DNA Test
for Refractive Surgery Safety

www.avellinolab.com/us
TGFBI
Corneal Dystrophy
TGFB1 Corneal Dystrophy
Why these 5

1. Granular Corneal Dystrophy type 1 (GCD1)
2. Granular Corneal Dystrophy type 2 (GCD2) a.k.a Avellino Corneal Dystrophy
3. Lattice Corneal Dystrophy type 1
4. Thiel-Behnke Corneal Dystrophy
5. Reis-Bucklers Corneal Dystrophy
Transforming growth factor beta-induced protein (TGFBIp) in the cornea

- Regulates cell-collagen interactions
- Modifies cellular adhesions
- Maintains components of the ECM
- Binds to collagen I, II, IV
- Produced in the epithelium (keratoepithelin)

- Upregulated during wound healing in the keratocytes near the wound
TGFBI Gene is located on the long (q) arm of chromosome 5 at position 31.

Mutations in TGFBI:
- Lattice: R124C (Arg-Cys)
- ACD: R124H (Arg-His)
- Reis-Buckler: R124L (Arg-Lys)
- GCD1: R555W (Arg-Try)
- Thiel-Behnke: R555Q (Arg-Glu)
TGFBI Corneal Dystrophies

Mutant TGFBIp + Impaired degradation (defective autophagy-lysosome system) = Accumulation of deposits in the cornea

Han, K.E., et al., Pathogenesis and treatments of TGFBI corneal dystrophies, *Progress in Retinal and Eye Research* (2015), E-Pub ahead of print
Exacerbation after trauma

TGFBI Gene Mutation (for wound healing)

Damage To Cornea (by UV or refractive procedure)

Excessive Production Of TGFBI Protein

Protein Deposits on Cornea
TGFB1 Corneal Dystrophies

GCD1
Hyaline Formations

GCD2
Hyaline and Amyloid

LCD1
Amyloid Formations
These 5 corneal dystrophies (CD) are inherited in an autosomal dominant pattern.

If one parent carries one gene for CD (heterozygous), children have a 50% chance of also having CD.

If one parent carries two genes for CD (homozygous), children have a 100% chance of also having CD.
Granular Corneal Dystrophy

**Heterozygote**
- 25 years
- 28 years

**Homozygote**
- 20 year old
- 24 year old

**Heterozygote after LASIK**
- Accelerated, vision loss
Debunking Myths And Misconceptions
Myth #1

“I’ve never seen it get worse after LASIK.”
In 2002, the first case report of exacerbation of GCD2 after LASIK was published in Cornea by E.K. Kim and colleagues.

Exacerbation of Avellino Corneal Dystrophy After Laser In Situ Keratomileusis

Xiu Hua Wan, M.D., Hyun Chae Lee, M.S., R. Doyle Stulting, M.D., Ph.D., Terry Kim, M.D., Seung Eun Jung, M.S., Moon Jung Kim, M.D., and Eung Kweon Kim, M.D., Ph.D.

Purpose. To report a case of Avellino corneal dystrophy that increased in severity 1 year after uncomplicated laser in situ keratomileusis (LASIK) for myopia. Methods. Avellino dystrophy was confirmed by polymerase chain reaction sequencing of F1NA from the patient and her parents. Results. Best spectacle-corrected visual acuity decreased from 20/20 to 20/30 12 to 20 months after LASIK owing to opacities that appeared centrally in the corneal stroma and the LASIK flap and remaining posterior stroma interface. Conclusions. LASIK is contraindicated in patients with Avellino corneal dystrophy because vision may be reduced by corneal opacities that appear in the interface of the flap and remaining posterior stroma postoperatively.

Key Words: Avellino corneal dystrophy—Granular corneal dystrophy—Laser in situ keratomileusis—Recurrent.

Laser in situ keratomileusis (LASIK) is a technique for the correction of refractive error by reshaping the corneal curvature with a 193 nm excimer laser under a flap of corneal tissue. Even though recent clinical studies have demonstrated the safety, predictability, and astigmatism of LASIK, its safety in various pathologic conditions has yet to be determined.

Avellino corneal dystrophy (ACD) was first reported in individuals of Italian descent, but more recently, it has been reported in European and Asian family members. ACD is attributed to a mutation in the BIGH3 gene, ACDC has morphologic characteristics of both granular and lattice dystrophy. Heterozygotes have minimal corneal abnormalities, whereas the visual acuity of homozygotes may be severely affected.


