

Braces for your eyes

By Alice Smellie

Contacts worn at night cure these short-sighted twins

In traditional Chinese medicine, short-sighted patients were encouraged to sleep with small bags of sand on their eyes to temporarily

restore perfect vision. Today, a similar – if more technically advanced – procedure is

offered by optometrists to short-sighted children aged eight upwards, halting the

ongoing deterioration of their sight. Instead of sandbags, special contact lenses are worn during sleep.

'Overnight vision correction, known as orthokeratology, is like wearing braces for the eyes,' says optometrist Kevin Lewis, former president of the College of Optometrists. 'Normally light rays pass through the front of the eye and focus on the retina, the inside of the back of the eye. Nerve messages are sent down the optic nerve from the retina to the brain, which interprets the information and this is how we see.'

'Short-sightedness, or myopia, is a problem of vision that causes distant objects to appear blurred. This is because light rays are being focused in front of the retina. Myopia is caused by the eye being too long from front to back, or the cornea – the front part of the eye – being too steeply curved. The result is a mismatch between the length of the eye and its focusing power.'

Up to 42 per cent of Britons are short-sighted. One in five children aged five to 15 and one in three aged 16 to 19 needs vision correction.

Genetics plays a large part in the development of myopia but environmental factors, such as spending long periods sitting in front of a computer, may contribute.

A study into myopia, monitoring 200 children wearing overnight lenses, found that after three years none of the volunteers' myopia increased. Those wearing



normal lenses show an average increase of almost one dioptre – the units used to measure myopia.

Orthokeratology lenses work by placing pressure on the cornea, pushing it back into shape, flattening the eyeball so that the light focuses at the correct point on the retina and you see clearly.

'The cornea is elastic, so it will return to its original position if you change its shape. It takes a week of wearing the lenses for this process to slow down enough that the corrected vision lasts for a day,' says Lewis.

Alex Osborne, 13, and his twin Dan, from Horsley, Gloucestershire, are two short-sighted patients to have benefited from overnight lenses. 'Alex's sight had

become so poor he was unable to see a cricket ball coming towards him,' says his mother Nicky, 49.

Nicky's sight is minus-ten dioptries. Her husband, Mark, 53, who works in the oil industry, has also worn glasses since his 20s for short-sightedness.

The lenses are of the gas-permeable type and uncomfortable for daily wear. They are changed yearly.

Alex started wearing them in October 2009 and his eyesight is near perfect and he doesn't need glasses.

His twin Dan was given the lenses three months after Alex and was equally thrilled. 'I always hated wearing glasses,' he says. 'Now I don't have to.'

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