

DME

Diabetic Macular Edema

A guide to understanding DME





> Knowledge is power. Take a few minutes to learn about DME—it may help you in the long run.



Content Index

Diabetic Macular Edema (DME)	3
Introduction to DME	7
What are the Risk Factors for DME?	9
What are the Symptoms of DME?	11
How is DME Diagnosed?	13
How is DME Treated?	15
How Fast Does it Progress?	16
Will I Get DME in My Other Eye?	16
Will I Lose My Vision Completely?	16
It's Your Vision – Hold On to It	16
Living with DME	19
DME Resources	22
Glossary of Terms	23



2

> **Diabetic macular edema is a common disorder of the retina and is a leading cause of blindness in the working age population.**



Diabetic Macular Edema (DME)

If you are like many Canadians, you probably don't know a lot about diabetic macular edema (DME). Even if you already have DME, you may not fully understand what's going on inside your eyes. This booklet has been developed to help meet the needs of people who may be at risk of developing DME and for those who have recently been diagnosed with it. There are 4 sections:

- 1. Introduction to DME.** General information about DME that everyone should know.
- 2. Risk Factors.** For everyone with diabetes, because you are at risk for developing DME.
- 3. What is DME?** A brief explanation of DME, including its symptoms, diagnosis and treatment.
- 4. Living with vision loss due to DME.** Practical information and tips for anyone who has experienced vision loss due to DME.

3



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> **Many people with type 1 diabetes and most with type 2 diabetes will develop some form of retinopathy.**



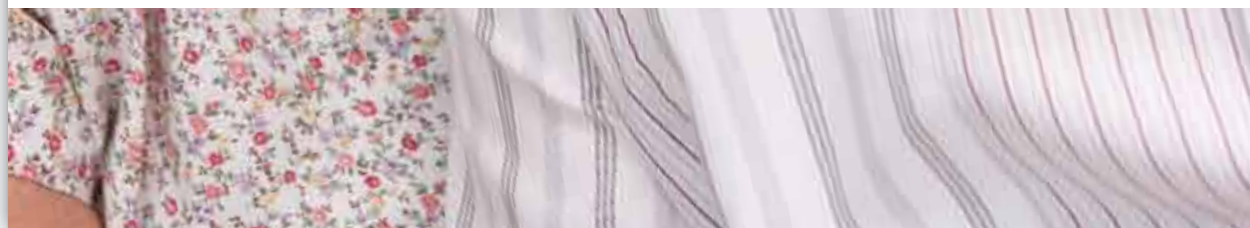
As its name suggests, diabetic macular edema (DME) is a disease linked to diabetes. Some people with diabetes will get a form of retinopathy—a disorder of the retina in the eye. Diabetic retinopathy can progress and result in diabetic macular edema that may affect your vision, and is one of the most common causes of blindness.

Although DME cannot be cured, treatments are available that may help improve your vision or slow down the progression of vision loss. There are also many ways for you to take part in your own healthcare, manage your diabetes and contribute to the health of your eyes. Knowledge is power. Take a few minutes to learn about DME—it may help you in the long run.

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- > **Risk increases the longer you have had diabetes. Over a 10-year period, about 10% of people with diabetes will develop vision loss due to DME.**



