Systematic Eye examination (Figure 1)

- Patients with type 2 diabetes should have an initial dilated and proper eye examination shortly after the diagnosis of diabetes. The examination should check for visual acuity (with pin-hole if necessary), lens opacity and retinopathy\(^1\).

- Retinal photography is the evidenced-based best practice and it should be carried out by experienced personnel in a programme of systematic screening for diabetic retinopathy Note\(^2,3,4\).

- For examination frequency -
  - It should be repeated annually.
  - Less frequent examinations (every 2-3 years) may be considered following one or more normal eye examinations\(^5,6\).
  - For patient with background retinopathy, more frequent examinations should be done if the patient is at high risk of development of diabetic retinopathy\(^7\). (Table 1)

- When planning pregnancy, women with preexisting diabetes should have a comprehensive eye examination and should be counselled on the risk of development and/or progression of diabetic retinopathy. Women with diabetes who become pregnant should have a comprehensive eye examination in the first trimester and close follow-up throughout pregnancy and for one year postpartum. This guideline does not apply to women who develop gestational diabetes because such individuals are not at increased risk of diabetic retinopathy\(^8,9\).

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Note: Dilated direct ophthalmoscope by an experience doctor should only be used opportunistically and is not a substitute for systematic screening programme. Such opportunistic screening is an option only if systematic screening by retinal photography is not possible/available\(^12\).
Referral

- Promptly refer patients with any level of macular edema, severe non-proliferative diabetic retinopathy (NPDR), or any proliferative diabetic retinopathy (PDR) to an ophthalmologist who is knowledgeable and experienced in the management and treatment of diabetic retinopathy \(^{10,11}\). (Table 2)

Table 1. Risk factors for diabetic retinal disease

| (a) Poor glycaemic control (HbA1c > 8%) |
| (b) Poor blood pressure control |
| (c) Sudden changes in visual acuity |
| (d) Duration of diabetes > 10 years |
| (e) Presence of microalbuminuria and proteinuria |
| (f) Hyperlipidaemia |
| (g) Pregnancy |

Table 2. When to refer to an ophthalmologist

- Positive pregnancy test
- Proliferative or pre-proliferative retinopathy
- Macular edema
- Non-proliferative retinopathy that is severe, of new onset or progressive
- Unexplained visual impairment
Figure 1. Screening and Management of Diabetic Eye Disease

All people with Type 2 diabetes from diagnosis

Pregnant -> Refer to ophthalmologist

Non-pregnant

Systematic eye examination
- Check visual acuity
- Retinal photography

Poor visual acuity?

Yes

Retinopathy?

Yes

Follow-up:
- Repeat eye examination yearly
- Repeat 2 or 3 yearly after one or more normal eye examinations

Presence of the following conditions?
- Proliferative or pre-proliferative retinopathy
- Macular edema
- Non-proliferative retinopathy that is severe, of new onset or progressive
- Unexplained visual impairment

No

Follow-up:
Ongoing monitoring of retinopathy yearly. More frequent examination if at high risk of progression of diabetic retinopathy (Table 1).

Note: Dilated direct ophthalmoscope by an experienced doctor should only be used opportunistically and is not a substitute for systematic screening programme. Such opportunistic screening is an option only if systematic screening by retinal photography is not possible/available.
Reference: