

## The Diploma in School Vision Practice - Syllabus

### Introduction and Aims

An abiding myth in optometry is that Dyslexia is a genetic anomaly in higher brain function and not amenable to optical correction. As a result the treatment is palliative without an officially accepted referral route to Optometry. The main aim of the diploma is to teach and test the understanding of the principles of binocular deficiency and their relationship to dyslexia, to be able to apply them directly to dispensing and optometry in general practice.

The simple definition of dyslexia is:

**dyslexia/disleksi/ noun**, a disorder involving difficulty in learning to read or interpret words, letters, and other symbols (the Oxford English Dictionary) .

It seems likely that a problem which implies difficulty seeing words is likely to have something to do directly with the vision in one or both eyes or binocular coordination and this might be a place to start investigations

After a break-through in the understanding of the relationship between vision and the occupation of sport, it has been possible to apply the visual rules of sporting excellence to that other occupation, reading.

Using tests developed in sport vision research in a local School in Wolverhampton it was found that up to 60% of year 7 children could have the predisposing signs of dyslexia and its associated disabilities and it follows that a similar proportion of the adult population is also likely to be affected.

Colleagues have achieved some success in retraining the brain-eye system using eye exercises or occupational therapy, but the connection between reading difficulties and the mechanics of eye-sight has been difficult to establish scientifically. This may be partly because an essential key was missing, the understanding of the relationship between eye dominance and dominance type and the two primary occupational visual skills of aiming and anticipation (based on depth perception). This could explain why dyslexia has fallen into myth and why some professionals including optometrists do not believe it exists at all.

In reality it now appears that apart from dispelling some remaining myths and the realignment of established principles, no new science is needed to understand dyslexia.

A better understanding of this condition and some of the advantages it confers on society will have a profound effect on the industry of Ophthalmic optics, if as predicted, over 50% of the population have



# School Vision - Measurement

**Day 1 Measurement** covers the evolution of the current understanding of dyslexia from research, in practice evidence and peer review, including associated measurement techniques.

## Learning outcomes

On completion of the day delegates should have an understanding of how the meaning of dyslexia has evolved from new research into eye dominance and dominance type, coupled with an appreciation of the application of the primary occupational visual skills of aiming and anticipation. The development of other measurement techniques such as reading speed, eye tracking and fixation disparity will be seen as also relevant to general practice. The workshop will give delegates practical experience using the School Vision battery of tests and collecting data

## Summary of topics to be covered

<b>Title</b>	<b>The definition of dyslexia, Eye dominance and dominance type, the primary occupational skills, the elements of occupational visual performance:</b>
<b>Abstract</b>	This presentation argues for a new and simpler definition of dyslexia, which defines cause and effect and a logical and effective method of treatment. The new understanding from Sport Vision of eye dominance and dominance type are discussed together with the primary occupational visual skills of aiming and anticipation (based on depth perception). Findings from the Moreton project are presented
<b>Learning Objective</b>	To understand the meaning of research that could change the definition of dyslexia from a disease capable of diagnosis to a component of normal ocular and binocular physiology, which requires simple measurement. To compare and contrast the simple definition of dyslexia with a wide array of disease processes collectively and currently called dyslexia, which are the sequelae of an uncorrected binocular vision problem at the near point To review research into eye dominance and the primary occupational visual skills of aiming and anticipation To summarise the elements of occupational visual performance and how these have led to the formulation of the school vision screening battery and the modified in practice routine To summarise the research at Moreton School, which has shown links between reading speed, light sensitivity, tracking, key stage 2 results and visual performance.
<b>Title</b>	<b>Derivation of the school vision screening battery, measurement of reading speed the importance and use of tints, eye tracking and its relation to eye speed:</b>
<b>Abstract</b>	Delegates will be taken through the derivation of the school vision screening battery from the original research in Sport Vision, and how this led to understanding of the relationship of visual performance to the occupation of reading. The original research in colour preference, eye tracking and rate of character recognition will be described to justify their use in the School Vision practice.
<b>Learning Objectives</b>	To understand the derivation of the school vision screening battery of tests, by describing the research that led to the new tests for rate of character recognition, colour preference and light sensitivity and dynamic fixation To understand the significance of measurement at the near point and how current practice needs to be modified to observe signs and symptoms related to learning difficulties

**Title**            **The measurement of fixation disparity and use of prisms:**

Abstract        The presentation reviews the use of Fixation disparity and its physiological significance.

