

What Aesthetic Derms Need to Know About Hair Loss

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2023 West Coast Derm

Disclosure

- **No conflict of interest**

- **National Alopecia Areata Foundation**

- **Chief Scientific Officer 2015-2022**



- **University of California Irvine**

- **Principal Investigator: Abbvie, Arcutis, Arena, BMS, Concert, Galderma, Merz, Lilly, Kadmon, Novartis, Pfizer.**
 - **Advisory Board,/Honoraria/Fees: Arena, Galderma, Lilly, Nutrafol, Concert, Loreal, Pfizer**

**Hair loss
Is everywhere!**

Post COVID

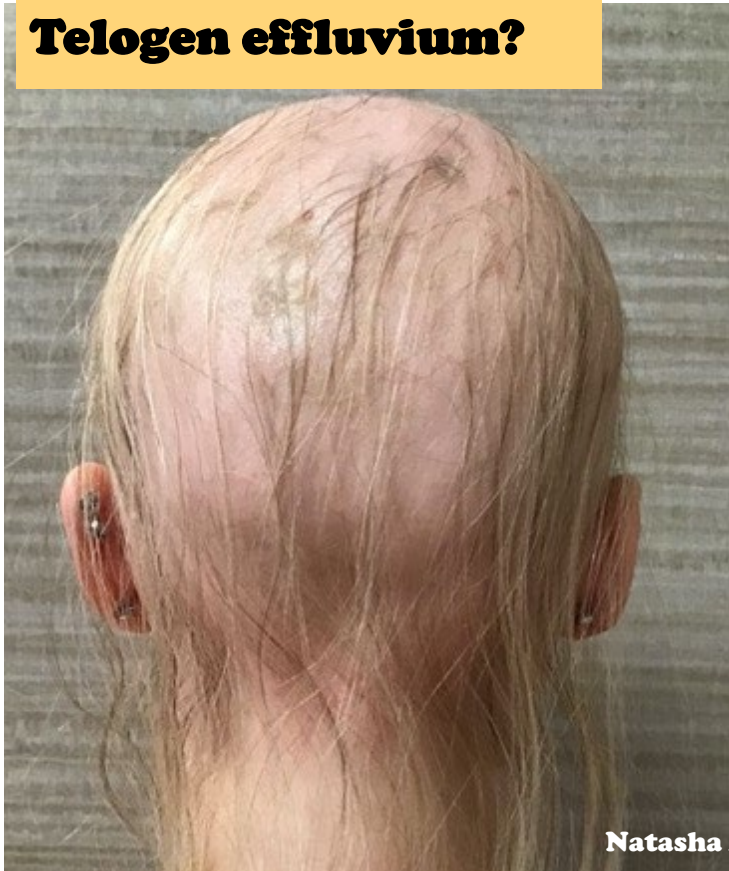
- **Top 5 sequelae**
- **Inflammation**
- **Telogen effluvium**



32 yo F
12 weeks

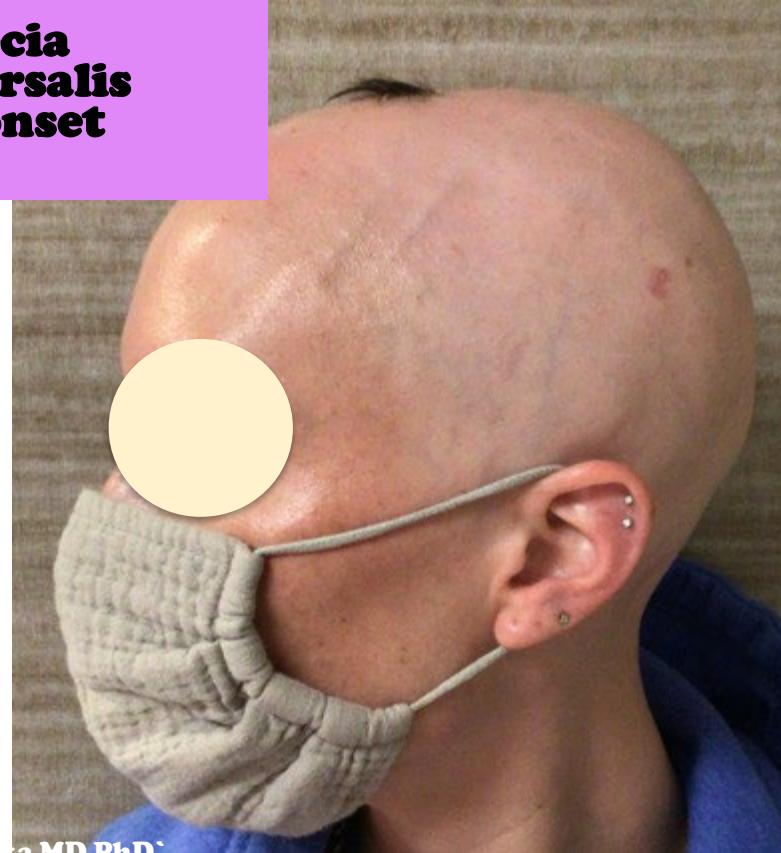
Mild COVID-19 infection

Telogen effluvium?



Natasha

**Alopecia
Universalis
new onset**



MD PhD

AA exacerbation: COVID-19 Vaccine



[Arash Babadjouni¹](#), [Celine H Phong²](#), [Cristina Nguyen²](#), [Natasha A Mesinkovska](#)

COVID-19 vaccination related exacerbations of hair loss in patients with moderate-to-severe alopecia areata on systemic therapy. JAAD 2022
Nov;29:181-185

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**ALOPECIAS:
Scarring**

Vs.

Non-scarring



**Early
treatment!**

Hair Loss : My Approach



**WHY ...
SO
difficult?**

WHY ... so difficult?

- **On Adulting!**
 - **AGA vs. Senescence**
- **WOMEN: 1/3 after age 40**
- **Hormones ...**
- **Rx: Minoxidil, spironolactone, finasteride**



>>—————<<
CLINICAL
CORRELATION
RECOMMENDED
—————>><<

The long awaited alopecia biopsy report

FINAL DIAGNOSIS:

A.Skin, right frontal scalp, punch biopsy: **Non-scarring alopecia (see comment)**

- **There is differential...**
- **These are features of nonscarring alopecia, and the differential diagnosis includes telogen effluvium, androgenetic alopecia, or chronic (burnt out) state of alopecia areata.**
- **Clinical correlation is recommended”**

Agenda:

1. ASK
2. EXAM
3. TREAT



What products they use?



