Nomograms in Laser Vision Correction

Nomograms in laser vision correction are basically mathematical equations that are typically displayed as look-up tables. Variables about subjective refraction protocol, surgical technique, laser room environment, laser device and other factors can be taken into account to determine the correct numbers to program into the laser.

Nomograms are predicting tools. They are used to provide specific adjustments for future treatments on the patient’s eye based on calculations derived from results of previous treatments and thereby considering the factors mentioned above. The calculation itself is always done by comparing the laser setting and the achieved refraction.

Starter nomograms are not necessary as each ZEISS refractive laser has already an internal look-up table build into its software. The data in this table is derived from extensive clinical studies and will typically provide satisfactory clinical results. However, slight deviations between sites caused by the above mentioned variables may give slightly different results. These differences are what we wish to improve with this service.
ZEISS User Nomogram Service

Benefits - What can nomograms do?
Nomograms can optimize clinical results* which is directly related to reduced enhancement rates. Improvements of predictability in Laser Vision Correction as well as higher UDVA (uncorrected distance visual acuity) postoperatively cause an increase of patient satisfaction**.

A basic nomogram derived from your data can potentially increase accuracy but not scatter! In order to decrease scatter, a standardized workflow in pre- and postoperative assessment as well as in performing the surgery is needed.

Why derive my personal nomogram?
As nomograms are specific to the below mentioned factors, “borrowing” nomograms from colleagues, even when using the same laser model and the same laser settings, may negatively affect your patient outcomes.

Most significant clinic-dependant differences exist in:
- Subjective refraction protocol
- Surgeon (surgical technique)
- User specific settings of laser device
- Treatment options (with SMILE®, PRESBYOND®, LASIK, PRK,...)
- Type of ametropia (myopia/hyperopia/astigmatism), enhancements
- Location (environmental)

Considering those factors will have the biggest impact on your personal nomogram. Other factors, like optical zone, gender, right eye / left eye, etc. typically have a negligible impact.

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ZEISS User Nomogram Service

How ZEISS supports you with the User Nomogram Service

Step 1: Counselling
- Training on requirements and the data needed
- Instructions for easy data collection

Step 2: Data Collection
- ZEISS provides dedicated Excel file
- At least 60 eyes

Step 3: Data Analysis
- Check for consistency
- Analysis of provided data
- Calculation of nomogram

Step 4: Analysis Debriefing*
- User receives report with outcomes and personalized nomogram
- Discussion on analysis results

Continuous Application Support
- Frequent application support visits
- Follow-up and further refinements

* The nomogram recommendation is given on the basis of your data provided and with no warranty as to its accuracy, applicability or for any particular purpose. You keep full responsibility for treatment decisions.