

Patient Information Brochure

Age Related Macular Degeneration (ARMD/AMD)

Q: How do we see?

A: Our eyes are like a camera with a lens system at the front of the eye, and the retina, like a photographic film, lining the inside wall of the back of the eye. Light passes through the cornea, pupil and lens and is focused on the light sensitive retina to form an image. Messages are sent via the optic nerve to the brain for processing.

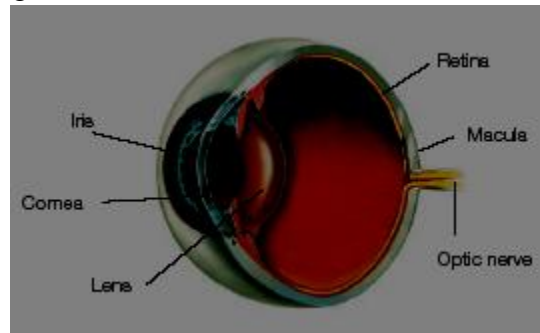


Fig 1. Normal Human eye and macula

Q: What is macula?

A: The macula is the central part of the retina. It is a small, specialized area in the middle of the retina and is responsible for our ability to see fine detail. This central vision is the vision we use for reading, driving, recognising faces, threading needles and other fine detailed work. The remaining part of the retina is responsible for our side vision, also known as peripheral vision. This is our mobility vision, allowing us to get about and to maintain our independence.

Q: What is ARMD?

A: With ARMD, there is damage or breakdown of the macula, leading to loss of central vision. The eye still sees objects to the side since peripheral vision is not affected. For this reason macular degeneration does not result in total blindness.

Q: What is Dry ARMD?

A: The most common form of the disease is known as **Dry ARMD**. This form occurs in approximately 80 to 90% of people with ARMD.

Q: How severe is it? How does it affect my vision?

A: In Dry ARMD the vision loss is usually very gradual and is seldom severe. Areas of the central retina gradually become thin and stop working. Some people notice blank areas in their vision.

Q: How can I prevent or cure it?

A: Vitamin supplementation, diet modification and stopping smoking can all decrease the rate at which this gets worse, and the eyesight may also be helped somewhat with the use of special low-vision magnifying lenses.

Q: What is Wet ARMD?

A: Some people develop a more aggressive form of the disease called **Wet ARMD** that can lead to rapid and severe vision loss. This occurs in only 10 to 15% of people with macular degeneration. In Wet ARMD, abnormal blood vessels grow under the macula and eventually leak fluid, bleed or lift up the retina. When this happens central vision is reduced and often distorted. The longer these abnormal new vessels continue to leak, bleed and grow, the more central vision will be lost.

Q: Will I become blind?

A: Left untreated, these fragile vessels will cause scarring and irreversible loss of the detailed central vision. Sometimes only one eye loses vision while the other eye continues to see well for many years. If both eyes are affected however, reading and close-up work may become extremely difficult. It does not cause blindness and since the side vision remains, people can usually take care of themselves quite well.

Q: What are the symptoms of Macular Degeneration?

A: Most patients with ARMD will notice difficulty in reading as words become blurred or crowded. There may be a black or grey spot in your central vision. A frequent and important early symptom of Wet ARMD is distortion when straight lines appear bent or wavy. You may become aware of this when looking at a page of small print or looking at a window frame or telephone pole with your affected eye.

These changes in eyesight are important symptoms and if they occur you should contact your ophthalmologist promptly. Do not assume you simply need a new pair of glasses and wait for an appointment in the future.

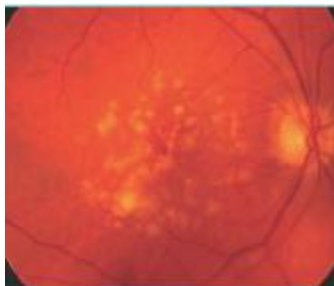


Fig 2A. Eye with Dry ARMD

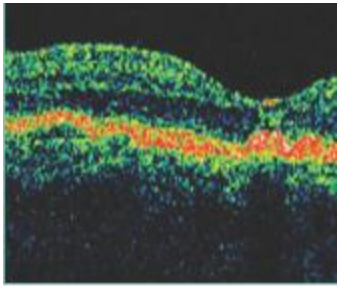


Fig 2B. OCT scan of same eye showing bumps below macula causing distortion

Q: How is ARMD diagnosed?

A: Many people do not realize they have macular problems until blurred vision becomes obvious. An eye specialist can examine the macula and identify early changes. If Wet ARMD is suspected, special tests called optical coherence tomography (OCT) and fluorescein angiogram are usually required.