SCALP ALLERGENS







Hair dye
46%

Shampoo
27%

Topical minoxidil
8%

ACD Scalp Review: Allergens

Offending Allergens	% Reported		
1. Phenylenediamine (PPD) 	24%	Methylisothiazolinone/methylchloroisothiazolinone (MI/MCI), Fragrance mix, Para-toluenediamine sulphate, Formaldehyde Formaldehyde-releasers (imidazolidinyl urea, diazolidinyl urea, and 2-bromo-2-nitropropane-1,3-diol), Alkyl glucosides, Propylene glycol, essential oils aminoazobenzene, a-nitro PPD	<2% each
2. Cocamidopropyl betaine 3-dimethylamino-propyl-amine (DMPA) 	17%	Thiuram mix, Glyceryl monothioglycolate (GMTG), 3-nitro-p-hydroxyethyl aminophenol, 4-aminophenol, 3-aminophenol, Paraben (Butylparaben, Ethylparaben, Propylparaben), Balsam of Peru, Budesonide, 3-aminophenol, 4-aminophenol, Ammonium persulfate, Caine mixture/benzocaine, Cocobetaine, D&C Yellow No.11, Ethylenediamine dihydrochloride, Epoxy resin, Lauramide diethanolamine (DEA), Neomycin, Neoprene, Methylidibromo glutaronitrile (MDGN), p-tert butylphenol formaldehyde resin (PTBFR), Resorcinol, Sodium N-methyl-N-(1-oxododecyl)-beta-alaninate (LMA), Cobalt chloride, Ammonium thioglycolate	
3. Minoxidil 	6%		
4. Nickel 	5%		
5. Disperse dyes	4%		
6. Zinc pyrithione	3%		

ACD Scalp Review: Products

Implicated Topical Products	% Reported
4. Moisturizer/conditioner 5. Permanent waves	2% each
Henna, CPAP, Wig and wig adhesive (superglue/tape), Brillantine, Fluocinolone oil, Hair gel, Traditional Chinese Medicine,	1% each
Hat, Spectacle Frame, Body wash, Headband, Hair clips, Hair stick, Hair tonic, Aromatherapy, Hair-smoothing treatment, Benzyl nicotinate, Benzoxonium cream, Clobetasol foam, Topical latanoprost	0.5% each

Scalp Allergic contact dermatitis (ACD)

- **RARE: Isolated scalp dermatitis (9.3%)**
 - **Signs found elsewhere on body**
 - **neck (28%)**
 - **face (23%)**
 - **forehead (15%).**

Pham et al., 2020 (submitted)

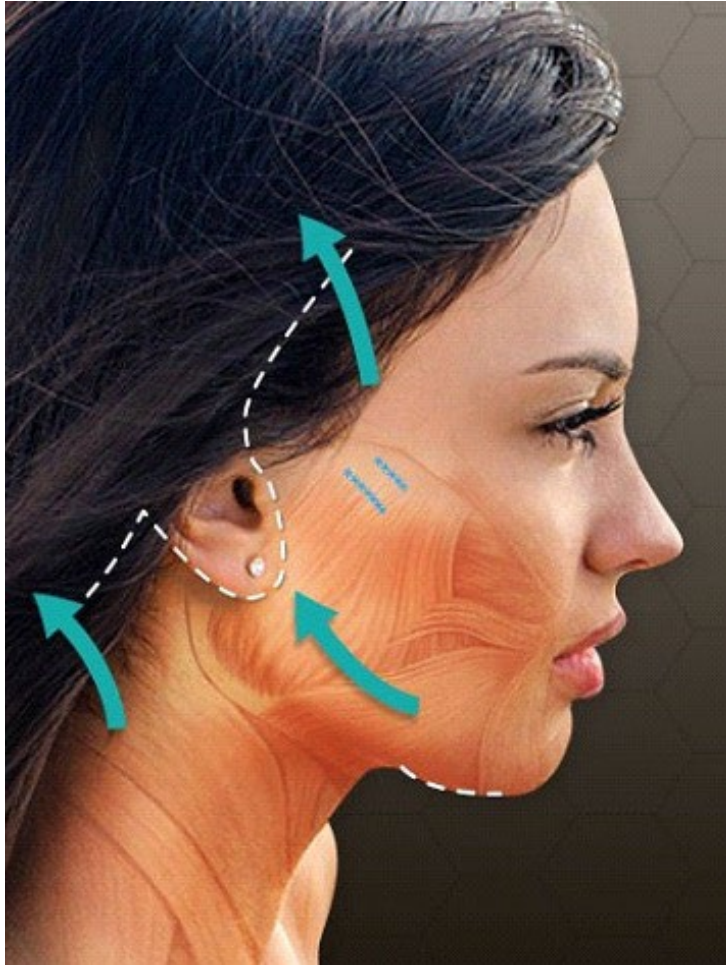


VAN LERBERGHE ET AL.

Pham et al., 2021 Dermatitis (submitted)

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Tip 3. Ask if any scalp surgeries?



- **FFA**
- **Coincidence?**
- **Cases in literature**

Tip 2: Botulinum toxin queen?

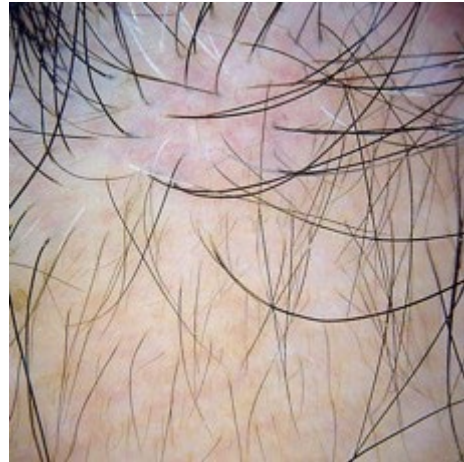


Botulinum-induced frontal alopecia (BIFA)



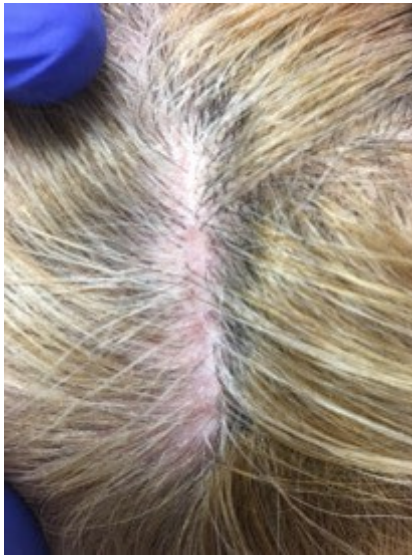
- **Regression of frontal hairline**
- **High forehead (>6 cm)**
 - **5 F**
 - **52.7 years (range 45-58)**
- **Hx: Periodic BTx for forehead rhytides**
 - **Q 4 to 6 months**
 - **1-10 years (mean 2.6)**

Botulin-induced frontal alopecia (BIFA)



- No biopsy
- Not FFA ?
 - normal skin
 - no atrophy
 - no scarring
 - no inflammatory signs

Tip 3. Any scars on scalp?



Pham et al Skin App 2021 review

Scalp surgeries: FFA vs AGA (2018)



