

# A Scleral Lens for a 6 Year Old ?!?! No Way!

## What Happened? Hey, Wait a Minute.....

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### Background

Scleral contact lenses have seen a rise in popularity amongst providers for the past several years. They offer the superior optics associated with RGP lenses without the discomfort and other complications that can come along with them. Scleral lenses are increasingly used to correct the vision of eyes with irregular corneas.

Conditions such as keratoconus, PMD, surgeries like RK and LASIK, and corneal scarring are major causes of corneal irregularities. These conditions occur most often in the adult population whose eyes are larger and are more mentally prepared to insert and remove the lenses. But what about children? Are there times when scleral lenses are appropriate for them too?

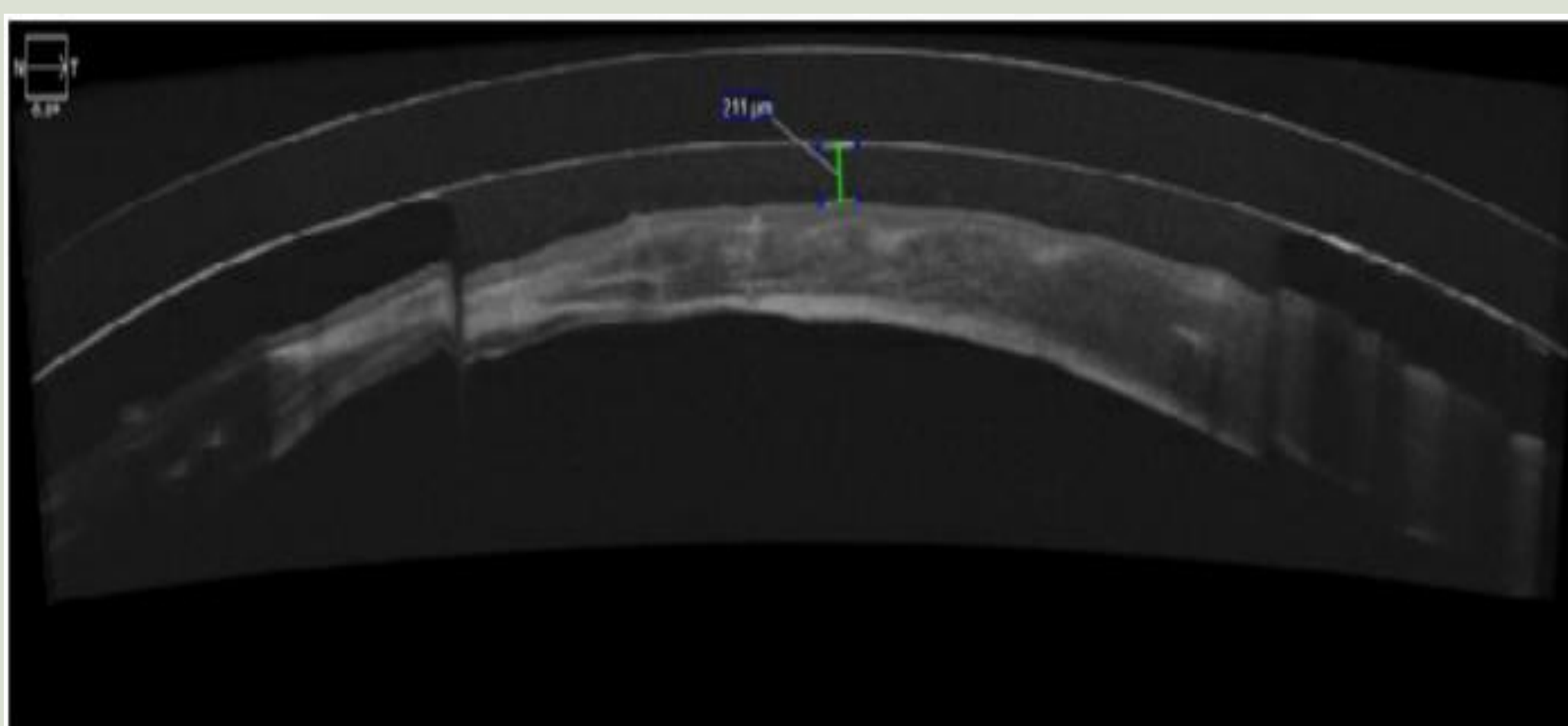
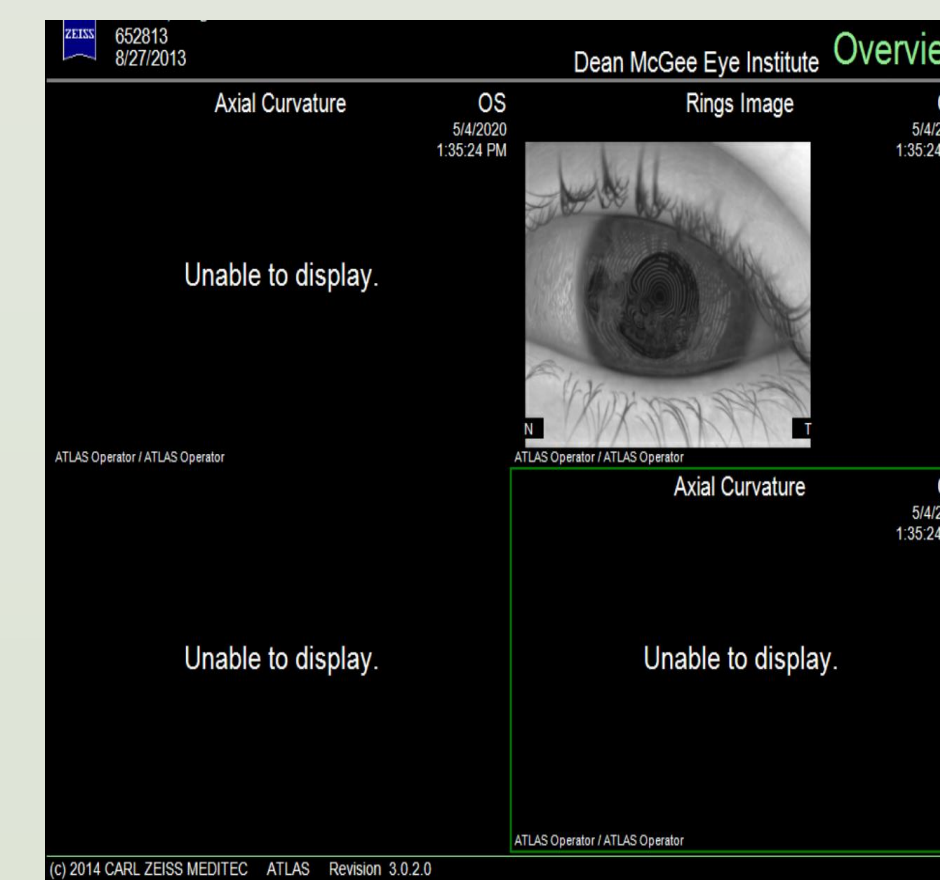
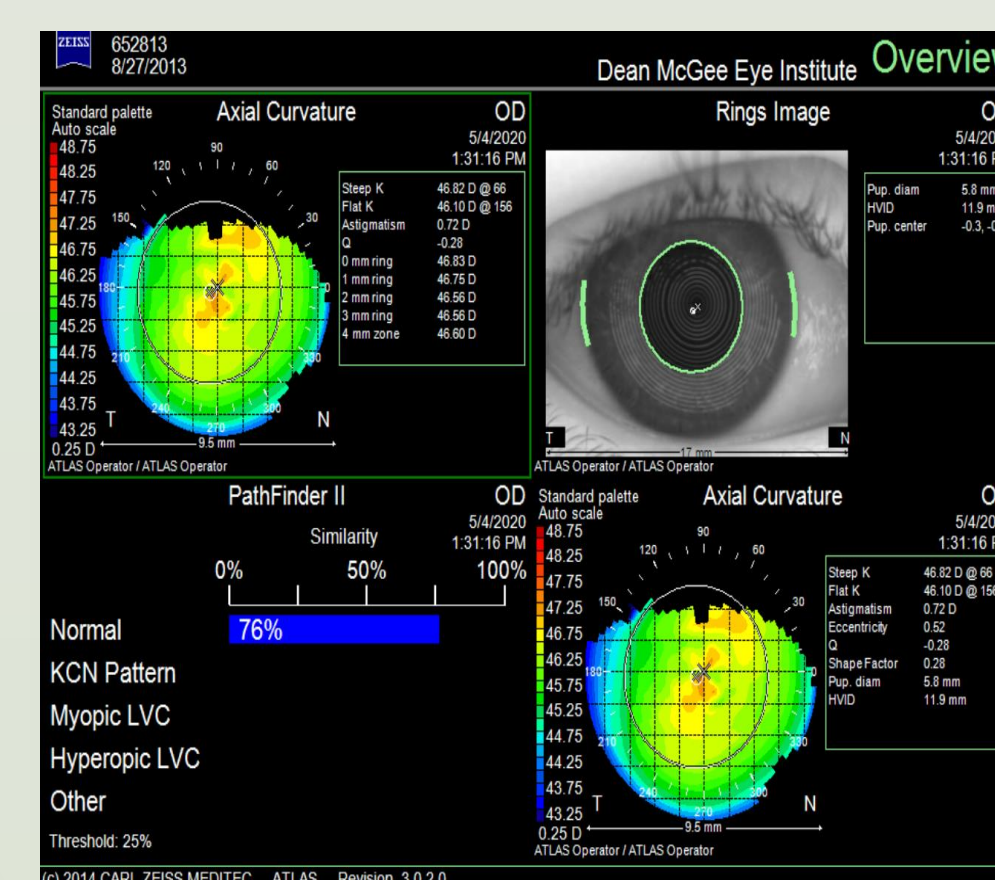
### Case History

