

IOL Calculation Worksheet for Post refractive Surgery Patients

Patient name _____ RIGHT EYE/LEFT EYE

DATA NEEDED

Pre Refr. Surg K K1 40.85 K2 42.39 Pre. Refr. Surg. Avg. K 41.62
 Pre Refr. Surg. Refraction -7.50 +1.75 x1.00 Spherical Equiv. -6.63
 Post Refr. Surg Refraction 4-6 Mo. -0.50 Spherical Equiv. -0.50
 Pre Refr. Surg. Spher. Equiv. -0.50 - Post Refr. Surg Pher. Equiv. -6.63 = 6.13 Surgical
 Refractive Change
 Central K on current post refr. surg. Topography 36.59
 Post Refr. Surg. Eff. Corneal Power (Eyesys Holliday Summary, 3mm average on other
 topography units) 36.75
 Manual Keratometry Post Refr. Surg. K1 38.00 K2 37.37 Post Refr. Surg. Avg. K 37.68
 Axial Length IOL Master/ A-Scan 27.30

CALCULATION METHODS

Clinical History Method (myopic RK, PRK, Lasik)

Pre Refr. Surg. Avg. K 41.62 - Surgical refractive change 6.13 = 35.49 (Corrected K).
 To obtain corrected IOL power use Corrected K calculated as above and Axial Length from A
 scan/ IOL Master in IOL Formula of choice

Feiz- Mannus (myopic RK, PRK, Lasik)

Run IOL Formula of choice with Pre Refr. Surg. K1 40.85 and K2 42.39 and Axial Length
 from A scan/IOL Master 27.30
 Pick desired IOL Power 13.00 (with predicted post op refr. of -0.82)
 Calculate - Above desired IOL power 13.00 + (Surgical refractive change 6.13 divided by
 $0.7 = 8.75$) = 21.75 Corrected IOL Power

Modified CVK (Computerized Videokeratography) (RK, myopic or hyperopic PRK/Lasik)

RK - use Post Refr. Surg. Eff. Corneal Power (EyeSys), 3mm average on other topography units

Lasik/PRK - Myopic Refractive Surg. Calculate 15% of Surgical Refractive Change =

6.13 Surgical Refractive Change x .15 = .92 K reduction amount
 Reduce Eff. Corneal Power/3mm average 36.75 by K reduction amount .92 =
35.83 Corrected K

Lasik/PRK - Hyperopic Refractive Surg. Adjust Eff. Corneal Power (Eyesys) or Zeiss Atlas Sim
 K as listed. Amount hyperpic correction Eff. Corneal Power Atlas Sim K

+1	-0.12	0.05
+2	0.04	0.48
+3	0.21	0.91
+4	0.37	1.34
+5	0.53	1.77

Calculate IOL using desired formula with corrected K and Axial length per IOL Master/Ascan

Modified Maloney

Place cursor of topography machine on direct center of corneal image = 36.59 Central Power
 Central Power 36.59 x 1.11 - 6.10 = 34.52 Corrected K
 Use corrected K and Axial length from IOL Master/A scan with desired formula to calculate IOL

Predicted
 Refr. for
19.00
19.00 = -0.20

19.25 = -0.88

19.00 = -0.48

19.00 = -0.61

approx.
 -0.5 to 0.75
 refraction
19.50 = -0.5

21.75 = -0.82

19.50 = -0.1

20.50 = -0.5

Aramberri Double K method (RK, myopic/hyperopic PRK, Lasik)

Use SRK-T formula with Post refr. surg. K 37.68. Select IOL Power 17.50 (with estimated post op refraction of -0.85) Use table below to obtain power adjustment for final IOL selection 19.50 (this table assumes a Pre Refr. Surg. K of 43D and use of an Alcon SA60 AT)

19.00 = 0.47

19.50 = 0.81

NOMOGRAM FOR EYES WITH MYOPIC REFRACTIVE SURGERY AND SRK -T FORMULA

Use this nomogram to ADD TO the selected IOL power to obtain the final IOL selection

Myopic Refr.	Axial length					
Surg. Correction	20	22	24	26	28	30
-2	0.7	0.7	0.7	0.6	0.5	0.3
-3	1.0	1.0	1.1	1.0	0.8	0.6
-4	1.3	1.4	1.4	1.3	1.1	0.8
-5	1.7	1.7	1.8	1.6	1.4	1.1
-6	2.0	2.0	2.1	2.0	1.7	1.4
<u>-7</u>	2.3	2.4	2.5	2.3	<u>2.0</u>	1.7
-8	2.6	2.7	2.8	2.6	2.3	2.0
-9	2.9	3.0	3.2	3.0	2.7	2.3
-10	3.2	3.3	3.5	3.3	3.0	2.6

NOMOGRAM FOR EYES WITH HYPEROPIC REFRACTIVE SURGERY AND SRK-T FORMULA

Use this nomogram to SUBTRACT FROM the selected IOL power to obtain the final IOL selection

Hyperopic refr.	Axial length					
Surg. Correction	20	22	24	26	28	30
+2	0.7	0.7	0.7	0.6	0.4	0.0
+3	1.1	1.1	1.1	0.9	0.5	0.0
+4	1.4	1.4	1.5	1.2	--	--
+5	1.8	1.8	1.9	1.7	--	--
+6	2.2	2.2	2.5	--	--	--

Manual Keratometry Adjustment Method (Myopic Lasik)

Post. Refr. Surg. Manual Avg. K 37.68, subtract 1 diopter = adjusted K 36.68
Use adjusted K, Binkhorst formula, and target refraction of -0.75 to -1.00 to calc. IOL power

19.00 = -1.19

18.50 = 0.80

No History Method (myopic lasik)

This method uses the Shammas post-lasik formula. It requires no pre refr. surg. data

Calculate Kc (corrected mean corneal power). Post refr. surg. ave. K 37.68 x 1.14 = 42.95 - 6.8 =

36.15 corrected mean corneal power (Kc)

Calculate estimated postop. ant. chamber depth (C-value in formula) using the A-constant of the specific IOL

0.5835 x Aconst 18.54 = 10.81 - 6.40 = 4.41 (value for C in formula)

L = axial length

R = desired refraction at the corneal plane

$$IOL = \frac{1336}{L \cdot 27.30 - 0.1(L \cdot 27.30 - 23) - (C \cdot 4.76 + 0.05)} - \frac{1}{Kc \cdot 36.15 + R - 0.75} - \frac{C \cdot 4.76 + 0.05}{1336}$$

19.00 = 0.39

20.50 = 0.71

0.43 - 4.81 = 22.06

60.56 - 40 = 20.56 @ 0.75

35.40

0.286 - 0.00360 = 0.2824

40

FINAL IOL POWER /LENS MODEL SELECTED

19.50