**Antioxidant vitamin supplements for eye health deprescribing algorithm**

Does the person have a diagnosis of age related macular degeneration (AMD)?

[Yes\*](#People_with_AMD)

No

Do they have:

* Intermediate AMD in at least one eye, **or**
* Advanced AMD in one eye (but not the other)?

**Deprescribe supplement** in line with [NHS England guidance on items which should not be routinely prescribed in primary care](https://www.england.nhs.uk/long-read/items-which-should-not-routinely-be-prescribed-in-primary-care-policy-guidance/).1No tapering needed.

Give [lifestyle advice](#Lifestyle_advice).

There is no evidence to support the use of antioxidant vitamin and mineral supplements for people with less than intermediate AMD, and there is no evidence that these supplements are useful in primary prevention.2

If the person wants to purchase supplement (despite the lack of evidence) give [choice of supplement](#Choice_of_supplement)advice (see below). Note the [beta-carotene safety warning](#Betacarotene_safety_warning) for smokers/former-smokers/people exposed to asbestos.

No

Yes

**Consider deprescribing supplement** in line with [NHS England guidance on items which should not be routinely prescribed in primary care](https://www.england.nhs.uk/long-read/items-which-should-not-routinely-be-prescribed-in-primary-care-policy-guidance/).1 No tapering needed.

NICE do not consider the [clinical evidence](#Clinical_evidence) to be sufficient to make a recommendation for or against their use.3

Give [lifestyle advice](#Lifestyle_advice).

Note that some people may have been advised to take a supplement by their ophthalmologist. Follow local prescribing guidance and communicate with the specialist if appropriate.

If the person wants to purchase supplement, give [choice of supplement](#Choice_of_supplement)advice. Note the [beta-carotene safety warning](#Betacarotene_safety_warning) for smokers/former-smokers/people exposed to asbestos.

\*People with AMD should be made aware of sources of practical and emotional support.3 Although it is anticipated that people diagnosed with AMD will receive information about their condition from secondary care, if necessary, consider offering supporting information and signposting to further resources.

**Lifestyle advice:** Smoking is the main modifiable risk factor. It is a risk factor for new-onset AMD and for progression of existing AMD to advanced disease. Current smokers have a two to three-fold increased risk of developing AMD, and those with a genetic susceptibility are also more likely to develop AMD if they smoke.4 Advise smokers to stop smoking as this reduces the risk of AMD progression.2 There is likely to be value in smoking cessation interventions to reduce the risk of AMD progression.

Encourage the person to eat a healthy, balanced diet - one that has a low glycaemic index and is rich in fruits, green leafy vegetables, and fish high in omega-3 fatty acids.2

Also advise the person to modify cardiovascular risk factors, including lowering cholesterol and saturated fat intake and controlling hypertension. Although there is no firm evidence that this helps to slow the progression of AMD, it is sensible and is unlikely to do any harm.2

**Clinical evidence:** Evidence supporting antioxidant supplements in slowing AMD progression comes primarily from two studies, AREDS and AREDS2.5,6 Whilst some of the data suggests a modest benefit, NICE do not consider the evidence to be definitive because of reservations about these studies.3 There is also concern that the high doses of vitamins and minerals contained in these supplements may potentially cause harm in some people.

**Choice of supplement:** The ingredients of antioxidant supplements marketed for eye health vary and should be checked carefully.

The two supplement combinations that have been studied the most for slowing AMD progression are known as the AREDS and AREDS2 formulas.5,6

* The AREDS2 formula contains lutein 10mg, zeaxanthin 2mg, vitamin C 500mg, vitamin E 400 IU, zinc 80mg or 25mg, and copper 2mg. If a person with AMD has been advised by their ophthalmologist to take a supplement, it would normally be this formula.2
* Some antioxidant supplements marketed for eye health (including the AREDS formula) contain beta-carotene. **Advise people who smoke,7 former-smokers,6 and those who have been exposed to asbestos7 not take supplements containing beta-carotene**, which has been associated with an increased risk of lung cancer in these groups.
* Taking supplements is not risk-free, so it is important to consider this alongside any potential benefits.
* Supplements can sometimes interact with other medication, which will need to be considered.

**References**

1. NHS England. Items which should not routinely be prescribed in primary care: policy guidance. Published: 3 August 2023, last updated 30 August 2024. <https://www.england.nhs.uk/long-read/items-which-should-not-routinely-be-prescribed-in-primary-care-policy-guidance/>
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3. NICE. Age-related macular degeneration: diagnosis and management (full NICE guideline) [NG82]. Published: 23 January 2018. <https://www.nice.org.uk/guidance/ng82/evidence>
4. Clinical Knowledge Summary. Macular degeneration - age-related. Risk factors section. Last revised in August 2022. <https://cks.nice.org.uk/topics/macular-degeneration-age-related/background-information/risk-factors/>
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6. The Age-Related Eye Disease Study 2 (AREDS2) Research Group. Lutein + Zeaxanthin and Omega-3 Fatty Acids for Age-Related Macular Degeneration: The Age-Related Eye Disease Study 2 (AREDS2) Randomized Clinical Trial. JAMA 2013;309(19):2005-2015. <https://doi.org/10.1001/jama.2013.4997>
7. Expert Group on Vitamins and Minerals. Safe Upper Levels for Vitamins and Minerals. Issued May 2003. <https://cot.food.gov.uk/sites/default/files/vitmin2003.pdf> Accessed 18/04/2024