



# EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE

## DIABETES

Effective March 1, 2015



# Diabetes Clinical Practice Guideline

The objective of this Clinical Practice Guideline (CPG) is to provide guidance to Doctors of Optometry on the assessment, diagnosis, co-management and referral of patients with Diabetes Mellitus and Diabetes Insipidus. It is based on the best available and most current optometric and medical clinical evidence and research. It is not intended to replace professional discretion and judgment; nor is it intended to be used as an all-encompassing clinical manual. Optometrists must base their diagnostic, co-management and referral regimens on the specific needs of the patient.

We wish to acknowledge the Canadian and American Associations of Optometry for their previously published CPG's used in the development of this guideline.

Diabetes Mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects of insulin secretion and/or increased cellular resistance to insulin. It is a chronic disease that can affect every organ in the body with long term systemic and ocular complications and ramifications. Type 1 diabetes accounts for approximately 10% of diabetes cases and is characterized by autoimmune pancreatic  $\beta$ -cell destruction that usually leads to absolute insulin deficiency. Type 2 diabetes accounts for approximately 90% of diabetes cases and is characterized by a mix of insulin resistance and insulin secretory defect ( $\beta$ -cell exhaustion). Gestational diabetes occurs in about 5 % of all pregnancies and can result in current and future complications to the fetus and mother.

Although, the majority of well-controlled diabetics only suffer from minor eye disorders, all diabetics face a higher risk of blindness than people without diabetes. In fact, diabetes is the leading cause of blindness in adults aged 20 – 74. Other ocular complications of diabetes may include:

- diabetic retinopathy
- macular edema
- glaucoma
- cataracts
- refractive changes
- permanent loss of visual acuity

The Alberta College of Optometrists recommends that all diabetics receive a dilated fundus examination and comprehensive eye examination on a regular basis as determined by your Doctor of Optometry.

Diabetes Insipidus (DI) refers to a completely separate and different condition than Diabetes Mellitus and is caused by totally unrelated mechanisms. Although, blurred vision may occur in rare circumstances, patients who present with possible signs and symptoms of DI (excessive thirst and excretion of urine) should be referred to their family physician, internist or endocrinologist for appropriate follow-up care.

## **Goals**

It is the goal of every optometrist to:

1. Identify those patients at risk for developing diabetes, minimize the damaging systemic and ocular effects of diabetes and preserve a patient's vision for as long as possible.
2. Collaborate and communicate with patients, legal guardians and/or other health care practitioners in order to:
  - Increase access to competent vision care services,
  - Maximize a patient's visual status and quality of life,
  - Improve patient compliance and outcomes,
  - Reduce the possibility of duplication of tests and services, and,
  - Provide vision care services in the most efficient and effective manner.

## **General Guidelines**

1. An annual, comprehensive eye and fundus examination with dilation is recommended for all diabetic patients with consideration given for more frequent assessments where appropriate.
2. As diabetes is a multi-organ, chronic condition, optometrists should communicate with other health care practitioners involved in the patients care as per Section 1.8 of the ACO Standards of Practice to ensure appropriate and optimal patient care.

## **Specific Initial Diagnosis Guideline**

In addition to those tests and procedures conducted during a comprehensive eye examination, the following specific history / procedures should be performed and documented when deemed necessary for patient's who are at risk or showing early signs of developing diabetes.

- Family and personal (ocular and general) health history.
- Relevant information and data from previous assessments.
- Type and onset of diabetes.
- Measure of blood sugar control (i.e. recent blood sugar and/or HbA1c readings).
- Current medications and compliance with treatment.
- Where applicable, name of physician monitoring patient's diabetic care to allow for appropriate co-management and communication.
- Extra-ocular muscle versions and pupil responses.
- Intra-ocular pressure.

- Assessment of the iris and anterior chamber angle for neovascularization and/or obstruction.
- Assessment of the retina and optic nerve (a dilated fundus exam is considered the current standard of care).
- Scanning laser imaging of macular area for patients who show signs and/or symptoms of possible macular edema (OCT or similar instrument).
- Retinal photography for future monitoring and/or referral purposes. (Retinal photography does not replace the need for a thorough dilated fundus exam).
- Any other supplemental testing as per the professional discretion of the optometrist appropriate to that specific patient.

### **Specific On-Going Management Guideline**

Depending on the severity and progression of diabetes, the following procedures should be performed and documented when deemed necessary on diabetic patients on a regular basis as part of their regular monitoring:

- Refraction (if clinically necessary) and visual acuities.
- Extra-ocular muscle versions & pupil responses.
- Intra-ocular pressure.
- Assessment of the iris and anterior chamber angle.
- Dilated fundus examination.
- Scanning laser imaging and retinal photography for those patients who show retinal changes from previous visits.
- Any other supplemental testing as per the professional discretion and judgment of the optometrist appropriate to that specific patient.

### **Summary**

Optometrists, as primary eye and health care providers, need to take an active role in the assessment, diagnosis, co-management, on-going care, treatment and referral of patients with diabetes. It should be the goal of the entire patient's health care team to continually educate patients (or legal guardians) on:

- Healthy lifestyle choices.
- Possible current and future complications of diabetes.
- The chronic nature of the disease and the need for constant, daily monitoring for the duration of the patient's life.
- The need for an annual, comprehensive eye examination with dilation.