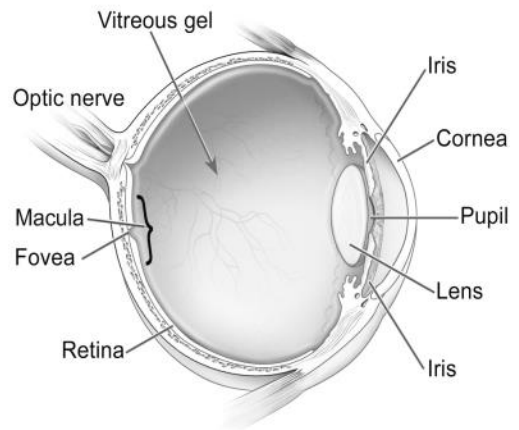




## Age-Related Macular Degeneration

The macula is a very small area at the center of the retina — a thin layer of light-sensitive tissue that lines the back of the eye. Light rays are focused onto the retina, where they are transmitted to the brain and interpreted as the images you see. It is the macula that is responsible for your pinpoint vision, allowing you to read, sew or recognize a face.

AMD is a chronic, age-related, degenerative disease of the macula.



### Risk Factors

There are a number of factors both in and out of your control that can put you at increased risk for developing AMD.

- Age: Risk increases with advancing age; from 8.5% for people 43-54 years of age to a high of 36.8% for people over 75.
- Family History: Up to 3 times greater risk within families (parents and siblings)
- Gender: Females are more susceptible.

### The following are risk factors that you can do something about:

- Smoking
- Diet: A diet low in antioxidant vitamins and minerals is a significant risk factor
- High blood pressure
- Excessive weight/obesity

There are two types of AMD, dry AMD and wet AMD.



## **What is Dry AMD?**

Most of the time, AMD will begin as the less severe dry type and, for approximately 80% of people, it will remain that way. Dry AMD usually involves both eyes.

The early stage of dry AMD usually begins with the appearance of drusen. Drusen are small yellow deposits that begin to accumulate in one of the deepest layers of the retina due to a breakdown in its normal function.

While drusen come and go with time, in some patients, an abnormal amount of drusen begins to build up. This will disrupt the retinal nerve layers above it, eventually damaging the layer of photoreceptor cells (the cells that receive visual images from the lens), resulting in “blank” or blind spots in your central visual field.

As dry AMD progresses from early to late stage, more cells break down and begin to waste away. In the end stages, the entire central macula can be damaged leaving a blind spot. If this process is going to occur, it takes many years for it to affect vision to the point where your functionality is affected.

As the disease continues to progress, the likelihood of it turning in to the more severe wet AMD significantly increases as well.

## **Diagnosis of Dry AMD**

Since dry AMD develops quite slowly, it can affect the vision in your eye without your being aware of it. This is because your eyes and brain are very good at compensating for weakness, and there is a great deal of overlap in the field of vision between the 2 eyes. If dry AMD is compromising vision in one eye, the good eye will adjust, making up for the other’s deficiency. Regular visits to the eye doctor are critical for early detection.

## **Treatment of Dry AMD**

Vitamin supplementation has been shown to slow down the progression of dry AMD and decrease the risk of conversion to wet AMD. This was shown in a large clinical trial called the AREDS trial. Your doctor may suggest you take a vitamin supplement that has the components studied in the AREDS trial. Based on the



results of both the AREDS and AREDS2 studies, we feel AREDS2 daily oral supplementation is recommended for patients with moderate to advanced AMD.

The Age-Related Eye Disease Study (AREDS) has previously demonstrated that daily oral supplementation with antioxidant vitamins and minerals can reduce the risk of developing advanced age-related macular degeneration (AMD) by 25% at 5 years.

