



To the Minister of Infrastructure and the Environment (I&M)

Subject : Presentation of advisory letter *Fitness to Drive with Autism*
Your reference : IENM/BSK-2012/142559
Our reference : I-1303/12/CP/db/006-F Publicationno. 2013/13E
Enclosure(s) : 3
Date : July 4, 2013

Dear Minister,

On 24 July 2012, you requested the Health Council of the Netherlands to advise on the periodic re-examination for fitness to drive with stable disorders, including autism and ADHD.

This request (Annex A) was prompted by a report, also written up at your request, on the manner in which the system of driving ability and fitness to drive tests may be improved.¹ The report concluded that issuing driving licenses with limited validity and re-examinations for people with a stable disorder or with diseases in remission have only limited efficacy.

This advisory letter informs you of the Council's findings on the subject of fitness to drive with autism spectrum disorders (hereafter ASD). As you are aware, we advised on fitness to drive and ADHD earlier this year as you wanted this topic addressed first.²

In order to provide the present advice, I appointed a special expert committee. A list of committee members can be found in Annex B. The medical advisor of the Central Office for Motor Vehicle Driver Testing (CBR) participated in Committee consultations as an advisor.

Current ASD Legislation

The current requirements to evaluate fitness to drive with ASD are summarised in Annex C. The first application should currently be accompanied by a specialist report, written up by a psychiatrist with knowledge and experience in the field of ASD in (young) adults. The examination takes place using a risk factor checklist.

If there are comorbidities, legislation in the corresponding chapter of the concomitant disease applies also.

The fitness to drive qualification was limited to three years for both the group 1 driving licenses (motorbikes and private cars) and group 2 licenses (lorries and buses). Re-examination



Subject : Presentation of advisory letter *Fitness to Drive with Autism*
Our reference : I-1303/12/CP/db/006-F Publicationno. 2013/13
Page : 2
Date : July 4, 2013

then takes place; passing this examination extends the fitness to drive period for another three years.

These rules have been formalised in the 2000 Fitness Requirements Regulation (REG2000) following an advisory report issued by the Health Council of the Netherlands in 2010.³ Up to that time, ASD had not been included in the regulation, but an increasing number of people asked the CBR questions about driving lessons and fitness to drive with ASD. Therefore a clear directive was needed.

ASD Findings

ASD is a syndrome definition based on behavioural characteristics. It is therefore not a description of a disease entity with a known cause, even though there is no doubt about an underlying neurobiological cause.³ The syndrome is highly heterogeneous. Not only is there much variation in the functional level, but also the nature and severity of symptoms may differ significantly.

Mental comorbidities are common in people with ASD: 70% suffer from an additional mental disorder, and two additional mental disorders are found in 41% of the people with ASD. This includes anxiety disorders, ADHD, oppositional defiant behavioural disorders, mood disorders, Gilles de la Tourette, obsessive-compulsive disorders, eating disorders and psychotic disorders. Increasingly, substance dependence is observed also. Neuropsychological problems are also common, particularly in the field of information processing.

Somatic problems are also found in the ASD population, more frequently than would be expected on the basis of general population data. This may involve epilepsy, but also genetic syndromes such as Fragile-X syndrome, tuberous sclerosis and velo-cardio-facial syndrome (VCF).

Theoretically, ASD is a permanent syndrome, although it is becoming increasingly clear that the disease course may vary. There is no medicine or other treatment that cures the syndrome. There have been treatment modalities (behavioural therapeutic and pharmacological) with symptomatic effect.

Much less is known about ASD in adults than in children. Diagnostics and differential diagnostics at an adult age can be challenging – there is currently no gold standard. As in children and adolescents, comorbidities are common in this group. Longitudinal studies have shown that the



Subject : Presentation of advisory letter *Fitness to Drive with Autism*
Our reference : I-1303/12/CP/db/006-F Publicationno. 2013/13
Page : 3
Date : July 4, 2013

core symptoms diminish as people approach adulthood. For example, communication and reciprocity in social interactions improve.

Nevertheless, only 10 to 25% of the adults with ASD are able to live independently or independent with supervision, take education, do regular work and build up a social network. Good early language development and IQ scores above 70 suggest a favourable prognosis.

