SPORTS VISION REPORT

Patient profile

Name: LF
Sports & Frequency: Netball – with team during season, plays Goal Attack
Football – twice a week
Swimming – twice a week

History & Symptoms

LF did not report any problems with her eyesight or her sports. She had not noticed any difference in her game recently and was happy with her current performance.

Tests performed

Eye Dominance = which eye the brain uses more for aiming

Fixation Disparity = Shows any imbalance in eye muscles due to a difference in prescription

Vision at High Contrast (VAR) = How far LF can see with black letters on white background. A score of 100 is excellent, anything more is above average anything less is below average.

Vision at Low Contrast (VAR) = How far LF can see with faded letters on white background. This is important as the 'real world' is usually low contrast, especially on cloudy or dimmer days. A score of 100 is excellent, anything more is above average anything less is below average.

Dynamic Fixation = How quickly LF can move her eyes from a close object to a far object going round in a circle. The eye muscles are of a similar make up to the skeletal muscles of the body, so if you have 'fast' eye muscles, it is likely you will have fast leg muscles too. Eye movement is very important in fast sports like netball and football, as tracking the ball at a high speed is required.

Results

Without Corrective lenses

Eye Dominance = Left / Middle / Right / Right

Fixation Disparity = The left eye was dimmer, but aligned

Vision at High Contrast = R) 97 L) 75

Vision at Low Contrast = R) 80 L) 65

Dynamic Fixation =

1. 16.16 sec
2. 16.37 sec
3. 16.53 sec

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With corrective contact lenses

R) -0.50 DS
L) -1.00 DS

Eye Dominance = Left / Middle / Right / Right

Vision at High Contrast = R) 102 L) 100

Vision at Low Contrast = R) 90 L) 85

Dynamic Fixation =

1. 14.65 sec
2. 13.81 sec
3. 12.84 sec

Analysis of Results

Eye Dominance

It is interesting how LF begins with the left as the dominant eye, but then switches to right eye afterward. This indicates that LF is likely to be switching eye dominance during her game, affecting her judgement of the ball, especially when aiming. We should find that after wearing the contact lens correction for a period of time, the eye dominance stabilises. In the research we often find that dominance can change if an eye starts to become myopic – so LF may have used her left eye for aiming, but now it becoming short sighted, she is having to switch to the right, non-preferred, eye.

Vision at high contrast

We can see how at high contrast there is a difference of 22 between the two eyes without correction, and a difference of just 2 between the eyes with correction. This is why the eye dominance is likely to stabilise after wearing the contact lens correction, and also give much improved depth perception, as the vision is balanced out.

