



# EyeMatters

A PRACTICE BUILDING RESOURCE



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## Bausch & Lomb Vision Care

### Recognizing the Clinical Realities of Corneal Staining

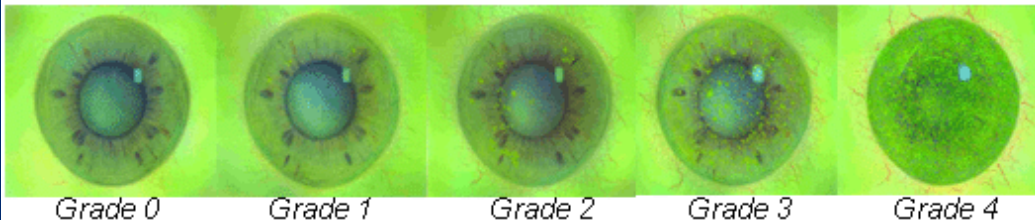
#### Evaluating Corneal Staining Data

In our previous edition of **Eye Matters**, we discussed how a certain level of low-grade corneal staining is quite common. Because of this, eye care practitioners must be prepared to differentiate "normal, expected" staining from "abnormal, needing management" staining.

So how do you grade the extent and severity of corneal staining and interpret its significance? The most commonly used grading scheme is some version of this global 4-step scale (Image 1):

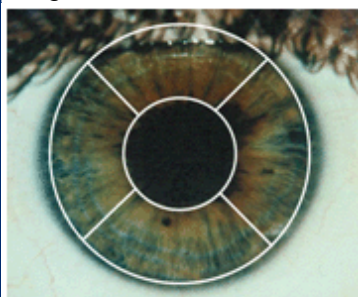
- Grade 0, of course, is no staining and ideal.
- Grade 1, trace staining, is not considered to be clinically significant and so requires no treatment.
- Grade 2 represents mild staining. Although also not considered to be clinically significant, it is noteworthy and should be monitored over time.
- Grade 3 is moderate staining and would imply that therapeutic intervention is appropriate.
- Grade 4 is severe, requiring treatment.

Image 1 - Global 4-step scale



More detailed evaluation of staining involves an assessment of the type, depth, and extent of staining. It can be even further detailed by grading those dimensions individually in each of five corneal zones (Image 2). When the corneal surface is considered in five zones, staining is described by a "sector staining score" or by some type of a cumulative staining score made up of 4-step graded findings from each zone.

Image 2



Five Corneal Zones

Once you are familiar with the grading scales, standards for acceptable levels of staining and definitions of clinical significance, you will be aware of presentations that sometimes confuse basic principles of corneal staining.

For instance, when staining data is presented on a magnified, partial scale, minor differences are over-emphasized (Chart 1). The same results presented on the FULL 4-step scale now clearly show how the modified scaling had visually suggested significance where there was none, since all of the findings are below Grade 1 – less than "trace" amounts (Chart 2).



#### Bausch & Lomb ReNu MultiPlus® multi-purpose solution

Rely on your own professional experience as validation that ReNu MultiPlus multi-purpose solution is a safe and highly effective product. Look at your patients' eyes, and see for yourself why it has had such a long history of patient and practitioner satisfaction. By understanding what is truly significant, you will be able to provide the best possible care for your patients.

See Comparative  
Corneal Staining Data

Click here to see Dr. Christopher Snyder's video presentation on corneal staining and additional references.

Chart 1

Corneal Staining Data on Partial Scale

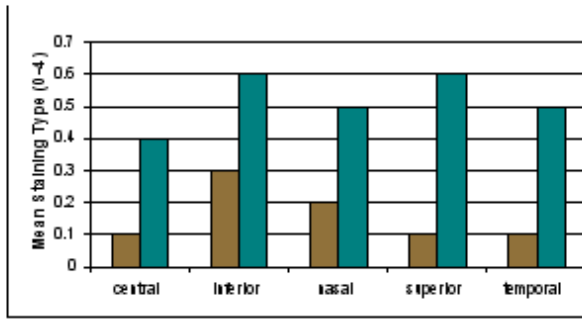
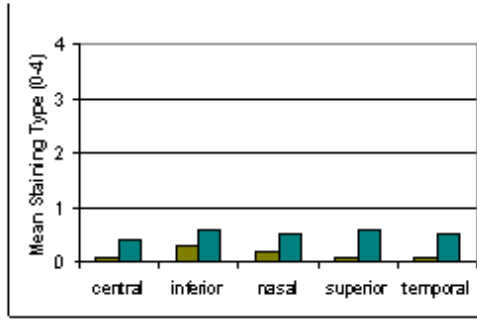


Chart 2

Same Data on Full Scale



Another perception “spin” occurs when an impression of significant difference is created by simply stating that fewer incidents of staining occurred with lens care product A than with lens care product B. While that may be a true statement, without statistical support it has no real practical significance.

Another way to characterize staining is simply as absent or present, without grading. For instance, one spot of staining in each of three zones of the cornea could be noted as an incidence in three out of five zones and reported as 60% staining. However, few clinicians would agree that three spots are equivalent to 60% staining.

We would encourage all practitioners to be good interpreters of staining data. Remember that the data can be defined, organized, analyzed, and presented in ways to spin impressions of significance that may or may not meet YOUR criteria for clinical significance.

In our next edition of [Eye Matters](#), we will look at corneal staining data for ReNu MultiPlus® multi-purpose solution – the number-one selling multi-purpose solution.

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Primary reference: Snyder C. *Solution interaction with ocular surface: The significance in making the grade. Clin. & Refractive Optometry 2005*

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