

Antioxidant supplements for age-related macular degeneration

This briefing focuses on the use of antioxidant supplements for the prevention of age-related macular degeneration (AMD) and provides the rationale for deprescribing them.

A number of antioxidant supplements marketed for eye health are available to purchase. They are classed as food supplements, and are not licensed as medicines. Although randomised controlled trials have investigated whether some specific formulas can slow the progression of age-related macular degeneration (AMD),^{1,2} the National Institute for Health and Care Excellence (NICE) do not consider the clinical evidence sufficient to make a recommendation.³ NHS England advise that they should not be prescribed.⁴

Savings

Table 1. Spend and potential 12 month cost avoidance on antioxidant supplements for AMD by country (NHSBSA Dec 2024 – Feb 2025 and Public Health Scotland Dec 2024 – Feb 2025)

	Latest 3 month spend	12 months cost avoidance (100% reduction in spend)	12 months cost avoidance per 100,000 population (100% reduction in spend)
England	£64,576	£258,304	£405
Wales	£7,108	£28,430	£861
Northern Ireland	£1,913	£7,653	£371
Isle of Man	£65	£261	£291
Scotland	£5,000	£20,000	£332
Total	£78,662	£314,648	£418

Recommendations

- Antioxidant supplements for AMD are not recommended for prescribing in line with [NHS England guidance on items which should not be routinely prescribed in primary care](#).⁴ Their benefits (and how any benefits balance with their potential risks) are not yet clearly established.³
- Be aware that:
 - » The antioxidant supplements that have undergone the most study in AMD are the Age-Related Eye Disease Study (AREDS) and AREDS2 formulas^{1,2} (see [Bulletin 368](#) for specific ingredients).
 - » There is no evidence that antioxidant vitamin and mineral supplements are useful in the primary prevention of AMD.⁵
 - » NICE do not consider the clinical evidence for the use of antioxidants in established AMD to be sufficient to make a recommendation for or against their use.³
- Discontinue prescribing antioxidant supplements for AMD on FP10 and do not initiate new prescriptions.⁴ To support this, a policy on the prescribing of these supplements and a process for deprescribing should be agreed locally by key stakeholders including GPs, ophthalmologists and other relevant healthcare professionals.
- Inform patients, provide them with information about the change and the reasons behind the change.
- Self-management support and advice for AMD should include a discussion about smoking cessation (where relevant), healthy diet rich in fresh fruit, vegetables, eggs, and oily fish, and sources of practical and emotional support.⁵
- Advise people who wish to purchase antioxidants marketed for eye health to discuss them with their health care professional before taking them.
- Some antioxidant supplements marketed for eye health (including the AREDS formula) contain beta-carotene.
 - » Advise people who smoke,⁶ former-smokers,² and those who have been exposed to asbestos to not take supplements containing beta-carotene, which has been associated with an increased risk of lung cancer in these groups.
 - » Advise people that some experts no longer recommend beta-carotene containing antioxidant supplements for this indication at all. Experts now generally recommend the AREDS2 formula^{5,7} (which contains lutein 10mg, zeaxanthin 2mg, vitamin C 500mg, vitamin E 400 IU, zinc 80mg or 25mg, and copper 2mg).²

References

1. Age-Related Eye Disease Study Research Group. A Randomized, Placebo-Controlled, Clinical Trial of High-Dose Supplementation With Vitamins C and E, Beta Carotene, and Zinc for Age-Related Macular Degeneration and Vision Loss: AREDS Report No. 8. Arch Ophthalmol 2001;119(10):1417-1436. <https://doi.org/10.1001/archopht.119.10.1417>
2. 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>
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. 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/>
5. Clinical Knowledge Summary. Macular degeneration - age-related. Scenario: Confirmed age-related macular degeneration section. Last revised in August 2022. <https://cks.nice.org.uk/topics/macular-degeneration-age-related/management/confirmed-amd/>
6. Expert Group on Vitamins and Minerals. Safe Upper Levels for Vitamins and Minerals. Issued May 2003. Accessed 18/04/2024 <https://cot.food.gov.uk/sites/default/files/vitmin2003.pdf>
7. Flaxel CJ, Adelman RA, Bailey ST, et al. Age-Related Macular Degeneration Preferred Practice Pattern. Ophthalmology 2020;127(1):P1-P65. <https://doi.org/10.1016/j.ophtha.2019.09.024>

Additional PrescQIPP resources, including implementation tools and data:

<https://www.prescqipp.info/our-resources/bulletins/bulletin-368-antioxidant-vitamins-for-AMD/>

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