FFA=54



AGA=51

**Natasha A Mesinkovska MD
PhD**

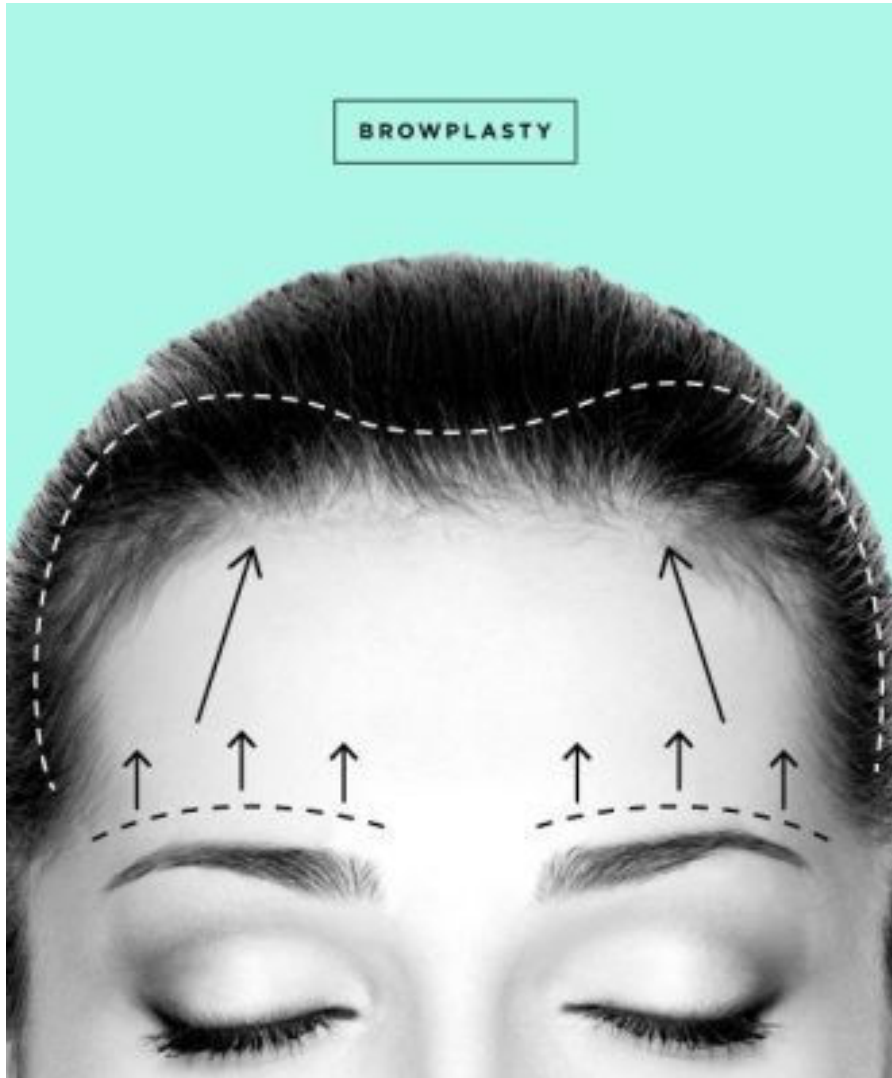
Pham et al Skin App 2021 review

SURGICAL PROCEDURES			
scalp and face			
	Frontal Alopecia (n=54)	AGA (n=51)	P-value
Patients	27 (50%)	5 (9.8%)	<0.001*

SURGICAL PROCEDURES

scalp and face

	Frontal Alopecia	AGA	P-value
	Head trauma w/ scar, Mohs surgery, Maxillofacial surgery Acoustic Neuroma Cranial orbital decompression		
Age at procedure	53.42±12 years old	52.2±13.07 years old	0.838
Time between procedure and disease onset	9±9.9 years	6.6±6.6 years	0.61



Role of sunscreen?

- **AGA and FFA same current use**
- **But FFA more before surgery**
- **?**

Hairline reduction surgery



Hairline reduction surgery





Agenda: TIPS

1. ASK

2. EXAM



1. Check The Occiput



Tip 2: Search for red areas

- **SUBTLE**
- **Erythematous patches and plaques**
- **Inflammation**
 - **Alopecia areata**
 - **Lupus erythematosus**
 - **Lichen planopilaris**
 - **Psoriasis**

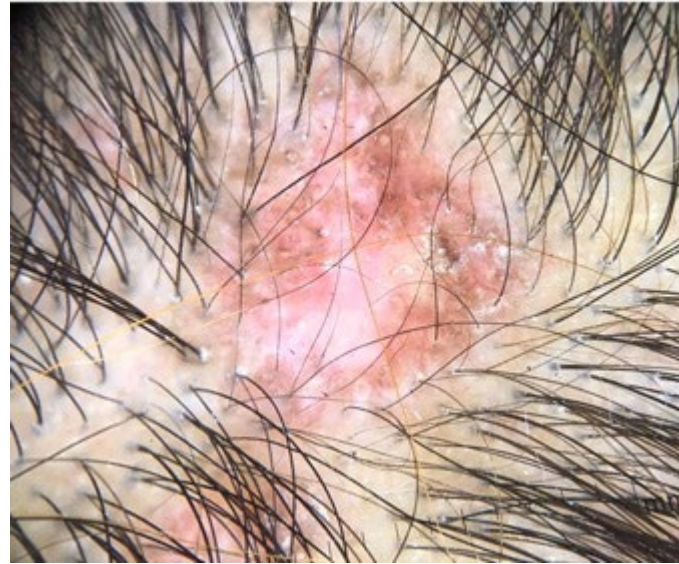
Alopecia areata



Psoriasis

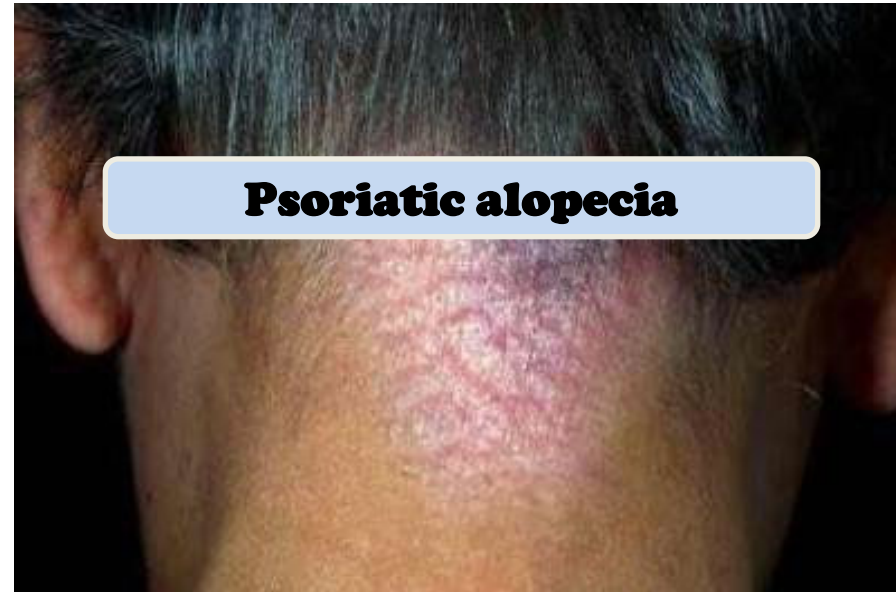


Discoid Lupus erythematosus



Tip 4. Do not miss the scale

- **Sebopsoriasis 28%**
- **Psoriatic alopecia**
 - **Diffuse**
 - **Patchy**
 - **Histology:**
 - **sebaceous gland atrophy?**
 - **Increased risk for alopecia areata 2.5OR**



Psoriatic plaque

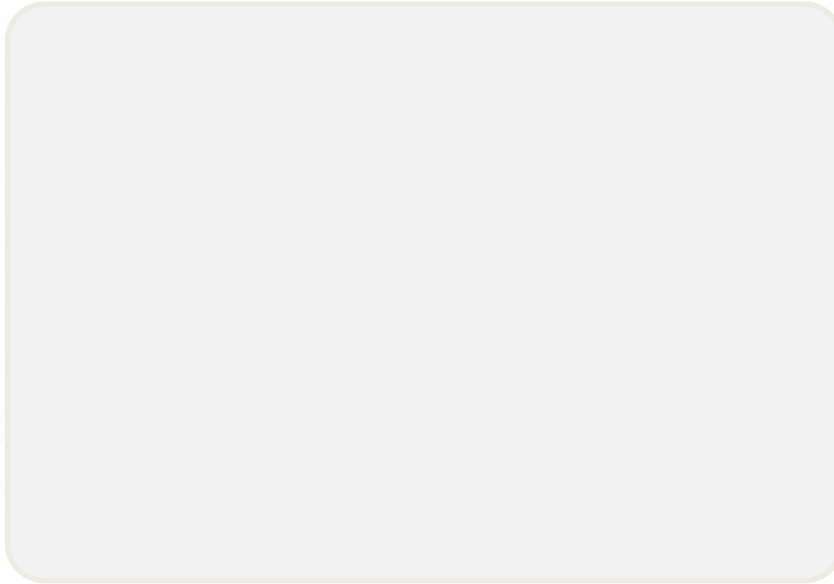


Psoriasis



AGA ? Or Psoriatic alopecia

**Psoriatic alopecia
Regrowth with
betamethasone dipropionate/calcipotriol hydrate**



Apremilast



PSORIATIC ALOPECIA

Tip 5. Look around ...

