



National  
Aboriginal  
Diabetes  
Association

# Diabetes and Retinopathy

2015

# Introduction

- ▶ You will learn about retinopathy, risk factors, treatment and personal management of diabetes and its complications
- ▶ This presentation is offered as educational information and shall not be used as a substitute for seeking medical advice. For more information, see your medical practitioner.

# Overview

- ▶ Diabetes occurs when the body can't produce or properly use a hormone called insulin, which results in high levels of blood sugar (glucose) in the body, and can damage organs, blood vessels and nerves.
  - In type 1 diabetes, the body produces little or no insulin, and the condition can be controlled by insulin injections
  - Type 2 diabetes occurs when the body produces inadequate amounts of insulin or cannot respond appropriately to it
  - Type 2 diabetes may be controlled by diet, medication and exercise
  - Diabetes can affect many parts of the body, and people with diabetes are at a high risk of developing vision problems, usually from a condition called diabetic retinopathy.

# Retinopathy

- ▶ In diabetic retinopathy, elevated sugar (glucose) levels in the blood cause blood vessels in the eye to swell and leak in the retina. New blood vessels may also grow causing further damage. Many people who have diabetes have some form of diabetic retinopathy.



# Diabetic retinopathy

- ▶ [https://www.youtube.com/watch?v=X17Q\\_RPUIYo](https://www.youtube.com/watch?v=X17Q_RPUIYo).

# Types of diabetic retinopathy

## Stage 1: Mild retinopathy

- ▶ At this stage, tiny blood vessels swell in the retina. Some early leakage may take place.

## Stage 2: Moderate retinopathy

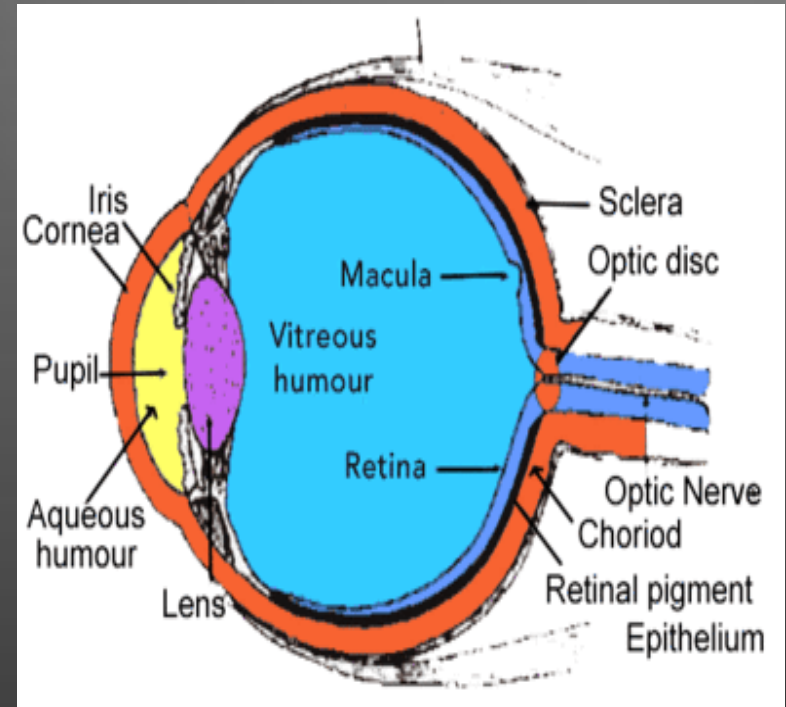
- ▶ Some of the blood vessels that feed the retina become blocked. Leaky blood vessels are more likely.

## Stage 3: Severe retinopathy

- ▶ More blood vessels are being blocked and other areas of the retina are not being nourished as a result.

