



## **Davis Duehr Dean Center for Refractive Surgery**

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[www.deancare.com/ddd](http://www.deancare.com/ddd)

Thank you for inquiring about Refractive Surgery/Laser Vision Correction services at Davis Duehr Dean. Our experience has shown that educational materials are valuable tools in the decision making process and in preparation of your procedure.

Davis Duehr Dean is part of the Dean Health System and the Dean/St. Mary's Regional Clinics. Davis Duehr Dean has over 20 locations that provide comprehensive Optometry, Ophthalmology and Optical services. The Davis Duehr Dean Center for Refractive Surgery is located in Madison, Wisconsin at 1025 Regent Street, (608) 282-3937 or toll-free at (800) 362-7796.

Please review the enclosed materials. Call us with any further questions, to schedule a consultation or your vision correction procedure.

Thank you  
Davis Duehr Dean Center for Refractive Surgery  
Providers and Staff

# QUESTIONS AND ANSWERS REGARDING VISION CORRECTION AT DAVIS DUEHR DEAN

## Why choose Davis Duehr Dean?

### 1. *Why should I choose Davis Duehr Dean for my laser vision correction?*

*Choose the experience you can trust!*

There are many reasons you might want to consider the Davis Duehr Dean Center for Refractive Surgery for your vision correction surgery:

- Davis Duehr Dean has over 90 years of reputation for eye care excellence—“Our Lifetime Commitment Means Something!”
- Davis Duehr Dean has the most LASIK experience in the area.
- Davis Duehr Dean has developed a reputation as an educational and technological Leader in Refractive Surgery.
- Davis Duehr Dean is a leader in offering the newest in technology—WavePrint, CustomVue, and IntraLase.
- Davis Duehr Dean Surgeons “teach the surgeons”—Our surgeons teach LASIK and Implantable Collamer Lens (ICL) techniques both locally and at major national and international refractive surgery conferences and symposia.
- Davis Duehr Dean offers the most advanced technology in refractive surgery (e.g., the most advanced lasers available; the safest, most advanced, and most complication-free microkeratomes for creating the LASIK flap; LASIK with IntraLase; and Implantable Collamer Lens (ICL) technology).
- Davis Duehr Dean had the first FDA-approved excimer laser in Wisconsin.
- Davis Duehr Dean performed the first LASIK surgery in Wisconsin.
- Davis Duehr Dean is highly regarded as a key facility for national refractive surgery studies, such as the Staar Surgical Implantable Collamer Lens (ICL).
- Davis Duehr Dean was the first in the United States to perform the FDA-approved, revolutionary Implantable Collamer Lens (ICL).
- Davis Duehr Dean offers all currently approved refractive surgical techniques.
- Davis Duehr Dean has a team of refractive surgeons for you to choose from.
- We have developed a unique and innovative Optometric Co-management Program.

### 2. *How can I contact you for more information?*

You can contact us for more information, to find out the name of an optometrist in your area who co-manages refractive surgery patients with us, and/or to schedule laser vision correction:

- Call us at (608) 282-EYES (3937) or toll-free at (800) 362-7796.
- Visit our web site: [www.deancare.com/ddd](http://www.deancare.com/ddd).

# What is refractive surgery?

## 3. What is refractive surgery?

The term “refractive surgery” refers to any surgery, laser or non-laser, that permanently changes the way your eye focuses light internally and thereby reduces, or even eliminates entirely, your refractive error, whether it be nearsightedness (myopia), astigmatism, or farsightedness (hyperopia). The most commonly performed refractive surgery today is that which is performed on or within the clear cornea (the clear dome on the front surface of the eye) to alter its curvature.

“Refractive surgery,” otherwise referred to as “laser vision correction,” is a type of corneal refractive surgery in which laser light from an excimer laser is used to reshape your cornea to alter its focusing, or refractive, power in order to “correct” your refractive error. The three well-known laser procedures in common use today are:

- Laser-Assisted Situ Keratomileusis (LASIK):  
with corneal flap created by IntraLase  
or Mechanical Microkeratome
- Laser Epithelial Keratomileusis (LASEK)
- Photorefractive Keratectomy (PRK)

## 4. What are refractive errors? What is nearsightedness? Farsightedness? Astigmatism?

Refractive errors represent physiologic imbalances between: (a) the steepness of curvature of the clear cornea on the front of your eye, and (b) the length of your eye. As a result, images are not focused properly on your retina in the back of your eye. The “normal” eye has a near perfect balance between curvature and eye length, as a result of which images entering the eye are brought into sharp focus on the retina. Any relationship between these two factors other than this “ideal” is referred to as a refractive error. The most common refractive errors are nearsightedness (myopia), farsightedness (hyperopia), astigmatism, and presbyopia (aging vision).

The clear cornea is the most important refractive surface of your eye, accounting for over 75% of the focusing of light by your eye. The lens merely fine-tunes the focusing job started by the more important cornea. The steepness of the cornea’s curvature is the major determinant of its focusing (or refractive) “power.” The more steeply curved the cornea (relative to the length of the eye), the greater its refractive power, and the eye is more myopic.

The very common refractive error referred to as nearsightedness (myopia) refers to that physiologic imbalance that results when the steepness of curvature of the clear cornea, and thus its focusing or refractive power, is relatively too great for the length of the eyeball. As a result, images are focused well in front of, rather than sharply on, the retina. A blurred image is formed on the retina and transmitted to the brain. Nearsighted people typically see well up close, but poorly or not at all in the distance without their glasses or contact lenses. Most people having refractive surgery today are nearsighted, often with variable amounts of astigmatism as well!

The term farsightedness (hyperopia) applies to the physiologic imbalance that is just the opposite of myopia (i.e., the curvature and refractive power of the cornea is relatively too little for the length of the eye). As a result, entering light rays are not bent (refracted) enough, and images are focused well behind the eye. As with myopia, a blurred image is focused on the retina at the back of the eye and is perceived as such by the visual center of the brain. This eye needs more, not less, corneal curvature. These people typically see better at a distance than they do up close, but may not see well at either distance without their glasses.

Astigmatism is the term that applies to a third physiologic imbalance wherein the cornea is shaped more like a football than a basketball (i.e., the horizontal and vertical curvatures are different). As a result, two different focal points are produced. Both may be in front of the retina (myopic astigmatism), behind the eye (hyperopic astigmatism), or one in front and one in back of the retina (mixed astigmatism). In any case, the two focal points must be separately adjusted with glasses or by surgical means.

