

# RVO

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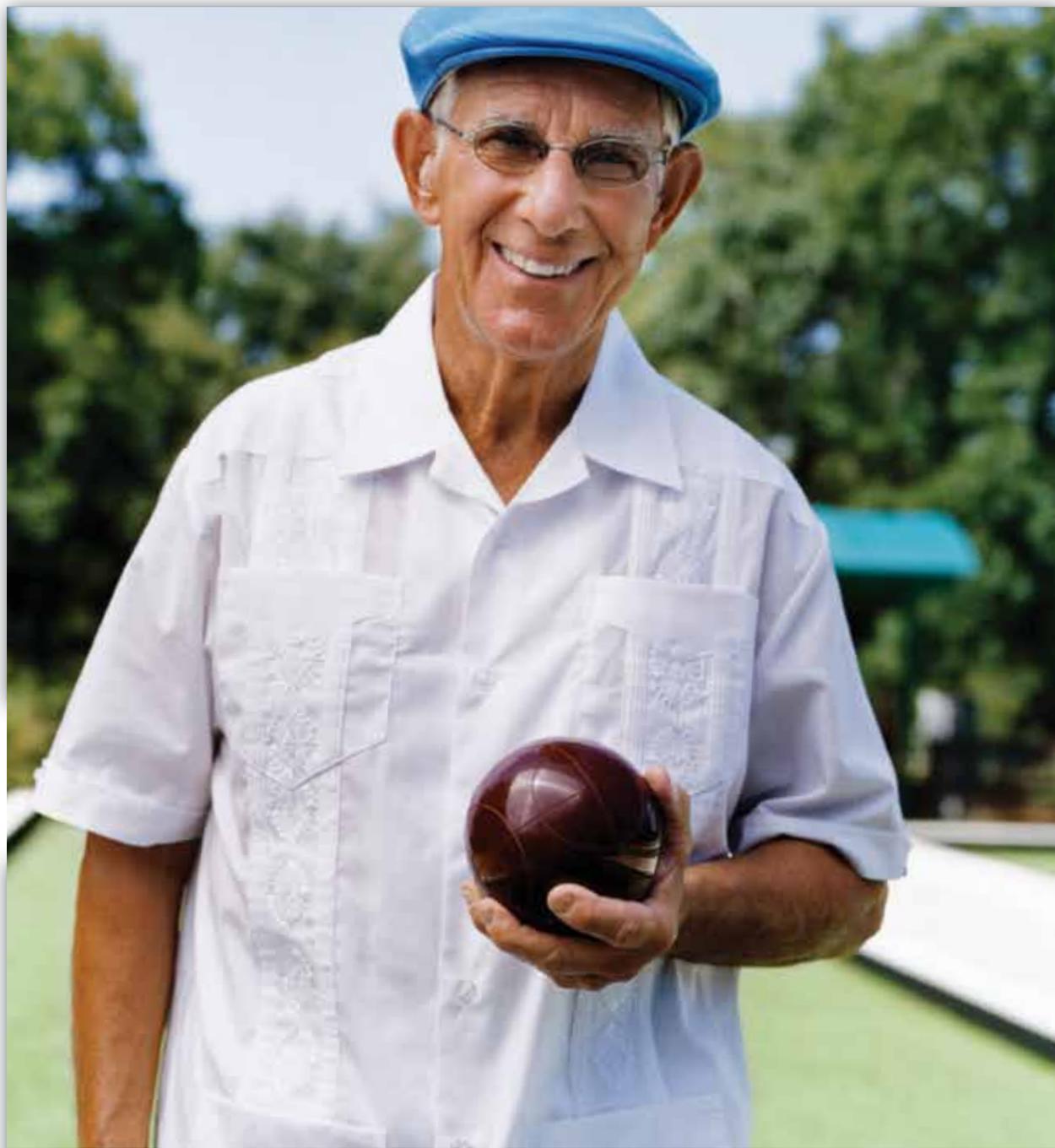
## Macular Edema Secondary to Retinal Vein Occlusion

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A guide to understanding RVO

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

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> **Retinal vein occlusion is a common disorder of the retina and is one of the most common causes of blindness.**