- **EARS**
- **MOUTH**
- **FACE**

Oral Lichen Planus



Geographic tongue



Forehead lack of wrinkles



Veins

FFA 62 yo

Allergic shiners?



Pt with AA

AA



EYELASHES??

FACIAL PAPULES = FFA



28 y/o FFA patient

- **FULL BODY ?**

Psoriasis



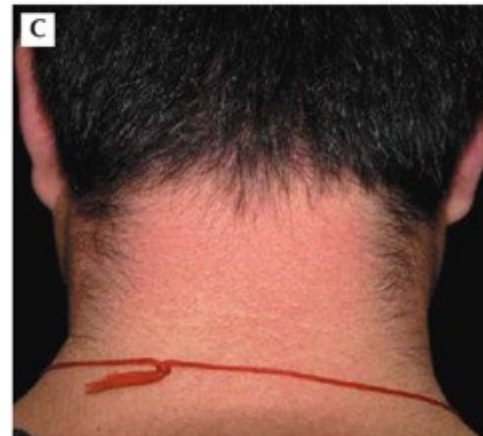
Allergy to PPD



Natasha A Mesinkovska MD PhD

ACD

- **zinc
pyrithione
in shampoo**



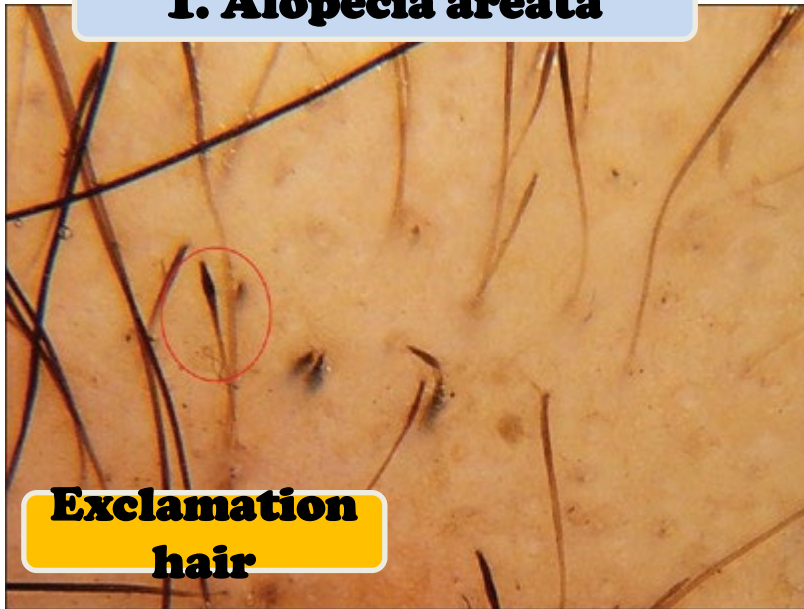
[Chih-Wei Hsieh](#), [Mei-Eng Tu](#), [Yu-hung Wu](#)
Published 2010 *Medicine*

Tip 8: Pull out your dermatoscope

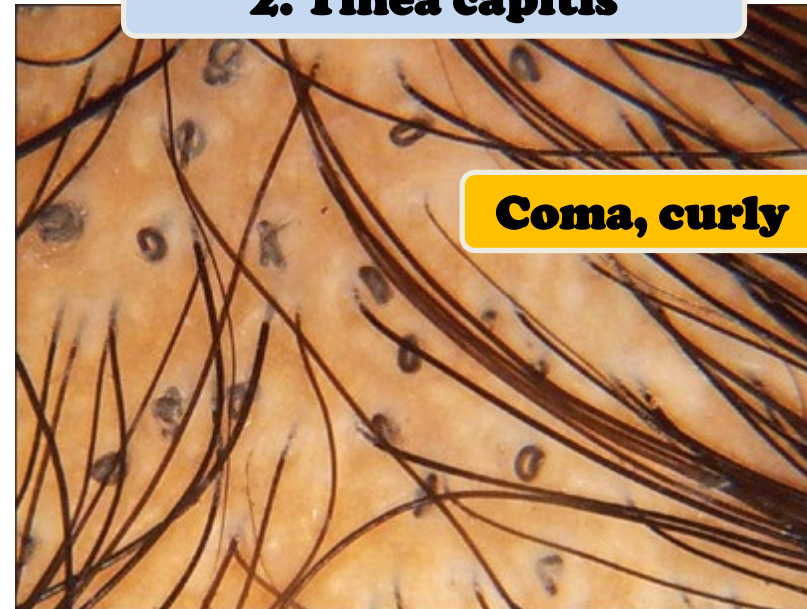


Tip 8: Pull out your dermatoscope

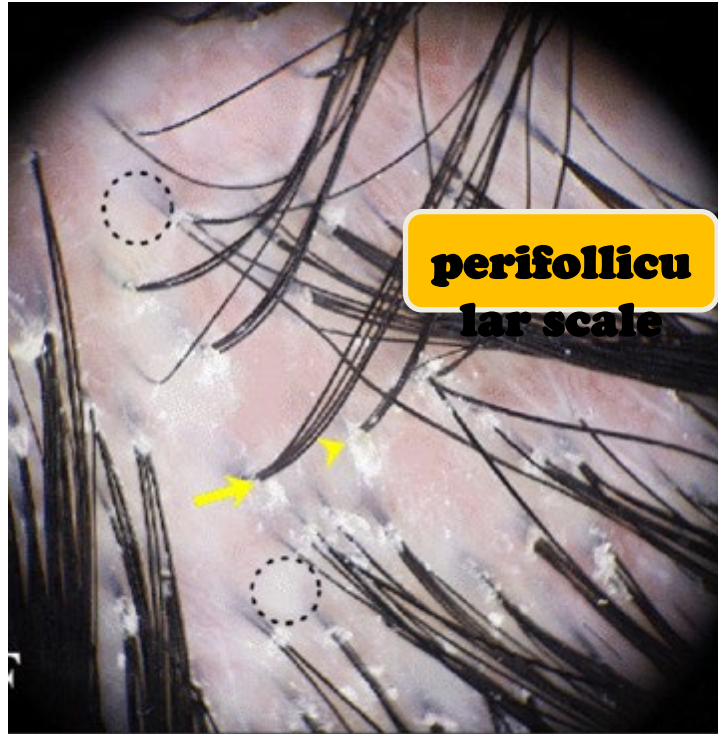
1. Alopecia areata



2. Tinea capitis



Lichen plano pilaris



Agenda: TIPS

1. **ASK**
2. **EXAM**
3. **WORK UP**



Agenda: TIPS

1. **ASK**
2. **EXAM**
3. **TREAT**



Tip 1: Minoxidil: Just do it?

