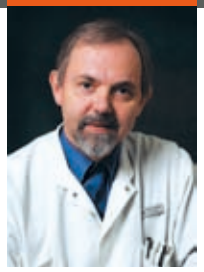





# New Glaucoma 5-Year Risk Estimator

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## Based on results from The Ocular Hypertension Treatment Study (OHTS) & The European Glaucoma Prevention Study (EGPS)

This is a new, updated method for estimating the 5-year risk that an individual with ocular hypertension will develop primary open angle glaucoma (POAG) based upon the two studies on Ocular Hypertension (OH), the OHTS and EGPS.

In March 2006 the first version of a Glaucoma Risk Calculator was presented in Oftalmolog (1).

This new risk estimator method (2) may be useful to clinicians and patients in deciding the frequency of tests and examinations and the potential benefit of starting treatment.

### DIRECTIONS FOR USE

The prediction models for POAG require the following:

- Age
- Vertical cup/disc ratio by contour
- IOP (3 measurements per eye measured using Goldmann applanation tonometry)
- Central corneal thickness using an ultrasound pachymeter (3 measurements per eye)
- Pattern standard deviation using any of the following (2 measurements per eye):
  a. Humphrey full threshold 30-2 or 24-2
  b. SITA standard 30-2 or 24-2
  c. Loss variance from Octopus 32 (dG2)

### METHODS

Two methods can be used to estimate the 5-year risk of developing (POAG): a continuous method based on actual data and a simplified point system.

#### 1. The Continuous Method:

The actual data for the patient age and eye measurements are entered.

#### 2. The Point System:

The range for the patient age and average of the multiple measurements is entered. The results in using the two methods will be similar but not identical. Examples for each method is listed below.

