

INFORMATION FOR PATIENTS

Convergence insufficiency

This leaflet describes convergence insufficiency and the treatment which may be given.

What is convergence insufficiency?

Convergence insufficiency is a condition where the eyes have difficulty working together to focus on something up close such as reading or looking at the phone.

There are six muscles around each eye; it is the ones closest to the nose, which are failing to pull the eyes in sufficiently to focus on a near object.

What are the signs and symptoms?

The main symptoms of convergence insufficiency are eye strain, particularly after prolonged close work. Headaches in or around the eyes, or around the forehead is also common, particularly after reading. There can also be blurring of close work, double vision or jumbling of print.

Occasionally, patients also experience problems with distance viewing. The patient's eyes are working so hard for near vision they do not immediately relax when looking in the distance.

This condition may have been present for several months or even years but has become noticeable more recently. It can become more obvious after an illness, injury, or change of workload such as more close work or working with a computer screen.

It can affect patients of all ages from school age where schoolwork becomes more concentrated and into adulthood.

What treatments are there?

Convergence exercises are given, to strengthen the weakened muscles. Exercises may initially make the eyes feel worse before they feel better, giving rise to more headaches. Treatment times vary, depending on how quickly the convergence and symptoms reduce.

Progress is monitored by the orthoptist on a regular basis.

When is the best time to do the exercises?

It is best to do the exercises when you are not too tired as fatigue can make it harder for your eyes to focus properly, making you put less effort into your exercises. Try to do them in the morning, around lunchtime or teatime when you are more alert and avoid just before bed.

Exercises are usually set for two to three minutes at a time, for between one and five times a day, depending on the patient. Short bursts of exercise with lots of effort are best.

It is important to relax the eyes afterwards to avoid eye strain, either by closing the eyes or looking out in the distance.

What are the exercises?

The following exercises may be set individually or as a mixture of two or more:

- **Pen convergence**

The head is straight, the eyes looking down slightly fixating on a pen or target as provided, this is then brought slowly towards the nose. You should aim to keep the target clear and as one image.

When two images appear make an effort to pull the eyes in to join the images. If the images can be joined bring the target even closer. If the images cannot be joined move the target slightly further away from the nose until the two images can be joined together.

Then move the target slowly back towards the nose again, trying to keep the image single and clear.

This should be repeated trying to get a little closer to the nose each time.

- **Jump convergence**

The head is straight, the eyes looking down slightly to focus on a near target making it clear and single vision, then swap fixation to a distance target (four to six meters away). Then swap fixation back to the near target again getting this clear and single vision. Repeat this for a few cycles.

Once this is comfortable try moving the near target to a closer distance to the nose and repeat the exercise.

- **Dot card**

The dot card provided should be held at the tip of the nose pointed downwards slightly.

Firstly, fixate on the furthest away dot getting this clear and single, then once this is achieved jump to fixate on the next closest dot and so on towards the nose.

Once clear, single vision cannot be achieved make an effort to join the two dots. If this can't be achieved move back to fixate on the previous dot and maintain this fixation. Once comfortable try to fixate closer again.

The eyes do play tricks a little with this test. Any dots behind or in front of the dot you are looking at will go double, however, this is normal double vision. The dot you wish to look at should remain single.

- **Stereograms**

Cats, buckets, circles - this is a further exercise to help bring in the eyes more efficiently.

Stereograms can be frustrating as you will feel you are doing two things at the same time.

The picture given (of either two cats, two buckets or two circles) is held at arm's length. A pencil is held with the other hand.

Look at the pencil. Starting with it just in front of the card, slowly move the pencil towards the nose keeping the card still.

To start with, four pictures should appear if you are looking at the pencil.

As the pencil approaches about halfway between the card and the nose, the two middle images should join up. Therefore, you should see just three images.

Stereograms can be very difficult to do as it is very tempting to look directly at the pictures. In this instance only two pictures will be seen.

If these exercises are done regularly most people notice an improvement within a few weeks. Without the exercises, symptoms will probably not improve and may worsen. The orthoptist will discuss other treatment options with you, however, exercising the muscles is the only way to fix the problem rather than just managing the symptoms.

Contact details

If you have any queries about your child's treatment please contact the Orthoptic Department:

- **Email:** Sfh-tr.orthoptics@nhs.net
- **Urgent orthoptic queries:**
 - Telephone: 07768615247, Monday to Wednesday, 8am-4pm
 - Telephone: 07825866704, Thursday to Friday, 8am-4pm
- **For appointment booking/cancellation:**
 - Telephone: 01623 672383

Further sources of information

NHS Choices: www.nhs.uk/conditions

Our website: www.sfh-tr.nhs.uk

BIOS website: www.orthoptics.org.uk

Patient Experience Team (PET)

PET is available to help with any of your compliments, concerns or complaints, and will ensure a prompt and efficient service.

If you would like this information in an alternative format, for example large print or easy read, or if you need help with communicating with us, for example because you use British Sign Language, please let us know. You can call the Patient Experience Team on 01623 672222 or email sfh-tr.PET@nhs.net.

This document is intended for information purposes only and should not replace advice that your relevant health professional would give you.

External websites may be referred to in specific cases. Any external websites are provided for your information and convenience. We cannot accept responsibility for the information found on them.

If you require a full list of references for this leaflet, please email sfh-tr.patientinformation@nhs.net or telephone 01623 622515, extension 6927.

To be completed by the Communications office
Leaflet code: PIL202502-06-CI
Created: November 2015 / Revised: February 2025 /
Review Date: February 2027