

DIABETIC EYE DISEASE

AN ILLUSTRATED GUIDE
TO DIAGNOSIS AND MANAGEMENT

ERNA E. KRITZINGER
AND
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DIABETIC EYE DISEASE

An Illustrated Guide to Diagnosis and Management

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Dedication

To our patients

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Introduction

The commonest cause of blindness in young and middle-aged people in the Western world is diabetes mellitus.

Although the mechanism underlying diabetic retinopathy is still not understood, the technology to reduce its progress exists, provided treatment is given at the appropriate time.

Doctors caring for patients with diabetes should be familiar with all aspects of diabetic retinopathy as well as the other ocular complications of diabetes. They also need a basic knowledge of the special techniques used in the diagnosis and treatment of diabetic eye disease (fundus fluorescein angiography, retinal photocoagulation, vitrectomy) and to understand how these procedures affect the diabetic patient in terms of limitation of activities and time off work. To ensure the most efficient use of ophthalmic services a clear plan of referral to ophthalmologists is required.

These are the concepts on which this guide is based, compiled by an ophthalmologist involved in the treatment of diabetic eye disease and a physician with a special interest in diabetes. In addition to doctors involved in the management of diabetic patients, this guide may be of value to ophthalmic opticians, medical students and nurses as a self-instruction manual.

1

Examination of the Eye

Testing visual acuity

Using the ophthalmoscope

The normal fundus

The abnormal fundus

Recording the findings

TESTING VISUAL ACUITY

Method

Test one eye at a time.

Test distant visual acuity.

Correct the refractive error if the visual acuity is worse than 6/6.

Test one eye at a time



Figure 1 Use an occluder in front of each eye in turn.

Test distant visual acuity

Use Snellen's test type charts which should be well illuminated and placed 6 metres away from the patient.

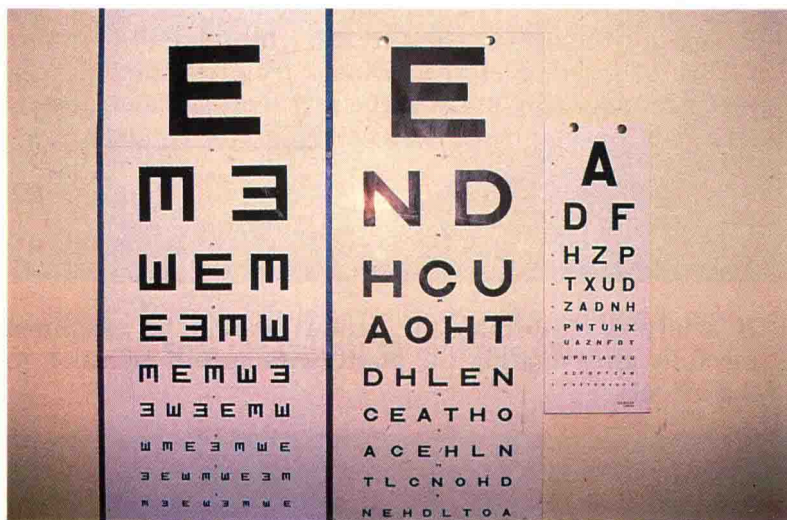


Figure 2 Different types of Snellen's charts available.

- (i) 'E'-chart for use by illiterate patients.
The patient holds a cardboard 'E' in a position to match that of the 'E' pointed to on the chart by the examiner.
- (ii) Standard 6 metre chart.
- (iii) 3 metre chart for use in examination rooms with limited space.

Correct the refractive error

If the visual acuity is worse than 6/6, correct the refractive error with the patient's *spectacles for distant vision*, if worn. It is important during the test to ensure that the patient does not confuse reading spectacles with those used for distant vision.

The *pinhole test* (opposite) can be used to differentiate between impaired vision due to refractive error and that due to pathology in the eye. The pinhole test overcomes refractive errors and improves the visual acuity. Provided the intervening structures are healthy it is a useful test of macular function. Worsening of the vision during the pinhole test suggests maculopathy in the diabetic patient and alerts to the presence of macular oedema, haemorrhage or exudates.

Action

1. If acuity is abnormal, the fundus should be examined carefully after dilating the pupil, with special attention to the macula.
2. Any deterioration in acuity accompanied by abnormalities of the macula itself or in the area close to it ———→ Referral to an ophthalmologist.
3. A two-line deterioration in acuity without any abnormalities on fundoscopy ———→ Referral to an ophthalmologist.