Treatment Description

PROSE (prosthetic replacement of the ocular surface ecosystem) is a pioneering treatment model developed by Boston Foundation for Sight (BFS) to restore vision, support healing, reduce symptoms and improve quality of life for patients suffering with complex corneal disease. PROSE uses FDA-approved custom designed and fabricated prosthetic devices to replace or support impaired ocular surface system functions that protect and enable vision.

Benefits

- Reestablishes a healthy and stable ocular surface environment that supports healing and reduces symptoms
- Improves vision by masking surface corneal irregularities and transmitting a sharp image to the back of the eye
- Prevents damage by protecting and shielding the cornea and conjunctiva against the environment and eyelids

For many of the thousands of patients suffering with complex corneal disease, PROSE can be the ideal, and sometimes only, treatment capable of restoring vision and dramatically reducing eye pain and light sensitivity.
Indications

**Ocular Surface Disease**
Dry Eye Syndrome  
Chronic ocular graft versus host disease (GVHD)  
Sjögren’s syndrome  
History of LASIK or other refractive surgery

**Limbal Stem Cell Deficiency**
Stevens-Johnson syndrome (SJS)/toxic epidermal necrolysis syndrome (TENS)  
Aniridia  
Cicatricial conjunctivitis/ocular cicatricial pemphigoid  
Chemical/thermal injury

**Epidermal Ocular Disorders**
Goldenhar syndrome  
Ectodermal dysplasia  
Atopy  
Epidermolysis bullosa

**Neurotrophic Keratitis**
Herpes zoster (shingles)  
Herpes simplex (ocular herpes)  
Familial dysautonomia  
Moebius syndrome  
Trigeminal nerve dysfunction  
Post-surgical

**Corneal Ectasia/ Irregular Astigmatism**

**Corneal Degenerations and Dystrophies**
Keratoconus  
Keratoglobus  
Pellucid marginal degeneration  
Terrien’s marginal degeneration  
Salzmann’s nodular degeneration  
Meesmann’s corneal dystrophy

**Post Operative Astigmatism**
Cornea transplant (penetrating keratoplasty or PK, PKP)  
Radial keratotomy (RK)  
Phototherapeutic keratectomy (PTK)  
Photorefractive keratectomy (PRK)  
Epikeratophakia  
LASIK  
Open globe injury

**Corneal Scarring**
After trauma  
After infection

**Corneal Exposure/Lagophthalmos**
Anatomic  
Paralytic  
• Acoustic neuroma
Devices Used in PROSE

The prosthetic devices created during PROSE are transparent domes, about the size of a nickel, made of gas-permeable plastic that allows oxygen to reach the ocular surface. Devices fit under the eyelids and rest on the sclera (the relatively insensitive white tissue) of the eye, vaulting the damaged cornea and creating a new smooth optical surface that protects the eye from the environment and blink trauma. The devices are filled with sterile saline at the time of insertion, creating a reservoir of fluid that continuously bathes the ocular surface with oxygenated artificial tears.

PROSE Creates:

• A new transparent, smooth optical surface over the irregular, damaged or diseased cornea
• An expanded artificial tear reservoir that provides constant lubrication while maintaining necessary oxygen supply

Prosthetic devices have three important zones performing different functions:

Optic Zone – replaces the optical power of a healthy cornea in combination with the fluid reservoir
Transitional Zone – assures sufficient vault over any cornea shape, independent of base curve
Haptic Zone – maximizes ocular surface system function by precisely aligning the shape of the haptic bearing with the shape of the patient’s eye

The mathematical description of contours using spline functions that are integral to the Design to Fit (DTF)™ CAD/CAM system allow devices to be created of almost infinitely variable shapes with smooth transitions between zones.

Treatment Process

PROSE interdisciplinary treatment teams include a cornea specialist ophthalmologist and an optometrist who has completed an intensive nine - week PROSE Clinical Fellowship at Boston Foundation for Sight. PROSE treatment teams work with each patient, his/her support system and other medical providers to form a collaborative care network in which all members work to understand each patient’s specific needs and reach treatment goals together.
PROSE Clinical Fellows use Boston Foundation for Sight’s proprietary DTF CAD/CAM system to directly control the design and assure that each prosthetic device precisely fits the patient’s unique eye shape and maximizes ocular surface system function. Devices are manufactured at BFS’ state-of-the-art lab using Precitech ultra-precision diamond Nanoform computerized numerical command (CNC) lathes, typically used to manufacture high-tech parts for the aerospace industry.

