

# **PAEDIATRIC OPHTHALMOLOGY: UPDATE LECTURE**

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# PAEDIATRIC OPHTHALMOLOGY: UPDATE LECTURE

- The pediatric eye exam is often feared by medical professionals, even by general ophthalmologists, as it can be:
  - difficult, loud, frustrating, often non-productive, with the possibility of sometimes causing harm if the child is not co-operative
- Unlike adult patients, children often are not able to realize or communicate what is wrong with their eyes.
- They often are not willing participants in the examination and so it requires significant effort to gain all the necessary information

# PAEDIATRIC OPHTHALMOLOGY: UPDATE LECTURE

- Impact on a child's health is beyond the impairment of vision, and can lead to developmental and psychosocial disadvantage.
- A high level of clinical suspicion, an accurate **monocular** assessment of the vision is needed as serious paediatric eye diseases and significant vision impairment can easily go unnoticed.

# **I) Examining Children's Eyes:**

## **HANDY TIPS AND TRICKS**

# I) Examining Children's Eyes:

- What to look for in eye examination?

- **Structure:**

- Eyelids
- Cornea
- Conjunctiva
- Sclera
- Anterior Chamber
- Iris
- Pupil
- Alignment
- *Red reflex*

- **Function:**

- Vision
- Eye movements

\* Almost all of these can be done with just a simple torch-light examination with a few toys

# I) Examining Children's Eyes:

- **Structure:**

- **Eyelids:** Lumps, Infection, Foreign body under eyelid, Injury, Swelling, symmetry
- **Cornea:** Abrasion, foreign body, clarity, size, symmetry, trauma
- **Conjunctiva and Sclera:** Foreign Body, redness, discharge, trauma
- **Anterior Chamber:** Clarity and contents
- **Iris and Pupil:** Shape, Colour, Symmetry, reaction
- **Alignment:** Looks straight or not
- **Red reflex:** Using Direct Ophthalmoscope or phone flash, symmetry

# I) Examining Children's Eyes:

- **Function:**

- **Vision:**

- Good vision, Poor vision, no vision
    - Equal or not
    - Surrogate markers for vision – Alignment, red reflex

- **Eye movements:**

- Full or limited
    - Nystagmus
    - Surrogate markers for limited eye movements r misalignments – diplopia?

# HANDY TIPS AND TRICKS

- Gather as much information about the patient as possible prior to entering the room.
- Engage, Smile and make eye contact as much as possible with the child.
- Keeping up to date on **current movies or characters** or trends that different age children enjoy can allow you to break the ice with some brief conversation prior to the exam.

# HANDY TIPS AND TRICKS

- Speak to children in a language they can understand.
- Ask the child "Do you know why are you here?" and "Why are we looking at your eyes?"
- Make them your ally and helper for the exam. Children will respond much better if you ask: "Do you want to play some fun games and shine some cool lights in your eyes?"
- "Can I take a peek at your pretty eyes with my magic lens?"
- "Do you want to hold on to the handlebars while I look?" helps to make a slit lamp exam less threatening.
- Whenever possible have staff put eye drops in. Try to not be in the room when it occurs. And then enter the room and sympathize by saying "we won't be letting anyone else put drops in their eyes today"

# HANDY TIPS AND TRICKS

- Position the patient



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# HANDY TIPS AND TRICKS

- Toys – Very Important!! – One Toy One Look!
- Keep a Box full of toys
- Best toys for getting attention are the ones that are colourful, flashing blinking lights, musical or with cartoon characters