## 5. *What options do I have for correcting my refractive error?*

There are three satisfactory options available to you for the “correction” of your refractive error. Eyeglasses and contact lenses, though they afford only temporary “correction” of your refractive error, continue to be valid options for most people. Refractive surgery offers a third, and more permanent, option for those individuals who have a strong perceived need of or desire to be less dependent upon traditional eyewear for recreational, occupational, or cosmetic reasons (i.e., those who desire “freedom” or relative independence from eyeglasses or contact lenses).

## What are its goals?

### 6. *What are the goals and objectives of laser refractive surgery? Is it for everyone?*

The primary goal of laser refractive surgery is to reduce, or even eliminate entirely, your dependence upon traditional optical appliances (i.e., eyeglasses and contact lenses) for the completion of your daily activities. Those of you who are doing well with glasses and/or contact lenses, whose job or recreational activities are not limited by the need for these devices and/or who feel no particular need to be less dependent on them for recreational purposes, probably should not seriously consider undergoing surgery for their refractive error.

For those of you less than 43 years of age, the relative independence that you gain will apply to both your distance (driving) and near (reading) vision. For those of you over 43 years of age (“the age of bifocals”), this relative independence may apply only to distance viewing unless a monovision option (one eye corrected for distance, the other for near) is selected at the time of surgery. People begin to require reading assistance at age 43 because of changes in the lens of their eye. It has nothing to do with corneal curvature or eyeball length.

Perfect, unaided vision is *not* a realistic goal of refractive surgery, although many patients come very close to this ideal objective. It is important for patients to realize that they *may* still require part-time use of glasses for reading, for driving at night or in inclement weather, or for recreational or cosmetic reasons. It is *not* intended for everyone with vision-limiting refractive errors.

## How does it work?

### 7. *How does refractive surgery reduce or “correct” my refractive error?*

The excimer laser, originally developed by IBM for the production of computer microchips, is one of many types of commercial laser systems that have been adapted for use in ophthalmic laser surgery. During the course of vision correction, the powerful beams of radiant light energy from the computer-controlled excimer laser vaporize a very precise amount of corneal tissue to “correct” your refractive error. This “cold” excimer laser does not cut or burn your cornea.

The curvature of the nearsighted cornea is relatively too steep for the length of the eye. All corneal refractive surgical techniques in common use today (LASIK with IntraLase or Mechanical Keratome, PRK, LASEK) “correct” nearsightedness by flattening, or reducing the steepness of curvature of, the central front surface of the cornea by a graded amount. In the case of laser vision correction, this is accomplished by vaporizing a thin disc of cornea from the surface of the cornea (Surface Ablation PRK), or from its deeper layers beneath a partial thickness, hinged, corneal flap (**Laser In Situ Keratomileusis, LASIK**). The VISX Star S4 Variable Spot Scan excimer lasers in use at Davis Duehr Dean contain the most advanced laser scanning technology of any lasers currently on the market. This laser is also approved for farsighted corrections (between +1 and +3.0 diopters). The process of excimer laser photoablation only takes about 10–60 seconds in most patients undergoing these procedures. In astigmatism, where the eye is shaped with two different curvatures, like a football, the

laser vaporizes on oval of corneal tissue to correct the imbalance. The farsighted eye has too little corneal curvature relative to its length. The laser must increase the steepness of curvature of this cornea. It accomplishes this by vaporizing a doughnut-like ring of corneal tissue from around the center of the cornea.

As with high myopic corrections, current evidence from Canada, South America, and Europe suggests that both farsighted and astigmatic corrections may be better accomplished under the protection of a corneal flap (i.e., hyperopic and astigmatic LASIK), rather than on the surface of the eye (astigmatic and hyperopic PRK). The VISX Star S4 is also approved to utilize wave scan and wave front technology to perform custom ablations.

## How do I know if I am a candidate?

### *8. What are the general eligibility requirements for refractive surgery?*

In general, you should be at least 18 years of age, your refraction should have been reasonably stable for at least 12–18 months, and you should be in excellent ocular and general health. You should have no active or chronic eye disease, and no chronic or active systemic diseases (e.g., diabetes, rheumatoid arthritis, lupus). Finally, you must have realistic expectations of what you will gain from your corrective surgery.

### *9. How can I learn more about my options for surgical vision correction, laser or otherwise?*

You may obtain more information about laser refractive surgery at the Davis Duehr Dean Center for Refractive Surgery:

- You may contact our representatives at the Davis Duehr Dean Center for Refractive Surgery at (608) 282-3937 or toll-free at (800) 362-7796.

### *10. How can I find out if I am a suitable candidate for laser vision correction?*

A determination of your eligibility, as well as selection of the appropriate vision correction technique can only be made after 1) a review of your personal goals and objectives, 2) a thorough and comprehensive eye history and examination by your primary eye care provider or other eye care specialist, and 3) a final determination by the surgeon performing the procedure.

### *11. Where can I schedule my preoperative refractive surgery evaluation appointment?*

After you have had an opportunity to browse this question and answer booklet, you may schedule your comprehensive evaluation and counseling appointment directly with one of our affiliated eye doctors or with the surgeon of your choice. Call your hometown eye doctor directly, or call us at (608) 282-3937 or toll-free at (800) 362-7796 to obtain the name of an affiliated eye doctor nearest you. Your eye doctor will then forward the necessary preoperative examination information to us in order that we may plan your surgery in advance of your arrival.

### *12. Is there anything I must do to prepare for my evaluation appointment?*

In order that your eye doctor may accurately measure your true refractive state, free of the influence of your contact lenses, we ask that you abstain from wearing your contact lenses for a while prior to your examination. Soft or disposable contact lenses should be left out for a minimum of one week (two weeks is even better!) prior to your examination. Rigid gas-permeable contact lenses should be left out for at least three weeks prior to your examination. Contact lenses can cause corneal warpage, swelling, or molding. It is important that this induced change in your corneal shape be eliminated before your eye doctor measures your refractive state, since it is this measurement that your surgeon will use to program the laser for your treatment.

### *13. What is the purpose of the formal preoperative evaluation appointment?*

The purposes of this appointment are to establish your eligibility for vision correction and to allow the surgeon to make a final determination on performing the procedure.

### *14. How soon after my preoperative evaluation appointment can I schedule my surgery?*

If you are reasonably certain that you are going to proceed with surgery after your evaluation appointment, we strongly encourage you to preschedule your evaluation *and* your surgery appointments both within a week of each other. This will reduce to a minimum the amount of time that you must abstain from wearing your contact lenses prior to your surgery. Otherwise, you could be facing a longer wait for surgery if you wait until after your evaluation appointment to schedule your surgery.