## **What is Wet AMD?**

Wet AMD is so named because of the involvement of blood in the deepest layers of the retina. In a process called choroidal neovascularization (CNV), new and abnormal blood vessels spontaneously begin to grow beneath the retina and push their way up through it. Imagine tree roots or weeds growing up through cracks in the pavement. Being weak and abnormal, these new vessels leak their contents of blood and fluid into the retina like a blister. This results in blurred central vision or even blind spots in the central visual field.

Left alone, this process eventually results in the growth of scar tissue which, in turn, causes severe and permanent central vision loss. There is no pain associated with the entire process.

Wet AMD is preceded by dry AMD, which makes regular check-ups especially important.

Wet AMD is more aggressive than dry AMD and does not occur as frequently, accounting for approximately 15% of all AMD cases. It can cause rapid, severe and permanent central vision loss in a matter of months. Early detection is critical in order to start any treatments that might help preserve your vision.

## **What are the Symptoms of Wet AMD?**

- Blurred vision
- Straight lines appear wavy or distorted (metamorphopsia)
- Blank spots in central vision (Scotoma)
- Any combination of the above



You will probably be the first person to detect the onset of wet AMD when you notice that your vision has suddenly blurred. If you already have dry AMD, your vision might suddenly blur, you may see a blank spot in your visual field, or things that should be straight appear bent or wavy.

## Will I Lose My Vision Completely?

**Not likely.** The eventual outcome of **untreated** wet AMD can be severe and permanent central vision loss, with vision dropping to legal blindness or lower. In AMD, total blindness or darkness rarely occurs because the disease rarely affects the entire retina, just the central macula. So while someone with AMD may experience extremely poor vision in their central visual field, their peripheral vision is not impaired.

## How Fast Does it Progress?

Unlike dry AMD which progresses relatively slowly and may go unnoticed for years, wet AMD is more aggressive and can cause severe vision loss in a matter of weeks or months. The speed at which wet AMD progresses is dependant on a variety of factors. And once you have wet AMD in one eye, the chances of it developing in your other eye are significantly increased.

## How is it Diagnosed?

Only an AMD specialist, such as an Ophthalmologist, can make a definitive diagnosis; however your regular eye doctor can usually detect the presence of wet AMD based on your symptoms, medical history and a basic eye exam including a dilated retinal exam.

## How is wet AMD treated?

You and your retinal specialist will determine which treatment is best for you. The first line treatment for most patients is ***Anti-VEGF Therapy***.

Anti-VEGF stands for Anti-Vascular Endothelial Growth Factor. VEGF triggers the growth of the abnormal blood vessels in the macula. Anti-VEGF drugs help prevent this from happening. The 3 drugs currently available in Canada and covered by the



## Stratford Eye Specialists

provincial health plan are Avastin, Lucentis and Eylea. These drugs need to be injected into the eye on a regular basis for optimum effect.

Anti-VEGF therapy is NOT a cure. Most studies have shown that with regular treatment, 90% of patients can maintain their vision. About 30% of patients have seen an increase in vision with treatment.

You and your retinal doctor will try to develop a treatment plan to best suit your specific condition. All patients respond differently to treatment and require different treatment frequency and duration.

On average, most patients require Anti-VEGF treatment every 1-2 months to maintain their vision. In some patients, the treatments can be spread apart further or discontinued – but there is always a risk of recurrence with subsequent loss of vision. This balance should be discussed with your retinal doctor.



## How to use an Amsler Grid

**Note:** If you wear reading glasses, be sure to have them on whenever you take this test.

1. Look at the centre dot on the grid with one eye at a time, covering the other eye with your hand.
2. Make sure you stay focused on the centre dot.
3. As you continue to look at the centre dot, check to see that all the surrounding lines are straight and all the squares are the same size.
4. If any area on the grid appears blurred, distorted, discoloured or in any way abnormal or different from your last test, contact your eye doctor immediately.

A person with distortion will see wavy or irregular lines in an area of the grid. A person with a blind spot or scotoma cannot see a portion of the grid.

