

DST-FC-102 Eye Assessment: Pediatric

Nurses with RN First Call Certified Practice designation (RN(C)s) are able to manage the following eye conditions:

- Conjunctivitis in children **6 months of age and older**
- Minor corneal abrasion in children **2 years of age and older**

The following assessment must be completed and documented.

ASSESSMENT

History of Present Illness and Review of System

General

The following characteristics of each symptom should be elicited and explored:

- Chronology
- Onset
- Current situation (improving or deteriorating)
- Location
- Radiation
- Quality
- Timing (frequency, duration)
- Severity
- Precipitating and aggravating factors
- Relieving factors
- Associated symptoms
- Effects on daily activities
- Previous diagnosis of similar episodes
- Previous treatments
- Efficacy of previous treatments

Cardinal Signs and Symptoms

In addition to the general characteristics outlined above, additional characteristics of specific symptoms should be elicited as follows:

Vision

- Recent changes
- Vision loss including loss of peripheral vision
- Blurring
- Halos around lights
- Floaters

Other Associated Symptoms

- Pain
- Sensation of pressure behind the eye
- Irritation
- Foreign-body sensation
- Photophobia

- Diplopia (observed squinting or keeping one eye closed in younger children)
- Lacrimation
- Itching
- Rubbing of eyes
- Eye discharge
- Ear pain
- Nasal discharge
- Sore throat
- Cough
- Nausea or vomiting
- Headache
- Urethral, vaginal or rectal discharge
- Pain or inflammation of the joints

Medical History (General)

- Medical conditions and surgeries
- Allergies (seasonal as well as medication)
- Medication currently used (e.g., prescription, oral contraceptives, over the counter)
- Herbal preparations, vitamins, minerals, supplements and traditional therapies
- Birth and prenatal history if age appropriate
- Communicable diseases: measles, chickenpox (varicella), herpes simplex
- Immunization Status

Medical History (Specific to eyes)

- Eye diseases, defects or injuries
- Eye surgery, including corrective
- Use of eyeglasses or contact lenses, corrective or cosmetic
- Change in type of contact lens or solution
- Concurrent infection of the upper respiratory tract
- Other infectious diseases (chicken pox, measles)
- Sexually Transmitted Infections (STIs)
- Immunocompromise
- Exposure to eye irritants (environmental or occupational)
- Current eye medications - homatropine, cyclogyl, steroids
- Systemic inflammatory disease (Inflammatory Bowel Disease, Reiter's syndrome, Juvenile Rheumatoid Arthritis)
- Diabetes mellitus
- Chronic renal disease
- Bleeding disorders

Family History

- Visual disorders (i.e. glaucoma, blindness, etc.)
- Systemic inflammatory disease (i.e., arthritis conditions, lupus)
- Diabetes mellitus
- Others with eye infections

Personal and Social History (Specific to eyes)

- Concerns reported by parent, caregiver or teacher about child's vision (i.e. squinting, headaches caused by reading)
- Use of protective eyewear for sports and other activities
- Exposure to irritants (chemicals, cigarette smoke, wood smoke)
- Exposure to ultraviolet radiation from the sun
- Housing and sanitation conditions
- School or day-care exposure to contagious organisms (e.g. conjunctivitis)
- Sexual activity, if applicable

PHYSICAL ASSESSMENT OF THE EYE

Vitals

- Temperature
- Pulse
- Respiration
- SpO₂
- Blood pressure (BP)
- Pain

General

- Apparent state of health
- Appearance of comfort or distress
- Colour
- Nutritional status
- State of hydration
- Hygiene
- Match between appearance and stated age
- Character of cry (in infants less than 6 months old)
- Activity level
- Mental status
- Degree of cooperation, consolability
- Emotional reaction to caregiver and examiner
- Difficulty with gait or balance

Inspection

Test visual acuity, visual field

- Visual acuity in children greater than 3 yrs of age
- Using a tumbling E or picture chart for children over 3 yrs of age or who cannot read the alphabet
- Most infants are farsighted, gradually gaining acuity as they develop, attaining approximately 20/50 by one year of age, and 20/20 by 6-8 years of age
- Test visual field in older children if concern about glaucoma

Inspection

- Bony Orbit: edema, lesions, bruising

- Lids and Lashes: ability to open and close, edema, erythema, crusting, eyelash position, tremors, foreign bodies, lesions. Evert upper lids as required.
- Lacrimal Apparatus: tearing, size
- Conjunctiva and Sclera: color, pattern of injection, discharge, edema, haemorrhage, pterygium, foreign body
- Cornea: clarity, abrasions or lacerations. Corneal cloudiness may be a sign of congenital cataracts, foreign body. Fluorescein stain to assess for corneal integrity.
- Pupil and Iris: color, size, shape, reactivity to light and accommodation
- Lens: transparency, opacities
- Fundi: red reflex, optic disc, retinal vasculature in older children
- Extraocular muscles: Extra ocular eye movements (EOEM), position and alignment of eyes (i.e., strabismus): use corneal light reflex test, cover-uncover test

