

EYE SPY

OCULAR CLUES

IN PEDIATRIC SKIN DISEASES

PED OPHTHALMOLOGY ADVICE



Prof. Claudia Prieglinger



Prof. Günter Rudolph



Prof. Elisabeth Messmer

„Tell them **when & how to cooperate** with ophthalmology!“

THREE-TIER TRIAGE SYSTEM



URGENT (same-day referral) – sight-/life-threatening



TIMELY (1-2 weeks) – progressive, but reversible



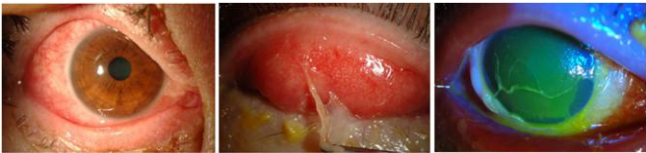
ROUTINE (baseline & 3-6 months) – chronic, surveillance

EPIDERMAL NECROLYSIS

Stevens-Johnson syndrome / Toxic epidermal necrolysis

Key ocular findings (> 80% of all patients)

- Pseudomembranous conjunctivitis
- Corneal epithelial erosion
- Symblepharon formation



- **Long-term sequelae 20% - 37%:**
dry eye, trichiasis, corneal scarring, photophobia etc.

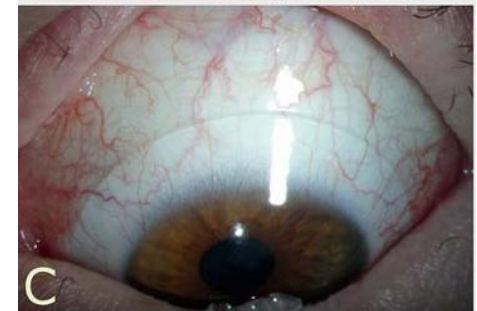
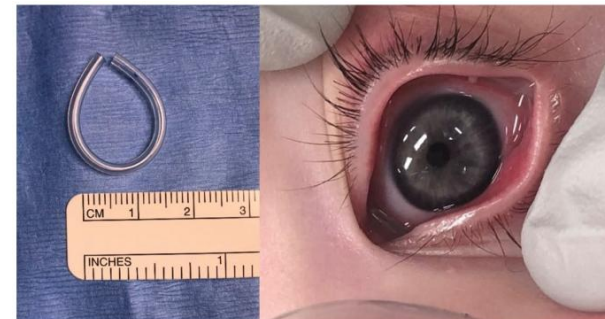
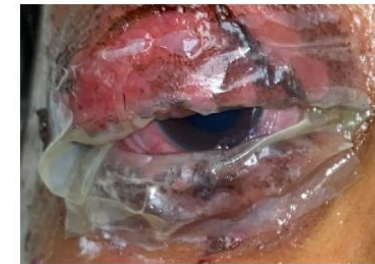


EPIDERMAL NECROLYSIS

Stevens-Johnson syndrome / Toxic epidermal necrolysis

Interdisciplinary treatment

- Preservative-free eye drops (every 30-120 min)
- Topical corticosteroid (4-10 x daily)
- Topical ciclosporin 1% (2-4 x daily)
- Topical antibiotic (4 x daily)
- Amnion-coated symblepharon ring
- Amnion grafting within first 72 hours



REACTIVE INFECTIOUS MUCOCUTANEOUS ERUPTION



RIME (MIRM: Mycoplasma-induced rash & Mucositis)

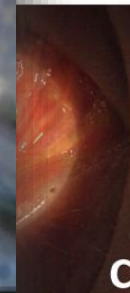
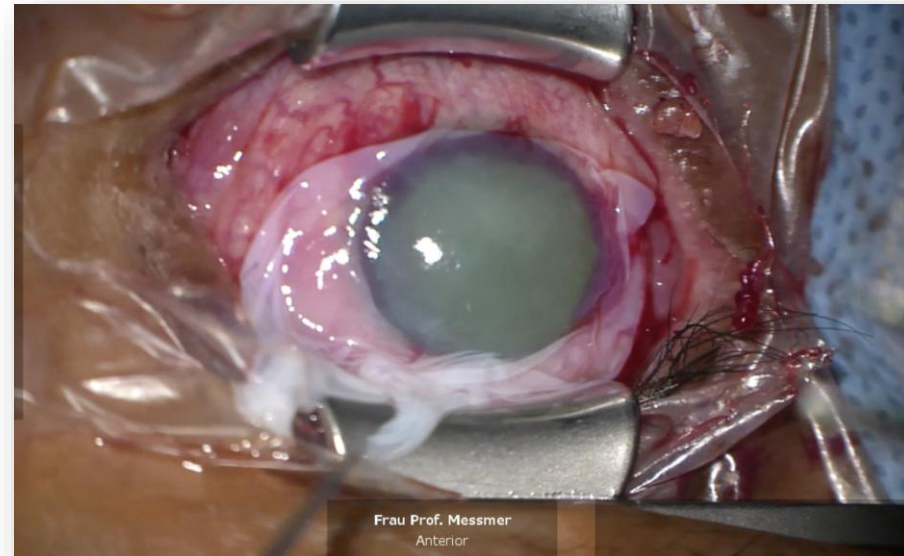
Parainfectious manifestation

(M. pneumoniae, Chl. pneumoniae, GAS, influenza B, parainfluenza virus, adenovirus, norovirus, SARS-CoV-2 etc.)