- **History: Ask about:**
 - **Low BP with fainting**
 - **Arrhythmia**
 - **Cardiac Issues**
 - **Get an OK FROM CARDiologist or PCP**
 - **Leg edema or anasarca**
 - **HAIRY? ethnicity**

Minoxidil oral

- **Adults**
- **Women**
 - **1.25 to 2.5 mg /day +**
- **Men**
 - **2.5 to 5 mg /day +**
- **Children:**
 - **1.25-2.5 mg**



Minoxidil: dosing

- **2.5 mg qd**
- **Afraid/issues:**
 - **2.5 qd or 5 mg qod**
 - **MORE IS MORE!**
 - **Can use topical too initially 2 weeks**
 - **I check everyone's BP**



Minoxidil adverse effects

1. **Hypertrichosis**

dose-dependent (4% risk at 0.25 mg/d, 38% risk at 1 mg/d)

2. **Postural hypotension - 2%**

3. **Lower limb edema**

(4.8%) JAAD 2019 Jimenez-Cauhe et al

Minoxidil: How to increase dose?

Limiting factors:

- **HAIR everywhere**
 - **Blonde**
 - **Grey**
 - **Vs the rest of us!**
- **Edema**
 - **Leg**
 - **Hands**
 - **Case report: Anasarca**

Minoxidil: Blood Pressure

- **#1 What about my blood pressure?**
- **No differences in BP**
 - **24 hour study: NO CHANGE**
 - **5 month +/- 1: NO CHANGE**

Kincaid C et al 2023



Minoxidil: EDEMA

Characteristics	Male	Female	Total	Edema Cohort
Dose Weight, mean (SD) mg/kg/d	0.038 (0.019)	0.034 (0.014)	0.035 (0.016)	0.059 (0.017)
Minoxidil Dosage, no. (%) mg				
0.625	0	1 (1)	1	0
1.25	1 (4)	21 (27)	22	0
2.5	19 (83)	53 (69)	72	3 (60)
5	3 (13)	2 (3)	5	2 (40)
Duration on Medication, no. (%)				
<1m	0	1 (1)	1	0
1-3mo	4 (17)	8 (10)	12	1 (20)
3-6mo	7 (30)	12 (16)	19	1 (20)
6-12mo	5 (22)	20 (26)	25	1 (20)
>12mo	7 (30)	36 (47)	43	2 (40)
Developed Edema, no. (%)				
Yes	0	5 (6)	5	-
No	23 (100)	72 (94)	95	-
Comorbidity, no. (%)				
Hypertension	2 (9)	19 (25)	21	0
Cardiovascular Disease	3 (13)	5 (6)	8	1 (20)
Hyperlipidemia	3 (13)	22 (28)	25	1 (20)
Diabetes	3 (13)	3 (4)	6	0
Hypothyroid	1 (4)	7 (9)	8	1 (20)
Other Inflammatory Condition	0	11 (14)	11	1 (20)

Table 2. Dosage, duration, development of edema, and comorbidities in patients following initiation of LDOM therapy.

Manuscript submitted



Ilhan Esse, MS3
University of Minnesota
Clinical Research Fellow,
UC Irvine Department of
Dermatology

Minoxidil: EDEMA

- **Edema in 5%**
- **ALL Female**
 - 5/100 patients
- **DOSE**
 - 40% [2/5] of patients on 5mg
 - 4% [3/72] on 2.5mg
 - 0. on 0.625-1.25mg

Edema Patients

- **Factor weight (mg/kg/d)**
- **EARLY:**
 - **<3 months of therapy**
 - **bilateral**
 - **Feet/ankle ALL**
 - **hands 20%**
 - **pitting or non pitting**

RX edema:

- **discontinue therapy or decrease dosage**
- **Edema completely or partially resolved < 1 week**
 - **partially - history of peripheral/leg edema**



Ilhan Esse, MS3
University of Minnesota
Clinical Research Fellow,
UC Irvine Department of
Dermatology

Minoxidil: Pericardial Effusions

2 cases mild OSH

Box warning of minoxidil:

” Pericardial effusion, occasionally with tamponade, has been observed in about 3% of treated patients ”

Kincaid C et al 2023



Pericardial Effusions

Bedside ultrasound at hair clinic???

- 100 pts
- 60 minoxidil : 40 not
- **Trace effusions!**

Cardiologist verification

- **Trace effusions: Minoxidil = none**
- **No mild, moderate effusions**



Kincaid C et al 2023





A. Woman (33 years) with female pattern hair loss before starting oral minoxidil treatment (1 mg/d). B. Patient after 12 months of treatment.

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Actas Dermosifiliogr. 2019;110:861-2

2. What LIGHT should I buy?

Photobiomodulation

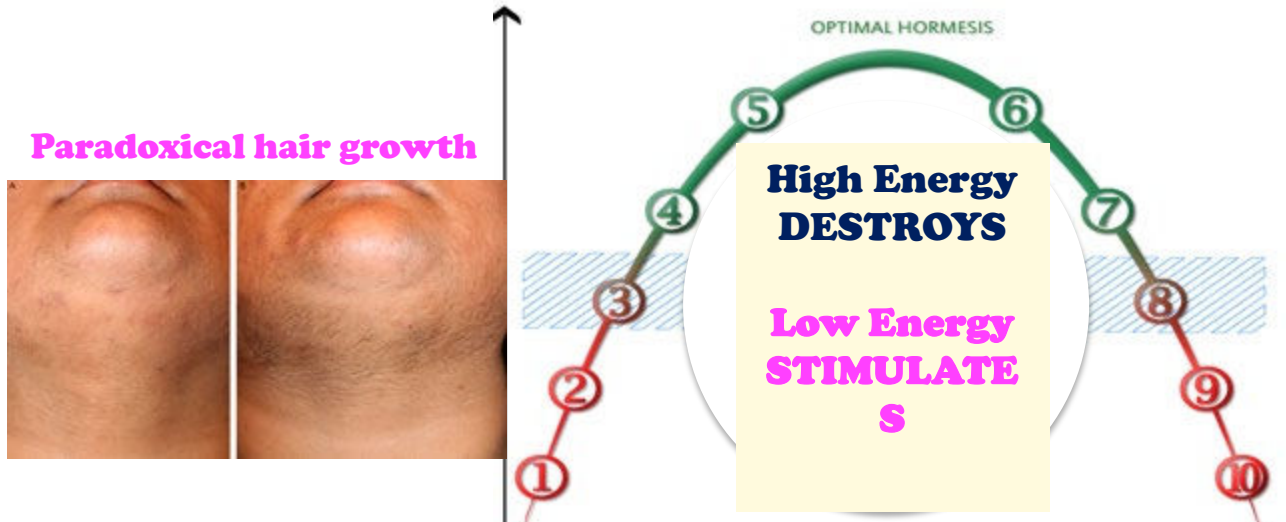


EXPLOSION OF DEVICES
66 LLLT registered with US
FDA (2007)



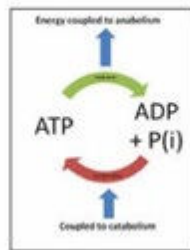
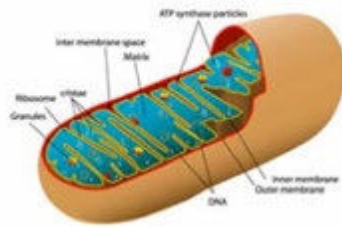
Light Therapy and Hair:

