



Irish College of Ophthalmologists

Eye Doctors of Ireland, protecting your vision

Visual Standards for Driving Safety (May 2011)

Introduction

In December 2010 the Road Safety Authority (RSA) introduced new visual standards for driving. The Irish College of Ophthalmologists (ICO) welcomes the introduction of these new standards. This document details the formal response of the ICO to the new visual standards for driving safety in Ireland.

Vision is the most important source of information when driving, so visual assessment for driving is a major public health issue. The loss of a person's driving licence for medical reasons can have major social consequences resulting in quality of life issues in many cases. Some recent ex-drivers may need counselling and psychological rehabilitation. The measurement of visual acuity, contrast sensitivity, fields of view, twilight vision and vision under glare conditions are important.

The ICO advocates the introduction of restricted licences, particularly for older drivers. Periodic renewal already exists from the age of 70 years. This should be maintained. The introduction of an Advisory and Appeals Board for vision issues led by the RSA to consider exceptional cases is recommended.

In the medium term the RSA should institute one or more approved Assessment Centres to carry out practical tests for exceptional cases referred by the Advisory and Appeals Board.

Visual Standards for Driving

In consideration of EU COMMISSION DIRECTIVE 2009/113/EC the Irish College of Ophthalmologists makes the following recommendations to the Road Safety Authority.

All applicants should undergo a visual acuity test, an examination of visual fields by confrontation and an examination to rule out ocular disease that might affect eyesight standards. These assessments will normally be carried out by a general practitioner (GP), other medical practitioner, or optometrist.

Where a doubt exists as to an applicant's capacity to reach the required eyesight standards, or if an ocular or neurological condition is present that may affect these standards, either detected or declared, then the applicant should be examined by a competent medical authority (i.e. "vision expert" as referred to in EU Directive), namely an ophthalmologist or other medical practitioner with a special interest in eyesight defects. At this second examination, particular attention must be paid, to the following: visual acuity, field of vision, twilight vision, glare and contrast sensitivity, diplopia and other visual functions that can compromise safe driving. Drivers suffering from a recent significant reduction of vision in one eye or from diplopia, should be examined by a competent medical authority for assessment before resumption of driving is permitted. Under consideration of all visual issues with

respect to the safety of the applicant and other road users, the competent medical authority must decide whether the applicant passes or fails the standard. A Group 1 applicant who fails the standard for a full licence may reach the minimum standard for a restricted licence. Exceptional cases may be referred to the RSA Advisory and Appeals Board for further consideration.

Adaptation period

Following a significant drop in vision in one eye, or subsequent to the onset of diplopia, the adaptation period before resumption of driving is permitted, will be different in each individual case. The pathological and visual variables are multiple and the exact length of time for adaptation for each case should be decided by the competent medical authority. The example of 'six months' as suggested in the Directive is not necessarily valid for every case. The appropriate time for adaptation could be less or more than a six month period and the ICO recommends that the exact adaptation period should be left to the opinion of the competent medical authority.

As detailed in the Directive:

Group 1:

6.1. Applicants for a driving licence or for the renewal of such a licence shall have a binocular visual acuity, with corrective lenses if necessary, of at least 0,5 when using both eyes together.

Moreover, the horizontal visual field should be at least 120 degrees, the extension should be at least 50 degrees left and right and 20 degrees up and down. No defects should be present within a radius of the central 20 degrees.

When a progressive eye disease is detected or declared, a driving licence may be issued or renewed subject to the applicant undergoing regular examination by a competent medical authority.

6.2. Applicants for a driving licence, or for the renewal of such a licence, who have total functional loss of vision in one eye or who use only one eye (e.g. in the case of diplopia) must have a visual acuity of at least 0,5, with corrective lenses if necessary. The competent medical authority must certify that this condition of monocular vision has existed for a sufficiently long time to allow adaptation and that the field of vision in this eye meets the requirement laid down in paragraph 6.1.

6.3. After any recently developed diplopia or after the loss of vision in one eye, there should be an appropriate adaptation period (for example, six months), during which driving is not allowed. After this period, driving is only allowed following a favourable opinion from vision and driving experts.

Group 2:

6.4. Applicants for a driving licence or for the renewal of such a licence shall have a visual acuity, with corrective lenses if necessary, of at least 0,8 in the better eye and at least 0,1 in the worse eye. If corrective lenses are used to attain the values of 0,8 and 0,1, the minimum acuity (0,8 and 0,1) must be achieved either by correction by means of glasses with a power not exceeding plus eight dioptries, or with the aid of contact lenses. The correction must be well tolerated.

Moreover, the horizontal visual field with both eyes should be at least 160 degrees, the extension should be at least 70 degrees left and right and 30 degrees up and down. No defects should be present within a radius of the central 30 degrees.

Driving licences shall not be issued to, or renewed for, applicants or drivers suffering from impaired contrast sensitivity or from diplopia. After a substantial loss of vision in one eye, there should be an appropriate adaptation period (for example six months) during which the subject is not allowed to

drive. After this period, driving is only allowed after a favourable opinion from vision and driving experts.'

