

THE COLLEGE OF OPTOMETRISTS



HIGHER QUALIFICATIONS INFORMATION PACK

Ocular Conditions - Diabetes

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The College of Optometrists

Certificate: Diabetes

Module: 1

Module Title: Diabetes Mellitus

Module Size: 10 credits

Assessment: Modules 1, 2 & 3 of the Certificate in Diabetes are assessed together.

Pre-requisites: None

Co-requisites: Modules 2 & 3

Aims and Objectives:

To give fundamental knowledge and understanding of the epidemiology, pathology, diagnosis and treatment of diabetes mellitus.

Learning Outcomes:

At the end of the module the student will be able to:

- Describe the pathological basis of diabetes mellitus
- Demonstrate full knowledge of the epidemiology and risk factors associated with diabetes
- Explain how the diagnosis is made and the current medical treatment modalities
- Appreciate the clinical differences between insulin and non-insulin dependent diabetes
- Demonstrate knowledge of the terms: macrovascular pathology, microvascular pathology, neuropathy and nephropathy and their relevance in systemic complications of diabetes.
- Describe the monitoring and treatment modalities of diabetes mellitus in primary and secondary care

Learning Strategies:

Distance learning including case analysis.

Outline Syllabus:

1. Definition
2. Diagnosis
 - a. Plasma glucose concentration
 - b. Urinalysis
 - c. Glucose tolerance tests
3. Classification
 - a) Insulin dependent diabetes mellitus (IDDM)
 - b) Non insulin dependent diabetes mellitus (NIDDM) - obese & non obese
 - c) Malnutritional related diabetes mellitus (MRDM)
 - d) Gestational Diabetes
 - e) Secondary diabetes - diabetes associated with other conditions or syndromes - pancreatic disease, hormonal, drug or chemical induced
 - f) Latent diabetes mellitus
4. Epidemiology
Prevalence and incidence of IDDM & NIDDM

5. Clinical characteristics
 - a) Insulin dependent diabetes mellitus (IDDM)
 - Onset
 - Signs and symptoms
 - Patient characteristics
 - Triggering factors
 - Genetic factors
 - Insulin therapies
 - Medical management
 - b) Non insulin dependent diabetes mellitus (NIDDM)
 - Onset
 - Signs and symptoms
 - Patient characteristics
 - Triggering factors
 - Medical Management
6. Systemic complications
 - a) Macrovascular
 - Coronary arteries
 - Cerebrovascular disease
 - Peripheral vascular disease
 - b) Microvascular
 - Nephropathy
 - Retinopathy
 - Skin disorders
 - c) Neuropathy
 - Diffuse neuropathies
 - Mononeuropathies
 - d) Nephropathy
 - Relationship to hypertension
 - Microalbuminuria
7. Monitoring and treatment of diabetes mellitus
 - a. Home Monitoring Tests - Urine & Blood tests
 - b. Insulin
 - c. Hypoglycaemic drugs
 - d. ACE inhibitors

Indicative Reading:

Diabetes Modules 1-12. Optometry Today Shared Care Series. Association of Optometrists
KRENTZ, A.J, Churchill's Pocketbook of Diabetes. Churchill Livingstone (Edinburgh) 2000.
KRENTZ, A.J. and BAILEY, C.J, Type 2 Diabetes in Practice. Royal Society of Medicine Press (London) 2001
GATLING, W, HILL, R. and KIRBY, M, Shared Care for Diabetes. Isis Medical Media (Oxford) 1997
National Institute for Clinical Excellence Diabetes Guidelines – <http://www.nice.org.uk>
RUDNIKA, A.R. Diabetic Eye Disease: Identification and Co-management. Butterworth-Heinemann (Oxford) 2000.
WILLIAMS, G. and PICKUP J.C, Handbook of Diabetes. Blackwell (Oxford) 1999.

The College of Optometrists

Certificate: Diabetes	Module: 2
Module Title: Ocular Complications of Diabetes and their Management	
Module Size: 10 credits	
Assessment: Modules 1, 2 & 3 of the Certificate in Diabetes are assessed together	
Pre-requisites: None	Co-requisites: Modules 1 & 3

Aims and Objectives:

To provide an in-depth understanding of the effects of diabetes mellitus upon the eye and its subsequent management

Learning Outcomes:

At the end of the module the student will be able to:

- Demonstrate a full and complete knowledge of all the ocular consequences of diabetes
- Relate the risk factors associated with diabetic retinopathy
- Recognise and use diabetic retinopathy grading systems
- Categorise diabetic retinopathy to facilitate the present and future management of the diabetic patient

Learning Strategies:

Distance learning including case analysis. Attendance at diabetic ophthalmic clinics.

