

Dermatology and Developmental Disability

Renee Howard MD
Professor of Dermatology, UCSF
Chief, Pediatric Dermatology
UCSF Benioff Children's Hospital Oakland



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Disclosure

- I have nothing to disclose
- No financial relationship with Amazon or branded products shown



Overview



Management of common skin diseases in children and young adults with developmental disability (DD) presents special challenges.

Patients with DD can have behaviors that alter or scar skin, hair, nails

Nutritional deficiency may present with skin lesions that are a clue to the problem.

Likewise, in children with DD of unknown cause, cutaneous findings can help guide definitive genetic diagnosis.

Learning Objectives



- Learn therapeutic tricks for 5 common skin diseases
- Describe morphology and treatment approach for 3 types of cutaneous lesions caused by body-focused repetitive behaviors
- Recognize skin findings resulting from 2 nutritional disorders
- Learn approach to the infant or child presenting with developmental disability and dermatologic disease or birthmarks

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Common things are common

- Atopic dermatitis
- Acne
- Warts
- Scalp psoriasis and seborrheic dermatitis
- Dermatology procedures in patients with DD and ASD



Atopy and Autism Spectrum Disorder (ASD)

- ?Increased risk ASD and ADHD with atopy early in life including infantile atopic dermatitis
- Due to sleep disruption, inflammatory cytokines?
- Atopic dermatitis more prevalent in this population?



J Pediatr. 2016 Apr;171:248-55
Pediatr Dermatol. 2015 Jul-Aug;32(4):455-60 .

Behavioral impact of atopic dermatitis

- Tactile sensory dysfunction exacerbates Itch/scratch, digging and picking as response
- Increased agitation
- Sleep disruption
- Superinfection
- Overwhelmed parents



Child Care Health Dev. 2017 Jan;43(1):67-74.

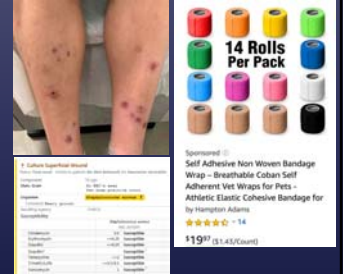
Atopic dermatitis treatment

- May resist topical application of medication and moisturizer
 - Use stronger topical agents once instead of weaker twice daily
- Vehicles-gels, creams that rub in
- Parents need to manage
 - Rewards
 - Keep only gentle skin care products in shower, by sink



Addressing itch

- Treat aggressively
 - Staph superinfection
 - Phototherapy
 - Systemic therapy
 - Dupilumab?
- Occlusion
 - Wrap extremities
 - Cover with Duoderm or Tegaderm
- Sedating antihistamines
 - Hydroxyzine 1mg/kg HS
 - Beware paradoxical effect, decreased seizure threshold



Acne vulgaris challenges

- Issues with autonomy and therapeutic decision making
 - Caregivers as advocates
- Pain, scarring, disfigurement
- Access to care limited
 - Restricted MediCal formularies
 - Workarounds
 - Shortage of medical dermatologists

follicles - this is called folliculitis. It is also possible that he is having some infected bug/insect bites.

Talk to your doctor about a possible dermatology (skin specialist) referral if the antibiotics don't clear up [redacted]'s rash. Below is a listing of Bay Area Dermatologists:

Children's Hospital Oakland Dermatology
747 52nd Street
Oakland, CA 94609
Phone 510-428-3304

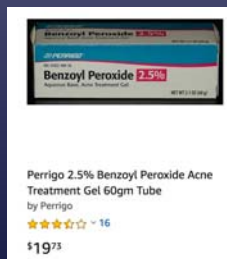
Isotretinoin denied by MediCal health plan

OCP + Aldactone 25 mg BID

- Benzoyl peroxide
- Clindamycin gel
- Tretinoin cream .025%
- Doxycycline x 6-12 months max
- Oral contraceptive
- Aldactone low dose as antiandrogen
- Never took isotretinoin

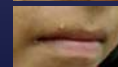
Acne workarounds for primary care

- OTC benzoyl peroxide 2.5% - 5% cleanser or 2.5% water-based gel
- OTC adapalene .1% gel
- Doxycycline monohydrate 100mg once or twice daily
- Oral contraceptives for girls
 - Add aldactone 25mg BID
 - Don't use without OCP - teratogenicity



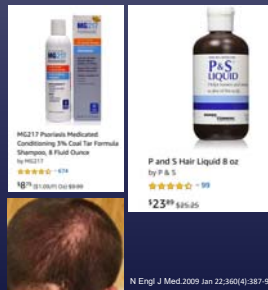
Wart woes

- Freezing hurts, during and after
 - Need several treatments
- Educate families
 - Viral infection, will go away when immune system "finds it"
- Workarounds
 - Salicylic acid 17%
 - Duct tape occlusion HS
 - Cantharone (not great)
 - Imiquimod (often not covered)
 - Squaric acid-derm referral



