Diabetic retinopathy is a complication of diabetes that can lead to blindness. Caused by changes in the blood vessels of the retina, diabetic retinopathy is the most common diabetic eye disease. Usually no symptoms are present in the early stages of the disease. As the disease progresses, a person may experience spots in vision or blurred vision.

For more information:
- American Diabetes Association: www.diabetes.org
- American Optometric Association: www.aoa.org
- Dash Diet: dashdiet.org
- Idaho Plate Method: www.platmethod.com/downloads.html
- National Eye Institute/National Institutes of Health: www.nei.nih.gov/

Normal Vision

Same scene viewed by a person with diabetic retinopathy

Diabetic Retinopathy

National Eye Institute, National Institutes of Health, Ref#: EDS01

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For more information on this and other topics, see www.ag.ndsu.edu/food

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**Risk Factors for Diabetic Retinopathy**

- Presence of Type 1 or 2 diabetes
- Diabetes diagnosis and pregnant
- Poor blood sugar control
- Poor blood pressure control
- Presence of kidney disease
- Duration of diabetes

**Prevention and Treatment**

- **Control blood sugar**
  - Maintain a consistent intake of carbohydrate foods at meals
    - Bread/starch/grain, milk/yogurt, fruit/fruit juice and sweets contain carbohydrate
- **Control blood pressure**
  - Increase intake of fruits, vegetables, whole grains, low-fat or fat-free dairy products and nuts
  - Decrease sodium intake
  - Moderate alcohol intake
- **Control cholesterol levels**
  - Choose foods moderate in fat and low in saturated fat, cholesterol and trans fat
- **Get regular physical activity**
  - Get moderate or vigorous activity most days of the week combined with resistance training
- **Lose weight if overweight**
- **Have regular physician and dietitian visits**
- **Have regular comprehensive and dilated-eye exams**
  - Yearly or as soon as possible during pregnancy

**Diabetic Retinopathy Treatments**

Scatter laser treatment, a vitrectomy and focal laser treatments are effective (decrease vision loss by 50 to 60 percent) but are not curative.

**Prevention is Key**

Eat a healthy diet to help control blood sugar, blood pressure and cholesterol levels.

**Know Your Numbers**

- **Fasting Blood Glucose Level**
  - Normal: 70-100 mg/dl
  - Prediabetes: >100 mg/dl
  - Diabetes: >126 mg/dl

- **Hemoglobin A1c**
  - Normal: 4-6%
  - Goal for Diabetes: <7%

- **Blood Pressure (mmHG)**
  - Normal: <120/80
  - Hypertension: ≥140/90

**Use the Plate Method for Healthy Meals**

- Vegetables - ½ plate
  - Watery, not starchy
- Meat/fish/poultry/tofu/eggs/nuts - ¼ plate
  - Protein foods
- Bread/starch/grain - ¼ plate for one serving; may have two servings
  - Includes starchy vegetables and dry beans
  - Choose whole grains most often
- Milk and yogurt – use 1 small cup or coffee cup
  - Skim or 1% milk, low-fat or fat-free yogurt
- Fruit – Use ½ cup dessert dish or 1 small cup or coffee cup
  - 1 small fruit, ½ cup sliced fruit or applesauce, ½ cup fruit juice, 1 cup melons or berries