

Not Just Little Adults: Pediatric vs Adult Skin

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Pediatric Dermatology



- 
- I have no financial relationships or conflicts of interest relevant to this presentation

By the end of this lecture you should be able to...
(know Peds Derm in 30 min)



- Identify a few normal pediatric pigmented lesions and how they vary from adults
- Be able to understand treatment options for children with common warts and molluscum that are newer or less painful
- Hemangiomas when to refer and when to treat
- Know few treatment options for children with moderate to severe eczema

SIZE DOES MATTER



NEVI

Globular pattern seen in children vs Reticulated pattern in adults on dermoscopy

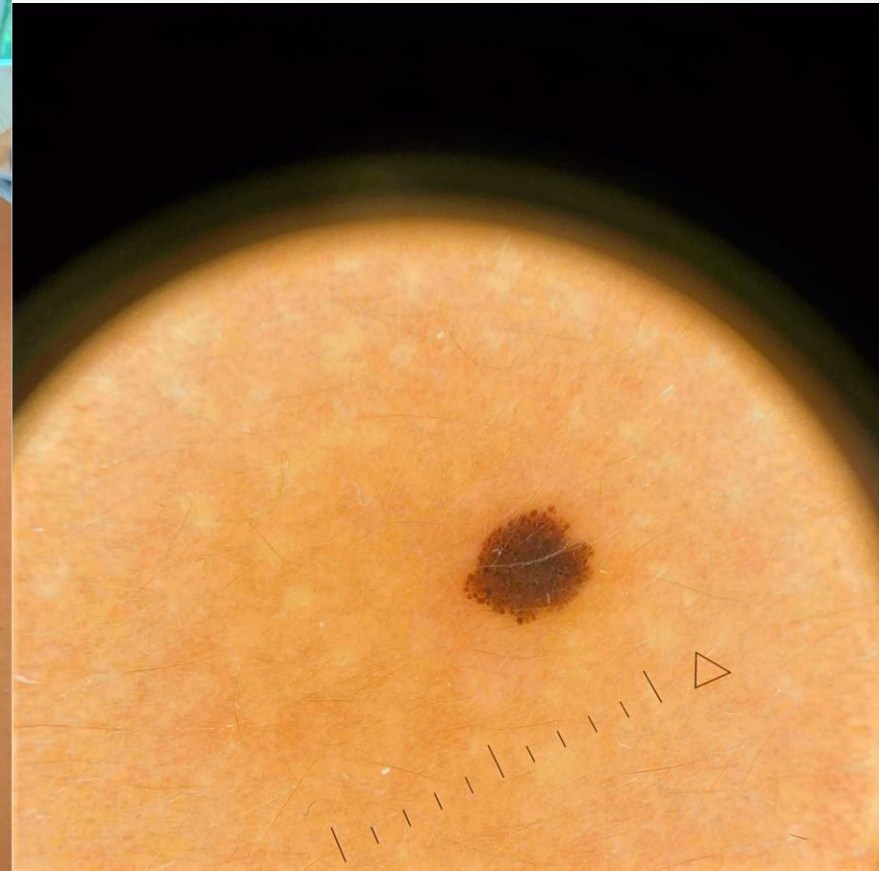
Peds have more active junctional components vs adults have more compound or intradermal patterns

Visually they have differences as well:

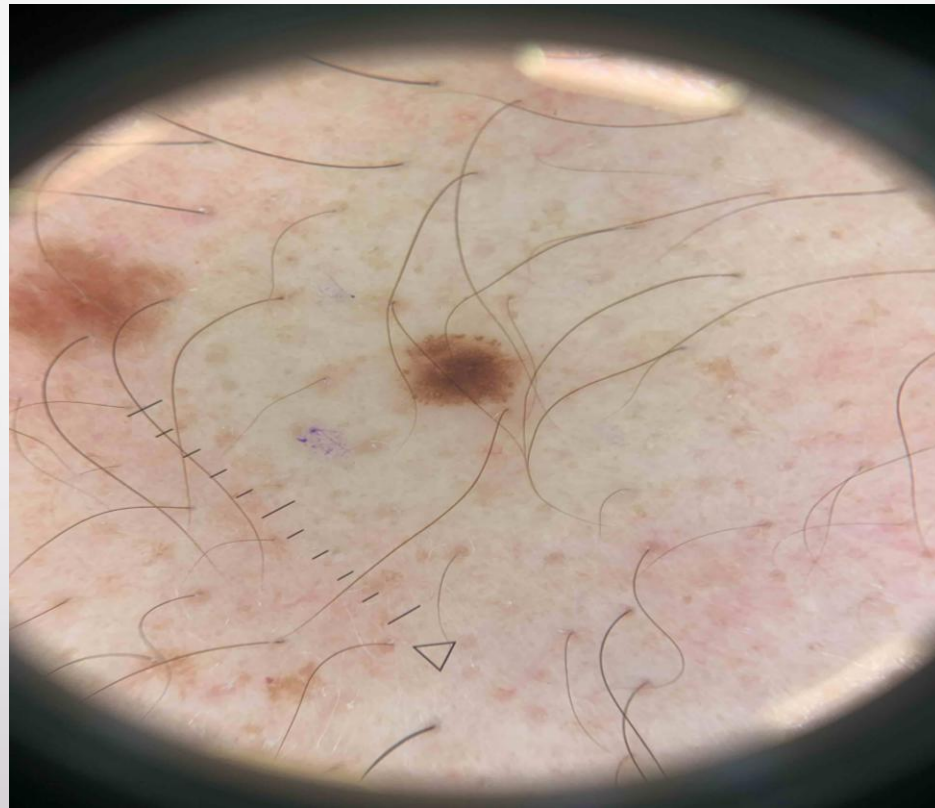
- fewer in number but increasing through adolescent years
- scalp and back nevi patterns: **eclipse** (lighter center and darker periphery) and **cockade** (darker center, tan rim followed by darker rim on periphery)
- more common to find Spitz Nevi in children