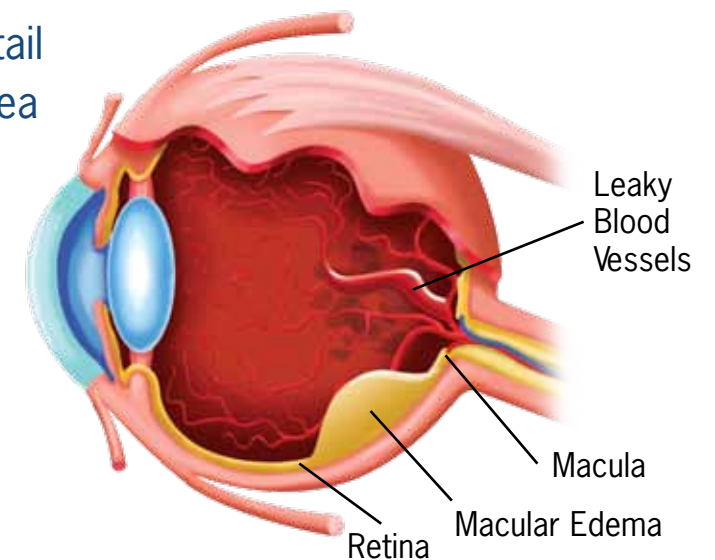
Introduction to DME

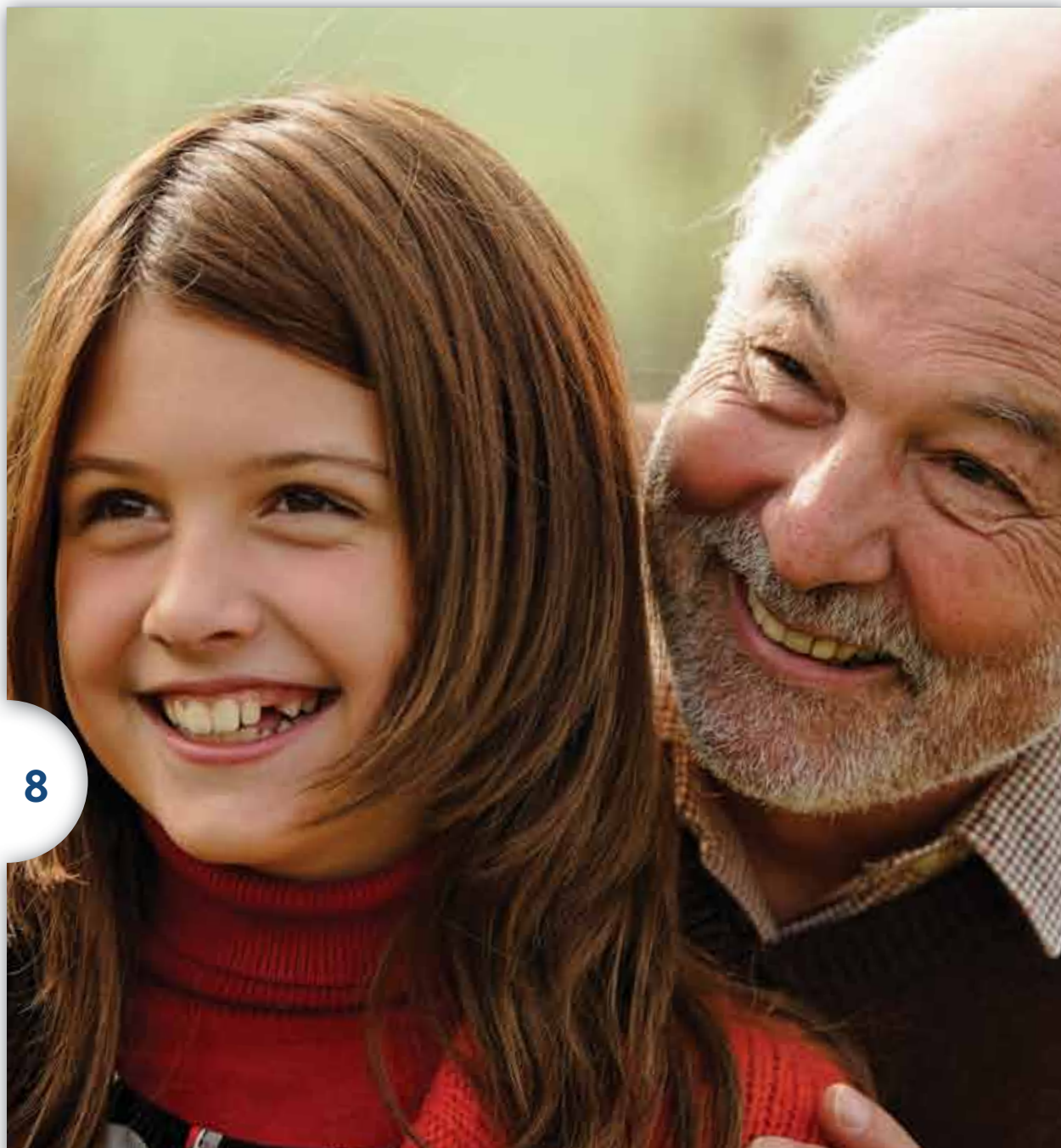
Some people with diabetes will get a form of retinopathy—a disorder of the retina of the eye. Diabetic retinopathy can progress and result in the development of diabetic macular edema, also known as retinal swelling. DME occurs when fluid leaks into the centre of the retina at the back of your eye (called the macula), causing it to swell. Swelling caused by fluid from leaky blood vessels blurs your vision, affecting your ability to read and see detail clearly.