State of Science on the Fitness to Drive with ASD

The EU study group IMMORTAL (Impaired Motorist Methods Of Roadside Testing and Assessment for Licensing) published a meta-analysis on limitations imposed by certain disorders on driving motor vehicles.⁴ It showed that people with mental disorders have a significantly higher relative risk (RR) to become involved in an accident than mentally healthy persons. An RR of 1.72 was found for mental disorders in general.

However, there is little scientific knowledge available on the specific relationship between fitness to drive and ASD. The clinical picture of ASD is highly heterogeneous and the scientific literature on which to base an evaluation of the fitness to drive for the entire group and that of the various subgroups is limited. There have been a number of new publications since the 2010 Health Council advisory report though. These will be reviewed here.

A study in 23 adult males with ASD found they have more difficulty anticipating what individuals (such as pedestrians) may do in traffic than possible car manoeuvres in which no driver is visible.⁵

Learning to drive is an important step on the way to independence for many adolescents. A study among parents of young adults with ASD showed that learning to drive constitutes a significant challenge for these young adults, and that particularly the complex tasks are problematic in addition to tasks such as locomotor coordination and planning.⁶

A comparative study in a driving simulator with ten young adult males with ASD and ten controls showed that the visual attention for important road situations was reduced in the first group when cognitive skills were needed, and that traffic behaviour could therefore be characterised as less safe.⁷



Subject : Presentation of advisory letter *Fitness to Drive with Autism*
Our reference : I-1303/12/CP/db/006-F Publicationno. 2013/13
Page : 4
Date : July 4, 2013

However, these studies have only limited relevance. An evidence-based review of ten driving performance studies in adolescents with ADHD and ASD found only one retrospective ASD study in a small group.⁸

Regulation Advisory

What does the Committee advise on the fitness to drive assessment in people with ASD?

Continue First Examination

On the basis of the available knowledge, and using expert opinion, the Committee takes the view that the current examination requirement for the first driving license application should reasonably be continued, both for group 1 and group 2 licenses. The examination should always be performed by a psychiatrist with knowledge and experience in the field of ASD in adults and who is not the treating psychiatrist of the person in question. Also the option to have a driving test performed should be continued.

Drop Re-examination

No disease course data can be derived from the scientific literature that justifies re-examination. The Committee therefore advises to drop the requirement for re-examination in ASD for group 1 and group 2 driving license holders.

Continue Option of Motivated Re-examination

We know from experience that 'the benefit of the doubt' is sometimes given after a first examination. In those cases, the examining specialist with adequate knowledge of ASD has the option under article 102 of the Driving Licenses Regulation to provide a *motivated* advice to the CBR to have re-examination performed after three or five years. This option should be continued.

No Separate Regulation Needed for Re-examination of Group 2 Driving License Holders

In addition to the applicant's personal statement, an examination under the Health and Safety at Work Act is mandatory also as part of the legally stipulated renewed application after five years for group 2 driving license holders. The Committee considers a separate passage in the REG2000 therefore unnecessary.



Subject : Presentation of advisory letter *Fitness to Drive with Autism*
Our reference : I-1303/12/CP/db/006-F Publicationno. 2013/13
Page : 5
Date : July 4, 2013

Transitional Arrangement

Seeing the current group of driving license holders with ASD was examined with the perspective of a re-examination after three years, and in order to prevent inequality of justice, the Committee recommends a transitional period. In practice this could mean that such drivers need to be examined one more time.

This advice was reviewed by the Standing Committee on Medicine, one of the permanent Health Council boards. I endorse the Committee findings and advice.boards. I endorse the Committee findings and advice.

