

Neuromyelitis Optica UK Specialist Services

Immunology Laboratory incorporating  
Diagnostic Neuroimmunology

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Dear Users of the Neuromyelitis Optica UK Specialist Service,

**Change to UK Screening Strategy for suspected Neuromyelitis Optica Spectrum Disorders [NMOSD]:  
Introduction of an additional anti-Aquaporin 4 assay by the NHS Diagnostic laboratory.**

The Oxford Neuroimmunology service incorporating the Oxford University Autoimmune Neurology diagnostic Lab will add a fixed cell based assay to the current live cell based assay for routine Aquaporin 4 testing from March 1<sup>st</sup> 2017. This is in order to comply with UKAS standard ISO 15189 (It is envisaged that both assays will become UKAS accredited as soon as possible with the accreditation of the fixed cell based assay already in process).

A recent multi-centre study assessing multiple platforms for the measurement of AQP4 antibodies found the Oxford live cell assay and the commercially available fixed cell based assay highly comparable, each with approximately 97% accuracy (Waters et al 2016). We will continue however to use the data generated from this parallel testing to blindly audit the sensitivities and specificities relative to the clinical picture in a routine clinical setting. All positive patients identified on the AQ4 assay will be titrated to produce a titre result that will be incorporated into the singular result.

Reporting of the AQP4 antibody assays will remain as one singular result. Where there is discordance between the assays, discussion between the laboratories and NMO clinical teams involved in the Neuromyelitis Optica UK Specialist Service will lead to an overall singular result being reported (often after the NMO Clinician having discussed with the referring clinician). The report will document that this discussion has taken place.

The second AQ4 assay is included in the Nationally Commissioned Service and as such will be free of charge to those who are eligible.

Sample requirements will remain the same; a minimum of 1 ml of serum will be sufficient to perform the anti-Aquaporin 4 assay, paired CSF can be tested if available, although it may not add diagnostic value to the serum AQP4 test. Please see our website for detailed information on our assays and on how to send samples for anti-Aquaporin4 testing to the Oxford Service. [www.ouh.nhs.uk/immunology/neuroimmunology](http://www.ouh.nhs.uk/immunology/neuroimmunology)

Please do not hesitate to contact us if you have any queries.



Professor BL Ferry  
Clinical Lead of NHS Diagnostic laboratory

#### REFERENCES

Patrick Waters, Markus Reindl, Albert Saiz, Kathrin Schanda, Friederike Tuller, Vlastimil Kral, Petra Nytrova, Ondrej Sobek, Helle Hvilsted Nielsen, Torben Barington, Søren T Lillevang, Zsolt Illes, Kristin Rentzsch, Achim Berthele, Tímea Berki, Letizia Granieri, Antonio Bertolotto, Bruno Giometto, Luigi Zuliani, Dörte Hamann, E Daniëlle van Pelt, Rogier Hintzen, Romana Höftberger, Carme Costa, Manuel Comabella, Xavier Montalban, Mar Tintoré, Aksel Siva, Ayse Altintas, Günnur Deniz, Mark Woodhall, Jacqueline Palace, Friedemann Paul, Hans-Peter Hartung, Orhan Aktas, Sven Jarius, Brigitte Wildemann, Christian Vedeler, Anne Ruiz, M Isabel Leite, Peter Trillenber, Monika Probst, Sandra Saschenbrecker, Angela Vincent, Romain Marignier

Multicentre comparison of a diagnostic assay: aquaporin-4 antibodies in neuromyelitis optica. *J Neurol Neurosurg Psychiatry* 2016. **87**: 1005-1015

In this paper, Table 3 shows:

Accuracy of commercially available assay – performed by Euroimmun-ranged from 97.4- 97.9%	average = 97.5%
<i>Accuracy of commercially available assay- performed by NHS Oxford Lab. 100% concordant with EI</i>	<i>average = 97.5%</i>
Accuracy of Live assay – performed by diagnostic centres - ranged from 96.4 – 99.5% -	average = 97.9%
Accuracy of commercially available assay- performed by diagnostic centres- ranged from 88.6-97.4%	average = 94.6%

