

MYOPIC MACULAR DEGENERATION



Macular
Disease
Foundation
AUSTRALIA

Myopic macular degeneration (also known as MMD) can occur in people who are very short-sighted, usually due to elongation of the eyeball. The stretching of the retina due to the elongation of the eye can result in tears in the macula area (the central part of the retina) and bleeding beneath the macula.

How the eye works

Your eye works very much like an old-style film camera. The front of your eye, made up of the cornea, iris, pupil and lens, focuses the image onto the retina, which is the tissue that lines the back of your eye. The retina is a light-sensitive tissue that acts like the film in a camera, capturing images and then sending them via the optic nerve to the brain, where the images are interpreted.

What is the macula?

The macula is responsible for detailed central vision and most of your colour vision. You use your macula to read, recognise faces, drive a car, see colours clearly, and perform any other activity that requires fine vision. The macula is approximately 5.5 millimetres in diameter.

What is myopia?

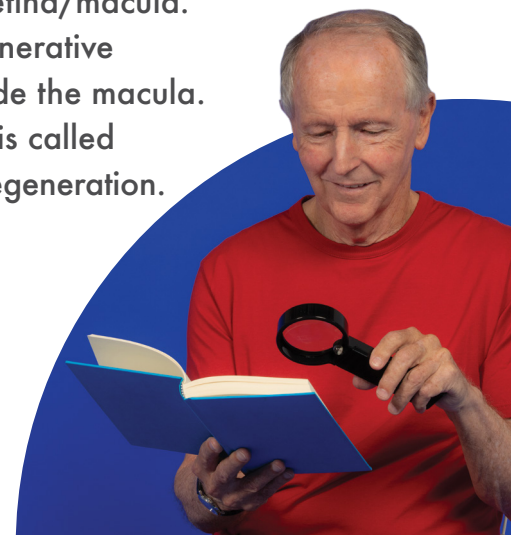
Myopia is often also referred to as short-sightedness. Myopia usually occurs when the eyeball has grown too long.

These differences mean your eye is not able to clearly focus light on the retina causing vision to be blurry in the distance but clear when something is up close. It is a very common condition and contact lenses or glasses will make the vision clear for most people.

The power of the glasses or contact lenses used to correct vision blur is measured in dioptres (D). The higher the number, the more myopic you are. High myopia is usually over -6.00 D.

Problems associated with high myopia

People with high myopia are at risk of pathological myopia. That is where permanent degenerative changes can occur to the retina/macula. Any of these degenerative changes can include the macula. Where they do, it is called myopic macular degeneration.



These degenerative changes can include the following.

Retinal atrophy

The stretching of the retina in myopia causes the retina to become thinner which can lead to areas of retinal atrophy (loss of tissue) and associated vision loss. Retinal atrophy can occur anywhere on the retina and if it happens in the central macula area, it can affect central vision.

Lacquer cracks

As the eye stretches it can cause breaks to appear in the layer between the retina and the choroid called Bruch's membrane. The choroid is the blood vessel layer under the retina. These breaks can also appear in the macula. They are called lacquer cracks. They may be associated with choroidal neovascularisation. Retinal haemorrhages can also occur even without the presence of a choroidal neovascularisation (see below).

Choroidal neovascularisation

Abnormal new blood vessels can grow in areas of atrophy or lacquer cracks and can involve the macula. This is known as choroidal neovascularisation (CNV). The abnormal new blood vessels are fragile with leaky walls and can lead to scarring and permanent vision loss.

Retinal detachment

People with high myopia are at an increased risk of retinal detachment and retinal tears due to the eye elongation and subsequent stretching/thinning of the retina. The most common symptoms are the sudden onset of flashes and floaters. Some people may also notice reduced vision or a curtain or shadow in the affected eye.

Retinal tears generally require laser treatment and retinal detachments usually require surgery. You can read more about retinal detachment in a separate fact sheet.

Dome-shaped maculopathy is a condition that occurs in up to 40 per cent of people with degenerative myopia.¹ As its name suggests, the macula becomes dome-shaped, appearing to be convex, contrary to its usually concave appearance. Often there may be associated fluid under the macula that may need treatment with anti-VEGF injections or laser.²

Managing myopia

Glasses and contact lenses are very effective in managing the blurriness caused by myopia in most cases. But they don't reduce the impact of high myopia on the eye.

Unfortunately, the higher the level of myopia, the greater the risk of additional damage occurring to the retina due to the elongation of the eye. If your retina has been damaged, then you may need more than glasses to help you see better.

There is ongoing research into the management of myopia in children to reduce the progression of eye elongation and therefore reduce retinal damage with age. Therapies include the use of eye drops, speciality hard and soft contact lenses, as well as spectacles.



Treatment of myopic macular degeneration

If you have myopic macular degeneration, you need to be monitored regularly. Any sudden changes in vision or any new symptoms should be reviewed by your eye health professional as soon as possible.

Not all of the eye changes that occur in pathological myopia can be treated.