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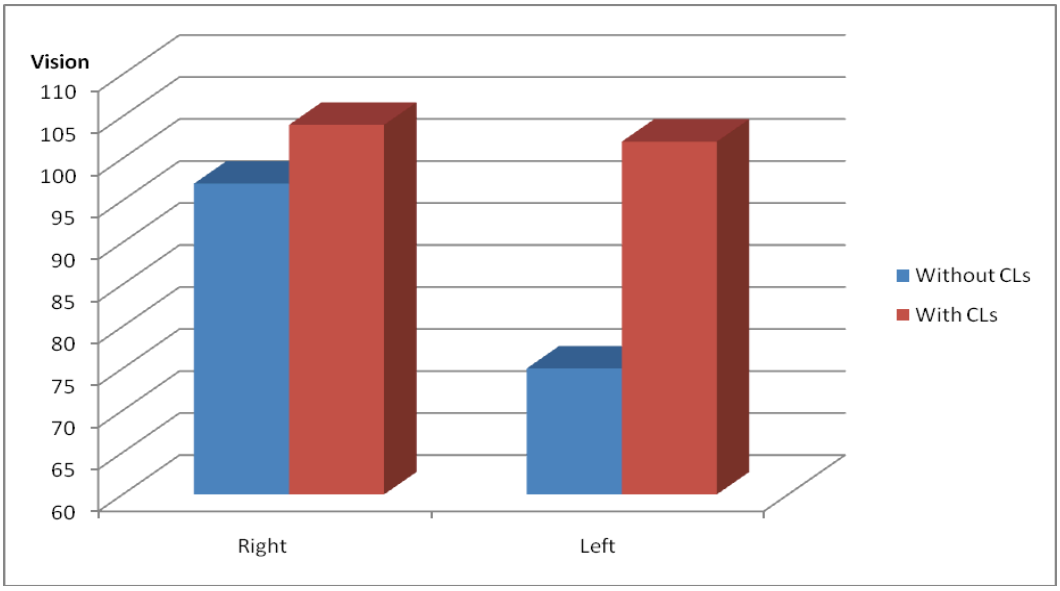
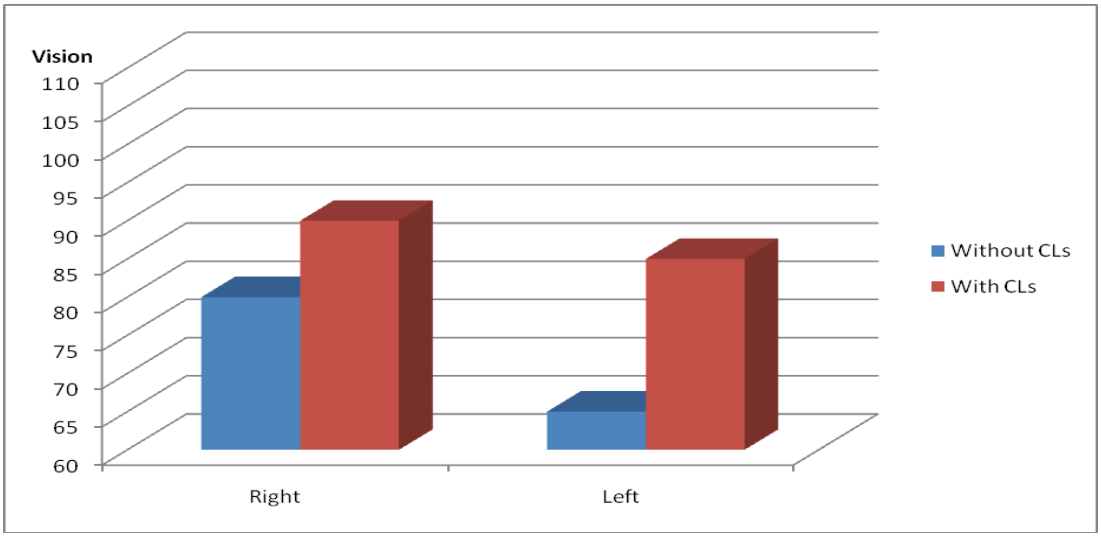


Vision at Low Contrast

At low contrast, the vision in the left eye improves dramatically from 65 to 85 which is 4 lines on the chart. This is important, as an improvement of just one line has shown to make a difference in sport, especially as the 'real world' outside the eye testing room is usually low contrast than high contrast.



Fixation Disparity

Without correction, the image from the left was eye aligned but dimmer than the right eye. This indicates that the eye muscles are lining up with each other correctly, but the information from the left eye is blurred.

Dynamic Fixation (Eye Speed)