Our patient is a 6-year-old female who was using needle nose pliers and accidentally hit herself in the left eye. The resulting 7mm horizontal linear corneal laceration through the inferior visual axis was closed with 15 nylon sutures. Her initial visual acuity was 20/150 which pin holed to 20/80-1. On follow up a month later, two medial sutures were loose, and were removed at the slit lamp without complications. Her vision had decreased to 20/200 due to a traumatic cataract and a combined set of procedures (intracapsular cataract extraction no IOL, Vitrectomy, EUA, and Stitch Removal) were performed.

On post op follow up, her corrected vision was reduced to 20/400. Nine nylon sutures remained, some of which became loose, causing irritation and foreign body sensation. It was decided to pursue contact lenses to correct her vision and relieve her symptoms.

### Initial Fitting

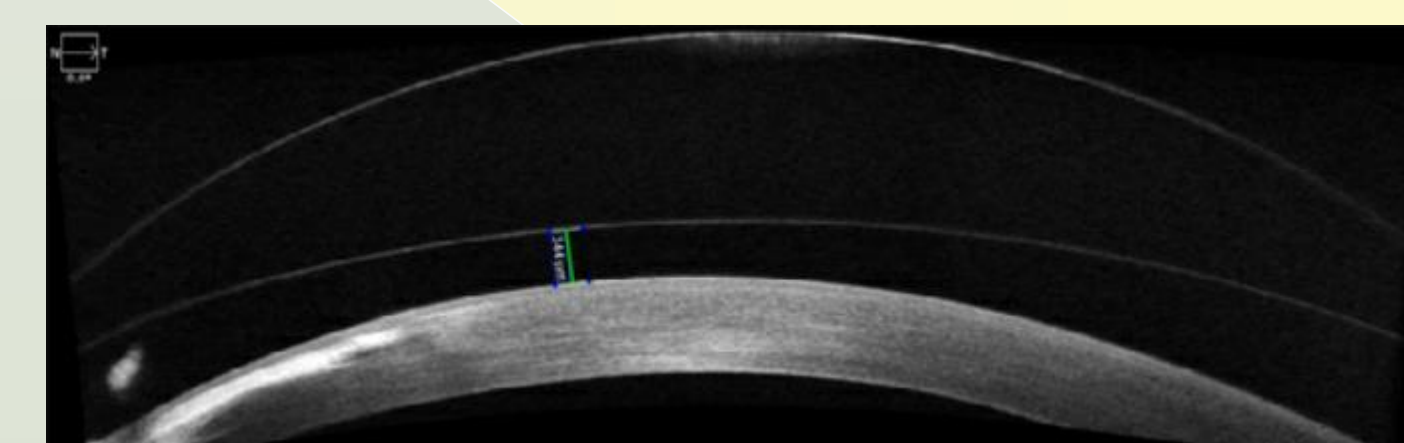
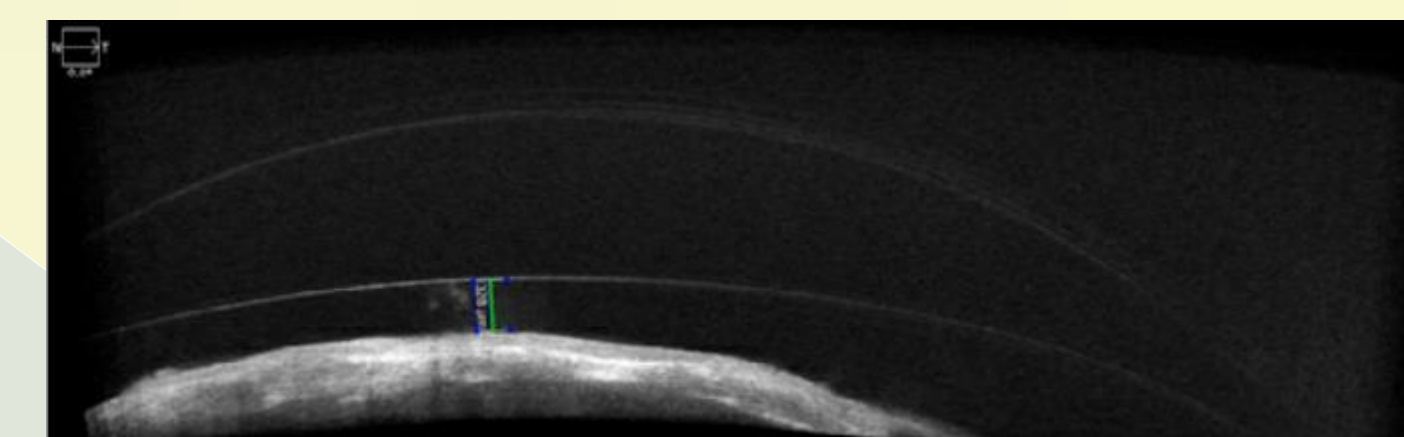
