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# THE EXPRESSION

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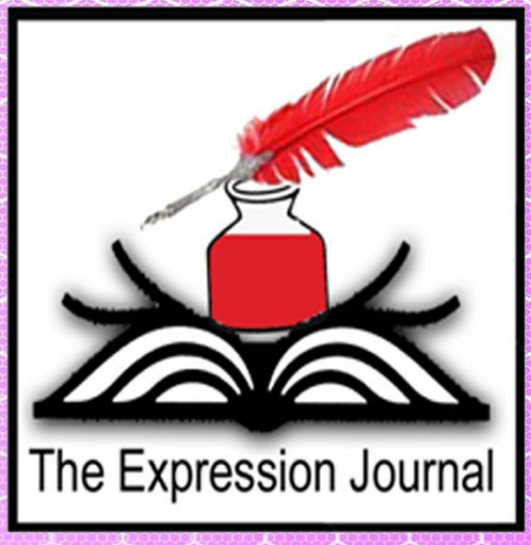


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# AMBLYOPIA TREATMENT STRATEGIES ANALYSIS

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## Abstract

**Background:** A survey on Amblyopia treatment based on treatment strategies of ophthalmologist, optometrist, and Orthoptist has been studied the effectiveness of Amblyopia treatment regimes and has followed the long term outcomes of these regimes. These studies are called as the Amblyopia Treatment Studies (ATS) and have been sorted into eight categories (According to pediatric eye disease investigator group).
**Methodology**: A survey of ophthalmologists, optometrist and Orthoptists attending a seminar in India. They were questioned as to how they treat Amblyopia.
**Results:** Ninety percent continue to use patching as their first method of treatment in moderate Amblyopia. Over 50% will patch four hours/day or more to begin treatment and 83% will use near exercises to augment the patching. Two thirds will begin patching six or more hours/day in patients with severe Amblyopia. Those atropine, use it daily rather than on weekends. Most felt that Amblyopia could be treated to age 12 years and some thought it could be treated to 14 years.
**Conclusion**: Most ophthalmologists, optometrist and Orthoptists taking the survey have not significantly changed their approach to Amblyopia treatment in light of the recent PEDIG studies.

## Keywords

PEDIG, Amblyopia Treatment Studies, Occlusion Therapy, Atropine Penaliz.

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## INTRODUCTION

The Pediatric Eye Disease Investigator Group (PEDIG) is a coordinated group of more than 60 clinics (more than 120 pediatric ophthalmologists and optometrists) crosswise over North America hoping to review scientifically pediatric eye disorder and the traditional treatment thereof. In the course of the most recent three years, they have looked all the more particularly at the treatment of Amblyopia, with eight noteworthy studies called Amblyopia Treatment Studies (or ATS) numbers 1 through 8.

## ATS STUDIES

ATS1[1] looked at a randomized trial of utilizing 1% atropine versus 2 to 6 hours of Occulsion therapy daily for treatment of direct Amblyopia children between ages 3 and 7 years of age with direct Amblyopia (de-fined as 20/40 to 20/100, or > 3 lines distinction between the visual sharpness of the two eyes) and with vision in the sound eye > 20/40 were set in one of two gatherings: treatment with atropine 1% or treatment with fixing. Vision was tried utilizing an electronic visual sharpness analyzer with single encompass HOTV Optotypes. Both Strabismic and Anisometropic amblyopic patients were incorporated. For hyperopic patients who demonstrated little accomplishment with treatment following four months, the lens over the sound eye was diminished to plano for facilitate optical penalization. after a half year of treatment, the examiner was to choose whether the patient should proceed in a similar gathering or be changed to the next gathering (roughly 25% of patients were changed to the elective frame). Patients were taken after for an aggregate of two years.

Results at the six-month[2] and two year[3] mark were similar in both groups suggesting that atropine and part time occlusion therapy had the same effect for initial treatment of moderate Omblyopia in children aged 3 to 7 years. Of note, however, was that while the end result was the same, visual improvement appeared to be faster in the patching group. In Kushner's discussion[4] he also pointed out that the end criteria for success was 20/30 in the study, but if a visual acuity of 20/25 was considered successful, 40% of the patching group achieved this vs. only 28% of the atropine group.

20/40.[5] With patients with Strabismic Amblyopia, ATS1 likewise demonstrated that Amblyopia therapy is related with deterioration of alignment from Orthotropia, with a 14% risk of Microstrabismus (16% in the patching group, 10% in the atropine group), and a 3% risk of a > 8 tropia. Amblyopia therapy alone was related with a 14% possibility of determination of a tropia > 8 , and a 36% shot of any determination at any rate to a Microtropia. Atropine was found to cause a change in visual result even without seeing an obsession change to the amblyopic eye when the great eye was obscured with atropine. ATS8 (in advance) takes after from ATS1 and contrasts end of the week atropine treatment enlarged and a plano focal point to the sound eye versus end of the week atropine alone The following examination, ATS26,[7] took a gander at patching regimes for either extreme (20/100– 20/400) or direct (20/40– 20/80) Amblyopia in children 7 years of age or more younger. It looked at two hours versus six hours of patching in direct amblyopes, and full-time patching versus six hours of patching for serious Amblyopia. Research Article 3 One hour of close visual action was suggested every day. Results were accounted for following four months of treatment.