Contrast Sensitivity Standards

Group I licence holders or applicants

must attain a log contrast sensitivity of no less than 1.50 under photopic conditions and 1.20 under mesopic glare conditions. A recommendation to restrict a licence holder or applicant to daylight driving where the photopic log contrast sensitivity of 1.50 is attained but where the mesopic glare standard of 1.20 is not attainable, should be instituted by the RSA with provision for entry of this restriction on the driving licence. The restriction to daylight driving may be made by the competent medical authority at the time of the second examination following consideration of the contrast sensitivity standards (Summary Table 1). A recommendation of annual review may also be made following this examination. Decisions on all other restrictions as listed below (3-6) will be made by the RSA Advisory & Appeals Board.

Group II licence holders or applicants must attain a log contrast sensitivity of no less than 1.65 under photopic conditions and 1.35 under mesopic glare conditions.

Glare Testing

To outrule significant glare disability, contrast sensitivity should be conducted under mesopic glare conditions.

Irish College of Ophthalmologists Contrast Sensitivity Standards		
	Group I	Group II
Photopic	1.50	1.65
Mesopic/Glare	1.20	1.35

Table 1

Visual Field Standards

Group I

The minimum field of vision for safe driving is defined as a field of at least 120° on the horizontal measured using a target equivalent to the white Goldmann III4e settings. In addition, there should be no significant defect in the binocular field which encroaches within 20° of fixation above or below the horizontal meridian.

This means that homonymous or bitemporal defects, which come close to fixation, whether hemianopic or quadrantanopic, are not normally accepted as safe for driving.

If a visual field assessment is necessary to determine fitness to drive, it is recommended that this should be a binocular Esterman field. Monocular full field charts may also be requested in specific conditions. Exceptionally, Goldmann perimetry, carried out to strict criteria, may be appropriate. For an Esterman binocular chart to be considered reliable for licensing, the false positive score must be

no more than 20%. When assessing monocular charts and Goldmann perimetry, fixation accuracy will also be considered.

Defect affecting central area only (Esterman)

For Group 1 licensing purposes the following are generally regarded as acceptable central loss:

- Scattered single missed points
- A single cluster of up to 3 adjoining points

For Group 1 licensing purposes the following are generally regarded as unacceptable (i.e. 'significant') central loss:

- A cluster of 4 or more adjoining points that is either wholly or partly within the central 20 degree area
- Loss consisting of both a single cluster of 3 adjoining missed points up to and including 20 degrees from fixation, and any additional separate missed point(s) within the central 20 degree area
- Any central loss that is an extension of a hemianopia or quadrantanopia of size greater than 3 missed points.

Exceptional cases

For Group 1 drivers who have previously held full driving entitlement, removed because of a field defect which does not satisfy the standard, may be eligible to reapply to be considered as exceptional cases on an individual basis, subject to strict criteria.

The defect must have been

- present for at least 12 months
- caused by an isolated event or a non-progressive condition and
- there must be no other condition or pathology present which is regarded as progressive and likely to affect the visual fields.

In order to meet the requirements of European law the RSA in addition, require:

- clinical confirmation, by a competent medical authority, of full functional adaptation.

If reapplication is then accepted, a satisfactory practical driving assessment, carried out at an approved assessment centre, may subsequently be required.

Defect affecting the peripheral areas – width assessment

For Group 1 licensing, the following will be disregarded when assessing the width of field:

- A cluster of up to three adjoining missed points, unattached to any other area of defect, lying on or across the horizontal meridian
- A vertical defect of only single point width but of any length, unattached to any other area of defect, which touches or cuts through the horizontal meridian.

Group II

A normal binocular field of vision is required, i.e. any area of defect in a single eye is totally compensated for by the field of the other eye.

Power of Corrective Lenses in Glasses

The ICO considers glasses of plus 8 dioptries or greater as a cut off level for Group II drivers to be an unfair and blunt instrument on which to fail a driver, particularly if the applicant has already been driving safely in a professional capacity. Modern lenses of plus 8 dioptries which are best formed, manufactured in high index material and fitted to a modern frame of the correct shape can reduce

spherical and chromatic aberrations to a satisfactory degree while allowing a greater field of view than that afforded by less sophisticated designs made from older materials. For this reason any applicant or licence holder with glasses that have a power exceeding plus eight dioptres spherical equivalent should be examined by a competent medical authority. If referred by an optometrist, details of current glasses and recommendations for improvements may be included in the referral. If doubt still persists the competent medical authority may refer the applicant for the consideration of the RSA Advisory & Appeals Board.

Restricted Licences

There is a need for restricted licences. The purpose of allowing restricted licences is to improve the safety margin through avoidance of hazardous conditions, especially for those who have prior driving experience and a good driving record. After examination the competent medical authority can advise the RSA on possible licence restrictions and on the re-assessment interval. An 'on the road' test may be indicated in certain cases. The ultimate responsibility for issuing or not issuing a driving licence, with or without restrictions, lies with the RSA and not with the competent medical authority.

The following possible driving licence restrictions should be considered by the RSA

1. Limitation to daylight driving
2. Requirement of more frequent testing, based on the prognosis of the condition
3. Restriction to a radius of 'X' Km from home
4. Restriction to familiar areas
5. Speed limitation
6. No motorway driving

Advisory and Appeals Board

A Board led by the RSA should be established

- a. To advise on visual standards
- b. To consider individual exceptional case referrals
- c. As an appeal mechanism for applicants who feel that they were unfairly refused a licence following the failure of the eyesight standards.

The ICO recommends that this Board should include the following: at least two members of the RSA, 3 ophthalmologists one of whom must be a neuro-ophthalmologist, a physician in the speciality of neurology and a General Practitioner.

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