- Oral erosions, blisters, haemorrhagic crusting **100%**
- Sparse (< 10% BSA), unspecific skin lesions (Nikolsky -)
- Systemic involvement uncommon

Ocular symptoms **13%**

- Bilateral conjunctivitis (100%)
- Pseudomembrane formation
- Corneal involvement less common

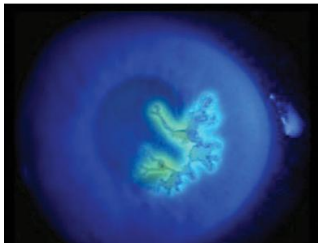


VIRAL INFECTIONS



Herpes simplex virus

Herpetic blepharoconjunctivitis



Rook's Textbook of Dermatology 2024.
DOI:10.1002/9781119709268.Rook107



Prakash G et al. BMJ Case Reports. 2015

- Aciclovir topically and systemically
- **No topical corticosteroids** without ophthalmology approval!

Varicella zoster virus

Dermatomal rash & nasociliary branch involvement



Christy JS et al. Indian J Dermatol. 2023 Jul-Aug;68(4):455-458

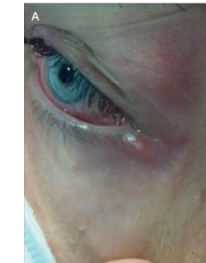
Blepharoconjunctivitis & stromal keratitis



Christy JS et al. Indian J Dermatol. 2023 Jul-Aug;68(4):455-458

- Aciclovir ASAP: within 3 d after onset
- **Hutchinson-sign (35%)**: ocular involvement 50% (cornea scarring, uveitis, retinitis)

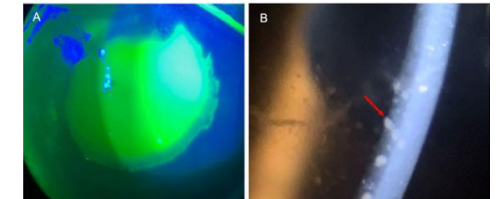
Mpox virus



Zong Y et al. Vaccines 2025, 13, 54

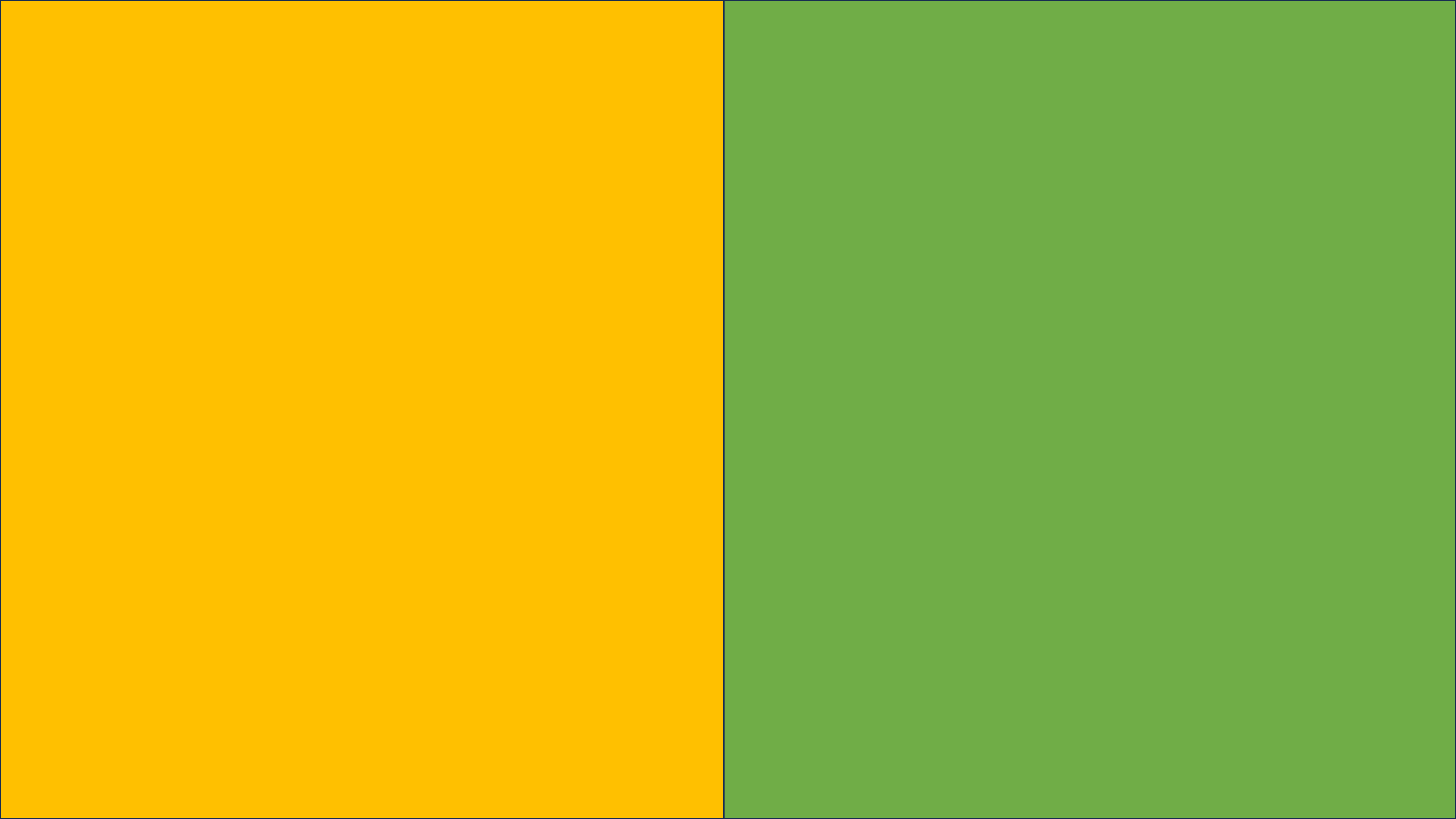
Periocular umbilicated papules & vesicles ($\geq 25\%$ of all cases)

Epithelial keratitis & uveitis



Zong Y et al. Vaccines 2025, 13, 54

- **High risk**: unvaccinated & immunocompromised patients
- Rare in childhood



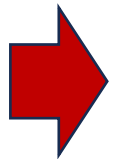
GLAUCOMA RISK



FACIAL PORT- WINE STAIN (STURGE-WEBER SYNDROME)

Ophthalmological recommendations
In infants with a CM suggestive of SWS, what parameters other than intraocular pressure (IOP) are relevant for the diagnosis of glaucoma?