Outline Syllabus:

1. Non retinal complications:

- a. Extraocular muscle palsies
- b. Orbit & lids
- c. Conjunctiva & lacrimal system
- d. Cornea
- e. Crystalline lens
- f. Uvea (iris, choroid)
- g. Vitreous
- h. Optic nerve

2. Diabetic Retinopathy (DR)

- a. Classifications
- b. Incidence
- c. Natural history
- d. Vascular abnormalities
- e. Oedema
- f. Hypoxia
- g. Axoplasmic Changes
- h. Vasoformative factors

3. Associated risk factors for DR

- a) Duration
- b) Age
- c) Metabolic control
- d) Blood pressure
- e) hypertension
- f) Proteinuria

4. Grading systems for DR

Indicative Reading:

Diabetes Modules 1-12. Optometry Today Shared Care Series. Association of Optometrists
Duanes Ophthalmology. Lippincott-Raven (CD ROM) 1997
HAMILTON, A.M.P. Management of Diabetic Retinopathy. BMP (London) 1996
MUCHNICK, B. (Ed). Clinical Medicine in Optometric Practice. Mosby (St. Louis) 1996
RUDNIKA, A.R. Diabetic Eye Disease: Identification and Co-management. Butterworth-
Heinemann (Oxford) 2000
TAYLOR, R., LOVELOCK, L. RYDER, B. A Practical Guide to Polaroid Retinal Photography.
Mosby-Wolfe (London) 1996

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Certificate: Diabetes

Module: 3

Module Title: Managing the diabetic patient in primary care

Module Size: 10 credits

Assessment: Modules 1, 2 & 3 of the Certificate in Diabetes are assessed together.

Pre-requisites: None

Co-requisites: Modules 1 & 2

Aims and Objectives:

To provide the knowledge to appreciate the total health care required by the diabetic patient and to be able to successfully fulfil the screening role of the optometrist.

Learning Outcomes:

At the end of the module the student will be able to:

- Explain the role of other professionals in the primary care of the patient with diabetes
- Aware of the clinical, ethical and legal requirements of screening programmes/shared care schemes
- Compare psychophysical and electrophysiological tests in the assessment of the visual function of the diabetic patient
- Relate the appropriate precautions to be used prior to pupil dilation, demonstrate the correct choice and use of pharmaceuticals and be knowledgeable regarding the action to be taken in the occurrence of dilation induced closed angle glaucoma
- Demonstrate proficiency in the use of headband slit lamp binocular indirect ophthalmoscopy
- Apply referral criteria regarding the diabetic fundus to facilitate correct decisions regarding the appropriate management of real life patients
- Relate the medical and surgical management of diabetic retinopathy

Learning Strategies:

Distance learning -
Tutorial and workshops - advanced investigative procedures
Attendance at diabetic ophthalmic clinics

Outline Syllabus:

1. Screening programmes/shared care schemes
2. Integration of optometry with other primary care providers- the role of:
 - a. The GP,
 - b. The practice nurse/diabetes specialist nurse,
 - c. The podiatrist
 - d. The dietician
3. Investigative procedures
 - a. Pupil dilation and precautions
 - b. Headband and slit lamp binocular indirect ophthalmoscopy
 - c. Fundus photography

4. Reasons for referral

- a. Diagnosis and grading of retinopathy
- b. Treatment
- c. Registration as partially sighted or blind

5. Medical and surgical management of DR

- a. Blood sugar control factors
- b. Fluorescein angiography
- c. Photocoagulation
- d. Local
- e. Panretinal
- f. Vitrectomy

Indicative Reading:

Diabetes Modules 1-12. Optometry Today Shared Care Series. Association of Optometrists BARTLETT and JAANUS (Eds) Clinical Ocular Pharmacology. (4th Edition). Butterworth-Heinemann. (Oxford) 2001.

HAMILTON, A.M.P. Management of Diabetic Retinopathy. BMJ (London) 1996.

MUCHNICK, B. (Ed) Clinical Medicine in Optometric Practice. Mosby (St. Louis) 1996.

RUDNIKA, A.R. Diabetic Eye Disease: Identification and Co-management. Butterworth-Heinemann (Oxford) 2000

Other useful resources:

Health Service documents on diabetes and shared care.

National Service Framework for diabetes Standards - <http://www.doh.gov.uk/nsf/diabetes/>

Diabetes UK (previously British Diabetic Association) documents - <http://www.diabetes.org.uk>

AOP documents involving Diabetes screening programmes and Shared Care available at:

<http://www.assoc-optometrists.org>

Royal College of Ophthalmologists publications – <http://www.rcophth.ac.uk>

Other useful links available from the College of Optometrists – <http://www.college-optometrists.org>

DIPLOMA IN OCULAR CONDITIONS – Certificate in Diabetes

Clinical Skills Log

Candidate name: _____

<i>Patient ID/Initials</i>	<i>Age</i>	<i>Date seen</i>	<i>Diagnosis</i>	<i>Action</i>	<i>Outcome</i>

Candidates may reproduce this sheet where necessary.