Yours sincerely,
(signed)
Professor W.A. van Gool
President



Subject : Presentation of advisory letter *Fitness to Drive with Autism*
Our reference : I-1303/12/CP/db/006-F Publicationno. 2013/13
Page : 6
Date : July 4, 2013

Literatuur

- 1 Andersson Elffers Felix. Onderzoeken rijvaardigheid en geschiktheid. Utrecht: 2012: GI22/006_rapport.
- 2 Health Council of the Netherlands. Advisory letter Fitness to Drive with ADHD. The Hague: Health Council of the Netherlands, 2013; publication no. 2013/01E.
- 3 Health Council of the Netherlands. Fitness to drive. Proposal for some changes in the Regeling eisen geschiktheid 2000. The Hague: Health Council of the Netherlands, 2010; publication no. 2010/07E.
- 4 IMMORTAL EU Project Final Program Report A3.2. Impaired motorists, methods of roadside testing and assessment for licensing. 2005. Internet: www.immortal.or.al
http://ec.europa.eu/transport/road_safety/projects/doc/immortal.pdf.
- 5 Sheppard E, Ropar D, Underwood G, van LE. Brief report: driving hazard perception in autism. *J Autism Dev Disord* 2010; 40(4): 504-508.
- 6 Cox NB, Reeve RE, Cox SM, Cox DJ. Brief report: driving and young adults with ASD: parents' experiences. *J Autism Dev Disord* 2012; 42(10): 2257-2262.
- 7 Reimer B, Fried R, Mehler B, Joshi G, Bolfek A, Godfrey KM e.a. Brief Report: Examining Driving Behavior in Young Adults with High Functioning Autism Spectrum Disorders: A Pilot Study Using a Driving Simulation Paradigm. *J Autism Dev Disord* 2013.
- 8 Classen S, Monahan M. Evidence-based review on interventions and determinants of driving performance in teens with attention deficit hyperactivity disorder or autism spectrum disorder. *Traffic Inj Prev* 2013; 14(2): 188-193.

Request for advice

On 24 July 2012, the then Vice President of the Health Council received the following request for advice from the Minister of Infrastructure and the Environment:

The Health Council regularly advises the Ministry of Infrastructure and the Environment on issues concerning the medical fitness to drive. Previously, requests to your Council for recommendations have been made on an ad hoc basis. I would like this cooperative work to be embedded into a more formal structure, as I have stated in the Lower House of the Dutch Parliament. I discussed this matter with your Council's General Secretary last May. Your Council is currently taking preparatory steps to embed the fitness to drive advisory process into a more formal structure by establishing a Standing Committee on Fitness to Drive.

With respect to another topic that was discussed with the General Secretary of your Board last May, I would ask that this committee give priority to the following topics this year:

- 1 Advisory process on periodic re-assessment for stable disorders such as ADHD and autism. I would very much like to hear your views on the current scientific situation regarding the periodic re-assessment requirement for stable disorders such as ADHD and autism or for disorders that occurred in the past. Allow me to provide some background details concerning this request:

I have commissioned a study into the assessments of driving ability and fitness to drive. This study was completed in April. One of the conclusions of this study was as follows: "The effectiveness of issuing driving licences with limited validity and the option of requiring re-assessment is limited to individuals with a stable clinical picture (ADHD) or to diseases from which drivers have recovered. Once it has been established that such disorders do not (or no longer) affect an individual's fitness to drive then such re-assessment would not seem to be effective."

In addition, the Lower House of the Dutch Parliament has asked (via the Bashir motion; Parliamentary Documents II, 2011/2012, 29398, No. 330) the Minister to drop the requirement for periodic re-assessment. Together with the Central Office for Motor Vehicle Driver Testing, I am currently preparing to implement this motion (Parliamentary Documents II, 2011/2012, 29398, No. 332) on an experimental basis.

Finally, I am awaiting the imminent submission (possibly by the end of this month) of a report from the Dutch Psychiatric Association (NVvP) on a range of topics, including ADHD. Please take this report into account during the advisory process.

I would ask that you advise me on this matter as soon as possible but no later than the end of 2012.

- 2 Furthermore, I would appreciate your advice on how to enhance the efficiency of the medical self-report procedure by making the questions in the self-report form more specific, especially with regard to determining the appropriate periods in which disorders occurred and in which medical treatment was given.

The Central Office for Motor Vehicle Driver Testing uses the details contained in the medical self-report form to reach a decision on the applicant's fitness to hold a driving licence. This form contains various questions about past disorders and treatments. The current wording of these questions makes no mention of the periods of time involved. This causes many applicants to wonder whether it is really relevant to mention past disorders and treatments (including those that occurred long ago).