## Stage 4: Advanced retinopathy

- ▶ The abnormal blood vessels have thin fragile walls that leak easily, causing blurred vision, severe vision loss or blindness.
- ▶ Vision loss can occur quickly at this stage and there is an increase vulnerability to developing other eye conditions such as a detached retina, which requires surgery, or glaucoma.
- ▶ Macular edema may also occur at any stage of diabetic retinopathy. In this associated condition, blood and fluid leaks into the macula, causing it to swell. Macular edema causes vision loss in the central retina, which allows us to see fine detail.





# Risk factors

- ▶ Everyone with diabetes is at risk of developing diabetic retinopathy, but there are certain factors that increase this risk. Some of the risk factors cannot be controlled.
- ▶ **Type of diabetes:**
  - People with type 1 diabetes are more likely to experience vision loss sooner than those with type 2 diabetes.
- ▶ **Ethnicity:**
  - Aboriginal Canadians are three to five times more likely than the general population to develop type 2 diabetes and are, therefore, at a much higher risk of developing vision problems related to diabetes.
- ▶ **High Blood Sugar (Glucose).** People with diabetes whose blood sugar is not at target are almost eight times more likely to develop diabetic retinopathy.  
People who have persistently high blood sugar are at risk for serious vision loss and blindness. Regular follow-ups with your health care team (eye doctor, family doctor, diabetes educator, nurse, dietitian, pharmacist, etc.) regarding control of your blood sugars, blood pressure and cholesterol play an essential role in helping to preserve vision.
- ▶ **Smoking.** When you have diabetes, smoking increases your risk of vision loss. It also increases blood pressure and blood sugar levels, making it harder to control diabetes.
- ▶ **High Blood Pressure.** If you have diabetes and you also have high blood pressure and/or high lipid (fat) levels, you're more likely to develop diabetic retinopathy.
- ▶ **High Cholesterol.** In addition to high blood pressure, high cholesterol has also been shown to be a risk factor for developing diabetic retinopathy

Uncontrollable risk factors

Controllable risk factors

# Symptoms

In the early stages of diabetic retinopathy, there are often no symptoms and vision is not affected.

Visit your eye doctor as soon as possible if you notice:

- dark spots in your visual field
- blurred, distorted or double vision
- large “floaters” – specks in the form of dots, circles, lines or cobwebs that move across your field of vision. They are most noticeable when looking at a white wall or clear sky. (These may or may not be a sign of diabetic retinopathy, but should be checked.)



# Diagnosis and Treatment

- ▶ Lost vision from diabetic retinopathy cannot be restored, but with early detection, treatment is often very successful and can prevent your vision from getting any worse.
- ▶ If you have any risk factors or are experiencing any of the common symptoms for diabetic retinopathy, see an eye doctor right away. Eye doctors can check your eyes and determine if you are at risk for diabetic retinopathy using diagnostic tests

# Prevention

- ▶ To protect against vision loss, everyone with diabetes should get a dilated eye exam once a year
- ▶ Keeping your blood sugar (glucose) at target
- ▶ Practical and emotional support provided by CNIB



# Questions and Answers



# Resources

- ▶ CNIB, [www.cnib.ca](http://www.cnib.ca).
- ▶ CDA, [www.diabetes.ca](http://www.diabetes.ca)
- ▶ Ontario, Ministry of Health and Long Term Care, <http://www.health.gov.on.ca/en/public/publications/ohip/eyecare.aspx>.
- ▶ Eye Didn't Know That, <http://www.eyedidntknowthat.ca/>.
- ▶ Health Canada, FNIHB, Non-Insured Health Benefits, <http://www.hc-sc.gc.ca/fniah-spnia/nihb-ssna/index-eng.php>.
- ▶ Vision Institute, [http://visioninstitute.optometry.net/practicetemplates/index.aspx?user\\_data\\_id=499](http://visioninstitute.optometry.net/practicetemplates/index.aspx?user_data_id=499).

# Resouces

- ▶ CNIB. 1080 Portage Avenue, Winnipeg, MB R3G 3M3, phone: (204) 774-5421. <http://www.cnib.ca/>.