

Module C

Treating Diabetes

3 - Retinopathy

Learning aims

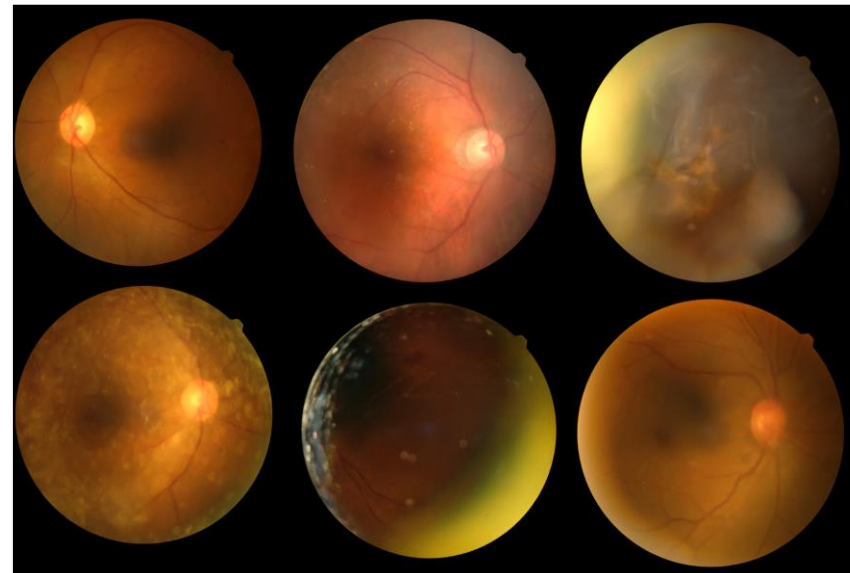
To demonstrate awareness by all care staff that residents with diabetes are at risk of diabetes-related eye disease such as retinopathy

To appreciate that most forms of diabetes-related eye disease such as retinopathy are often treatable causes of visual loss

To understand why it is important to encourage residents with diabetes to attend annual retinal screening appointments if possible

Diabetic retinopathy

- ⊙ Diabetic retinopathy is the commonest cause of blindness in the working population in the UK. However, there are lesser degrees of visual loss caused by diabetes.
- ⊙ Residents with either type 1 or type 2 diabetes can develop retinopathy
- ⊙ Many factors increase the risk of developing retinopathy: long duration diabetes, poor glucose control, hypertension, hyperlipidaemia, etc.
- ⊙ Retinopathy may cause several symptoms: poor vision, blurred/patchy vision, eye pain, shapes floating in your field of vision (floaters)



Consequences of Visual Loss in Care Home Residents

The presence of increasing loss of vision in residents with diabetes can lead to severe consequences if not managed:

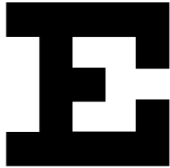









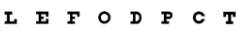
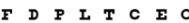
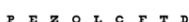
- Diminished quality of life
- Disability
- Disruptive behaviour
- Depression



Visual Loss – measuring visual acuity

- ⊙ Any resident with visual loss may experience difficulty in reading, walking, and socialising
- ⊙ In the UK, about 360,000 people are registered as 'blind' or partially sighted
- ⊙ Legal Blindness is equivalent to being unable to see the top letter on a Snellen chart at 3 metres
- ⊙ Partial sight (sight impaired, SI): unable to see the top letter on the Snellen chart at 6 metres.

Snellen Chart

	1	20/200
	2	20/100
	3	20/70
	4	20/50
	5	20/40
 	6	20/30
	7	20/25
 	8	20/20
	9	
	10	
	11	

