitalization and antibiotic use (nosocomial infections, c. diff and anaphylaxis). They estimated the misdiagnosis of cellulitis leads to 50-130,000 unnecessary hospitalizations and $195-515 million in avoidable healthcare spending.
Cellulitis Treatment

• Healthy patients
  – Penicillin for 5 days (studies suggest the addition 5 days superfluous).
  – Prednisone 40 mg orally for 7 days. (studies suggest faster cure, shorter hospital stays and decreased risk of recurrence due to less inflammation and therefore less damage to lymphatics).
  – Elevate the extremity
  – Address underlying cutaneous issues
    • Tinea pedis (chronic antifungal therapy)
    • Stasis
    • Eczema
    • Weight

Don’t use antibiotic therapy for stasis dermatitis of lower extremities

Stasis dermatitis is commonly treated with antibiotic therapy, which may be a result of misdiagnosis or lack of awareness of the pathophysiology of the disease. The standard of care for the treatment of stasis dermatitis affecting lower extremities is a combination of leg elevation and compression.

The routine use of oral antibiotics does not improve healing rates and may result in unnecessary hospitalization, increased health care costs and potential for patient harm.
Atopic Dermatitis versus Generalized Xerosis

Jackson Pollock, Red Painting 1-7, 1950
Mom brings a 3 month old baby into your office complaining that her child has a worsening red, scaly rash on his face. She adds that he has been fussy for the last few days. No one else in the family has a rash like this.
This child’s treatment should include antibiotics.

A. True
B. False
Atopic Dermatitis
Atopic Dermatitis
Atopic Dermatitis
A connection between atopic dermatitis, asthma and allergic rhinitis began with the observation of the developmental timeline, the so-called “Atopic March”.

The concept of an “Atopic March” is the progression of eczema in infancy to asthma, rhinitis and food allergies in childhood.
Two primary hypothesis for the mechanism of atopic dermatitis:

• The defect resides in an immunologic disturbance with epithelial-barrier dysfunction a consequence of the local inflammation.
• Intrinsic defect is in the epithelial cells leading to barrier dysfunction with the immunologic aspects an epiphenomenon.

Current Thoughts

• Restoring the skin barrier function early in life may prevent sensitization, and thereby halt the development of asthma and allergic disease.

• The focus of treatment should be early and proactive – instead of the current reactive treatment of flares.

• Atopic dermatitis is a disease that is controlled and not cured.
Role of the Stratum Corneum

• The stratum corneum provides the skin’s barrier, which is a brick and mortar-like structure, found in the upper most epidermal layer.

• Any alteration in this barrier leads to transepidermal water loss (TEWL) which is the hallmark of dermatitis.
Brick-like pattern of the stratum corneum (skin barrier)

- Skin cells ("bricks")
- Lipids ("mortar")
Generalized Xerosis

• AKA xeroderma, xerosis cutis
• Abnormally dry skin
• More common in elderly
• More common in winter
• Dry, itchy, scaly skin especially on arms & legs
Generalized Xerosis

Causes:
Systemic illness
Medications
  Diuretics
  Cholesterol
  Allergy
  Retinoids
Vitamin deficiencies
Environment
Environmental Factors

- Bathing products
- Over bathing
- Hot water
- Lack of humidity
- Scented products
- Irritating fabrics
- Laundry detergent
- Dryer sheets
Simple Treatment Approach

1. Minimize irritation from the environment
2. Moisturize, moisturize, moisturize
Moisturizers: OTC

- **Humectants**: hydroscopic substances that attract water to the skin
- **Emollients**: soften and increase the flexibility of stratum corneum by intercalculating between corneocytes
- **Occlusive**: oily substances that retard TEWL by creating a physical, hydrophobic barrier on the skin surface
Physiologic Moisturizers

• 501(k) “medical devices” also known as barrier creams
• Address the problem of abnormal barrier function
• No age restrictions, no limitation to frequency of use, no restrictions to body parts
• OTC moisturizers improved barrier function by 50% at 45 min. Physiologic lipids had minimal improvement at 45 min but have a 90% improvement at 8 hours
# Physiologic Creams

<table>
<thead>
<tr>
<th>Prescription</th>
<th>Over-the-counter</th>
</tr>
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<tbody>
<tr>
<td>• Hylatopic Plus</td>
<td>• Cerave</td>
</tr>
<tr>
<td>• EpiCeram</td>
<td>• Cetaphil</td>
</tr>
<tr>
<td>• NeoSalus</td>
<td>• Excipient</td>
</tr>
<tr>
<td>• Eletone</td>
<td></td>
</tr>
</tbody>
</table>
Other Rx Moisturizing Options

• Alpha-hydroxy acid products
  – Ammonium lactate (5-12%)

• Urea products (10-40%)
  – Keratolytic emollient
Topical Steroids

- Class 1 (super potent)
  - clobetasol, betamethasone
- Class 2 (potent)
  - halcinonide, desoximetasone
- Class 3 (upper mid-strength)
  - fluticasone
- Class 4 (mid-strength)
  - triamcinolone
- Class 5 (lower mid-strength)
  - fluocinolone
- Class 6 (mild)
  - desonide
- Class 7 (least potent)
  - hydrocortisone

“If it is wet, dry it
If it is dry, wet it”
Calcineurin Inhibitors

• Steroid sparing agents which block cytokine production.

• Useful in maintenance although safety with use > 1 year has yet to be established.

• Do not use in children < 2 years of age.

• Over 10 years of use and no evidence of an association with cancer in humans reported to date.
Calcineurin Inhibitors

• Black box label: “Although a causal relationship has not been established, rare cases of malignancy (e.g. skin and lymphoma), have been reported in patients with topical calcineurin inhibitors.”

• Since the black box labeling, prescriptions have decreased by 50%.
Calcineurin Inhibitors

• Tacrolimus (Protopic) ointment
  – More effective vehicle, less allergenic.
  – 0.03% approved 2 -15 years of age.
  – 0.1% approved > 15 years of age.

• Pimecrolimus (Elidel) cream
  – Approved > 2 years of age.
Jensen JM, et al. investigated the effect of 2 common treatments on the skin barrier in patients with atopic dermatitis.

Fifteen patients with mod-severe AD were randomized to receive pimecrolimus to one arm and betamethasone to the other bid for 3 weeks.

The study evaluated skin barrier function, stratum corneum structure, epidermal proliferation and differentiation.

Pimecrolimus vs. Betamethasone Study Results

• Both products improved clinical and biophysical parameters and epidermal differentiation.
• Betamethasone was superior in reducing clinical symptoms and epidermal proliferation; however, it led to epidermal thinning.
• Pimecrolimus improved the epidermal barrier and did not cause atrophy.
• Conclusion: Pimecrolimus may be more suitable for long-term treatment of atopic dermatitis.

Antihistamines

- Klein & Clark did an evidence-based literature review and concluded that there is no evidence to support the efficacy of non-sedating antihistamines in the treatment of AD.
- Sedating antihistamines may improve QOL by promoting restful sleep rather than a reduction in AD symptoms.

Obstacles to Treatment

• Choose products that don’t burn or sting
• Choose products that are effective
• Disproportionate fear of using topical steroids or immune modulators with frightening package inserts
• Treatment failures are likely due to lack of adherence not to lack of efficacy
Lack of Adherence

• Feldman et al in a study prescribed TAC cream for children with AD and monitored adherence electronically.

• Adherence to the simple treatment regimen was only 32%.

Don’t use oral antibiotics for treatment of atopic dermatitis unless there is clinical evidence of infection.

The presence of high numbers of the Staphylococcus aureus bacteria on the skin of children and adults with atopic dermatitis is quite common. While it is widely believed that Staph bacteria may play a role in causing skin inflammation, the routine use of oral antibiotic therapy to decrease the amount of bacteria on the skin has not been definitively shown to reduce the signs, symptoms or severity of atopic dermatitis.

Antibiotic use can also lead to antibiotic resistance and can cause hypersensitivity reactions.
Allan McCollum  Collection of Forty Plaster Surrogates
Moles versus Melanoma
Melanoma

- Fifty percent occur in individuals under 40.
- Melanoma is the most common cancer in young adults between the ages of 24 to 29.
- Early detection is essential to survival.
  - Five year survival rate for melanoma in situ is 99%.
  - Five year survival rate for distant stage melanoma is 15%.
Melanoma Facts

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MELANOMA INCIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935</td>
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</tr>
<tr>
<td>1980</td>
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<tr>
<td>1990</td>
<td>1:105</td>
</tr>
<tr>
<td>2000</td>
<td>1:74</td>
</tr>
<tr>
<td>2016</td>
<td>1:28</td>
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Melanoma
ABCDE’s

• Asymmetry
• Borders
• Color
• Diameter
• Enlarging
Melanoma

ABCDE’s

Asymmetric
Melanoma

ABCDE’s

Borders
Melanoma
ABCD E’s

Color
Melanoma
ABCDE’s

Diameter
Melanoma

ABCDE’s

Enlarging
MelaFind

- New device used for the visualization of pigmented lesions.
- Able to look 2.5 mm below the skin’s surface.
- Device analyzes the acquired images using advanced algorithms against a database of benign and malignant lesions to assist in the decision of whether to biopsy a suspicious lesion.
MelaFind

• FDA approved
• Clinically proven to correctly identify melanoma with a very high rate of detection
• Sensitivity to melanoma is 98.3%
• In a pivotal study, the device’s ability to see subsurface irregularities gives it a major advantage over dermatologists.
Prevention

- Stanford study of 60,000 post-menopausal women who took ASA at least twice a week for 5 years were found to decrease their risk of developing a melanoma by 30%. *(Cancer 2013;119(8):1562-1569.)*

- Danish study with 200,000 men and women who took aspirin or NSAID daily for at least 3 years had a significant decrease in developing SCC or melanoma (15% and 13%). *(Cancer 2012;118(9):4768-4776.)*
“What’s the secret of my success? It’s Adobe Photoshop Day Cream”

Adobe Photoshop Day Cream. Reduces miraculously wrinkles and all skin imperfections. To always look young and glamorous.
#1 Age Defying Product
#1 Age Defying Product

SUNBLOCK
Sunscreen and Prevention of Skin Aging  
A Randomized Trial

• 900 fair skinned Australians, age 25-55, who regularly wore sunscreen and usually wore hats, were entered into study.
• Half continued regular habits other half applied a broad spectrum sunscreen daily.
• The study lasted 4.5 years and was paid for by NHMRC of Australia. No sunscreen makers contributed.
• Results: Diligent use of daily sunscreen can slow or even prevent the development of wrinkles and sagging skin. The daily sunscreen group had noticeably more resilient and smoother skin than those assigned to continue their usual practices.
• Regular sunscreen use retards skin aging!

FDA UPDATE ON SUNSCREENS

- New labels effective 2012
- “Broad” implies both UVB and UVA protection.
- Products not labeled as broad or that have an SPF <15 will carry a warning about skin cancer.
- Water resistance, not waterproof, and only two times available: 40 or 80 minutes.
- Products with SPF >50 will be labeled as “50+”
Sun Protection

**Sunblock**
- Physical protection
- Immediate sun protection
- Reflects UV rays off skin
- Perfect for sensitive skin
- Ingredients to look for:
  - Zinc oxide
  - Titanium dioxide

**Sunscreen**
- Chemical protection
- Must apply 30 minutes prior to sun exposure
- Can be associated with skin irritation and instability
- Best ingredient to look for:
  - Mexoryl (currently LOreal holds the patent)
  - Only available in US with SPF of 15.
Beach Essentials in China: Flip-Flops, a Towel and a Ski Mask
FDA Approved Anti-Aging

Retin-A
Anti-Aging
ACTIVE RETINOIDS

• Renova is Retin-A in a moisturizing base.
• Renova is the first ever FDA approved beauty product.
• Claim: “To assist in the reduction of fine lines, wrinkling, brown spots and surface roughness.”
Patient Before and After RENOVA® Treatment

Baseline

24 weeks
Patient Before and After RENOVA® Treatment

Baseline

24 weeks
Patient Before and After RENOVA® Treatment

Baseline

24 weeks
Vitamin A
Non-prescription Products

- Retinol products - contains a larger, more stable molecule with less skin irritation.
- Retinol is not an active form of Vitamin A.
- In theory, the Retinol is absorbed into the skin then converted by enzymes to the active form. Studies are conflicting.
- Johnson & Johnson owns Retin-A, Renova and Neutrogena (Retinol anti-aging cream).
The gray area between drugs and cosmetics. Drugs are known to have biological actions. Cosmetics have no known biological actions.

COSMECEUTICALS
Cosmeceuticals

- Peptides
- Antioxidants
- Polyphenols
- Alpha hydroxyacids
- Stem cells
- Vitamins: C, E
- Botanicals
Twins Day Research

Sun exposure, smoking stress, antidepressants, divorce & alcohol all contribute to aging.
Myths vs. Facts
Tanning gives skin a “Healthy Glow”
FACT
Tanning beds are safer than the sun
FACT

Ultraviolet radiation, whether from the sun or from a tanning bed, causes wrinkles and skin cancers.
Tanning Bed Facts

• WHO added tanning machines to its list of the most dangerous cancer-causing forms of radiation.

• International Agency for Research on Cancer reported that those who use sunbeds before age 30 increase their lifetime risk of melanoma by 75%.

