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CONSULTING ROOM

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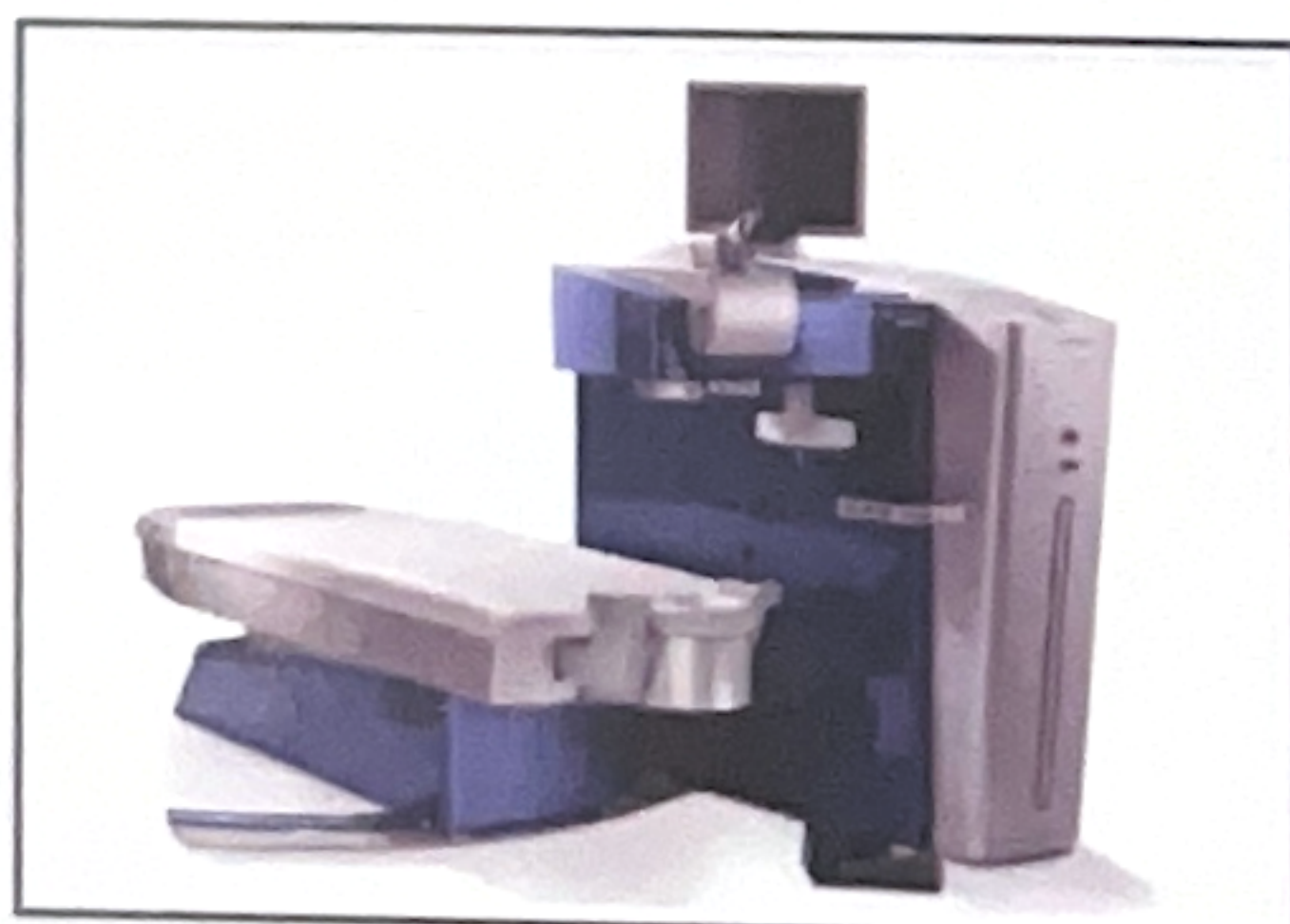
### BLADELESS LASIK - A Paradigm Shift in Refractive Surgery



### Lasik Flap Creation in progress using the Femtosecond Lensx Laser

Refractive errors are and have been the bane of childhood and adulthood for millions of people worldwide. Dependence on glasses or contact for almost all activities has led to despair. Mankind has been evolving since nearly half a century. However one of the most significant developments came in the year 1989 when Ioannis Palikaris, a Greek ophthalmologist performed how a Laser beam could be utilized to refashion the shape of the cornea so that light rays could be redirected to focus accurately on the retina in order to obtain crisp unaided vision. In the initial days and even till today's LASIK or Laser Assisted in situ keratomileusis basically involves using a moving blade (microkeratome) to lift a flap of the cornea supported on a hinge that is rolled backwards to expose the corneal bed (stroma). The Excimer Laser then delivers precise beams of Laser in a predetermined fashion depending on the refractive error to carve out corneal tissue (ablation) that simply evaporates. Leaving behind a reshaped corneal bed. The flap is then repositioned into its original position and after confirming that the flap is indeed well apposed, the patient is allowed to go back home.

