



**DEPARTMENT OF VETERANS AFFAIRS  
Veterans Health Administration  
Washington DC 20420**

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**UNDER SECRETARY FOR HEALTH'S INFORMATION LETTER**

**VISUAL IMPAIRMENT PREVENTION FOR VETERAN PATIENTS**

**1. Purpose.** This Veterans Health Administration (VHA) Information Letter provides guidance regarding the coordination of care for the prevention of visual impairment from age-related macular degeneration, diabetic retinopathy, and glaucoma. Department of Veterans Affairs (VA) Optometrists and Ophthalmologists work as equal partners to provide a continuum of high quality eye care services. Optimal eye care requires coordination between Primary Care and Eye Care to ensure prompt and appropriate referrals, and the complementary strengths of both eye care professions to meet the needs of eligible Veterans.

**2. Background**

a. Age-related macular degeneration (AMD), diabetic retinopathy (DR), and glaucoma are the three most common etiologies of permanent visual impairment and blindness among Veterans. Appropriate management and coordination of care across a spectrum of providers, from primary care through specialty and sub-specialty eye care, and across multiple venues, from Community-based Outpatient Clinics (CBOCs) through tertiary care centers, is necessary to maintain vision to the best extent possible for patients at risk.

b. VHA staff are reminded that the provision of timely and appropriate eye care is a fundamental responsibility of the VHA clinicians. VHA staff are also reminded that this requires:

(1) Knowledge of the indications for population screening as well as the risk-factors and clinical symptoms that would indicate a need for referral to early testing, along with an awareness of applicable clinical practice guidelines and appropriate treatment modalities.

(2) The implementation of care coordination agreements to facilitate the referral process and to ensure seamless continuity of care between clinical services. These are vehicles that have been mutually agreed upon by all parties for defining roles, responsibilities, and methods of communication when multiple providers share in the management of patients.

(3) The ability to identify patients with these conditions, and the application of a quality management program looking at both process of care and clinical outcomes.

c. It is important that an Ongoing Professional Practice Evaluation (OPPE) systematic peer review process regarding each eye care practitioner's overall performance includes a component that specifically addresses AMD, DR, and glaucoma.

### **3. Definitions, Prevalence Data, Risk Factors, Symptoms and Treatment Options**

#### **a. AMD**

(1) Definition. According to the National Eye Institute of the National Institutes of Health, AMD is a disease associated with aging that gradually destroys sharp, central vision. Central vision is needed for seeing objects clearly and for common daily tasks, such as reading and driving. In some cases, AMD advances so slowly that people notice little change in their vision. In others, the disease progresses faster and may lead to a loss of vision in one or both eyes. AMD is a leading cause of vision loss in Americans 60 years of age and older.

(2) Types. AMD consists of two types, dry AMD and wet AMD. The dry form is much more common (see Att. A).

(3) Risk Factors. AMD risk factors include:

(a) People over age 60;

(b) Smoking;

(c) Obesity;

(d) Race, Caucasians are much more likely to lose vision from AMD than Hispanics, Latinos, or African Americans;

(e) People with a family history of AMD; and

(f) Women, who appear to be at greater risk than men.

(4) Symptoms

(a) Neither dry nor wet AMD cause pain.

(b) For dry AMD the most common early sign is blurred vision. As it progresses the clarity of detail, such as faces or words in a book, may be noted to improve in brighter light, and then later a blind spot in the middle of the field of vision occurs.

(c) For wet AMD the classic early symptom is that straight lines appear crooked. A blind spot may also occur resulting in loss of central vision.

(5) Current Treatment Options. AMD treatment options include:

(a) **For dry AMD**

1. Once dry AMD reaches the advanced stage, no treatment can revert vision loss. Timely appropriate treatment, however, can delay and possibly prevent early or intermediate AMD from progressing to a more advanced stage.

2. The National Eye Institute's Age-Related Eye Disease Study (AREDS) found that specific high-dose formulation of antioxidants and zinc significantly reduces the risk of advanced AMD.