- SWS: up to **70%** ocular abnormalities
- Timely tonometry
- Funduscopy + split lamp examination etc.



Lifelong ophthalmological follow-up

PHAKOMATOSIS PIGMENTO- VASCULARIS

ORIGINAL STUDIES

Clinical Insights Into a Large Cohort of Phakomatosis Pigmentovascularis

Kolipaka, Gowri Pratinya DNB^{*}; Molleti, Deepthi DNB^{*}; Krishnamurthy, Rashmi DNB^{*}; Rao, Aparna FRCS, PhD^{*}; Mandal, Anil K. MD^{*}; Senthil, Sirisha FRCS^{*}

Author Information

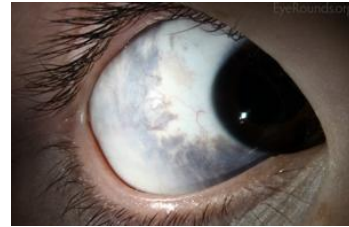
Journal of Glaucoma 34(6):p 476-483, June 2025. | DOI: 10.1097/IJG.0000000000002552

- n= 119 , median age 0.48 yrs.
- Glaucoma: **88%** (bilateral 75%)
- 17% < 1 month at diagnosis



High risk of early-onset glaucoma

OCULODERMAL MELANOCYTOSIS (OTA NEVUS)



eyerounds.org

Prevalence of glaucoma and characteristics of ocular manifestations in patients with Naevus of Ota

- Scleral & conjunctival melanocytosis (100%)
- Glaucoma **1%** (0% under age 10 yrs.), suspected 8.7%, ocular hypertension 3.3%



Low-risk of early-onset glaucoma

INFANTILE HEMANGIOMA



Key ocular complications

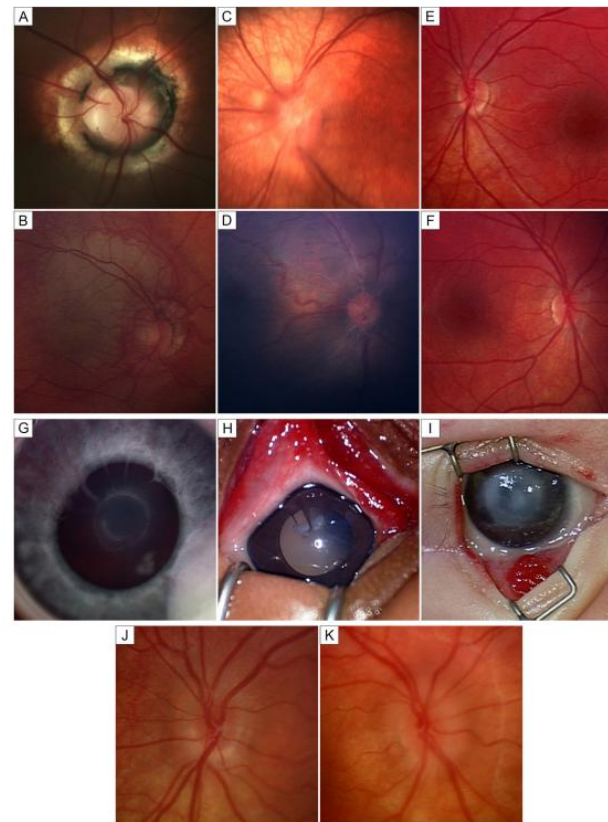
- **Amblyopia**
neurodevelopmental error, reduced best-corrected visual acuity
- **Astigmatism**
refractive error due to irregular curvature of the cornea or lens
- **Anisometropia**
unequal refractive error → cortical suppression of “blurry eye”

Diameter > 1 cm & upper lid involvement
=
High risk of ocular complications

PHACE SYNDROME



Ocular involvement



- Microphthalmia
- Congenital glaucoma
- Strabismus
- Amblyopia
- Optic nerve hypoplasia/atrophy
- Optic disc anomalies
- Peripapillary staphyloma
- Coloboma
- Persistent fetal vasculature
- Retinal vascular anomalies
- **Retinal detachment**
- Choroidal hemangioma
- Conjunctival hemangioma etc.