Br J Dermatol. Jul;165(1):137-143

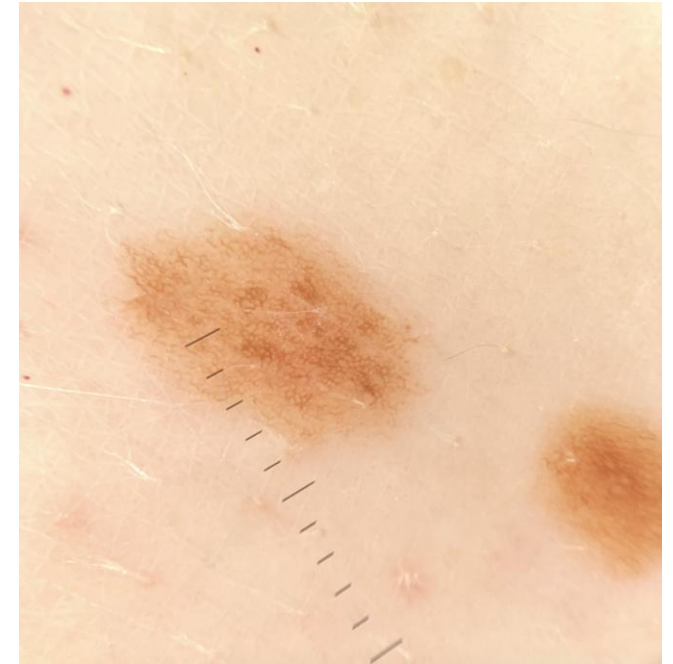
Globular pattern (pediatric)



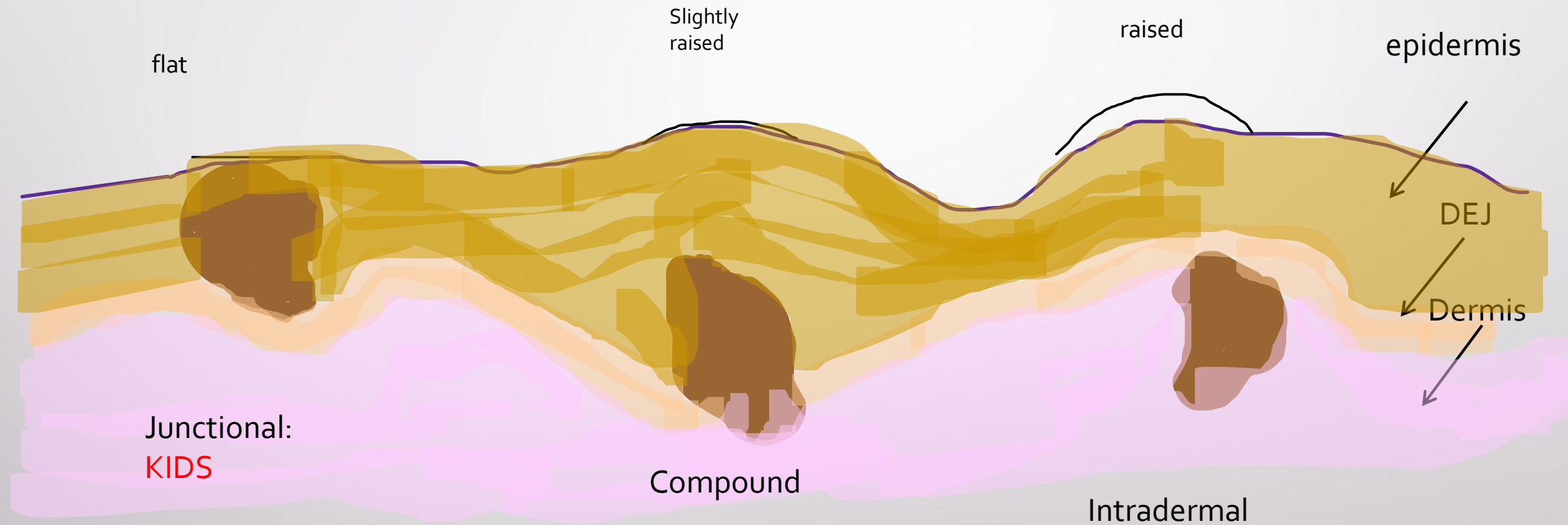
Adult globular mimicker: Severely dysplastic



Reticulated
(adult)



