



# Age-related Macular Degeneration (AMD)

## A Patient's Guide

**Fighting Blindness**

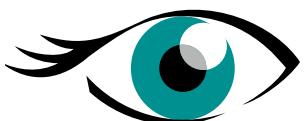
1 Christchurch Hall  
High Street  
Dublin 8

Tel: +353 1 709 3050

Fax: +353 1 709 3010

Email: [info@FightingBlindness.ie](mailto:info@FightingBlindness.ie)

[www.FightingBlindness.ie](http://www.FightingBlindness.ie)



**Fighting  
Blindness**

**Cure. Support. Empower.**

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Written and edited by: Lauren Dare and Susan Quirke of Fighting Blindness  
Designed by: Patrick Nesbitt  
Printed by: Spectrum Print Logistics, Ltd.

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This publication is also available in audio format. Please contact Fighting Blindness at +353 1 709 3050 to request a copy.



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# About Fighting Blindness

Fighting Blindness is an Irish, patient-led organisation funding research into treatments and cures for blindness. We also provide a unique professional counselling service for people and families affected by sight loss. Our vision is to cure blindness, support those experiencing sight loss and empower patients.

## The Past

Fighting Blindness started in 1983 as a group of families affected by blindness, getting together for support. From there we have grown to the point where we are now a global leader in the search for cures and treatments for genetically-inherited and age-related forms of blindness. Researchers in Trinity College Dublin funded by Fighting Blindness located the first known gene responsible for causing Retinitis Pigmentosa. Since then over 100 other genes have been discovered, and the ongoing research in this area is extremely encouraging. These discoveries have also greatly contributed to the expansion of our knowledge of other conditions, such as AMD. Since our foundation, we have funded over 40 research projects in universities and colleges in Ireland, with one in the UK. We are proud to be an organisation that is enabling the progress of research that may not otherwise have been funded.



Avril Daly, Chief Executive of Fighting Blindness

## The Present

We do our utmost to ensure that those who are facing the degeneration of their sight, whether they are far into that journey or have been recently diagnosed, are not alone. We involve our patient members not only in our direct activities, but in national projects that are taking place, including discussion groups and health forums. We make sure that our members are kept fully informed and up to date about current research developments. We are developing infrastructures to enable Irish patients to participate and have access to clinical trials when the opportunities arise. We advocate for sustainable infrastructures to expedite the development of therapies and to ensure equitable access to these therapies when they become available. We strive to achieve this by providing access to support in many formats, especially through the Insight Counselling Centre. We are involved at the very pulse of patient activities at all times.

## The Future

Fighting Blindness believes that research is key to the improvement of the quality of life for patients with unmet medical needs. We know treatments for conditions causing sight loss will not only improve the potential for full and independent lives for those affected, but will allow for a more inclusive society, develop Ireland's reputation in excellence in the area of medical research and ease the social burden on government. The future has never been brighter for patients pursuing treatments for blindness and this optimism is fuelled by the ever-increasing knowledge and understanding of the conditions that our research is providing. However, there is clearly much more we need to do. Every day people are losing more sight and we believe that this is unacceptable. Progress will need to be more focused and more expedient if treatments are to be realised in the fastest possible time frame.