Hormesis

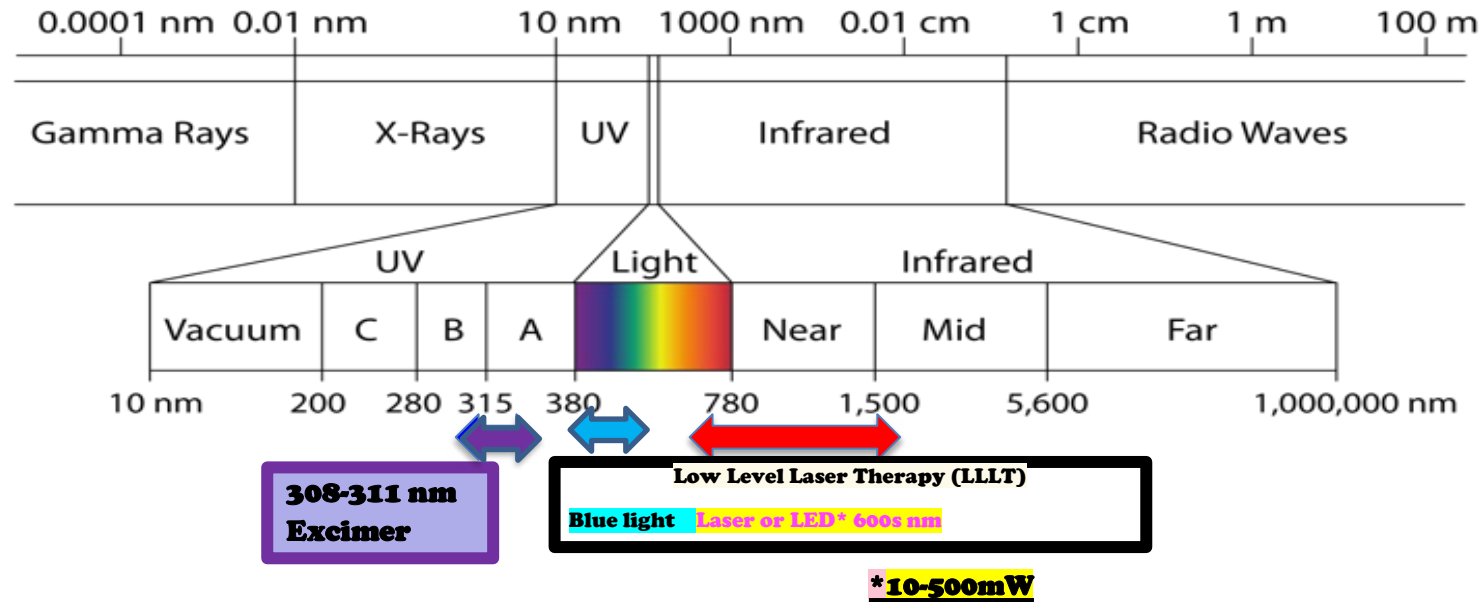


epilation

Mitochondria & ADP-ATP Conversion



Photobiomodulation



**What type of hair loss is it
good for?**

**@natashader
m**

LLLT and alopecia

- **Good for AGA**

- **Many publications supporting efficacy**
 - ~ topical minoxidil
- **M and F**
- **Expectations!**
 - **Cost vs. quality**

- **Promising**

- **Chemotherapy alopecia**
- **? Scarring Alopecia early**

- **Not effective**

- **Alopecia areata**

LLLT in Androgenetic alopecia

- **AGA treatment**

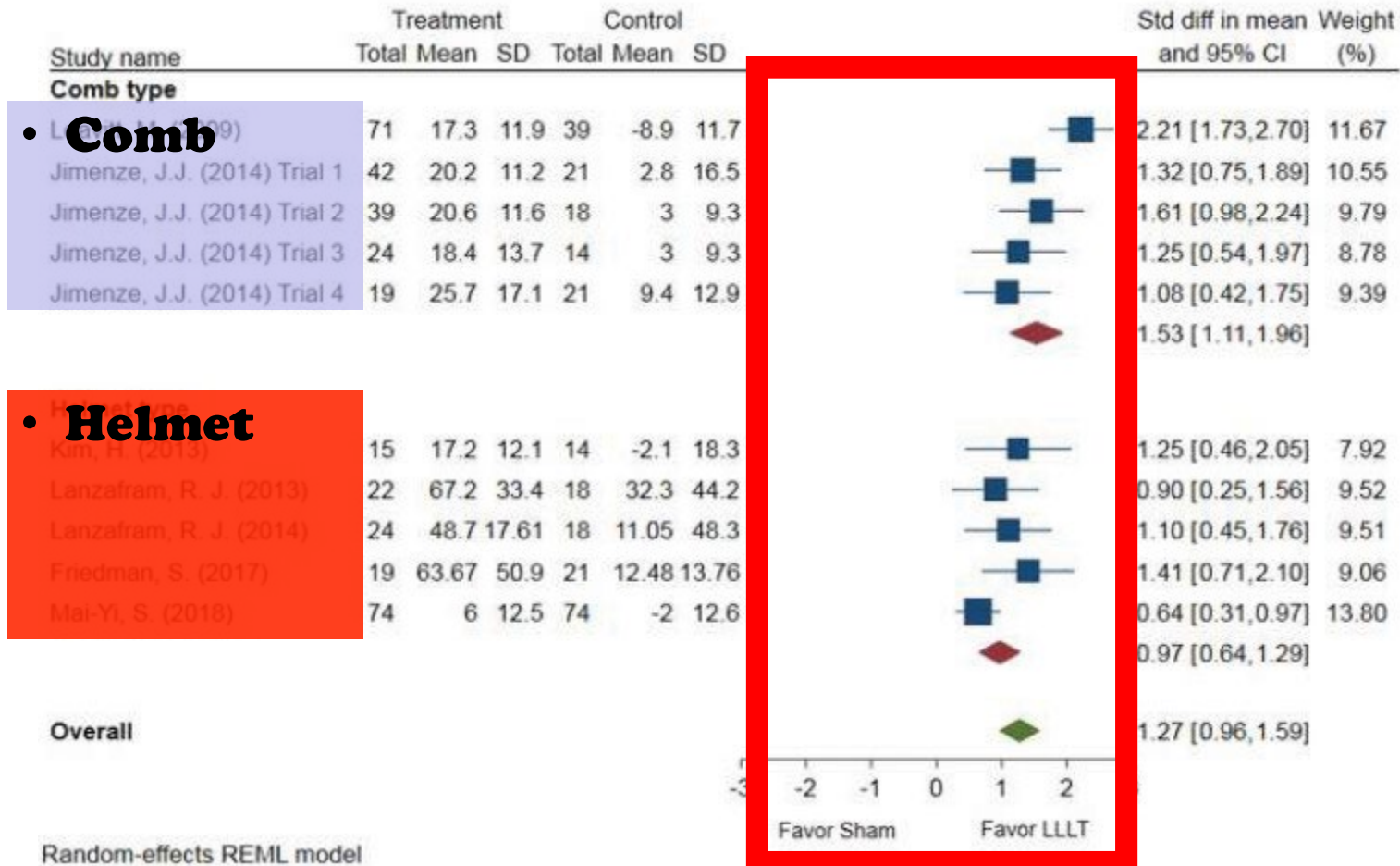
- **3 x per week**
- **10-15 minutes**
- **~ 4 months of Rx**
- **LONG TERM**

- **Very safe**

- **Temporary shedding**
 - **1-2 months, resolves**
- **Neoplasms on scalp: dysplastic or malignant could be stimulated ?**