If choroidal neovascularisation occurs, you may be treated with anti-vascular endothelial growth factor (anti-VEGF) eye injections or laser, depending on the location.

You should always discuss the appropriate treatment with your eye health professional, to ensure you understand the options available.

Monitoring myopia

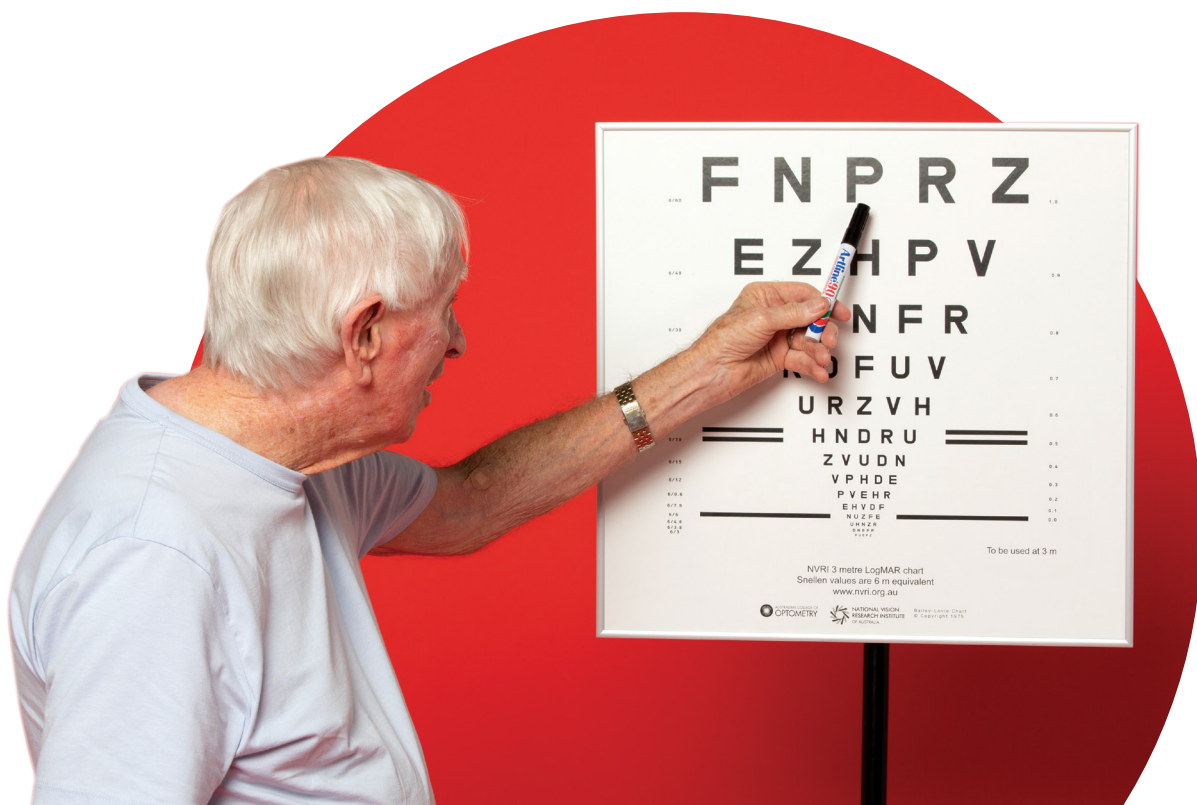
Even if your vision appears stable, it is essential that you have a comprehensive eye exam at least every year. Your eye health professional may recommend more frequent eye exams, so always follow their recommendations.

Managing vision loss

If you experience vision loss as macular myopic macular degeneration progresses, a key priority is maintaining quality of life and independence. A low vision assessment is an essential way to regain control of your situation and get started to ensure you can live well with vision loss.

These assessments include tests to determine how much of your vision remains. The result of these assessments will help you gain a better understanding of your vision impairment and how to make the most of your remaining sight. It will also include valuable advice and support for your individual circumstances.

You can undergo an assessment at a low vision clinic, and sometimes in a major hospital or university. Some eye health professionals also provide low vision assessments. You may be able to have a low vision assessment in your own home. We recommend you contact MDFA so we can direct you to the appropriate low vision services for your needs.





Need more information?

Learn more about macular disease at www.mdfoundation.com.au.

How's your macula? Take the quiz at www.CheckMyMacula.com.au.

You can also access our free, personalised support services and order information kits and Amsler grids by calling our National Helpline on **1800 111 709**.

M DFA has a free newsletter and you can sign up to receive invitations to education sessions and events in your area.

Macular Disease Foundation Australia is committed to reducing the incidence and impact of macular disease, by providing up-to-date information, advice and support.



National Helpline

1800 111 709

E info@mdfoundation.com.au

W www.mdfoundation.com.au

W www.CheckMyMacula.com.au

Reference:

1. <https://bmcophthalmol.biomedcentral.com/articles/10.1186/s12886-020-01473-2>
2. <https://pubmed.ncbi.nlm.nih.gov/18342827/>

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