Palpation

Palpate the bony orbit, forehead, eyebrows, eyelids, lacrimal apparatus and pre-auricular lymph nodes for tenderness, swelling or masses

Do not palpate globe if rupture injury is suspected or if the client has undergone recent eye surgery

Associated Systems

- An ENT examination, including the lymph nodes of the head and neck, should also be performed if there are symptoms of a systemic condition, such as viral URTI or an STI, (e.g. if gonorrhoea is suspected)
- Pre-auricular adenopathy might indicate chlamydial, viral or invasive bacterial infection of the eye (e.g., gonorrhoea)

Abdomen

Assess liver for tenderness and enlargement if eye symptoms are associated with symptoms of an STI.

Genitourinary System and Rectal Area

Assess for urethral, cervical or vaginal discharge if eye symptoms are associated with symptoms of an STI.

Musculoskeletal System and Extremities

Examine the joints to assess for warmth, redness, pain or swelling.

SYMPTOMS REQUIRING URGENT REFERRAL

The first step is to differentiate major or serious causes of red eye from minor causes.

The following signs and symptoms require urgent referral to a physician or nurse practitioner:

- Unilateral or bilateral eye pain
- Ocular pain
- Ocular injury of any kind
- Severe photophobia of unknown cause
- Persistent blurring of vision
- Recent onset of visual disturbances – light flashes, floaters (recent onset), halos, dimming, visual distortion, double vision, abnormal colour perception or loss of visual acuity.
- Visual field loss
- Reduced ocular movement
- Exophthalmos (proptosis)
- Ciliary flush
- Scleral icterus
- Hyphema
- Irregular cornea (epithelial defect or opacity, irregular corneal reflection of light)
- Non-reactive pupil
- Treatment failure after 3 days
- Worsening symptoms
- Compromised host (e.g., immuno-suppressed client)
- Signs of preseptal or orbital cellulitis
- Symptoms in conjunction with a communicable disease i.e. chickenpox
- Finger like (dendritic) projections noted on fluorescein stain (herpetic)

DIAGNOSTIC TESTS

The RN(C) may consider the following diagnostic tests in the examination of the eye to support clinical decision-making:

- Swab drainage for Culture and Sensitivity (C&S) only if there is no resolution of symptoms after an empiric course of treatment.

ADDITIONAL TESTING

- Apply fluorescein stain to test for corneal integrity if there is a possibility that a corneal abrasion has occurred.

REFERENCES

More recent editions of any of the items in the Reference List may have been published since this DST was published. If you have a newer version, please use it.

American Academy of Ophthalmology. (2014). [*Policy statement: Guidelines for appropriate referral of persons with possible eye diseases or injury.*](#)

American Academy of Ophthalmology. (2015). *Comprehensive Adult Medical Eye Evaluation.*

Ball, J. W., Dains, J. E., Flynn, J. A., Solomon, B. S., & Stewart, R. W. (Eds.). (2015). *Seidel's guide to physical examination* (8th ed.). St. Louis, MO: Elsevier.

Eye Physicians & Surgeons of Ontario. (2017). [*Vision Safety.*](#) Canadian Ophthalmological Society.

Dains, J. E., Baumann, L. C., & Scheibel, P. (2012). *Advanced health assessment and clinical diagnosis in primary care* (4th ed.). St. Louis, MO: Elsevier Mosby.

Estes, M. E. Z. (2014). *Health assessment and physical examination* (5th ed.). Clifton Park, NY: Cengage Learning.

Gardiner, M. F. (2016). [*Overview of eye injuries in the emergency department.*](#) *UptoDate*

Jacobs, D. S. (2014). [*Corneal abrasions and corneal foreign bodies: Clinical manifestations and diagnosis.*](#) *UptoDate.*

Porter, R. S., & Kaplan, J. L. (Eds.). (2011). Approach to the ophthalmologic patient. In *The Merck Manual* (19th ed.). Whitehouse Station, NJ: Merck Sharpe & Dome Corporation.

Sawyer, S. S. (2012). *Pediatric physical examination and health assessment.* Sudbury, MA: Jones & Bartlett Learning.

Stephen, T. C., Skillen, D. L., Day, R. A., & Bickley, L. S. (2010). *Canadian Bates' guide to health assessment for nurses.* Philadelphia, PA: Lippincott, Williams & Wilkins.

Waldo, M. H. (Ed.). (2011). *Ophthalmic procedures in the office and clinic* (3rd ed.). San Francisco, CA: American Society of Ophthalmic Registered Nurses.

Zoric, L. & Stojcic, M. (2013). The influence of ultraviolet radiation on eye. *Primary Health Care* 3: 133.