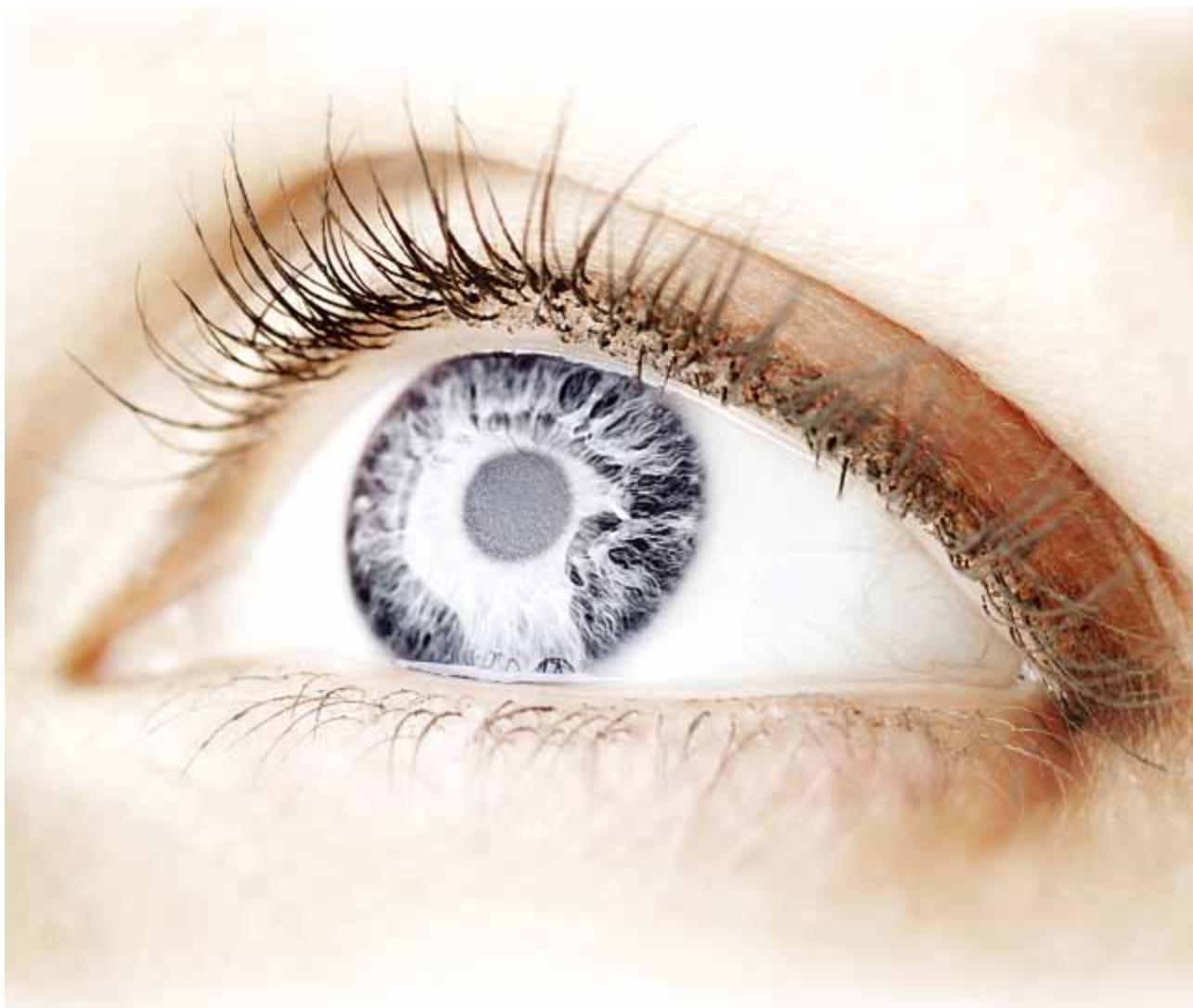
# Introduction

This booklet describes Age-related Macular Degeneration (AMD), an eye condition that causes loss of central vision as people get older. With one in 10 people over the age of 50 developing AMD, it is the leading cause of blindness in the developed world. In Ireland, over 20% of people officially registered blind have AMD.

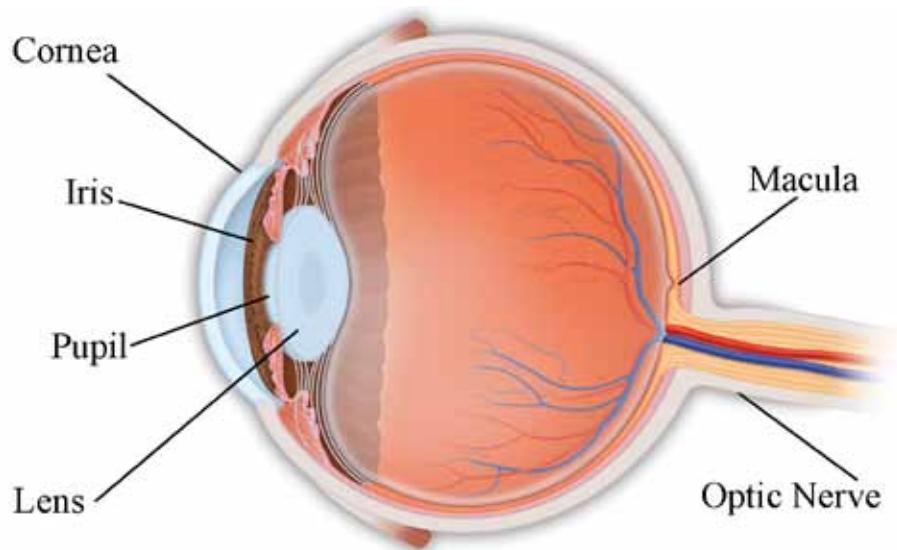
At Fighting Blindness, we are funding and enabling AMD research to discover the cause of the disease and how to treat it. In this booklet, you will learn more about AMD, steps you can take to protect your eyes and what to do if your sight is failing.

## Did you know?

AMD is the leading cause of blindness in the developed world. It is thought to affect 1 in 10 people over the age of 50, increasing to 1 in 3 over the age of 75.



# A Look Inside Your Eye



One thing you can't see is how your eye works. The processes that lead to our sense of sight are quite complex. The eye is one of the most complicated organs in the body.

The best way to understand how your eye works is to imagine a camera. Light enters the eye and is imaged by the retina. This acts like a camera's film—it captures the image and sends it to the brain for processing. If something happens to a camera's film, the image will be distorted. This is precisely what happens when the retina becomes damaged due to AMD.

This diagram shows the basic elements of the eye.

**Cornea:** The cornea is the transparent outer layer of the eye that refracts, or redirects, light to a sharp focus at the retina.