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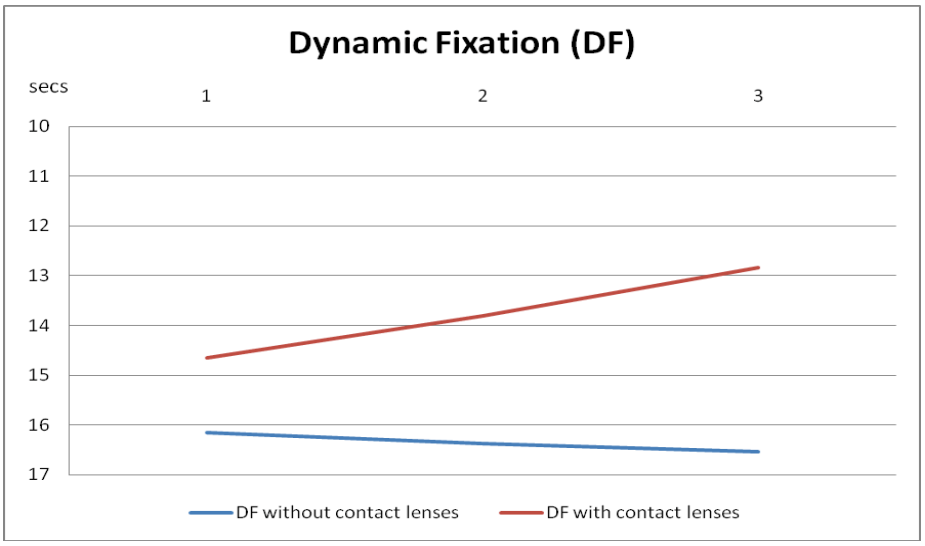
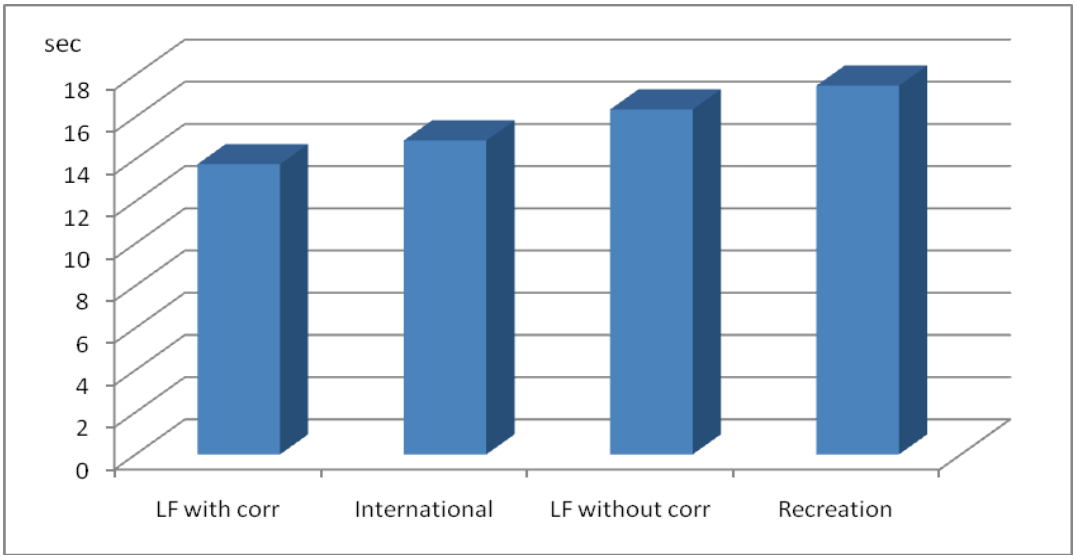


Without corrective contact lenses, the speed gets slower, indicating fatigue and slowing down of visual information going from the eye to the brain. This may be having an effect of LF's game, as she plays, as fatigue sets in, her reaction speed may be decreasing.

However, with corrective contact lenses the speed improves dramatically each time, suggesting that once the vision is corrected the speed of information is faster and also that LF is able to 'learn' the task much faster. This indicates that during her sport, her learning and anticipating of the ball would be vastly improved with her corrective contact lenses.

LF's average time for DF with her correction was 13.76 and without correction was 16.35. Comparing this eye speed to another study with track and field athletes' average eye speed on the DFT as well as subjects who play recreational sport[3], it is interesting to note that LF's eye speed is very competitive indeed with correction, making her ideal for a fast, explosive sport. Her eye speed without correction reduces her ability to match that of a recreational sportsperson, rather than a professional.



LF Fleming, 22-03-95

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Prescription Corrective Options

As LF's prescription is straight forward and her games are fast paced, contact lenses are an ideal solution. We can also offer:

- Wrap around sports glasses
- Prescription swimming goggles

Visual Performance Exercises

LF does not require any visual exercises at the moment. Playing with her contact lenses is enough to improve her game.

Other Recommendations

- To improve contrast further, sports glasses with yellow tints are available.
- To help with sun glare, wrap around sunglasses are available.