From the Institute of Vision Research, Department of Ophthalmology (K.E.J.W., H.C.L., E.J.K., M.J.K., E.E.K.), Yonsei University College of Medicine, Seoul, Korea; the Department of Ophthalmology (T.K.), Second Hospital, Zhejiang University College of Medicine, Hangzhou, China; the Brain Korea 21 Project for Medical Science (E.E.K.), Yonsei University; Seonh, Korea; the Department of Ophthalmology (K.H.K.), Ewha Womans University Medical School, Seoul, Korea; and the Department of Ophthalmology (D.K.), Duke University School of Medicine, Durham, North Carolina, U.S.A.

The authors have no proprietary interests in this study.

This work was supported by Yonsei University Research Fund of 2000. Address correspondence and reprint requests to Dr. E.K. Kim, Department of Ophthalmology, Yonsei University College of Medicine, Brain Korea 21 Project for Medical Science, CPO Box 8044, Seoul 120 752, Korea. E-mail: enji@yenu.edu.kr.
Exacerbation of Avellino Corneal Dystrophy After LASIK in North America

Christopher S. Banati, MD, Woon Cheo Kim, MD, Bradley Randleman, MD, Eung Kweon Kim, MD, PhD, and R. Doyle Studer, MD, PhD

Purpose: To report the first case of Avellino corneal dystrophy exacerbation after LASIK in a white North American patient.

Methods: Case report and literature review.

Results: A 25-year-old white female developed progressive corneal opacities after LASIK. Preoperative examination had revealed only subtle white corneal opacities in each eye. The patient's mother had similar corneal opacities. DNA analysis of the patient revealed a heterozygous mutation at the R124H location in the RIK1 gene.

Conclusions: LASIK can exacerbate Avellino corneal dystrophy and should be avoided in patients with this condition. A careful history and genetic analysis can identify affected patients and those at risk.

Key Words: Avellino dystrophy, RIK1 gene, LASIK

Avellino corneal dystrophy is an autosomal dominant, stromal corneal dystrophy originally described in descendents of the Avellino, Italy region. This dystrophy is caused by a specific mutation at codon 124 of the RIK1 gene on chromosome 5. Avellino dystrophy shares clinical features with both granular and lattice corneal dystrophies. RIK1 gene analysis has been used to discriminate these disorders because of the same mutation associated with each dystrophy. Exacerbation of Avellino dystrophy after LASIK has been reported in Korea.

In 2006, exacerbation of GCD2 after LASIK was reported in North America in a white female.

FIGURE 1. Slit-lamp view right eye of central, granularr appearing corneal opacities 14 months after LASIK.
Exacerbation after LASIK

25 y.o. female with undiagnosed GDC2 underwent LASIK in the left eye only.
Seven years later, opacity formations were significantly worsened in the left eye.
Exacerbation after LASIK

Clinical Course
LASIK performed. 1 year later, enhancement performed. 4 years later, patient noted decreasing UDVA

Right eye pre-op

Right eye 4 years after LASIK

Compliments of Anthony Aldave, MD
OCT showing protein deposits at the interface of the flap

Histology slide after penetrating keratoplasty from a patient with GCD1 that was accelerated after LASIK
Exacerbation after LASIK

LASIK 2006. Patient presented with decreased vision 6 years later and was watched for 2 additional years. Family history is negative. DNA analysis revealed GCD2 mutation.
Exacerbation after LASIK

Left eye of the same patient

2012-3-29 Left Eye

2014-11-21 Left Eye

Fengju Zhang MD, PhD
Beijing Tongren Eye Center
Myth #2

“If a patient has a corneal dystrophy, I won’t miss it.”
Subtle Clinical Presentation

Three family members with clear or subtle phenotype - all tested positive for GCD2

Father  
age 55  
GCD2 positive

Patient  
age 36  
GCD2 positive

Daughter  
age 33  
GCD2 positive
Subtle Clinical Presentation

**Daughter - age 21**
Patient ‘qualified' for LASIK on slit lamp exam, then tested positive for GCD2

**Mother – age 47**
Also tested GCD2 Positive. No previously identified family history
Subtle Clinical Presentation

Patient (bottom) presented 1 year post-FS LASIK with decreased vision. She tested positive for GCD2. Mom (top) was subsequently tested and was positive for GCD2.
Myth #3