(b) **For wet ADM.** Wet AMD can be treated with laser surgery, photodynamic therapy, and pharmacologically; however, none of these treatments are cures for wet AMD. The disease and loss of vision may progress despite appropriate treatment, which may include:

1. **Laser Surgery.** This procedure uses a laser to destroy fragile, leaky blood vessels. However, laser treatment can also destroy surrounding healthy tissue resulting in some loss of vision, and only a small percentage of people with wet AMD can be effectively treated with laser surgery. Vision loss may progress despite repeated laser treatments.

2. **Photodynamic Therapy.** Verteporfin injected intravenously will "stick" to new, abnormal blood vessels. Once activated by laser light, the drug destroys the new blood vessels slowing the rate of vision decline. While photodynamic therapy is relatively painless and can slow the rate of vision loss, it does not stop vision loss nor restore vision in eyes already damaged by advanced AMD. Treatment results are often temporary and multiple treatments are required over time.

3. **Pharmacologic Injections.** Abnormally high levels of a specific growth factor, vascular endothelial growth factor (VEGF), promote the growth of abnormal new blood vessels in wet AMD. Pharmacologic agents that block the effects of the growth factor (anti-VEGF) retard new blood vessel formation, which can slow vision loss from AMD and in some cases improve sight.

(c) **Low-vision Rehabilitation.** Those patients with significant vision loss from either dry or wet AMD who have received appropriate medical or surgical treatment need to be referred for low-vision rehabilitation care, as indicated.

b. **DR**

(1) **Definition.** According to the National Eye Institute of the National Institutes of Health, DR is a leading cause of visual impairment in American adults. It is caused by changes in the blood vessels of the retina. An individual with DR may not notice changes to vision, but over time, DR can progress and cause vision loss. DR usually affects both eyes.

(2) **Types.** There are two types of DR, non-proliferative and proliferative. Non-proliferative retinopathy generally is visually asymptomatic, but can progress to proliferative retinopathy (see Att. B).

(3) Risk Factors. DR risk factors include:

- (a) Duration of diabetes mellitus,
- (b) Poor control of diabetes mellitus,
- (c) Pregnancy,
- (d) Proteinuria,
- (e) Hypertension,
- (f) Ocular surgery,
- (g) Ethnic influences,
- (h) Dyslipidemia,
- (i) Lack of exercise, and
- (j) Smoking.

(4) Symptoms

(a) Often there are no symptoms in the early stages of DR, nor is there any pain. Blurred vision may occur when there is macular edema.

(b) If intra-ocular bleeding occurs with proliferative retinopathy, patients may see spots “floating” in their vision.

(5) Current Treatment Options

(a) Non-proliferative retinopathy does not require treatment, unless there is macular edema. To prevent progression of DR, blood sugar, blood pressure, and lipids need to be well controlled.

(b) Proliferative retinopathy is treated with scatter laser surgery to shrink the abnormal blood vessels. Timely treatment and appropriate follow-up care can reduce the risk of blindness by 95 percent.

(c) Macular edema is treated with focal laser surgery to stabilize the condition, which can reduce the risk of vision loss by 50 percent.

(d) Patients with significant vision loss from DR, who have received the appropriate medical or surgical care, need to be referred for low vision rehabilitation care, as indicated.

**c. Glaucoma**

(1) Definition. According to the National Eye Institute of the National Institutes of Health, glaucoma is a group of diseases that can damage the eye's optic nerve and result in vision loss and blindness. This may be defined by a constellation of findings. Early treatment to reduce intra-ocular pressure may protect against serious vision loss (see Att. C).

(2) Risk Factors. Glaucoma risk factors include:

- (a) African Americans over age 40;
- (b) Everyone over age 60, especially Mexican Americans; and
- (c) People with a family history of glaucoma.

(3) Symptoms

(a) In early stages, there are no symptoms. Vision is normal, and there is no pain.

*NOTE: Glaucoma can develop in one or both eyes.*

(b) As the disease progresses, a person with glaucoma may not notice vision beginning to fail; that is, objects in front may be seen clearly, but objects to the side may be missed.

(c) In later stages, peripheral vision is lost resulting in "tunnel vision."