Currently, about 2.5 million people in Canada have diabetes. People with diabetes are at increased risk for eye complications.

DME often affects both eyes. It occurs in both eyes in approximately 71% of people but does not always affect vision. If you already have the condition in one eye, talk to your doctor about addressing your risk factors to reduce the chances of DME occurring in the other eye.

- > The eyeball with detail of the retina and area affected by DME





- > **It's important to be proactive and do everything possible to learn about the disease and how you can reduce your risk.**



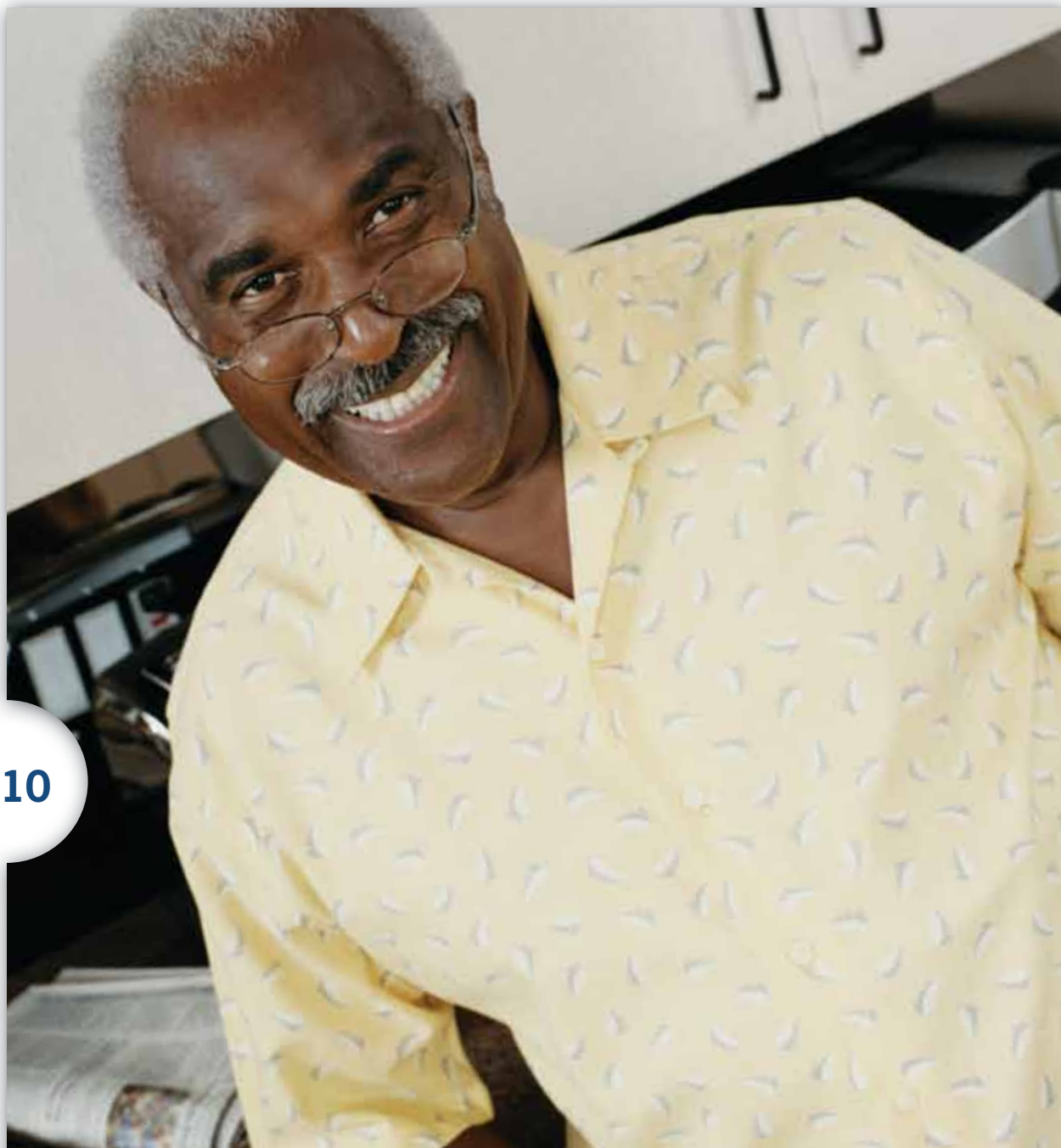
What are the Risk Factors for DME?