However there were some inherent disadvantages noted with both the microkeratomes and the initial Excimer Lasers. The flap produced using the microkeratome blade can be somewhat inconsistent regarding its thickness and uniformity.



**Alcon Wavelight  
Ex-500 Excimer Laser**

Typically, depending on the microkeratome head chosen, the flap should be after 90 or 130 microns but in actual practice it may be somewhat unpredictable. Additionally there are issues of a free flap or button hole in the flap if the ring used to support the microkeratome complications are fortunately rare, they can sometimes impact the final visual outcome.

Now with the advent of FEMTOSECOND LASER TECHNOLOGY (LENSEX FLAP), it is possible to obtain a precise, consistent, uniform and highly reproducible flap every single time. The femtosecond Laser involves the rapid delivery of very short pulses of true Laser energy (a femtosecond equals 10<sup>-15</sup> seconds or 0.000000000000001 second). After docking on the cornea, these laser pulses are delivered in a very rapid, precise computer controlled manner so as to achieve the most uniform flaps along with a near perpendicular side cut to the corneal surface. At the very core of this technology is another laser called OCT (Optical Coherence Tomography) which is able to map out the precise anatomy of the cornea so that the flap can be aligned accurately. The stromal bed rendered in this manner for the subsequent ablation is therefore of an exquisite quality.

Once that flap is created the patient stays put on the table whilst the bed itself rotates to the Wavelight Excimer Laser Ex-500. Which is the part of the Refractive suite. The flap is now carefully lifted and the Ex-500 delivers its own Excimer Laser Energy in the form of flying spots so as to ablate the stromal bed in a very coordinated array that completely reshapes the cornea so as to not only correct the refractive error but to actually enhance the quality of vision by getting rid of unwanted corneal aberrations using a wavefront optimized technology. After irrigating in its original place rather easily thanks to the precise side cuts obtained initially by this femtosecond Lensx Laser. Visual rehabilitation post-operatively is quick with minimal discomfort and the patient to resume normal activities after a couple of days.



### Benefits of Lasik

From improved self-confidence to a whole range of new activities, LASIK has a long list of benefits.

1. Immediate improvement in vision compared to the pre-op unaided vision.
2. Almost immediate freedom from corrective eyeglasses and contact lenses.
3. Patients who have undergone successful LASIK eye surgery find that travel becomes much more enjoyable and convenient. Furthermore such activities as swimming, Cycling, Skydiving, And even spending a day outdoors or at the beach become much more pleasurable without the worries and hassles associated with corrective eyewear.
4. Heightened self-confidence to face the world.



### Advantages of EX-500 Excimer Laser

#### WaveLight Ex-500

the wavelight Ex-500 has several unique advantages as a platform.

**Speed :** each burst of the Alcon Ex-500 laser lasts mere of a second before the laser shifts to its next position-up to 100 times faster than some lasers. It therefore takes only 1-4 sec to treat 1 Droper using a 6 mm zone ensuring greater patient comfort. The speed also ensures minimal dehydration of the corneal bed leading to increased treatment outcome accuracy.

**Precision :** the alcon Ex-500 Laser uses a small-spot Laser which allow the lasik surgeon to shape the cornea in finer, more gradual increments for a smoother surface with eye tracking technology which at 1050 Hz is almost 8 times faster than some of the other lasers. Thus the chances of decentred treatment are extremely low.

