Do You Need an Appointment with an Ophthalmologist?

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### Introduction

Daily life in Hong Kong, a metropolitan city with information overflow, involves highly demanding visual tasks in work, study and entertainment. There are several prevalent eye diseases that may be present without the patient recognizing any problem. These diseases, however, can cause severe visual loss when advanced or complicated. Early detection and treatment of asymptomatic eye disease can preserve visual function and prevent blindness.  

"Silent" ocular diseases

**Glaucoma** is the leading cause of registered blindness in Hong Kong (23%). Intraocular pressure above 21 mmHg may cause optic nerve damage in susceptible individuals. However, a significant proportion of patients with glaucomatous optic neuropathy and visual field loss were found to have intraocular pressure of 21 mmHg or lower. Chronic glaucoma patients usually have slowly progressive peripheral visual field loss that is difficult to be noticed by patient. Only when irreversible optic nerve damage is over 90% will central vision be affected and the patient alerted. Important risk factors for glaucoma include old age, family history of glaucoma, elevated intraocular pressure, high myopia, prolonged use of steroid.

**Diabetic retinopathy** causes visual loss by vitreous haemorrhage, macular oedema and tractional retinal detachment. Most blinding diabetic retinopathy goes through slowly progressive stages of retinopathy when there is no visual symptom but only ophthalmologic evidence of retinal ischaemia, including retinal microaneurysm, retinal exudates, retinal haemorrhages and retinal neovascularisation. Laser procedure, like panretinal photocoagulation, is effective in selected cases to prevent progression to binding complications of diabetic retinopathy.

**Age-related macular degeneration** (AMD) is the leading cause of irreversible legal blindness among Caucasian Americans in U.S.A.. The incident and progression of AMD increase significantly with age. AMD is usually asymptomatic in early stages, although eyes at high risk of developing choroidal neovascularisation have identifiable ophthalmic features, such as large confluent soft retinal drusen.

**Peripheral retinal breaks and degeneration** are present in 6-8% of adult population. They may be asymptomatic or present as floaters. They can be complicated by retinal detachment, a serious sight-threatening condition requiring a major ocular surgery. Retinal breaks and retinal detachment are more likely to occur in high myopic eyes (-6 dioptre or more). Retinal laser barrier procedure is safe and effective in minimising the risk of this complication.

Specific findings in routine comprehensive eye evaluation may be the first sign to suggest hypertension, diabetes mellitus, AIDS, collagen vascular disease, malignant disease...

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### Comprehensive adult medical eye evaluation

The purpose of a comprehensive adult medical eye evaluation serves to detect and diagnose vision-, health-, or life-threatening disease, and to initiate a management plan as necessary.

A comprehensive eye evaluation in adult includes ophthalmic history taking, visual acuity assessment, pupil reactions, ocular motility and alignment, external examination of eyelids and orbit, visual field by confrontation, slit-lamp biomicroscopy to examine cornea and anterior segment, intraocular pressure measurement, indirect ophthalmoscopy to examine retina and optic nerve through pharmacologically dilated pupils.

Further tests may be justified if indicated, e.g. colour vision testing, detailed visual field testing by perimetry machine, Amsler grid testing for macular function, gonioscopy to examine anterior chamber angle, fundus fluorescein angiography to record the blood flow and leakage in retina and choroid, syringing and probing of tear duct system...

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### Plan of periodic comprehensive eye evaluation

If no risk factor is identified, the recommendation by American Academy of Ophthalmology published in 2000 is:

- 1 examination during age 20-29
- 2 examinations during age 30-39
- once every 2-4 years during age 40-64
- once every 1-2 years at age of 65 and above
If **risk factor** of ocular disease present, the recommendation is:

- **Diabetes without retinopathy**
  
  | Onset after age 30 | once per year |
  | Onset before age 30 | 5 years after onset and yearly thereafter |
  | Pregnancy | prior to conception or early in first trimester, 3 monthly thereafter |

- **Risk factor for glaucoma (family history, high myopia...)**
  
  | Onset after age 30 | once per year |
  | Onset before age 30 | 5 years after onset and yearly thereafter |
  | Pregnancy | prior to conception or early in first trimester, 3 monthly thereafter |

If **ocular change or disease** is identified, management and follow up plan will be individualised.

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**Provider**

Ophthalmologist is the recommended personnel for comprehensive eye evaluation, based on their thorough knowledge of systemic and ocular disease, as well as skills and experience in medical decision making.

**References**