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Study finds vision loss due to diabetes is rising globally

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Diabetes has become one of the top causes of vision loss around the world, according to an article published on August 23, 2016 in *Diabetes Care* journal by a global consortium led by researchers at Nova Southeastern University's (NSU) College of Optometry in Fort Lauderdale/Davie, Florida, and the Vision and Eye Care Unit at Anglia Ruskin University in Cambridge, United Kingdom.

Blindness and visual impairment due to diabetic retinopathy (DR) increased significantly in the 20-year period researchers analyzed. In 2010, one in every 39 blind people was blind due to DR, which increased 27 percent since 1990. Of those with moderate or severe vision impairment, one in 52 people had vision loss attributed to diabetes, an alarming increase of 64 percent since 1990.

Poor control of glucose levels and lack of access to eye health services in many parts of the world are thought to contribute to this increase, according to the researchers. As more people live longer with diabetes, there is a higher risk of developing DR and subsequent vision loss.

DR is a condition resulting from chronically high blood sugar from diabetes in which the delicate blood vessels in the lining of the inside of the eye (retina) become damaged and start leaking and distorting vision, according to the National Eye Institute. In DR's most advanced stage, new abnormal blood vessels grow, damaging the retina and leading to permanent scarring and vision impairment or blindness.

"Unfortunately diabetic retinopathy usually does not have any symptoms in the early stages," says Janet Leasher, O.D., M.P.H., co-author of the report and a professor at NSU's College of Optometry. "People diagnosed with diabetes should have a dilated eye health exam at least every year and be advised by their eye care practitioner for their personal situation. Patients should work closely with their health care provider to determine the best methods to control their blood sugar levels."

During the 20-year period analyzed in this study, the regions of the world with the highest number of people visually impaired by DR were South Asia, Middle East & North Africa, and West Sub-Saharan Africa. The regions with the highest number of people who were rendered blind from DR were East Asia, Tropical Latin America, and South Sub-Saharan Africa.

In people older than 50, the greatest increase in the prevalence of blindness caused by DR occurred in South Sub-Saharan Africa, Southern Latin America Central Sub-Saharan Africa. Those regions with the greatest increase in the prevalence of visual impairment caused by DR in this age group lived in Central, South and Tropical Latin America. Results showed a slight decrease in visual impairment caused by DR in South and Southeast Asia, Oceania, and East and West Sub-Saharan Africa.

"With the alarming prevalence of vision loss due to diabetes rising more than two-thirds in the last 20 years, the precipitous global epidemic of diabetes must be addressed," said Rupert R.A. Bourne, FRCOphth, M.D., lead investigator of the report, ophthalmologist and professor and associate director of the Vision and Eye Research Unit at Anglia Ruskin University.

The authors recommend public policy planning in regions most affected

by DR, including:

- Strategies for preserving the vision of diabetic adults,
- Development of evidence-based, cost-effective strategies to screen for DR,
- Improve control of systemic risk factors (e.g., glucose and blood pressure) among people with diabetes,
- Increase health education and awareness of the risk of visual loss from DR,
- Intensified prevention and treatment of DR through the introduction of laser treatments, intra-vitreal injections of steroids and anti-VEGF (vascular endothelial growth factor) drugs, and
- Reduction of differences between regions in the screening and management of diabetes and DR, socioeconomic factors and medical infrastructure.

The estimates in this study form part of the broader research of the Global Vision Database, which seeks to estimate and report on the changes over time in the causes and prevalence of vision loss.

More information: "Global Estimates on the Number of People Blind or Visually Impaired by Diabetic Retinopathy: A meta-analysis from 1990-2010," *Diabetes Care* DOI: 10.2337/dc15-2171

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