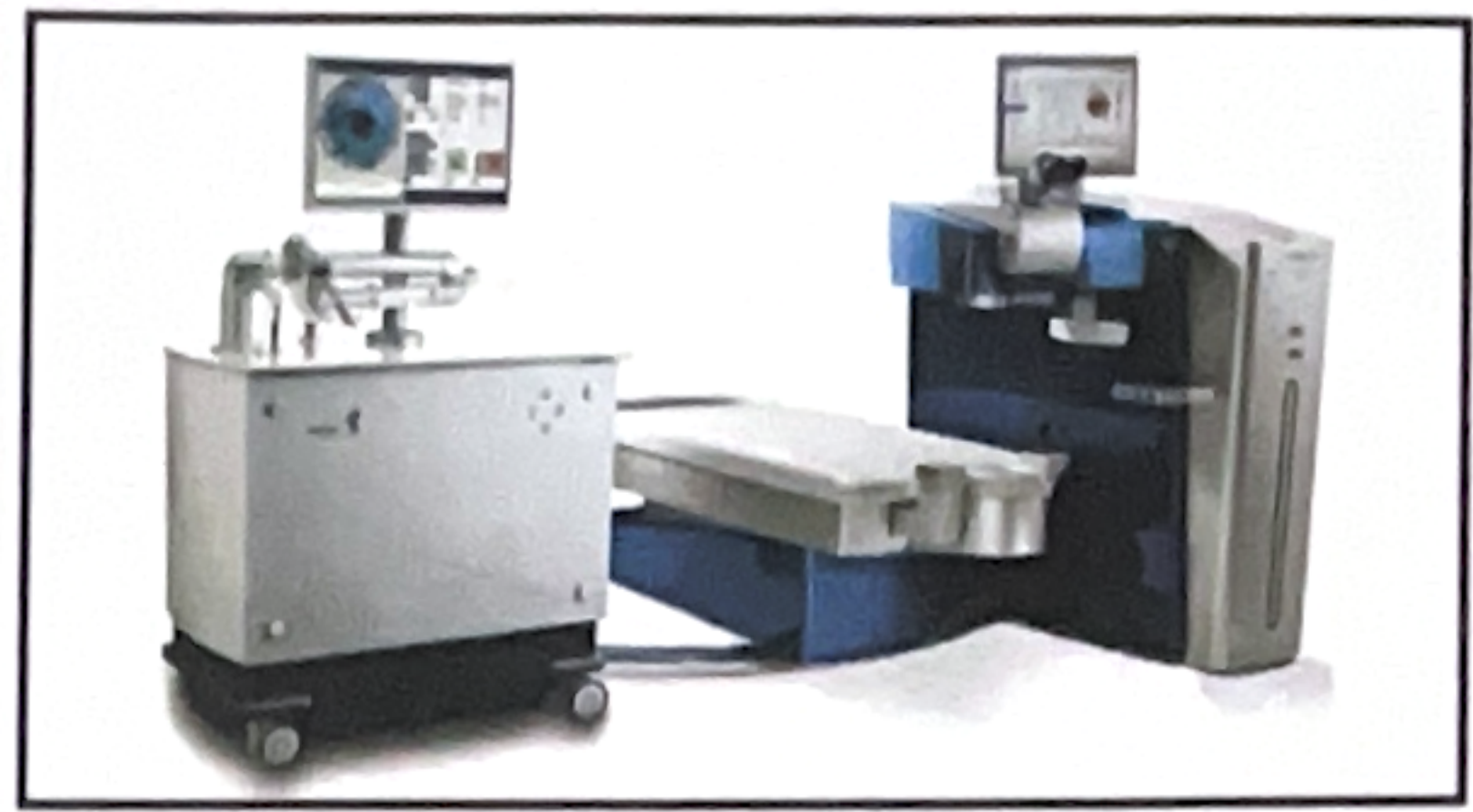
**Personalized Procedure :** using advanced wavefront optimized technology the wavelight Ex-500 laser creates a map of the patient's eyes and their unique characteristics to assist the surgeon in creating an individual personal vision profile. This map serves as a guide in when correcting eyes with high astigmatism. It also helps in minimizing the corneal aberrations (irregularities) after surgery that is associated with glare and night vision problems leading to better visual outcomes.