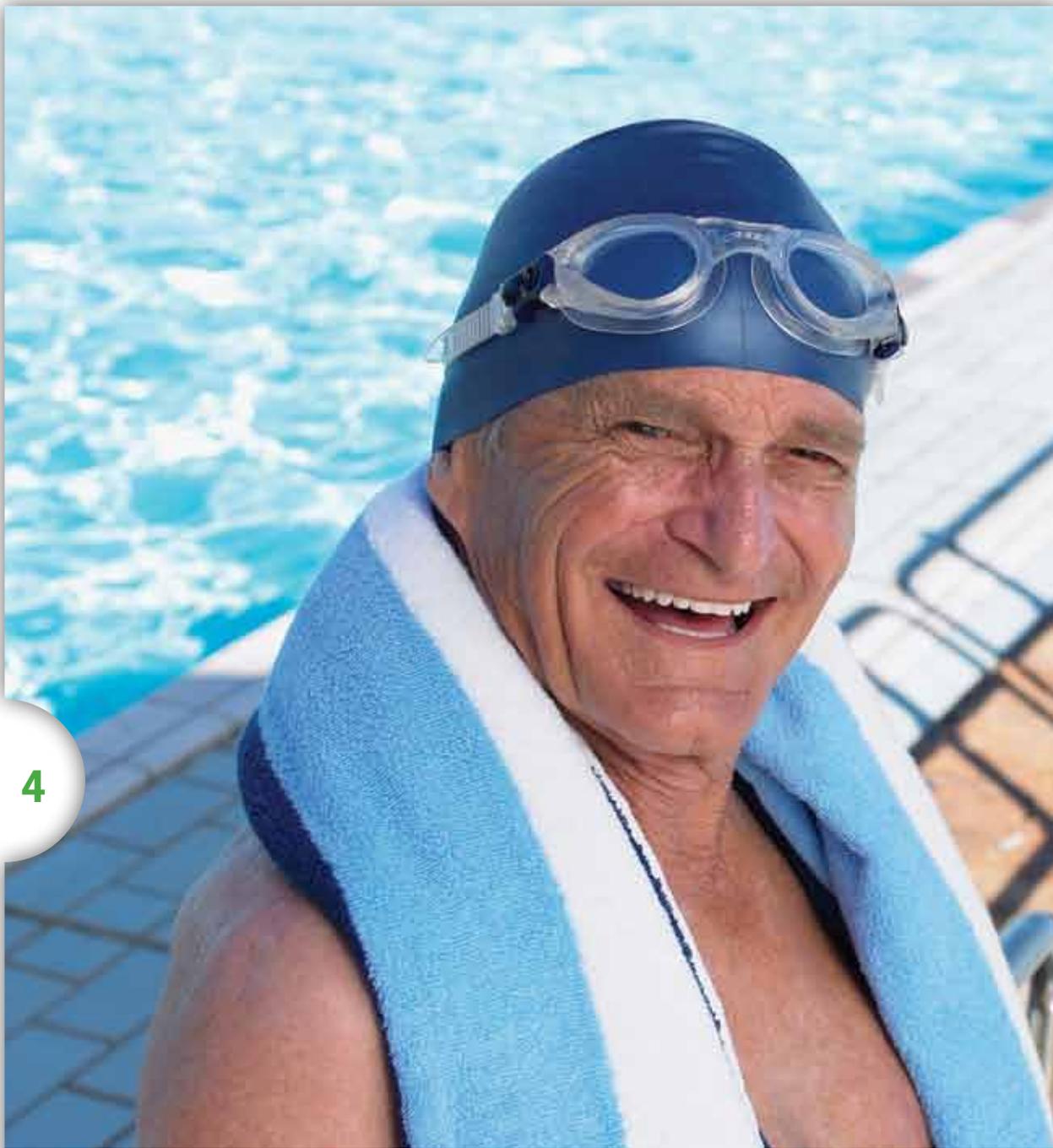


## **Macular Edema Secondary to Retinal Vein Occlusion (RVO)**

If you are like many Canadians, you probably don't know a lot about macular edema or retinal vein occlusion (RVO). Even if you already have RVO, 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 RVO and for those who have recently been diagnosed with it. There are 4 sections:

- 1. Introduction to RVO.** General information about RVO that everyone should know.
- 2. Risk Factors.** For everyone, especially people with cardiovascular risk factors, because they are most at risk for developing RVO.
- 3. What is RVO?** A brief explanation of RVO, including its symptoms, diagnosis and treatment.
- 4. Living with Vision Loss Due to RVO.** Practical information and tips for anyone who has experienced vision loss due to RVO.

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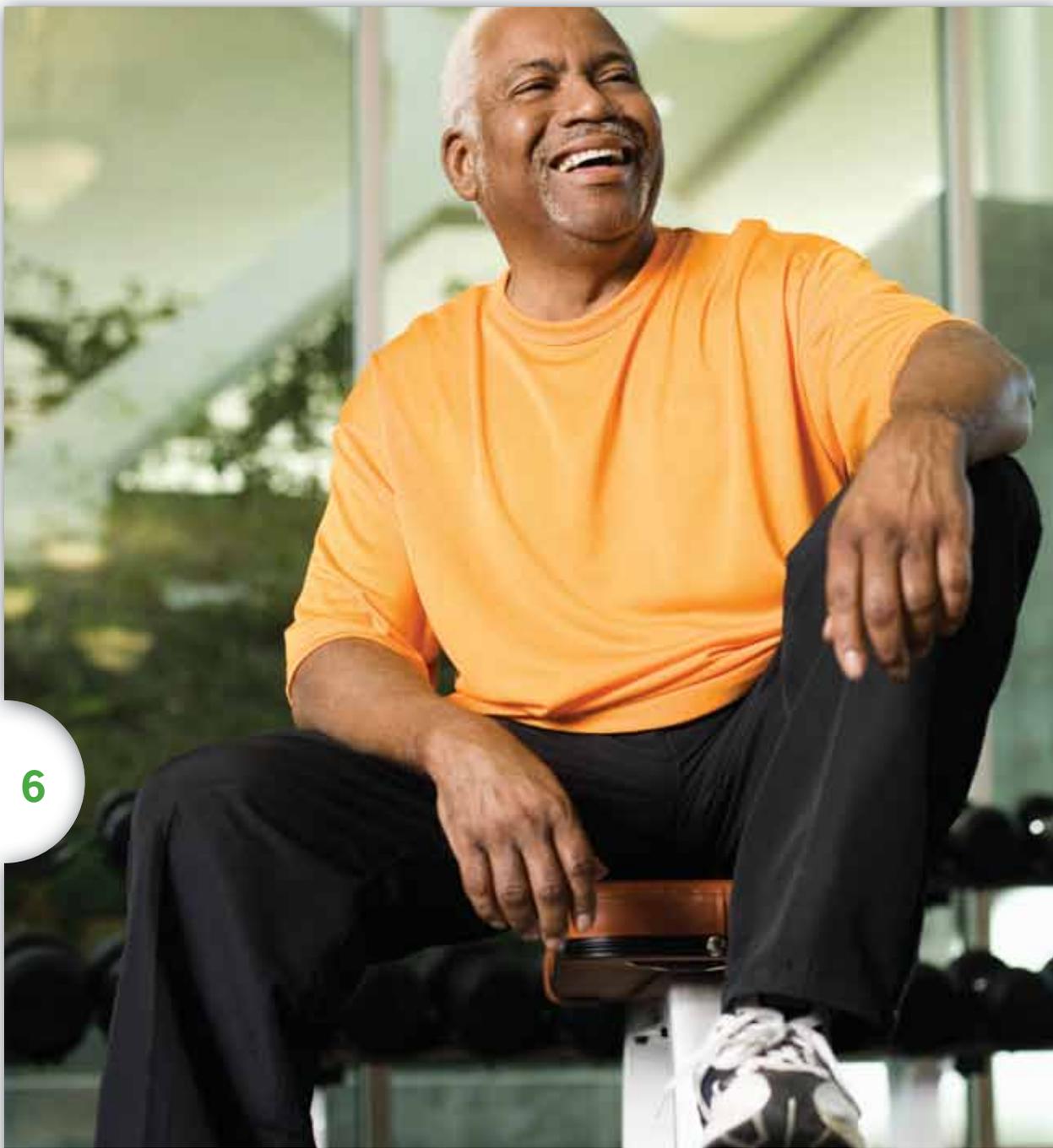
> **RVO is a common disorder, and is one of the most common causes of blindness.**



RVO is a blockage of the veins that carry blood away from the retina of the eye. Blockage caused by RVO can cause fluid to leak into the macula—the part of the eye where focusing occurs. This swelling, called macular edema, can cause blurred vision and sometimes complete vision loss.