“It’s a Korean or Asian problem.”
A Global Problem

Known Incidence

Known Prevalence

USA Ethnicity Count

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Case Count GCD1</th>
<th>Case Count GCD2</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Caucasian</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>German</td>
<td>0</td>
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<tr>
<td>Italian</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Polish</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Scottish-Irish/French</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Korean</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Indian</td>
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<td>0</td>
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<tr>
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<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>21</td>
</tr>
</tbody>
</table>

EUROPE

GCD1

GCD2

Total: 8 21
Examples of Cases in US Literature

Chris Banning
• Emory (2006)
• 25-year-old white female, 1 year post LASIK

Michael Saidel
• University of Chicago (2007)
• 53-year-old white male, 7 years post LASIK

Nasreen Syed
• University of Iowa (2011)
• 44-year-old white male, 8 years post LASIK
Why a DNA test?

Diagnosis of Inherited Corneal Disorders:
Is Genetic Analysis Necessary?

Anthony Aldave MD, USA

- Neither a positive family history nor characteristic clinical features are reliable means of differentiating between inherited and non-inherited corneal disorder.

- Molecular genetic analysis is the most definitive means of distinguishing between the two
Molecular genetic testing provides a rapid, inexpensive, non-invasive, definitive means of:

- Identifying individuals at risk of significant complications following keratorefractive surgery
- Differentiating between dystrophic and neoplastic corneal protein deposition
- Differentiating between dystrophic and degenerative corneal opacifications
- Diagnosing suspected dominant corneal dystrophies in the absence of family history

~ Anthony Aldave, MD
Recommendations for Genetic Testing of Inherited Eye Diseases


Evan M. Stone, MD, PhD (Chair), Anthony J. Ackless, MD, Arlene V. Drack, MD, Matthew W. MacCumber, MD, PhD, Val C. Sheffield, MD, PhD, Elias Tsiropoulos, MD, Richard G. Webber, MD

Genetic testing can make a very positive impact on individuals and families affected with inherited eye disease in a number of ways. When properly performed, interpreted, and acted on, genetic tests can improve the accuracy of diagnoses and prognoses, can improve the accuracy of genetic counseling, can reduce the risk of disease occurrence or recurrence in families at risk, and can facilitate the development and delivery of mechanism-specific care. However, like all medical interventions, genetic testing has its own set of risks that can vary from patient to patient. For example, the results of a genetic test can affect a patient’s plans to have children, can create a sense of anxiety or guilt, and can even impact a patient’s relationships with other family members. For these reasons, skilled counseling should be provided to all individuals who undergo genetic testing to maximize the benefits and minimize the risks associated with each test.

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The Role of the Ophthalmologist in Genetic Testing

Ophthalmologists should be aware that sensitive and specific genetic tests now exist for dozens of inherited eye diseases. Whenever the clinical findings suggest the presence of an inherited eye disease, the treating ophthalmologist should either discuss the potential value of genetic testing with their patient and offer the appropriate tests (if any) to the patient, or refer the patient to a physician or counselor with expertise in the selection and interpretation of genetic tests. The ophthalmologist should strive to make the most detailed and specific clinical diagnosis possible to aid in the proper ordering and interpretation of the test. Ophthalmologists who order genetic tests should understand the potential implications of genetic testing for their patient and themselves, if qualified to do so, and should ensure that counseling is provided to the patient and his or her family members, if appropriate. Informed consent should also be obtained from the patient and his or her family members before genetic testing.

Ophthalmologists also should ensure that their patients receive a copy of their genetic test results.

There are a number of web-accessible resources available to help ophthalmologists choose appropriate genetic tests and to locate knowledgeable genetics professionals to assist them with specific patients. For example, the National Institute of Health Genetic Testing Registry (www.genetests.org) is a web-based clinical test that includes a database of Clinical Laboratory Improvement Amendments-approved genetic tests and context-specific links to key resources such as GenetReviews, professional practice guidelines, PubMed reviews, and Online Mendelian Inheritance in Man (OMIM) records. There is also an announcement of clinical referral resources including links to the American Academy of Ophthalmology (http://www.aao.org), the American Board of Genetic Counselors (http://www.abgc.net), and the National Society of Genetic Counselors (http://www.nsgc.org). The websites of these organizations provide listings of genetics professionals by zip code.