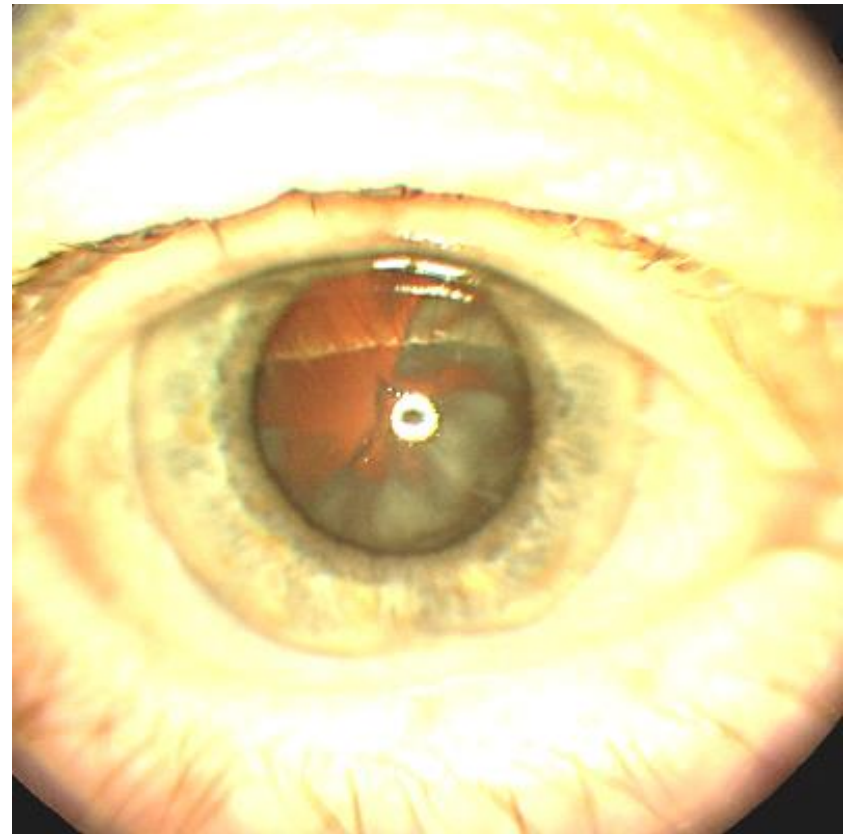
Common causes of visual loss in older people

In a population of older people with diabetes in Gloucestershire, the three commonest causes of visual loss were:

- 🎯 Cataract-related 49%
- 🎯 Macular degeneration 29%
- 🎯 Diabetic retinopathy 15%

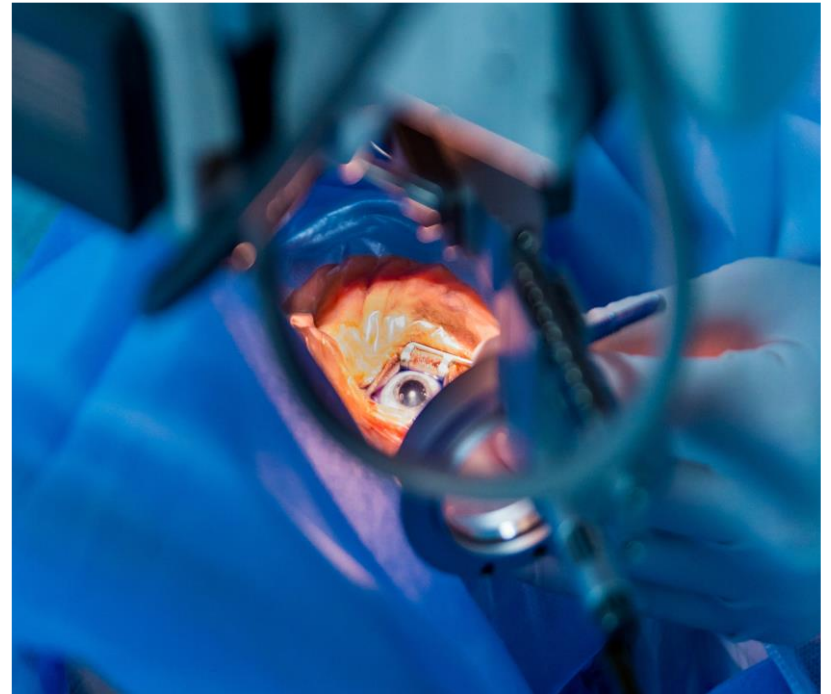
Cataract – a common correctable cause of visual loss

- ◎ Cataract is a clouding and increased density of the lens and is more common in older people and also more common in people with diabetes.
- ◎ When a cataract occurs, it may cause clouding or frosting of the eye lens.



Cataract Surgery

- ◎ Cataract surgery is generally very successful. Under a local anaesthetic, the old lens can be liquefied by a powerful ultrasound and removed painlessly. A new lens is then inserted and positioned. The whole procedure often only takes about 20 mins.
- ◎ Many people do not require distance spectacles after cataract surgery and only require them for reading.



Opacification of Posterior Capsule

Post-operative lens opacification

- ⊙ Sometimes, the posterior capsule of the lens becomes opaque approximately 18 months after a cataract operation.
- ⊙ This may interfere with vision but is usually easy to treat using a YAG laser machine.

Residents and eye surgery

- ⊙ Care home residents with diabetes-related eye disease should not be denied the opportunity to undertake eye surgery
- ⊙ Many residents with diabetes will be able to cooperate and tolerate the procedures well

Macular degeneration

- ⊙ Macular degeneration is a common cause of distortion or loss of central vision in older people.
- ⊙ As a result, it is sometimes called age-related macular degeneration
- ⊙ There are two types:
 - wet type, where there is leakage of fluid or blood in the macular area
 - dry type, where there are degenerative changes and drusen in the macular area without fluid leakage.