Learning        To review the measurement of fixation disparity and its physiological significance

Objectives     To understand the use of prisms in relation to eye dominance  
To understand some of the characteristic signs revealed by Fixation Disparity, which are diagnostic of a predisposition to dyslexia and related disabilities, dyspraxia dysgraphia discalculia

**Title**            **School vision screening and data collection (workshop):**

Abstract        This workshop describes and justifies a screening regime to identify people at risk of learning difficulties and proposes a modified in practice routine. Delegates will gain experience in the use the School Vision screening battery to collect their own data and measure their partners and see how they compare with their colleagues as they fill in the spread sheet

Learning        To understand the use and purpose of the school vision screening battery,

Objectives     To gain experience in using the school vision battery of tests and in collecting and collating data

**Assessment**

On days one two and three Delegates will assess the course by filling in a questionnaire and answering multi-choice questions related to each presentation and workshop

## School Vision - diagnosis

**Day 2 Diagnosis** explains how the collected data can be used to support a diagnosis and explain some of the social and behavioural consequences. The particular implications in sport are also discussed as well as the implications in the dispensing of specs and contact lenses

### Learning outcomes

Statistically between 40 and 50% of delegates will have signs of dyslexia associated with difficulties they have had in the past but which have been silently overcome. The most powerful learning experience is to recognise these signs and symptoms in one's self and share them with the other delegates. As the picture of cause and effect builds delegates will learn how the catalogue of signs and symptoms builds to the point where even myopia and anisometropia can be explained in terms of the mechanical forces induced in the dyslexic visual system. Case histories from day to day practice will reinforce this experience. Time will be spent on the particular requirements of dispensing of specs and contact lenses and the role dyslexia has to play in sport. The day closes with an overview of the course work requirements and exam format.

### Summary of topics to be covered

#### Title **Data analysis and (self) diagnosis:**

Abstract Delegates will analyse their own data collected the previous day and compare it with their peer group to see where the difference are and how these are significant in terms signs and symptoms.

Learning To learn the importance of simple descriptive statistics to highlight visual trends

Objectives Understanding the significance of personal data and the data of other subjects in relation to ocular and personal history

Appreciating at a personal level how binocular vision can influence educational and occupational potential

Understanding the relationship between dominance type and visual performance

To appreciate the use and application of prism to the task of reading

Gaining a new understanding of the prevalence of binocular dysfunction

#### Title **The signs and symptoms of dyslexia and its associated disabilities dyspraxia dysgraphia dyscalculia, Case records, the aetiology of myopia and travel sickness:**

Abstract The presentation discusses and justifies the reasons for the signs and symptoms of dyslexia and its associated disabilities dyspraxia, dysgraphia and dyscalculia, accumulated in research from the Moreton Project (a three year study in Wolverhampton of year 7 children), sport vision research and in practice case records.

Learning Objectives To be able to understand and measure the signs and symptoms of dyslexia and its associated disabilities

dyspraxia dysgraphia dyscalculia (such as poor spelling, reduced rate of character recognition and associated signs, lack of concentration (attention deficit), hyper activity, light sensitivity, poor or excessively neat and small hand writing, easy distraction and clumsiness), with reference to research findings and case records,

To learn and debate a plausible theory for the aetiology of myopia and travel sickness

**Title**            **The importance of sport and its relation to dyslexia**

Abstract            This lecture describes how and understanding of the visual difficulties in sport help to solve visual problems in reading and writing. It hints at the gift of dyslexia and how some of the most remarkable achievements in sport and academia might not have been possible without the trauma and stigma of learning difficulties in the formative years