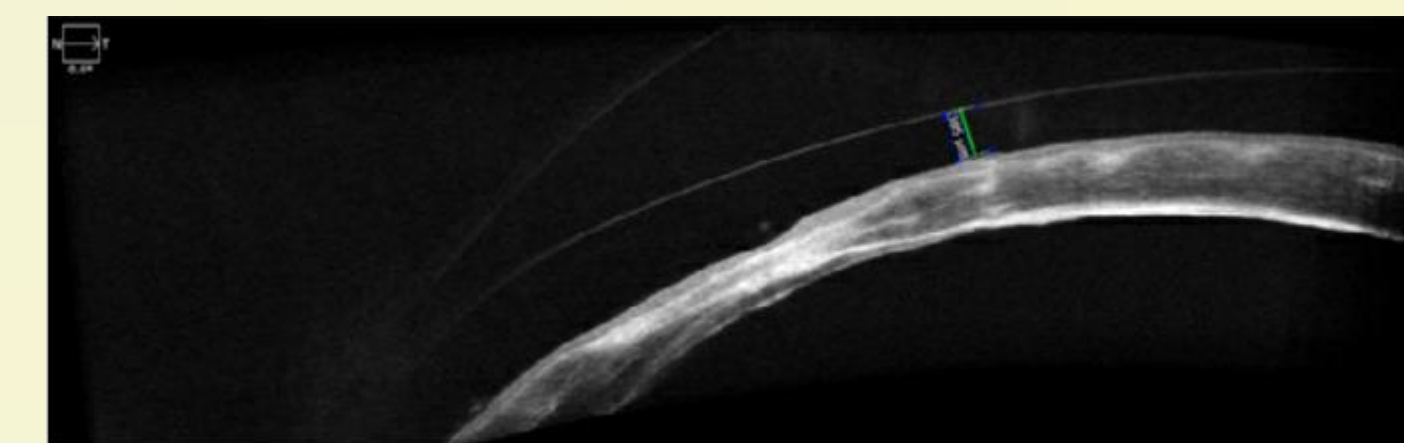
The Zenlens from Alden optical was chosen for its oblate design that would offer the best chance to vault over the scar and sutures on the peripheral cornea, both nasal and temporal. The Z-15 lens was selected to allow even further clearance in the mid-periphery. Proparacaine was instilled due to the extreme sensitivity of the patient. The initial insertion was difficult even with the anesthetized cornea. Some air bubbles were present in the periphery but not centrally. Her vision improved with over refraction to 20/70, a significant improvement from the 20/400 BCVA spectacles. The outer edges, referred to as APS, did not appear to have any areas of blanching nor lifting. The lens also demonstrated sufficient limbal clearance, although the views were difficult with a fidgeting, nervous child. Ocular Coherence Tomography (OCT) images revealed ample clearance of the scar/suture line.