**Iris:** The iris is the visible outer layer that gives us our eye colour. It adjusts the size of the pupil, determining how much light reaches the retina.

**Pupil:** The pupil is the hole in the centre of the eye that lets light in.

**Lens:** The lens is a transparent structure inside the eye that works with the cornea to focus. It fine-tunes images and allows us to see at various distances.

**Retina:** The retina is a light-sensitive tissue that lines the back of the eye. When light hits the retina, messages are sent to the brain telling us what we see.

**Macula:** The macula is the central part of the retina that allows us to achieve high-quality vision and accounts for our ability to read, to drive safely and to see the world in detail and colour. The macula is yellow due to the collection of pigment from coloured fruit and vegetables we eat as part of our daily diet. This pigment is important to protect your vision from AMD.

**Optic Nerve:** The optic nerve carries information of what you see from the retina to the brain.

# What is AMD?

As we get older, some parts of our body slow down. Many people assume worsening eyesight is part of the aging process, but it doesn't have to be. There are many steps you can take to protect your eyes throughout your life. Everyone should develop a healthy lifestyle now to prevent health problems further down the line.

**Age-related Macular Degeneration (AMD)** is a disease that causes the gradual loss of sight, causing blurring or loss of central vision. This is often due to the destruction of the macula, a yellow pigmented structure at the back of the eye that is responsible for our detailed colour vision. The severity of the disease depends on each person and on how quickly it is detected.

**AMD is a chronic disease**—it cannot be cured and in many patients, sight cannot be restored after it is lost. However, certain forms of the disease can be treated. Early detection is important to potentially stop the spread of the disease and to protect your sight.

**One in 10 people over the age of 50 have AMD.** The number of people living with AMD in Ireland is set to increase over the next few years as our population ages. People are living longer and getting AMD earlier. You could now reasonably expect to live with AMD for 30-50 years. While it rarely causes total blindness, sight loss due to AMD can cause difficulty doing everyday tasks like reading, driving, watching TV and recognising faces. A person living with AMD often loses their social independence, putting pressure on the state, individuals and families trying to cope with sight loss.

**There are two forms of AMD, Early and Late.** In Early AMD, the signs that the retina is being damaged are only visible to your eyecare practitioner (optometrist or ophthalmologist). At this stage, the damage does not affect sight and people are unaware of the condition. This highlights the importance of regular eye examinations to detect AMD in its early stages.

Some people progress from Early to Late AMD, where the condition causes loss of vision. There are two forms of Late AMD, Dry AMD and Wet AMD.

**Dry AMD** is more common and has a slower progression. There are currently no treatments available.

**Wet AMD** is rarer. It is very aggressive and causes severe sight loss, but can be treated if diagnosed early.

## Did you know?

Lifestyle choices play an important role in reducing your risk. Make the decision today to stop smoking, eat a diet rich in fish and green leafy vegetables and enjoy regular exercise.



Normal Vision



Blurring of Central Vision –  
Early Stage AMD



Loss of Central Vision –  
Late Stage AMD

### Dry (Atrophic) AMD

Dry AMD is characterised by a loss of central vision. It is caused by an accumulation of small, yellowish deposits called drusen. This causes the thinning and breakdown of the macula. The amount of sight loss for someone with Dry AMD depends on how much the macula becomes damaged over time. Sometimes abnormal blood vessels begin to leak, leading to Wet AMD.

### Wet (Neovascular) AMD

Wet AMD is caused by abnormal growth and bleeding of blood vessels in the eye. This causes scarring of the retina, leading to distortion of vision where straight lines look curved. Current treatments include injections of a medication (referred to as anti-VEGF therapy) into the eye. Researchers are currently looking into alternative drug therapies to stop progression of the disease.

## Risk Factors and Prevention

Over the past 20 years, many risk factors for AMD have been discovered. Researchers know that certain genes cause AMD, but they don't know what triggers the gene. While AMD can be inherited, many lifestyle choices can make progression of the disease worse.

You may be at risk of developing AMD if you:

- Are over the age of 50
- Have a family history of AMD
- Smoke
- Are overweight
- Have fair skin and light eyes
- Are a woman
- Have a history of cataracts
- Have a poor diet

There are simple steps you can take today to help save your sight. Many of these are part of living a healthy lifestyle, so your heart and lungs will thank you too!

### Stop Smoking

We all know the harmful effects of cigarettes, but did you know that smoking can damage your eyes? Smoking reduces the amount of oxygen in your bloodstream. Your eye is a complex organ that needs oxygen to survive. Recent studies have shown that the sight of people with AMD is dramatically improved when you stop smoking. Even if you've smoked for 50 years, today is the day to stop!

# Getting Tested – The Amsler Grid

It is important to have your eyes tested every two years. If you notice any change in your vision, especially blurring, see your optometrist or doctor right away. Today, many optometrists can take a photograph of the back of your eye to detect irregularities. They may also shine a small light into the back of your eye to detect presence of drusen, a characteristic of dry AMD.

