Effectiveness of conventional amblyopia treatment with occlusion can be limited by patient non-compliance and discomfort from the adhesive patches\(^\text{1}\). "Amblyz™ liquid crystal glasses utilize an intermittent occlusion technique (at 30-second opaque/transparent intervals) and avoid adhesive to treat amblyopia, potentially improving compliance. Several pilot studies support the effectiveness of this new intermittent occlusion therapy (IO therapy), making it an interesting option/alternative for amblyopia treatment (1, 2, 3). However, there are no objective compliance data for these glasses, limiting the understanding of the dose-response for this treatment. This study reports the feasibility of a sensor to monitor objective compliance with IO therapy glasses (Amblyz™).  

### METHODS

- Two children (6-7 yrs.) with severe unilateral amblyopia associated with strabismus and anisometropia were enrolled.
- Prior to enrollment, both wore optical glasses for 12 weeks. At enrollment, both were prescribed 12 hours of IO-therapy with Amblyz™ glasses.
- An inexpensive, commercially available sensor was attached to the temple arm to monitor compliance for 3 weeks.
- Compliance was defined as the percentage of hours of actual glasses wearing compared to the prescribed hours.
- Daily and general compliance were calculated.

### RESULTS

- Patient A had general compliance of 89%, but daily compliance declined from 110% to 60% over 3 weeks.
- Patient B had approximately 52% general compliance, with poor daily compliance on weekends.
- Neither of the patients' parents reported that the child had discomfort or social concerns related to the attached sensor.

### DISCUSSION

- Objective compliance with Amblyz™ IO-therapy glasses can be monitored by a simple sensor. These preliminary results are limited by short-term follow-up.
- From individuals monitored with objective compliance, compliance decreases with time. This agrees with literature on compliance (Wallace et al., 2013).
- This finding will guide quantitative investigations of IO-therapy in treating amblyopia.

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