

A Look Past the Lens—Identifying and Diagnosing Diabetic Retinopathy to Improve Eye Care for Patients with Diabetes

TOOLKIT

Guidelines, Recommendations, and Articles: Overview of Diabetic Retinopathy

Resource	Address
Flaxel CJ, Bailey ST, Fawzi A, et al. Diabetic Retinopathy Preferred Practice Pattern. American Academy of Ophthalmology; 2019	https://www.aao.org/preferred-practice-pattern/diabetic-retinopathy-ppp
At a glance: Diabetic Retinopathy (NIH. National Eye Institute)	https://nei.nih.gov/health/diabetic/retinopathy
ICO Guidelines for Diabetic Eye Care. International Council of Ophthalmology, updated 2017	http://www.icoph.org/downloads/ICOGuidelinesforDiabeticEyeCare.pdf
Solomon SD, Chew E, Duh EH, et al. Diabetic Retinopathy: A Position Statement by the American Diabetes Association. <i>Diabetes Care</i> . 2017	http://care.diabetesjournals.org/content/40/3/412
Wang W, Lo AC. Diabetic retinopathy: pathophysiology and treatments. <i>Int J Mol Sci</i> . 2018;19:1816	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6032159/
Adamis AP, Miller JW, Bernal MT, et al. Increased vascular endothelial growth factor levels in the vitreous of eyes with proliferative diabetic retinopathy. <i>Am J Ophthalmol</i> . 1994;118:445-450	https://www.ncbi.nlm.nih.gov/pubmed/7943121
Tang J, Kern TS. Inflammation in diabetic retinopathy. <i>Prog Retin Eye Res</i> . 2012;30:343-358	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3433044/
Oxidative stress and diabetic retinopathy. Kowluru RA, Chan PS. <i>Exp Diabetes Res</i> . 2007; 2007:43603	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1880867/
Fukushima Y, Inoue N, Uemura A. Pathophysiology of diabetic retinopathy: The old and the new. Kusuhara S, <i>Diabetes Metab J</i> . 2018;42:364-376	https://e-dmj.org/Synapse/Data/PDFData/2004DMJ/dmj-42-364.pdf
Cavan D, Makaroff L, da Rocha Fernandes J, et al. The diabetic retinopathy barometer study: Global perspectives on access to and experiences of diabetic	https://www.diabetesresearchclinicalpractice.com/article/S0168-8227(17)30437-0/fulltext

retinopathy screening and treatment. <i>Diabetes Res Clin Pract.</i> 2018;129:16-24	
Caldwell RB, Bartoli M, Behzadian MA, et al. Vascular endothelial growth factor and diabetic retinopathy: pathophysiological mechanisms and treatment perspectives. <i>Diabetes Metab Res Rev.</i> 2003;19:442-455	https://www.ncbi.nlm.nih.gov/pubmed/14648803
Aiello LP, Avery RL, Keyt BA, et al. Vascular endothelial growth factor in ocular fluid of patients with diabetic retinopathy and other retinal disorders. <i>N Engl J Med.</i> 1994;331:1480-1487	https://www.ncbi.nlm.nih.gov/pubmed/7526212

Selected Clinical Trials and Related Studies

Resource	Address
DRCRN, Wells JA, Glassman AR, et al. Aflibercept, bevacizumab, or ranibizumab for diabetic macular edema. <i>N Engl J Med.</i> 2015;372:1193-1203	https://www.ncbi.nlm.nih.gov/pubmed/25692915
Comparative effectiveness study of intravitreal aflibercept, bevacizumab, and ranibizumab for diabetic macular edema (Protocol T) NCT01627249	https://clinicaltrials.gov/ct2/show/NCT01627249
Gross JG, Glassman AR, Sun JK, et al. Five-year outcomes of panretinal photocoagulation vs intravitreal ranibizumab for proliferative diabetic retinopathy: A randomized clinical trial. <i>JAMA Ophthalmol.</i> 2018;136:1138-1148	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6233839/
Ip MS, Domalpally A, MD, Hopkins JJ, et al. Long-term effects of ranibizumab on diabetic retinopathy severity and progression. <i>Arch Ophthalmol.</i> 2012;130:1145-1152	https://www.ncbi.nlm.nih.gov/pubmed/22965590
Wykoff CC, Ou WC, Khurana RN, et al. Long-term outcomes with as-needed aflibercept in diabetic macular oedema: 2-year outcomes of the ENDURANCE extension study. <i>Br J Ophthalmol.</i> 2018;102:631-636	https://www.ncbi.nlm.nih.gov/pubmed/28814412