Specific Recommendations

1. Offer genetic testing to patients with clinical findings suggestive of a Mendelian disorder whose causative gene(s) have been identified. If unfamiliar with such testing, refer the patient to a physician or counselor who is. In all cases, ensure that the patient receives counseling from a physician with expertise in inherited disease or a certified genetic counselor.

2. Use Clinical Laboratories Improvement Amendments-approved laboratories for all clinical testing. When possible, use laboratories that include in their reports estimates of the pathogenicity of observed genetic variants that are based on a review of the medical literature and databases of disease-causing and non-disease-causing variants.

3. Provide a copy of each genetic test report to the patient so that she or he will be able independently to seek mechanism-specific information, such as the availability of gene-specific clinical trials, should the patient wish to do so.

4. Avoid direct-to-consumer genetic testing and discourage patients from obtaining such tests themselves. Encourage the involvement of a trained physician, genetic counselor, or both for all genetic tests so that appropriate interpretation and counseling can be provided.

5. Avoid unnecessary parallel testing—order the most specific tests available given the patient’s clinical findings. Restrict massively parallel strategies like whole-exome sequencing and whole-genome sequencing to research studies conducted in tertiary care facilities.

6. Avoid routine genetic testing for genetically complex disorders like age-related macular degeneration and late-onset primary open-angle glaucoma until specific treatment or surveillance strategies have been shown in 1 or more published clinical trials to be of benefit to individuals with specific disease-associated genotypes. In the meantime, continue the genotyping of such patients for research studies.

7. Avoid testing asymptomatic minors for uniterable disorders except in extraordinary circumstances. For the few cases in which such testing is believed to be warranted, the following steps should be taken before recommending testing for a minor or a child:
Why a DNA test?

Indications for *TGFBI* Screening Prior to Keratorefractive Surgery

Anthony Aldave, MD

- Presence of unexplained corneal stromal opacities
- Under 40 years of age AND
  - Korean or Japanese ancestry
  - Family history of TGFBI dystrophy
  - Family history of corneal transplantation for any reason.
DNA Test for Refractive Surgery Safety

Clinic Applications
Avellino Labs
Genetic Diagnostics for the Ophthalmic Industry
### Avellino Universal Test

**DNA Analysis for 5 TGFBI gene Corneal Dystrophies:**

1. Granular Corneal Dystrophy type 1 (GCD1)
2. Granular Corneal Dystrophy type 2 (GCD2) a.k.a Avellino Corneal Dystrophy
3. Lattice Corneal Dystrophy type 1
4. Thiel-Behnke Corneal Dystrophy
5. Reis-Bucklers Corneal Dystrophy

**One Swab**

**Rapid Test**

**Affordable Cost**
Avellino Universal Test
For Patient Safety Evaluation
Prior to Corneal Refractive Surgery

- LASIK
- LASEK
- PTK
- PRK
- Keratoplasty
- Cross Linking
- Premium Cataract
Global Avellino Lab
2008 Laboratory Locations

Avellino Laboratory Inc.
(Seoul/Busan)
Global Avellino Lab

2013 Laboratory Locations

2013
Avellino LAB. USA, Inc. (Menlo Park)

2008
Avellino Laboratory Inc. (Seoul/Busan)

2010
Avellino Japan Co., LTD
Tokyo Osaka Nagoya Fukuoka Sapporo
Global Avellino Lab
Current Test Laboratory Locations

2013
Avellino LAB. USA, Inc.
(Menlo Park)

2015
Avellino LAB China Inc.
(Shanghai)

2008
Avellino Laboratory Inc.
(Seoul/Busan)

2010
Avellino Japan Co., LTD
(Tokyo, Osaka, Nagoya, Fukuoka, Sapporo)
Avellino Lab
Test Now Available in Over 50 Countries
**Clinical Trial:**
100% Sensitivity, Specificity

**CLIA Testing:**
100% Accuracy, Precision

Clinical Trial
734 corneal dystrophy subjects
(2,202 samples)
136 normal controls
(408 samples)
A Simple Solution to a Global Problem

Avellino Lab’s buccal swab test takes less than a minute to administer in the clinic using a buccal swab and requisition form provided by the company.
# Sample Stability

