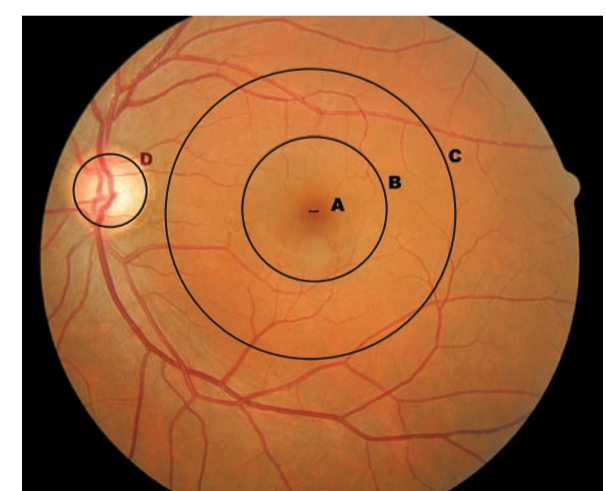
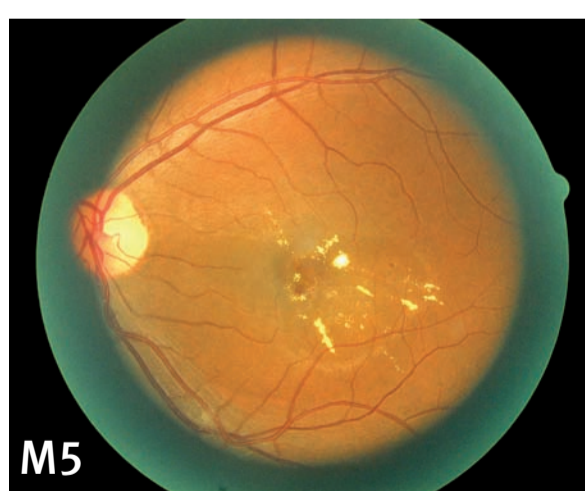
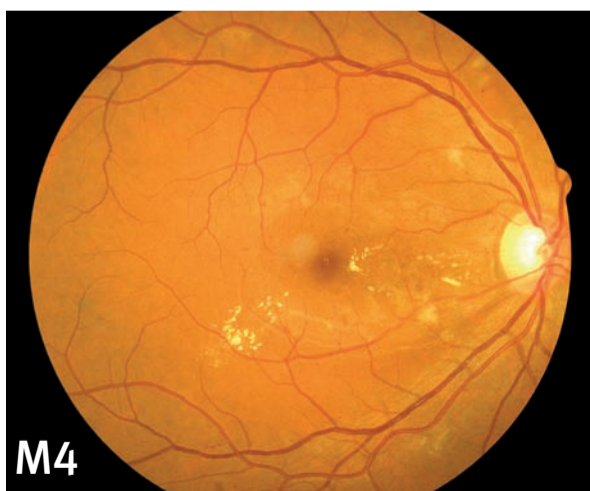
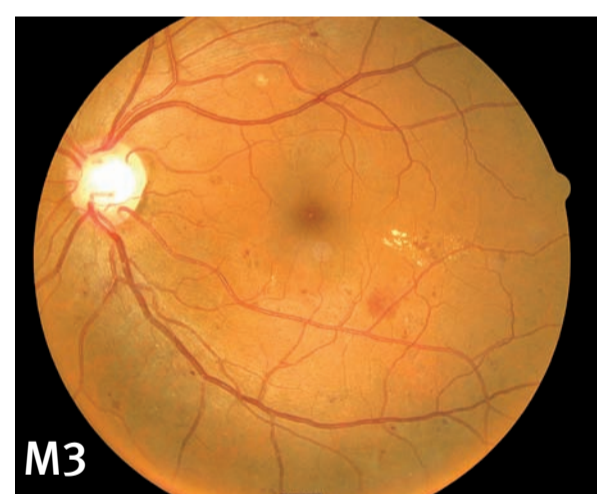
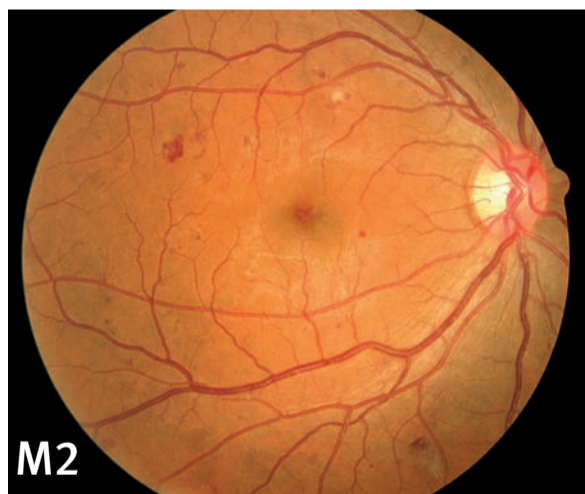
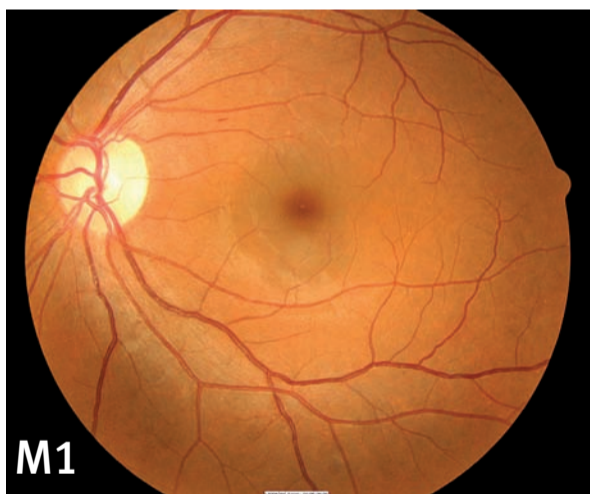


