

AGE-RELATED
MACULAR
DEGENERATION
(AMD)

UNDERSTAND MORE ABOUT
**AGE-RELATED
MACULAR
DEGENERATION
(AMD)**



Tomorrow's Eye Care, Today®



Singapore National
Eye Centre
SingHealth

Age-related Macular Degeneration (AMD)

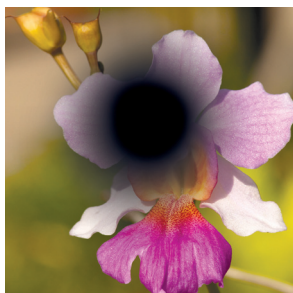
What is age-related macular degeneration (AMD)?

AMD is a chronic irreversible medical condition that results in loss of vision in the centre of the visual field (the macula) because of damage to the retina. The condition can make it difficult to read, recognise faces or drive safely. Peripheral vision remains intact in most people and this will allow them to remain independent with most of the other daily activities.

AMD is one of the leading causes of blindness affecting those 50 years or older. Studies from the Singapore Eye Research Institute have shown that smokers are four times more likely to develop the “wet” or advanced form of AMD than non-smokers.



Normal vision



Vision with AMD

What causes AMD?

AMD occurs in “dry” and “wet” forms. 90 per cent of AMD patients suffer from the “dry” form.

Dry AMD results in slow progressive loss of central vision. The condition develops as the light-sensitive cells in the macula slowly break down with age.

Wet AMD, also known as exudative or neovascular AMD, is caused by the growth of small, abnormal blood vessels under the retina in the macula. Wet AMD usually arises from pre-existing dry AMD.

These abnormal blood vessels leak blood, fluid, lipids and protein, resulting in disruption of the normal structure of the retina. If it is not treated, scar tissue form under the macula and central vision is permanently destroyed. The “wet” form commonly results in advance visual loss within a short period of time.

What are the symptoms?

In early AMD, the impact on vision is generally mild or even non-existent. However, as the disease progresses, symptoms may include:

- Blurring of central vision
(may be gradual or rapid in onset)
- Shadows or missing areas of vision
- Distorted vision
(e.g. straight lines appear wavy)
- Problems discerning colours, especially differentiating between similar colours
- Slow recovery of visual function after exposure to bright light
- Loss of contrast sensitivity
(ability to tell different levels of brightness apart)

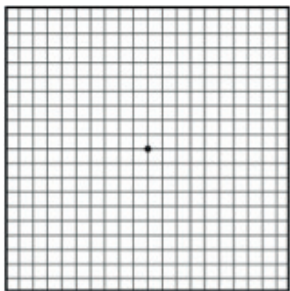
How is AMD detected and monitored?

The early stages of AMD usually start without symptoms. Only a comprehensive dilated eye examination can detect AMD. The eye examination may include the following:

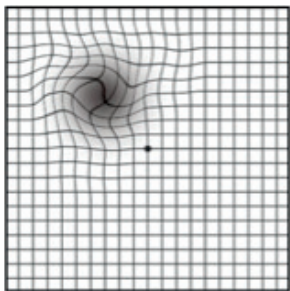
- **Amsler Grid**

Your ophthalmologist may ask you to look at an Amsler grid. Changes in your central vision may cause the lines in the grid to disappear or appear wavy, a sign of AMD. This is also used to monitor patients at home for progression.

Amsler Grid



Normal vision



Vision impaired by AMD

Hold the Amsler grid below at eye level at a comfortable reading distance. If you wear any type of reading lenses, wear them during this test. Cover one eye at a time, and focus on the centre dot. If you see wavy or fuzzy lines, or if certain squares are missing or appear blurred, you may be displaying symptoms of AMD.

- **Fundus Fluorescein Angiogram (FFA) and Indocyanine Green Angiogram (ICG)**

In this test, a fluorescent dye is injected into a vein in your arm. Pictures are taken as the dye passes through the blood vessels in your eye. This makes it possible to see leaking blood vessels, which occur in the “wet” type of AMD. In rare cases, complications due to the injection can arise, like nausea or more severe allergic reactions.

- **Optical Coherence Tomography (OCT)**

You have probably heard of ultrasound, which uses sound waves to capture images of living tissues. OCT is similar except that it uses light waves, and can achieve very high-resolution cross-sectional images of any tissues that can be penetrated by light, such as the eyes. After your eyes are dilated, you will be asked to place your head on a chin rest and hold still for several seconds while the images are obtained. The light beam is painless.