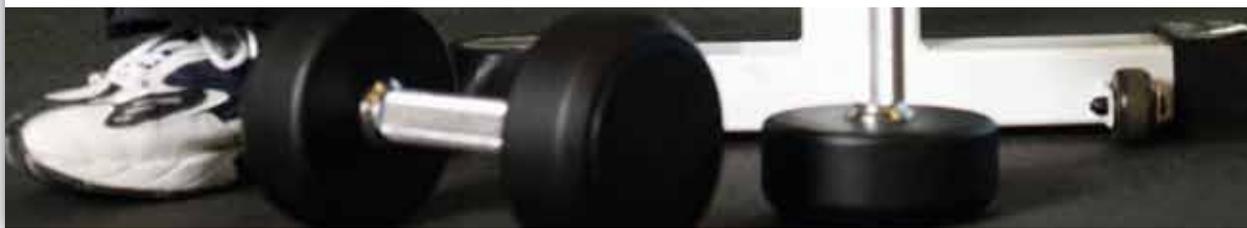
Although the blockage caused by RVO cannot be reversed, treatments are available that may slow down the progression of vision loss and improve your vision. There are also many ways for you to take part in your own healthcare, manage your risk factors and contribute to the health of your eyes. Knowledge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

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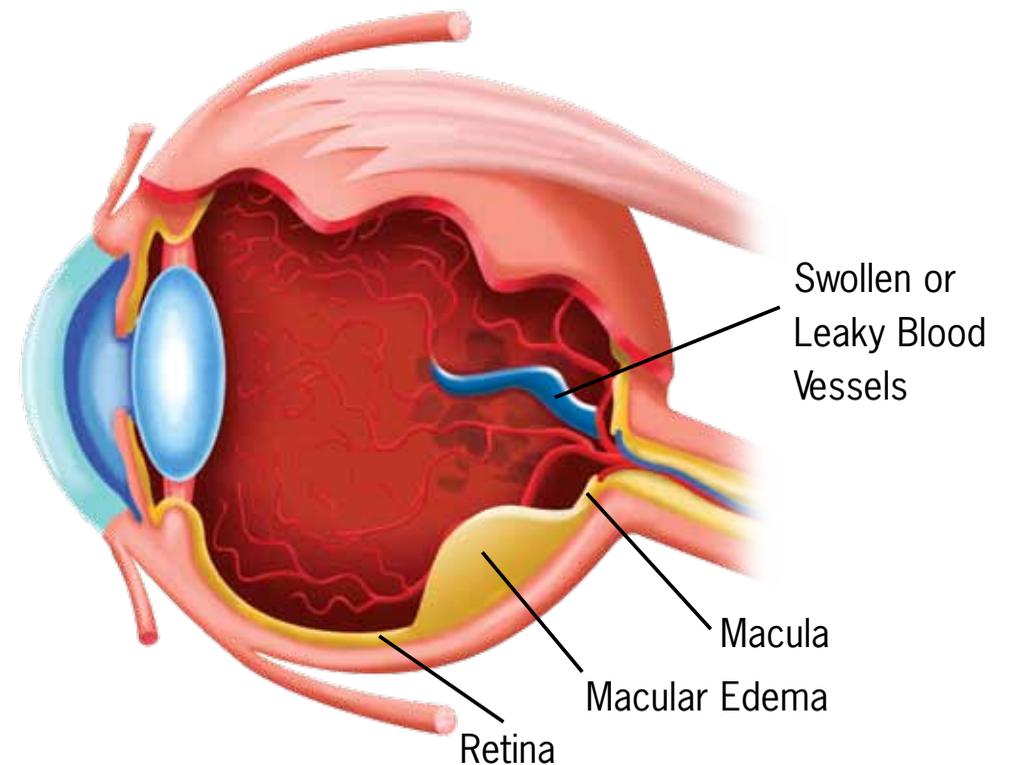
> RVO can be a serious condition that often leads to sudden vision loss in the affected eye.