<table>
<thead>
<tr>
<th>Sample Storage Condition</th>
<th>Acceptable Collection to Receipt Time Frame</th>
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<tbody>
<tr>
<td>Room Temperature</td>
<td>up to 13 days</td>
</tr>
<tr>
<td>Refrigerated</td>
<td>up to 4 weeks</td>
</tr>
<tr>
<td>Frozen</td>
<td>up to 1 year</td>
</tr>
</tbody>
</table>
Complete Requisition Form
Peel & Place Label on Protective Tube

Peel Off and Place on side of SWAB protective tube: Verify sample ALU number on the SWAB tube and TRF
Test Results within 24 hours of receipt at Lab
Test Results via Secure Web Portal
DNA Test for Refractive Surgery Safety
Supply Package
for ten (10) In-Office Patient Tests

Contents Include:

- Ten (10) Patient Brochures
- Ten (10) Buccal Swabs
- Ten (10) Test Requisition Forms
- One (1) Clear Plastic Zip-top Envelope Courier
- One (1) Pre-Paid Courier Shipping Envelope
- One (1) Instructions for Use
# Getting Started

www.avellinolab.com/us  
www.avellinolabresources.com

<table>
<thead>
<tr>
<th>Category</th>
<th>Specific Action Required</th>
<th>Supporting Materials/Links</th>
<th>Resources/Contact</th>
</tr>
</thead>
</table>
| Supplies       | Contact us to receive initial shipment of supplies                                       | • 850.396.1741  
|                |                                                                                        | • info@avellinols.com                                                                     | Avellino Labs Clinic Resources Site |
| Consultation   | Email Campaign – Prior to Consultation                                                   | • Staff Scripts / Emails                                                                  | Resources tab     |
|                | The Procedure – Determine when samples will be collected (GWAD first recommended)      | • Test Procedure / Pre Simple Steps Instruction Card                                       | Training tab      |
|                | Optional – Patient Video                                                                 | • 3 Minute Patient Educational Video                                                      | Resources tab     |
|                | Email Campaign – Post Consultation                                                      | • Staff Scripts / Emails                                                                  | Resources tab     |
| Logistics      | Complete Test Requisition Forms (CLIA lab required)                                      | • Test Procedure / Instructions (CLIA lab required)                                        | Training tab      |
|                | Collect samples and bundle for timely shipment                                          | • Test Procedure / Pre Simple Steps Instruction Card                                       | Training tab      |
|                | Re-order Supplies                                                                       | • Re-order Forms                                                                          | Resources tab     |
| Training       | Scheduled Training for staff (ask us about a lunch and learn)                          | • Staff Training                                                                          | Training tab      |
|                | Independent Training – Training Videos for Review or New Staff                          | • Training Videos                                                                         | Training tab      |
|                | Independent Training – Test Requisition Form / Labeling Swabs / Collect Cells           | • Test Procedure / Pre Simple Steps Instruction Card                                       | Training tab      |
|                | Independent Training – How to Prepare to Patients                                       | • Staff Scripts / Emails                                                                  | Resources tab     |
|                | Independent Training – Increase Conversion rates with Pre & Post Email Campaigns        | • Staff Scripts / Emails                                                                  | Resources tab     |
| Marketing      | Marketing – Add Website Pages, Order Patient Brochures and other Clinic Marketing Materials | • Marketing                                                                              | Resources tab     |
|                | Public Relations – Differentiate your Clinic with a Press Release, Article, YouTube Video | • Public Relations                                                                        | Resources tab     |
|                | Incorporate DNA Test Into Referring OD Letter                                            | • Public Relations / OD Sample Letter                                                      | Resources tab     |
Staff Scripts

Avellino DNA Test for LASIK Safety

[Your CLINIC Name]

The procedure:
To make sure we are doing everything possible for the safest LASIK procedure outcome, we have incorporated a cutting-edge safety test into our screening process. We will swipe this wand ten times along each cheek to run the test. Your results will be available within a week.

Additional information about the test?
The Avellino DNA Test for LASIK Safety looks for genetic disorders (corneal dystrophies) that cause issues over time with eyesight. This condition impacts about 1 per 1000 people and if you have it, you are not a good candidate for LASIK as it can accelerate the condition’s development. You will also need to be extra careful about protecting your eyes from UV rays over time. The test is 100% accurate.

Additional concerns?
This is not something to be worried about. Many people live their entire lives with the condition and don’t even realize it.