PHACE SYNDROME



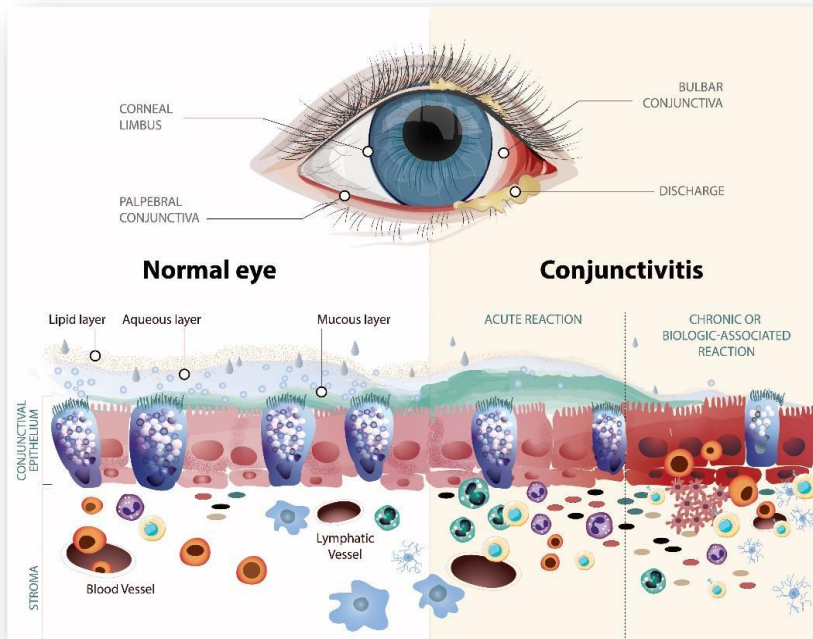
Safety of beta blockers for the treatment of PHACE syndrome: A systematic review

Adverse events	n/204 (%)
Sleep disturbance	20 (9.8)
Gastrointestinal	16 (7.9)
Worsening of ulceration, Raynaud's	15 (7.4)
Respiratory	9 (4.4)
Cold extremities	5 (2.5)
Hypotension	5 (2.5)
Seizure	2 (1.0)
Bradycardia	1 (0.5)
Hypoglycemia	1 (0.5)
Hyperactivity	1 (0.5)
Nr of serious adverse events	2 (1.0)
None	125 (71.1)

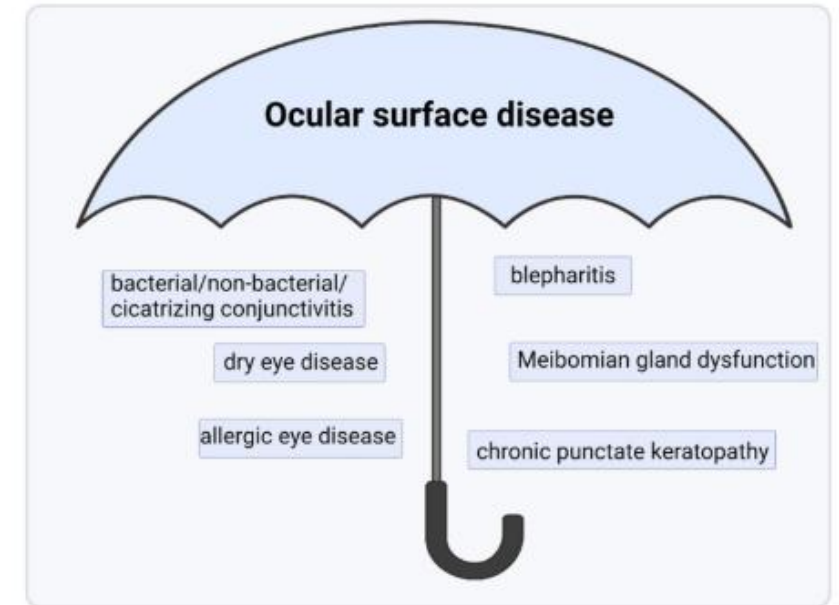
Propranolol is
(very!) safe
in children with
PHACE
syndrome!