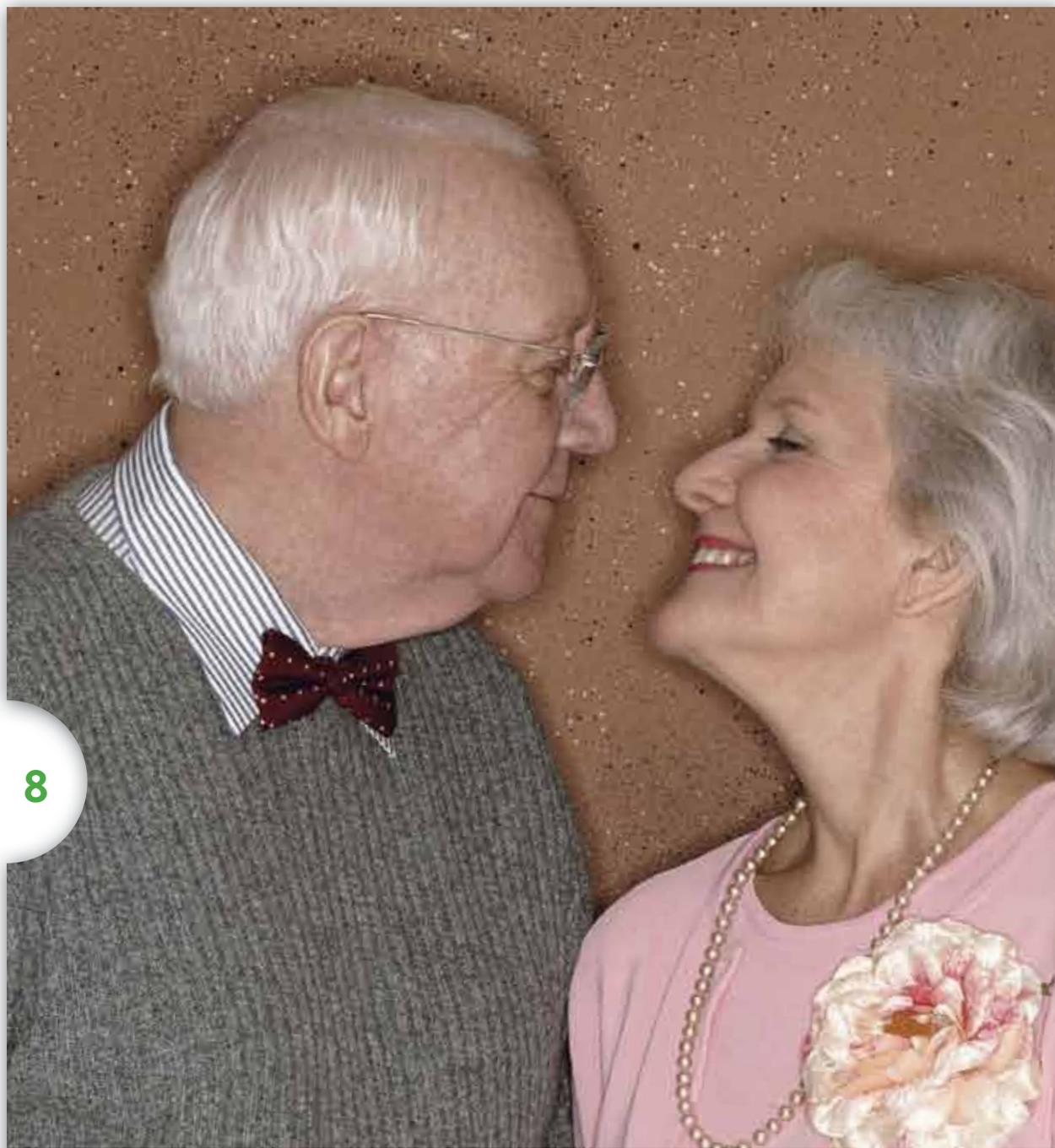
## Introduction to RVO

Veins in your eyes—known as retinal veins—are an important part of blood circulation and are needed to help you see well. The main job of these veins is to move blood out of your eye. RVO occurs when one of these veins gets blocked, usually due to atherosclerosis or a blood clot. This blockage happens without warning.

> The Eyeball with Detail of the Retina and Area Affected by RVO



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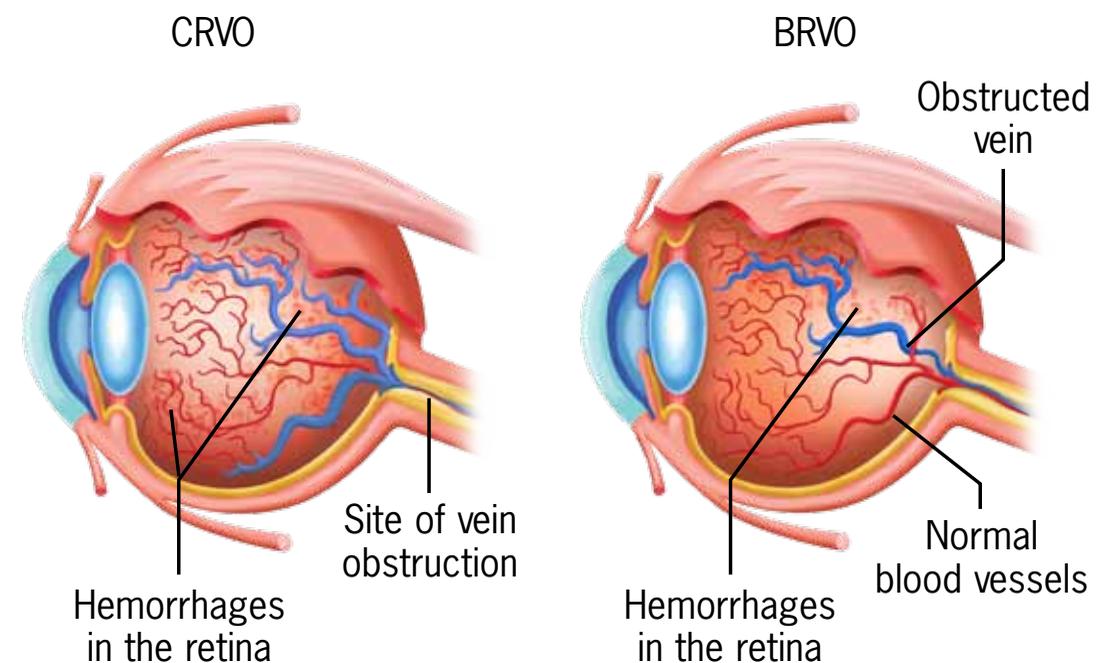
> There are two types of RVO, named for where the blockage happens.

## Central Retinal Vein Occlusion (CRVO)

In this type of retinal vein occlusion, the vein blockage occurs in the central, or main, retinal vein as it exits the back of the eye. This form of RVO is less common than BRVO but it is a major sight-threatening condition.

## Branch Retinal Vein Occlusion (BRVO)

The veins in the retinal branch spread and drain blood from all areas of the retina. Branch retinal vein occlusion, also known as BRVO, occurs when one segment of the veins in the retina is blocked. It's called *branch* retinal vein occlusion because these retinal veins tend to "branch out" into smaller veins. This form of RVO is approximately five times more common than central retinal vein occlusion.





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- > **It's important to be proactive and do everything possible to learn about your disease. Consider lifestyle changes whenever possible.**