Types of Melanocytic Nevi



Junctional, Compound, Intradermal



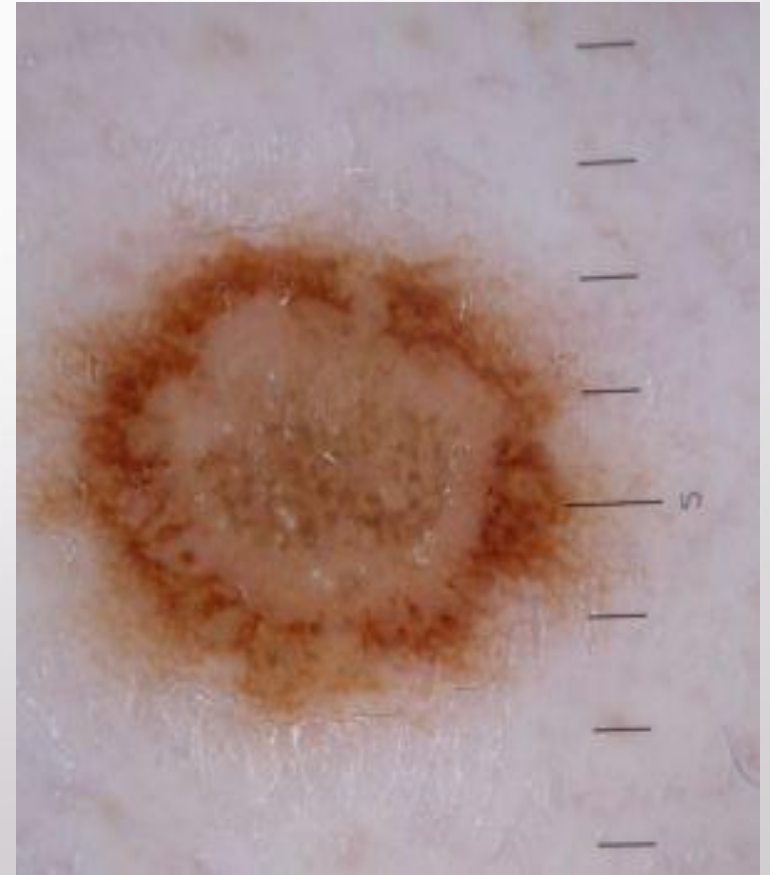
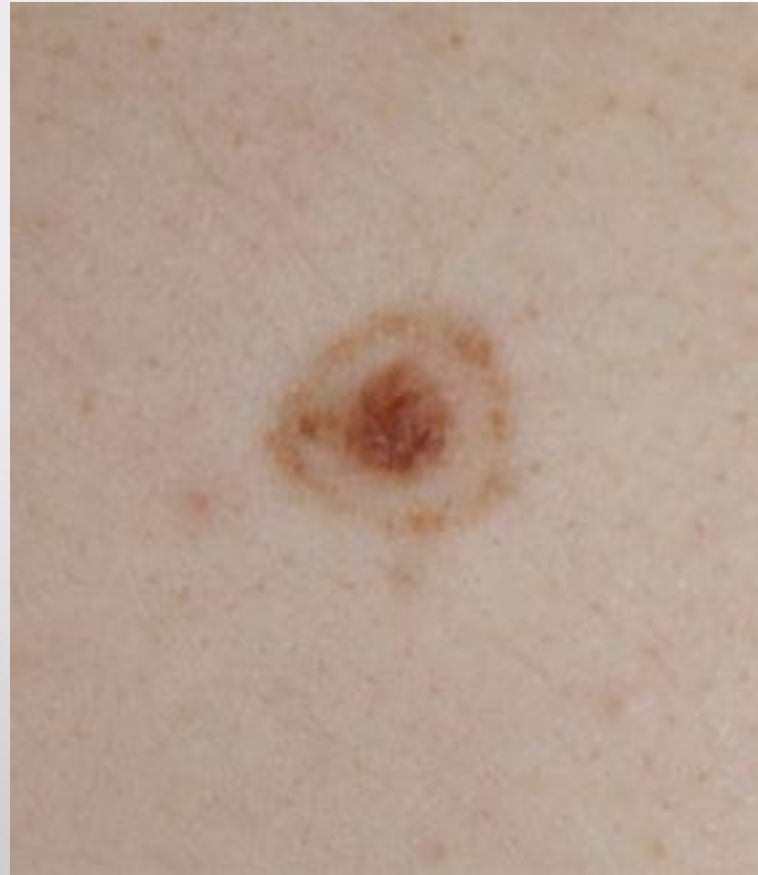
Eclipse pattern



Eclipse



Cockade Pattern



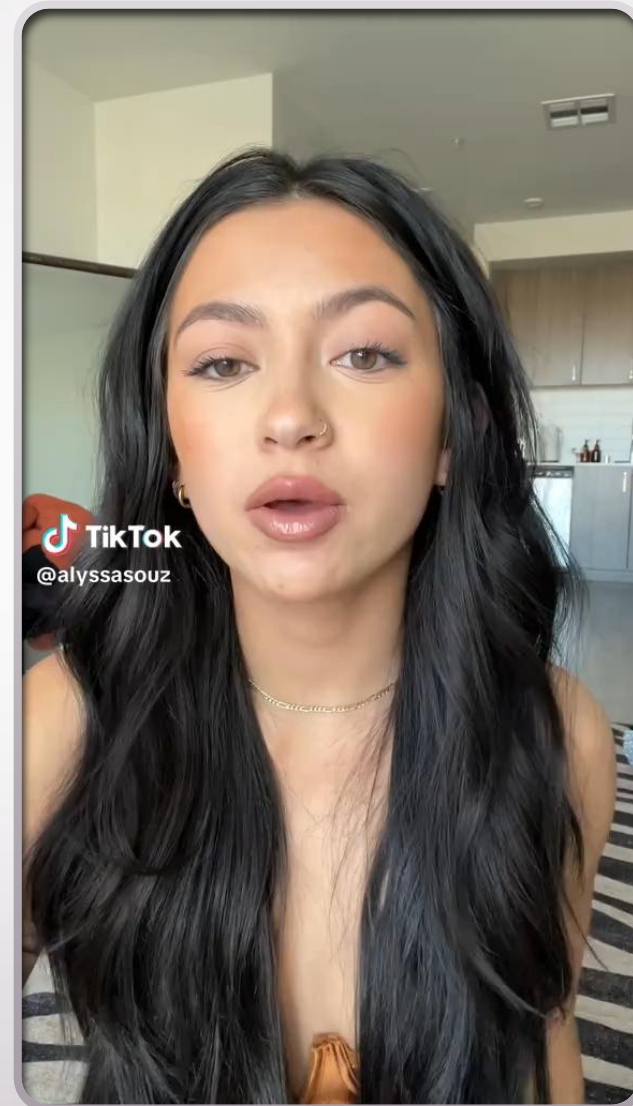
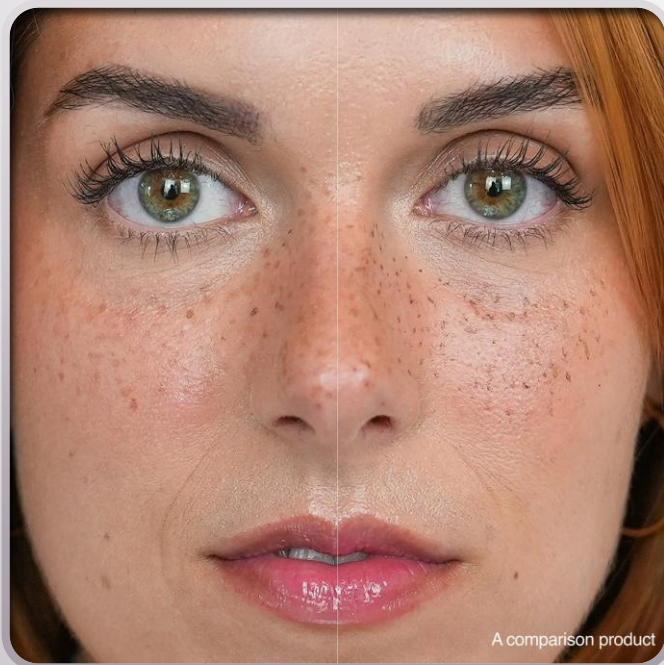
Turkish study of 100 children with 574 nevi total