### *15. Where can I have vision correction performed?*

At the time of your evaluation appointment, your referring eye doctor will make arrangements for your surgery and provide you with directions to our laser center. Since you will ordinarily receive mild sedation for your laser surgery, and because your vision will likely be blurry immediately after your surgery, you will need to have someone (spouse, family member, friend, significant other, etc.) transport you to and from the laser center for your surgery. Plan to spend about an hour and a half to two hours with us.

## **LASIK**

### *16. What is LASIK?*

Laser In Situ Keratomileusis (LASIK) became the dominant and preferred refractive surgical procedure worldwide even before the excimer laser was approved for use in this country in November, 1995. It subsequently became the preferred procedure in the U.S. and at Davis Duehr Dean as well, accounting for 97% of the laser vision correction that we currently perform. Why the overwhelming popularity of LASIK? This can be summarized as follows:

- excellent and immediate results
- lack of serious complications in the hands of experienced surgeons
- overwhelming “convenience” advantages to patient and surgeons
- “same day” surgery on both eyes
- word of mouth testimony (patient-to-patient referrals)

This strong appeal of LASIK to surgeons and patients derives from the fact that it uniquely combines into a single procedure the submicron precision and accuracy advantage of the excimer laser and the surface-preserving features of lamellar keratoplasty (flap) techniques.

The IntraLase Method® is similar to LASIK with Mechanical Microkeratome, but uses a blade-free technique to create the corneal flap. Instead of a surgical instrument, surgeons use tiny, rapid pulses of laser light that pass through the top layers of the cornea. This allows the surgeon to more precisely determine the dimensions of the flap. As with traditional LASIK, the IntraLase Method® can be performed on both eyes the same day, with little discomfort and almost no post-operative down-time. Learn more about this procedure at [www.intralasefacts.com](http://www.intralasefacts.com).

There are three painless steps involved in LASIK surgery, which together require only a few minutes to perform under eyedrop anesthesia only:

- Step 1: A partial thickness hinged corneal flap is created by tiny rapid pulses of laser light that pass through the top layers of the cornea. A flap can also be created by an instrument called a keratome. This provides the surgeon access to the deeper layers of the cornea where the refractive laser correction (excimer laser photoablation) is actually performed.

- Step 2: The refractive correction is then performed with the excimer laser on the deeper cornea.
- Step 3: The flap is then resealed *without stitches*, thereby restoring the eye to its natural, preoperative, and almost undisturbed state (i.e., no disruption of the ocular surface). The front surface of the cornea flattens (or steepens) by the desired amount to correct the refractive error.

Can LASIK be used to correct all refractive errors? Most of the Davis Duehr Dean refractive surgeons offer LASIK to their low myopes (-1 to -4 diopters), to their moderate myopes (-4 to -8 diopters), and to some of their high myopes (-8 to -12 diopters or so), provided preoperative testing demonstrates that the cornea is thick enough to safely allow that much correction. Some of our surgeons still recommend PRK for their low myopes. That decision is left to the discretion of the individual surgeon. In addition, LASIK is the preferred procedure for the “correction” of astigmatism and farsightedness (up to 3.5 diopters).

## Tell me more about LASIK.

### 17. What are the advantages of LASIK? Disadvantages?

Lasik offers you a high degree of accuracy together with very attractive “convenience” advantages, a real plus for busy patients and eye care providers alike:

- **rapid visual, refractive, and physical recovery**
- **same day surgery on both eyes**
- **a minimal requirement for postoperative care and eyedrop medications**
- **almost no downtime from work**

Why is LASIK so “convenient”? As stated earlier, LASIK combines into a single procedure the unmatched surgical precision advantage of the excimer laser and the minimal disruption of the ocular surface that is a characteristic feature associated with the flap technique. In contrast to PRK, the only break in the ocular surface from LASIK occurs at the edge of the flap. This heals in 1–2 hours, after which the ocular surface is restored to its normal preoperative state. This almost guarantees recovery within one day.

PRK, on the other hand, involves a significant disruption of the ocular surface insofar as the laser treatment on the surface of the eye, rather than beneath a flap. As a result, PRK patients are more likely to experience postoperative pain, a greater risk of infection, and a delay in visual, refractive, and physical recovery, as compared with LASIK. They also require the use of a disposable contact lens during the surface healing period. It is for these reasons that same-day bilateral LASIK surgery has become the standard of care in refractive surgery.

### 18. Can all nearsighted people be “corrected” with LASIK?

Most of the refractive surgeons at Davis Duehr Dean offer LASIK to virtually all of their nearsighted patients, from low myopia (-1 to -4 diopters) to high myopia (-8 to -11 diopters or so), provided preoperative testing demonstrates that the cornea is the correct shape and is thick enough to safely allow that much correction. Some surgeons prefer PRK for their low myopes.

### 19. Do most refractive surgeons offer PRK as an option? Which procedure do Davis Duehr Dean surgeons prefer?

Today, most refractive surgeons prefer LASIK to PRK for the full range of nearsighted, astigmatic, and farsighted correction. Why? Because the results are excellent, both eyes can be corrected on the same day, complications are exceedingly rare, patients are thrilled with the results and refer other patients, and there is very little postoperative care required (and thus a minimum of downtime from work). Nevertheless, some refractive surgeons still prefer PRK to LASIK for the patient with low degrees of nearsightedness (-1 to -4 diopters), believing it to offer comparable results with a slightly reduced risk.

In general, however, Davis Duehr Dean surgeons only offer PRK as the procedure of choice to the following patients:

- those who specifically request it and who have a low degree of myopia
- those who have very small or deepset eyes
- those who have small amounts of astigmatism only
- those who have a history of recurrent corneal erosions
- those whose preoperative testing suggests that PRK might be a less risky option

## 20. *Can you correct astigmatism? Farsightedness?*

Surgeons at Davis Duehr Dean Refractive Surgery offer myopic, astigmatic, and farsighted LASIK corrections to eligible patients. As with high myopic corrections, current evidence from Canada, South America, and Europe suggests that both farsighted and astigmatic corrections may be better accomplished under the protection of a corneal flap (i.e., hyperopic and astigmatic LASIK), rather than on the surface of the eye (astigmatic and hyperopic PRK).