In the severe Amblyopia group (ATS2a), it was inferred that Amblyopia enhanced with both six hours daily patching and full time patching when joined with pre scribed close work. In the direct Amblyopia group (ATS2b), it was inferred that Amblyopia enhanced with both two and six hours of low maintenance impediment when joined with one hour of endorsed close work. The rate and magnitude of improvemennt was additionally equivalent.

An Amblyopia recurrence study (ATS2c)[8] then followed 156 children under the age of 8 years with successfully treated Amblyopia who had discontinued their treatment. Repeat of Amblyopia overall during the one year follow-up was around 22%. This was comparable in both the atropine and the fixing patching. While there was a recommendation this was not a randomized trial, the information hints for the advantage of weaning patients from patching versus stopping the utilization of atropine inside and out.

ATS6[9] is still currently underway and furthers the findings of ATS2 comparing near vs. distance activities while patching for Amblyopia.

ATS3 [10,11] analyzed treatment of Amblyopia in chidren aged 8 to 18 years with the goal of deciding the reaction rate to treatment in older children. It likewise took a gander at

the recurrence of repeat of effectively treated Amblyopia in the 7 to < 5 years and with 1 to 2 D of hyperopic anisometropia and gentle to direct Amblyopia. Moreover, they found a lower repeat rate (14%) for Amblyopia after treatment with glasses alone contrasted with repeat rates revealed after treatment with impediment or atropine (24– 26%).

ATS7 (in progress) follows the time course of visual improvement of children with bilateral refractive Amblyopia.

The result showed that Amblyopia enhanced with optical redress alone in 1/4 of patients. Patients matured 7 to 12 years with active Amblyopia therapy (patching/atropine) can enhance vision even with earlier Amblyopia treatment.

ATS4[12] observed daily verses weekend (or two days) atropine regime for treatment of moderate Amblyopia (20/40– 20/80) in 168 children aged 3 to 6 years. Following four months, comes about indicated end of the week atropine was as powerful as day by day atropine in treating moderate Amblyopia in this age group. The visual change was like that seen with two to six hours of patching for direct Amblyopia revealed in ATS2.

ATS5 (in advance) is looking at two hours of day by day patching versus a control group of spectacle therapy. At the last AAPOS meeting, Steele et al.13 detailed that they had discovered anisometropic Amblyopia could be treated with exhibition revision alone. They found that the best candidates were < 5 years and with 1 to 2 D of hyperopic anisometropia and gentle to direct Amblyopia. Moreover, they found a lower repeat rate (14%) for Amblyopia after treatment with glasses alone contrasted with repeat rates revealed after treatment with impediment or atropine (24– 26%).

ATS7 (in progress) follows the time course of visual improvement of children with bilateral refractive Amblyopia.

**STUDY DESIGN**

Above study material has been taken from PEDIG studies and a study based on survey by asking ophthalmologist, via mail questionnaire, if and how these studies had changed their treatment regimes. The response rate was somewhat poor. We conducted a similar survey at the start of an ATS review lecture at a pediatric ophthalmology conference in Delhi, India. Our survey had six ATS related question. This was in no way a statistically accurate analysis, but rather an informal way of penetration of the PEDIG recommendation in to typical pediatric ophthalmology practices. There were 66 questionnaires answered. The audience was composed mainly of pediatric ophthalmologists, optometrist and orthoptists from north India.

**TABLE**

| Sr. No. | Questions and their responses | | |
|---|---|---|---|
| 1 | Question | Do you use Atropine as first treatment for moderate Amblyopia? | |
| Response | | >75% of the time | 5% |
| | | 50% of the time | 5% |
| | | < 25% of the time | 90% |
| 2 | Question | Do you use daily or on weekend(2 days) Atropine? | |
| Response | | Daily | 71% |
| | | Weekend | 29% |
| 3 | Question | How many hours do you patch for moderate (20/40-20/80 Amblyopia in < 7 year olds? | |
| Response | | 2 | 4.4% |
| | | 2 to 4 | 41.12% |
| | | 4 to 6 | 26.5% |
| | | 6 to 8 | 27.9% |
| 4 | Question | How many hours do you patch for severe (20/100-20/400) Amblyopia in < 7 years olds? | |
| Response | | 2 | 0% |
| | | 2 to 4 | 6.25% |
| | | 4 to 6 | 26.5% |
| | | 6 to 8 | 67.27% |
| 5 | Question | Do you recommend near work with patching? | |
| Response | | Yes | 83% |
| | | NO | 17% |
| 6 | Question | What do you think, is the upper age for the success with Amblyopia treatment? | |
| Response | | 12 years | 60% |
| | | 14 years | 25% |
| | | 16 years | 8% |
| | | 18 years | 7% |

**RESULTS**

The questions and responses are shown in the above table. (Percentage of practitioners is shown in the table.