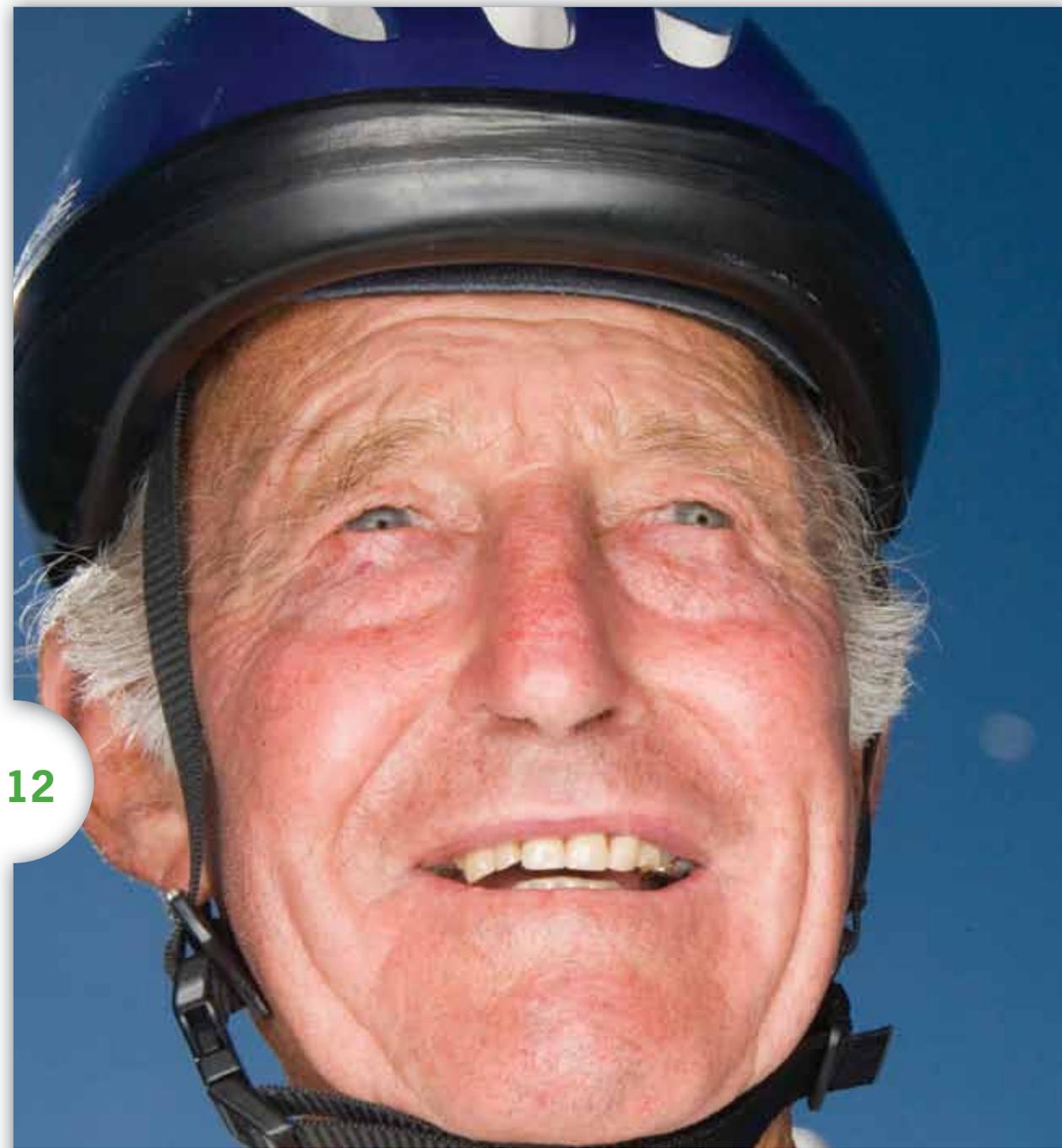
## What are the Risk Factors for RVO?

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

- > Cardiovascular risk factors, including:
  - Hypertension
  - Hardening of the arteries
  - High cholesterol
  - Cardiovascular disease (e.g., stroke, coronary artery disease)
  - Presence of blood clots
- > Increasing age
- > Glaucoma
- > Being overweight or obese
- > Not getting enough exercise
- > Smoking
- > Use of oral contraceptives

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.

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- > **Vision loss can happen suddenly, affecting your ability to do everyday things. This can have a significant impact on your life.**



## What are the Symptoms of RVO?

With RVO, any loss of vision you may experience happens only in the eye affected by the disease. Some people with RVO may not notice any symptoms. That's why it's important to get your eyes checked regularly.

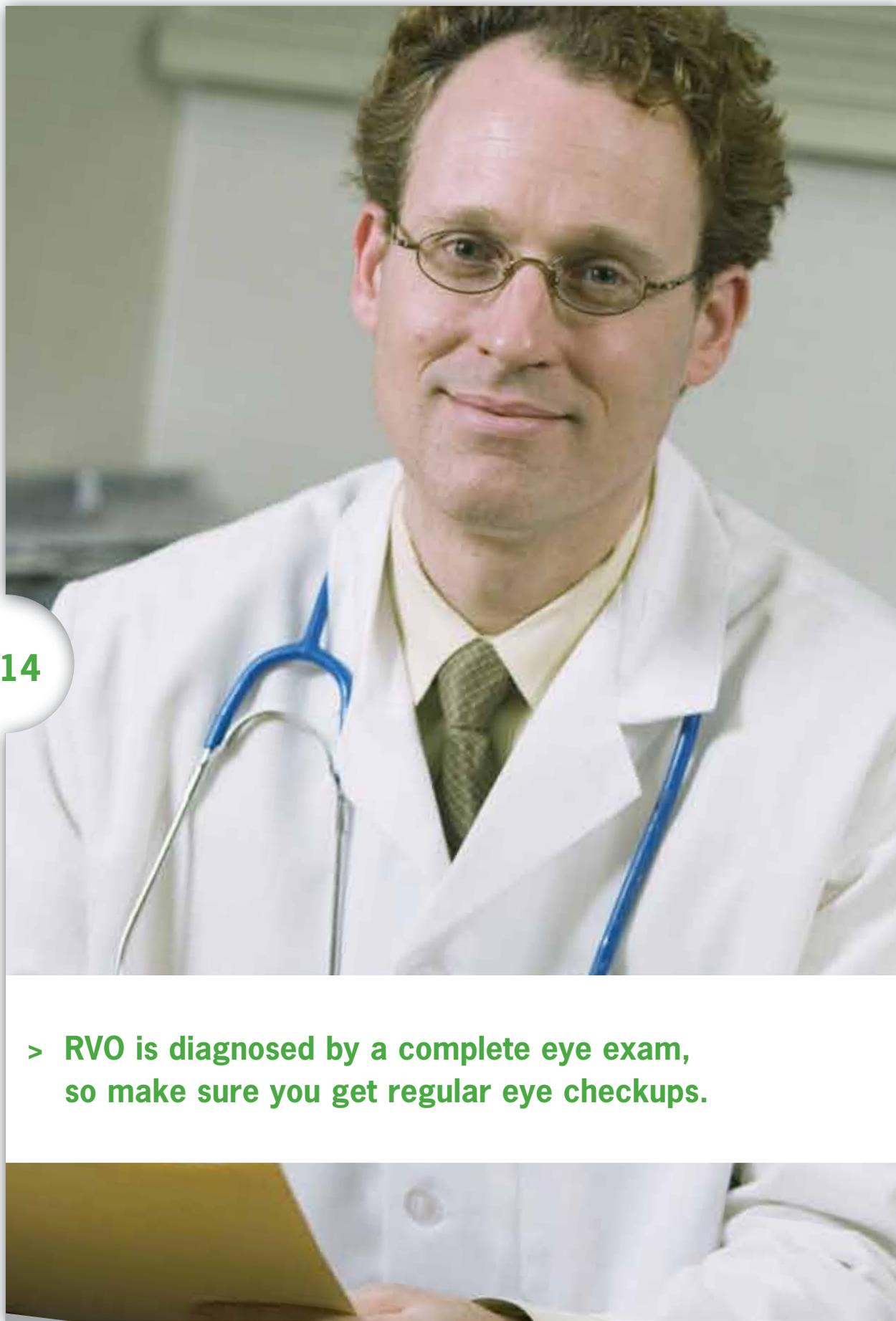
RVO blockage happens without warning. When RVO symptoms occur, they might include:

