

The Wisconsin Epidemiologic Study of Diabetic Retinopathy (WESDR) - 1984



Objective

To determine the incidence, prevalence, and severity of diabetic retinopathy and visual impairment and associated risk factors in diabetic patients.

Methods

Design: Population-based epidemiological study over 25 years

Timeline:

Original study: 1980-1982

Follow-ups: 1984-86, 1990-92, 1995-96, 2000-01, 2006-07, and 2012-14

Sample Size:

Type 1 Diabetes: 996

Type 2 Diabetes: 1370

Outcome Measures: Incidence rate and severity of diabetic retinopathy using stereoscopic color fundus photographs

Results

Point 1: Diabetic retinopathy was found to be related to: Longer duration with the disease, high levels of glycosylated hemoglobin, proteinuria, increased diastolic BP, and male sex.

- Those diagnosed with diabetes prior to the age of 30 had a higher prevalence of diabetic retinopathy (71% vs 39%), and increased progression to diabetic retinopathy (11% vs 3%).

Point 2: Incidence and progression of diabetic retinopathy was greatest in younger patients at 10 year follow up

- Incidence of any retinopathy was greatest (89%) in patients diagnosed prior to age 30, followed by patients older than 30 and on insulin (79%), followed by those older than 30 and not on insulin (67%)
- Progression to proliferative diabetic retinopathy followed a similar trend (30%, 24%, and 10%, respectively)

Point 3: A later follow-up found 20 years after diagnosis with diabetes 99% of patients with type 1 and 60% of patients with type 2 showed the development of retinopathy.

TLDR: After 25 years there have been over 230 reports from the WESDR study to show glycemic control is associated with a decreased risk of diabetic retinopathy and other diabetic complications.