Learning Objectives

- To understand the motivational advantages conferred on subjects by learning difficulties in sporting and academic arenas
- To understand the positive feedback on binocular control achieved by playing sport which in turn improves reading and writing skills
- To be able to differentiate between a therapy which treats symptoms and refractive intervention which addresses cause
- To be able to decide when and how to treat with therapy or visual correction To understand why the prevalence on dyslexia in some sports is greater than others
- To be able to predict the sports to which subjects will be visually predisposed
- To understand how visual deficiency in some sports leads to heightened sporting skill

**Title**            **The social and behavioural sequelae of binocular deficiency**

Abstract            This lecture is part of Day 2 (Diagnosis) of the diploma in School Vision Practice. It shows how many levels of disability (reading, psychological and physical) can emanate from a simple binocular deficiency, in a hunter gatherer species where survival can depend on the way the two eyes work together.

Learning Objectives

- To revise the laws of sport and occupational vision to show how the primary occupational visual skills of aiming and depth perception affect occupational performance including reading
- To understand why visual performance at the near point is key to future sporting and occupational visual skills
- To understand how visual deficit in relation to eye dominance affects the skills of aiming and anticipation (based on depth perception)
- To understand how aiming, vision and visual acuity relate to dyslexia and its associated disabilities (dyspraxia, dysgraphia, dyscalculia and attention deficit)
- To be able to predict the secondary effects of binocular deficiency such as poor spelling, reduced reading speed, lack of concentration, easy distraction and clumsiness
- To understand the tertiary behavioural effects that directly relate to these disabilities like low self-esteem, delinquency, disruptive behaviour, social isolation, autistic tendencies (obsessive concentration, exclusion of others' contributions)
- To logically argue the long-term sequelae of visual deficiency in adults, which can include great entrepreneurial success or a prison term

**Title**            **Research Methods**

Abstract            This presentation focuses on the requirements of the Diploma exam to illustrate the scientific importance of statistics and their use in identifying subjects in greatest need of attention. Delegates will be given guidance on the choice of and construction of a research project

Learning Objectives

- To understand the meaning of standard deviation and probability
- To understand how to analyse group data
- To construct a visual profile for the group to grade performance from needing attention to excellent
- To be able to analyse and produce a report on personal visual performance.
- To be able to relate aspects of visual performance to its likely effect on reading performance
- To understand the use of descriptive statistics if necessary in the diploma project
- To be able to construct a research project

## School Vision - management

**Day 3 Management** centres on the management of the dyslexia assessment where treatment begins and the differential roles of role of orthoptics, vision therapy and refractive correction. Particular attention is paid to nutritional and psychological aspects pre and post assessment. A practical business model for the school vision practice is proposed

### Learning outcomes

It is important to know that the dyslexic child is usually part of a family at least some of whom will also be dyslexic and the treatment and understanding of their children begins with them. The importance of the relationship between accommodation and convergence, which has been historically affected by the use of cyclopaegia in hospitals will be explained. An important aim of the course is to clarify the difference between therapy, orthoptics and visual correction as modes of treatment. Delegates will be shown that what we eat and the medication we are prescribed directly or indirectly affects and that dyslexia shows the possibility of a direct relationship between ocular, systemic and psychological morbidity. Candidates will learn about the need to formulate a working business model to realise the clinical and commercial potential of this once in a lifetime opportunity.