## 21. *Does this submicron precision always translate into a precise and stable visual and refractive postoperative result 6–12 months postoperatively?*

Generally speaking, yes! Unfortunately, human biologic variability (i.e., the biologic healing response to this laser ablation) produces some variation in the actual visual and refractive results achieved. Most low and moderate myopes having LASIK/PRK achieve excellent results and maintain those results over the long term. Nevertheless, a certain percentage of patients will regress (i.e., lose some of the initial corrections over the course of a few weeks or months). Many of these will require reoperation (enhancement) to regain their initial result. This regression has been most common in, but not limited to, women in their early 40s and patients with large amounts of myopia preoperatively. Most regression after LASIK occurs within the first 2–3 months after surgery, and for PRK within the first 6 months after surgery, and seldom after that, it is largely for this reason that LASIK and PRK enhancements can be safely performed quite early, after 3 months (providing the refraction is stable).

## 22. *What if I am undercorrected? What if I regress?*

Despite the submicron precision and accuracy of the excimer laser in general, a certain percentage of patients will be undercorrected after the initial surgery. This may be due to primary undercorrection (present from the first postoperative day) or, alternatively, to secondary undercorrection (i.e., due to regression of effect—excellent initial result followed by loss of some of the effect over several weeks or months as the eye heals). Primary undercorrection can be the result of inaccurate refraction, patient noncompliance with the requirement for contact lens abstinence before the refraction or surgery, inaccurate data entry, too moist a cornea during the laser ablation, or other biologic variables beyond the surgeon's control (age, hormonal environment, healing response, etc.). In the unlikely event you feel that your vision is not good enough to allow you to drive safely or to perform your duties, and a residual refractive error is measurable, you will ordinarily be prescribed a temporary pair of eyeglasses or disposable contact lenses. These will allow you to function while awaiting the optimal timing for an enhancement procedure (usually about 3 months).

## 23. *If I am undercorrected or regress after my vision correction, can I have an enhancement procedure?*

Yes, in most cases. Enhancements for small residual refractive errors, though theoretically correctable with additional surgery, are generally ill-advised because the risk of complications may exceed the potential benefit from additional surgery. Your optometrist and surgeon will advise you accordingly. Nevertheless, most patients who are undercorrected initially or who regress later can have an enhancement procedure to regain or achieve the desired result. This is contingent upon there being sufficient remaining corneal thickness to allow additional laser ablation and upon your surgeon's judgment that additional correction is warranted and can be safely performed. There is an increased risk of complications (e.g., wrinkles, epithelial ingrowth) with enhancements. For this reason,

enhancements should be scheduled only after careful consideration of the risk-to-benefit relationship. Small residual refractive errors are best left alone!

## 24. *WavePrint and CustomVue correction.*

With the VISX WavePrint system and CustomVue laser vision correction technology, we can offer a new level of personalization to the procedure. This new technology combines state-of-the-art diagnostic and laser treatment technologies to let us deliver laser vision correction that is as unique as your fingerprint. First, we obtain a WavePrint map for a detailed analysis of your vision. This information is entered into the Star S4 Eximer laser system to provide you the very best personalized laser vision correction. As always, your doctor will discuss with you the best treatment options available to you.

If you have any additional questions, or would like to schedule a free consultation to determine if you are a candidate for this procedure, call (608) 282-3937 or toll-free at (800) 362-7796.

## LASEK

### 25. *What is LASEK?*

LASEK (laser epithelial keratomileusis) is a form of advanced surface ablation. Also called epithelial LASIK or E-LASIK, LASEK is an alternative for people with corneas that are too thin, too flat or otherwise less than suitable for LASIK or individuals with certain occupational requirements.

It's a technique for reshaping corneal tissue to help you see better without glasses or corrective lenses. The epithelium (top layer of cornea) is used to create a flap in the cornea. An excimer laser is then used to reshape the underlying corneal tissue. The excimer laser produces a concentrated beam of cool ultraviolet (UV) light. LASEK can treat myopia, hyperopia, and astigmatism.

The excellent quality of vision you can expect from LASEK is identical to what you can expect from LASIK, but there are some differences related primarily to a slightly longer recovery time. Most patients usually wear a clear bandage contact lens for several days. You may feel eye irritation during the first day or two afterward. Immediately following LASEK, your vision will be mildly blurry and somewhat variable for a period of time.

If you are considering LASIK, but your doctor says you need LASEK instead, ask about the benefits of each procedure. Many surgeons who perform LASEK consider it a better option for some patients who may have specific occupational needs or certain types of corneal shapes. LASEK in some studies has been associated with faster recovery of sensation or nerve function in the eye's surface (cornea) compared with LASIK and in some instances provides enhanced safety for individuals at risk for facial trauma.

## PRK

### 26. *What is Photorefractive Keratectomy (PRK)?*

Excimer Laser Photorefractive Keratectomy (PRK), also known as surface ablation PRK, was the first excimer laser corneal refractive surgical technique to be widely investigated and applied around the world, and the one originally investigated and approved by the FDA. By the time PRK was approved by the FDA in this country, LASIK had already become the most popular method for refractive surgery in the rest of the world. The PRK procedure for nearsightedness involves vaporizing (photoablating) a thin disc of corneal tissue from the surface of the cornea, rather than from the deeper cornea under the protection of a surface-preserving flap, as in the LASIK procedure. This involves the application of multiple pulses of the excimer laser to remove this thin disc (1–2 hairs thick) of corneal tissue from the central 6–8 millimeters (1/4 inch) of the corneal surface. Thus, the term surface ablation PRK. The front surface of the cornea is thus flattened (its curvature reduced) by a graded amount, thereby “correcting” the underlying nearsightedness (myopia).

There are three painless steps involved in PRK surgery, which together require only a few minutes to perform under eyedrop anesthesia only:

- Step 1: The surface epithelium, the thin outer layer of the cornea, is first removed from the area to be treated. This is accomplished with the laser itself or by mechanical removal.
- Step 2: The refractive correction is then performed with the excimer laser on the cornea.
- Step 3: Since the surface of the cornea has been disrupted by the surgery, much like an abrasion from a fingernail, it is necessary to protect the surface until it has healed over. This requires that a disposable contact lens be inserted and left in place for the duration of the surface healing process, approximately 3 days. The front surface of the cornea flattens (or steepens) by the desired amount to correct the refractive error.

What are the advantages and disadvantages of PRK?

1. Since PRK does not involve a corneal flap, there are no risks for flap complications.
2. More corneal tissue remains for stability.

