PICTURE: ALAMY

Contacts worn at night boost children's sight

By ANNA HODGEKISS

CONTACT lenses worn at night could slow down or even halt sight deterioration in children.

The vast majority of children with sight problems are short-sighted — they have difficulty seeing things far away. This is caused by a misshapen eyeball.

The new contact lenses work in a similar way to a dental brace, gently pressing on the eye to restore it to the shape of someone with normal vision.

New research has found that after a year of use, children had far less sight deterioration than those who'd worn regular contact lenses.

In normal sight, the light rays pass into the eye through the cornea. They then hit the retina at the back of the eye where they are transformed into image-forming signals, which are then sent to the brain.

With short-sight, the cornea is either too curved or the eyeball too long. This means the light rays from distant objects focus in front of the retina, rather than directly on it, making the objects appear fuzzy.

The overnight lenses, which have been available for several years to help adults, work by gently pressing on the cornea, reducing its curvature and thereby refocusing the light directly on to the retina. It also, in effect, shortens the eyeball.

The reshaping in adults is temporary because the cornea will gradually spring back to its original shape, so the lenses must be worn every night. (The lenses themselves are slightly harder than the softer lenses people commonly use for daytime wear.)

However, a few years ago scientists noticed that children who wore this type of contact lens had a slower deterioration of their eyesight, — the reshaping seemed to be more permanent.

BASED on this observation, a controlled clinical trial of the lenses was set up in the U.S. two years ago. Around 300 children aged eight to 14 are taking part in the five-year study, known as SMART.

Half of the subjects have been given the overnight lenses, while the others are using normal contact lenses every day. At the end of the first year, both groups stopped wearing their lenses for one month to see if their prescription had changed.

Sight loss is measured in diopters. In children who are short-sighted it is estimated that sight deteriorates by 0.25 to 1.2 diopters a year (as a guide, most adults have a prescription that is no worse than minus 5).

The results showed that, after the first year, the children in the overnight lens group had no prescription change; in the control group the average increase was 0.4 diopters.

Because short-sightedness is usually picked up by the early teenage years, it is hoped overnight lenses could at least prevent further sight deterioration.

The reason why children seem to benefit more than adults is because their eyes are still growing — this makes it easier to change their shape, just as it's easier to fix misaligned teeth in children rather than adults.

Michael Ward, a 13-year-old from Watford, has been wearing the overnight lenses for two years. Before then, the keen sportsman had to either wear his glasses when playing sport or not wear them at all.

'It's made a huge difference because I can see everything now,' he says. The rate of his sight deterioration has also slowed. 'I went river rafting one weekend and didn't wear them for two nights — my sight only started to get worse on the third day.'

Parwez Hossain, a consultant in ophthalmology at Southampton General Hospital and member of the scientific committee of the Royal College of Ophthalmologists, says these lenses could potentially be a cure for short-sightedness, although 'we won't know this for another few years'.

DID YOU KNOW?

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