- > Blurred vision
- > Mild to marked vision loss



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Vision loss can affect your ability to do everyday things like reading, watching television, and driving. This can have a significant impact on your life.



- > **RVO is diagnosed by a complete eye exam, so make sure you get regular eye checkups.**

## How is RVO Diagnosed?

If you have risk factors for RVO, make sure you get regular eye checkups. If your regular eye doctor suspects RVO, 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.

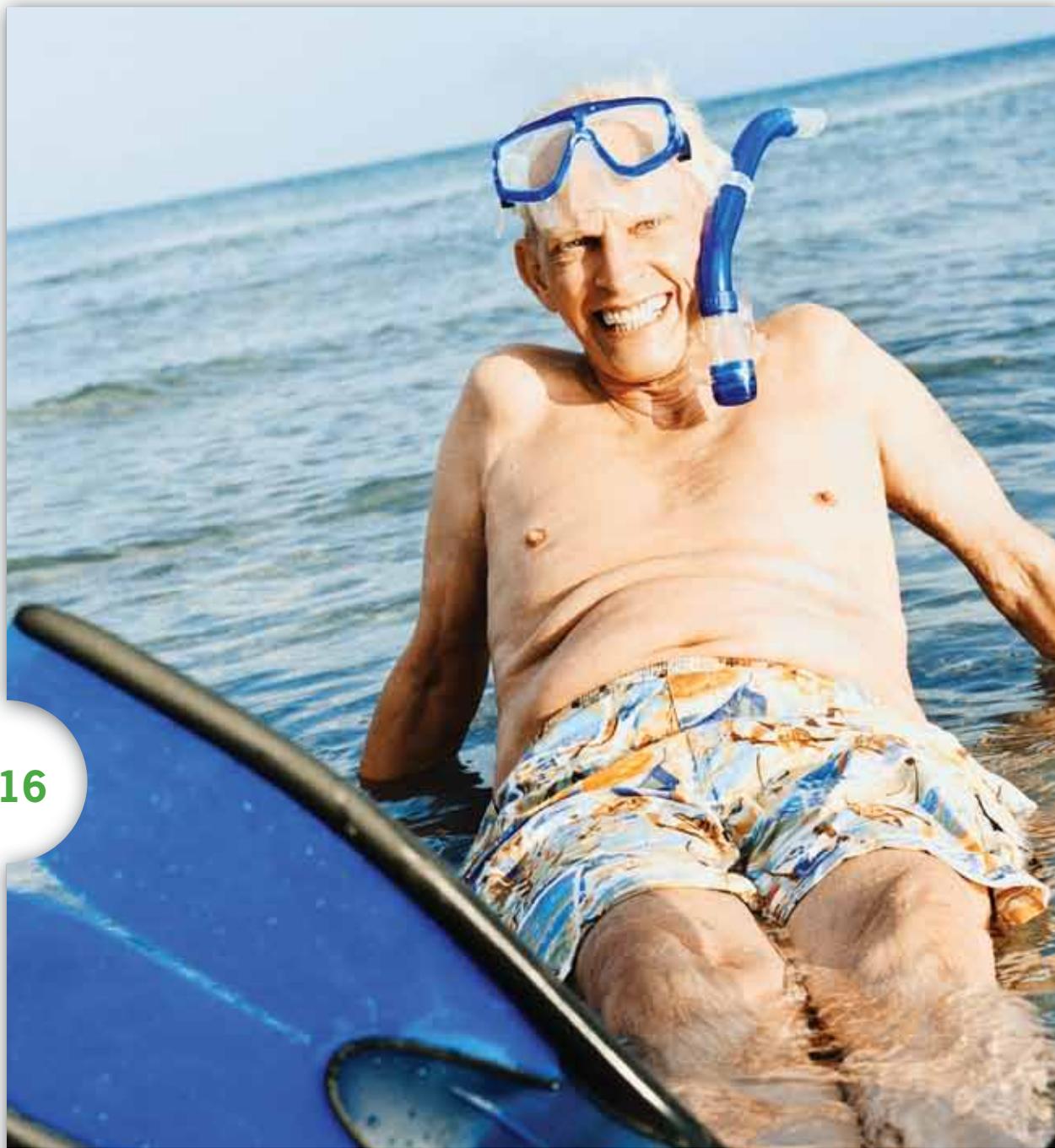
**A Dilated Eye Exam.** Drops are placed in your eyes that widen the pupils, and allow your eye care professional to see the inside of your eyes. A special magnifying glass is used to help your doctor examine your retina and optic nerve for signs of damage or other problems.

