Why Opticians should be doing Vision Screening in Schools

Michael Gilsenan
F.B.D.O. Dip.ScV., M.AsvP
Lee Opticians Warrenpoint
UK AOP Dispensing Optician of the year 2011

“Have you ever considered the link between eyes and children’s underperformance in school?”

➢ Up to 1 million children (aged 0-12) in UK have undetected vision problems

Current Vision Screening in Schools

➢ Orthoptist led service
➢ In most areas of UK children are screened for visual problems by a school nurse in primary 1.
➢ Considered a patchy service
➢ This screening is looking for turns in the eye (strabismus), lazy eyes (amblyopia) and high levels of long and short sight (hypermetropia and myopia) only.

Comments made Senior NI Orthoptist

➢ 5-8% of children may have a vision/eye problem.
➢ Amblyopia is the most common visual disorder of childhood (Fielder 2004)
➢ ‘All 4-5 year olds have a vision test’

Current screening does not look for:

➢ smaller prescriptions
➢ eye muscle imbalances
➢ convergence insufficiencies
➢ accommodation problems
➢ eye tracking
➢ pattern glare issues.

Current School Screening

➢ School children are suffering unnecessarily
➢ Undetected vision problems contribute to underperformance in our school children
➢ Departments of Health and Education are wasting money on alternative interventions when corrected vision dysfunctions may solve medical and educational conditions
➢ This is a public health issue
Vision Problems that will Affect Children’s Performance in School

- Short sight (Myopia)
- Long sight (Hypermetropia)
- Astigmatism
- Convergence Insufficiency
- Accommodation
- Ocular Muscle Balance
  - Strabismus
  - Eye Tracking
  - Pattern Glare
  - Eye Dominance

Common Visual Dysfunctions

- Myopia
- Hypermetropia
- Astigmatism

Hypermetropia

Statistics taken from random sample of Lee Opticians Visual Stress Patients (age range 6 to 17)

- All children coming because of educational or coordination problems

Less Common Visual Dysfunctions

- Convergence Insufficiency
- Accommodation
- Ocular Muscle Balance
  - Strabismus
  - Eye Tracking
  - Pattern Glare
  - Eye Dominance

Convergence Insufficiency

*an inability of the eyes to turn towards each other, or sustain convergence*
Convergence Insufficiency Simulation

The assumption of self diagnosis by almost youth is increasing. The visual stress of the modern world will
make our younger generation more susceptible than the older generation. The average person today
spends about 5 hours per day an 10-12 hours in 2015. The most amount of time which mental stress is
defined as a self diagnosis and can lead to addictions.

There are at least two major methods to the self diagnosis. First, the use of self diagnosis and/or
involves a visual screening test. A variety of other organizes have
determined these adveances in the assessment of children
and increase the chance of self diagnosis. How do I determine if
self diagnosis is right for me or not?

Convergence Insufficiency Demonstration

Statistics taken from random sample of Lee Opticians Visual Stress Patients (age range 6 to 17)

- Defective CI: 11%
- Reduced CI: 13%
- Range: 11% to 24%

www.convergenceinsufficiency.org

‘Convergence insufficiency disorder frequently goes undetected in school age children because proper testing is not included in (1) eye tests in a GP/Pediatrician’s clinic; (2) school eye screenings; and/or (3) standard eye examinations in an optometrist’s, ophthalmologist’s or optician’s practice’

Convergence Insufficiency Symptoms

- Headaches
- Blurred vision
- Poor concentration
- Easily distracted
- Frustration
- Minor behavioural issues
- Loss of place when reading
- Heavy or sore eyes (rubbing)

Convergence Insufficiency Symptoms similar to ADD Symptoms

Dr Philip Skovira Paediatric Optometrist Ohio estimates that 25% of children diagnosed with ADD/ADHD only have a visual problem
Accommodation

- Is the ability of the eyes to focus and to maintain focus
- Automatic focusing camera

Symptoms of Poor Accommodation

- Eye rubbing
- Sore eyes
- Tired reading
- Poor concentration
- Can’t focus
- Delay in focus
- Headaches