**Remember, an optometrist can detect many diseases, including AMD, before you have any symptoms. Regular eye exams are essential for maintaining good eye health and protecting your sight. Adults should be tested every two years.**

**One easy at-home test for AMD is the Amsler Grid.**

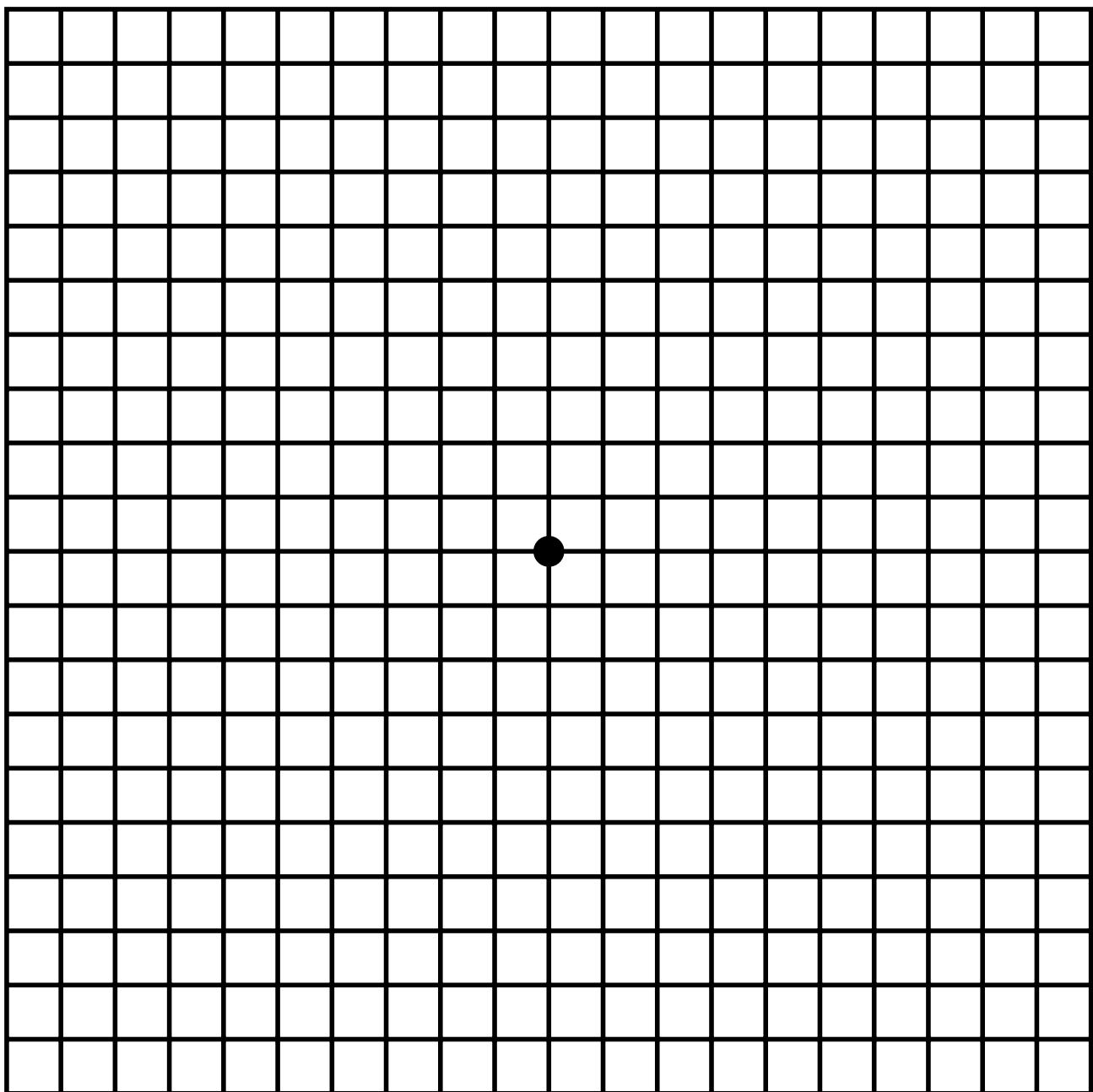
## How to test with the Amsler Grid:

- Hold the grid at reading distance, about 12 inches (30cm) away from your face.
- If you wear reading glasses, leave them on. Do not take the test while wearing varifocal or distance glasses.
- Cover one eye and focus on the centre dot.
- Make sure you can see all four corners of the grid.
- If the lines appear missing or wavy, you may have AMD. Contact your doctor immediately.

Remember, even if the grid looks normal, you should still attend regular eye exams for early detection of AMD.



## Amsler Grid



## What Happens After Diagnosis?

If your optometrist detects something wrong with your eye or suspects you have AMD, he or she will refer you to an ophthalmologist. This person will be able to medically treat your eyes and talk to you about the best course of action for your particular condition.

Your eye care practitioner will suggest lifestyle changes that will help slow the progression of AMD, such as stopping smoking and eating a healthy diet. Vitamin supplements may also be recommended.