How is AMD treated?

If you have been diagnosed with wet AMD, treatment is usually necessary as the condition may worsen over the next few weeks and may lead to irreversible vision loss. Treatment can stabilise the vision, however, the degree of improvement will depend on how early the disease is detected and the response to the treatment.

Age-related Macular Degeneration (AMD)

Intravitreal injections (drugs injected into the eye)

Currently, the most common treatment is in the form of drugs injected into the eye.

Avastin*, **Lucentis** and **Eylea** are examples of drugs used to treat wet AMD as they block the growth of abnormal blood vessels. The injection can be performed safely after the eye has been anaesthetised with eye drops. You will experience some mild discomfort after the injection.

**Avastin is accepted by all public hospitals and institutions for treatment of AMD*

However, the effect of each injection would usually last for one month and a long course of repeated injections is required to adequately control the condition. Clinical studies have suggested that at least 12 to 14 injections will be required over a two-year period to control the disease. During this time, your eye condition should be reviewed frequently as response can vary between individuals. Your ophthalmologist will also need to repeat the OCT scan at most visits, and the angiogram periodically to assess your response.

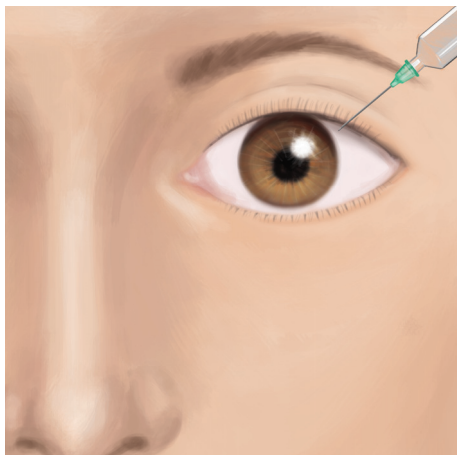


Illustration: Intravitreal Injections of Anti-VEGF Agents

Other treatment options (usually used in combination)

In some selected cases, other forms of treatment, with or without injections may also be recommended by your ophthalmologist.

Photodynamic therapy uses a non-thermal laser together with an intravenous drug (verteporfin) to reduce leakage and seal up abnormal blood vessels. **Laser photocoagulation** uses a hot laser to destroy the abnormal blood vessels.

For **dry AMD**, there is currently no known treatment, but supplements may help slow down the progression in high-risk eyes. Early detection of conversion to the wet type is also important for better preservation of vision.

How can my friends, family and I help to improve on the treatment in AMD?

- You can help by participating in one of the many clinical trials on AMD conducted at the Singapore Eye Research Institute. Newer treatments are constantly evaluated for efficacy on our local patients. We need your help to show that the drug is useful and the appropriate doses are used on our patients.
- All clinical and laboratory research into new drugs and therapies are costly. Your donation can help fund our research efforts to make the treatment for these conditions better. Research often takes years and your support will help us make the lives of our patients better. You can also support our needy patient fund, which allows us to provide treatment to the less privileged in our community.

Please contact us at isharethevision@sneec.com.sg for more information on the above. You can also help by passing this brochure along to others to increase the awareness of this disease.

LOCATION MAP



Legend


 MRT Station


 Taxi Stand


 East West Line

 North East Line

 Shuttle Bus Service
Mon to Fri (8.00am - 7.00pm)
Sat (8.00am - 2.00pm)

 Opp Outram Park Stn
Bus No. 33, 63, 75, 121,
122, 174, 174e, 851, 970

 Outram Park Stn Exit F
Bus No. 61, 124, 143, 147,
147e, 166, 197, 961, 961C

 Outram Park Stn/Outram Rd
Bus No. 33, 63, 75, 121, 122, 174,
174e, 534, 535, 549, 761, 851, 970

This patient information leaflet is a general guide to help patients understand specific eye conditions, treatment or tests. The information does not replace the need for individual advice from an ophthalmologist. Please consult with your ophthalmologist about your specific eye condition and/or concerns.

The contents of this leaflet are not to be produced in any form without the prior permission of the Singapore National Eye Centre.

Information correct at date of print (March 2020)

Singapore National Eye Centre Company Registration No. 198900840W

Singapore National Eye Centre

11 Third Hospital Avenue, Singapore 168751

Appointments: (65) 6227 7266 Fax: (65) 6226 1884

Email: appointments@sneec.com.sg

Website: www.sneec.com.sg