(d) Over time, central vision may likewise decrease resulting in blindness.

(4) Current Treatment Options. Glaucoma treatment options include:

- (a) Medication in the form of eyedrops or pills,
- (b) Laser trabeculoplasty,
- (c) Conventional surgery,
- (d) A combination of any of the preceding treatment options, and

(e) Low-vision rehabilitation. Those patients with significant vision loss from glaucoma who have received appropriate medical or surgical treatment need to be referred for low-vision rehabilitation care, as indicated.

**4. Guidance for Managing Progressive Eye Conditions Leading to Vision Loss**

**a. Screening**

(1) Knowledge of the risk factors predisposing AMD, DR, and glaucoma as well as presenting symptoms are important and need to be considered in the context of comprehensive continuum of eye care provided by primary care staff, optometrists, ophthalmologists, and ophthalmology and optometry sub-specialists.

(2) Primary care providers need to be aware of the risk factors and presenting symptoms associated with these eye diseases and refer appropriately. It is important that underlying conditions predisposing or contributing to these eye diseases and their progression (e.g., diabetes) are managed appropriately.

(3) It is recommended that:

(a) Primary care, optometry, ophthalmology and sub-specialty providers have care coordination agreements in place to ensure that at-risk patients are appropriately referred for preventive eye care or specialty eye-care services.

(b) These care coordination agreements need to state:

1. When patients with these diagnoses are referred to the next level of care. When not all levels of care are available at a given facility, alternate plans need to be in place to ensure appropriate care is available and provided in a timely manner (e.g., referral to another VA facility, an academic or non-academic affiliate, or community-based eye care specialist or sub-specialist).

2. When patients are referred to another facility or to the community.

(c) The care coordination agreements are reviewed and agreed to by primary care, optometry, and ophthalmology. If all services are not available at that facility, the Veterans Integrated Service Network (VISN) consultants need to review and approve.

#### **b. Diagnosis**

(1) The diagnosis of AMD, DR, and glaucoma can only be made by an eye care provider, and is therefore highly dependent on appropriate and timely referral.

(2) Because these are progressive eye diseases that may result in visual impairment and blindness, early diagnosis is essential as is the initiation of appropriate therapy followed by lifelong monitoring.

#### **c. Treatment**

(1) The treatment of AMD, DR, and glaucoma need to be performed in a coordinated manner by eye care specialists.

(2) Optometrists, ophthalmologists, and their respective subspecialists provide seamless care utilizing their collective expertise.

(3) In order to facilitate this working relationship, it is recommended that:

(a) A care coordination agreement be in place to ensure appropriate and timely referral of patients to the next level of care. Recommendations from the National Eye Institute, National Institutes of Health, as well as ophthalmologic and optometric clinical practice guidelines need to be utilized to determine appropriate protocols for patients, which are dependent upon their disease condition.

(b) There is a periodic peer review of all patients diagnosed with these progressive eye conditions, which is incorporated into the disease management process at least annually to ensure that patients receive appropriate treatment. This review needs to include optometrists, ophthalmologists, and appropriate ophthalmologic and optometric sub-specialists. **NOTE:** *A method to track all patients with these diagnoses (e.g., a local registry) would facilitate compliance.*

(c) Regular staff meetings occur that include both optometry and ophthalmology to facilitate care coordination.

## 5. References

a. *Age-Related Macular Degeneration: What You Should Know* (NIH Publication No. 03-2294). Bethesda, MD: National Eye Institute, National Institutes of Health.

b. Centers for Disease Control and Prevention (CDC). *Number and Percent of U.S. Population with Diagnosed Diabetes*. ([http://www.cdc.gov/diabetes/statistics/prevalence\\_national.htm](http://www.cdc.gov/diabetes/statistics/prevalence_national.htm)).

c. *Diabetic Retinopathy: What You Should Know* (NIH Publication No. 03-21-71). Bethesda, MD: National Eye Institute, National Institutes of Health.

d. *Don't Lose Sight of Age-Related Macular Degeneration* (NIH Publication No. 02-3462). Bethesda, MD: National Eye Institute, National Institutes of Health.

e. *Don't Lose Sight of Diabetic Eye Disease* (NIH Publication No. 04-3252). Bethesda, MD: National Eye Institute, National Institutes of Health.

f. *Don't Lose Sight of Glaucoma* (NIH Publication No. 96-3251). Bethesda, MD: National Eye Institute, National Institutes of Health.

g. *Glaucoma: What You Should Know* (NIH Publication No. 03-651). Bethesda, MD: National Eye Institute, National Institutes of Health.

