**STANDARD OPERATING PROCEDURE (REFRACTIVE ERRORS)**

Following points pertaining to the presenting complaints will be obtained:

1. **HISTORY**

* Blurring/Decreased vision for far and near
* Inability to read at working distance in dim light
* Watering
* Constant itching
* Headache
* Tiredness of eyes

1. **PAST HISTORY OF**

* Previous use of spectacles
* Frequently changing spectacles

1. **EXAMINATION**

* Visual acuity assessment (including Pin hole examination)
* Visual axis (cover/uncover test)
* Pupillary responses
* Ocular movements (Ductions and Versions)
* Posterior segment evaluation
* Refraction

1. **VISUAL ACUITY**

1. Non Verbal Child (upto 1 year)

* Ocular fixation
* Following visual stimulus
* Quality of fixation will be assessed (like central, eccentric,
* steady, unsteady, maintained)
* Ability to fixate a light held at distance is assessed
* Blink reflex in response to sound is observed

2. Verbal but Preliterate child (1-5 years)

* Ability to locate small objects
* Marble game test (child is asked to place marbles in holes of a

card)

* Snellen’s E chart

3. Above 5 years of age

Snellen’s vision box (alphabets, E-chart or Landolt’s C-ring)at 6 m

4 Visual assessment using Pin hole (if improvement then refraction)

1. **REFRACTION**

**Objective refraction** (using Autorefractometer)

**Retinoscopy**

* Will be carried out after 3-4days (when homatropine or cyclopentolate is used) and 3 weeks (when atropine is used).

ATROPINE: (will be used in children below 7 years of age, as 1% ointment thrice daily for three consecutive days)

HOMATROPINE: (will be used between the age of 7-35 years, as 2% drops to be instilled every 10min.for 3 times)

CYCLOPENTOLATE: (will be used between 7-35 years of age, as 1% drops to be instilled every 15min. for 3 times and the retinoscopy is performed after 60-90 min)

PHENYLEPHRINE: (will be used in elderly, as 5% and 10% drops)

**Subjective refraction** (Post Mydriatic test)

* Trial and error method will be used.
* The strongest convex lens and the weakest concave lens providing best vision will be chosen in patients with hypermetropia and myopia, respectively.
* Refining of the sphere will be done using Fogging method or Duchrome test.
* Refining of the cylinder will be done using Jackson’s cross cylinder, astigmatic fan or Stenopic slit.
* An improvement in visual acuity while looking through a pin-hole will indicate that optical correction in the trial frame is incorrect.
* Convex lens used for near correction will be such that 1/3rd of the amplitude of accommodation remains as reserve.
* Unless there is esodeviation or evidence of reduced vision it is not necessary to correct low hyperopia. As with myopia, significant astigmatic errors will be fully corrected.
* When hyperopia and esotropia coexist, initial management will include full correction of the Cycloplegic refractive error.
* In a school-aged child initially full correction will not be given as this will cause blurring of distant vision because of the inability to relax accommodation fully. We will start with increasing the number depending upon the acceptance of the child.

1. **TREATMENT**

**Will be individualized based on the type of refractive error, age, and patient preference:**

* Spectacles
* Contact Lenses
* Referral for surgical correction for those who wish to avoid glasses or because of occupational or cosmetic needs, in the form of LASIK/ LASEK/ EPI-LASIK.