ATOPIC DERMATITIS

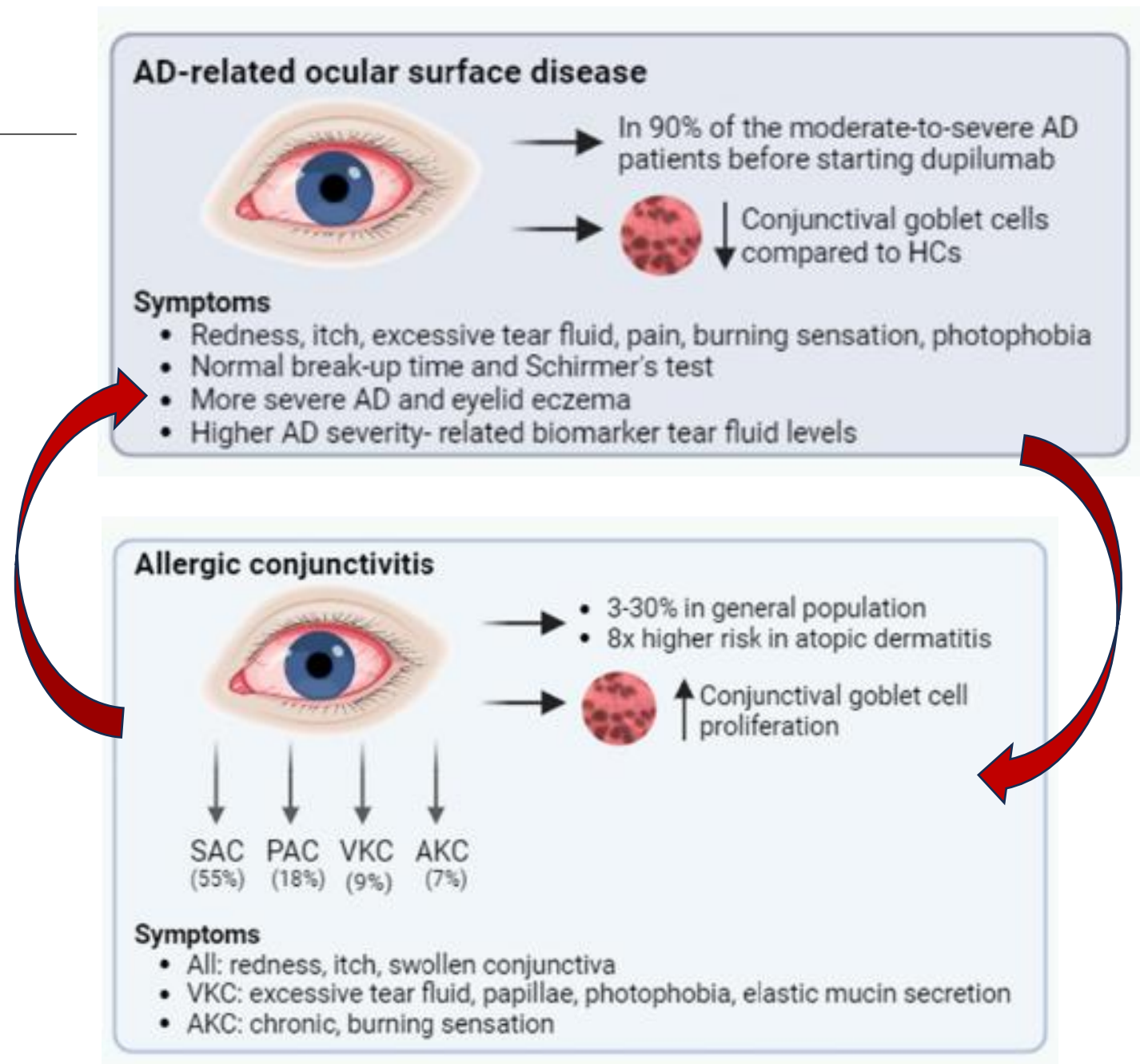


Achten R et al. Clin Exp Allergy 2024



70% to 90% of children
with moderate – severe AD

AD | OSD













Dupilumab-associated OSD

Br J Dermatol 2024; 191:865–885
https://doi.org/10.1093/bjd/ljae344
Advance access publication date: 5 September 2024

BJD
British Journal of Dermatology
Guidelines

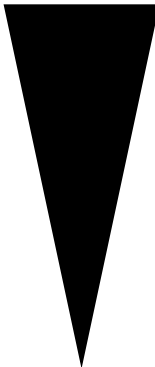
An expert consensus on managing dupilumab-related ocular surface disorders in people with atopic dermatitis 2024

		Efron Grading Scales					Severity assessment tool
		Normal	Trace	Mild	Moderate	Severe	
Symptoms	Redness						
	Limbal redness						
Irritation or pruritus		None	None	+	++	+++	
Discharge (clear)		None	None	None	None	+ / ++ / +++	
DROSD GRADING		-	Mild	Mild	Moderate	Severe	

Ardern-Jones MR et al. BJD 2024

Age-dependent incidence

- Adults: 40%
- Adolescents 6%-17%
- & Children:



