

# Management Of Diabetic Retinopathy

糖尿病视网膜病的治疗

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Diabetes

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# C O N T E N T S

1	WHAT IS DIABETIC RETINOPATHY? . . . . .	1
2	NATURAL PROGRESSION OF DIABETIC RETINOPATHY . . . . .	1
3	PREVENTION OF DIABETIC RETINOPATHY . . . . .	2
4	DETECTION AND SCREENING FOR DIABETIC RETINOPATHY . . . . .	3
5	TREATMENT OF DIABETIC RETINOPATHY . . . . .	3
6	CONCLUSION . . . . .	3

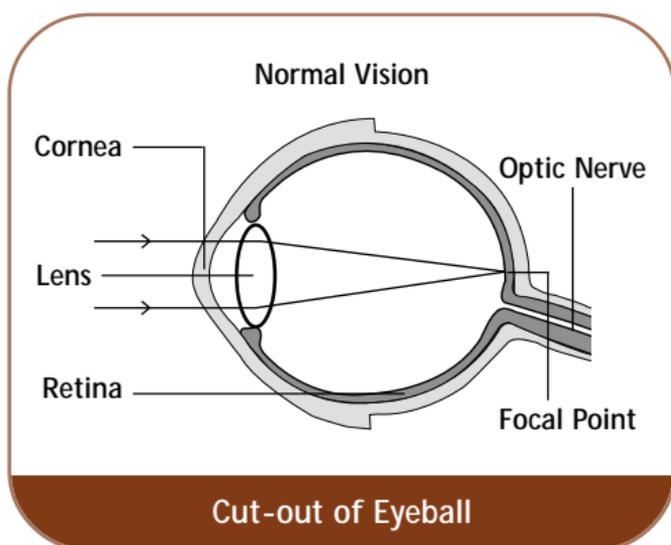
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This Patient Education Booklet is based on the Clinical Practice Guidelines on the Management of Diabetic Retinopathy. It has been written primarily for people with diabetes, their family members, and their caregivers. It is hoped that they will then be able to use this booklet as a basis to discuss with their doctors the treatment options available to them.

Clinical Practice Guidelines are guidelines to help doctors and patients make appropriate choices about the patient's illness, based on the best scientific evidence currently available. The guidelines do not replace the judgement of the doctor. It is important to remember that each person is different, and the Clinical Practice Guidelines may not always apply to everyone.

# 1 WHAT IS DIABETIC RETINOPATHY?

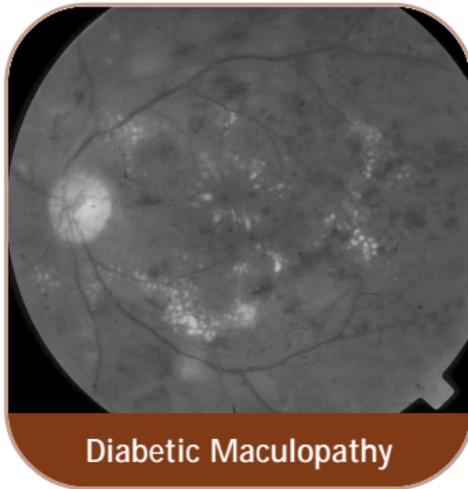
Diabetic retinopathy, the leading cause of blindness in the developed countries, is a complication of diabetes. It occurs when diabetes damages the tiny blood vessels inside the retina, the light sensitive area at the back of the eye.



## 2 NATURAL PROGRESSION OF DIABETIC RETINOPATHY

Most patients with diabetes mellitus ultimately develop characteristic abnormal changes of the blood vessels in their retinas.

In its early, non-proliferative stage, the damaged blood vessels leak fluid and fat onto the retina. If this occurs in the central part of the retina, **macular oedema** develops. It is the leading cause of blindness in adult-onset diabetes patients.



Later, there is narrowing of the blood vessels which restricts blood flow to the retina. This leads to abnormal growth of blood vessels in the retina (proliferative stage), resulting in bleeding into the clear jelly in the centre of the eyeball and growth of abnormal fibrous tissues in the eye. The retina becomes separated from its attachment to the eyeball. Ultimately, glaucoma (increased pressure in the eyeball, due to blockages in the fluid drainage system caused by the abnormal growth of new blood vessels) can develop.

### 3 PREVENTION OF DIABETIC RETINOPATHY

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People with diabetes types 1 and 2 are at risk. The longer a person has diabetes, the higher the risk of developing diabetic retinopathy. Up to 21% of people with type 2 diabetes has retinopathy at the time of diagnosis of diabetes. Poor control of blood sugar levels, high blood pressure and cigarette smoking are risk factors. Good control of diabetes reduces the risk of getting diabetic retinopathy and blindness.

## 4 DETECTION AND SCREENING OF DIABETIC RETINOPATHY

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Diabetic retinopathy often has no early warning signs. Therefore, life-long checking is necessary. This is done by fundal examination, where the retina and the inside of the eye is checked using specialised medical instruments.

Diabetic patients should have their fundi checked regularly by their doctor or have fundal photography done.

## 5 TREATMENT OF DIABETIC RETINOPATHY

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To be examined by a specialist eye doctor early in the course of the disease is particularly important for patients with type 2 diabetes and severe non-proliferative retinopathy. It can be treated with laser surgery to seal off leaking blood vessels and destroy new growth.

Despite laser surgery, some cases with advanced disease may not respond to treatment. In these patients, vitreous surgery may be required.

## 6 CONCLUSION

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People who fail to respond to treatment, or when no further treatment is possible, would be referred to various social support services for counselling and rehabilitation e.g. the Singapore Association of the Visually Handicapped.

People with diabetes should understand that:

1. Surgery/laser is effective in reducing, but not removing, the risk of loss of vision due to diabetic retinopathy. Diabetic retinopathy is a chronic condition that is often progressive. Regular follow-up is essential to detect possible worsening retinopathy and to give appropriate treatment.
2. Uncontrolled diabetes increases the risk of retinopathy and severe vision loss.
3. Diabetes is a multi-system disease and regular care by your doctor is essential.

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