- Participant ages 2-17 years.
- Divided participants into **<10 yo** and **>10 yo**
- Findings:
- Majority had **globular pattern 57%**, vs homogeneous 12%, reticulated 8 % and unspecified 13%. As children aged (>10 yo) they progress to reticular pattern
- Females had statistically more nevi UE vs males 80% vs 56%
- Higher number of nevi in adolescence vs < 10 yo group, but there was no gender difference, the use of sunscreen, or Fitzpatrick type did not play a factor.
- [An Bras Dermatol 2024 Oct 31;100\(1\):22-30](#)

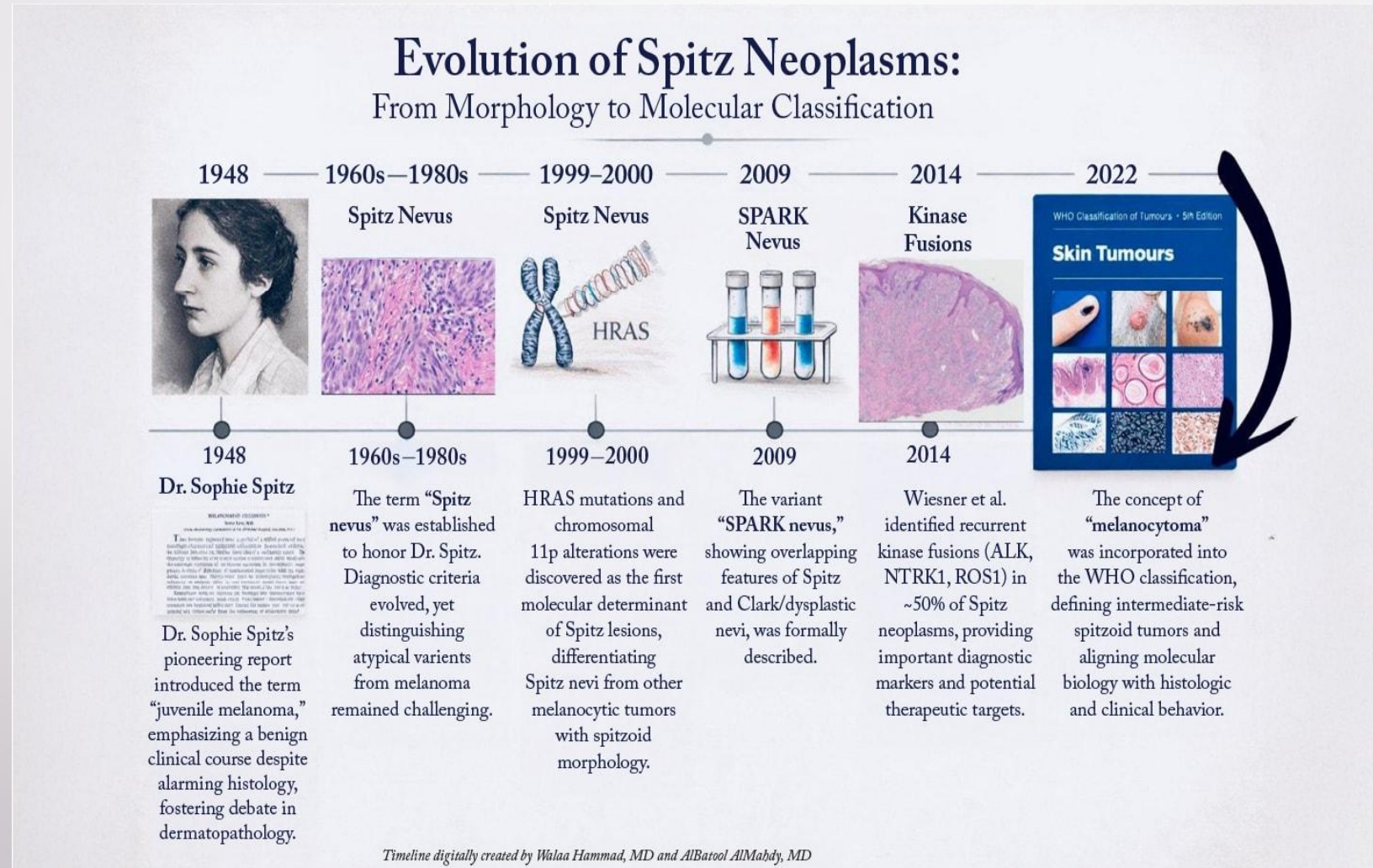
New Type of Nevus in Pediatric Patients



FRECK



Spitz Nevi



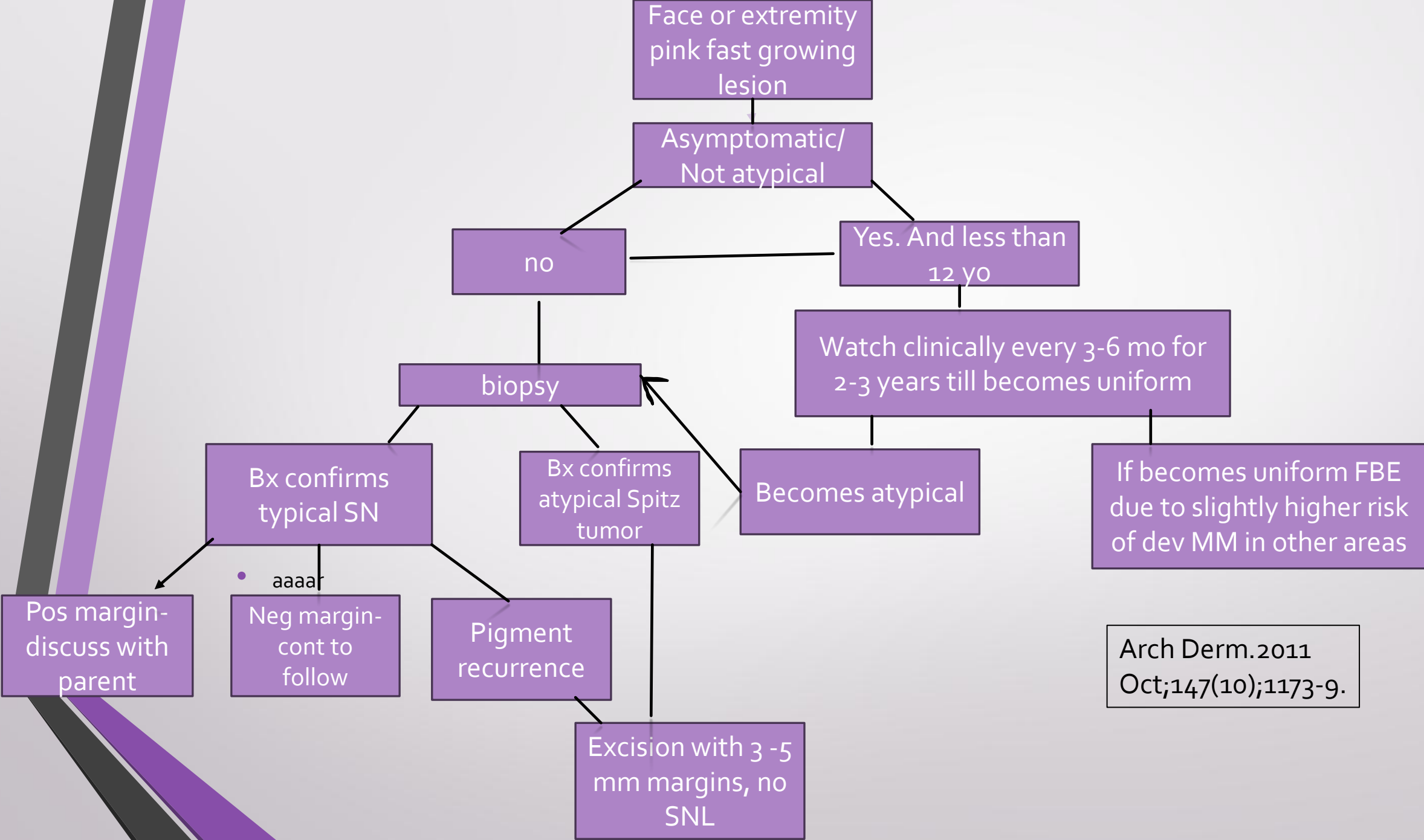
Classification According to WHO:

- **1) Benign Spitz nevi (SN)**= common symmetric, small <6 mm with large stable cells that mature with depth (HRAS mutations)
- **2) Spitz Melanocytoma**= or Atypical Spitz Tumor is a tumor of intermediate malignant potential, sharing genetic and visual features with benign nevi and melanoma
- **3) Spitz melanoma**- A malignant genetically unstable neoplasm, asymmetric, large > 1 cm with mitotic figures, genetic mutation's loss of CDKN2A gene or TERT promotor mutations
- **"Spitz vs Spitzoid"**= 2018 WHO guidelines, **Spitz lesions** are associated with at least a single genetic alteration such as in MAP kinase pathways or specific kinase gene fusions. **Spitzoid lesions** refers to morphological resemblance to classic SN histologically

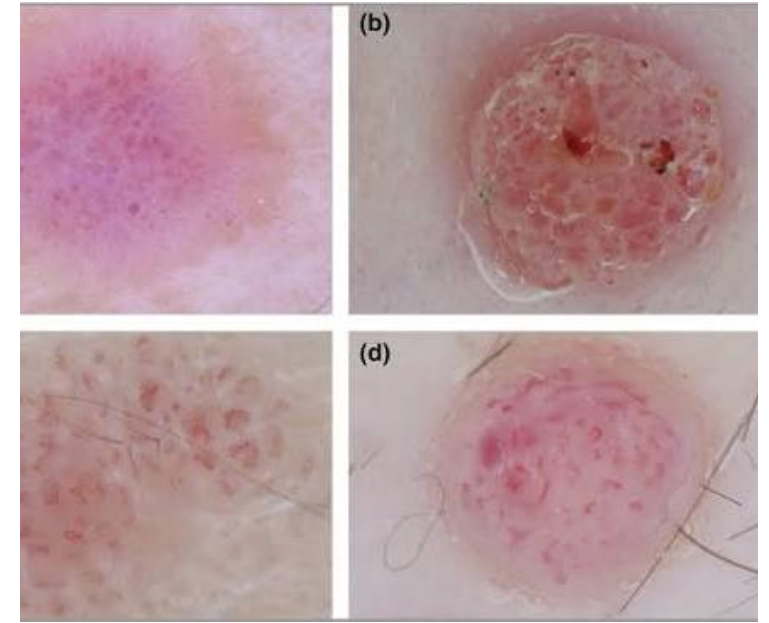
Genomic Characteristics of Spitz lesions