### Summary of topics to be covered

**Title**            **Managing the dyslexia assessment, understanding binocularity and its relation to accommodation**

**Abstract**        This lecture underlines that the assessment and treatment of dyslexia involves the whole family and success relies on everyone understanding what and why things are being done. An explanation of symptoms from first principles with which the subject and their dyslexic parent can identify is the key to a successful outcome

**Learning Objective**    To understand the importance of parental involvement and support

To be able to allocate the necessary time for a School Vision assessment

To learn how to write a formal report

To be able to recognise and discount the characteristic behavioural patterns of dyslexic parents

To understand the importance of measurement and demonstration

To recognise the frustrations of bright dyslexic children who are underachieving despite great effort

To be able to communicate to parents the difference between lack of concentration and loss of fixation due to binocular instability

To be able to describe binocular instability in terms of the accommodation vergence reflex

To be able to describe the difference between reading difficulties due to pattern glare and those due to amblyopia

To know how to communicate directly with the dyslexic child at all times during the examination, whilst keeping the parents informed and involved

To recognise underachievement in children already doing well at school as well as those whose academic achievement is giving cause for concern

To be able to give a clear prognosis and planning for subsequent visits and the likelihood of future changes in prescription.

To be able to describe the difference between traditional orthoptics and vision therapy, when and how each may be applied

**Title**            **The trauma and myth of cycloplaegia**

**Abstract**        This presentation revises the mode of action of cyclopentolate and pilocarpine in relation to its effect on the accommodation vergence reflex. The use of cycloplaegia is more historical than practical and the pros and cons will be discussed

**Learning**        To revise the mode of action and effect of cyclopentolate and pilocarpine

**Objectives**      To compare and contrast the roles of the hospital orthoptist and the optometrist  
To understand the history of the use of cyclo plaegia in optometry  
To revise the accommodation / vergence reflex  
To understand the pros and cons of cycloplaegic refraction  
To learn the use and application of near retinoscopy  
To review the ethics of extended use of cyclo plaegia in the control of myopia

**Title**            **The differential roles of therapy orthoptics and visual correction**

**Abstract**        It will allow delegates to experience first hand the effect and difficulty of orthoptic exercises to differentiate them from simple ocular calisthenics. The understanding of vision therapy will be addressed by reference to the foveal and peripheral visual systems and their effect on balance and simple ball catching and balloon batting exercises.

**Learning**        To differentiate between the roles of therapy orthoptics and visual correction

**Objectives**      To show that an essential precursor to vision therapy is an effective refraction  
To underline what is required from a school vision assessment  
To understand why the best therapy is reading or three-dimensional constructional exercises with the visual correction for near in situ.  
To argue the effect of 2 dimensional computer games on visual, physical and academic development  
To revise the role of traditional Orthoptics to re-establish normal visual function.  
To understand the meaning and purpose of visual callisthenics  
To introduce the idea of therapy where whole body activities can have a positive effect on inter ocular performance.  
To demonstrate how visual dis-ease can affect whole body control.  
To show how treatment can be cost effective, straight forward and available to all who need it.

**Title**            **The association between binocularity and morbidity**

**Abstract**        Sight is the most important sense and how important may become clear as the treatment of dyslexia becomes better understood. The associations between binocularity, general well being and behaviour will be presented, with their far reaching implications in terms of human interaction and international affairs.

**Learning**        To understand the role of binocular vision in a hunter gatherer species

**Objectives**      To understand how binocular vision directly affects the skills of reading, writing, hand eye coordination and distance judgment  
To discuss the pressures and responsibilities of modern society which tends to over emphasise the importance of academic achievement and the use of computers.  
To list the potential behavioural responses to inappropriate punishment for poor reading and writing skills and the social consequences among peer groups.  
To consider the importance of social interaction in the formative years  
To learn about research in prisons and the incidence of dyslexia and visual deficiency  
To understand the connection between binocular deficiency and over achievement, or compulsion and obsession.  
To consider the long terms effects of psychological imbalance, poor reading and communication skills on general health and life expectancy  
To consider the effect of mental and physical stress on the immune system and the incidence of the degenerative disease

**Title**            **The importance of nutrition and the effects of drugs**

**Abstract**        There is current concern in the media about the use of drugs to suppress the behaviour of hyperactive children. The reliance on a quick fix in western medicine will be debated with the possibility of non drug based alternatives in the context of dyslexia