Seborrheic dermatitis & scalp psoriasis

- Itchy, scaly, sometimes red scalp
- Persistent
- More common in patients with neurologic issues & can coexist
- Treatment tricks
 - Shampoos: 2% ketoconazole twice a week, tar 5 days a week
 - Class I or II topical steroid HS
 - Gel, lotion or solution (can sting)
 - Layer OTC tar and salicylic acid HS



Procedures in patients with DD and ASD

- Pediatric dermatologists are your friends
- Tricks -Dr. Oza
 - "Tell, show, do"
 - "Assent even if can't consent"
 - Lidocaine cream under occlusion
 - Distraction
 - Physical: Ice, vibration
 - Psychological: screen time, headphones



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Dr. Howardism: "Restless Hands Syndrome" AKA

- Hair pulling disorder DSM 5
- Skin picking disorder DSM 5
 - Habit tic deformity
 - Lichen simplex chronicus



Trichotillomania = Hair Pulling Disorder

- Habitual pulling of hair from scalp, brows, lashes
 - Biting, eating hair
- Irregular ill-defined patches
- Impulsiveness, hyperactivity, self-stimulatory, serotonergic
- Can be exacerbated by medications



FIG. 1. The patient's left temporo-parietal region. 1 month after starting MPH. MPH, methylphenidate.

J Child Adolesc Psychopharmacol. 2017;9(3):171-175-476.



Skin picking disorder

- Picking, digging, biting, or scratching with instrument
- Erosions, ulcerations, crust, scarring
- Face, extensors, nailfolds, upper back within reach of hand



Lichen simplex chronicus

- Due to persistent rubbing
- Itchy in one place
- Skin thickened "lichenified"
- If crusting think Staph
- Occlusion
 - Wraps
 - Duoderm thin
 - Tegaderm



Habit tic deformity



- Chronic picking at nailfold and plate
- Vertical ridging of nail
- Treated with occlusion or behavioral approach
- Not fungal!

Skin Appendage Disord. 2017 Oct;3(4):186-187.

Address underlying skin disease that may initiate or drive the behavior



Treatment: Skin picking and Hair pulling disorders

- Cognitive behavioral therapy
- Fluoxetine and escitalopram
- N-Acetylcysteine
 - 1200-3000mg/day studied in adults with SPD
 - Smells like sulfur
 - Increases extracellular glutamate
 - Glutamatergic dysfunction associated with compulsive habitual behaviors



JAMA Psychiatry. 2016 May 1;73(5):490-6.
 Int J Dermatol. 2019 Jan 22. PubMed PMID: 30667049

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Avoidant/restrictive food intake disorder



Nutritional disruptions common in with DD, ASD

- Avoidant/restrictive food intake
- GI problems
- Therapeutic diets
- Fad diets/parental beliefs
- Parental exhaustion
- Neglect



Nutritional disorders with skin findings

- Scurvy
 - Vitamin C
- Kwashiorkor
 - Protein (not calories)



Arch Dis Child Educ Pract Ed. 2018;103(6):304-306.

Avoidant/restrictive food intake disorder

- Yellow-white diet \rightarrow Vitamin C deficiency (<11 micromole/L)
 - Petechiae, purpura, perifollicular hemorrhage, corkscrew hairs
 - Gingival swelling, bleeding
 - Limp, bone pain, fatigue
- 100-300 mg Vitamin C daily



Ann EmergMed. 2008; Oct;70(4):493-495.

6 year old G-tube dependant with new rash



Gradual onset of hair thinning, loss of pigment in hair and eyelashes
Edema, rash

6 months pureed fruit/veg diet



Low total protein and albumin, Vitamin B1, B6

Kwashiorkor in the United States

- Case series in infants on rice milk diets for atopic dermatitis and "food allergy"
- Similarly, children with ASD may be on restrictive self-selected or therapeutic diets with or without medical supervision



Date of download: 2/10/2018
Patient 5. Diffuse fine scale in a reticulated pattern over the abdomen.

J Dev Behav Pediatr. 2011 Apr;32(3):264-7.
Arch Dermatol. 2001;137(5):630-636.

Kwashiorkor

- Protein deficiency, not calorie
 - Child not underweight
- Edema
- Erosive, desquamative dermatitis
 - "flaky paint"
- Low protein and albumin
- Rx high protein/calorie diet



Arch Dermatol. 2001 May;137(5):630-6.
J Dev Behav Pediatr. 2011 Apr;32(3):264-7.

