

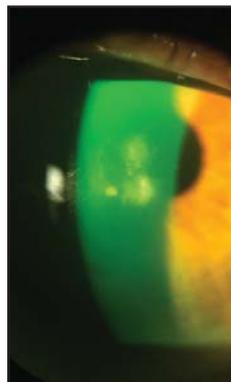
### **Ampleye Scleral Lens Yields Superb Vision for Advanced Keratoconus Patient**

by Stephanie L. Woo OD FAAO FSLs

NE, a 59 yo WM presented to the clinic for a contact lens consultation. He had a history of keratoconus OU x 30 years and had worn corneal gas permeable lenses since age 31. The reason for his visit was to discuss other contact lens options. He complained that his current GP lenses dislodged on a frequent basis, and he wanted a contact lens design that would improve this problem. He stated that he was able to wear both lenses every day for about 8-9 hours per day. He currently used Boston Simplus to clean, disinfect, and store the lenses. He denied sleeping in the lenses. He stated that his vision was pretty good during the day with his GPs, however night driving was a challenge because of the glare and haloes.

Distance vision with his current GP lenses (of unknown parameters) was 20/40 OD, OS and OU. Both contact lenses exhibited a 3 point touch with heavy bearing inferiorly near the cone. Both lenses centered inferiorly and moved significantly with blink. Lenses had moderate scratches and mild deposits. With lenses removed, there was mild diffuse superficial keratitis OU with dense staining over the cones OU. There were corneal scars OU, likely caused from the heavy bearing of the GP lenses (Fig 1).

*Figure 1*  
Corneal scarring due to keratoconus and heavy bearing corneal GP lens.



The patient was presented with two options. First, I offered to refit his corneal GP lenses. I would improve the fit by steepening the

base curve to limit the amount of bearing over the cones. I would try to improve the centration and movement of the lenses as well. Second, I offered to refit him into a scleral lens design. The benefits included improved lens centration, stable vision, improved comfort, and reduced lens dislodgment. There was also a potential for improving night vision due to the increase in optic zone diameter. The patient opted to try the scleral lens, and Ampleye was selected.



*Figure 2*

Following the fitting guide along with viewing sagittal depth of the patient's eye (Fig 2), diagnostic lenses were inserted and evaluated on both eyes. Once appropriate central and limbal clearance were obtained, the lenses were allowed to settle for 30 minutes. After 30 minutes, the following information was collected:

	<u>OD</u>	<u>OS</u>
Diagnostic Lens	Ampleye	Ampleye
Sag:	5200	5000
Base Curve:	7.34	7.34
Diameter:	16.50	16.50
Power:	-12.00	-10.00
PCZ/Central Clearance:	300um	300um
LLZ/Limbal Clearance:	Full	Full
SLZ/Edge Alignment:	360°	360°
Compression:	None	None
Over-Refraction:	+5.50	+4.00

Based on the diagnostic lenses and over-refraction, the following lenses were ordered:

**OD: Ampleye/5200 sag/7.34 BC/ 16.50 Dia/-6.00  
Optimum Extreme, clear**

**OS: Ampleye/5000 sag/7.34 BC/ 16.50Dia/ -5.75  
Optimum Extreme, ice blue**

At dispense, NE achieved 20/25 vision OD, OS, OU and stated, "Wow this is the clearest I have seen in years. Plus I don't even feel the lenses!"

Central clearance was confirmed to be about 300 um OU with 150um over the cone OD and 180um OS. Edges were aligned and no significant over refraction was found. Insertion and removal techniques were reviewed with the patient, along with lens care. The patient was sent home with a scleral lens kit that included preservative-free saline for insertion, small and large plungers, a hydrogen peroxide care system, and information about scleral lenses from sclerallens.org and gpli.info.

NE returned for a 2 week follow up. He stated, "I am so happy with these contacts! I can see so clearly, and they are so comfortable. I haven't had any issues of the lenses popping out. My night vision has also improved significantly."

The Ampleye scleral lens helped this keratoconic patient see clearly, and it also helped with his problem of lens dislodgement. Ampleye is a great choice for irregular cornea patients.

Dr. Stephanie L. Woo graduated from the Southern California College of Optometry and completed a Cornea/Contact Lens residency at the University of Missouri - St. Louis. She is a Fellow of the American Academy of Optometry and a Fellow of the Scleral Lens Education Society. She is a contributing author for the American Optometric Association Contact Lens and Cornea section, and she is the author of the "GP Expert" column for Review of Contact Lenses. She is also the Public Education Chair for the Scleral Lens Education society and is an Advisory Board member for GPLI. She currently practices at Havasu Eye Center in Lake Havasu, AZ.