Macular degeneration

- ⦿ The photograph shows advanced wet type disease with a scar in the macular area following leakage. At an earlier stage, there is fluid leakage in the macular area and sometimes bleeding into the retina.
- ⦿ In the early stages the 'wet' condition can be treated by a course of intravitreal injections of VEGF (vascular endothelial growth factors) inhibitors. This dries up the leakage and may preserve vision.
- ⦿ The dry type progresses at a much slower rate with gradual increases in the degenerative changes in the macular area.



Diabetic retinopathy

- ① The photograph to the right shows hard exudates in the right macular area caused by leakage of fluid. Visual loss in diabetic retinopathy is usually caused by diabetic maculopathy.
- ① Diabetic maculopathy can be treated with either laser treatment or a course of intravitreal injections of VEGF inhibitors.



Annual retinal screening

- ① Attending a screening programme for diabetic retinopathy is highly worthwhile
- ① In Iceland, the risk of blindness from diabetic retinopathy dropped from 2.4% in 1980 to 0.5% in 2005 following the introduction of such a programme.
- ① Screening and subsequent treatment is very effective in reducing severe eye complications of diabetes.

Annual retinal screening – can be highly effective

- Previously, systematic screening in the Newcastle area reduced the risk of blindness to 0.035% of the diabetic population.



- An earlier study demonstrated that the risk of retinopathy was increased in those who were not screened promptly after diagnosis of type 2 diabetes.

Annual retinal screening – Looking after your eyes

- ⦿ Before screening for diabetic retinopathy was introduced in the UK, there was an increase in blindness due to diabetic retinopathy in older age groups.
- ⦿ All residents with diabetes should report to the care staff any change in their vision such as floaters, dimming of vision, difficulty focusing, etc.
- ⦿ Residents with diabetes who smoke should be encouraged to stop smoking.
- ⦿ All residents with diabetes (smokers and non-smokers), should ensure that their diabetes control is satisfactory and that their blood pressure is controlled.

Optometrists and Care Homes

- ⊙ Arranging a regular optometry review of care home residents can be challenging
- ⊙ Residents with diabetes generally tend to have at least one ocular condition but may be confused or lack sufficient comprehension or physical ability to allow standard assessments
- ⊙ Every effort should be made by the care home to liaise with the GP to keep residents with diabetes on the diabetes register for eye annual screening, or to arrange visits by an optometrist

Key messages

KM

Unmanaged visual loss in residents with diabetes can have serious consequences such as diminished quality of life.

KM

Diabetic retinopathy is an important cause of visual loss in older people with diabetes and there are other treatable causes such as cataract and wet macular degeneration.

KM

Attendance at screening is important to prevent loss of vision whether screening takes place at the eye clinic or within the care home.

Questions

Q1. What is the commonest cause of blindness in the working population of the UK?

- A. Diabetic retinopathy
- B. Cataract
- C. Macular degeneration

Answers

Q1. What is the commonest cause of blindness in the working population of the UK?

- A. **Diabetic retinopathy**
- B. Cataract
- C. Macular degeneration

Questions

Q2. People with diabetes should attend retinal screening appointments:

- A. Monthly
- B. Twice a year
- C. Annually

Answers

Q2. People with diabetes should attend retinal screening appointments:

- A. Monthly
- B. Twice a year
- C. **Annually**

Questions

Q3. The following are known risk factors for diabetic retinopathy:

- A. Low blood pressure
- B. Diabetes duration less than 1 year
- C. Poor glucose control

Questions

Q3. Which of the following are known risk factors for diabetic retinopathy:

- A. Low blood pressure
- B. Diabetes duration less than 1 year
- C. **Poor glucose control**

Questions

Q4. Which of the following are symptoms of diabetes eye disease:

- A. Floaters
- B. Poor vision
- C. Blurred vision
- D. Eye pain
- E. All of the above

Answers

Q4. Which of the following are symptoms of diabetes eye disease:

- A. Floaters
- B. Poor vision
- C. Blurred vision
- D. Eye pain
- E. All of the above**

Answers

Q5. Which of the following are potential barriers to diabetic eye screening in care homes:

- A. Residents unable to tolerate the screening procedure
- B. Very poor outcomes of those who have received eye screening
- C. Unavailability of local optometrists willing to undertake eye screening
- D. None of the above

Answers

Q5. Which of the following are potential barriers to diabetic eye screening in care homes:

- A. Residents unable to tolerate the screening procedure**
- B. Very poor outcomes of those who have received eye screening
- C. Unavailability of local optometrists willing to undertake eye screening**
- D. None of the above

Further reading and references

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Learning completed