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The child with DD + Birthmarks ?Neurocutaneous syndrome

- Pigmentation
 - Café au lait macules ?NF1
 - Blaschkoid hyper- or hypopigmentation
 - Ash leaf? Tuberous Sclerosis
- Other
 - Giant congenital melanocytic nevi
 - Disorders of cornification
 - Epidermal nevus syndrome
 - Incontinentia pigmenti
 - Xeroderma pigmentosum



Orphanet J Rare Dis. 2018 Mar 5;13(1):39.

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Orphanet J Rare Dis. 2018 Mar 5;13(1):39.

Abnormal Pigmentation: Use Wood's Lamp

- Turn lights off, no windows
- Hold light close to skin
- Wear glasses!
- Examine entire skin surface
- Turn lights back on and see if visible without Wood's lamp

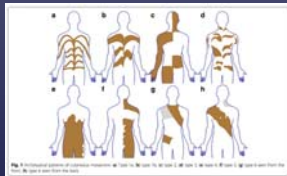


"100 years of Wood's lamp revised"



J Eur Acad Dermatol Venereol. 2015 May;29(5):842-7.

Blaschkoid hypo- and/or hyperpigmentation



USE THESE
Blaschkoid hypo-, hyper-dyspigmentation
Pigmentary mosaicism
Segmental pigmentary disorder
DISCARD THESE OLD TERMS
Hypomelanosis of Ito
Linear and whorled nevoid hypermelanosis
Incontinentia achromicans
Nevoid hyperpigmentation (ICD 10)
Cutis tricolor



Orphanet J Rare Dis. 2018 Mar 5;13(1):39.

Blaschkoid hypo- or hyperpigmentation

- 75% noticed at birth or first year
- 55% systemic problems
 - Most common association developmental delay in 54%
 - Other: skeletal, seizures, dysmorphic facies
- 42% abnormal cytogenetic
 - 84% mosaic
- Selection bias



Orphanet J Rare Dis. 2018 Mar 5;13(1):39.

Blaschkoid hypo- and hyperpigmentation "dyspigmentation"



Pediatr Dermatol. 2014 Jul-Aug;31(4):471-6.

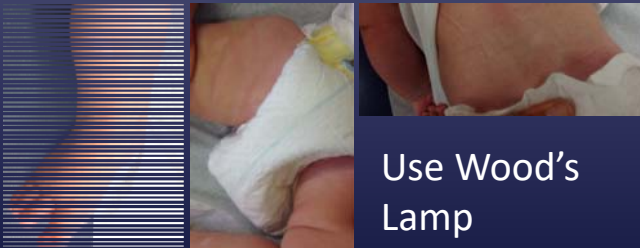
Blaschkoid dyspigmentation

- Chart review of patients referred to pediatric dermatology clinic
- Extracutaneous features in 13%
 - Neurological in 5%
- If no obvious dysmorphic facies or systemic features, follow
 - Skin
 - Neurodevelopmental



Pediatr Dermatol. 2014 Jul-Aug;31(4):471-6.
Br J Dermatol. 2010 Jun;162(6):1337-41.

Ash leaf macules in Tuberous Sclerosis



Use Wood's
Lamp

White spots: is it ash leaf macules?

- Pityriasis alba-scaling
- Postinflammatory hypopigmentation
- Vitiligo—early, then depigments
- Nevus depigmentosus-at birth
- Blaschkoid hypopigmentation
- Ash leaf macule



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White spots: is it ash leaf macules?

- Patients with TS can have significant neurological problems
- Skin findings
 - At birth-ash leaf macules
 - Later
 - Café au lait macules-acquire
 - Angiofibromas -treatable
 - Periungual fibromas
 - Fibrous forehead plaques
 - Shagreen patch

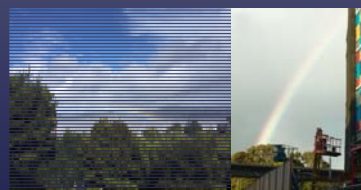
Topical Sirolimus
Pulse dye laser

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Department of Dermatology
Kelly Cordoro, Ilona Frieden, Anu
Mather, Erin Mathes, Sonal Shah



Dermatology and Developmental Disability

Renee Howard MD

13 March, 2019

Vikash Oza MD NYU: Google his name and AAD autism to see Dermatology news

Atopic dermatitis

Accordino RE, Lucarelli J, Yan AC. Cutaneous Disease in Autism Spectrum Disorder: A Review. *Pediatr Dermatol*. 2015 Jul-Aug;32(4):455-60. doi:10.1111/pde.12582. Epub 2015 Mar 30. Review. PubMed PMID: 25824343.

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Hogeling M, Frieden IJ. Segmental pigmentation disorder. *Br J Dermatol*. 2010 Jun;162(6):1337-41. doi: 10.1111/j.1365-2133.2010.09702.x. Epub 2010 Feb 15. PubMed PMID: 20163411.

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Ash leaf macules

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