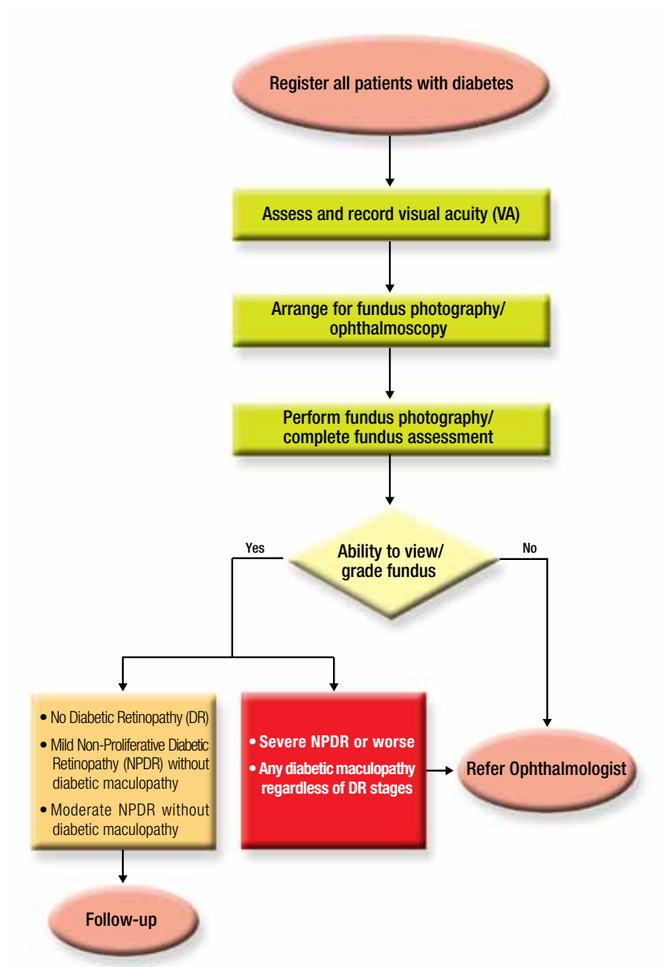
Algorithm for Screening of Diabetic Retinopathy to Prevent Blindness



RECOMMENDATION

- Screening for diabetic retinopathy should be done in all patients with diabetes mellitus.

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- First screening for diabetic retinopathy (DR) should be done at:
  - Adults type 1 diabetes mellitus (T1DM) - up to 3 years after diagnosis
  - Adults type 2 diabetes mellitus (T2DM) - at time of diagnosis
  - Pregnant women with
    - i. Pre-existing diabetes mellitus (DM) - prior to planned pregnancy
    - ii. Gestational DM (GDM) diagnosed in the first trimester - at the time of diagnosis. Otherwise not required.
  - Children T1DM
    - i. At age 9 years with 5 years of DM duration
    - ii. At age 11 years with 2 years of DM duration
  - Children T2DM - at time of diagnosis

International Clinical Diabetic Retinopathy and Diabetic Macula Oedema Disease Severity Scale

RETINOPATHY STAGE	FINDINGS ON OPHTHALMOSCOPY
No apparent retinopathy	No abnormalities
Mild non-proliferative DR (NPDR)	Microaneurysms only
Moderate NPDR	More than just microaneurysms but less than severe NPDR
Severe NPDR	Any of the following: 1. More than 20 intraretinal haemorrhages in each of 4 quadrants 2. Definite venous beading in 2 or more quadrants 3. Prominent intraretinal microvascular abnormalities in 1 or more quadrants AND no signs of proliferative retinopathy
Proliferative DR (PDR)	One of the following: 1. Neovascularisation 2. Vitreous/preretinal haemorrhage
Advanced Diabetic Eye Disease (ADED)	One of the following: 1. Formation of fibrovascular tissue proliferation 2. Traction retinal detachment due to formation of posterior vitreous detachment 3. Dragging of retinal/distortion 4. Rhegmatogenous retinal detachment

MACULA OEDEMA	FINDINGS ON OPHTHALMOSCOPY
Absent	No retinal thickening or hard exudates in posterior pole
Present	• Mild – some retinal thickening or hard exudates in posterior pole but distant from the macula • Moderate – retinal thickening or hard exudates approaching the centre of the macula but not involving the centre • Severe – retinal thickening or hard exudates involving the centre of the macula

Recommended Follow-up Schedule

STAGE OF RETINOPATHY	FOLLOW-UP
No DR	12 - 24 months
Mild NPDR without maculopathy	9 - 12 months
Moderate NPDR without maculopathy	6 months
Mild/Moderate NPDR with maculopathy	Refer to Ophthalmologist
Severe NPDR without maculopathy	
Any maculopathy	
Proliferative DR	Refer urgently to Ophthalmologist
Advanced Diabetic Eye Disease (ADED)	
No DR to Mild NPDR in Pregnant Women	Every 3 months
Moderate NPDR or Worse in Pregnant Women	Refer to Ophthalmologist

Criteria for Urgent Referral to Opthamologist

URGENCY OF REFERRAL	OCULAR FEATURES
Emergency (same day referral)	• Sudden severe visual loss • Symptoms or signs of acute retinal detachment
Within 1 week	• Presence of retinal new vessels • Preretinal haemorrhage • Vitreous haemorrhage • Rubeosis iridis
Within 4 weeks	• Unexplained drop in visual acuity • Any form of maculopathy • Severe NPDR • Worsening retinopathy

Target Level of Modifiable Risk Factors in Adults

GLYCEMIC CONTROL	TARGET LEVEL
1) Fasting Blood Glucose 2) Non-Fasting Blood Glucose 3) HbA_{1c}	4.4 - 6.1 mmol/L 4.4 - 8.0 mmol/L <6.5%
LIPID	**TARGET LEVEL**
1) Triglicerides 2) LDL-cholesterol 3) HDL-cholesterol	≤1.7 mmol/L ≤2.6 mmol/L ≥1.1 mmol/L
BODY MASS INDEX	<23 kg/m²
BLOOD PRESSURE	**TARGET LEVEL**
1) Normal Renal Function 2) Renal Impairment / micro- or macroalbuminuria	130/80 mmHg 125/75 mmHg