There are a number of factors both in and out of your control that can put you at increased risk for developing DME or making it worse. Some of the known and suspected risk factors are:

- > Diabetes-associated risks:
 - All people with diabetes—both type 1 and type 2—are at risk of developing DME. The probability of developing DME is related to how long you have had diabetes and your level of blood sugar control
- > Risk factors for developing type 2 diabetes:
 - High cholesterol
 - Being overweight or obese
 - Not getting enough exercise
 - Smoking

Research has shown that your ethnicity and gender have no effect on the risk of developing DME.

Obviously, you can't change everything that puts you at risk, but wherever you can, consider making any lifestyle changes that will reduce your risk of developing type 2 diabetes. If you already have diabetes, make sure to control your blood sugar levels and get your eyes checked by an eye doctor regularly.



- > **Vision loss due to DME can make vision-related activities, like reading and driving, more difficult. This can have significant impact on your quality of life.**



What are the Symptoms of DME?

- > Blurred vision
- > Loss of contrast sensitivity

With DME, you may not notice any change in your vision at first. Over time however, your eyesight gets worse and you may experience a loss of vision. That's why it's important to get your eyes checked regularly.

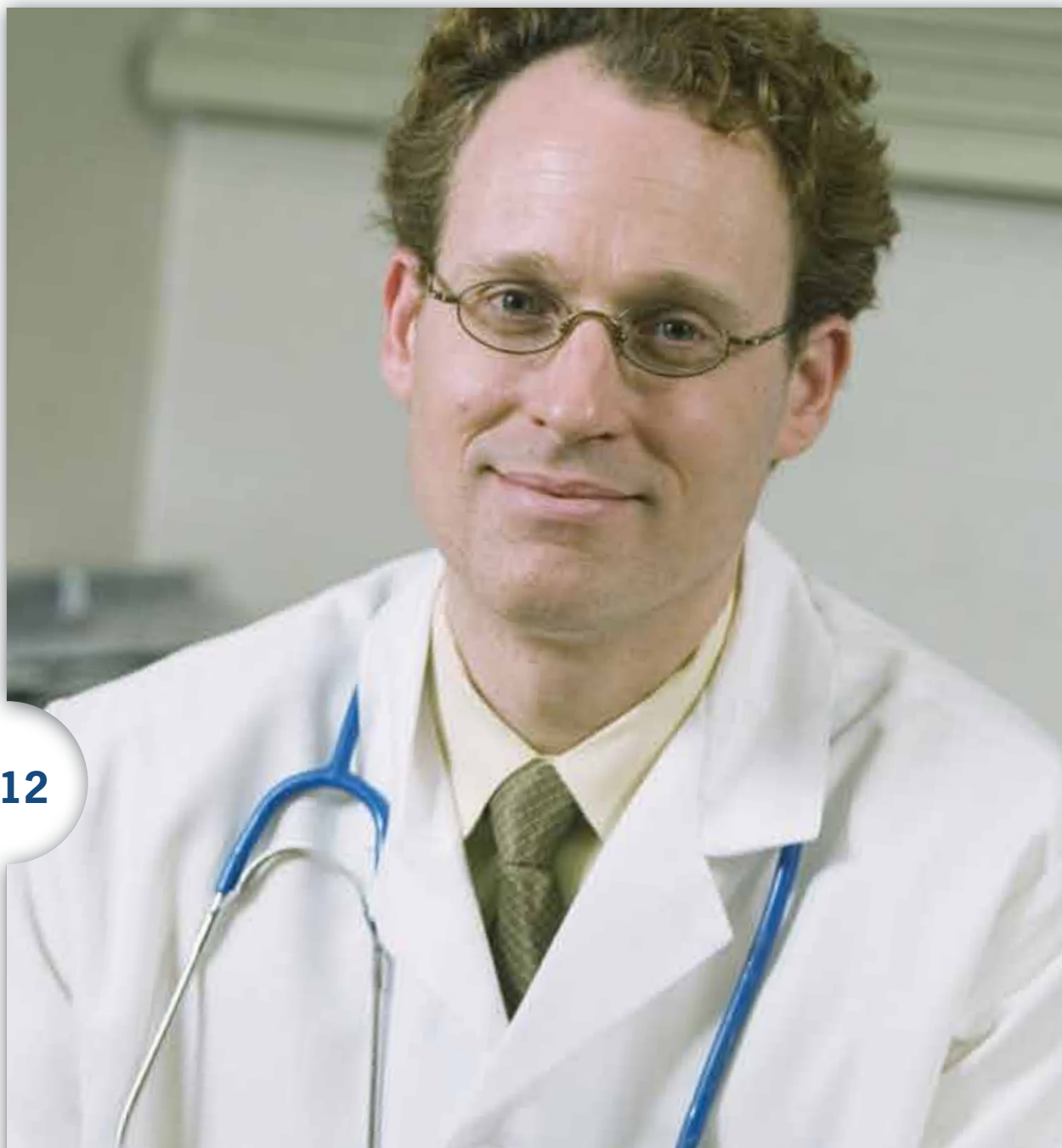
> How DME Affects Your Vision



Normal Vision



Vision with DME



- > **DME is diagnosed through a complete eye exam, so make sure to get regular eye checkups.**

How is DME Diagnosed?

If you have been diagnosed with diabetes, make sure you get yearly eye exams to check for signs of retinopathy. If your regular eye doctor suspects DME, you will be referred to a specialist. There you will have a complete eye exam that may include:

A Visual Acuity Test. This test uses an eye chart to measure how well you see at different distances.

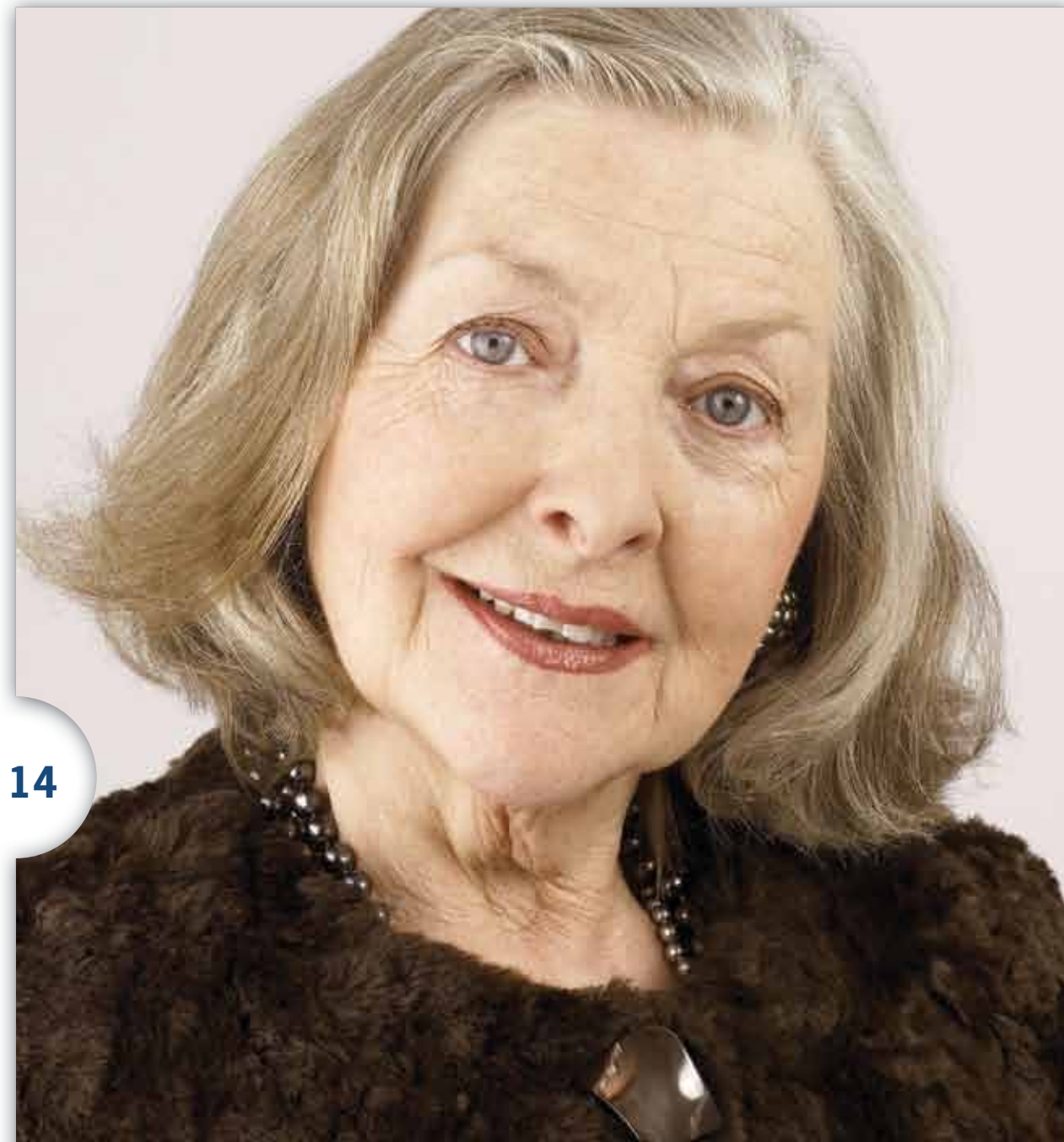
A Dilated Eye Exam. Drops are placed in your eyes that widen the pupils, and allow your eye care professional to see the inside of your eyes. A special magnifying glass is used to help your doctor examine your retina and optic nerve for signs of damage or other problems.