## DISCUSSION

The results indicate that most of us in India are still using patching as the first method of Amblyopia treatment. Atropine is seen as a reasonable alternative and we use it more now in noncompliant patients. If atropine is used, it is more likely to be used daily rather than just on weekends. Nearly all who use patches would patch more than two hours/day and the majority would begin patching more than four hours/day in patients with moderate Amblyopia. Two thirds would patch six hours/day or more for patients with severe Amblyopia. The majority (83%) use near work exercises as part of Amblyopia treatment while patching. Sixty percent feel that patching can be successful to age 12 years and another 25% think it may be useful to age 14 years.

We still favor patching and use it in 95% of our practice. We find that if we present families with the chance of a more rapid Amblyopia resolution, coupled with a chance of a higher visual acuity as an end point and also mention the rare although present systemic risks associated with atropine, parents do agree to try patching first. We encourage longer hours of patching and longer observation times in newly treated older amblyopic patients as we have had some spectacular improvements in older amblyopic patients whose condition has been late in detection and who have been previously untreated. We start patients with moderate Amblyopia on two hours/day of patching, but if there is an in adequate response we increase the length of time. We think it is reasonable to start patients with severe Amblyopia on six hours/day of patching. We also suggest one hour/day of near work.

## CONCLUSION

In spite of numerous studies published by the PEDIG, we found in our survey that most ophthalmologists, optometrist and orthoptists in India still continue to use patching as the primary treatment for Amblyopia. It appears that although the PEDIG studies are interesting and Research Article 6 have stimulated thought, personal experience and past teaching still guide our approach to Amblyopia treatment.

## REFERENCES

1. Pediatric Eye Disease Investigator Group: A ran-domized trial of atropine vs. patching for treat-ment of moderate Amblyopia in children. *Arch Ophthalmol* 2002; 120:268–278.
2. Pediatric Eye Disease Investigator Group: A com-parison of atropine and patching treatments for moderate Amblyopia by patient age, cause of am-blyopia, depth of Amblyopia, and other factors. *Ophthalmology* 2003; 110:1632–1638.
3. Pediatric Eye Disease Investigator Group: Two-year follow up of a six-month randomized trial of atropine versus patching for treatment of moderate Amblyopia in

children. *Arch Ophthalmol* 2005; 123:149–157.
4. Kushner BJ: Atropine vs. patching for the treatment of moderate Amblyopia in children. *Arch Ophthalmol* 2002; 120:387–388.
Scott WE: Amblyopia treatment outcomes. *J AAPOS* 2005; 9: 107–111.
4. Pediatric Eye Disease Investigator Group: A randomized trial of patching regimens for treatment of severe Amblyopia in children. *Ophthalmology* 2003; 110:2075–2087.
5. Pediatric Eye Disease Investigator Group: A randomized trial of patching regimens for treatment of moderate Amblyopia in children. *Arch Ophthalmol* 2003; 121:603–611.
6. Pediatric Eye Disease Investigator Group: Risk of Amblyopia recurrence after cessation of treatment. *J AAPOS* 2004; 8:420–428.
7. Pediatric Eye Disease Investigator Group: A randomized pilot study of near activities versus non-near activities during patching therapy for Amblyopia. *J AAPOS* 2005; 9:129–136.
8. Pediatric Eye Disease Investigator Group: A prospective, pilot study of treatment of Amblyopia in children 10 to <18 years old. *Am J Ophthalmol* 2004;137:581–583.
9. Pediatric Eye Disease Investigator Group: Randomized trial of treatment of Amblyopia in children aged 7 to 17 years. *Arch Ophthalmol* 2005; 123:437–47.
10. Pediatric Eye Disease Investigator Group: The course of moderate Amblyopia treated with atropine in children: Experience of the Amblyopia Treatment Study. *Am J Opthalmol* 2003; 136: 630–639.
11. Steele AL, et al.: Successful treatment of anisometropic Amblyopia with spectacles alone. *J AAPOS* 2006; 10:37–43.
12. Wygnanski-Jaffe T: The effect on pediatric ophthalmologists of the randomized trial of patching regimens for treatment of moderate Amblyopia. *J AAPOS* 2005; 9:208–211.