The disadvantages of surface ablation PRK are attributable to the 6–8 millimeter (1/4 inch) disruption of the ocular surface that it entails (i.e., the greater risk of pain and of infection, and the delay in visual, refractive, and physical recovery for a few days to a week while the corneal surface heals under the protection of a disposable contact lens). In contrast, the only disruption of the ocular surface that occurs in LASIK occurs at the edge of the flap. This heals in 1–2 hours, thereby restoring the ocular surface to its normal preoperative state almost immediately.

Despite a slower recovery, the PRK patient should achieve visual and refractive results comparable to those of the LASIK patient.

Current, improved techniques for performing surface ablation PRK have greatly reduced the incidence and risks (corneal haze, scarring, and myopic regression). Newer refinements in excimer laser technologies (e.g., scanning and tracking lasers, multizone, and multipass techniques) offer even smoother and more homogeneous PRK treatment. This reduces the risk of complications and accelerates visual recovery. For these reasons, surgeons now offer simultaneous bilateral PRK.

## What are the long-term effects?

### *27. What are the long-term effects of vision correction? LASIK? PRK?*

We actually have considerable long-term experience with vision correction. The long-term effects of lamellar keratoplasty (i.e., flap techniques), an essential component of LASIK, are well-known, since this technique has been evolving in Bogota, Colombia, since 1962. To date, no late complications have been reported by our Colombian colleagues. The excimer laser has been in use worldwide for over a decade. Similarly, no long-term complications have been reported to date.

### *28. Are the corrective effects of laser vision correction permanent?*

All indications point to relative refractive stability for LASIK after 3 months, and for PRK after 6–12 months. Lamellar keratoplasty techniques (e.g., LASIK and ALK) have evolved over the past 30 years or so in Bogota, Colombia. To date, no late refractive changes have been reported by the highly respected surgeons in that country.

## Are there other techniques available?

### *29. Are there techniques other than LASIK and PRK available for correcting my refractive error?*

LASIK and PRK are the best known of the FDA-approved corneal refractive surgical procedures, and the ones with which we have the most experience worldwide.

LASEK: A slight variation on the traditional LASIK procedure is available, LASEK. This procedure may be an option for patients who are not good candidates for the traditional procedure.

LASEK is a surgery that utilizes an epithelial flap (as opposed to a deeper stromal flap with LASIK). LASEK preserves more corneal tissue, on average, than a typical LASIK procedure. Therefore, for patients who have thin corneas, LASEK may offer a safer alternative than LASIK.

CLE: Another option available to patients is Clear Lens Extraction (CLE). Used to treat a wide range of hyperopia and myopia, this procedure involves removing the eye's lens and inserting an artificial lens. The process resembles that of cataract surgery; however, in cataract surgery the lens is clouded, whereas in this surgery, the removed lens is clear. An advantage is that cataract surgery has been performed successfully for years and is a familiar procedure to many surgeons.

### *30. What about the Implantable Collamer Lens (ICL)? What role will it play in refractive vision correction?*

In February 2006, Davis Duehr Dean was the first in the US to perform the FDA-approved second-generation optical implants—Implantable Collamer Lens (ICL). ICL may be an ideal option for those who are not candidates for refractive surgery, or who cannot tolerate contact lenses.

Surgically implanted lenses, also known as phakic IOLs (intraocular lenses) are a new option for people seeking correction of common vision errors such as myopia (nearsightedness). These implants, which resemble contact lenses, are micro-surgically placed between the clear front covering of the eye (cornea) and the iris (colored portion of the eye). The micro-incision self seals so no stitches are needed. This means faster healing time and less complications. The ICL is custom designed and is paper thin.

Implantable lenses are a surgical alternative to LASIK. Implantable lenses are similar to the intraocular lenses (IOLs) used in cataract surgery. Implantable lenses are placed in eyes that retain their natural lens, unlike in cataract surgery where IOLs replace a natural lens that has turned cloudy.

## **What does it involve for me?**

### *31. Can I have laser vision correction performed on both of my eyes at the same time?*

Yes! This is largely due to the high degree of accuracy and predictability, and the extremely low complication rate experienced with these procedures. At Davis Duehr Dean, surgeons perform “same day bilateral surgery,” the current “standard of care.” Proceeding with surgery on your second eye is conditional upon a successful completion of surgery on your first eye. That is, if all goes well with the procedure on your first eye and, in your surgeon's experience, there is every reason to anticipate an uneventful recovery and successful outcome, he/she will immediately proceed with surgery on your second eye. If there is any difficulty with your first eye, surgery on your second eye will be postponed until the first eye has recovered adequately.

### *32. How long does surgery take?*

Both PRK and LASIK require about 10 minutes per eye from start to finish. The actual excimer laser surgery itself requires only between 15 and 120 seconds to complete on each eye in most patients. The entire surgical procedure, from arrival at the laser surgery center to discharge home, ordinarily will require no more than an hour and a half to two hours or so.

### *33. Is refractive surgery painful?*

There is little or no pain, either during or after the surgery, associated with any of the currently available refractive surgical procedures. This is especially true of LASIK, which tends to be a completely

painless operation. An occasional patient will experience a brief scratchiness or burning sensation an hour or so after surgery as the anesthetic wears off. PRK patients may experience some mild discomfort the first day after surgery as the surface heals under the contact lens, but this tends not to be disabling. With the concomitant use of a contact lens and eye drops, 90% of PRK patients report little or no discomfort after PRK, while the other 10% experience moderate to severe discomfort lasting only overnight in the majority.

#### *34. How quickly will I see well after surgery?*

Patients having same-day bilateral LASIK for myopia and astigmatism will experience an almost immediate recovery of vision and visual stability, allowing a return to work the next day. Typically, LASIK patients can expect their vision to be somewhat blurry the first hour or two, followed by steady improvement over the course of the day of surgery. Many patients report being able to read road signs on the drive home. Most can watch TV the night of surgery, and most report they were able to drive the next morning. The farsighted LASIK patient will experience a slightly slower visual and refractive recovery than myopic LASIK patients. These patients will initially be mildly myopic after hyperopic LASIK, but will regress to the desired end point over 1–4 weeks.

Patients having surface ablation PRK will experience somewhat blurred vision (20/40 to 20/80 range) during the 2–3 days ordinarily required for healing of the ocular surface under a disposable contact lens. After that, it rapidly improves (i.e., it is not at all unusual for low myopes to achieve 20/30 to 20/40 vision by the first or second day). “Good” vision is usually achieved by one week, excellent vision at 2–4 weeks. Daily office visits are recommended until the ocular surface heals and the contact lens can be removed.