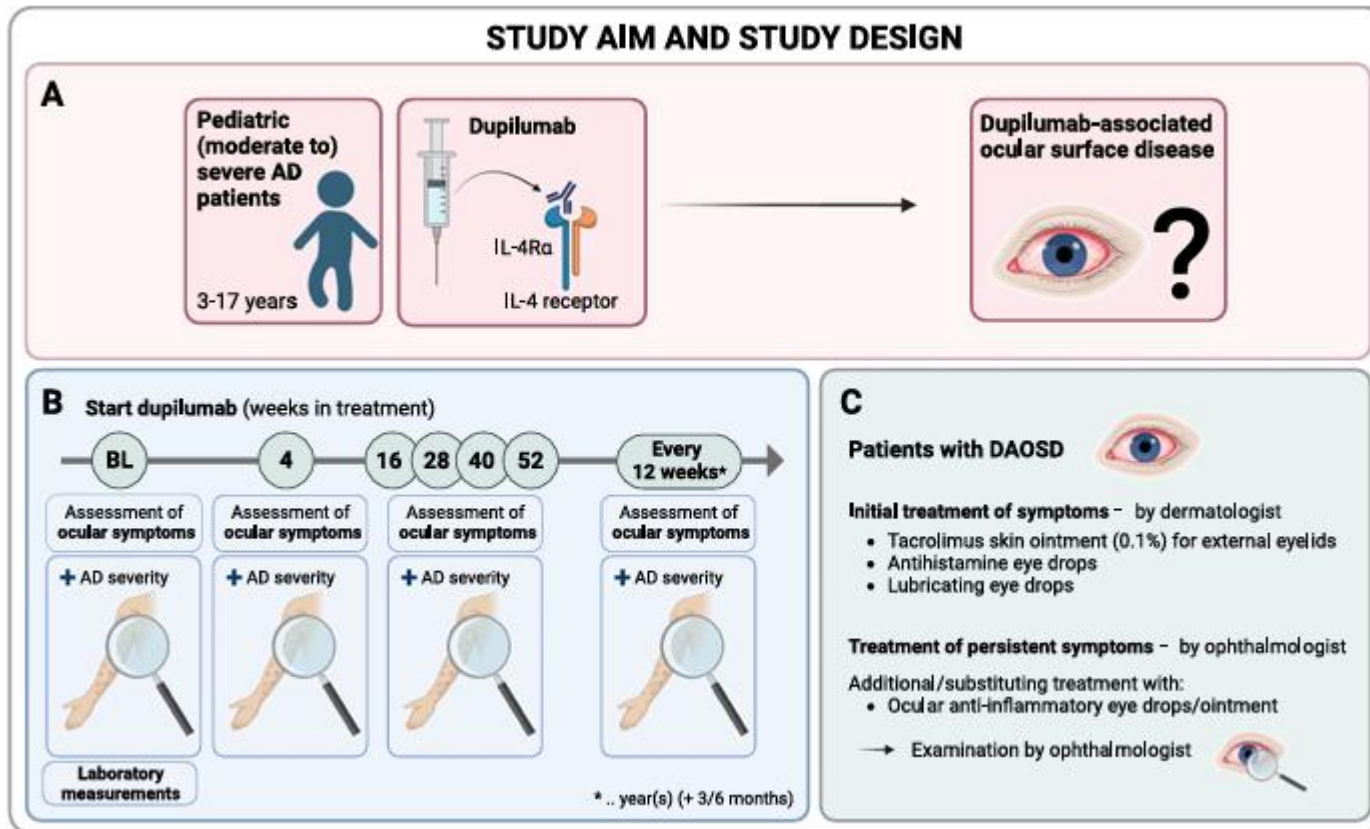
Risk factors

- Severe atopic dermatitis
- Eyelid involvement
- History of ocular diseases

Fachler et al. JAAD 2022
Shi et al. JAAD 2023
Paller et al. Adv Ther 2024

Dupilumab-associated OSD

Real-world incidence in pediatric AD?



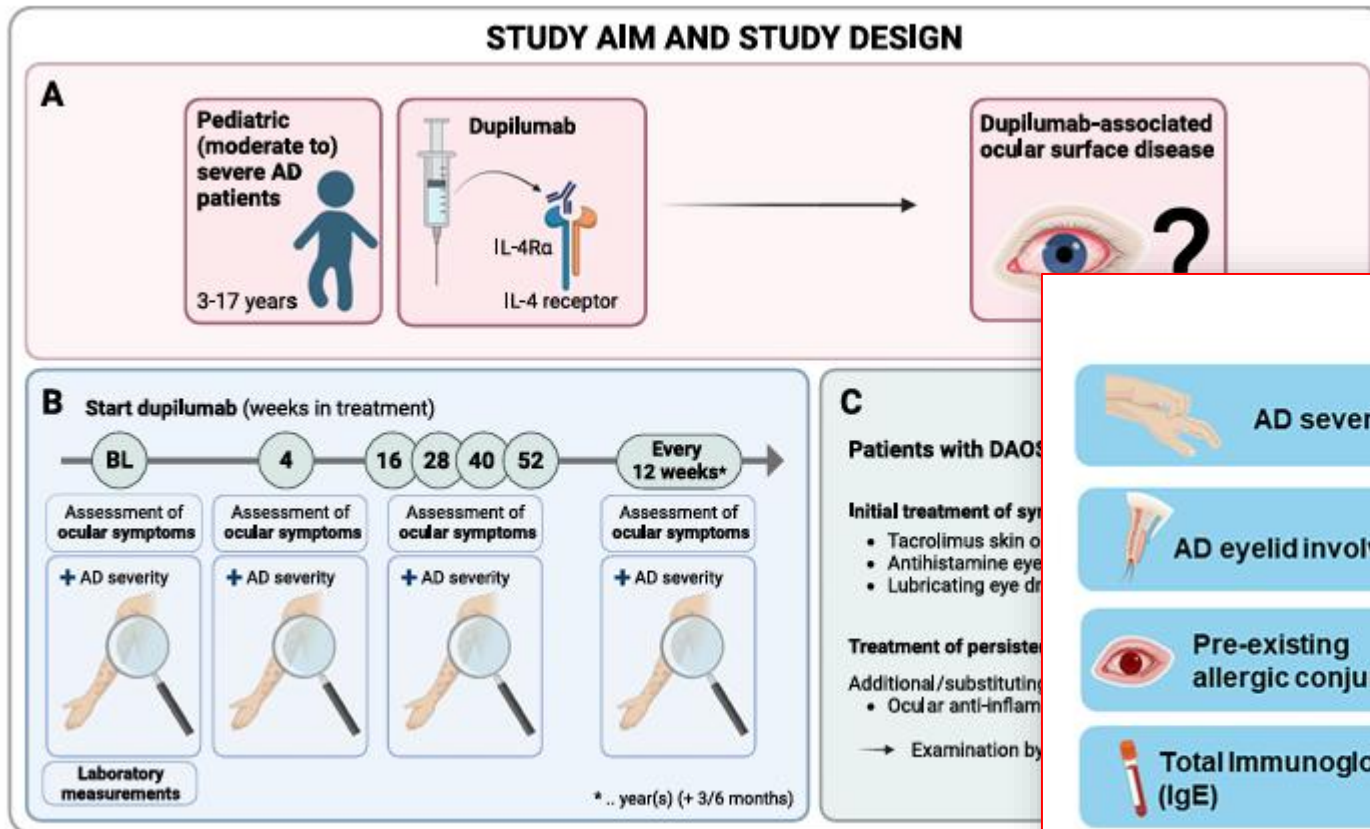
- 35% DAOSD
- 30% DAOSD_{Therapy}
- 14% onset \geq 1 year of treatment

n = 104 patients
11.7 \pm 4.0 years
median follow-up 70.5 weeks

Dupilumab-associated OSD

Real-world incidence in pediatric AD?