If Wet AMD is suspected, you may have a test called Fluorescein Angiography. A special dye is injected into your arm and carried through your bloodstream. As it passes through the blood vessels in your eye, doctors can detect the severity of the leaking and bleeding. If you have Wet AMD, a treatment of anti-VEGF therapy may be recommended to treat the damaged blood vessels in your eye. The success of this therapy depends on early detection and treatment before irreversible scarring and damage occurs.

**“The final outcome depends on how much sight has deteriorated when AMD is detected and how soon treatments begin when necessary.”**

Prof Stephen Beatty,  
Waterford Institute of Technology



# Support Services

Receiving news about an AMD diagnosis may be frightening and confusing. There is a lot of information to learn about treatments and how to cope with sight loss, and you may not know where to turn for help. There is help available for you.

Some great organisations to get in contact with are:

## **Fighting Blindness**

1 Christchurch Hall, High Street, Dublin 8  
Tel: 01 709 3050  
Email: [info@FightingBlindness.ie](mailto:info@FightingBlindness.ie)  
[www.FightingBlindness.ie](http://www.FightingBlindness.ie)

## **NCBI (National Council for the Blind of Ireland)**

Whitworth Rd, Drumcondra, Dublin 9  
Tel: 01 8307033 or 1850 33 43 53  
Email: [info@ncbi.ie](mailto:info@ncbi.ie)  
Web: [www.ncbi.ie](http://www.ncbi.ie)

## **MIST (Macular Impairment Support and Togetherness)**

Adara, Crossthwaite Park West, Dun Laoghaire, Co. Dublin  
Tel: 01 280 9895  
Email: [beazles@indigo.ie](mailto:beazles@indigo.ie)

## **Other supports:**

Contact the National Council for the Blind of Ireland (NCBI) for further information on the following supports:

### **Low Vision Aids**

Low vision aids, such as hand-held magnifiers, may help you with reading things like books, letters and food labels, doing a crossword, setting the controls on your cooker or enjoying family photographs. Other low vision aids may be used to see things in the distance, like watching a football match on television, seeing a show at the theatre or checking the number of a bus.

These aids come in different strengths and sizes and can be small enough to fit into your pocket or large enough to place on your desk. Some people prefer to have their magnifiers fitted onto spectacles so that their hands are free for other tasks. These aids are available through NCBI's low vision service.

### **Aids and Appliances**

A selection of large-print, tactile and talking aids and appliances are available, such as signature and writing guides, talking watches and clocks, large button phones and a wide range of other equipment, designed to make everyday activities easier.

### **Assistive Technologies**

Assistive technology can be used to make things bigger and easier to see by enlarging print, photos and pictures onto a screen or by reading your letters or bills aloud so you can listen to them.

## Counselling

Fighting Blindness provides a unique, professional counselling service for individuals and families affected by sight loss through our Insight Counselling Centre. You can join us in individual and group therapy sessions to help you come to terms with AMD. There are also several support groups in Ireland that we can introduce you to.

For more information on the Insight Counselling Centre and to speak confidentially to our counselling psychologist, call 01 674 6496 or email [insight@fightingblindness.ie](mailto:insight@fightingblindness.ie).



**“Losing your sight is like losing someone you love. It’s like a part of your heart is gone. You have to adapt both emotionally and mentally.”**

Gerry Kerr, Fighting Blindness



**“Talking to a therapist can help you find ways to cope with problems or difficult situations independent of family or friends.”**

Counselling Psychologist Mary Lavelle of the Insight Counselling Centre, with her guide dog Star

**Fighting Blindness**  
Insight Counselling Centre  
4 South Great Georges Street  
Dublin 2

Tel: +353 1 674 6496  
Email: [insight@fightingblindness.ie](mailto:insight@fightingblindness.ie)

## Living with AMD – Meet Joe O'Callaghan

Age-related Macular Degeneration is a much talked about eye condition in the present day, but eighteen years ago when I retired, the condition was unknown to me. I now had more time to indulge my hobbies, which included an interest in music and an occasional game of golf. I did some choral singing and performed as a soloist also. My general health was excellent and is so today.

In 2003, I became concerned about my sight. There was notable deterioration. Night driving, in particular, became difficult. Oncoming lights, road markings, white lines became a problem. At this stage I went to my optician who recommended I take it further and see a specialist. He diagnosed

AMD and explained the condition to me. Understandably, I was shocked, but he did assure me I would not go blind. I was advised to visit the National Council for the Blind, who cater for not only blind but people with any degree of visual impairment. I received invaluable help in selecting low vision aids. I visit occasionally to keep in touch with developments in that field. This equipment enables me to keep up my reading needs but at a slower pace.

I have also discovered the enjoyment of audio books from my local library. Having never been an avid reader, this has opened another door. I continue to walk regularly, usually with my wife Eileen.

I joined a group called MIST (Macular Impairment Support and Togetherness). We meet once a month and spend a couple of hours comparing notes and, on occasion, listening to invited speakers. I find these meetings very beneficial.