. Front Oncol. 2022 Jun 7;12:889223

	Type (Mutation or Translocation)	Fusion Partners	Histopathological Features	Clinical Features	Incidence
HRAS	Mutation	N/A	Low cellularity, desmoplasia, infiltrating base (97, 98)	Pleiotropic (97)	5-22% (30, 99, 100)
BRAF	Translocation	NRF1, SOX6 (65), EMLR4, BAIAP2L1 (101)	Epithelioid morphology, high-grade nuclear atypia (102)	Favors extremities, non-metastatic (102)	5% (65, 100, 102)
ROS1	Translocation	TPM3, PPFIBP1, MYH9, CAPRIN1, MYO5A (104)	Epithelioid and spindle cells homogeneously (104)	Pink/red papules in various locations (104)	7-19% (100, 104)
NTRK1	Translocation	LMNA, TP53 (105)	Superficial, evenly distributed pigmentation (106)	Favors extremities, may be amelanotic, even sex distribution, median age 26y (100)	8-19% (13, 100, 106)
ALK	Translocation	NPM1, TPR, CLIP1, GTF3C2 (107)	Fascicular growth pattern, infiltrating base, and fibrillar cytoplasm (107)	Favors extremities, may be amelanotic or vascular, more common in females, median age 12y (106, 107)	8-26% (13, 100, 106, 108)
MET	Translocation	TRIM4, ZKSCAN1, DCTN1 (13, 105)	Fusiform or epithelioid morphology, amphophilic cytoplasm, melanocyte nests (105)	Epidermal hyperplasia, good treatment outcomes (105)	0.5-1% (100, 105)
RET	Translocation	GOLGA5, KIF5B (105)	Not well described	Driver of lung cancer formation, can be treated with crizotinib, cabozantinib, and vandetanib (13)	2-3% (13, 100, 109)
MAP3K8	Both	SVIL, DIP2C, UBL3, STX7, SPECC1, CUBN, PRKACB (16)	Epithelioid morphology, high grade cytological atypia, multinucleated giant cells, p16 loss, junctional nests, desmoplasia (16, 23, 107)	Ulceration, dome-shaped, median age: 18, tendency for lymph node involvement (16, 17, 23)	8-33% (23, 28, 110)



Arch Derm.2011
Oct;147(10);1173-9.



Pigmented and Non-pigmented
Spitz nevi

Prognosis

888 pediatric patients with at least one spitz nevi there were no fatalities

Multicenter study of fatal pediatric MM, none were spitz melanomas in prepubertal kids

Br J Dermatol. 2019;18(2);366

Pediatr Dermatol.2020;37(6);1073

J Am Acad Dermatol. 2020(5);1274

Feature	Details
Lesion	Pearly, umbilicated papule
Cause	Poxvirus
Spread	Skin-to-skin, fomites
Treatment	Observation, cryotherapy, curettage

Molluscum Contagiosum



Newer treatments for MC

- 1. **Ycanth**- cantharidin rx but administered in office.
 - Single use vial with applicator tip. 2 and older. 54% treated cleared over 84 days vs 13% placebo. Left on for **24 hours**, every 3 week application. \$685.00 per one applicator so took 4 treatments to clearing in 84 days= \$2740.00
- 2. **Zelsuvmi**- Berdazimer gel rx used at home by parents for 12 mo and up. Nitric oxide releasing agent with antiviral properties. Used once daily and 32% cleared in 120 days vs placebo 20% cleared. Site irritation. \$1944-1953.00 for two tubes
- J Am Acad Dermatol 2000;43:503-7= 90% clearance with Cantherone .7% solution, multi-dose vial

Ycanth/ Canthardin

Before treatment



5 hours after application







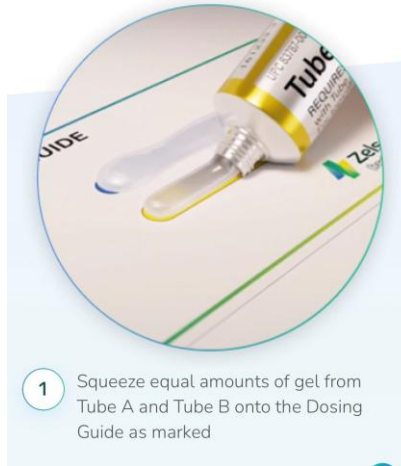
Berdazimer compound



9:44



ZELSUVMI is applied in just
3 simple steps



- 1 Squeeze equal amounts of gel from Tube A and Tube B onto the Dosing Guide as marked



- 3 Apply ZELSUVMI as a thin, even layer directly to each molluscum bump once daily for up to 12 weeks

Stubborn warts



Treatment options beyond LN2

- **Candida injections:**
 - Study shows possibly using .5ml vs .3ml (suggested in past) may be more efficacious
 - Compared to placebo, measles, mumps, and rubella (MMR) vaccine, purified protein derivative (PPD), and HPV vaccine there was better *complete clearance* and *clearance of distant warts*.
- Acta Derm Venereol. 2024 Oct 18;104:40819
- Dermatol Ther (Heidelb). 2025 Mar 29;15(5):1135–1152

Candida injections



Diphencyprone(DPC)

