

Achieving spectacle independence with PRESBYOND Laser Blended Vision

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CASE HISTORY

I have been an emmetrope all of my life and enjoyed being spectacle-free until age 45 when I started to wear reading glasses because of presbyopia. The need for glasses evolved from being a minor inconvenience to a frustrating situation because I often found myself wasting time looking for my glasses or wasting money replacing ones that I had lost or accidentally sat on and broken.

To avoid needing glasses, I tried contact lens monovision, wearing a lens in my non-dominant eye for near vision. Functionally, it worked well for me, but my eye with the contact lens became red, which led some patients to ask me if I had an infection. Because of the reactive irritation, I reverted to wearing reading glasses with its related annoyance and frustration.

About 12 months ago, at the age of 63, I began to think seriously about refractive surgery to correct my presbyopia, and I decided to undergo PRESBYOND Laser Blended Vision. I was very comfortable choosing laser surgery because I had personally performed approximately 50,000 laser vision correction procedures when I was practicing as a refractive surgeon. I was also very comfortable choosing PRESBYOND because my surgeon was Dan Z. Reinstein, MD, MBA, who has been a respected colleague of mine for many years.

I scheduled a visit with Dr. Reinstein for an evaluation, and he found that I was a very suitable candidate for PRESBYOND. The fact that I had been using monovision and tolerated the anisometropia made me a good candidate. Based on the in-office assessment and my history of monovision, the plan was to target -1.5 D of anisometropia.

The PRESBYOND procedure is performed using the VisuMax femtosecond laser for the flap and the MEL 90 (or MEL 80) excimer laser to perform a customized ablation profile that is created with proprietary software for the CRS-Master workstation (all Carl Zeiss Meditec AG, Jena, Germany). The centers where I worked as a refractive surgeon used the IntraLase Femtosecond laser, and during my PRESBYOND procedure, I regretted that I never had the opportunity to use

the VisuMax because I believe it provides a truly superior experience for patients. Whereas the flap-cutting procedure can be very uncomfortable for patients using an IntraLase laser because it has a flat applanation surface and requires higher suction, the VisuMax has a low-suction curved patient interface, and I felt nothing unpleasant.

My vision was blurry during the procedure, which took less than 10 minutes and seemed to be done even more quickly as I listened to Dr. Reinstein explaining everything that he was doing. When I was operating, I also provided commentary to patients during their procedures, and in my reversed role I confirmed my belief in its benefit for reducing patient apprehension and maintaining comfort.

I was able to see well immediately after the procedure, and by the next day I had functional uncorrected near, intermediate, and distance vision. I was astounded by the speed of my visual recovery because I expected it would take a while before I would be able to see clearly. My refractive data are listed in the table. Binocularly, my uncorrected visual acuity is 20/20 at distance N5 at intermediate, and N4 for near.

Table 1: Preoperative and postoperative manifest refraction

Visit	Right eye	Left eye
Preoperative	+0.75 -0.75 x 133	+1.00 -1.00 x 79
Day 1	-0.50 DS	+0.00 DS
Month 1	-1.75 -0.25 x 155	+0.25 -0.50 x 170
Month 3	-1.50 -0.25 x 150 (N4)	+0.25 -0.25 x 180 (20/20+1)

I am appreciating the benefit of my successful PRESBYOND treatment in my daily life. My medicolegal work involves working at a computer to write reports for my cases, and it involves a significant amount of reading. I am now able to do both tasks comfortably without glasses.

In addition, my contrast sensitivity was essentially unchanged after the procedure. Therefore, I am able to read menus in dimly lit restaurants without glasses, and I have no problems driving at night. If I close my

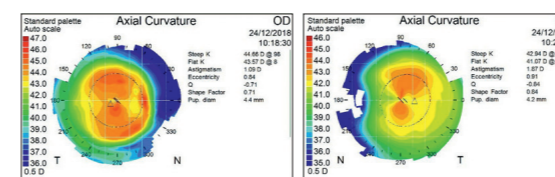
distance eye, I see some starburst around light sources in my near vision eye, but the symptom is minimal, not bothersome at all, and really not noticeable with both eyes open.

I think that some refractive surgeons have a favorite procedure for addressing presbyopia, and some surgeons that I know have cautioned me that there is a potential for refractive regression after PRESBYOND. Although I am only almost 6 months out from my surgery, my refraction and visual acuity have been stable, and I am not concerned about regression. I accept that I may need an enhancement sometime in the future, but I will confront that situation if and when it occurs.

DISCUSSION

PRESBYOND allows for a laser procedure that combines a small amount of anisometropia (≤ 1.5 D) with a controlled amount of spherical aberration that is created using a non-linear aspheric ablation profile to increase depth of field (Figure 1). I would describe PRESBYOND as monovision on steroids because of its many advantages.

Figure 1: Postoperative axial curvature maps



Conventional monovision worked well for me, but there are people who cannot tolerate the anisometropia, even becoming dizzy and nauseous. The low level of anisometropia created with PRESBYOND is much better tolerated, and stereoacuity is also maintained after the PRESBYOND procedure. Although patients need to be counseled to expect a period of neuroadaptation after the surgery, I believe that its duration is relatively short for most patients because of the relatively small inter-eye difference in refraction targeted with PRESBYOND. In addition, unlike conventional monovision, the blended vision created by PRESBYOND delivers continuous quality vision from near to far.

Emmetropic patients have other surgical options for presbyopia correction. If I had any cataract, I would have considered lens removal with monofocal IOL implantation to create pseudophakic monovision. I would not have chosen multifocal IOL implantation, however, because I have seen too many patients affected by disabling glare and halos with that technology. My natural lenses are still clear, however, and I

do not expect them to change soon considering that my father was 84 years old when he came to need cataract surgery. Therefore, I could not justify exposing myself to the potential sight-threatening risks of intraocular surgery.

I did not consider a corneal inlay procedure at all. I had been on the medical advisory board for two companies that market corneal inlays, and I was initially enthusiastic about the outcomes in the cases I performed while I was practicing refractive surgery. However, I began to see patients who were having severe problems with haze. Therefore, I concluded no good can come from having a foreign body in the cornea, I stopped doing inlay procedures, and I resigned as an advisor to the manufacturers.

CONCLUSION

In any situation where there are options for management, many patients ask their physician for advice based on their trust in the provider's expert knowledge and experience. I believe that there is no more compelling recommendation that a physician can provide than one that is based on personal experience. When I was practicing refractive surgery, patients would question whether I actually believed in the efficacy and safety of laser vision correction if they saw me wearing my reading glasses. If I was still performing laser vision correction today, I would certainly implement PRESBYOND, and I believe my personal success and satisfaction with the procedure would give patients great comfort and confidence in choosing the procedure.

Although I cannot personally offer PRESBYOND to patients, I have recommended it to several people that I know and encouraged them to schedule a consultation with Dr. Reinstein. Considering my experience, I have no doubt that if I were to go back to the time when I was deciding what I should do to eliminate my need for reading glasses, I would not hesitate to choose PRESBYOND again.

Dr. Crewe-Brown, MD, currently works primarily as a medicolegal expert and part-time as a Consultant Ophthalmologist. Prior to his semi-retirement from clinical ophthalmology, he had a 23-year career specializing in cataract and refractive surgery.