#### *35. How often will I need to be checked by my surgeon or my optometrist after vision correction?*

Very little postoperative care is required for patients undergoing either LASIK or even “modern” PRK using the laser/scrape method of epithelial removal. In general, both groups of patients will be examined on the first postoperative day by either the surgeon or the co-managing optometrist. PRK patients are also seen on the second or third day postoperatively for purposes of removal of the bandage contact lens (provided the epithelium has healed completely). Subsequent postoperative visits will be provided by your surgeon or by your referring optometrist. LASIK patients require almost no postoperative care, but are routinely seen at 1 day, 2–4 weeks, 2–4 months, 6 months, and at 1 year. PRK postoperative visits are routinely scheduled at 1, 4, and 8 weeks, followed by additional visits as indicated by the healing response, by the presence or absence of complications, by the visual and refractive results and stabilization, and by the apparent need for secondary (enhancement) surgery.

#### *36. How long should I plan to remain off work after my vision correction?*

LASIK patients can typically return to work the next day, even with bilateral surgery. Despite the slightly slower visual and physical recovery period associated with surface ablation PRK using the laser/scrape method or epithelial removal, these patients see and feel well enough to return to work within a day or two, especially if only one eye was operated upon. Patients having unilateral PRK will continue to see well in their other eye, even the first day, so that they will not be severely handicapped visually.

#### *37. How long will I need to use eye drops after vision correction?*

Following LASIK, you will be given two separate eye drops (an antibiotic and an anti-inflammatory medication). The drops will be used for approximately 5 days. No oral or eye drop pain medication is required. Those of you undergoing surface ablation PRK will be instructed to use these same drops, along with Voltaren (or Acular) drops for control of discomfort, until the ocular surface has healed (2–3 days in most patients). After that, you will be instructed to use anti-inflammatory steroid (“cortisone”) drops on a rapidly declining scale, for one to several weeks, depending upon the healing

response of your cornea. You will also be given prescriptions for an oral pain and sleep medication for the first night. Your doctor will guide you in this and closely monitor your healing response.

### *38. Are there any activity restrictions after vision correction?*

There are no major activity restrictions imposed following either PRK or LASIK, other than might be imposed by common sense or by the visual limitation itself. Eye makeup should be avoided for at least two weeks. Showering and shampooing are permissible after the day of surgery, but the operated eye(s) should be kept closed. You should avoid dusty or dirty environments for the first week after surgery. Driving should be regarded as unsafe on the day of surgery because of the blurred vision, disturbed depth perception, and because of the pain and sleep medications which may cause drowsiness. Once your visual recovery permits, you may resume driving, albeit cautiously. Patients having PRK in only one eye at a time will ordinarily see well enough with the unoperated eye to legally drive. However, these patients must keep in mind that their depth perception may be disturbed until their operative eye vision has improved to 20/40–50 range, often by the third postoperative day. Once your vision permits, there are no particular restrictions on driving or upon leisure athletic activities (e.g., golf, tennis). Swimming should be avoided for at least two weeks. You should refrain from contact sports without protective eyewear for two months, so as to avoid abrading your new surface or dislodging your flap. PRK patients should minimize prolonged reading or computer work for the first 1–2 weeks, since these activities involve reduced blinking and may lead to drying of the disposable contact lens, or exacerbation of dry eye symptoms.

## Are there risks involved?

### *39. How risky is vision correction? What are the chances that I could lose my eyesight after LASIK or PRK?*

Complications are an inherent part of any surgical procedure. Refractive surgery and laser vision correction are not exceptions. As with any ophthalmic surgical procedure, vision-threatening complications are always a possibility, although the risk following LASIK or PRK appears to be exceptionally low. Vision correction is probably the safest eye surgery that we perform, i.e., cataract and glaucoma surgery have a much higher risk and incidence of complications. Studies and experience to date have shown the risk of sight-threatening infections (e.g., corneal ulcers) to be even less with refractive surgery than with the wearing of extended-wear contact lenses by several thousand-fold.

### *40. Could my vision actually become worse after vision correction?*

This is always a possibility, although it is highly unlikely using modern techniques of vision correction, modern instrumentation, and currently recommended guidelines for postoperative care. Should this highly unlikely loss of best corrected visual acuity occur, it would most likely be the result of irregular astigmatism from too much surgery or poor patient fixation and centration during the ablation, or from flap complications in LASIK. These are all exceedingly rare complications when using modern techniques. A small percentage of patients, most commonly those having large amounts of correction for high myopic powers, do lose 1–2 lines of best corrected visual acuity after vision correction, even though their unaided acuity is dramatically improved and they are in all likelihood happy with the result. This complication occurs very rarely in lower myopic powers.

### *41. What are the chances that I might still need to wear eyeglasses or contact lenses after surgery?*

At Davis Duehr Dean, 96% or more of patients undergoing refractive surgery will achieve a 20/40 or better level of visual acuity after their initial surgery and any required enhancement procedures. This is sufficient to allow you to legally drive without glasses or contact lenses. This is excellent functional

vision and should liberate you from full-time dependence upon eyeglasses or contact lenses. Nevertheless, you may still decide that you want an eyeglass prescription for the small remaining refractive error in order to achieve your best vision for driving at night or in inclement weather, or for going to movies or athletic events. Those patients with enough residual refractive error and enough residual corneal thickness to safely permit an enhancement will be enhanced. The other 4% of patients who do not achieve that level of vision, and who cannot have additional surgery with a reasonable margin of safety, may have enough undercorrection or overcorrection to still require eyeglasses or contact lenses on a near full-time basis. Most patients get what they want out of refractive surgery!

#### *42. Will I need reading glasses after my refractive surgery? What is monovision?*

Patients over 42–43 years of age will likely require reading glasses either immediately after laser refractive surgery or within a few years of having surgery, just as those of us who never needed glasses did upon reaching the “age of maturity.” This is due to aging changes in the natural lens of the eye, rather than to changes in corneal curvature or eyeball length. The alternative is for patients over 43 to select monovision as their surgical target. Monovision surgery involves intentionally leaving one of your eyes mildly nearsighted after surgery. This will enable you to perform some close tasks or even to read with that eye without correction, while using your other, fully corrected, eye for your sharpest distance vision. Discuss with your doctor if monovision is right for you.