### Are you a candidate for LASIK ?

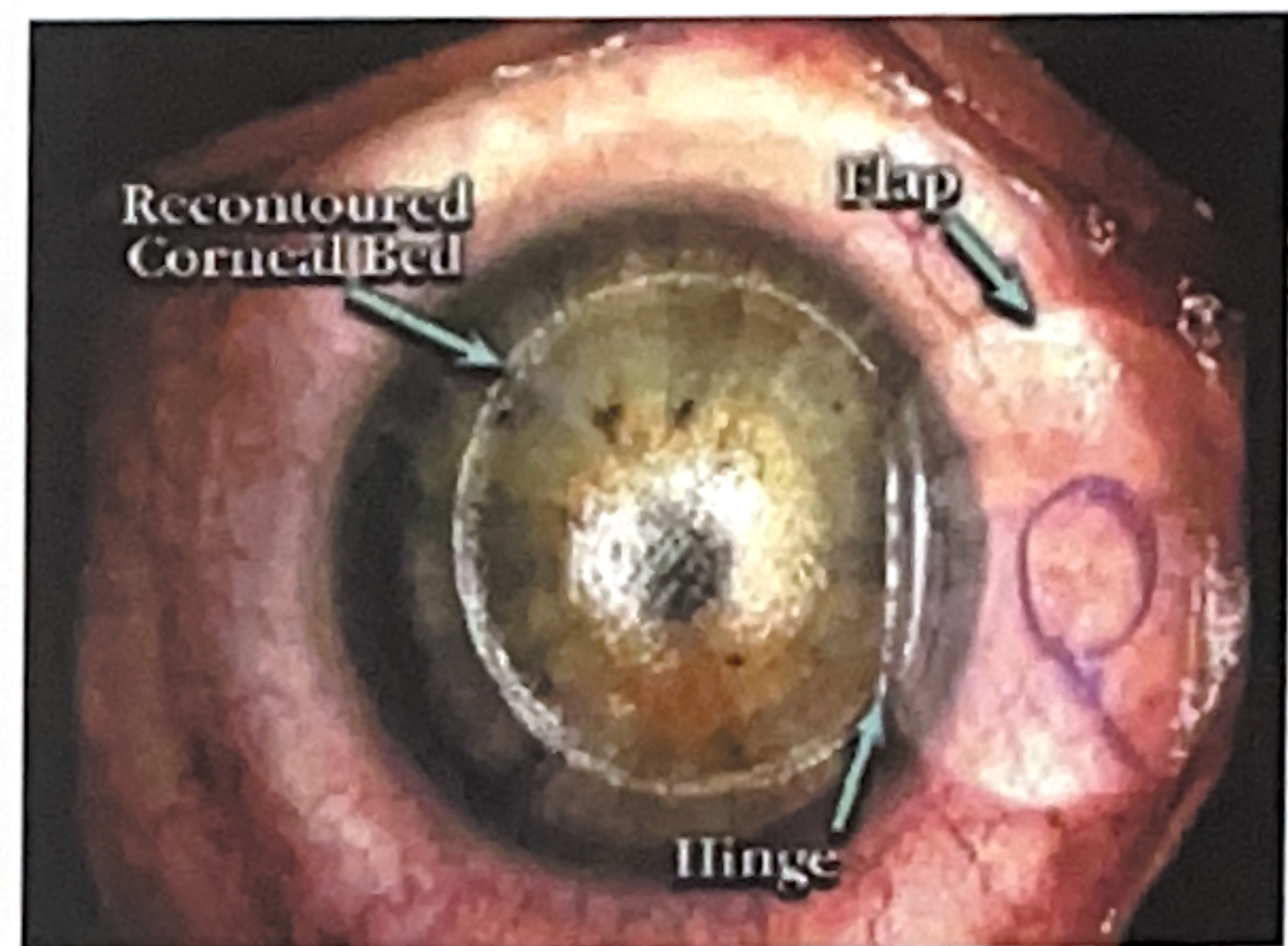
- You should be at least 18 years old.
- Your eyes must be healthy and your glasses prescription stable for at least 6 months to year.
- You should not be pregnant or nursing as these conditions might change the measured refraction of the eye.
- You should be in good general health.

### LASIK FAQs:

- How long does the surgery take ?  
As in most of the cases both eyes are treated in the same sitting, the procedure usually lasts 15 to 20 minutes.
- Is it painful ?  
No surgery is carried out after putting anesthetic drops some patient might feel some pressure sensation for a few minutes.
- When can normal daily activities be resumed ?  
One can resume your activities in 2-3 days time. Tough water sport or swimming should be avoided for at least a month.
- Is repeat treatment required ?  
Up to 99% patients do not require any further procedure. In the remaining few patients an enhancement treatment might be required to achieve optimum vision.



**Laser Ablation in progress using the Excimer Laser**



**Planning of the Lasik after Docking**

- Is treatment permanent ?  
Yes however you will need reading glasses once you reach the presbyopic age which 40 to 45 years.
- Is LASIK safe ?  
Lasik is one of the safest surgeries performed in the human body. It has been recognized by the most stringent US FDA as a safe proven and effective treatment for correcting refractive errors.