Natasha:
Good adjunct

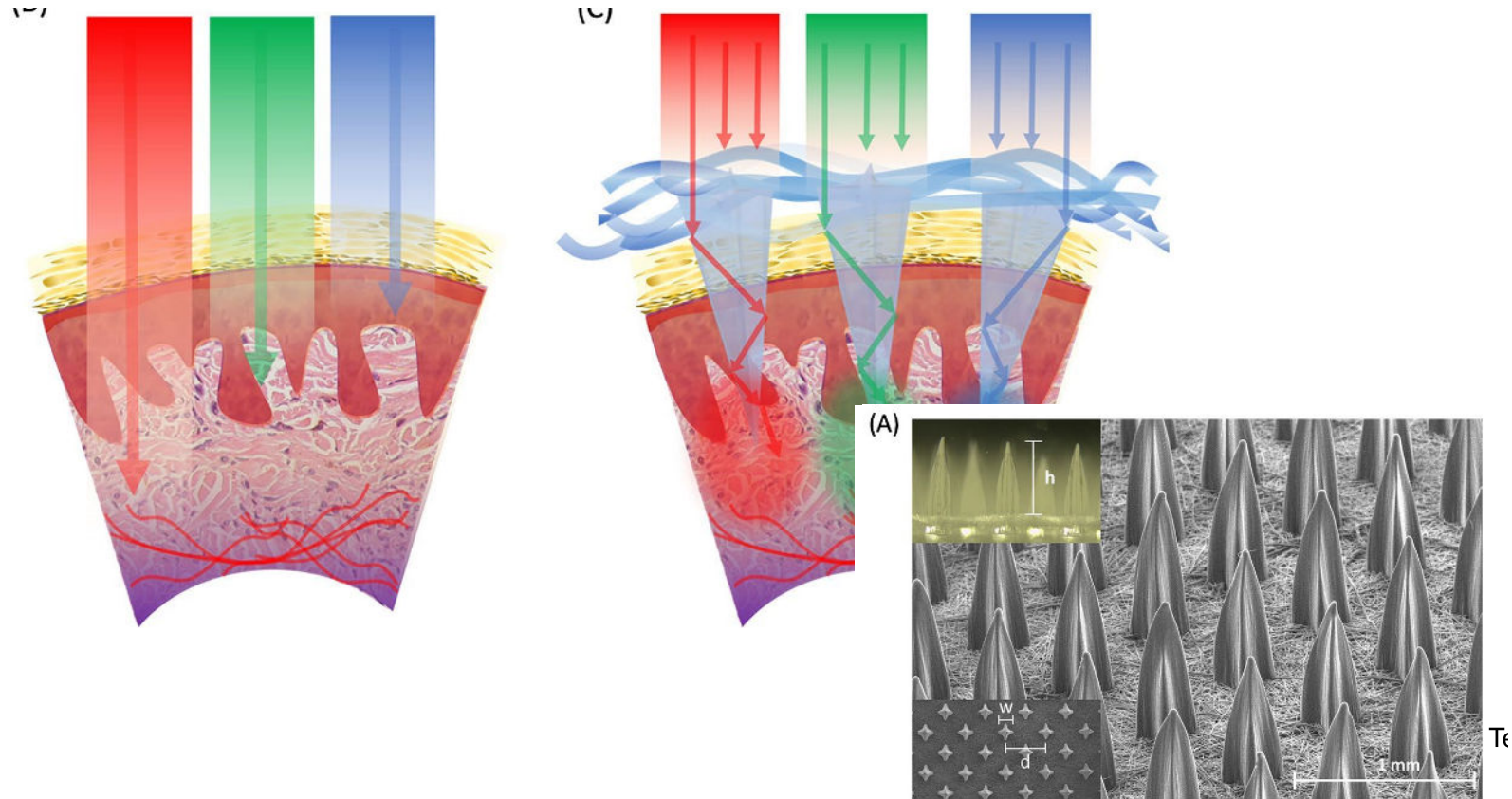
Hair comb, Helmet, Cap... What to get?



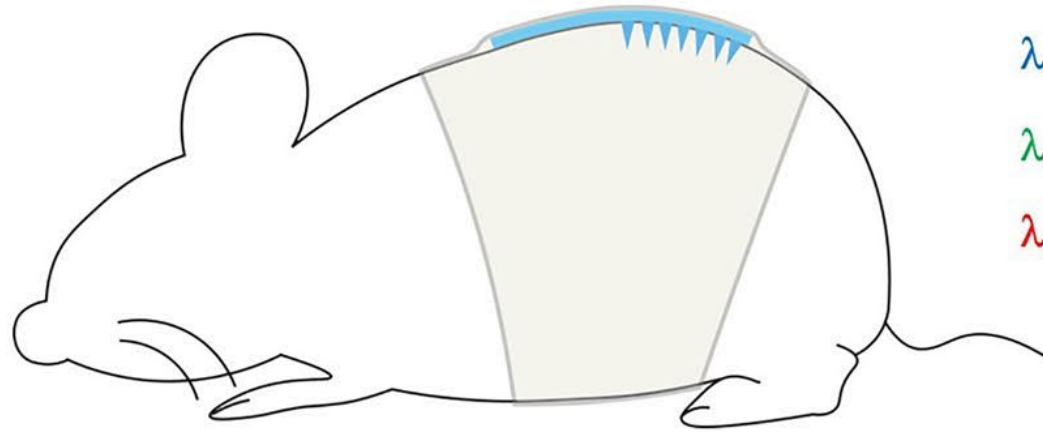
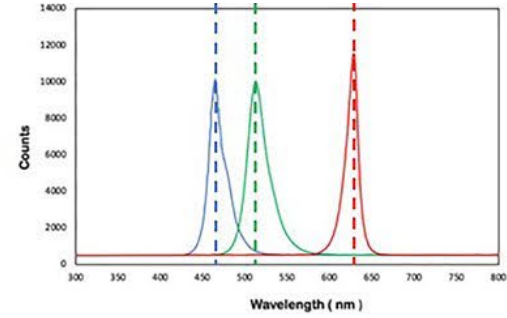
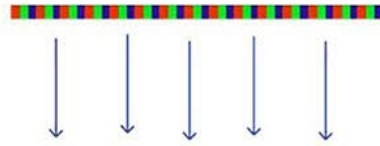
Low-Level Light Therapy:

Which light type works the best?

Microneedle LED: Control of light penetration



(B)