# HANDY TIPS AND TRICKS



# HANDY TIPS AND TRICKS



# HANDY TIPS AND TRICKS

- Checking Visual Behavior and Red reflex
- Red reflex



# What Does a Newborn See?

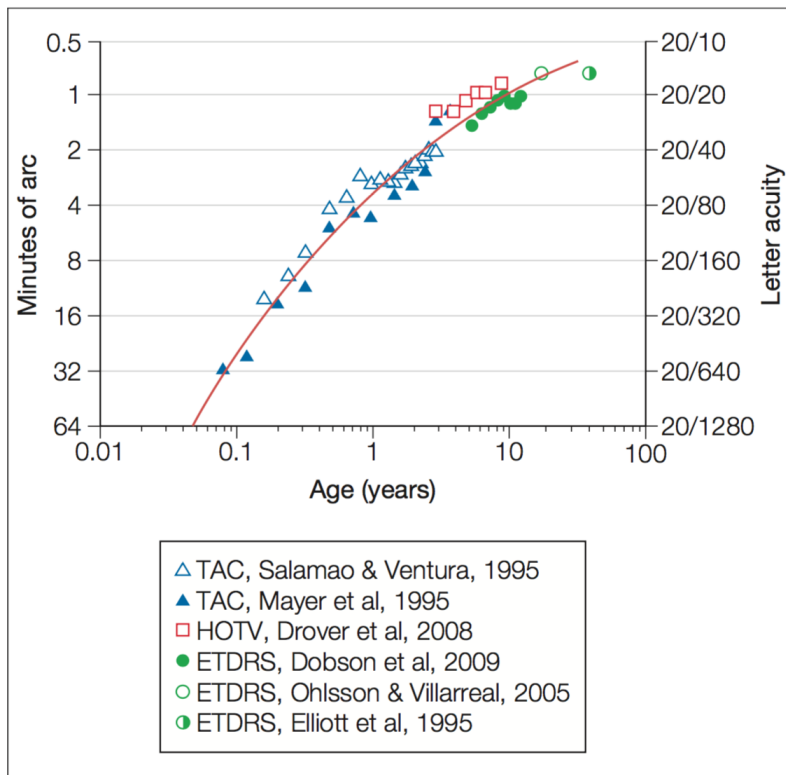
## - Chaos

■ William James (1890):

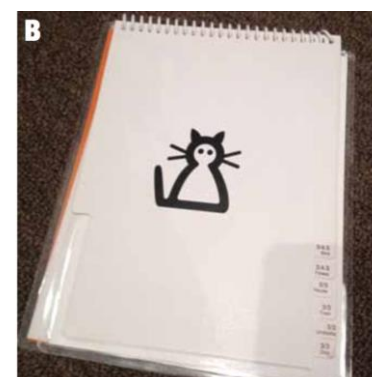
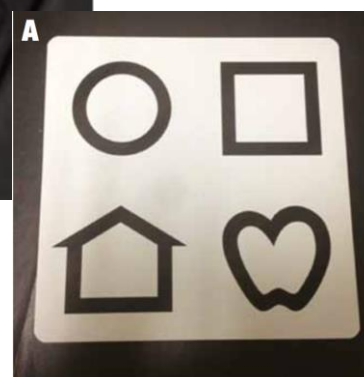
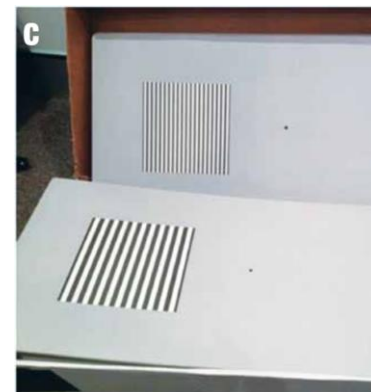
‘buzzing, blooming, confusion’

# Normal Visual Milestones

Technique	Newborn	2 months	4 months	6 months	1 year
Optokinetic nystagmus	20/400	20/400	20/200		20/60
Preferential looking (one study)	20/400	20/200	20/200	20/150	20/50
Preferential looking (other study)	20/800 to 20/1600	20/1200	20/400	20/300	20/100
Visual evoked potential	20/100 to 20/200	20/80	20/80	20/20 to 20/40	20/40