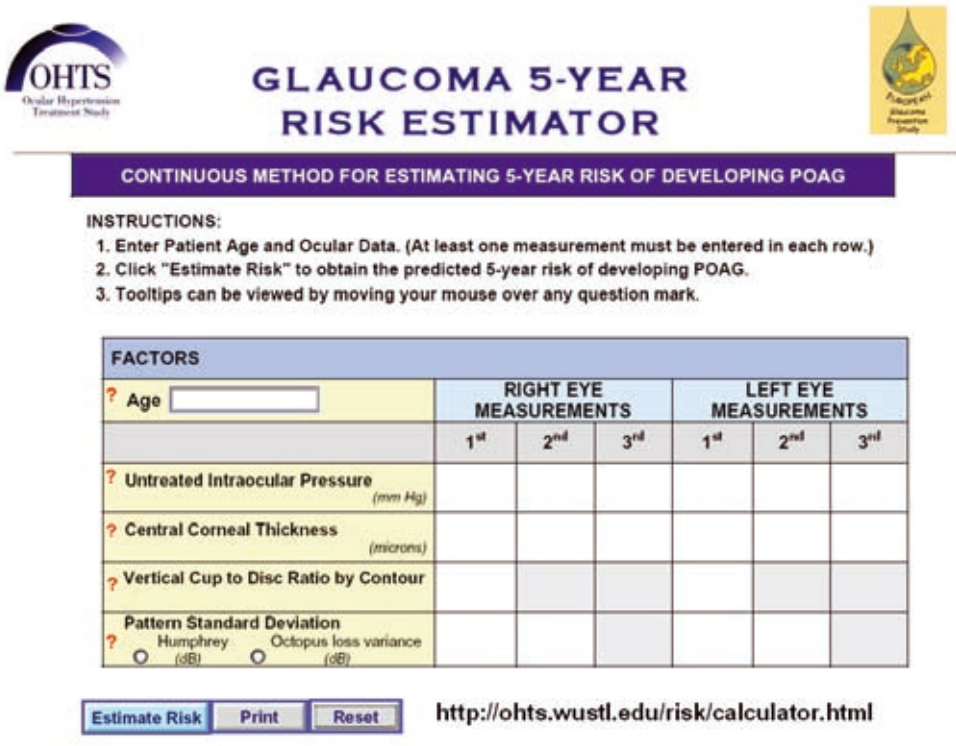


*Figure 1 The Continuous Method*

## Example: To calculate the 5-year risk of developing glaucoma for:

| PATIENT DATA | VARIABLES |
|---|---|
| 55 year old patient | Age = 55 |
| IOPs are right eye: 22, 23, 21 and left eye: 28, 24, 26 | Mean IOP = 24 mm Hg |
| CCTs are right eye: 530, 536, 530 and left eye: 550, 545, 549 | Mean CCT = 540 |
| VCDs are right eye: 0.40 and left eye: 0.40 | Mean VCD = 0.40 |
| PSDs (Humphrey) are right eye: 1.8, 2.6 and left eye: 2.2, 2.2 | Mean PSD = 2.2 |

AGE = Age at baseline
VCD-RATIO = Vertical cup/disc ratio by contour (1 measurement per eye)
IOP = Untreated intraocular pressure (mean of 3 measurements per eye)
CCT = Central corneal thickness using an ultrasound pachymeter (mean of 3 measurements per eye)
PSD = Pattern Standard Deviation using Humphrey 30-2 full threshold or SITA standard 30-2 or
Loss Variance (LV) from Octopus 32 (dG2)
(2 measurements per eye)

## The Continuous Method:

**FACTORS**

Age 55

| | RIGHT EYE MEASUREMENTS | | | LEFT EYE MEASUREMENTS | | |
|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 1st | 2nd | 3rd |
| Untreated Intraocular Pressure (mm Hg) | 22 | 23 | 21 | 28 | 24 | 26 |
| Central Corneal Thickness (microns) | 530 | 536 | 530 | 550 | 545 | 549 |
| Vertical Cup to Disc Ratio by Contour | 0.40 | | | 0.40 | | |
| Pattern Standard Deviation ◉ Humphrey (dB) ○ Octopus loss variance (dB) | 1.8 | 2.6 | | 2.2 | 2.2 | |

Close Window 16.9% The patient's estimated 5-year risk (%) of developing early glaucoma in at least one eye.

*Figure 2 The Continuous Method*

## 2. The Point System:

| FACTORS | Points for Factors 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Age (years) | <45 | 45 to < 55 | ☑ 55 to <65 | 65 to <75 | >75 |
| Intraocular Pressure (mm Hg) Mean (3 measurements per eye and average of 2 eyes) | <22 | 22 to <24 | ☑ 24 to <26 | 26 to <28 | >28 |
| Central Corneal Thickness (μ) Mean (3 measurements per eye and average of 2 eyes) | > 600 | 576-600 | 551-575 | ☑ 526-550 | <526 |
| Vertical Cup/Disc Ratio by Contour Mean (1 measurement per eye and average of 2 eyes) | <0.3 | 0.3 to <0.4 | ☑ 0.4 to <0.5 | 0.5 to <0.6 | ≥0.6 |
| Visual Field: Humphrey Pattern Standard Deviation (dB) Mean (2 measurements per eye and average of 2 eyes) - OR - Octopus Loss Variance Mean (2 measurements per eye and average of 2 eyes) | <1.8 / <3.24 | 1.8 to <2.0 / 3.24<4.0 | ☑ 2 to <2.4 / 4.0<5.76 | 2.4 to <2.8 / 5.76<7.84 | >2.8 / >7.84 |
| **Sum of Points and Estimated 5-Year Risk of Developing POAG** | | | | | |
| Sum of Points | 0-6 | 7-8 | 9-10 | 11-12 | >12 |
| Estimated 5-Year Risk of Developing POAG | ≤4.0% | 10% | 15% | 20% | ≥33% |

Total Points: 11 Estimated Risk: 20% The patient's estimated 5-year risk (%) of developing early glaucoma in at least one eye.

*Figure 3 The Point System*

The Risk Estimator is downloadable from: http://ohts.wustl.edu/risk

*Referencer: www.oftalmolog.com*


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