Check For Poor Accommodation

- Budgie stick
- RAF Rule

Statistics taken from random sample of 100 Lee Opticians Visual Stress Patients (age range 6 to 17)

- Defective Accommodation 15%

Ocular Muscle Balance

- Eyes aligned correctly for distance and near vision

Example of Ocular Muscle Imbalance
Compensatory Head Tilt

Tests for Ocular Muscle Balance
- Howell Phoria Card
- Defective OMB at Near 7%

Eye Tracking
The ability to control fine eye movements to follow a line of print when reading. If not efficient, a child can have difficulty reading (losing their place, or repeating the same sentences). People with this condition may also have difficulty with balance, depth perception, sports or hand eye coordination.

Good Eye Tracking

Poor Eye Tracking

Eye Tracking with Prescribed Tinted Lenses
Statistics taken from random sample of 100 Lee Opticians Visual Stress Patients (age range 6 to 17)

Pattern Glare

- Is characterised as visual stress disorders on viewing striped patterns or repeated shapes
- Relevance with reading
- Link between pattern glare and headaches
- Link between pattern glare and car sickness

Symptoms with Pattern Glare difficulties

- Tired when reading
- Eye rubbing
- Sore eyes when reading
- Estimated that 20% of children suffer from pattern glare

Subjective test (always overlooked)

Statistics taken from random sample of 100 Lee Opticians Visual Stress Patients (age range 6 to 17)

- Children with defective pattern glare difficulties: 30
- Children with defective pattern glare difficulties who complained of headaches: 93%

Eye Dominance

Statistics taken from random sample of 100 Lee Opticians Visual Stress Patients (age range 6 to 17)

- R.E. dominance in study: 47
- L.E. dominance in study: 43

- Right eye dominance in population: 70%
Other Interesting Statistics from Random Sample of 100 Lee Opticians Visual Stress Patients

- 2 Amblyopic
- 68 Never had an eye examination
- Of 68 children who never had an eye examination 40 were prescribed glasses for Myopia, Hypermetropia or Astigmatism
- 16 had CI and defective Accommodation
- 58 complained of Headaches

Why it is Important for School Children to have regular Eye Examinations
(Case Study Hannah)

Hannah, age 15

- Eye test Age 4 and 5: R/L +0.50DS No Rx prescribed
- Eye test Age 8 and 10: R +1.50/-0.50x100 L +1.50/-0.50x100 with Defective Accommodation
- Eye test Age 12,13,14 R +2.25/-1.00x100 L +1.75/-0.50x110 with Defective Accommodation
- Eye test Age 15 Same Rx, complaining of intermittent horizontal diplopia in distance. Now also with 10 esophoria at distance (previously 2 esophoria) and normal at near…… divergence weakness, exercises given

Comprehensive Vision Screening undertaken in St Clare’s Convent Primary School Newry

Pre screening:
Out of 27 p5 pupils, 2 wearing glasses
16 never had an eye test

Post screening:
15 wearing corrective glasses
6 wearing prescribed tinted glasses
2 did eye exercises
1 child that I had concerns about didn’t have eye examination

Did Screening Work?

- Yes
- Improvement in standardised scores
- Much better than expected transfer test results
- Much greater awareness amongst school staff about importance of eyes in education
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<thead>
<tr>
<th>Comments made Senior NI Orthoptist</th>
<th>The Way Forward ?</th>
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<tbody>
<tr>
<td>➢ 5-8 % of children may have a vision/eye problem.</td>
<td>➢ Better vision screening in primary schools</td>
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<td>➢ Amblyopia is the most common visual disorder of childhood (Fielder 2004)</td>
<td>➢ Children seen by Educational Psychologists or Occupational Therapists should have a complete vision assessment done as well</td>
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<td>➢ ‘All 4-5 year olds have a vision test’</td>
<td>➢ Better communications between educational and optical professions</td>
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<td>➢ Dispensing Opticians…a profession ready and waiting!</td>
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<td></td>
<td>➢ Pilot study required ? (to prove that children who are under-performing can be helped significantly with better vision assessments)</td>
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Thank you

michael@leopticians.com
028 4175 3030