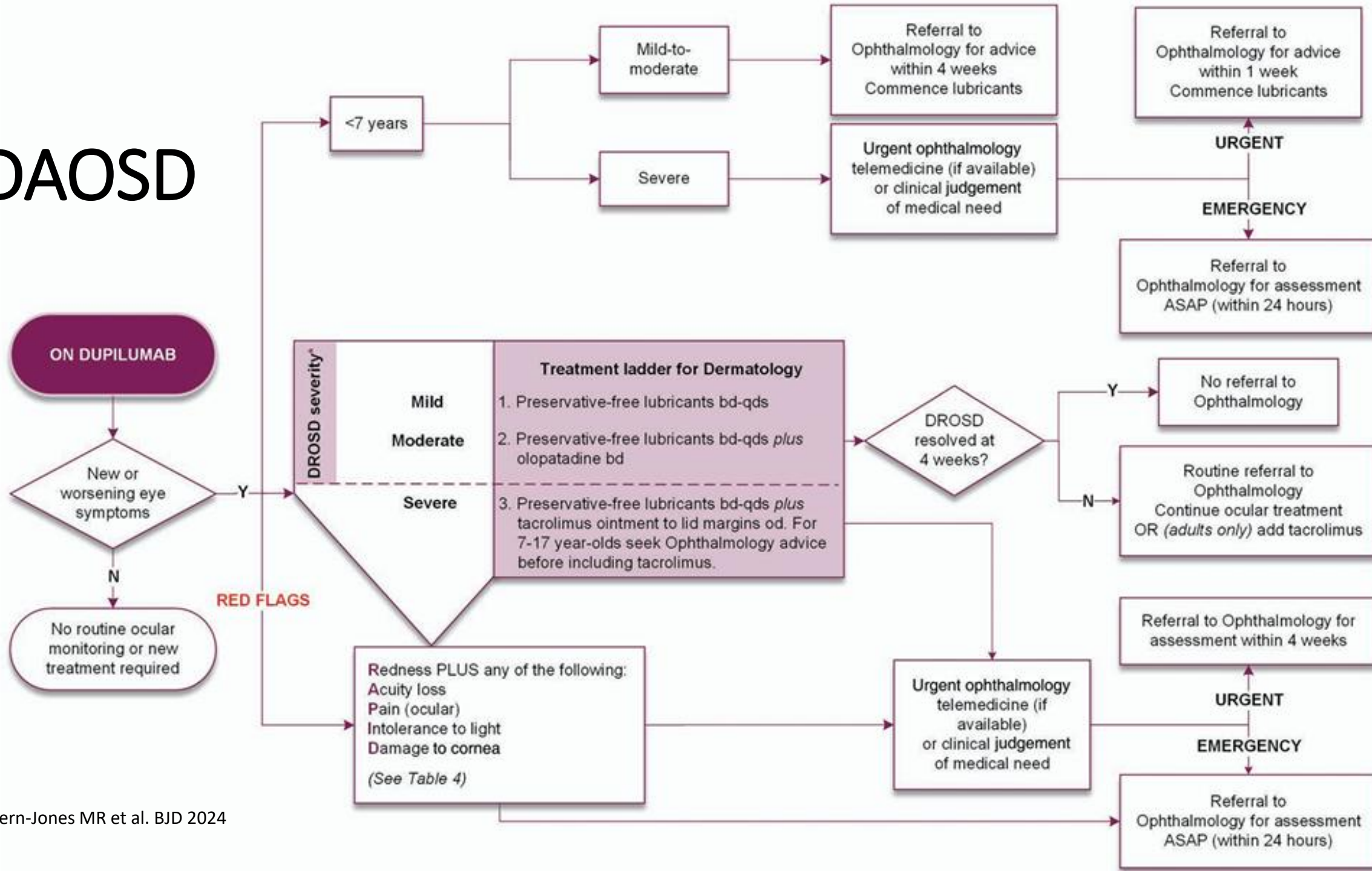
- 35% DAOSD
- 30% DAOSD_{Therapy}
- 14% onset ≥ 1 year of treatment



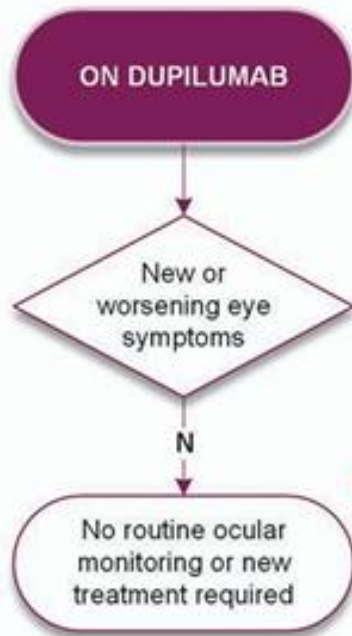
	DAOSD +		DAOSD -
AD severity	Mean EASI: 19.4	≈	Mean EASI: 17.4
AD eyelid involvement	58.3%	≈	63.2%
Pre-existing allergic conjunctivitis	63.9%	≈	61.8%
Total Immunoglobulin E (IgE)	↑ Median: 3570 kU/L	≠	↓ Median: 1430 kU/L

n = 104 patients
11.7 ± 4.0 years
median follow-up 70.5 weeks

DAOSD



DAOSD



- **Children < 7 yrs should be referred to ophthalmology**

- Mild to moderate: within 4 wks
- Severe: within 1 day to 1 week (telemedicine)

Referral to
Ophthalmology for assessment
ASAP (within 24 hours)

- **Pts. \geq 7 yrs, mild / moderate: dermatological management**

- preservative-free lubricant, antihistamine ED
- Not resolved after 4 wks → routine referral

tacrolimus ointment to lid margins od. For
7-17 year-olds seek Ophthalmology advice
before including tacrolimus.