Tonometry. An instrument will be used to measure the pressure inside your eyes. Drops that numb your eyes may be used before this test.

Optical Coherence Tomography (OCT). This test uses a special camera to take images of your retina. This procedure helps your doctor diagnose, treat and manage retinal diseases.

Fluorescein Angiogram. A special dye will be injected into your arm, and pictures taken as the dye passes through the blood vessels in your retina. This test helps your doctor identify any leaking blood vessels.

Colour Fundus Photography. This test uses a specialized microscope attached to a camera designed to the inside surface of the eye, including the retina.



> **Treatment of DME involves you and your healthcare team working together.**

How is DME Treated?

DME is treated either with an anti-vascular endothelial growth factor (anti-VEGF) therapy or laser photocoagulation. In some cases, your eye specialist may recommend a combination of the available treatments. You and your specialist will determine together which treatment is best for you.

Anti-Vascular Endothelial Growth Factor (Anti-VEGF) Therapy. This uses drugs that have been developed specifically for use in the eye. VEGF is thought to trigger abnormal leaking blood vessels in the macula, which leads to edema. Anti-VEGF drugs are injected into the eye to help prevent this from happening.

Laser Photocoagulation. With laser photocoagulation, your doctor will place laser “burns” in areas where leaky blood vessels are affecting central vision. This slows the leakage of fluid and reduces the amount of fluid in the retina.

These treatments are not cures for DME. DME is a chronic condition and monitoring is essential. It’s important for you to get regular eye checkups, keep your blood sugar under control, and make lifestyle changes that can reduce your risks for vision loss.

How Fast Does it Progress?

Progression of DME is a gradual process that causes a decline in vision that may not be noticed until the macula is involved. You may not have any symptoms in the very early stages. In later stages, your vision may become blurred or blocked in areas.

Will I Get DME in My Other Eye?

DME often affects both eyes. If you already have the condition in one eye, talk to your doctor about addressing your risk factors to reduce the chances of DME occurring in the other eye.

Will I Lose My Vision Completely?

Untreated DME can be severe and lead to permanent loss of vision, with vision dropping to legal blindness or lower. Early detection and treatment can help slow down the progression of vision loss.

It's Your Vision—Hold On to It

Your vision is precious—do whatever is in your control to hold on to it. There are specific things you can do that may help.

Proactively monitor your vision:

- > Visit your eye doctor or DME specialist regularly – don't miss any scheduled appointments

- > If you notice a change in your vision, contact your eye doctor immediately
- > Be proactive about vision rehabilitation and use any tools and visual aids (e.g., a magnifying glass) you can to assist you

Take control of your diabetes:

- > Take your diabetes medications as directed by your healthcare professional
- > Regularly monitor your blood sugar levels. Keeping your levels under control is the single most important way to manage your diabetes
- > Keep high blood pressure under control
- > Maintain a healthy body weight and manage your diet with your healthcare team. Your doctor can tell you what you should and shouldn't eat, as well as when you should eat
- > If you smoke, speak with your doctor about a cessation program and work towards quitting as soon as you can
- > Exercise to help avoid high blood pressure and elevated cholesterol

You have an important role to play in controlling your diabetes, ensuring that vision loss is caught early and getting treated as soon as possible!



