

Criteria for Use of High Dose Vitamin Supplementation for Macular Degeneration

VHA Pharmacy Benefits Management Strategic Healthcare Group and the Medical Advisory Panel

The following recommendations are based on current medical evidence and expert opinion from clinicians. The content of the document is dynamic and will be revised as new clinical data becomes available. The purpose of this document is to assist practitioners in clinical decision-making, to standardize and improve the quality of patient care, and to promote cost-effective drug prescribing. The clinician should utilize this guidance and interpret it in the clinical context of the individual patient situation.

Introduction

Age related macular degeneration (ARMD) is a leading cause of blindness in the United States. It is estimated that 8 million people at least 55 years old have more advanced ARMD. The use of high dose vitamin supplementation for this population could have significant impact in quality of life and prevention of disease. Indeed, the AREDS Trial conducted by the National Institute for Health, high dose supplementation in patients with advanced AMD suggested an absolute risk reduction of 6% in progression to more advanced AMD or to further substantive visual acuity loss. This correlates to a NNT of 17. However, the result was based on a selective post-hoc analysis of data from the larger randomized control trial. In addition, use of high dose supplementation is not without risk, especially with the recent correlation of beta-carotene and lung cancers. Patients need to be appropriately screened prior to initiation of high dose supplementation, to insure optimal safety and efficacy of therapy.

Patient Selection

Given the current evidence available the following patients may benefit from therapy with high dose supplementation:

- Patients 55 years of age and older
- And**
- Presence of extensive intermediate size drusen OR 1 or more large drusen OR non central geographic atrophy in at least 1 eye OR vision loss secondary to ARMD (**Category 3 and 4 AMD**)
- And**
- Dry AMD
- And**
- Non-smoking

Currently, apart from those people meeting criteria (above), there is no clear evidence that use of high dose vitamin supplementation reduces the risk of AMD or progression to advanced AMD in the following groups:

- Family history of AMD
- Category I – no AMD
- Category II-early AMD
- Retinal pigment changes

Dosing

The high dose supplementation used in the AREDS Trial consisted of: Vitamin A (as *B-carotene*) 28640 IU, Vitamin C 452mg, Vitamin E 400IU, Zinc (oxide) 69.6 mg, Copper 1.6 mg total dose per day. At the time of the study the carotenoids, lutein and zeaxanthin, were unavailable commercially. Several commercially available supplements contain these quantities of ingredients. (Table 1) Care should be taken in assuring the proper dose of tablets is taken on a daily basis to prevent under or over supplementation.

Safety

High dose zinc supplementation may elevate glycosylated hemoglobin levels in patients with diabetes.

High doses of beta-carotene have been associated with increased rates of lung cancer in patients who smoke cigarettes. It is unclear whether the same benefits suggested for non-smokers applies to smokers or whether using high-dose vitamins without beta-carotene will have the same effect on AMD progression.

Increased levels of zinc are found in amyloid plaques associate with Alzheimer's disease.

Increased copper supplementation should be avoided in patients with biliary tract obstruction or Wilson's disease.

Table 1:
Ingredients per day

	Ocuvite Preser Vision	ICAPS AREDS Formula	Retinavites	Visivite	All-U- Need Eyes	Macula Protect Complete	MaxiVision	Viteyes
Vitamin A as beta carotene	28640 IU	28640 IU	25000	28640	28640	25000	28640	25000
Vitamin C	452 mg	452 mg	500	500	500	500	500	500
Vitamin E	400 IU	400 IU	400	400	400	400	400	400
Zinc	69.6 mg (as oxide)	69.6 mg (as oxide)	80	80	70	80	80	80
Copper	1.6 mg	1.6 mg	2	2	1.6	2	2	2
Dose/day	4	4	2	2	4	4	2	2
Cost/month	\$10.80	\$17.99	\$10	\$17.95	\$19.23	\$29.90	\$19.95	\$13.32

Manufacturers

Product	Manufacturer	Web address
Ocuvite Preser Vision	Bausch/Lomb	http://www.bausch.com/us/vision/products/vitamins/ocuvite_preservision.jsp
ICAPS AREDS	Alcon	http://www.alconlabs.com/us/eo/products/icaps.jhtml
Retinavites*	American Vitamin	http://www.retinavites.com/AREDS.asp
Visivite*	Vitamin Science Inc.	http://www.age-related-macular-degeneration.com/
All-U-Need	Coyle	http://www.coyledrug.com/eye.htm
MaculaRx	Science Based Health	http://sciencebasedhealth.com/sbh/perWell/vision/macularxplus_l1.asp?cid=goog_3b&gclid=C1642x014
Maxivision	Medical Ophthalmics, Inc	http://www.medicalophthalmics.com/brochures/MV_AREDS_Brochure.pdf
Viteyes*	Vitamin	http://www.viteyes.com/product.asp?3=20

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Updated versions may be found at <http://www.vapbm.org> or <http://vaww.pbm.med.va.gov>

* has a smokers formula which contains no betacarotene

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