

PURPOSE

This case highlights factors to consider when fitting soft prosthetic lenses for patients with fixed and dilated pupils. Soft prosthetic contact lenses usually fall into three categories: tinted, printed, and hand-painted lenses. Consider the following aspects when selecting an initial contact lens; cosmesis, iris color, glare control, sensitivity to field of view, vision, comfort and cost.

CASE HISTORY

70yo Caucasian female

Chief Complaint: glare and photophobia OD, Hx of lost brown tinted lens OD

Ocular History:

- Complications during cataract extraction June 2013 leading to fixed and dilated pupil OD
- Radial Keratotomy (RK) OU x 1990

Medical History: Hypertension, elevated cholesterol

Other salient information:

- Patient goals, in order from most important to least important: lens comfort, glare control, vision, cosmesis
- Rx sunglasses worn whenever driving or staying outdoors
- History of losing contact lenses frequently
- Patient denies desire for rigid gas permeable lenses due to discomfort



Figure 1: Initial presentation of a fixed, dilated pupil OD

PERTINENT FINDINGS

	OD	OS
BCVA	20/40+	20/25-2
SRx	+3.75 -2.00 x 065	+0.75 -3.00 x 093
Pupils	5.5mm, fixed, dilated	3 -> 2.5mm, no rAPD
Iris	11.7mm, bluish gray	11.7mm, bluish gray
Cornea	8RK incision scars 360	8RK incision scars 360
Lens	PCIOL, clear	1+ NS

DISCUSSION

Soft prosthetic lenses are fit similarly to conventional soft lenses with considerations for base curve, lens diameter, and lens power. However, these lenses are usually offered in low water, hydrogel materials to create a suitable surface for tinting, printing, or painting.

Tinted lenses are translucent and act like a dark filter. It will then alter the underlying iris color. For this reason, printed or custom painted lenses are recommended for light-colored irises.

Printed lenses are highly reproducible as they are computer-generated, but are only available in pre-designated colors and parameters. Pupil and iris diameter must be chosen carefully. Although matching pupil sizes are preferred for cosmesis, we should consider reduction in field of view with small lens pupil diameters.

Hand-painted lenses require close consultation with the laboratory. This option comes with high cost and extensive labor, but with high reward for improved cosmesis. This customizable route, in addition to printed lenses, offer open pupil designs to maintain patient vision and various iris colors with an optional black underprint.

TREATMENT & MANAGEMENT

Finalized CLRx:

Contaflex Filcon 38% / 8.6 base curve / 14.5 diameter / +3.75 -1.75 x 060 / 4.5mm open pupil diameter / 12.0mm iris diameter / bluish gray color with black underprint

Lens Parameter Considerations:

- 4.5mm pupil diameter allowed for improved field of view
- Visible iris diameters should match the patient's HVID; the closest measurement available is 12.00mm
- A black underprint improved glare control as per the patient's subjective response; in addition, the bluish gray color against the black underprint matched more closely to her left eye iris color compared to no underprint



Figure 2: Finalized soft printed lens OD

CONCLUSION

When fitting soft prosthetic lenses, the first step is to determine the patient's main complaint to guide your lens fitting process. This patient had reduced vision due to post-RK ectasia; however she denied rigid contact lens fittings due to comfort concerns. Because of her low concerns about cosmesis, we recommended tinted or printed lenses. However, due to her past history of lens loss and light-colored irises, printed lenses provided an excellent option for our patient.