# HANDY TIPS AND TRICKS



# HANDY TIPS AND TRICKS

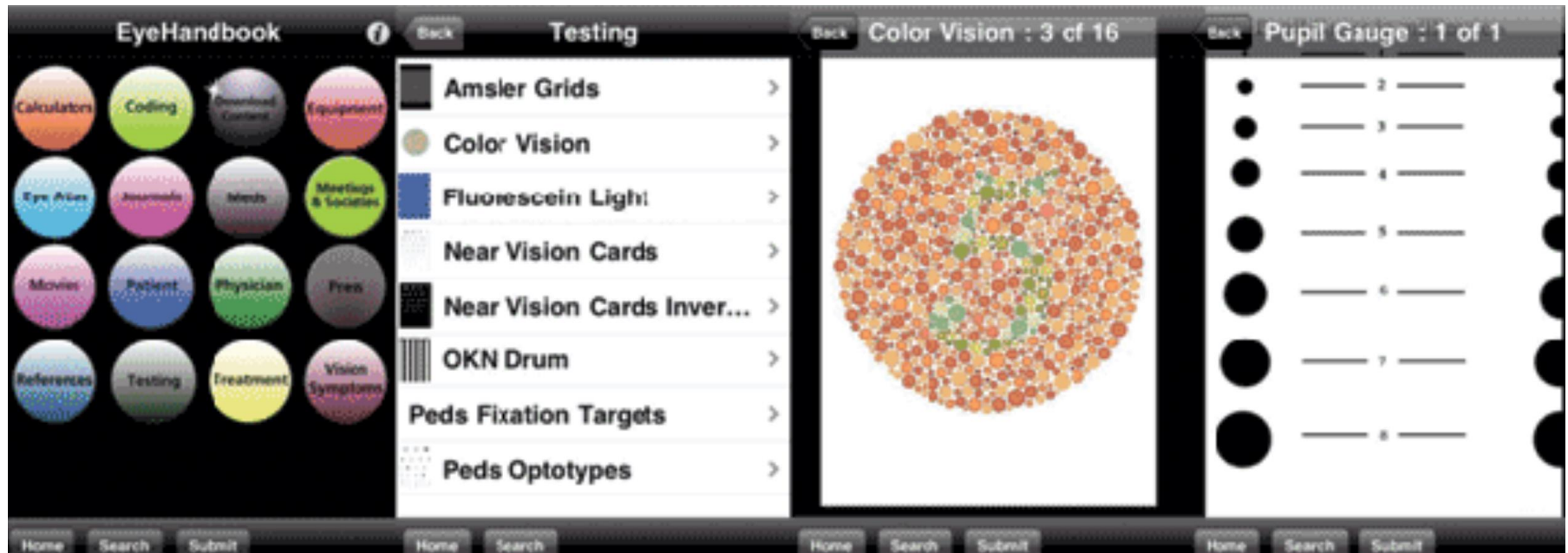


# HANDY TIPS AND TRICKS



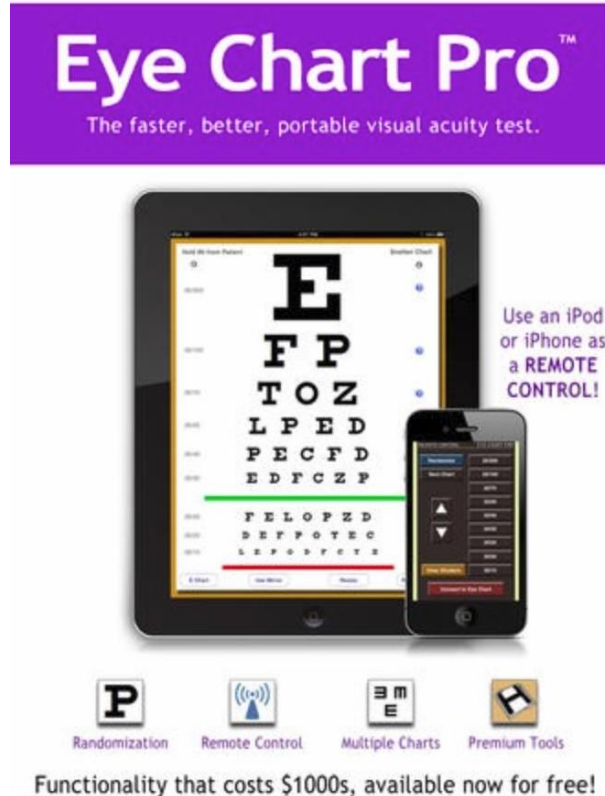
# HANDY TIPS AND TRICKS

- Use phone or ipad and Apps!
- Eye Handbook (EHB) (Has fixation targets)