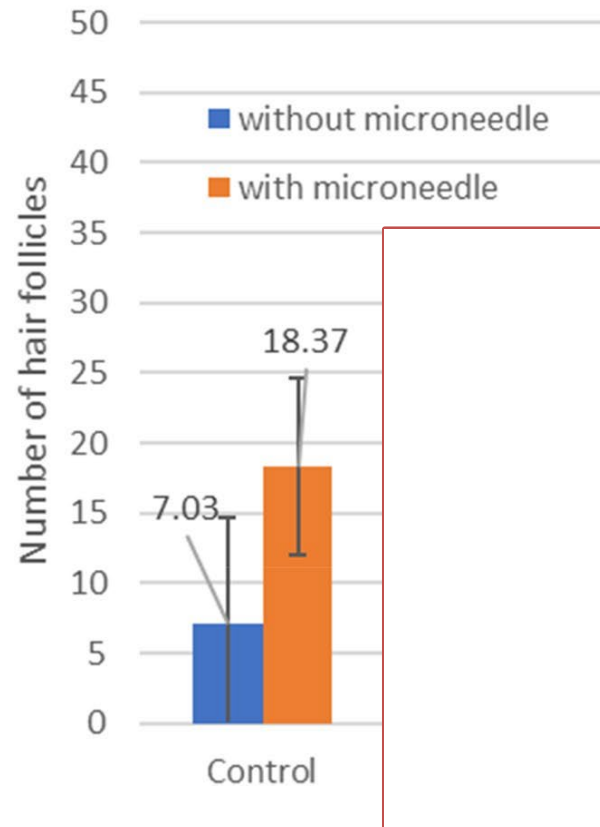


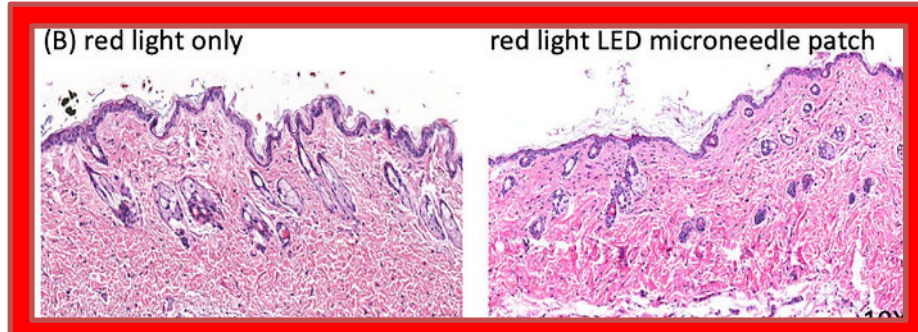
$$\lambda_1 = 465 \text{ nm}$$

$$\lambda_2 = 513 \text{ nm}$$

$$\lambda_3 = 629 \text{ nm}$$

Hair counts

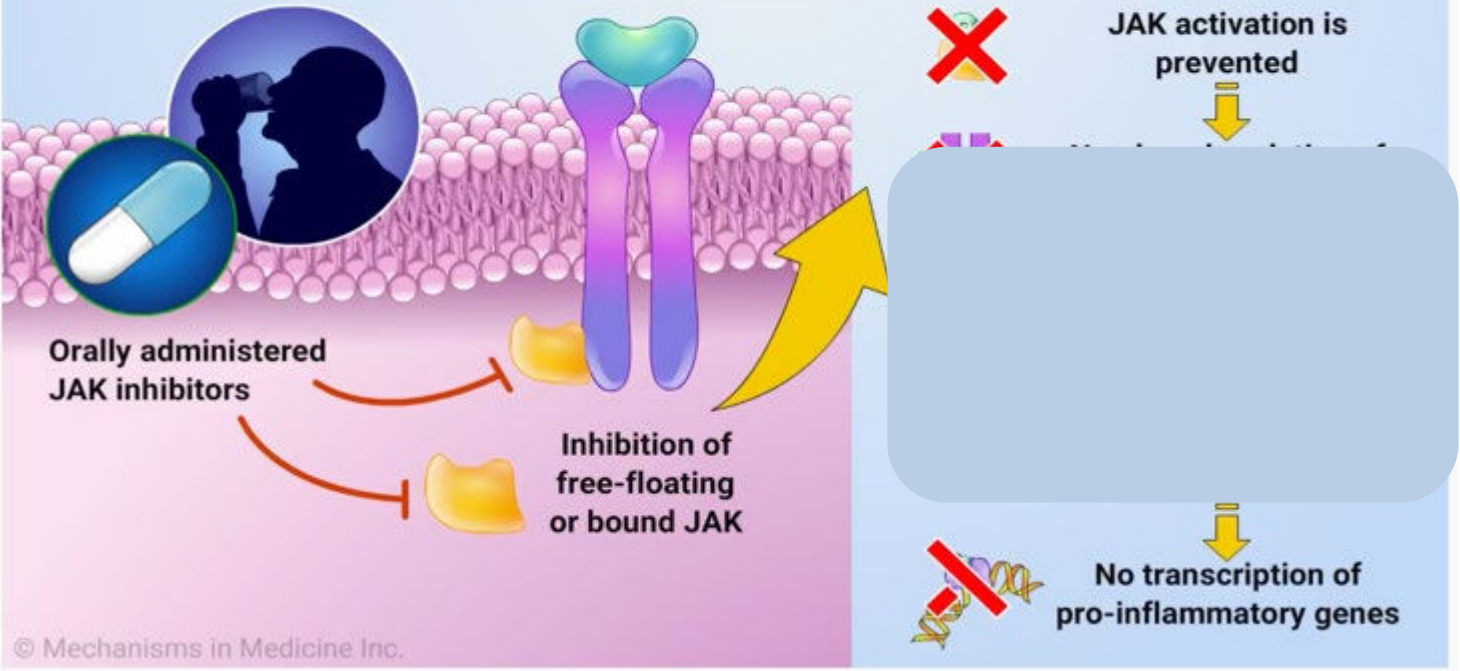




Hair histology



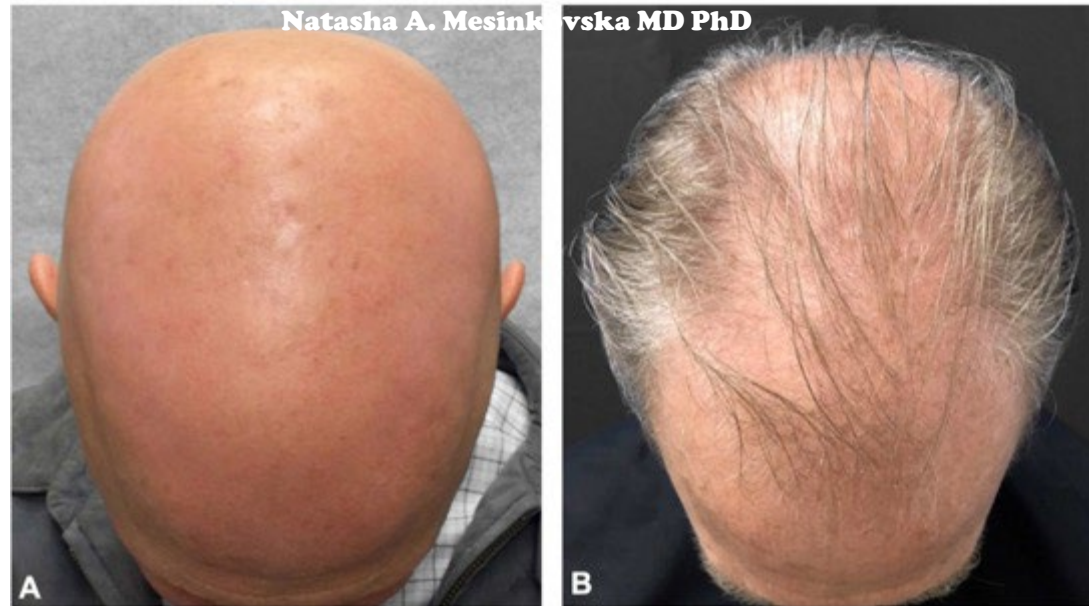
JAK inhibitors prevent JAK-STAT signaling pathway



Warn them

U. FDA labeling Boxed Warning
for Serious Infections, Malignancy,
Cardiac events and Thrombosis.

not for AGA



**A 65yo 12-year history
(A) before JAK inhibitor (SALT 100) and
(B) after 44 weeks (SALT 40).**

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Long term

Pre



Month 5



Month 6



**1 month
After
stopping**

Tofacitinib dose: 5 mg BID (10 mg)
Age: 53, Duration of disease: 30 yrs

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Courtesy of Dr. Bergfeld

No skipping pills



6 months



Natasha A. Mesinkovska MD PhD



Natasha A. Mesinkovska MD PhD

7 months

Tofacitinib dose: 5 mg BID (10 mg)

Age: 18

Duration of disease: 6 yrs



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Treat the patient!

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