

Dry Age-Related Macular Degeneration (Dry AMD)

Macular degeneration results from damage to the macula, the part of the eye responsible for central vision and seeing fine details clearly.⁵ Most cases occur as part of the aging process and are known as age-related macular degeneration (AMD).⁶ All cases begin as dry AMD, the early form which accounts for 85 percent to 90 percent of all cases.⁷

Prevalence	Risks	Symptoms
<ul style="list-style-type: none"> About 10 million people in the U.S. have AMD⁶ Dry AMD accounts for 85 percent to 90 percent of all cases⁷ It is estimated that the prevalence of advanced AMD in the U.S. will grow to nearly 3 million by 2020 due to the aging baby boomer generation⁸ 	<ul style="list-style-type: none"> AMD is a leading cause of vision loss in people over age 60⁵ Women tend to be at greater risk than men, and Caucasians are more likely to lose vision from AMD than African-Americans and Asian populations⁹ Smoking, obesity and family history could also put a person at risk of AMD⁹ 	<ul style="list-style-type: none"> In early stages, AMD may not cause any noticeable symptoms⁵ The disease may be present, and symptoms may occur, in one eye or both⁵ People with dry AMD in only one eye often do not notice any change in their vision⁵

Wet Age-Related Macular Degeneration (Wet AMD)

Wet age-related macular degeneration begins when blood vessels form abnormally at the back of the eye through a process called angiogenesis.⁹ The blood vessels leak blood or fluid in the macula and form scars that cause central vision to deteriorate. All cases begin as dry AMD, but 10 to 15 percent progress to wet AMD, which can result in sudden and severe central vision loss.⁷

Prevalence	Risks	Symptoms
<ul style="list-style-type: none"> Approximately 90 percent of all AMD-related blindness results from wet AMD⁷ Between 1 and 1.5 million Americans have wet AMD^{9,7} About 200,000 new cases of wet AMD are diagnosed each year in North America⁶ 	<ul style="list-style-type: none"> Risks for wet AMD similarly increases for people over age 60⁵ As with dry AMD, women tend to be at greater risk than men, and Caucasians tend to be at greater risk than African-Americans and Asian populations⁹ Similarly, smoking, obesity and family history could also put a person at risk of wet AMD⁹ 	<ul style="list-style-type: none"> Sudden blurred vision¹¹ Difficulty seeing at a distance or doing detailed work¹¹ Blind spots develop in the middle of the field of vision¹¹ Colors become hard to distinguish¹¹ Edges or lines appear wavy¹¹

Diabetic Macular Edema (DME)

Diabetic macular edema is a serious eye condition that may affect people with diabetes (Type 1 and Type 2). The macula is the central portion of the retina and the part of the eye responsible for sharp central vision. DME results when the damaged blood vessels leak fluid and cause swelling, which blurs vision. If retinopathy worsens, severe vision loss and even blindness can occur.¹

Prevalence	Risks	Symptoms
<ul style="list-style-type: none"> DME is a leading cause of vision loss for people with diabetes² Approximately 745,000 people in the U.S. have DME³ Approximately 55 percent are unaware they have the condition⁴ 	<ul style="list-style-type: none"> All people with Type 1 and Type 2 diabetes are at risk for DME¹ The risk for developing DME is closely associated with the length of time a patient has lived with diabetes and the severity of diabetic retinopathy¹ 	<ul style="list-style-type: none"> Blurred or double vision² Loss of contrast² Patches of vision loss, which may appear as small black dots or lines "floating" across the front of the eye²

Retinal Vein Occlusion (RVO)

Retinal vein occlusion occurs when the normal blood flow through a retinal vein becomes blocked, causing swelling (edema) and hemorrhages in the retina, which may result in vision loss. RVO is commonly caused by a clot in the retinal vein. Macular swelling often occurs as a result of RVO. When fluid collects between the layers of the macula, vision can become blurred and distorted.¹²

