MODULE 7.2
Color Fundus Photography

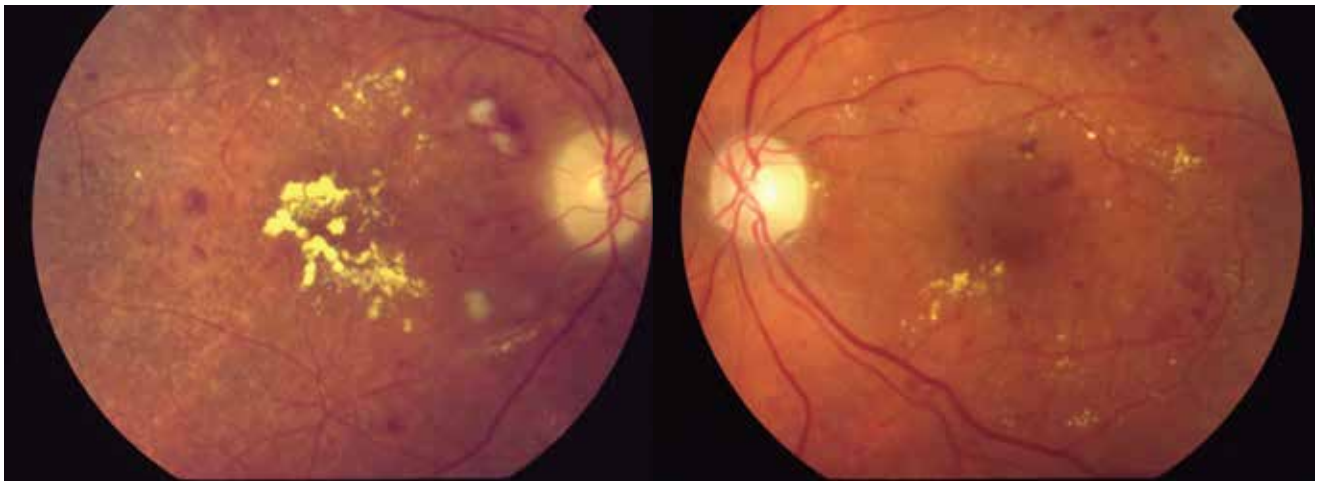
Color fundus photographs allow documentation and precise measurement of clinical observations. Presence, size, and location of hard exudates can be reviewed without the need to have the patient present. The thickness of the retina and the presence of cysts or subretinal fluid cannot be objectively measured with this technique.

The diagnosis of diabetic macular edema (DME) is based on clinical examination of the patient. Retinal thickening in the macula can be subjectively assessed at the slit-lamp biomicroscope, often with the aid of a contact lens or noncontact lens.[1] Biomicroscopic assessment is, however, dependent on the observer's experience and is relatively insensitive for the detection of mild retinal thickening that can be seen on optical coherence tomography (OCT; see Module 7.3).[1,2]

Follow-up of clinical observations is possible only by obtaining sequential images at every follow-up visit. Serial color stereoscopic fundus photography offers a means to document clinical observations. Analysis of this photography in the Early Treatment Diabetic Retinopathy Study showed close agreement in detection of retinopathy, and particularly clinically significant macular edema (CSME), between stereo fundus photography and clinical examination.[3] However, like biomicroscopy, this modality does not provide a reproducible measure of change in retinal volume.[1]

Color Fundus Photography

Color fundus photographs allow for documentation and precise measurements of clinical observations.
Presence, size, and location of hard exudates can be reviewed without the need of having the patient present. Also, follow-up of clinical observations is only possible by obtaining sequential images at every follow-up visit.



Thickness of the retina, presence of cysts, and subretinal fluid cannot be objectively measured with this technique.

Diabetic macular edema (DME): overview of etiology, diagnosis, and treatment options, Patricio G. Schlottmann, M.D.

References

1. Schlottman PG. Diabetic macular edema (DME): overview of etiology, diagnosis, and treatment options. Paper presented at: International DME Expert Summit; June 22, 2014; Paris, France.

2. Brown JC, Solomon SD, Bressler SB, Schachat AP, DiBernardo C, Bressler NM. Detection of diabetic foveal edema: contact lens biomicroscopy compared with optical coherence tomography. *Arch Ophthalmol.* 2004;122:330-335.

3. Kinyoun J, Barton F, Fisher M, Hubbard L, Aiello L, Ferris F 3rd. Detection of diabetic macular edema. Ophthalmoscopy versus photography--Early Treatment Diabetic Retinopathy Study Report Number 5. The ETDRS Research Group. *Ophthalmology.* 1989;96:746-750.