

## INTRODUCTION

**Amblyopia** refers to a decrease of vision, either unilaterally or bilaterally, for which no cause can be found by physical examination of the eye. The term *functional* amblyopia often is used to describe amblyopia, which is potentially reversible by occlusion therapy. *Organic* amblyopia refers to irreversible amblyopia (Kushner, 1998).

Although many types of amblyopia exist, it is believed that their basic mechanisms are the same even though each factor may contribute different amounts to each specific type of amblyopia. In general, amblyopia is believed to result from *inadequate foveal stimulation*. It occurs during the critical periods of visual development, it is the number one cause of monocular vision loss in adults, aged 20-70 years or older (von Noorden, 1996).

Many causes of amblyopia exist; the most important are Anisometropia, Strabismus, Strabismic anisometropia and Visual deprivation (Lin et al, 2008).

Diagnosis of amblyopia usually requires a 2-line difference of visual acuity between the eyes. The clinician must first rule out an organic cause and treat any obstacle to vision (Daw, 1998).

Most vision loss from amblyopia is preventable or *reversible* with the right kind of intervention. The recovery of vision depends on how mature the visual connections are, the length of deprivation, and at what age the therapy is begun. The amblyopic eye must have the most accurate *optical correction* possible. This should occur prior to any occlusion therapy because vision may improve with spectacles alone (Cotter et al, 2006).

Patients with bilateral refractive amblyopia do well with spectacle correction alone, with most children aged 3-10 years achieving 20/25 or better within a year (Wallace et al, 2007).

The next step is forcing the use of the amblyopic eye by *occlusion therapy*; Patching may be full-time or part-time, Treatment Studies (ATS) have helped to provide new information on the effect of various amounts of patching.

Patients treated with 6 or more hours a day of patching have a greater risk of recurrence when patching is stopped abruptly rather than when it is reduced to 2 hours a day prior to cessation of patching (Holmes et al, 2003).

In the past, *penalization* therapy was reserved for children who would not wear a patch or in whom compliance was an issue. The Amblyopia Treatment Studies, however, have demonstrated that atropine penalization in patients with moderate amblyopia (defined by the study as visual acuity better than 20/100) is as effective as patching (Repka et al, 2005).

The endpoint of therapy is spontaneous alternation of fixation or equal visual acuity in both eyes.

When visual acuity is stable, patching may be decreased slowly, depending on the child's tendency for the amblyopia to recur.

Treatment of strabismus generally occurs last. The endpoint of strabismic amblyopia is freely alternating fixation with equal vision. Surgery generally is performed after this endpoint has been reached ( Repka, 2008).

The main complication of not treating amblyopia is long-term irreversible vision loss. Most cases of amblyopia are reversible if detected and treated early. So, this vision loss is preventable. Patients with high anisometropia and patients with organic pathology have the worse prognosis. Patients with strabismic amblyopia have the best outcome. Younger patients seem to do better. The better the initial visual acuity in the amblyopic eye; the better the prognosis is (Levartovsky et al, 1995).