Tidsskriftet Tidsskrift for Den norske legeforening

Revised diagnostic criteria for multiple sclerosis

FROM THE SPECIALTIES

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Biomarkers are given greater emphasis in the revised diagnostic criteria for multiple sclerosis.

The diagnosis of multiple sclerosis (MS) is based on clinical symptoms and findings, characteristic MRI changes of the central nervous system and cerebrospinal fluid findings. The revised McDonald diagnostic criteria for MS place greater emphasis on biomarkers. In the absence of a more likely alternative explanation, an MS diagnosis may now be established on the basis of MRI findings and cerebrospinal fluid analyses in patients without clinical MS symptoms or findings (1).

Historically, clinical evidence of MS has been required because non-specific symptoms such as headache and fatigue are common, and MRI abnormalities in these patients can raise suspicion of MS but are more often due to other causes. To differentiate MS from monophasic conditions such as acute disseminated encephalomyelitis or isolated myelitis, previous diagnostic frameworks required evidence of new relapses or new MRI lesions demonstrating dissemination in time. In the revised McDonald criteria, this mandatory requirement has been removed and replaced by an updated framework that emphasises the overall clinical evaluation alongside paraclinical evidence, such as cerebrospinal fluid and MRI biomarkers (1).

MRI findings and cerebrospinal fluid analysis

Three key changes have been introduced regarding MRI in MS. First, the optic nerves are now defined as an anatomical location for MS, in addition to the periventricular, juxtacortical/cortical, infratentorial and spinal cord regions (2). Lesions of the optic

nerves can be detected using MRI, optical coherence tomography or visual evoked potentials (2, 3).

Second, the central vein sign and paramagnetic rim lesions on MRI are now recognised as biomarkers for MS. These elements are not always required, but are particularly emphasised in patients over 50 years of age or with vascular risk factors when cerebrospinal fluid findings are normal, typical clinical MS signs are absent or MRI lesions are limited to only one or two typical anatomical locations for MS (2).

Finally, elevated levels of kappa free light chains in cerebrospinal fluid can now be used as a simpler and faster alternative to oligoclonal IgG bands (1).

Improving diagnostic precision

The revised diagnostic criteria will reduce the frequency of ambiguous diagnoses, such as 'clinically isolated syndrome' or 'radiologically isolated syndrome' (1). They may also lead to earlier diagnosis and initiation of treatment, potentially improving prognosis (4).

The risk of misdiagnosis or overdiagnosis is low. The revised criteria are unlikely to lead to an MS diagnosis in patients previously considered healthy; they are more likely to clarify the diagnosis in patients who had previously been given an uncertain or provisional diagnosis. Diagnostic precision is expected to improve as the new criteria are implemented by radiologists and neurologists throughout Norway.

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Publisert: 8. December 2025. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.25.0592
Received 4.10.2025, first revision submitted 19.10.2025, accepted 4.11.2025.