Accordingly, I would like to hear your views regarding the options for making the medical self-report form's questions more specific, both in terms of mentioning the periods of time involved and doing so more precisely. Please submit your advice on this matter to me before the summer of 2013.

In the course of your advisory process, please make it clear how this ties in with European regulations and with the Fitness Criteria Regulations 2000. In the course of your advisory process, and if your advisory report so warrants, please draw up a draft text for the Fitness Criteria Regulations 2000.

Yours sincerely,

On behalf of the Minister of Infrastructure and the Environment,

(signed)

The Director of Roads and Traffic Safety,

Ms. M.C.A. Blom

The Committee

-
- Prof. J.J. Heimans, *chairperson*
Professor of Neurology, VU Medical Center, Amsterdam
 - Prof. A. de Boer
Professor of Pharmacology, Utrecht University
 - Dr. G.A. Donker
GP, The Netherlands Institute for Health Services Research (NIVEL), Utrecht,
Gezondheidscentrum de Weide (The de Weide Health Centre), Hoogeveen
 - Prof. Y. van der Graaf
Professor of Epidemiology, Utrecht University
 - Dr. J. Groeneweg
Faculty of Social Sciences, Leiden University
 - Prof. A.C. Hendriks
Professor of Health Law, Leiden University
 - Prof. J.B.L. Hoekstra
Professor of Internal Medicine, Academic Medical Center, Amsterdam
 - Prof. J.E.E. Keunen
Professor of Ophthalmology, Radboud University Nijmegen Medical Centre
 - Prof. R.C. van der Mast
Professor of Psychiatry, Leiden University Medical Center, Leiden
 - Prof. M.J. Schalijs
Professor of Cardiology, Leiden University Medical Center, Leiden
-

- Prof. J. Wokke
Professor of Neurology, University Medical Centre Utrecht
- R.A. Bredewoud, physician, *advisor*
Head of the Medical Department, Central Office for Motor Vehicle Driver Testing, Rijswijk
- S. Faber, *observer*
Senior Policy Officer, Ministry of Infrastructure and the Environment, The Hague
- Dr. P.M. Engelfriet, *scientific secretary*
Health Council, The Hague
- Dr. C.A. Postema, Physician, *scientific secretary*
Health Council, The Hague

The Health Council and interests

Members of Health Council Committees are appointed in a personal capacity because of their special expertise in the matters to be addressed. Nonetheless, it is precisely because of this expertise that they may also have interests. This in itself does not necessarily present an obstacle for membership of a Health Council Committee. Transparency regarding possible conflicts of interest is nonetheless important, both for the chairperson and members of a Committee and for the President of the Health Council. On being invited to join a Committee, members are asked to submit a form detailing the functions they hold and any other material and immaterial interests which could be relevant for the Committee's work. It is the responsibility of the President of the Health Council to assess whether the interests indicated constitute grounds for non-appointment. An advisorship will then sometimes make it possible to exploit the expertise of the specialist involved. During the inaugural meeting the declarations issued are discussed, so that all members of the Committee are aware of each other's possible interests.

Fitness Criteria Regulations 2000

8.11. Autism Spectrum Disorders (ASD)

A specialist report, written up by a psychiatrist with knowledge and experience in the field of ASD in adults, is required as part of the fitness to drive assessment.

The examination takes place using a risk factor checklist (the CBR has such a list).

If there are comorbidities, either psychiatric (anxiety and compulsive disorders, attention disorders, hyperactivity, depressive disorders, psychotic disorders) or somatic (epilepsy, genetic abnormalities), these should be sufficiently controlled; the relevant paragraphs from chapters 7 and 8 apply also. If treatment involves medicines that impact the ability to drive, the relevant paragraphs in chapter 10 apply also.

If the CBR considers a driving test necessary for accurate assessment, it may use the services of a CBR expert in the field of practical fitness. This will always be done for a first driving license application. The CBR has an extensive protocol for such situations.

Fitness to drive is granted for a maximum of three years, both for group 1 and group 2 driving licenses.