# HANDY TIPS AND TRICKS

- Use phone or ipad and Apps!
- Snellen's Chart on iPad (Eye Chart Pro)



# HANDY TIPS AND TRICKS

- Use phone or ipad and Apps!
- Balloonimals
- Other paediatric fixation apps



## **II) Red Flags for Red Eyes:**

# II) Red Flags for Red Eyes:

- Common reason for primary care visits
- Most common referral from GPs to Ophthalmologists

**”My child had a red eye which started 3-4 days ago, GP started him on Chlorsig, has made no difference”**

## Top Causes we see in Kids:

- Viral Conjunctivitis
  - Viral Conjunctivitis
  - Viral Conjunctivitis
  - Anterior uveitis
  - Foreign bodies
  - Episcleritis
  - Dry eyes
- 
- Rare serious causes:
    - Microbial Keratitis
    - Posterior uveitis
    - Eye tumours - retinoblastoma

# II) Red Flags for Red Eyes:

## SYMPTOMS:

### A) PAIN/DISCOMFORT:

- Most Red eyes have some level of discomfort, atleast a mild “irritation” or commonly described as “sore”
- “Pain” (Sharp, pricking, dull aching, lancing) as a symptom is a RED FLAG!
- Unfortunately kids may not be able to describe symptoms and may not be able to differentiate pain from irritation.
- Sometimes kids can present with generalised irritability and crankiness with only a local ocular cause.

## II) Red Flags for Red Eyes:



Pre-verbal kids may not complain, but may just keep rubbing at the eye or closing the eye.

RED FLAG: Need to rule out foreign body, abrasions, corneal pathology or even diplopia due to ocular misalignment.

# II) Red Flags for Red Eyes:

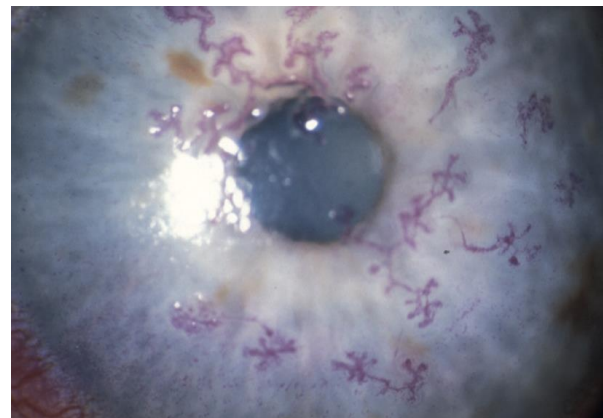
## B) PHOTOPHOBIA:

- Is the affected eye more light sensitive than the other eye?
  - Any difference in patient's behaviour when light is shone in bad eye vs good eye?
  - Difficulty keeping eye open in normal room light



Photophobia:

