

Age-related Macular Degeneration

What is age-related macula degeneration?

Age-related maculopathy (ARM), also known as age-related macular degeneration, is damage or breakdown of the macula. The macula is a very small part of the retina, the light-sensitive tissue of the back of the eye, which is responsible for central vision. This is the part of the retina which produces our fine detailed vision.



How does ARM affect vision?

As ARM damages the part of the retina responsible for central vision and for seeing fine detail, it becomes difficult to see small details of objects. Vision to the sides is not affected. If both eyes are affected, reading and other tasks requiring fine vision may become very difficult. ARM does not cause blindness. Because some side vision remains, usually people can still take care of themselves.

What causes ARM?

ARM is the result of ageing processes in the eye. Some of the layers of the retina thicken and waste material which is usually removed from the retina forms deposits, distorting the retina. This distortion can cause damage to the other layers of the retina. In about 10 per cent of cases, new blood vessels grow into the macula from beneath. These newly-formed vessels are fragile and often leak blood into the retina where the blood causes scar tissue to form. The scarring blocks out central vision to a severe degree. There are also some other forms of macular degeneration which are inherited and not associated with ageing.

How common is ARM?

ARM mainly affects older people: about four per cent of those more than 40 years old, nine per cent of those over 50 years, 23 per cent of those over 65 years and 31 per cent of those aged 80 years or more. Men and women are equally affected. ARM accounts for up to 45 per cent of legal blindness and up to 70 per cent of seriously impaired vision in people over the age of 70 years.

How is ARM detected and diagnosed?

People with ARM may notice that their vision has deteriorated. Many patients do not realise that they have a problem until their vision becomes blurred. Optometrists perform a number of tests in an examination which enables them to detect the presence of ARM in the early stages.

The optometrist examines the macula carefully with an instrument called an ophthalmoscope which allows examination of the interior of the eye. If indicated, the optometrist may place a drop in the eye to dilate the pupil to get a better view of the internal structures. Through the ophthalmoscope the

optometrist will look for changes in the structure of the macula such as accumulations of waste material or new blood vessels.

Another test which may be used is a grid pattern known as an Amsler chart. This is a regular grid which looks like a piece of graph paper. Patients with ARM often report that sections of the grid appear to be distorted or missing. Optometrists will usually refer patients whom they suspect have ARM to an ophthalmologist (eye surgeon) for confirmation of the diagnosis. The ophthalmologist may perform a test called fluorescein angiography. In this test a fluorescent dye is injected into the patient's bloodstream and the ophthalmologist observes the progress of the dye through the blood vessels in the retina. This reveals any leaking blood vessels.

Can ARM be treated?

When most body tissues such as muscle, skin or bone are damaged, the tissues' cells have the capacity to regrow and repair the damage. Because nerve cells cannot regenerate, damage to nerve tissue, such as the retina, is usually permanent and irreversible. This is why the vision loss in ARM is so difficult to treat, compared with other vision disorders. For example, it is possible to remove and replace the eye's lens in a person with cataract but it is not possible to replace or even repair the retina of a person with ARM.

Where new blood vessels have appeared in the macula area, laser surgery may be used. In this treatment a focused, intense beam of laser light is used to seal off leaking blood vessels and to prevent new vessels growing. This treatment is most effective when it is applied in the very early stages of the disease, before extensive damage has been done.

While there is little which can be done to prevent or cure ARM, people with the disease can be helped to continue functioning normally. Many patients with ARM will eventually come under the classification of being a low vision patient. Special help in the form of low vision devices is available from optometrists and specialist low vision clinics. Low vision devices enable patients to make the most of their vision and include items such as miniature telescopes, high-powered reading spectacles, hand-held and stand magnifiers, closed circuit televisions and other simpler aids such as large-print books.

What should you do about ARM?

For treatment of ARM to be effective, it must be diagnosed as early as possible. Regular eye examinations are the key to early detection of retinal changes and other signs of disease. If you notice any change in the quality of your vision, have your eyes examined immediately. Regular examinations are particularly important for people over the age of 50 years and people whose families have a history of eye problems.