I am a member of Fighting Blindness and through their meetings and newsletters I learn of the progress being made in the quest for suitable treatments for all eye conditions and for the various stages of AMD. As a result I remain optimistic, even at my age, that some degree of improvement in my situation may soon be possible.

Since my diagnosis, new doors have opened and I have made new friends. I have learned to adjust my life to live with AMD and today, I am glad to say, I lead a happy and contented life.



## Research and the Future of AMD Treatments

**“The number of cases of AMD will increase by 100% between 2008 and 2020.”**

Prof Stephen Beatty,  
Waterford Institute of Technology

For 30 years, Fighting Blindness has been driving research efforts in Ireland to make sure that everything in our power is being done to develop treatments and cures for blindness. We believe that research is the key to improving the quality of life for the thousands of people who are affected in this country, and millions across the world. It is our hope that one day we will not only treat, but be able to cure AMD. In the meantime, we hope to find affordable, safe and effective treatments to help stop the progression of the disease. By understanding the conditions, we can work towards finding solutions. Research is a long and costly process, so while we invest in funding to enable work throughout the country and further afield, we also work hard to support those who have been diagnosed and who are adjusting to a life that includes the challenges of sight loss.

As Fighting Blindness is a patient-led organisation, founded and governed at all times by patients, patient empowerment is our core conviction. We empower patients by enabling them to get involved in discussions and decisions about healthcare issues that affect them, giving power to the patient voice. Although the organisation began in its early days by concentrating on rare forms of retinal degeneration, the work we were funding provided cross-fertilisation opportunities, which led us to develop research into more common chronic diseases such as Age-related Macular Degeneration and Diabetic Retinopathy.

The first involvement Fighting Blindness had with research into AMD came through Waterford Institute of Technology, when we funded the Ph.D. studies of a promising young scientist. Through this, we were effectively able to establish AMD research in Waterford. The team at WIT began the largest longitudinal study of its kind in the country which concentrated on looking at the effects of nutrition on the progression of AMD. This work has gone from strength to strength and the Waterford group is now established as a Centre of Expertise in the study and treatment of AMD. In 2012, this research team, the Macular Pigment Research Group, launched a one-of-a-kind research and vision-testing facility to further their studies into the link between nutrition and vision.

Significant breakthroughs have been made recently at Trinity College Dublin, exploring the effects of genetics in AMD as well as investigating therapies which are potentially less invasive than those currently available. Researchers are trying to uncover the underlying



causes of AMD with the hope that new therapies can be developed with greater understanding of the disease. The Genetics Department is pioneering a non-invasive method for drug delivery to the retina with the aim of treating AMD without the need for injections. While this work is still in early stages, it looks promising that there will be positive outcomes in the future.

Internationally, researchers are trying to understand why some people get AMD and others do not. While we understand some of the risk factors and lifestyle choices that may lead to the disease, researchers are also investigating the role of the immune system in the progression of the disease. We are keen to continue supporting work in the area of AMD, which we believe is a chronic disease and should be a public health priority. The condition is reaching epidemic proportions in this country and it is estimated that this increase is largely due to our aging population.

**“Everyday we are learning more about how AMD works. I believe we are close to finding a non-invasive treatment to stop the progression of early AMD.”**

Prof Pete Humphries,  
Trinity College, Dublin

Fighting Blindness is enthusiastic about research, so that we can better understand the causes and effects of AMD in order to move forward in our quest for an ultimate cure. In a similar approach, we believe that it is extremely important for patients and their family members to fully understand their conditions and the options available to them. This helps patients make informed decisions about their treatment and care options.

To this end, Fighting Blindness stay involved on a national and international level, so that we can make sure we are up to date on research developments in the diagnosis, care and treatment of people with AMD. We are proud to represent Ireland as part of the AMD Alliance International, which strives to bring knowledge, help and hope to individuals and families around the world affected by AMD.

Fighting Blindness is also an active member of the European Patient Forum (EPF) and the first Irish group ever to be represented on its board. The EPF was founded in 2003 to become the collective patients' voice at EU level, manifesting the solidarity, power and unity of the EU patients' movement. As more and more health policy is developed at EU level Fighting Blindness believe it is essential to have a voice at EU level that represents the views and concerns of its membership.

## Did you know?

There are huge amounts of research happening all over the world right now. We at Fighting Blindness are determined to do all we can to support research and believe that this combined effort provides genuine hope and possibility to all those affected.

# Lifestyle Tips

## Eat Your Veg

Bugs Bunny was right: carrots are good for your eyes. So are green leafy vegetables, like spinach and kale, because they are high in Vitamins C and E, as well as zinc. Yellow bell peppers and carrots are great for your eyes because they provide the carotenoids lutein, zeaxanthin and beta carotene that go directly to the eye and help protect the macula. The yellow colour of the macula is made of carotenoids.

## Exercise and keep off the weight

Research out of Waterford Institute of Technology funded by Fighting Blindness shows that our expanding waistlines could put our sight at risk. Like smoking, increased fat intake deprives your eyes of vital nutrients and oxygen. Obesity also puts you at risk for developing diabetic retinopathies (loss of vision due to diabetes).