## **Your lifelong vision is our commitment.**

#### *43. The commitment.*

Once your refractive surgery has been completed, you are immediately covered.

#### *44. How does the commitment work?*

You, your Davis Duehr Dean surgeon, and your co-managing eye doctor will agree on the level of correction which will be attempted through laser surgery. Then your Davis Duehr Dean surgeon and your co-managing eye doctor will determine which of the then available and approved procedures will be used to best achieve the goal—PRK (Photo-Refractive Keratectomy), LASIK (Laser Assisted In-Situ Keratomileusis) with either IntraLase Laser or Mechanical Keratome, hyperopic LASIK, or monovision (one eye corrected for distance vision, one eye for near vision). Prior to surgery you will have a thorough discussion of what the correction goals are and why they were established (limiting factors involved, if any).

It is important to note that while Davis Duehr Dean has a tremendous record of success in meeting our individual goals, in a very small percentage of cases, that goal is not met. This is usually due to the patient’s general health or ocular limitations (see restrictions to the Commitment).

If the correction is not met during the initial procedure, you, your Davis Duehr Dean surgeon, and your co-managing eye doctor will confer to discuss the possibility of an enhancement or additional treatment. You will receive an enhancement/additional treatment if your Davis Duehr Dean surgeon believes the procedure may enhance your vision and is medically advisable. These procedures are typically performed in the first year after the original procedure.

#### *45. Enhancements or additional treatments.*

Enhancements or additional treatments shall be charged as follows:

1. If less than 1 year after original surgery—no charge.
2. 1–2 years after original surgery—75% fee deduction from our then current fee.\*
3. 2–3 years after original surgery—50% fee deduction from our then current fee.\*

4. 3–4 years after original surgery—25% fee deduction from our then current fee.\*
5. After 4 years after original surgery—0% deduction.

\*Our “then current fee” is defined as the fee that is current as of the date of such enhancement or additional treatment.

Please discuss enhancements/additional treatments with your surgeon. The surgeon may recommend another procedure if the following applies:

- Your vision decreases due to refractive change to below 20/40 without glasses or by more than three lines of vision from the targeted vision,
- And the co-managing eye doctor and one of our surgeons establish that your vision could potentially be improved with additional refractive surgery and that this surgery is advisable.

#### *46. Do I need to go in for an annual exam to qualify?*

Depending on several factors, your own eye doctor can best determine the appropriate intervals for your regular eye exams. Generally, regular eye exams occur every one to two years. Please note postoperative eye exam fees after one year are the responsibility of the patient.

#### *47. What are the restrictions?*

In order to qualify for the Commitment, you must:

- comply with all postoperative instructions
- have attended your regular eye exams
- must not have a condition of the eye which could possibly cause additional problems

The Commitment does not cover loss of vision due to (but not limited to) the following: aging, disease, an accident involving trauma to the eye or a permanent or temporary condition, other than myopic regression or refractive error, caused by natural physiological changes. In addition, the Commitment does not include patients with diseases which might impede a successful correction (such as diabetes, active autoimmune or collagen vascular disorders); patients with a cornea too thin before and/or as a result of the previous surgery; patients who had RK or other refractive surgery prior to having LASIK, or PRK at the Davis Duehr Dean clinic; patients whose initial refractive surgery was not performed at the Davis Duehr Dean clinic; patients diagnosed with an ocular condition such as cataracts, glaucoma, diabetic retinopathy, retinal tear, detachment, degeneration, or presbyopia, a change in vision resulting from natural physiological changes due to aging.

#### *48. Our goal is patient satisfaction.*

The spirit of the Commitment is one of satisfaction. The decision to retreat any patient is a joint decision between the comanaging eye doctor, the treating Davis Duehr Dean surgeon and you.

#### *49. Need more information?*

Please contact us at:

(608) 282-3937 (EYES)

(800) 362-7796

Web site: [www.deancare.com/ddd](http://www.deancare.com/ddd)

Davis Duehr Dean Surgeons:

Donald E. Beresky, M.D.

Stephen M. Boorstein, M.D.

Christopher R. Croasdale, M.D.

Christina Delany, M.D.

Anne E. Kilby, M.D.

Peter J. McCanna, M.D.

Mary Jo Oyen, M.D.

Jon G. Stock, M.D.

John A. Vukich, M.D.

## How much does it cost?

### *50. How much does refractive surgery cost? Is any form of financing available?*

The fee for refractive surgery depends on the procedure that you and your eye care provider decide upon. Procedure fee quotes may be specific to each individual patient, based on the treatment appropriate for him/her.

Davis Duehr Dean offers LASIK, PRK, and LASEK corneal refractive procedures. In addition, our surgeons offer Implantable Collamer Lenses (ICL) and Refractive Lens Exchange (RLE) with multifocal and standard intraocular lens implants. Please contact our office for additional information on any of these procedures.

Prices for refractive procedures are posted on the Davis Duehr Dean web page at [www.deancare.com/ddd](http://www.deancare.com/ddd) or you may call our Refractive Surgery Center at (608) 282-3937 or (800) 362-7796. Prices are subject to change without advance notice. A confirmation of your procedure and costs will be sent to you prior to your scheduled surgery.

\*Note: Some patients experience “Dry Eye Syndrome,” requiring the placement of temporary or permanent tear duct plugs. Permanent tear duct plugs would involve an additional fee, which reflects supply costs only. The professional fee for insertion of plugs is waived. All prices are subject to change without advance notice.

### *51. Will my health insurance or HMO policy cover all or any part of the fee for refractive surgery?*

With rare exceptions, the major health insurers and HMOs do not cover any part of the fee for refractive surgery. This is not likely to change in the foreseeable future. However, you may wish to take advantage of the flexible spending account benefits if offered by your employer. Under the terms of these plans, you essentially pay for your surgery with pretax dollars and, in effect, save whatever your income tax percentage rate happens to be. Check with your employer to establish whether or not this benefit is available to you.

### *52. How can I contact you for more information?*

You can contact us for more information, to find out the name of an optometrist in your area who co-manages refractive surgery patients with us, and/or to schedule laser vision correction:

- Call us at (608) 282-EYES (3937) or toll-free at (800) 362-7796.
- Visit our web site: [www.deancare.com/ddd](http://www.deancare.com/ddd).