<p>Obeid A, Gao X, Ali FS, et al. Loss to follow-up in patients with proliferative diabetic retinopathy after panretinal photocoagulation or intravitreal Anti-VEGF injections. <i>Ophthalmology</i>. 2018;125:1386-1392</p>	<p>https://www.ncbi.nlm.nih.gov/pubmed/29606377</p>
<p>Prompt panretinal photocoagulation versus ranibizumab + deferred panretinal photocoagulation for proliferative diabetic retinopathy (Protocol S) NCT01489189</p>	<p>https://clinicaltrials.gov/ct2/show/NCT01489189</p>
<p>Wykoff CC, Eichenbaum DA, Roth DB, Hill L, et al. Ranibizumab induces regression of diabetic retinopathy in most patients at high risk of progression to proliferative diabetic retinopathy. <i>Ophthalmology Retina</i>. 2018;2:997-1009</p>	<p>https://www.ncbi.nlm.nih.gov/pubmed/31047503</p>
<p>Sun JK, Glassman AR, Beaulieu WT, et al. Rationale and application of the protocol S anti-vascular endothelial growth factor algorithm for proliferative diabetic retinopathy. <i>Ophthalmology</i>. 2019;126:87-95</p>	<p>https://www.ncbi.nlm.nih.gov/pubmed/30096354</p>
<p>Mazhar K, Varma R, Choudhury F, et al. Severity of diabetic retinopathy and health-related quality of life: the Los Angeles Latino Eye Study. <i>Ophthalmology</i>. 2011;118:649-655</p>	<p>https://www.ncbi.nlm.nih.gov/pubmed/21035872</p>
<p>Study of the efficacy and safety of intravitreal (IVT) aflibercept for the improvement of moderately severe to severe nonproliferative diabetic retinopathy (NPDR) (PANORAMA) NCT02718326</p>	<p>https://clinicaltrials.gov/ct2/show/NCT02718326</p>
<p>Willis JR, Doan QV, Haskova Z, et al. Vision-related functional burden of diabetic retinopathy across severity levels in the United States. <i>JAMA Ophthalmol</i>. 2017; 135:926-932</p>	<p>https://www.ncbi.nlm.nih.gov/pubmed/28750122</p>

Interdisciplinary Care

Resource	Address
Lustman A, Comaneshter D, Vinker S, et al. Interpersonal continuity of care and type two diabetes. <i>Primary Care Diabetes</i>. 2016; 10:165-170	https://www.ncbi.nlm.nih.gov/pubmed/26530317

Professional and Patient Resources

Resource	Address
American Academy of Ophthalmology (AAO)	https://www.aao.org/about/who-we-are/overview
American Optometric Association (AOA)	https://www.aoa.org/patients-and-public
American Society of Retina Specialists (ASRS)	https://www.asrs.org/
ASRS Patient Education	https://www.asrs.org/patients
CDC. Watch Out for Diabetic Retinopathy	https://www.cdc.gov/features/diabetic-retinopathy/index.html
Prevent Blindness. Diabetic Macular Edema (DME)	https://www.preventblindness.org/diabetic-macular-edema-dme
The Discovery Eye Foundation. Diabetic Retinopathy	https://discoveryeye.org/eye-conditions/diabetic-retinopathy/
NIH. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). Diabetic Eye Disease: What is diabetic eye disease?	https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/diabetic-eye-disease
National Diabetes Education Program (NDEP). Healthy Eyes Matter	https://www.cdc.gov/diabetes/ndep/pdfs/toolkits/working-together/149-healthy-eyes-matter.pdf