Prevalence	Risks	Symptoms
<ul style="list-style-type: none"> RVO affects more than 1 million people in the U.S. and is the second-most common cause of vision loss due to retinal vascular disease^{13,14} An estimated 887,000 people are affected by branch-RVO, while approximately 265,000 people are affected by central-RVO¹³ 	<ul style="list-style-type: none"> RVO typically affects patients who are over age 50, and the incidence increases with age¹⁵ People with a history of high blood pressure, hypertension, diabetes and atherosclerosis are at an increased risk for developing RVO¹⁵ 	<ul style="list-style-type: none"> Sudden blurring or vision loss in all or part of one eye¹⁶ Temporary loss of central vision lasting a few seconds to minutes (less frequent)¹⁶ Visual disturbance centrally or peripherally¹⁶

¹ National Eye Institute. Facts About Diabetic Retinopathy. Available at: <http://www.nei.nih.gov/health/diabetic/retinopathy.asp>. Accessed June 6, 2012.

² American Academy of Ophthalmology. What is Diabetic Retinopathy? Available at: <http://www.geteyesmart.org/eyesmart/diseases/diabetic-retinopathy.cfm>. Accessed August 27, 2013.

³ Bressler NM, Varma R, Doan Q, et al. Underuse of the Health Care System by Persons With Diabetes Mellitus and Diabetic Macular Edema in the United States. *JAMA Ophthalmology*. 2014 Feb;132(2):168-73.

⁴ Bressler NM, Varma R, Doan Q, et al. Prevalence of Visual Impairment from Diabetic Macular Edema and Relationship to Eye Care from the 2005 – 2008 National Health and Nutrition Examination Survey (NHANES) [abstract]. The Retina Society 45th Annual Scientific Meetings, Washington, DC; October 4–7, 2012 (accepted for presentation).

⁵ National Eye Institute. Age-related macular degeneration: What You Should Know. National Eye Institute: NIH publication 03-2294. Available at: <http://www.nei.nih.gov/health/maculardegen/webAMD.pdf>. Accessed January 12, 2011.

⁶ AMD Alliance International. Age-Related Macular Degeneration (AMD) Fact Sheet. Available at: <http://www.amdalliance.org/amd-factsheet.html>. Accessed December 1, 2010.

⁷ AMD Alliance International. Basic Facts about AMD. Available at: http://www.amdalliance.org/information_overview_basic_facts.html. Accessed December 1, 2010.

⁸ Centers for Disease Control and Prevention. Vision Health Initiative. Available at: http://www.cdc.gov/visionhealth/basic_information/eye_disorders.htm. Accessed January 24, 2011.

⁹ BrightFocus Foundation. Macular Degeneration Prevention & Risk Factors. Available at: <http://www.brightfocus.org/macular/about/risk.html>. Accessed December 1, 2010.

¹⁰ Medscape. AMD: Underlying Causes and Treatment: Unraveling Angiogenesis. http://www.medscape.org/viewarticle/506716_3. Accessed December 1, 2010.

¹¹ University of Michigan Kellogg Eye Center. Age-related macular degeneration. Available at: <http://www.kellogg.umich.edu/patientcare/conditions/amd.html>. Accessed January 12, 2011.

¹² Williamson Eye Institute. Retinal Vein Occlusions. Available at: <http://www.williamsoneyeinstitute.com/retina-center/retinal-vein-occlusions>. Accessed February 18, 2009.

¹³ Genentech data on file (Based on population-based studies/the Beaver Dam Eye Study 2000 and 2008 and the United States Census).

¹⁴ Rehak J, Rehak M. Branch retinal vein occlusion: pathogenesis, visual prognosis, and treatment modalities. *Curr Eye Res*. 2008;33:111-131.

¹⁵ American Academy of Ophthalmology. Who Is At Risk for Central Retinal Vein Occlusion? Available at: <http://www.geteyesmart.org/eyesmart/diseases/central-retinal-vein-occlusion-risk.cfm>. Accessed August 27, 2013.

¹⁶ American Academy of Ophthalmology. Who Is At Risk for Central Retinal Vein Occlusion? Available at: <http://www.geteyesmart.org/eyesmart/diseases/central-retinal-vein-occlusion-symptoms.cfm>. Accessed August 27, 2013.