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h. National Eye Institute of the National Institutes of Health, National Eye Health Education Program. (<http://www.nei.nih.gov/nehep/>).

i. Optometric Clinical Practice Guidelines, American Optometric Association. (<http://www.aoa.org/x4813.xml>).

j. Preferred Practice Patterns, American Academy of Ophthalmology. (<http://one.aao.org/CE/PracticeGuidelines/PPP.aspx>).

k. VA-Department of Defense (DOD) Clinical Practice Guidelines. "Management of Diabetes in Primary Care." ([http://www.healthquality.va.gov/diabetes\\_Mellitus.asp](http://www.healthquality.va.gov/diabetes_Mellitus.asp)).

**6. Inquires.** Questions need to be addressed to the Chief Consultant, Medical-Surgical Services at (202) 461-7120.

Robert A. Petzel, M.D.  
Under Secretary for Health

Attachments

DISTRIBUTION: E-mailed to the VHA Publications Distribution List 3/31/2010

## ATTACHMENT A

### MACULAR DEGENERATION

**1. Dry Age-Related Macular Degeneration (AMD).** Dry AMD occurs when the light-sensitive cells in the macula slowly break down, gradually blurring central vision in the affected eye. As dry AMD worsens there may be a blurred spot in the center of the vision, and over time central vision is gradually lost in the affected eye.

a. One of the most common early signs of dry AMD is the presence of drusen, which are seen as yellow deposits under the retina. They often are found in people over the age of 60. Drusen alone do not usually cause vision loss. In fact, the relationship between drusen and AMD is still not clear; however, an increase in the size or number of drusen is associated with the risk of developing either advanced dry AMD or wet AMD. These changes can cause serious vision loss.

b. Dry AMD has three stages, all of which may occur in one or both eyes:

(1) **Early AMD.** People with early AMD have either several small drusen or a few medium-sized drusen. At this stage, there are no apparent symptoms or vision loss.

(2) **Intermediate AMD.** People with intermediate AMD have either many medium-sized drusen or one or more large drusen. Some people note a blurred spot in the center of their vision. More light may be needed for reading and other tasks.

(3) **Advanced Dry AMD.** In addition to drusen, people with advanced dry AMD have a breakdown of light-sensitive cells and supporting tissue in the central retinal area. This breakdown can result in a blurred spot in the center of vision. Over time, the blurred spot may get bigger and darker, taking more of the central vision. This results in difficulty reading or recognizing faces.

c. Ninety percent of all people with AMD have dry AMD. In addition, more than 85 percent of all people with intermediate and advanced AMD combined have the dry form.

**2. Wet AMD.** Wet AMD occurs when abnormal blood vessels grow under the retina. These new blood vessels tend to be very fragile and often leak blood and fluid, which raises the macula rapidly resulting in irreversible damage. With wet AMD, also known as advanced AMD, loss of central vision can occur quickly. It does not have stages like dry AMD. Wet AMD accounts for about 10 percent of cases. However, if only advanced disease is considered, about two-thirds of patients have the wet form, and thus, the wet form leads to significantly more vision loss than the dry form.

### **3. Prevalence Data**

a. The overall prevalence of wet AMD or advanced dry AMD in the United States population 40 years and older is estimated to be 1.47 percent, with 1.75 million citizens having

AMD. The prevalence of AMD increases dramatically with age, with more than 15 percent of Caucasian women older than 80 years having wet AMD or advanced dry AMD. More than 7 million individuals have drusen measuring 125 microns or larger and are therefore at substantial risk of developing AMD. Owing to the rapidly aging population, it is projected that the number of persons having AMD will increase by 50 percent to 2.95 million in 2020.

b. AMD is far more prevalent among Caucasians than among African Americans. Data from the Los Angeles Latino Eye Study (LALES) suggest that the prevalence of early AMD increased from 6.2 percent in those 40-49 years of age to 29.7 percent in those 80 or older. Early AMD was significantly more common in males than in females. The prevalence of advanced AMD increased from 0 percent in those 40-49 years of age to 8.5 percent in those 80 years or older.