- Wart clearance 77-88% complete and distant sites
- Most common is 1% sensitization and .1% home treatment every 1-2 weeks for 6-8 months
- No scarring, ? At home treatment, applied at night washed off in AM
- Hard to find compounding pharmacies that will mix
- Best if mixed in petrolatum
- SED: mild rash at site, blistering, flu-like symptoms, widespread contact like rash, worsening of eczema, urticaria, rare report of anaphylaxis
- [https://www.jaad.org/issue/S0190-9622\(11\)X0016-6](https://www.jaad.org/issue/S0190-9622(11)X0016-6)
- J Dermatolog Treat. 2021 Sep;32(6):658-662

HEMANGIOMAS IN INFANTS, WHEN TO TREAT AND WHEN TO REFER

- *Pediatrics* (2020) 145 (4): e20191628

IHReS INFANTILE HEMANGIOMA REFERRAL SCOR

Complications or potential risk of complications (Ulceration, Visual Compromise, Feeding difficulties, Stridor) ☐ Yes ☐ No

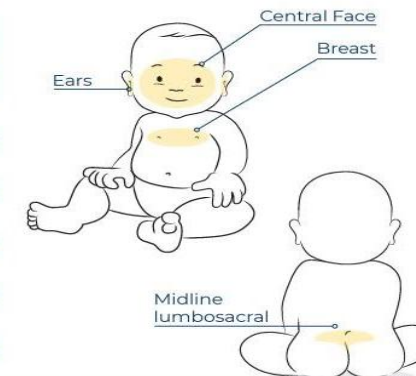
Central face and/or ears ☐ Yes ☐ No

Breast (in female) ☐ Yes ☐ No

Midline lumbosacral ☐ Yes ☐ No

Size ≥ 4 cm (focal or segmental) ☐ Yes ☐ No

Number of hemangiomas ≥ 5 ☐ Yes ☐ No



IF AT LEAST ONE OF THE PREVIOUS SITUATIONS IS TICKED "YES",
PLEASE REFER THE PATIENT TO AN EXPERT CENTER.

IF YOU TICKED "NO" TO ALL QUESTIONS, PLEASE FILL IN THE TABLE ON NEXT PAGE.

Note: In case of multiple IH, the score should be done for each IH.

THE TOTAL SCORE IS THE SUM OF THE SCORES FROM EACH PARAMETER BELOW:

Parameters	Items			Score Please consider only the highest score for each parameter
Location of Hemangioma	Other facial areas than those mentioned previously	☐ Yes ☐ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
	Neck, Diaper area, Scalp	☐ Yes ☐ No	If Yes: 2 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
Size of the biggest Hemangioma	≥ 1 cm on other facial area than those mentioned previously	☐ Yes ☐ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
	2-4 cm on other body area than those mentioned previously	☐ Yes ☐ No	If Yes: 2 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
Current child age and growth of Hemangioma	The infant is $<$ than 2 months	☐ Yes ☐ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
	The infant is ≥ 2 and ≤ 4 months with an evident growth within last 2 weeks	☐ Yes ☐ No	If Yes: 2 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
TOTAL				

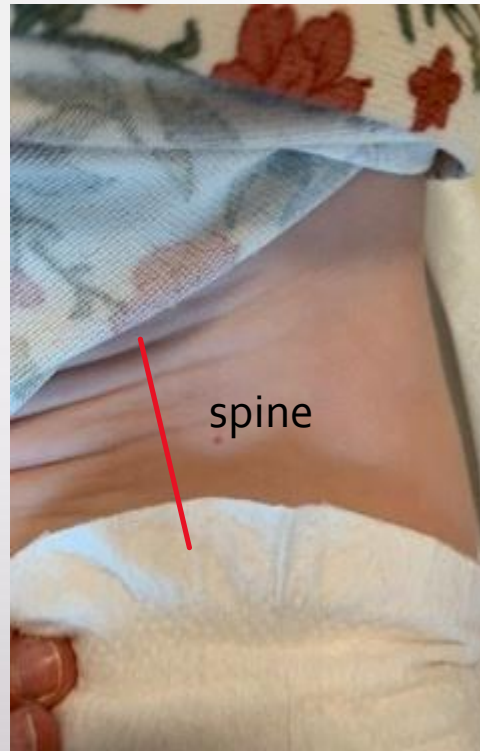
SCORE ≥ 4 : PLEASE REFER THE PATIENT TO AN EXPERT CENTER.

SCORE < 4 : PATIENT NOT TO BE REFERRED, SHOULD BE MONITORED. SCORE WILL BE DONE AT EVERY VISIT.

The final decision to refer the patient to an expert centre is up to the physician and the parents.

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3 mo old with 3 hemangiomas, largest is 3.5 cm



Complications or potential risk of complications (Ulceration, Visual Compromise, Feeding difficulties, Stridor)

☒ Yes ☐ No

Central face and/or ears

☐ Yes ☒ No

Breast (in female)

☐ Yes ☒ No

Midline lumbosacral

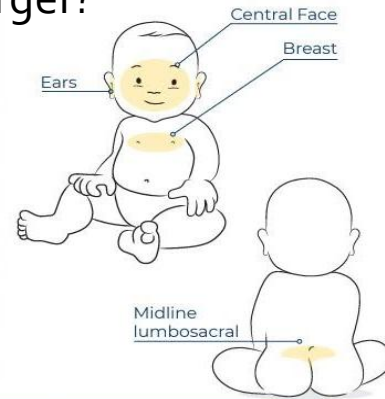
☐ Yes ☒ No

Size ≥ 4 cm (focal or segmental)

☐ Yes ☒ No

Number of hemangiomas ≥ 5

☐ Yes ☒ No



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Size of the biggest Hemangioma	≥ 1 cm on other facial area than those mentioned previously	☐ Yes ☒ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☒ 2 ☐ 0
	2-4 cm on other body area than those mentioned previously	☒ Yes ☐ No	If Yes: 2 points (if No: 0 point)	
Current child age and growth of Hemangioma	The infant is < 2 months	☐ Yes ☒ No	If Yes: 3 points (if No: 0 point)	☐ 3 ☒ 2 ☐ 0
	The infant is ≥ 2 and ≤ 4 months with an evident growth within last 2 weeks	☒ Yes ☐ No	If Yes: 2 points (if No: 0 point)	
TOTAL				4