> **People who learn to adapt can continue to do the things they love.**



Living with DME

A diagnosis of DME does not mean an automatic sentence to a life of blindness, however, the disease can have a profound effect on your quality of life. A significant loss of central vision can severely impact your ability to function as before, making things you've always taken for granted such as reading, driving, and watching television, extremely difficult. But you should still be able to function independently with the help of visual aids and rehabilitation.

One of the most difficult things to overcome, however, is the emotional toll that vision loss takes. On first diagnosis, people can experience a range of emotions including shock, disbelief, denial, resentment, anger, sadness, and a sense of loss. Most people also go through a period of depression, which, unchecked, can lead to even more problems than just coping with vision loss. Ask for help if you need it. Your loved ones, family, friends, and even others with DME are there to help you.

Learning to carry on in new ways is the key. People who learn to adapt can continue to do things they love. For example, if reading is your passion, you can adapt by using a magnifier or listening to audio books which allows for continued independence and confidence.



- > **Specialists, the CNIB and other services can offer various vision enhancement devices and tips, as well as vision rehabilitation counselling.**



The Canadian National Institute for the Blind (CNIB) or other low vision specialists can help you to cope with your vision loss. Both specialists and the CNIB can offer various vision enhancement devices and tips, as well as vision rehabilitation counselling, peer support and other services to help you make the most of your remaining vision and increase your independence.

Low vision rehabilitation and a solid support network of family, friends, DME support groups and organizations like the CNIB can all help you cope with vision loss.

If you need more information on how better to control your diabetes, the Canadian Diabetes Association has courses and other tools available for your use.

DME Resources

Additional DME and support information can be found through the following resources:

CNIB

Tel.: 1-800-563-2642

www.cnib.ca

Canadian Diabetes Association (CDA)

Tel.: 1-800-226-8464

www.diabetes.ca

Canadian Council of the Blind (CCB)

Tel.: 1-877-304-0968

www.ccbnational.net

Canadian Ophthalmological Society (COS)

www.eyesite.ca

Foundation Fighting Blindness

Tel.: 1-800-461-3331

www.ffb.ca

The Canadian Association of Optometrists (CAO)

Tel.: 1-888-263-4676

www.opto.ca

The National Coalition for Vision Health

Tel.: 416-480-5091

www.visionhealth.ca

Glossary of Select DME Terms

Diabetes

A chronic (lifelong) disease marked by high levels of sugar in the blood.

Diabetic Macular Edema (DME)

Swelling of the retina in diabetes mellitus due to leaking of fluid from blood vessels within the macula.

Diabetic Retinopathy

Damage to the eye's retina that occurs with diabetes.

Hypertension

Hypertension is the term used to describe high blood pressure. Blood pressure is a measurement of the force against the walls of your arteries as the heart pumps blood through the body.

Insulin

A natural hormone that helps the body's cells use blood sugar for energy.

Macula

The small, central area of the retina responsible for fine detailed vision.

Photoreceptors

These are actually nerve endings in both the retina and macula that absorb incoming light. They have the ability to transform it into electrical energy and then transmit it to the brain where it is registered as images.

Retina

The retina lines the back of your eye and acts like the film in a camera. It is a thin, multi-layered tissue that covers about two-thirds of the eye's inner wall and contains millions of photoreceptor visual cells.

Type 1 Diabetes

Type 1 diabetes is a chronic (lifelong) disease that occurs when the pancreas does not produce enough insulin to properly control blood sugar levels.

Type 2 Diabetes

Type 2 diabetes is a chronic (lifelong) disease marked by high levels of sugar (glucose) in the blood. Type 2 diabetes is the most common form of diabetes.

Vascular Endothelial Growth Factor (VEGF)

A substance made by cells that stimulates new blood vessel formation and triggers abnormal leaking of blood vessels.



> **A solid support network of family, friends, DME peer groups and organizations can all help you cope with vision loss.**



For more information call:

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Printed in Canada LUC-12-01 5535776
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