National Multiple Sclerosis Society

Diagnosis of multiple sclerosis: 2024 revisions of the McDonald criteria

What is the McDonald Criteria?

The McDonald Criteria are a set of guidelines that provide healthcare providers with a tool to make an accurate diagnosis of MS. The 2024 revision of the McDonald Criteria marks an important step forward in how healthcare providers diagnose MS.

Thanks to progress in areas like biomarkers, brain imaging, and other medical tests, physicians now have better tools to identify MS earlier and with greater accuracy. An earlier diagnosis allows people to begin treatment sooner, significantly improving their health outcomes.

The updates include changes to where and how we look for evidence of MS, including new tests for diagnosis, as well as specialized criteria for diagnosing children (under 18 years of age) and people over 50.

The revisions were developed by the International Advisory Committee on Clinical Trials in MS, a body convened by European Committee on Treatment and Research in MS (ECTRIMS) and the National MS Society (USA). Building on its role in creating the previous criteria, the Committee led a series of virtual meetings in 2022 and 2023 to review the latest research and weigh evidence across key topics.

Why is it important that we updated the 2017 criteria?

The enhanced McDonald Diagnostic Criteria reflect new understanding of how MS appears and progresses in individuals. They also demonstrate the shift toward considering the biologic basis of MS at diagnosis and also include mechanisms to prevent misdiagnosis.

These updates to the criteria give healthcare professionals even more ways to diagnose MS more quickly and accurately. An earlier diagnosis allows people to begin treatment sooner, significantly improving their health outcomes.

What are the main differences between the 2017 and 2024 McDonald Criteria?

The 2024 revisions make some key changes that matter for both doctors and patients. These changes include:

1. No longer needing “time to pass” (Dissemination in Time). In the past, people often had to wait months or even years for new MS activity to show up before a diagnosis could be confirmed. Removing this requirement means many can now get answers sooner, without long delays.

2. Broader criteria for "where lesions appear" (Dissemination in Space). By recognizing more patterns of MS activity in the brain and spinal cord, doctors have clearer guidance and fewer gray areas when interpreting MRI scans. In addition, the optic nerve may serve as an additional physical location to demonstrate DIS if no other explanation exists for optic nerve pathology.

3. Diagnosis even without classic symptoms. In some cases, evidence of MS can appear in MRI or other tests – also known as RIS (Radiologically Isolated Syndrome), before a person has typical symptoms. RIS is now considered MS and people can begin treatment.

4. New supportive tools. Signs like the central vein sign and paramagnetic rim lesions on MRI, plus kappa free light chains in spinal fluid, give doctors additional evidence to strengthen the diagnosis.

	2017	2024
Tools for Diagnosis	Doctors needed to see typical MS symptoms. MRI and spinal fluid tests were helpful.	Diagnosis can be made even without typical symptoms. MRI is the most helpful tool. Spinal fluid tests (CSF), eye scans (OCT), and visual tests (VEP) are also useful.
Where MS Damage Must Be Seen (DIS)	Damage in at least 2 of 4 areas: near brain fluid spaces, brain surface, brainstem/cerebellum, or spinal cord.	Damage in at least 2 of 5 areas: same as 2017 plus the optic nerve. If 4 or more areas are affected, that's enough for diagnosis. For progressive MS, 2 spinal cord lesions count as 2 areas.
MRI Tools	New or growing lesions or contrast-enhancing spots on MRI showed MS activity over time.	Similar to 2017, but now includes new MRI signs: Central Vein Sign (CVS) and Paramagnetic Rim Lesions (PRL), which support diagnosis and increase specificity to replace DIT
Spinal Fluid Tests (CSF)	Looked for oligoclonal bands (immune proteins) to support diagnosis.	Can use either oligoclonal bands or a newer test called Kappa-Free Light Chains (kFLC). Both show immune activity in the brain/spinal cord.
Eye and Visual Tests	Not used in diagnosis.	Eye scans (OCT), optic nerve MRI, and visual response tests

		(VEP) can now show optic nerve damage and help confirm MS.
Older Adults & Other Health Issues	Doctors were cautious and looked for more brain lesions.	For people over 50 or with conditions like high blood pressure or diabetes, doctors now need stronger evidence: spinal cord lesions, positive spinal fluid tests, or specific MRI signs (CVS).
Pediatric MS	Criteria shouldn't be used during first ADEM episode. A second MS-like attack was needed for diagnosis.	Same rule applies: don't use criteria for first ADEM episode. The same criteria should be used to diagnose pediatric patients as adults, with additional paraclinical evidence (MOG-IgG testing and the presence of CVS in more than half T2 lesions) recommended to prevent misdiagnosis.