• Yet, the number of tanning salons exceeds the number of Starbucks.
Tanning Bed Facts

• Tanning beds transmit 12-15 times the UV radiation than the sun.

• NYU study determined that one 20 minute session in a tanning bed was equivalent to 5 eight hour days (40 hours) lying on the beach without sunscreen on.
Artificial tanning before vacation will prevent sunburn.
Artificial Tanning Prior to Spring Break Offered No Protection Against Sunburn

• 163 Iowa college students.
• In fact, the study found a marginal increase in the risk of sunburn.
• Artificial tanning gave the students a false sense of security in addition to increasing their risk for developing skin cancer.

Sunscreens should only be applied before anticipated sun exposure.
FACT

Eighty percent of all sun damage incurred over a lifetime is from incidental sun exposure.
One bottle of sunscreen should last the whole summer.
FACT

A week at the beach for a family of 4 would require a minimum of 6 eight ounce bottles of sunscreen if the sunscreen was applied as recommended!
“All natural” ingredients are better for my skin.
FACT

• There are currently no regulations on the use of “Natural”.
• A manufacturer is free to use the term regardless of what is in the product.
Moisturizers prevent wrinkles.
FACT

Moisturizers can improve the appearance of fine lines and wrinkles but do nothing to treat or prevent them.
Facials are good for your skin.
FACT

A recent study demonstrated that 80% of people get breakouts from facials. Although they are relaxing and feel good, they have no long term skin benefit.
With the right contraption, you can “exercise away” your wrinkles.

QVC Facial Flex – the All-Natural Facelift!
FACT

• Wrinkles are caused by repetitive muscle motion: laughing, smiling, frowning, etc.

• Botox eliminates wrinkles by paralyzing the underlying muscle.
Better than Botox?
FACT

The only thing better than Botox is a plastic surgeon!
...The Many Faces of the Botox Babe...

Happy

Sad

Worried

Excited

Depressed

Asleep

© 2002 HANDELSMAN—NEWSDAY
BOTOX: AN ANTIDEPRESSANT?

• Current research suggests moods can be altered by changing facial expressions.

• Injecting Botox into the brow area of 10 clinically depressed women prevented them from furrowing their brow muscles for several months. Two months later, nine women had clinically “recovered” from their depression.

Collagen creams help to build up the collagen in your skin.
BECAUSE 30th SKIN CAN WAIT FOR SURGERY

WRINKLE DE-CREASE
COLLAGEN FILLER

WRINKLE REDUCER
with Collagen Bio-Spheres & Boswelox®

Now, the power of collagen to diffuse the appearance of lines and wrinkles.

RESULTS:
Immediately: Visibly smooths wrinkles by up to 20% in 3 weeks. 54% saw fewer lines after 4 months.

L’OREAL
PARIS

Because you’re worth it.

9 out of 10 prefer LiftFusion™ over Botox® in a clinical study.

LIFT FUSION™
MICRO-INJECTED M-TOX™
TRANSDERMAL FACE LIFT™
(No needles. No waiting. No kidding.)

The first Topical-Injectable™ alternative to doctor-administered anti-wrinkle injections. Technologically advanced LiftFusion utilizes a serum with micro-injected proprietary M-Tox™ that delivers instant, visibly transformative results comparable to popular injectables like Botox® without the discomfort, side effects and unnatural look of facial expressions associated with many syringe-administered anti-wrinkle products.

The clinical study concluded: “Only the LiftFusion treatment delivered statistically significant visual reduction of wrinkles at all evaluations. LiftFusion was clearly superior to Botox®.”

FUSION BEAUTY™

learn more: fusionbeauty.com

Sephora sephora.com
FACT

• THE ONLY WAY FOR COLLAGEN MOLECULES TO GET INTO YOUR SKIN IS WITH A NEEDLE.

• COLLAGEN MOLECULES ARE TOO LARGE TO PENETRATE THE EPIDERMIS THEREFORE, THEY STAY ON THE SURFACE OF THE SKIN.

• THEY ARE GOOD MOISTURIZERS.
Estee Lauder is better than Clinique.
The Estee Lauder Corporation owns Clinique, Bobbi Brown, Aveda, Origins, Prescriptives, M.A.C., La Mer, etc.
“*” fades or prevents stretch marks?

* Cocoa butter, Strivectin, Vitamin E, etc.
To date, there is not an over-the-counter cream that can fade or prevent stretch marks.
Beauty is not in the face: beauty is a light in the heart.

Kahlil Gibran