National Diabetes Retinal Screening Grading System and Referral Guidelines 2006

Chart 2: Diabetic Macular Disease

Grade	Clinical Signs	Outcome	Minimum Level of Grader (DHB Designated Ophthalmologist approved)
M0 No Macular Disease	No microaneurysms, haemorrhages or exudate within 2DD of the centre of the macula.	Biennial photoscreen.	Primary grader
M1 Minimal	Microaneurysms and haemorrhages within 2DD but outside 1 DD of the centre of the macula (No exudate).	Photoscreen 12 months unless Retinopathy requires referral.	Primary grader
M2 Mild	Microaneurysms or haemorrhages within 1DD but no exudates or retinal thickening and no reduction in vision.	Photoscreen 6–12 months or referral to an ophthalmologist.	Secondary grader
M3 Mild	Exudates (and/or retinal thickening) within 2DD of the centre of the macula but outside 1DD.	Ophthalmologist review in less than 6 months recommended.	Secondary grader
M4 Moderate	Exudates or retinal thickening within 1DD of the centre of the macula. Foveola not involved.	Referral to an ophthalmologist. Review in less than 4 weeks recommended.	Secondary grader
M5 Severe	Exudates or retinal thickening involving the Foveola. Reduced vision.	Urgent referral to an ophthalmologist. Review in less than one week recommended.	Secondary grader

- Recommendations for re-screening and referral are based on the grade in worst eye. Grades for peripheral retinopathy and for macular disease for both eyes should be recorded.
- Some methods of screening do not allow accurate assessment of retinal thickening, eg, photoscreening. Referral of M2 patients may be deferred if techniques such as biomicroscopy are part of the screening assessment. Visual Acuity may also be helpful.
- Chart images R3 and M2 are the same, which illustrates that the macular field is used in the grading of peripheral retinopathy, and of macular disease.
- For laser-treated retinopathy the grades are RT and/or MT. If retinopathy persists grade and refer as above, or no retinopathy undertake biennial screening.
- Non-DHB contracted providers undertaking screening are advised to refer all patients with retinopathy to a public ophthalmology service or a private ophthalmologist. They should also seek advice from their local DHB-designated Retinal Screening Ophthalmologist should they have queries regarding any matter pertaining to screening.



Macular Diagram

For clinical purposes the **approximate** dimensions of the macula region are the following:

- The perimeter of the macula is 2 optic disc diameters (DD) from the centre (the foveola) ie, a circle with a radius approximately 2 optic disc diameters (DD) in length (C). The diameter of the macula is therefore 4DD, ie, quite a large area, the perimeter of which is usually situated just within the temporal vascular arcades. DDs are used for measurement because of variation in optical magnification and ocular size.
- The radius of circle (B) is one DD, and it is quite large. 500 um is very approximately 1/3rd of a disc diameter, or slightly smaller.
- The fovea is approximately one disc diameter wide (D) centred on the foveola.
- The foveola is the centre of the macula (Line A = approximate diameter). It is displaced slightly downwards in relation to the Optic disc.