## Diabetic Eye Screening

### Key Points

- Diabetic retinopathy is the most common cause of sight loss in the working age population (1)
- All people with any type of diabetes are at risk of developing retinopathy. Those most at risk are people who have had diabetes for a long duration and/or who have poorly controlled diabetes and hypertension
- The NHS Diabetic Eye Screening Programme aims to reduce the risk of sight loss among people with diabetes by the early detection and treatment.
- Screening is offered annually to all people with diabetes aged 12 or over.

### Introduction

**Diabetic retinopathy is a common complication of diabetes. It occurs when high blood glucose levels damage the cells at the back of the eye, known as the retina. If it is not treated, it can lead to blindness.**

The retina is the light-sensitive layer of cells at the back of the eye. To work effectively, the retina needs a constant supply of blood, which it receives through a network of tiny blood vessels.

Over time, a continuously high blood glucose level can cause the blood vessels to become blocked or to leak. This damages the retina and stops it from working.

During the initial stages, retinopathy does not cause any noticeable symptoms. You may not realise that your retina is damaged until the later stages, when your vision becomes affected.

**Possible symptoms of late-stage retinopathy include:**

- shapes floating in your field of vision (floaters)
- blurred vision
- reduced night vision
- sudden blindness

The four UK nations were the first countries in the world to introduce systematic national
screening programmes for diabetic retinopathy.

The implementation of screening in England was announced in the 2003 Delivery Strategy for the National Service Framework for Diabetes and, by 2008, local retinal screening programmes covered the whole country.

Four years on, annual screening for diabetic retinopathy is an established and essential component of effective healthcare for all people with diabetes aged 12 and over across the UK.

Collaboration between the screening programmes for diabetic retinopathy in England, Scotland, Wales and Northern Ireland is an integral part of the UK National Screening Committee's strategy. The four UK nations continue to work together closely in a number of areas, including a current evaluation project to determine the optimal screening intervals, particularly for low risk patients who have no diabetic retinopathy. (2)

Screening involves checking visual acuity and then taking digital photographs of the retina. The photographs are then scored by a two or three-stage image grading process to identify the changes of sight-threatening diabetic retinopathy. Screening is offered annually to all people with any type of diabetes aged 12 or over. It is estimated screening could save more than 400 people per year from sight loss in England. (3) The main treatment is laser therapy.

Current situation

England

The NHS Diabetic Eye Screening Programme aims to reduce the risk of sight loss among people with diabetes by the early detection and treatment, if needed, of sight-threatening retinopathy. Around 90 local programmes deliver screening across England. Local programmes are accountable to the national programme and submit an annual report containing general information about the service offered and information to support an assessment against the national Service Objectives and Quality Assurance Standards. The NHS Diabetic Eye Screening Programme is co-ordinated and led from the NHS Adult (non-cancer) Screening Programmes Centre in Gloucester.

Screening is delivered locally in line with national quality standards and protocols. Each local programme co-ordinates screening for its population and organises invitation letters, screening clinics, results letters and referrals to eye departments. The local screening programmes inform GPs when people are invited for screening. GP’s are also informed of their patients' screening results (3).

It is estimated that in England every year 4,200 people are at risk of blindness caused by diabetic retinopathy and there are 1,280 new cases of blindness caused by diabetic
In 2011–12, the service identified 2.59 million people with diabetes. 98.6% of these were offered screening, but only 80.9% per cent of those offered were screened.

The uptake variation in England varies from 95% (highest PCT) to 66.7% (lowest PCT)

Forthcoming changes

The NDESP has identified that significant variation currently exists between programmes in terms of grading and referral processes. There is also significant variation in commissioning, particularly as to what activities are part of screening and what activities are part of diagnostic and treatment services. To address these issues, a new grading criteria and common pathway for diabetic eye screening will be implemented in phases across England during 2013–14. The new pathway and grading criteria will ensure a consistent approach to the commissioning and delivery of screening. From April 2013, national screening programmes will be commissioned by the NHS Commissioning Board (NHS CB) on behalf of Public Health England while diagnostic and treatment services will be commissioned by clinical commissioning groups (CCGs). The NHS CB and CCGs will have separate budgets, so it is vital there is clarity about who is commissioning which part of the service.

Scotland

The Scottish Diabetic Retinopathy Screening service is a National Services Division programme available across all areas of Scotland. People aged 12 and over diagnosed with diabetes are automatically invited once a year for an eye screen appointment. Screening is initially carried out by digital retinal photography which is graded and quality assured using nationally agreed standards and policies.

Data from the Scottish National Diabetes Screening Collaborative shows that between April 1 2012 and 31 December 2012 of the 227,380 people eligible for retinal screening only 76.7% had been screened.

There is no variation data available for Scotland

Wales

The Diabetic Retinopathy Screening Service for Wales (DRSSW) was commissioned in July 2002 by Welsh Government as part of the Welsh Eye Care Initiative and is hosted by Cardiff and Vale University Health Board. The service is community based, delivering from sites across Wales, chosen to allow all patients reasonable and equitable access. The service operates under the standards set by the UK National Screening Committee and robust quality assurance systems are in place throughout.

Clinics are visited by mobile teams based in three centres around Wales (Cardiff, Carmarthen, Bangor). All retinal images are transmitted to Cardiff where they are assessed for the presence and severity of any retinopathy according to a single protocol agreed with Ophthalmologists in Wales; other types of lesions may also be reported.
DRSSW became operational in June 2003 and by December 2006 had achieved all Wales coverage; i.e. all known, eligible patients had been invited for screening at least once.

The DRSSW database currently has 168,500 registered, eligible patients. In 2012/13 136,400 were invited for screening, of which 110,800 were successfully screened (81% compliance). Variation data is recorded and shows only marginal differences between localities. The annual incidence of retinopathy was 30%.

**Northern Ireland**

The Northern Ireland Diabetic Retinopathy Screening Programme holds responsibility for contacting eligible patients.

No further data is available at present. (7)

### Diabetes UK calls to action or Recommendations

1. Diabetes UK wants retinal screening carried out at least once a year as part of a person’s annual review
2. Screening programmes must track patients’ progress to ensure they receive annual screening and access to prompt treatment and follow-up when needed
3. Screening services must have good links with local provider eye departments (9)
4. Specialist care should have access to screening images to use for clinical management and educational purposes
5. The NHS CB and CCGs will have separate budgets, so it is vital there is clarity about who is commissioning which part of the service (2).

### Conclusion

Retinal screening needs to be carried out at least once a year as part a person’s annual review. Screening programmes must track patients’ progress to ensure they receive annual screening and access to prompt treatment and follow-up when needed. It is important that screening services must have good links with local provider eye departments (8) and that there is clarity about who is commissioning which part of the service (2).

Generally, efforts need to be made in order to reduce variation of uptake rates across the UK.
## Further information

Royal College of Ophthalmologists. Retinopathy Guidelines [www.rcophth.as.uk](http://www.rcophth.as.uk)

## References

2. The Royal College of ophthalmologists “Focus” Winter 2012
   
8. Diabetes UK State of the Nation 2012

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