

# Miniature lens system implantation for advanced age- related macular degeneration

Information for the public

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## What has NICE said?

Short-term studies in small numbers of patients show that [miniature lens system implantation](#) for advanced [age-related macular degeneration](#) can improve central vision and is adequately safe. But there is not much good evidence about how well this procedure works or how safe it is in the long-term. It should only be used if extra care is taken to explain the risks and extra steps are put in place to record and review what happens.

NICE noted the importance of carefully assessing patients thinking about having the procedure, to predict how well they will cope with the changes in vision afterwards. It also noted the need for visual training and therapy after the procedure.

### What does this mean for me?

Your health professional should fully explain what is involved in having this procedure, and

discuss the possible benefits and risks with you. In particular, they should explain the uncertainty about the evidence on how likely it is to improve your symptoms and possible side effects including early complications. They should also explain that you will need to adapt to having a lens system implanted into 1 eye and the need for visual rehabilitation. You should be told how to find more information about the procedure. You should only be asked if you want this procedure after having this discussion. Your health professional should ask you if details of your procedure can be collected.

### **Other comments from NICE**

NICE noted that comments from patients were mixed. Some patients reported good improvement in their vision. Others reported difficulty in coping with highly magnified images, and said that the improvement in their vision was not satisfactory.

## **Your healthcare team**

This procedure should only be done by experienced cataract surgeons with appropriate training in implanting miniature lens systems.

## **The condition**

Age-related macular degeneration is an eye disorder that causes progressive loss of central vision. It affects older adults, and often occurs in both eyes.

NICE has looked at using [miniature lens system implantation](#) as a treatment option.

[NHS Choices](#) may be a good place to find out more.

## **The procedure**

This procedure involves implanting an artificial lens system into one eye only (not both eyes). The aim is to improve vision by magnifying the image in that eye or by moving the image to an undamaged part of the eye. Under local anaesthetic the natural lens is removed through a small cut at the front of the eye where the cornea (the clear film at the front of the eye) meets the sclera (the white part of the eye), and the miniature lens system is put in. Miniature lens systems can have a single miniature telescope (to magnify

the image), or 2 separate artificial lenses (to align the image). After the procedure, people need training and therapy to learn how to see using the implant.

## Benefits and risks

When NICE looked at the evidence, it decided that miniature lens implantation for age-related macular degeneration can improve central vision and quality of life in the short-term and is adequately safe. But the studies were short-term and included only a small number of patients. NICE decided there was not enough evidence to know how well it works or how safe it is in the long-term. The 5 studies that NICE looked at involved a total of 314 patients.

Generally, the studies showed improvements in central vision and quality of life in about two thirds of eyes treated. People reported being able to see 2 to 3 more lines on a sight chart and having better quality of vision, up to 5 years after the procedure. However, the amount of benefit declined over time.

The studies showed that the risks of the procedure included:

- problems during the procedure that meant the surgery could not be completed as originally intended, in 5% of patients
- removal of the lens system because of problems (in 1% to 2%) or because the patient asked for it to be removed (in 5%)
- corneal problems that needed transplantation 1 year after the procedure, in 1% of patients
- pressure in the eye that needed treatment in 28% of patients
- thickening at the back of the lens in 30% of patients, which was treated successfully with a laser
- other damage to the eye up to 60 months after the procedure (details about the outcome were not reported).

If you want to know more about the studies, see the [guidance](#). Ask your health professional to explain anything you don't understand.

# Questions to ask your health professional

- What does the procedure involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make my vision worse?
- Are there alternative procedures?
- What are the risks of the procedure?
- Are the risks minor or serious? How likely are they to happen?
- What care will I need after the procedure?
- What happens if something goes wrong?
- What may happen if I don't have the procedure?

## About this information

NICE [interventional procedures guidance](#) advises the NHS on the safety of a procedure and how well it works.

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## Accreditation

