RANZCO: Patient Screening and Referral Pathway Guidelines for diabetic retinopathy (including diabetic maculopathy)

**Patient Presents**
- All persons with Type 2 diabetes mellitus should undergo screening for diabetic retinopathy at the time of diagnosis and then every two years if retinopathy is present.
- Screen all diabetics at diagnosis and screen children when they reach puberty.

**Clinical Assessment**
- a. Clinical History
- b. Clinical Modifiers: risk of progression of Diabetic Retinopathy
- c. Best Corrected Visual Acuity
- d. Digital Fundus Photography (Non-mydriatic acceptable)

**Grade Visual Acuity**
- a. 6/12 or worse (unexplained by other pathology): refer to Ophthalmologist
- b. Better than 6/9: continue to Grade Image Quality
- c. 6/9 to 6/12: ophthalmic opinion may be sought

**Grade Image Quality**
- a. Inadequate for accurate grading of Diabetic Retinopathy:
  - i. repeat imaging with dilated pupils.
  - ii. if still inadequate: referral to Ophthalmologist
- d. Adequate for grading of Diabetic Retinopathy

**Grade Diabetic Retinopathy**

- **No Diabetic Retinopathy:**
  - i. Clinical Modifiers’ Present: Repeat screening in 1 year
  - ii. Clinical Modifiers’ Absent: Repeat screening in 2 years

- **No Diabetic Maculopathy**
  - *Non-Centre Involving (Vision Threatening)*
    - Definition: MA, Hb, Hex, thickening within 2 disc diameters (but not within 500 microns) of the foveal centre.
    - Action: referral to Ophthalmologist within 12 weeks

- **Centre Involving (Vision Affecting)**
  - Definition: MA, Hb, Hex, thickening within 500 microns (½ disc diameter) of the foveal centre.
  - Action: referral to Ophthalmologist within 4 weeks

- **Mild NPDR**
  - Definition: MA only.
  - One year risk PDR: 1-5%
  - Action: repeat screening in 1 year
  - i. On detection of DR patient should be referred for a comprehensive assessment (which can be undertaken by an ophthalmologist) followed by appropriate management
  - ii. Referral to Ophthalmologist within 4 weeks

- **Moderate NPDR**
  - Definition: MA + Hb + VB (less than severe NPDR)
  - One year risk PDR 12-26%
  - Action:
    - i. Comprehensive Eye and Fundus Examination required
    - ii. Referral to Ophthalmologist within 12 weeks
    - iii. Monitoring of Retinopathy co-ordinated with Ophthalmologist

- **Severe NPDR**
  - Definition: 20 MA + Hb in each quadrant of fundus, VB in 2 quadrants, IRMA in 1 quadrant (4:2:1 rule). One year risk of PDR: 50%
  - Action: refer to Ophthalmologist recommended within 4 weeks

- **Proliferative Diabetic Retinopathy (PDR)**
  - Definition: NVD, NVE, Iris Neovascularisation, Vitreous or Pre-retinal Hemorrhage.
  - Action: refer to Ophthalmologist within 1 week

- **Sudden Severe Visual Loss**
  - Definition: Vitreous hemorrhage, Retinal Detachment, Neovascular Glaucoma
  - Action: refer to Ophthalmologist same day

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This chart should be read in conjunction with the accompanying document: Clinical Notes for Screening and Referral Pathway for Diabetic Retinopathy.

In New Zealand, a national screening service is in place, free for patients.

RANZCO recommends that patients should be referred on to the local service provider, where one is available. The RANZCO Diabetic Retinopathy Screening and Referral Pathway can be used as default where no screening service is available.

**Abbreviations:**
- DR – Diabetic Retinopathy
- HB – Haemoglobin
- Hex – Hard exudates
- IRMA – Intraretinal microvascular abnormality
- MA – Microaneurysms
- NPDR – Non-proliferative Diabetic Retinopathy
- NVD – Neovascularisation at disc
- NVE – Neovascularisation elsewhere
- PDR – Proliferative Diabetic Retinopathy
- VB – Venous beading

**Pregnancy**
- All women with Diabetes
  - • Who are planning for pregnancy should have a comprehensive eye assessment to exclude diabetic retinopathy. If retinopathy is present, Action: Routine referral to an ophthalmologist within 4 weeks
  - • Who become pregnant should be examined in the first trimester.
    - Action: Routine referral to an ophthalmologist within 4 weeks