

# Hawaii Ophthalmologists' Recommendations to Patients for Prevention of Age-related Macular Degeneration

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## INTRODUCTION

Age-related-macular degeneration (AMD) is the most common cause of visual loss in the western world. One major emphasis in ophthalmologists' practice has been on methods to prevent or mitigate the development of AMD. Several factors have been shown to oppose the development of AMD, including: not smoking, maintaining a normal BMI, AREDS2 vitamin supplementation, and consuming a Mediterranean diet. Although significant associations between AMD and the aforementioned risk factors have been reported and cited in the literature, it is not known what impact this information has exerted in clinical practice.

## PURPOSE

This study was conducted to determine the trends in ophthalmologists' recommendations to their patients for the prevention of development or progression of Age-related macular degeneration compared to preventative measures that have been published in the literature.

## METHODS

95 ophthalmologists currently practicing in Hawaii were sent an anonymous survey through SurveyMonkey. The survey assessed what recommendations were made to patients concerning the prevention of AMD. The survey contained a single question: When encountering a patient who is interested in preventing AMD or seeking to slow the progression of early AMD, do you (select all that apply):  
The survey assessed the incorporation of four interventions shown to aid in preventing AMD: smoking cessation or avoidance, recommendation of taking AREDS 2, adherence to a Mediterranean diet, and maintaining a normal body mass index (BMI).

## REFERENCES

- <sup>1</sup>Raimundo Vingerling JR, Hofman A, Grobbee DE, de Jong PT. Age-related macular degeneration and smoking. The Rotterdam Study. Arch Ophthalmol. 1996 Oct;114(10):1193-6. PubMed PMID: 8859077.
- <sup>2</sup>Coleman H, Chew E. Nutritional supplementation in age-related macular degeneration. Curr Opin Ophthalmol. 2007 May;18(3):220-3. Review. PubMed PMID: 17435429.
- <sup>3</sup>Moeller SM, Parekh N, Tinker L, et al, CAREDS Research Study Group. Associations between intermediate age-related macular degeneration and lutein and zeaxanthin in the Carotenoids in Age-related Eye Disease Study (CAREDS): ancillary study of the Women's Health Initiative. Arch Ophthalmol 2006; 124:1151-1162
- <sup>4</sup>Merle B.M., Silver R.E., Rosner B., and Seddon J.M.: Adherence to a Mediterranean diet, genetic susceptibility, and progression to advanced macular degeneration: a prospective cohort study. Am J Clin Nutr 2015; 102: 1196-1206

## ASSOCIATIONS FOUND IN THE LITERATURE

The link between AMD and smoking has been established since 1996<sup>1</sup>.

- A cross-sectional study of 6174 patients aged 55 or older found significantly increased risk in the development of AMD in both current smokers and former smokers compared to non-smokers

The association between nutritional supplements to mitigate AMD has been established since 1993 with AREDS and since 2007 with AREDS2 studies<sup>2</sup>.

- Vitamin C, vitamin E, zinc, copper, and beta carotene were found to be helpful in preventing the progression of AMD from moderate to severe disease in 25% of participants in the first AREDS study in 1993

The association between increased BMI and AMD has been established since 2005<sup>3</sup>.

- A cohort study including 261 patients which identified a statistically significant relationship between increased BMI and risk for progression to advanced AMD

The association between a Mediterranean diet and mitigation of AMD has been established since 2015<sup>4</sup>.

- High adherence to Mediterranean diet (vegetables, fruit, legumes, whole grains, nuts, fish, red and processed meats, alcohol, and the ratio of monounsaturated to saturated fats) was significantly associated with a Hazard Ratio of 0.74, suggesting that adherence to a Mediterranean diet lowers the risk of progression to advanced AMD<sup>4</sup>

## OUTCOME

Responses from 41 ophthalmologists were received. 100% of participants responded Yes to recommending smoking cessation to their patients. 75.6% of participants responded Yes to recommending AREDS 2. 41.5% of participants responded Yes to recommending a Mediterranean diet to their patients. 36.6% of participants responded Yes to recommending maintaining a normal BMI to their patients. Of the participants, 22% had answered Yes to all of the above.

## CONCLUSION

Although significant associations have been made between multiple risk factors and the pathogenesis of AMD, the clinical impact of the data varies. These risk factors are disproportionately communicated to patients by ophthalmologists when discussing prevention or mitigation of AMD. This outcome could be due, in part, to the length of time since the establishment of each risk factor publication. Not smoking and the utilization of AREDS 2 are relatively older recommendations, and these were more commonly discussed risk factors discussed between patient and physician. The risk factor of increased BMI is associated with a greater risk of AMD, and the recognition of the value of incorporation of a Mediterranean diet to prevent AMD have been reported in more recent studies. The lower percentage of ophthalmologists recommending these latter mitigation factors suggests a delay between information available in the literature and the incorporation of these recommendations to the patients.

This is important not only for ophthalmologists to know, but for primary care physicians as well. An understanding of such a delay in communicating preventative methods to patients should empower physicians in primary care to offer this information to their patients when discussing health maintenance and vision care.