# Payment Plan Options

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DAVIS DUEHR DEAN CENTER FOR REFRACTIVE SURGERY

The Davis Duehr Dean Center for Refractive Surgery offers affordable, easy payment plan options at reasonable rates. Financing options available at 25% down payment with an interest rate of 9% and 50% down payment with an interest rate of 7%. There is no application or penalty fee for early payment and interest accrues from the date of surgery. Once your application has been approved, you will be contacted to establish a payment plan that is best suited for you. A signed contract agreeing to the terms of the payment plan that is best suited for you. A signed contract agreeing to the terms of the payment plan and your down payment is required two weeks prior to your scheduled surgery date. In addition, for your convenience, we also accept cash, personal checks, money orders, Visa, and MasterCard.

Should you have any further questions regarding our payment plan program, please contact our Dean Medical Center Financial Services Department at (608) 250-1100 or toll-free at (877) 434-3326 and ask for Refractive Surgery Financing.

The completed Credit Application (on the back of this page) can be faxed to (608) 250-1453 or mailed to:  
Dean Business Office • ATTN: Financial Services • 1808 W. Beltline Hwy. • Madison, WI 53725

\*Plan options are subject to change without notice at any time.  
The plan option available to you will be based on Credit Application approval.

Publication date: September 4, 2000

Updated: April 2008

# Credit Application

DAVIS DUEHR DEAN CENTER FOR REFRACTIVE SURGERY

## Applicant

## Plan Option

Name (First, MI, Last)						
Present Address			City	State	Zip	Years/Months
Date of Birth	Social Security Number		Own <input type="checkbox"/>	Payment	Home Phone	
			Rent <input type="checkbox"/>	\$		
Former Address (if less than two years at current)			City	State	Zip	Years/Months
Employed By	Employer's Address		City	State	Zip	Years/Months
Position	Monthly Salary	Work Phone	Former Employer (if less than two years at current)			Years/Months
Other Income Source			Amount			
			\$			
Name of Nearest Relative Not Living with You			Relationship		Phone	

## Co-Applicant

Spouse's Name (First, MI, Last)			Date of Birth	Social Security Number		
Employed By	Employer's Address		City	State	Zip	Years/Months
Position	Monthly Salary	Work Phone				
	\$					

## Sign Here

By signing, Applicant(s) ("you"): (a) certify that the information provided above is true and correct; (b) acknowledge that this Application is subject to approval by Dean Health Systems; (c) agree that we may contact any source necessary to verify your credit responsibility.

X \_\_\_\_\_ X \_\_\_\_\_  
 Signature of Applicant Date Signature of Co-Applicant Date

## Business Office Use Only

Account Information	Place of Service		Physician
Credit Search	Procedure		Date
Credit Approval/Notification of Applicant	Finance Amount	Annual % Rate	Monthly Payment

# Refractive Surgeons at Davis Duehr Dean



Donald E. Beresky, M.D.



Stephen M.  
Boorstein, M.D.



Christopher R.  
Croasdale, M.D.



Christina Delany, M.D.



Anne E. Kilby, M.D.



Peter J. McCanna, M.D.



Mary Jo Oyen, M.D.



Jon G. Stock, M.D.



John A. Vukich, M.D.

## Davis Duehr Dean Locations and Outreach Locations

Baraboo  
(608) 356-2020

Boscobel  
(608) 375-6001

Columbus  
(920) 623-2431

Delavan  
(262) 728-5568

Dells/Delton  
(608) 254-8383

Dodgeville  
(608) 930-4362

Edgerton  
(608) 884-3314

Fort Atkinson  
(920) 563-8468

Janesville/Riverview  
(608) 755-3515

Jefferson  
(920) 674-2217

Lancaster  
(608) 723-2020

Madison - Regent  
*Refractive Surgery*  
(608) 282-3937  
(800) 362-7796  
*General Information*  
(608) 282-2000  
*Appointments*  
(608) 282-2020

Madison - East  
(608) 260-6003

Madison - West  
(608) 824-4020

Milton  
(608) 868-4727

Mineral Point  
(608) 987-3301

Monroe  
(608) 324-2000

Montello  
(608) 297-2501

Platteville  
(608) 342-2020

Portage  
(608) 742-5522

Reedsburg  
(608) 524-4303

Richland Center  
(608) 647-8995

Sauk Prairie  
(608) 643-3333

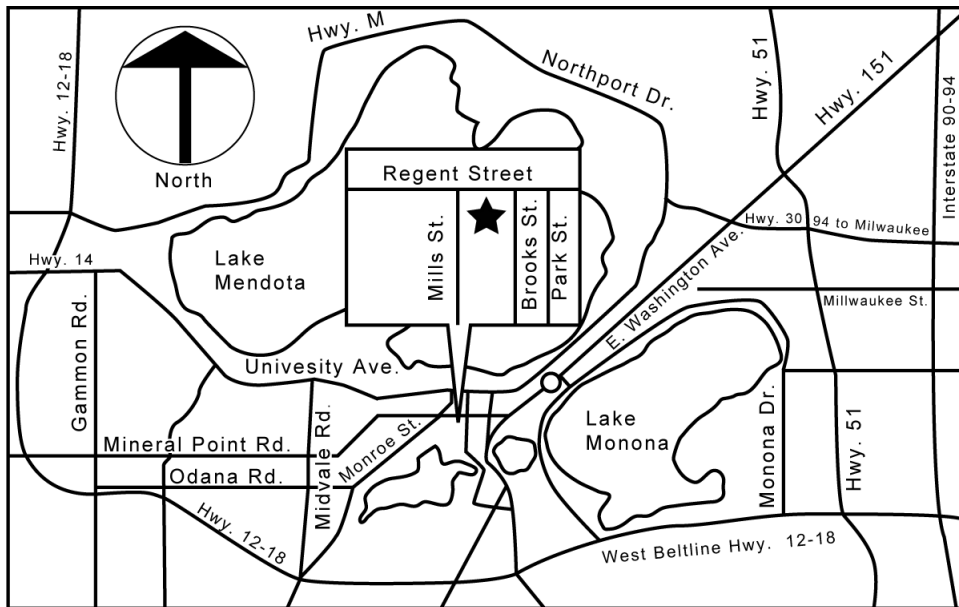
Stoughton  
(608) 877-2700

Sun Prairie  
(608) 825-3008

Whitewater  
(262) 473-4514

# Davis Duehr Dean Center for Refractive Surgery

DAVIS DUEHR DEAN-MADISON, WI  
1025 Regent Street  
(608) 282-3937 • (800) 362-7796



*I-90 to 12/18 (Beltline)  
Park St. exit (151)  
Left onto Regent  
Left onto Mills*