Video script: Diagnosis and monitoring of AMD

Welcome to this dryAMD video where we take a closer look at the diagnosis and monitoring of age-related macular degeneration (AMD).

In this video we will introduce you to the tests used to diagnose and monitor AMD. Please note that not all tests will be carried out by your healthcare professional, and the tests used may differ depending on where you live.

If you have any questions related to any of the tests, you should ask your healthcare professional at your next visit. If you have been diagnosed with AMD or are at risk of developing an eye disease, it is important to ensure you are monitoring any changes in your vision.

Let’s start with a tool that you can use to monitor your own vision.

An essential and easy-to-use self-monitoring tool to detect early changes in your vision is the Amsler grid. With an Amsler grid, you may observe distortion in your vision such as straight lines appearing wavy, blurred patches or dark patches that may be a sign of AMD.

If you detect any changes in your vision, please consult an optometrist or ophthalmologist as soon as possible.

You can download and print an Amsler grid as well as step-by-step instructions on dryAMD.eu.

However, an Amsler grid is not a substitute for regular eye examinations. The only way to diagnose AMD is to have a thorough eye examination including a check of the macula, by an optometrist or ophthalmologist.[1]

Now, let's look at an overview of examinations that healthcare professionals may perform in order to diagnose and monitor AMD. Let's start with the more common tests.

To begin with, there's the comprehensive eye examination.

Here, a person's ability to see details, shapes, and letters at a certain distance[2] is measured. Best-corrected visual acuity (BCVA) is normally assessed using a Snellen Chart. The number of letters a person can correctly identify represents his or her visual acuity. In other words, the further down the Snellen chart a person can read the better their visual acuity is.

Then there is the fundus examination. This is a more in-depth test to help diagnose AMD. It's an optical examination of the retina at the back of the eye and can be conducted using either ophthalmoscopy or fundus photography.[1] In both methods, dilating drops are applied to the patient's eye to allow the practitioner to see more of the back of the eye.[3]

In ophthalmoscopy, a bright light shines through the dilated pupil and an ophthalmoscope provides magnified images of the retina. In fundus photography, a low powered microscope takes colour images of the retina.[1]

Ophthalmoscopy and fundus photography are used in the diagnosis of AMD, as they show retinal abnormalities like drusen, pigmentary abnormalities, atrophy, bleeding, and fluid build-up.[1]

Practitioners have a number of techniques that allow them to obtain a more detailed view of the retina. One of them is the optical coherence tomography (OCT). OCT takes cross-section pictures of the retina and provides a detailed evaluation of the health of the retina. OCT can measure retinal thickness, identify drusen and choroidal neovascularisation (CNV), which are typical features of AMD.[1,2]

Another is fundus autofluorescence. In this imaging technique a specific light is used to produce autofluorescence of a molecule called lipofuscin, which is typically distributed evenly throughout the retina.[2] Unhealthy retinal regions can appear darker for atrophic areas due to an absence of lipofuscin, or brighter for drusen due to excess lipofuscin, both of which are signs of AMD.[2,3]

And then there is fundus fluoresceine angiography or FFA. In FFA, an intravenous fluorescent dye is injected intravenously to image retinal blood vessels. A special camera takes photos of the retina as the dye travels throughout its blood vessels. This shows if abnormal new blood vessels are growing under the retina, which may indicate the presence of wet AMD.

This was a short overview of the tests that are used to diagnose and monitor AMD. Make sure to watch further videos on dryAMD.eu to learn more.

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References:

1. Apellis GA Dossier, section 8.3.2.

2. Lakshminarayanan, V. Visual acuity. In: Chen J, *et al.* (eds). Handbook of Visual Display Technology. Vol. 1. Springer-Verlag Berlin Heidelberg; 2012; pp.93–99.
3. Mitchell P, *et al. Lancet*. 2018;392(10153):1147–1159.
4. Townsend WD. *Optom Clin*. 1992;2(3):127–144.
5. Fleckenstein M, *et al. Ophthalmology*. 2018;125(3):369–390.
6. AMD Book. Optical coherence tomography in age-related macular degeneration. 2017. Available at: https://amdbook.org/content/optical-coherence-tomography-age-related-macular-degeneration (accessed July 2023).
7. Holz FG, *et al. Ophthalmology*. 2017;124(4):464–478.
8. Flaxel CJ, *et al. Ophthalmology*. 2020;127(1):P1–P65.
9. Csaky KG, *et al. Surv Ophthalmol*. 2019;64(3):353–364.
10. Sadda SR, *et al. Retina*. 2016;36(10):1806–1822.
11. Monés J, Rubin GS. *Eye (Lond).* 2005;19(11):1142–1150.
12. Kimel M, *et al. Invest Ophthalmol Vis Sci*. 2016;57(14):6298–6304.