**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 photograph the inside surface of the eye, including the retina.



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



## How is RVO Treated?

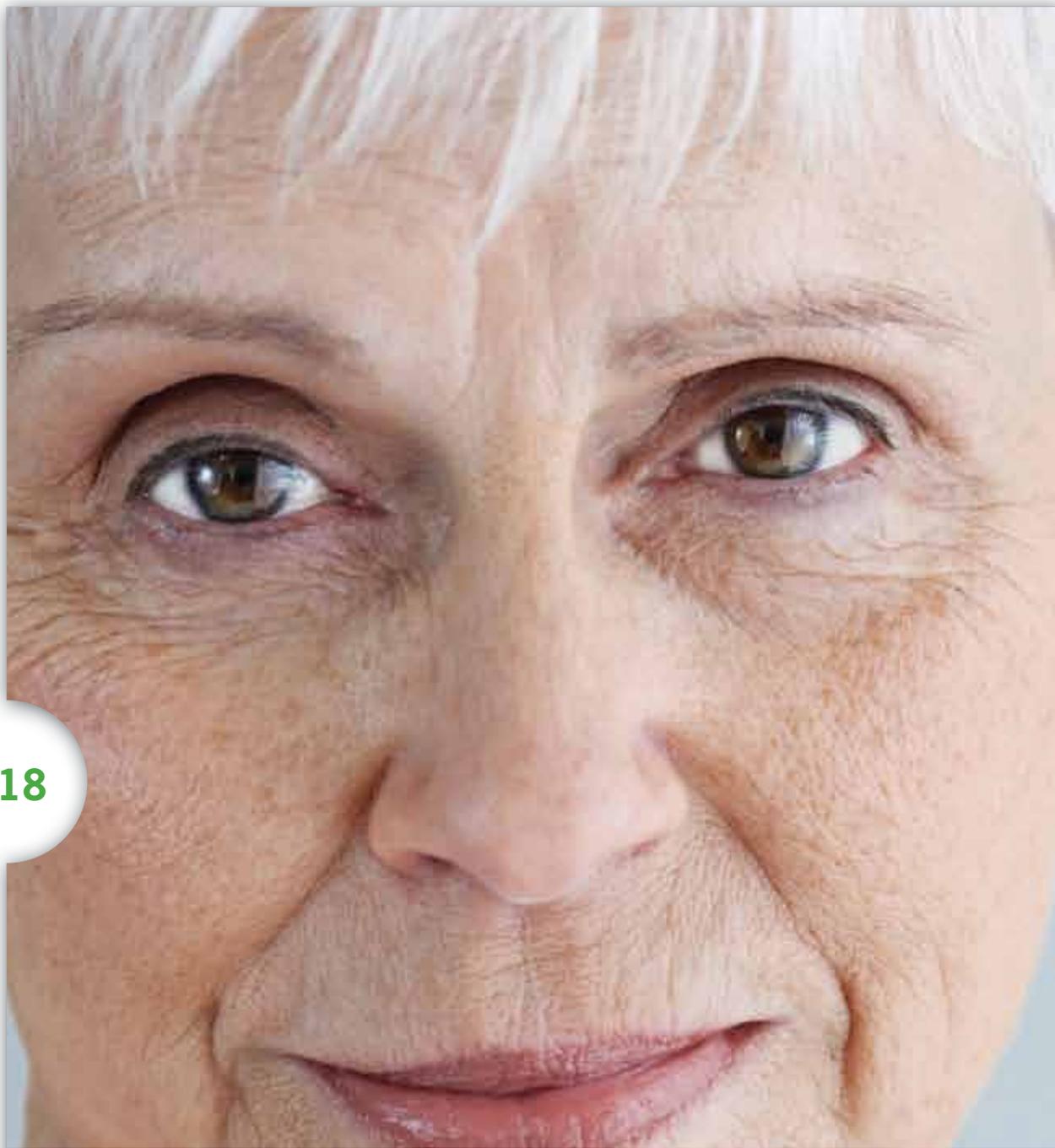
RVO is treated with an anti-vascular endothelial growth factor (anti-VEGF) therapy, implants (for CRVO), or laser photocoagulation (for BRVO). In some cases, your eye specialist may recommend a combination of the available treatments. You and your specialist will determine together which treatment is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

### **Anti-Vascular Endothelial Growth Factor (Anti-VEGF)**

**Therapy.** Uses drugs that have been developed specifically for use in the eye. VEGF is thought to be a trigger for abnormal leaking blood vessels in the macula, which leads to edema, and a trigger for growth of abnormal blood vessels in the macula. Anti-VEGF drugs are injected into the eye to help prevent this from happening.

**Steroid Implants.** Implants work by reducing swelling in the back of your eye, which helps to lessen or prevent more damage to the macula. Under general anaesthetic, your doctor will inject a small implant into the back of your eye.

**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.



> **Managing complications such as macular edema, glaucoma, and cardiovascular risk factors is important. Talk to your doctor about what you can do to manage your risks.**

## **Will I get RVO in My Other Eye?**

Some studies have shown that RVO may recur in the affected eye or in the other eye in up to 15% of patients over a five-year period. This situation has been studied, but not extensively. What data there is suggests that recurrence may be reduced with medical treatment focused on addressing a patient's cardiovascular risk factors.

## **Will I Lose My Vision Completely?**

Whether you lose your vision completely depends on many factors. Vision will improve in many BRVO patients without treatment. Treatment may also help people with RVO regain useful vision. Managing complications such as macular edema, glaucoma, and cardiovascular risk factors is important. Talk to your doctor about what you can do to manage your risks.



- > **You have an important role to play in controlling risk factors and getting early treatment.**



## 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.

Take care of your vision:

- > Visit your eye doctor or RVO 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

Control your cardiovascular risk factors:

- > Take your medications to control your cardiovascular risks if you have them, as directed by your doctor
- > Maintain a healthy body weight
- > Exercise regularly
- > Keep high blood pressure under control
- > If you smoke, speak with your doctor about a cessation program and work towards quitting as soon as you can

## Living with RVO

A diagnosis of RVO 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 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 RVO are there to help you.

Learning to carry on in new ways is the key. People who learn to adapt so they can continue to do things they love fare much better. 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.

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, RVO support groups and organizations like the CNIB can all help you cope with vision loss.



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

## **RVO Resources**

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

### **CNIB**

Tel.: 1-800-563-2642

[www.cnib.ca](http://www.cnib.ca)

### **Canadian Council of the Blind (CCB)**

Tel.: 1-877-304-0968

[www.ccbnational.net](http://www.ccbnational.net)

### **Canadian Ophthalmological Society (COS)**

[www.eyesite.ca](http://www.eyesite.ca)

### **Foundation Fighting Blindness**

Tel.: 1-800-461-3331

[www.ffb.ca](http://www.ffb.ca)

### **The Canadian Association Of Optometrists (CAO)**

Tel.: 1-888-263-4676

[www.opto.ca](http://www.opto.ca)

### **The National Coalition for Vision Health**

Tel.: 416-480-5091

[www.visionhealth.ca](http://www.visionhealth.ca)



## Glossary of Select RVO Terms

### Atherosclerosis

Atherosclerosis is a condition in which fatty material collects along the walls of the arteries. This fatty material thickens, hardens (forms calcium deposits) and may eventually block the arteries.