- Corneal involvement (FB, Abrasion, Ulcer, keratitis)
- Uveitis



# **II) Red Flags for Red Eyes:**

## **C) BLURRED VISION:**

# II) Red Flags for Red Eyes:

## SIGNS

- Inspect Lids in chronic red eye
  - Molluscum
  - Blepharitis

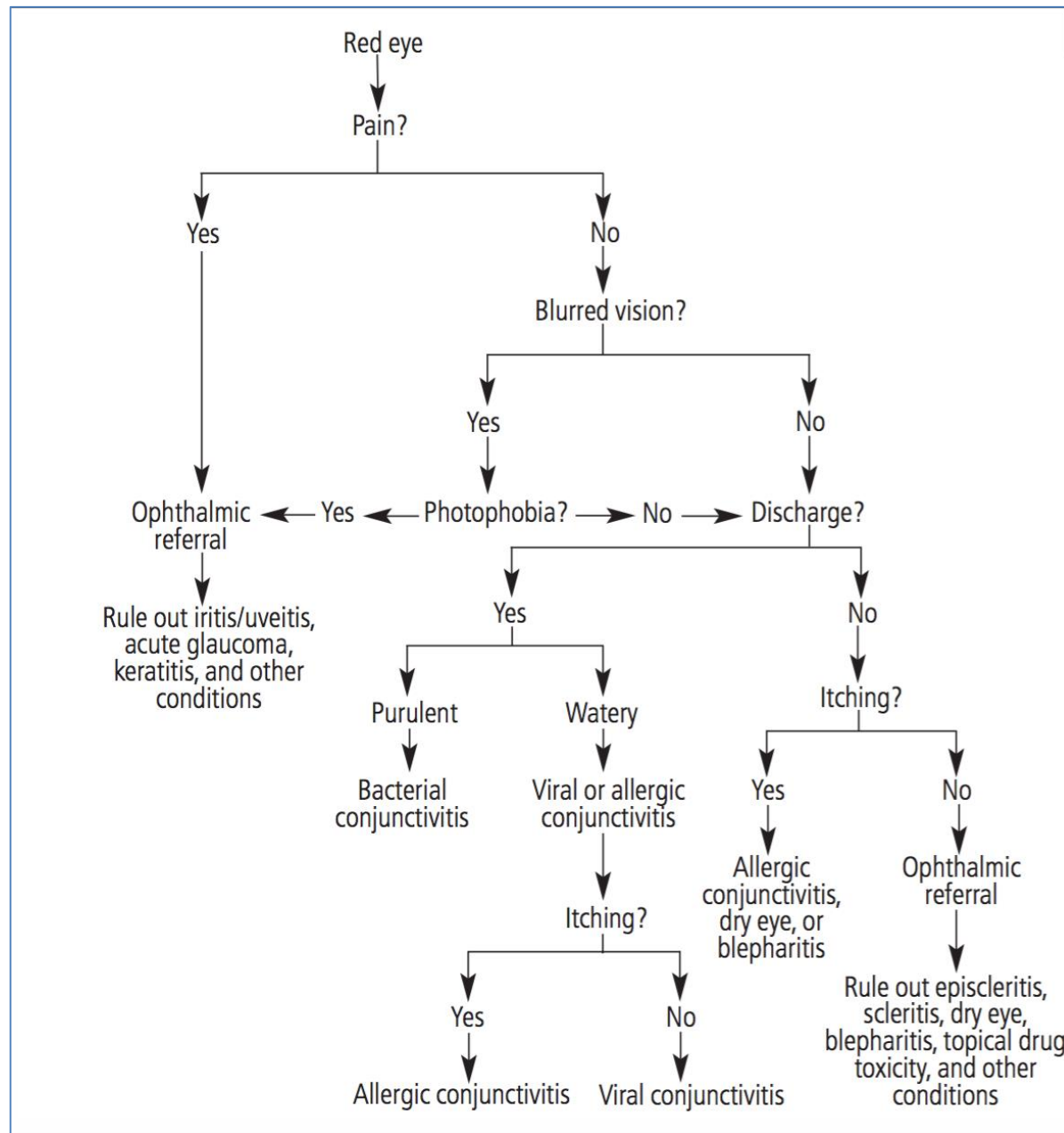


# II) Red Flags for Red Eyes:

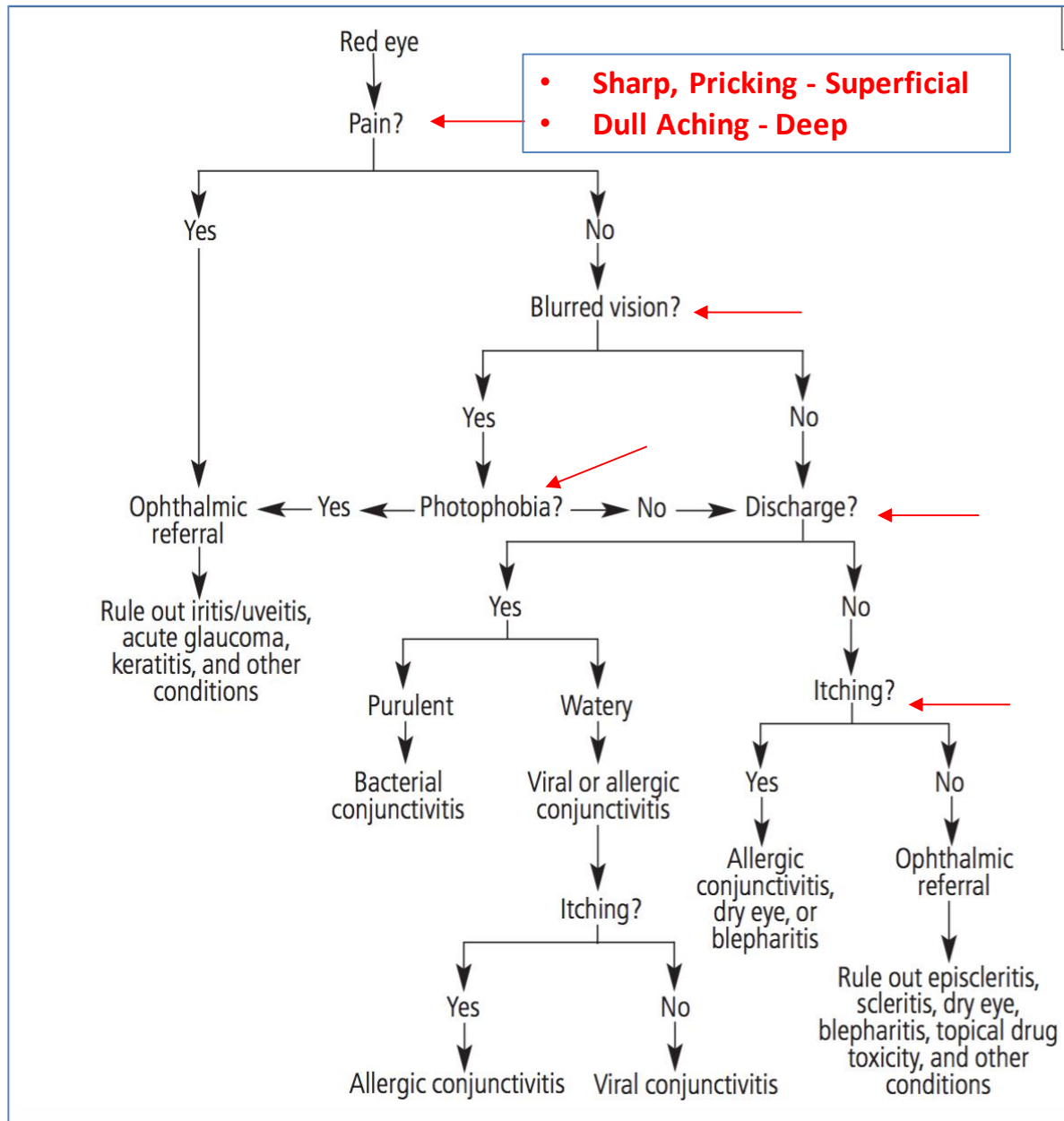
## SIGNS

- Inspect Lids in chronic red eye
  - Molluscum
  - Blepharitis

## II) Red Flags for Red Eyes:



## II) Red Flags for Red Eyes:



# **III) Common paediatric eye injuries**

## **IV) Red eyes in Children - Common causes**

# **V) Strabismus**

# I) Examining Children's Eyes:

- Sometimes difficult to get all the information in a single examination
- At birth one does not know for sure that a baby's eyes are normal and fully functional. The general practitioner's role is to identify the risk of inherited disease and to perform the relatively simple screening examinations for conditions that require referral for specialist attention. These depend on the child's age and serve to identify different conditions at different ages. Acquired conditions are most commonly allergic or infective in origin



## O) Motility

Aim is to know whether it is only strabismus or serious acquired disease.

See for head posture, face turn

Doll's eye movement

Nystagmus

OKN

Old photos