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International Council of Ophthalmology /  
International Federation of Ophthalmological Societies

## ICO International Clinical Guidelines

# Diabetic Retinopathy (Initial and Follow-up Evaluation)

**(Ratings:** A: Most important, B: Moderately important, C: Relevant but not critical  
**Strength of Evidence:** I: Strong, II: Substantial but lacks some of I, III: consensus of expert opinion in absence of evidence for I & II)

### Initial Exam History (Key elements)

- Duration of diabetes **(A:I)**
- Past glycemic control (hemoglobin A1c) **(A:I)**
- Medications **(A:III)**
- Systemic history (e.g., onset of puberty**(A:III)**, obesity**(A:III)**, renal disease**(A:II)**, systemic hypertension**(A:I)**, serum lipid levels**(A:II)**, pregnancy**(A:I)**)

### Initial Physical Exam (Key elements)

- Best-corrected visual acuity **(A:I)**
- Measurement of IOP **(A:III)**
- Gonioscopy when indicated (for neovascularization of the iris or increased IOP) **(A:III)**
- Slit-lamp biomicroscopy **(A:III)**
- Dilated funduscopy including stereoscopic examination of the posterior pole **(A:I)**
- Examination of the peripheral retina and vitreous, best performed with indirect ophthalmoscopy or with slit-lamp biomicroscopy, combined with a contact lens **(A:III)**

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## Diagnosis

- Classify both eyes as to category and severity of diabetic retinopathy, with presence/absence of CSME. **(A:III)** Each category has an inherent risk for progression.

## Follow-up History

- Visual symptoms **(A:III)**
- Systemic status (e.g., pregnancy, blood pressure, renal status) **(A:III)**
- Glycemic status (hemoglobin A1c) **(A:I)**

## Follow-up Physical Exam

- Visual acuity **(A:I)**
- Measurement of IOP **(A:III)**
- Slit-lamp biomicroscopy with iris examination **(A:II)**
- Gonioscopy (if neovascularization is suspected or present or if intraocular pressure is increased) **(A:II)**
- Stereo examination of the posterior pole with dilation of the pupils **(A:I)**
- Examination of the peripheral retina and vitreous when indicated **(A:II)**

## Ancillary Tests

- Fundus photography is seldom of value in cases of minimal diabetic retinopathy or when diabetic retinopathy is unchanged from the previous photographic appearance. **(A:III)**
- Fundus photography may be useful for documenting significant progression of disease and response to treatment. **(B:III)**
- Fluorescein angiography is used as a guide for treating CSME **(A:I)** and as a means of evaluating the cause(s) of unexplained decreased visual acuity. **(A:III)** Angiography can identify macular capillary nonperfusion **(A:II)** or macular edema (or both) as possible explanations for visual loss.
- Fluorescein angiography is not routinely indicated as part of the examination of patients with diabetes. **(A:III)**
- Fluorescein angiography is not needed to diagnose CSME or PDR, both of which are diagnosed by means of the clinical exam.

## Patient Education

- Discuss results or exam and implications. **(A:II)**
- Encourage patients with diabetes but without diabetic retinopathy to have annual dilated eye exams. **(A:II)**
- Inform patients that effective treatment for diabetic retinopathy depends on timely intervention, despite good vision and no ocular symptoms. **(A:II)**

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- Educate patients about the importance of maintaining near-normal glucose levels and near-normal blood pressure and lowering serum lipid levels. **(A:III)**
- Communicate with the attending physician, e.g., family physician, internist, or endocrinologist, regarding eye findings. **(A:III)**
- Provide patients whose conditions fail to respond to surgery and for whom treatment is unavailable with proper professional support and offer referral for counseling, rehabilitative, or social services as appropriate. **(A:III)**
- Refer patients with significant visual impairment to a provider experienced in vision rehabilitation who can equip the patient with appropriate aids. **(A:III)**

\* Adapted from the [American Academy of Ophthalmology Summary Benchmarks, November 2006 \(www.aao.org\)](http://www.aao.org)

(For more ICO International Clinical Guidelines, see [www.icoph.org/guide](http://www.icoph.org/guide))

### **Preface to the Guidelines:**

International Clinical Guidelines are prepared and distributed by the International Council of Ophthalmology on behalf of the International Federation of Ophthalmological Societies.

These Guidelines are to serve a supportive and educational role for ophthalmologists worldwide. These guidelines are intended to improve the quality of eye care for patients. They have been adapted in many cases from similar documents (Benchmarks of Care) created by the American Academy of Ophthalmology based on their Preferred Practice Patterns.

While it is tempting to equate these to Standards, it is impossible and inappropriate to do so. The multiple circumstances of geography, equipment availability, patient variation and practice settings preclude a single standard.

Guidelines on the other hand are a clear statement of expectations. These include comments of the preferred level of performance assuming conditions that allow the use of optimum equipment, pharmaceuticals and/or surgical circumstances.

Thus, a basic expectation is created and if the situation is optimum, the optimum facets of diagnosis, treatment and follow up may be employed. Excellent, appropriate and successful care can also be provided where optimum conditions do not exist.

Simply following the Guidelines does not guarantee a successful outcome. It is understood that, given the uniqueness of a patient and his or her particular circumstance, physician judgment must be employed. This can result in a modification in application of a guideline in individual situations.

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Medical experience has been relied upon in the preparation of these guidelines, and they are whenever possible, evidence-based. This means these Guidelines are based on the latest available scientific information. The ICO is committed to provide updates of these guidelines on a regular basis (approximately every two to three years).

(Also see the Introduction to the ICO International Clinical Guidelines at [www.icoph.org/guide/guideintro.html](http://www.icoph.org/guide/guideintro.html) and the list of other Guidelines at [www.icoph.org/guide/guidelist.html](http://www.icoph.org/guide/guidelist.html).)