## See your eye doctor regularly

Don't ever accept failing eyesight as part of getting older. All adults should get an eye exam every two years. If something goes wrong in the meantime, see your optometrist right away or speak to your GP.

Be active in your healthcare: partner with your doctor to make sure you understand your condition and the options that are available. If you don't understand what your doctor is saying, ask them to repeat it or ask questions until you do understand. Make sure you know if there are signs and symptoms you should be aware of. Ask a friend or family member to accompany you to your appointment to help you write down or remember any information given. Being informed will help you feel more in control.



**“We are in the midst of an epidemic of AMD. The most important measure a person can take is to abstain from tobacco use.”**

Dr John Nolan, Waterford Institute of Technology

# Eat for Eye Health



A balanced diet is good for your health and a diet full of carotenoids can help build up the yellow pigment of your macula and protect your retina.

Foods good for protecting your eyes include:

- Carrots
- Bell peppers
- Sweet potatoes
- Spinach
- Kale
- Turnip greens
- Collard greens
- Swiss chard
- Romaine lettuce
- Broccoli
- Courgettes
- Corn
- Garden peas
- Brussels sprouts
- Eggs
- Goji berries
- Kiwi

Here's a quick and easy recipe to help get all those good vegetables into your body!

## Bright Eyes Vegetable Soup

*2 tbsp Olive Oil  
1 Onion, finely chopped  
2 Cloves garlic, chopped  
500g Potatoes, diced  
½ tsp Paprika  
2 Carrots, diced  
1 Courgette, diced  
2 Bell peppers (yellow, orange or red), diced  
1L Vegetable Stock  
200g Kale (or spinach), chopped with stems and stalks removed  
1 tsp Basil  
1 tsp Oregano  
1 tsp Cumin  
2 Bay leaves  
100g Frozen peas  
Salt & Pepper to taste*

Heat oil in large pot.

Add onion and garlic. Saute until soft.

Add potatoes and paprika. Stir and cook 2 minutes.

Add carrots, courgette and bell pepper. Stir and cook 2 minutes.

Cover vegetables with stock (about 800mls).

Add kale on top of mixture and cover with remaining stock. Stir through and add more liquid if needed to cover vegetables.

Bring to boil and add seasoning (basil, oregano, cumin, bay leaves).

Reduce heat and simmer covered for 30 minutes (or until potatoes are soft).

Add frozen peas and cook 5 minutes.

Change things up by adding chorizo or smoked sausage, sweet potatoes, lentils, chilli powder or tomatoes. Serve with crusty bread and enjoy with good health!

# Frequently Asked Questions

## What is AMD?

Age-related Macular Degeneration (AMD) is a chronic disease that affects one in 10 people over the age of 50. It is the leading cause of blindness in Ireland and the developed world. AMD causes loss or blurring of central vision.

## What can I do to stop AMD?

Stopping smoking and leading a healthy lifestyle are very important. Eating a healthy diet rich in vegetables like carrots, bell peppers and spinach can help reduce the risk of developing AMD for everyone, and especially those with a family history of the disease. If AMD has already been diagnosed, these steps can potentially reduce the effects and progression of AMD. You may also be advised to take vitamin supplements to help promote good eye health. While these are available over the counter, you should always check with your healthcare provider before beginning a new course of treatment.

## How often should I get my eyes tested?

All adults should get their eyes tested every two years. If your vision begins to change, see your optometrist or GP right away.

## Where can I learn more?

For more information about AMD, current research and support services, visit [www.FightingBlindness.ie](http://www.FightingBlindness.ie) or call Fighting Blindness at +353 1 709 3050.

## What should I ask my doctor about AMD?

If you are diagnosed with AMD, ask your doctor to give you clear information about your disease.

Questions you may want to ask are:

- Do I have Wet or Dry AMD?
- Has my AMD been detected early or late?
- Do I have signs of AMD in both eyes? If not, how can I protect the unaffected eye?
- What lifestyle changes can I make to help slow the progression of AMD? Are there any supplements I can take?
- What type of therapies are suggested? What will this involve? What is the cost?

If you have any additional questions, contact Fighting Blindness.

Fighting Blindness cannot give specific medical advice, but we are happy to share information and resources for patients.

## How can I get involved in fundraising for research and counselling?

You can become a Member of Fighting Blindness or can make a donation using the form at the end of this booklet.

You can also donate online at [www.FightingBlindness.ie](http://www.FightingBlindness.ie) or ring +353 1 709 3050 to make a donation or set up a monthly Direct Debit payment.

We hold many fundraising events throughout the year including treks, cycles, runs and social events. We'd love for you to join us!

# Glossary

Here is a list of terms your doctor may use when describing AMD and your treatment.