## ATTACHMENT B

### DIABETIC RETINOPATHY (DR)

1. **Vision Loss.** Blood vessels damaged from DR can cause vision loss in two ways:

a. Leaking blood into the center of the eye resulting in blurred vision, and eventually leading to fibrosis and retinal detachment.

b. Fluid can leak into the center of the macula resulting in macular edema. It can occur at any stage of DR, although it is more likely to occur as the disease progresses through the more advanced stages.

2. **Prevalence Data**

a. Diabetes has become an epidemic in the United States, and the prevalence of DR is high. It is estimated that 40.8 percent of adults aged 40 and older with diabetes have DR and that 8.2 percent have advanced, vision-threatening retinopathy. More than 4 million Americans (3.4 percent) aged 40 and older have some form of DR and this is projected to reach 6.1 million by the year 2020.

b. The prevalence of DR increases across successive age groups and then drops off again, with lower prevalence in those older than 75 years compared with those aged 65 to 74.

c. Prevalence rates for diabetes are higher among racial and ethnic minorities than the general population. African Americans, Hispanics and Latinos, American Indians, and Alaska Natives aged 20 and older are at least 1.5 times more likely to have diagnosed diabetes than their Caucasian counterparts. Studies have found that the prevalence of severe retinopathy is greater in African Americans with type 2 diabetes than in non-Hispanic Whites, though it is equally high in Latinos of Mexican ancestry.

d. No gender differences have been reported between any racial or ethnic groups for DR.

## ATTACHMENT C

### GLAUCOMA

**1. Stages Of Glaucoma.** The stages of glaucoma based upon eye examination findings include:

a. **Glaucoma Suspect.** Findings in the optic nerve head, increased intraocular tension, or questionable retinal nerve fiber layer or visual field changes, with or without other risk factors, may be suggestive of the diagnosis, but are insufficient to make it definitively. These cases require periodic monitoring.

b. **Mild.** The optic nerve head may have mild concentric narrowing or partial localized narrowing of the neuroretinal rim, disc hemorrhage, and asymmetry with corresponding retinal nerve fiber layer and visual field changes.

c. **Moderate.** The optic nerve head has moderate concentric narrowing of the neuroretinal rim, an increase in the area of central disc pallor, a complete localized notch, or loss of the neuroretinal rim in one quadrant with corresponding retinal nerve fiber layer loss. The visual field reveals a complete arcuate scotoma in at least one visual hemifield.

d. **Severe.** The optic nerve head has complete absence of the neuroretinal rim in at least three quadrants, “bayoneting” of the vessels, and a markedly increased area of central disc pallor with corresponding absence of the retinal nerve fiber layer. The visual field loss reveals a complete arcuate scotoma in both hemifields with a 5 degree to 10 degree central island of vision.

### **2. Prevalence Data**

a. Glaucoma is a leading cause of blindness and visual impairment affecting as many as 2.22 million nationwide. It is estimated that an additional 2 million may have the disease, but have not been diagnosed. There are no symptoms of glaucoma in the early stages of the disease. Vision loss from this disease is permanent and cannot be reversed.

b. Recent studies have confirmed that the rate of glaucoma increases with age and that African Americans have higher rates of the disease than Hispanics, Latinos, or Caucasians. African Americans are three times more likely to develop visual impairment due to glaucoma than other ethnic groups.

c. Results from the Los Angeles Latino Eye Study (LALES) suggest that the prevalence of glaucoma is high among Latinos of Mexican ancestry. There appears to be an absence of gender-related differences, but they did find that older Latinos have a higher prevalence of glaucoma than younger Latinos.