### Macular Edema Secondary to Retinal Vein Occlusion (RVO)

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

### 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. High blood pressure is one of the risk factors for RVO.

### 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

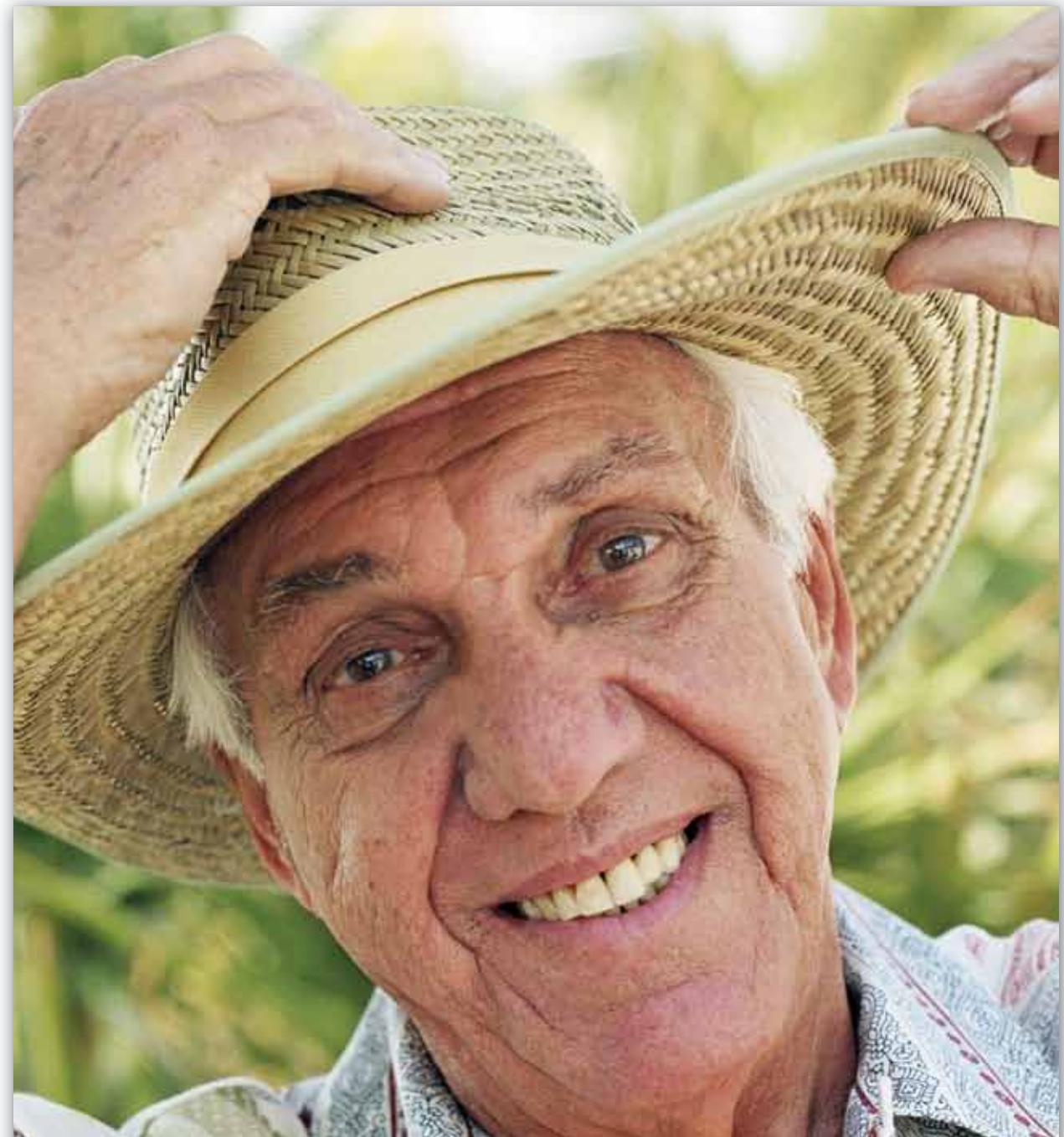
The retina lines the back of your eye and acts like the film in a camera. It is a thin, multi-layered tissue that covers about two-thirds of the eye's inner wall and contains millions of photoreceptor visual cells.

## Retinal Vein Occlusion (RVO)

A retinal vein occlusion occurs when one of the veins in your eyes (which is responsible for carrying blood away from the retina) gets blocked. This blockage can occur without warning. RVO can be a serious condition that in some cases can lead to vision loss in the affected eye.

## Vascular Endothelial Growth Factor (VEGF)

A substance made by cells that stimulates new blood vessel formation.

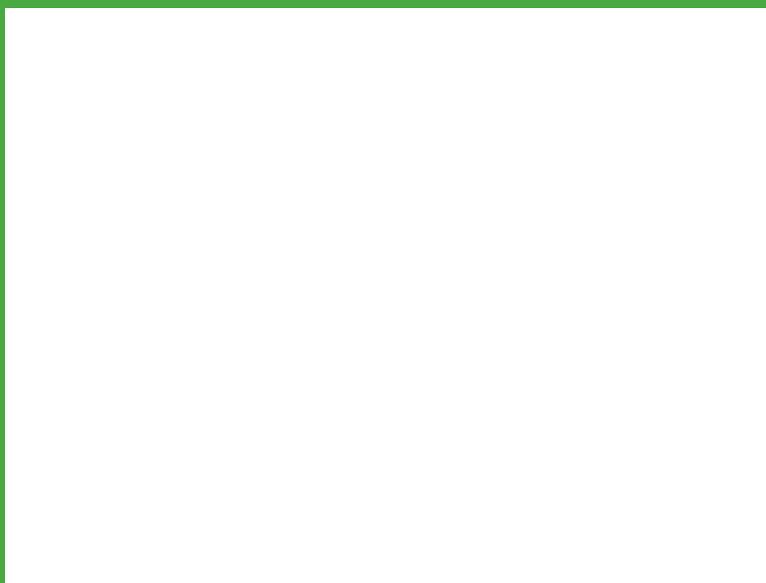


> **A solid support network of family, friends, RVO peer groups and organizations can all help you cope with vision loss.**



For more information call:

**1-800-363-8883**



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