LASIK is one of the safest medical procedures available and outcomes almost always exceed patient expectations. Advances in genetic diagnostics are changing what is possible in terms of preventive and predictive medicine, enabling eye care professionals to screen otherwise good LASIK and refractive surgery candidates for previously undetectable conditions, and in the process genetic science is closing the gap between excellent and perfect.

Powered by Avellino, the DNA Safety Test for LASIK
Patient Education Made Simple

- Patient Education Brochures in multiple languages
- Waiting Room / Patient Consultation Video in multiple languages
- Website Banners

First Genetic Test for LASIK Safety

First and Only Genetic Test for LASIK Safety
Patient Video (only 3 minutes)
Marketing Resources

http://www.avellinolabresources.com

Paula Hook
Director of Marketing

Paula.hook@avellinolab.com
Direct: 972-517-1784
Marketing Made Easy

Marketing & Public Relations Resources
- Patient Brochures
- Website Content
- Staff Scripts
- Press Release Sample
- Images
- Logos

LASIK is an amazing technology that has a medical breakthrough, providing so much value to so many people with such little risk. Presurgical testing for corneal dystrophy can whittle that risk even further.

CONGRATULATIONS!
Marketing Resources

RESOURCES

Staff Scripts / Email Campaign Samples
- Staff Scripts
- Email Campaign

Order/Reorder Forms
- Supply Reorder
- Brochure Order
- Custom Patient Requisition Order

Public Relations
- Sample Press Releases
- Customizable Press Release
- Sample Promo Videos
- Optometric Publications

Marketing
- Patient Brochures
- Website Content
- Logos for website or print
- Images for website or print
As Avellino's DNA Test for LASIK Safety helps to differentiate you from your competition, we encourage you to share information about it on your website or on a page that details your clinic's safety procedures.

A DNA Test to Increase LASIK Safety

We want to ensure you are given the best and safest care possible, so in addition to running our standard tests, we also include an Avellino DNA test for LASIK Safety, the latest advancement in genetic testing for eye care. The test provides Safe, Painless, and Accurate protection of your vision. The test is no charge to you.

While no other LASIK clinic in the area presently offers this test, we are committed to working at the cutting edge of safety and personalized medicine, so we are screening our patients for additional genetic traits that are contraindicative to LASIK procedures. While these traits are highly unusual, we want to be absolutely sure you are a good candidate before going forward.

How does it work?
This testing process is very simple. The clinic uses a buccal swab on the inside of both cheeks, sends the swab to the test lab, and doctor then receives the test results within 24 hours.

Do you need Avellino DNA Testing?
If you are considering refractive surgery you should definitely be tested. The Avellino DNA Test for LASIK Safety will eliminate the risk of developing GCD after refractive surgery.

How reliable is the test?
The Avellino DNA Test has been proven to be 100% accurate in clinical trials. If tested, you can have high confidence before you have surgery that you are not at risk of post-LASIK GCD complications.

What is Granular Corneal Dystrophy?
According to Avellino test results, the GCD2 genetic mutation is present in approximately 1 out of every 1,100 people. Such predictive and preventative capabilities now provide personalized medical information with powerful options for improving the quality of an individual's health and life decisions. Avellino Labs is the first and only lab in the world performing commercial genetic testing for LASIK Safety. GCD (type 1 and 2) are caused by a genetic mutation. When the cornea is damaged (by LASIK or UV light sunburn), the normal production of wound healing protein to the cornea is triggered. People with the genetic mutation will have surplus protein production which builds up over time and causes gray-white spots on the cornea. The disease usually develops slowly. However, it varies according to the individual patient's age, genetics and environmental exposures.

Contact Us to Learn More
Please do not hesitate to email or call us if you would like to learn more about this test or have any other questions about your upcoming procedure.

Powered by Avellino, the DNA Safety Test for LASIK
Avellino Tests Performed

540,694

(July 13, 2016)

Patients Protected

663
Avellino Labs
Genetic Diagnostics for the Ophthalmic Industry

For more information:
Avellino Lab USA, Inc.
Website: www.avellinolab.com
(650) 396-3741
infousa@avellinolab.com
THANK YOU
January 20-23, 2016
Avellino Labs
at
WEF Meeting
Davos, Switzerland

https://www.youtube.com/watch?v=jGutrH5gUEo&feature=youtu.be