OR (adults only) add tacrolimus

RED FLAGS

- **Pts. \geq 7 yrs, severe: always ophthalmological management**

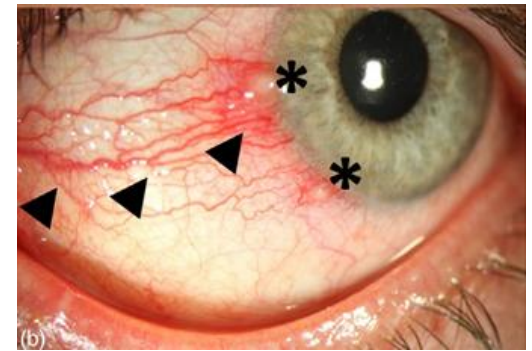
- Emergency or urgent referral (telemedicine)
- **RED FLAGS:** REDNESS + acuity loss / ocular pain / photophobia / corneal damage

Referral to
Ophthalmology for assessment
ASAP (within 24 hours)

ROSACEA

OCULAR ROSACEA

- **60%** of pediatric cases, mostly bilateral
- Meibomian gland dysfunction → tear film instability → ocular surface inflammation
- **Clinical signs & symptoms**
 - lid margin erythema, chalazion
 - conjunctival hyperemia
 - epiphora, photophobia
 - foreign body sensation etc.



TOPICAL TREATMENT

Treatment of ocular rosacea: a systematic review

Shani Avraham^{1,*} | Sophie Khaslavsky^{2,*} | Nadia Kashetsky³ |
Samantha Y. Starkey⁴ | Kirill Zaslavsky⁵ | Joseph M. Lam^{6,7}

Treatment modality (number of patients)	Complete response, %	Partial response, %
Lid hygiene (105)	34 (36/105)	30 (31/105)
Topicals (136)	45 (61/136)	45 (61/136)
Antimicrobials (90)	52 (47/90)	39 (35/90)
Cyclosporine (46)	30 (14/46)	57 (26/46)
Oral antibiotics (580)	20 (118/580)	70 (404/580)
Tetracyclines (445)	15 (68/445)	75 (334/445)
Doxycycline (206)	23 (48/206)	63.6 (131/206)
Nitroimidazoles (19)	79 (15/19)	21 (4/19)
Macrolides (99)	35 (35/99)	56 (55/99)
Lincosamides (17)	–	65 (11/17)
Isotretinoin (67)	–	40 (27/67)
IPL (109)	–	89 (97/109)
Combination (77)	4 (3/77)	86 (66/77)
No intervention (113)	–	4 (5/113)

J Dtsch Dermatol Ges. 2024

Eyelid hygiene

2-3x daily
long-term

Artificial tears

Azithromycin
1,5% eye drops

2x daily
for 3 days

1 therapy
cycle

3 cycles per month

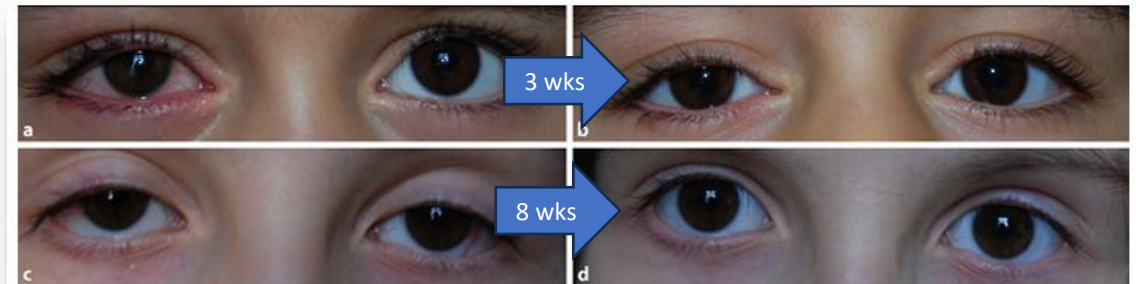
for 2 months

2 cycles per month

for 2 months

1 cycle per month

for 2 months



mod. Starosta DA, Lorenz B. Ophthalmologe 2021

“INVISIBLE EYE DISEASES”

SKIN & RETINA

Pseudoxanthoma elasticum



- *ABCC6* pathogenic variants
- elastic fiber calcification
- Peau d'orange, angioid streaks, comet tail lesions...

Meinke J et al. Ophthalmologie 2025

Incontinentia pigmenti



- *IKBKG* pathogenic variants
- multisystem ectodermal dysplasia
- Retinal vasculopathy

Bodemer C et al. JEADV 2020

SKIN & UVEA

Linear morphea

- Ocular disorders in **1-5%**
- 2/3 facial linear Morphea
- „White uveitis“

Liguoro I et al. Autoimmun Rev 2025

Psoriasis + JPsA

- JPsA: Uveitis in **6.6%**
- Early onset (< 6 yrs): severe / prolonged course

Baquet-Walscheid K et al. J Rheumatol. 2022



VITILIGO

NO OPHTHALMOLOGY REQUIRED IN ASYMPTOMATIC CHILDREN

RESEARCH LETTER

Auditory and Ocular Manifestations in Pediatric Vitiligo

Table 2. Risks of Auditory and Ocular Manifestations in Pediatric Patients With Vitiligo

„No significant differences ...
in vision impairment, dry eye
disease, uveitis, or glaucoma.“

KEY POINTS

“CONTACT OPHTHALMOLOGY IN CASE OF...”



IMMEDIATE REFERRAL

- RED FLAGS – severe systemic diseases - young children with ocular symptoms



TIMELY REFERRAL

- Functional impairment, inflammatory skin diseases, “invisible eye diseases”



ROUTINE REFERRAL

- Chronic skin diseases, established derm / ophthalmo cooperation



<https://kidsownpublishing.org.au/product/i-spy-with-my-little-eye/>

THANKS A LOT!



Kinder-
Dermatologie

+49-89-4400-56895

hagen.ott@med.uni-muenchen.de

