McDonald diagnostic criteria

The McDonald criteria is a tool for clinicians to help them provide an accurate diagnosis of multiple sclerosis (MS) as early as is possible. The criteria provides a guide to the tests required and which should be arranged in order for clinicians to be sure of a diagnosis.

The McDonald criteria were devised in 2001 by a team led by Professor Ian McDonald, and were most recently revised in 2017. The criteria are used to seek to establish evidence of damage to the central nervous system (CNS) comprising of the brain and spinal cord.

The criteria looks at the evidence of damage in two ways, is the damage 'disseminated in time' (DIT) – meaning, is there evidence of damage in the CNS at different dates and, is the damage 'disseminated in space' (DIS) – meaning, is the damage in different parts of the CNS. This helps to distinguish MS from other neurological conditions.

MRI evidence is used in the McDonald criteria extensively and is a requirement for everyone who is diagnosed with MS. For those with few or no clinical symptoms yet who show lesions on MRI, there would be evidence of DIS.

When a lumbar puncture is required, it is oligoclonal bands in the spinal fluid that are looked for. These are a good marker for MS. The bands can show that there has been disease activity in the past which can be used as evidence of DIT.

The most recent 2017 revision of the criteria does not change any previous diagnosis. However, they may allow neurologists to diagnose newer cases much earlier on, meaning patients can access certain treatments sooner.

Clinical presentation – what evidence for MS is already present?	Objective lesions	What additional data is required for an MS diagnosis?
2 or more relapses	2 or more	None, clinical evidence will suffice (additional evidence desirable but must be consistent with MS)
2 or more relapses	1	**Dissemination in space** (DIS) shown by one of more MRI detected lesions typical of MS **OR** a further relapse showing damage to a different part of the CNS
1 relapse	2 or more	**Dissemination in time** (DIT) shown by oligoclonal bands **OR** MRI evidence of new lesions since previous scan **OR** a further relapse
1 relapse	1 (known as Clinically Isolated Syndrome (CIS))	**Dissemination in space** (DIS) shown by one or more MRI detected lesions typical of MS **OR** a further relapse showing activity in a different part of the CNS. **Dissemination in time** (DIT) shown by oligoclonal bands **OR** MRI showing new lesions since a previous scan **OR** a further relapse
Neurological progression is suggestive of MS. This is typical for a diagnosis of primary progressive MS (PPMS)		**Continued progression for one year (from previous symptoms or by ongoing observation) plus any two of these** One or more MRI detected lesions in the brain typical of MS, two or more MRI detected lesions in the spinal cord, oligoclonal bands in the spinal fluid

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