**Learning Objectives**

- To revise the nutritional roles of the macro (protein fat and carbohydrate) and micro (vitamins and minerals) nutrients
- To review the production of food including, GMO, factory farming, use of pesticides hormones and preservatives
- To review the pharmacology of the ritalin group of drugs.
- To review literature on omega 3 and fish oils
- To review the known effects of food additives in sweets and fizzy drinks on young children
- To consider the current understanding of dyslexia and pressures on medical practitioners to solve problems for which they do not have the evidence to understand
- To consider the commercial pressures on evidence based medicine
- To understand the aetiology of visually related hyperactivity, disruptive behaviour and delinquency
- Summarise the difference between good nutrition and junk
- To use a single ubiquitous food item to illustrate the potential harm being done to children and their visual systems by an unwitting alliance of western medicine and the food industry
- To trace back the potential aetiology of many auto immune processes, allergies, diabetes, asthma, obesity (and all its sequelae) and arthritis to the same food item.

**Title**            **Charging for dyslexia assessments and a business model for the School Vision practice**

**Abstract**        To reach all the people who could benefit from an understanding of how binocular vision can affect reading it must have a positive effect on practice profitability. The communication of this understanding is as critical to the long-term welfare of young patients and it is to the survival of the business. A working business model will be presented to the course delegates with details of a fee structure, and the likely effects on dispensing rate and return.

**Learning Objectives**

- To learn how to communicate charges to the customer for the best clinical and commercial outcome
- To propose and justify a plan for ongoing clinical care
- To learn how to create the right practice environment to encourage the maintenance of the best ongoing patient care and up to date equipment
- To receive guidance on expected practice growth in terms of new patient numbers and recommendations and the effect this will have on dispensing rate and return.

**Title**            **Binocular vision and the future of Ophthalmic Optics**

**Abstract**        This presentation summarises the importance of binocular vision in a hunter-gatherer species and the multitude of occupational skills to which human beings can turn their talent if they have no visual problems. It concludes with the proposal that this gives Ophthalmic optics a highly specific and unique role in medicine in the prevention of ocular, systemic and psychological morbidity

**Learning Objectives**

- The importance of sport in the original research findings, which related vision to occupation.
- The understanding of the importance of binocular vision in a hunter-gatherer species.
- The understanding of reading as an occupation, susceptible to the same analysis as any other occupation
- Confirming the relative role of binocular vision in various occupations
- Understanding the environmental pressures on the visual development of the modern growing child
- Reviewing the importance of the near point in human visual development.
- Summarising the role of ophthalmic optics in the correction and protection of vision
- Appreciating the role of vision in the understanding of self and others.
- Understanding the future of the Ophthalmic Optics industry including optometrists and dispensing opticians in the prevention of ocular systemic and psychological morbidity

## The Diploma in School Vision practice

**Day 4 Exam** There is a need for a better understanding of the causes and treatment of dyslexia. Concerned parents, who see their obviously bright children, underachieving at school, drive this need. Government understanding and help is patchy and PCT terms of reference discriminate against children whose lives could be transformed by cost effective and timely Optometric and Dispensing intervention.

**The diploma in School Vision practice is a first step toward addressing this need and raising professional and government awareness**

Holders of the diploma will be invited to become members of the Association of School Vision Practitioners. They will be registered and licensed to practice supported by annual College accredited CET and a retention fee. The register of their names will be available on the School vision websites, which will be referred to in all publications

### Learning outcomes

Delegates will have submitted course work, which will demonstrate their ability to use simple descriptive statistics to analyse data. They will also be required to undertake a small research project for which they should allow about 20 hours over the three-month intervening period. On the morning of the exam day they will give a 10 minute presentation of their project; this presentation will be supported by a written report 2 x A4 sides long (N10 Ariel). The course work will be marked prior to the exam day and all delegates will be invited to listen to the presentations which themselves will be unique and may cast new light on the subject. All will be published in the transactions of the conference in the School vision section of the British Journal of Sportvision. Assistance will be given to achieve Journal publications. The final section of the exam day will and open book exam based on multi choice questions, which will not be time limited (but nominally and hour) all course notes will be available to candidates before and during the exam.