SCORE ≥ 4 : PLEASE REFER THE PATIENT TO AN EXPERT CENTER.
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1 month old with lower lid hemangioma



Complications or potential risk of complications (Ulceration, Visual Compromise, Feeding difficulties, Stridor) ☒ Yes ☐ No

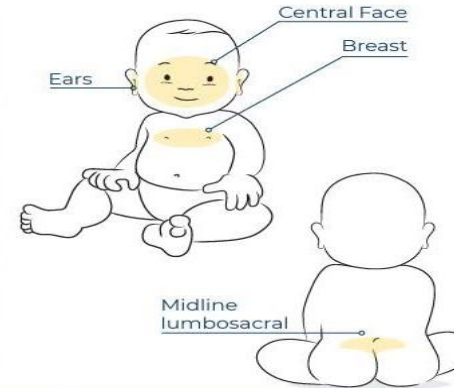
Central face and/or ears ☒ Yes ☐ No

Breast (in female) ☐ Yes ☒ No

Midline lumbosacral ☐ Yes ☒ No

Size ≥ 4 cm (focal or segmental) ☐ Yes ☒ No

Number of hemangiomas ≥ 5 ☐ Yes ☒ No



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	The infant is ≥ 2 and ≤ 4 months with an evident growth within last 2 weeks	☐ Yes	☐ No	If Yes: 2 points (if No: 0 point)	
TOTAL					

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3 month old infant with
facial hemangioma



IHReS

INFANTILE
HEMANGIOMA
REFERRAL SCOR

Complications or potential risk of complications (Ulceration, Visual Compromise, Feeding difficulties, Stridor)

☒ Yes ☐ No

Central face and/or ears

☒ Yes ☐ No

Breast (in female)

☐ Yes ☒ No

Midline lumbosacral

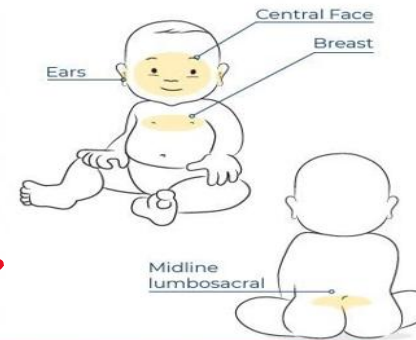
☐ Yes ☒ No

Size ≥ 4 cm (focal or segmental)

☒ Yes ☐ No

Number of hemangiomas ≥ 5

☐ Yes ☒ No



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	The infant is ≥ 2 and ≤ 4 months with an evident growth within last 2 weeks	☒ Yes ☐ No	If Yes: 2 points (if No: 0 point)	☐ 3 ☐ 2 ☐ 0
TOTAL				8

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BEARD Hemangioma

- Associated with airway hemangiomas especially subglottic
- Reports as high as 63% of infants with BEARD distribution have airway

PHACE syndrome

- Large segmental facial hemangiomas including in BEARD region have associations including **p**osterior fossa brain malformations, **h**emangiomas, **a**rterial anomalies, **c**ardiac anomalies, and **e**ye abnormalities
- Up to 31% of infants with large segmental hemangiomas on the face meet PHACE syndrome

LUMBAR hemangiomas

- Large hemangioma on lower back, buttocks sometimes pelvis, legs
- Urogenital anomalies, Malformation of underlying spinal cord, Bony deformities, Anorectal malformations, Renal anomalies
- Drolet, B.A., Maheshwari, M. *et al.* Spinal dysraphism associated with the cutaneous lumbosacral infantile hemangiomas



Schumacher, W.E., : a neuroradiological review. *Pediatr Radiol* **42**, 315–320 (2012).
<https://doi.org/10.1007/s00247-011-2262-5>

Moderate to Severe Eczema Treatment for 6 months and up



Dupilumab

- **Keratitis** .59% in Pediatric users vs 39.6% in Adults (Opthl Sci Vol 6, Issue 3, 101076, 3/26P)
- Increased risk of **helminth infections** vs adults: pinworms and tapeworms: 2.2% on dupilumab vs 0.7% not taking
- Increased risk of **HFMD and skin papillomas** in 6 mo-5 yo > 2% incidence vs adults (increased due to increased exposure with daycare)
- Less risk in peds of chronic rhinosinusitis vs adults
- Overall risk is similar for SED in children vs adults

Psychological Side Effects

- Reduction in **anxiety** 41% from 76%, **depressive d/o** of 40% from 70%, **sleep d/o** 23% from 54% in **18 yo** > (AAP , vol 156, issue supplement 2, dec 2025)
- In a study looking at pediatric > 6 mo on Dupilumab vs Mtx, cyclosporine or phototherapy: decrease in neuropsychiatric diagnoses including behavioral d/o, anxiety, depression, sleep d/o (JAAD, 20025 Jan 19;92(5):1126-1128.)
This was a retrospective chart evaluation which may have reporting bias.

Pediatrics



Needle phobia

YOU GOT THIS!

BEFORE:

Listening to music! (songs of choice)
Playing with a fidget toy in the car
Holding on and hugging a stuffed animal
Box breathing (breath in for 4, hold for 4, breathe out for 4)

DURING:

Playing with a fidget (breathing ball/fidget toy)



Buzzy Bee?



Reading bracelets



Breath innnnn..... Breathe outtttt - Shot!

AFTER:

Choose a fun Band-Aid & treat!











12 years and up

- Less of an issue with shot phobia at this age
- Nemolizumab – less painful
- Lebrikizumab- less frequent
- Jak inhibitors orally



Thank You!