Steps in the Treatment Process

• Referral from primary eye care provider, medical doctor or cornea specialist
• Initial medical review
• Determination of insurance coverage and potential eligibility for free care (1-6 weeks on average)
• Medical consultation to assess candidacy; local and regional consults may be conducted prior to the financial evaluation process (2 hour visit)
• PROSE treatment (5-10 day-long visits)
• Periodic follow-up visits as required during first 6 months
• Annual medical evaluation of PROSE treatment

Patients continue to be followed by their primary eye care provider throughout treatment, and ongoing care is coordinated with primary providers and the PROSE treatment team.

Call Us Today for a Consultation!

Call us today to learn more or set up a consultation. Ellen Thomas, Patient Coordinator, is available to answer all of your questions. Please call Ellen today at (713) 798-6109.

PROSE Guide for Patients and Doctors  http://www.bcm.edu/eye  (713) 798-6109
About Alkek Eye Center PROSE Clinic

The PROSE Clinic at the Alkek Eye Center at the Baylor College of Medicine in Houston is located at the Texas Medical Center, one of the largest medical centers in the world. Our PROSE clinic opened in 2008 under the direction of renowned dry eye expert and cornea specialist Dr. Stephen Pflugfelder and BFS Clinical Fellow, Anisa Gire, OD. Additionally, more than 25 doctors with various corneal specialties and sub-specialties are available to our patients.

Dr. Gire and our PROSE patient coordinator Ellen Thomas would be happy to assist you with any questions you may have regarding candidacy, billing, insurance or scheduling. It is our goal to make the approval and treatment process as easy as possible for our patients.

Contact Information

Alkek Eye Center, Baylor College of Medicine
One Butler Boulevard, Houston, TX 77030
Ellen Thomas, Patient Coordinator: 713-798-6109
Main scheduling center: 713-798-6100
http://www.bcm.edu/eye

About Boston Foundation for Sight

Boston Foundation for Sight (BFS) is an internationally renowned nonprofit eye health care organization specializing in complex corneal disease research, education, treatment and patient care. Their 13,000 square foot facility in Needham, MA, includes a state-of-the-art manufacturing lab, a medical institute staffed with seven doctors and a dozen technicians/trainers, a Clinical Research Center and a new Patient and Community Support Center.

Please visit their website for more information: www.bostonsight.org or call 781-726-7337.
Research Highlights

PROSE treatment “significantly improved visual acuity and visual functioning in patients with corneal ectasia, irregular astigmatism and ocular surface disease….”
- American Journal of Ophthalmology 2010; 149: 54-61

Fit of prosthetic devices “could be attained in all candidate eyes (n = 89) with corneal ectasia. 93.1% of eyes achieved visual acuity of 20/40 or better.” PROSE treatment “yielded significant increase in visual function… with high tolerance (wearing failure 8%) at 6 months.”
- Poster Presentation, World Cornea Congress VI, April 2010

PROSE Clinic Network

In addition to the Alkek Eye Center at Baylor College of Medicine and Boston Foundation for Sight, there are eight top-ranked specialty eye care institutes located in academic medical centers in the U.S. and clinics abroad that offer PROSE treatment. Each PROSE clinic is independently operated by PROSE partners who manage scheduling and insurance and provide ongoing care.

Doheny Eye Institute, University of Southern California, Los Angeles

Illinois Eye and Ear Infirmary, University of Illinois College of Medicine, Chicago

Kellogg Eye Center, University of Michigan, Ann Arbor

Weill Cornell Eye Associates, Weill Cornell Medical College, New York City

Brooke Army Medical Center, San Antonio, TX

LV Prasad Eye Institute, Hyderabad, India

The Eye Super Specialities (TESS), Mumbai, India

Nagoya Eye Clinic, Nagoya, Japan

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