### Assessment

Delegates will be assessed on their statistical course work, project content, presentation and the written exam. Successful candidates will be awarded the Diploma in School Vision practice accredited by The National Open College Network, gaining College CET points for course attendance.

# The Diploma in School Vision Practice

## Confirmed CET

Module	Course	CET Number	Points
Measurement	The definition of dyslexia Sportvision research, eye dominance, dominance type The primary occupational visual skills. The elements of occupational visual performance Research findings from Moreton School	C11304OD	2
	Derivation of the school vision screening battery Measurement of reading speed The importance and use of tints Eye tracking and its relation to eye speed	C11305OD	2
	Measurement of fixation disparity and the use of prisms	C-11306OD	1
	Screening and data collection <b>Workshop</b>	C-11300D7	6
Diagnosis	Data analysis and the use of diagnostic school vision screening tests <b>Workshop</b>	C-11540OD	4
	The signs and symptoms of dyslexia and its associated disabilities. Case records. The aetiology of myopia and travel sickness	C-11355OD	1
	Dispensing for dyslexia Use of contact lenses in reading difficulties	C-11356OD	1
	The importance of sport and its relation to dyslexia	C-11357OD	1
	The social and behavioural sequelae of binocular deficiency	C-11358OD	1
	Research Methods	C-11359OD	1.5
Management	Managing the dyslexia assessment and follow up	C-11360OD	1
	Understanding binocularity and its relation to accommodation		
	The trauma and myth of cycloplaegia	C-11361OD	1
	Differential roles of therapy orthoptics and visual correction <b>Workshop</b>	C-11362OD	4
	The association of binocularity and morbidity	C-11363OD	1
	The importance of nutrition and the effects of drugs	C-11364OD	1
	Charging for dyslexia assessments and a business model for the School vision practice	C-11365OD	1
	Binocular vision and the future of optics	C-11366OD	1

Total CET 30.5

## Programme

Time	Measurement (Day 1)	Diagnosis (Day 2)	Treatment (Day 3)	Diploma 4 <sup>th</sup> Day
08.45	<b>Registration</b>	<b>Registration</b>	<b>Registration</b>	<b>Registration</b>
09.30	The definition of dyslexia Sportvision reseach, eye dominance, dominance type The primary occupational visual skills. The elements of	Data analysis and the use of diagnostic school vision screening tests <b>Workshop</b>	Managing the dyslexia assessment and follow up Understanding binocularity and its relation to accommodation	Presentations
10.30	occupational visual performance Research findings from Moreton School		The trauma and myth of cycloplaegia	
11.00	Derivation of the school vision screening battery  Measurement of reading speed	The signs and symptoms of dyslexia and its associated disabilities. Case records. The aetiology of myopia and travel sickness	Differential roles of therapy orthoptics and visual correction	
12.00	The importance and use of tints  Eye tracking and its relation to eye speed	Dispensing for dyslexia  Use of contact lenses in reading difficulties	<b>Workshop</b>	
<b>1.00</b>	<b>Lunch</b>	<b>Lunch</b>	<b>Lunch</b>	<b>Lunch</b>
2.00	Measurement of fixation disparity and the use of prisms	The importance of sport and its relation to dyslexia	The association of binocularity and morbidity	Presentations
3.00	Screening and data collection	The social and behavioural sequelae of binocular deficiency	The importance of nutrition and the effects of drugs	
4.00	<b>Workshop</b>	Research Methods Statistical course work, project and Diploma requirements	Charging for dyslexia assessments and a business model for the School vision practice	Written exam
5.00			Binocular vision and the future of optics	
<b>5.30</b>	<b>Close</b>	<b>Close</b>	<b>Close</b>	<b>Close</b>