OCT is a no-touch method of scanning the macula to look for fluid leaks, the first sign of Wet ARMD. It only takes a minute to do, and no needles or touching of the eye are required.

Fluorescein angiography is used to locate exactly where the leaking blood vessels are. In this test, dye is injected into a vein in the arm. The dye travels through the body, and with a special camera a series of photographs are taken as the dye passes through the retina, putting together a map of the problem which can be used by the doctor during treatment.

Q: What is the treatment for Dry ARMD?

A: With any kind of ARMD, various measures have been shown to decrease the risk of the disease getting worse. These include:

1. **Vitamin Supplementation**

A large American study, the Age-Related Eye. Diseases Study (AREDS) found that using certain combinations of vitamins could reduce the chance of ARMD getting worse by about one quarter.

2. **Stop smoking**

Smokers are at higher risk of ARMD, and of Wet ARMD in particular. It is therefore very important to stop smoking at the earliest sign of this condition.

3. **Dietary changes**

Various foods seem to protect against the development of Wet ARMD, including nuts and fish oils.

Q: What is the treatment for Wet ARMD?

A: With Wet ARMD, several different treatments are possible:

1. **Avastin/ Lucentis/ Macugen Injections**

These drugs at present appear to be the best treatment for Wet ARMD. They are injected into the eye, and may need to be repeated several times over the course of several months, but they have been shown to improve vision in people with Wet ARMD, so long as scarring has not started to take place. No other treatment seems to improve vision; other treatments can only decrease the rate at which things get worse.

2. **Thermal Laser Therapy (Photocoagulation)**

In this procedure, the heat from a laser light is used to cauterize the abnormal leaky blood vessels. This treatment also damages overlying normal retina. This is done only if new blood vessels are away from the macula.

3. **Photodynamic Therapy (PDT)**

PDT uses a light-activated drug (Visudyne) and a special non-thermal laser to selectively destroy abnormal blood vessels while preserving surrounding normal healthy tissue. It is used less frequently now since the injections are proven better than PDT alone.

Q: Do the injections have any side effects?

A: Like any procedure on the body, these injections also have side effects which are thankfully rare.

With any injection in the eye, there is always a risk of infection or retinal detachment, the chances of which are 0.1 %. Occasional reports of excess reaction in the eye, increase in eye pressure, episodes of stroke and heart problems have been reported. Overall these drugs are safe, highly effective and are used worldwide.

Q: How do monitor my vision?

A: **Amsler Grid Eye Exam** can be used at home for monitoring one's vision.

Directions:

1. Wear the glasses or contacts you normally wear for reading.
2. View the grid at reading distance (approx 30cm) in a well-lit room.
3. Cover one eye with your hand and focus on the centre dot with your uncovered eye. Repeat with the other eye.
4. If you see wavy, broken or distorted lines, or blurred or missing areas of vision you may be displaying symptoms of ARMD and should contact your eye care provider immediately

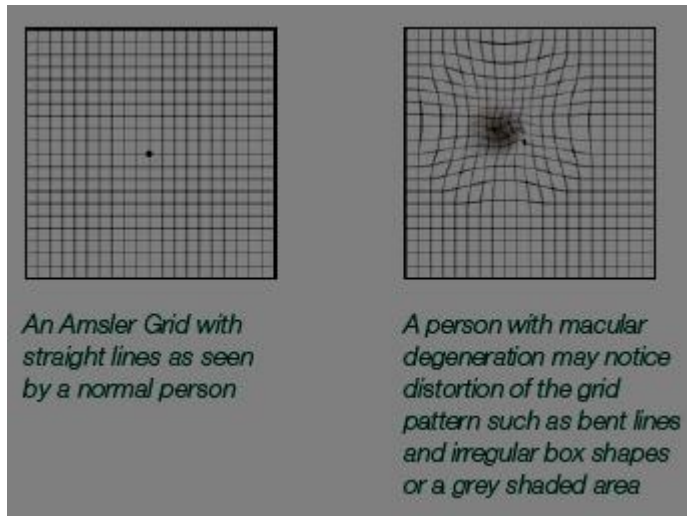


Fig 3. Amsler Grid test

Q: Is there no alternative to repeated injections?

A: Unfortunately not till now. Research is on in this field. Many new drugs in the form of better injections and even eyedrops are in the pipeline in the near future. In fact a drug called *Eyelea* is already available in Europe, which shows comparable results as Avastin and Lucentis, if not better. However it may take some time to reach Indian shores.