## A

**Age-related Macular Degeneration:** a disease associated with aging that causes loss or blurring of central vision

**Amsler Grid:** a simple grid pattern used to detect AMD

**Antioxidants:** enzymes that counteract the damaging effects of oxidation of cells

**Anti-VEGF:** (anti-vascular endothelial growth factor) a treatment for AMD that slows the leaking and bleeding of blood vessels in the retina

**Atrophic:** see Dry AMD

## B

**Beta-carotene:** the red-orange pigment that gives carrots their colour and helps maintain the macula

## C

**Chronic illness:** an illness or disease that lasts a long time

**Choroid:** part of the vascular layer of the eye that provides oxygen and nutrients to the retina

**Cornea:** the transparent outer layer of the eye that refracts light, allowing us to see

**Carotenoids (Lutein, Zeaxanthin, beta-carotene):** yellow pigments found in food that helps protect the eye and form the macula

**Cones:** photoreceptor cells that function in daylight and provide our perception of colour

## D

**Drusen:** tiny yellow or white accumulations of extracellular material that build up and are a sign of AMD

**Dry AMD:** (also known as atrophic), this form of AMD is currently untreatable. It is characterised by a loss of central vision caused by an accumulation of small, yellowish fat deposits called drusen. This causes the macula to dry out and thin. The amount of sight loss for someone with dry AMD depends on how much the macula thins. Sometimes abnormal blood vessels begin to form leading to Wet AMD

**Degenerative:** a gradual loss of function, as in degenerative retinal diseases—a gradual loss of sight as the retina stops working

## E

**Early AMD:** people diagnosed with AMD early have no vision loss, but have clinical symptoms of AMD. This means that a healthcare professional is able to detect AMD in your eye and you may be able to make lifestyle changes to slow the progression of the disease. Early detection is essential to saving your sight and all adults should attend regular vision tests even if they have no noticeable changes to their sight

## F

**Fundus:** the interior surface of the eye that includes the retinal, fovea and macula

**Fovea:** a small pit at the centre of the macula with a high concentration of cone cells

## G

**Genes:** stores of information that tell our cells what to do and pass down family traits including hair and eye colour, as well as certain illnesses

## I

**Intraocular injections:** in AMD this refers to injections of anti-VEGF treatment directly into the eye

**Iris:** the visible coloured part of the eye that adjusts the size of the pupil, letting light into the retina

## L

**Late AMD:** a person diagnosed with late AMD has already started to lose some vision. At this point, your AMD will be described as atrophic (also known as Dry AMD) or neurovascular (also known as Wet AMD)

**Lens:** the transparent structure inside the eye that works with the cornea to focus and fine tune images

**Lutein:** a carotenoid found in green leafy vegetables such as spinach and kale that helps maintain the yellow pigment of the macula and protects the retina

## M

**Macula:** an oval shaped yellow pigment at the back of the eye that protects from UV light and is essential for sight

## O

**Optometrist:** a licensed professional who examines your eyes for defects in vision or eye conditions in order to prescribe corrective lenses or appropriate treatment

**Optician:** someone who makes or sells lenses (glasses and contacts) in accordance to an optometrist's prescription

**Ophthalmologist:** a medical doctor specialising in the eye that can carry out specialised treatments or surgery once referred by an optometrist

**Optic nerve:** sends information from the retina to the brain

## P

**Pupil:** the hole at the centre of the eye that lets light in to the retina

**Photoreceptor cells:** specialised neurons (cells) in the retina that convert light into signals for the brain

## R

**Retina:** a light-sensitive tissue that lines the back of the eye and sends messages to the brain of what we see

**Retinopathies:** diseases associated with a condition of the retina

**Retinal pigment epithelium (RPE):** a pigmented cell layer outside the retina that nourishes retina visual cells

**Rods:** photoreceptor cells that function in dim light and provide black and white images

## S

**Sclera:** the white part of your eye that forms a protective layer

## V

**Vitreous humour:** the clear gel that fills the space between the lens and retina

**Vitamin C and E:** important vitamins that act as antioxidants

## W

**Wet AMD:** (also referred to as neovascular) this form of AMD is often treatable. It is characterised by a distortion or blurring of vision caused by bleeding blood vessels in the eye that lead to blistering and scarring of the retina. Current treatments include injections of a medication (referred to as anti-VEGF therapy) into the eye. However, not everyone is suitable for this treatment

## Z

**Zinc:** an essential element found in the human body with high concentrations in the eye. It can be found naturally in red meat, seeds, nuts, beans and can also be found in supplements

**Zeaxanthin:** a carotenoid found in red vegetables like carrots and bell peppers that is important for protecting the macula and retina

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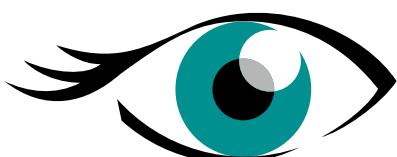
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# Fighting Blindness

Cure. Support. Empower.

**Fighting Blindness**

1 Christchurch Hall  
High Street  
Dublin 8

Tel: +353 1 709 3050

Fax: +353 1 709 3010

Email: [info@FightingBlindness.ie](mailto:info@FightingBlindness.ie)

**[www.FightingBlindness.ie](http://www.FightingBlindness.ie)**