OCT image of initial fitting. Air bubbles present. 5-4-20.

### Initial Dispensing

Initial dispensing presented with its own set of challenges. Proparacaine was again required to insert the lens. Initial vision was a disappointing 20/125 but improved to 20/25 with over refraction. The APS again looked good with no blanching nor lift. The lens successfully vaulted over the entire scar/suture complex. The lens remained in eye for at least 30 minutes, which allowed the Proparacaine to wear off. The patient reported no foreign body sensation. The patient and her mother were instructed on the insertion, removal, and cleaning procedures. After an extensive training session, the patient was released with the lens to practice with until a replacement arrived.



Various views demonstrating sufficient clearance of corneal surface. 5-27-20

### Overcoming Insertion and Removal Difficulties

The patient returned a few days later reporting the inability to insert the lenses. She and her mother report multiple unsuccessful attempts. The lens was inserted in office without Proparacaine and the patient immediately cried out in pain and began to cry. She calmed down in about five minutes and reported her eye was comfortable and she could see. The patient's mother requested a prescription for Proparacaine for home use prior to insertion to ease her discomfort. That request was denied, of course, due to fears of corneal decompensation that results from chronic anesthetic use. **An incremental technique was adopted.** She was given a small diameter soft daily disposable lens (Extreme H2O 13.6 diameter) to use for 12 days to build up confidence and practice.

### More Insertion Diffculty

The patient presented to pick up the second scleral lens. Vision was 20/40, decreased a little from the previous over refraction but acceptable. The fit of the lens remained excellent, as those parameters were unchanged from the previous lens. She had been using the daily disposable soft lenses successfully, even removing them by herself. Inserting the scleral lens was still a major challenge. **Another incremental technique was adopted.** The Dailies Total 1 from Alcon has the reputation of being extremely comfortable along with a very high DK/t of 156. A Total 1 lens was inserted with ease. The scleral lens was then placed on top, also with ease. A piggyback approach with a scleral lens has not been well described in literature. Theoretically, the further decrease in oxygen to the cornea is not desirable for long-term use so only a 10-day supply was given.

### Follow-up Care

The patient returned a week later stating they inserted the lens that morning without the piggyback. Her vision was excellent at 20/30. She presented after wearing the lens 3 hours, no blanching nor lift were observed. OCT imaging showed sufficient corneal clearance. The patient was pleased with her vision and confident about wearing the lens full time and was released for 3 months. She is still happy, stable, and complication free after 9 months of wearing the lens.

### Conclusions

Situations may arise to push the realm of your comfort zone. A 6-year-old wearing sclerals. An underpowered soft daily disposable used on an aphakic eye. A piggyback with a scleral lens. There are times when the overall long-range goal must be kept in mind and flexibility used along the course to achieve the desired outcome. The road may be difficult and bumpy but will lead to great outcomes if one maintains a stepwise process and thinks outside the box.

### Acknowledgements

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