

MS diagnostic criteria according to McDonald *et al.* (2010)

In April 2001 an international panel recommended new diagnostic criteria for MS (McDonald *et al.* 2001). The McDonald criteria were revised in 2005 (Polman *et al.* 2005) and in 2010 (Polman *et al.* 2010).

McDonald WI, Compston DAS, Edan G, *et al.* Recommended diagnostic criteria for MS: Guidelines from the international panel on the diagnosis of MS. *Ann. Neurol.* 2001; 50: 121-127

Polman CH, Reingold SC, Edan G, *et al.* Diagnostic criteria for multiple sclerosis: 2005 revisions to the "McDonald Criteria". *Ann. Neurol.* 2005; 58: 840-846

Polman CH, Reingold SC, Banwell B, *et al.* Diagnostic criteria for multiple sclerosis: 2010 revisions to the McDonald Criteria. *Ann. Neurol.* 2010; 69: 292-302

In blue: criteria for dissemination in time (DIT)

In red: criteria for dissemination in space (DIS)

Clinical presentation (Possible MS)		Additional requirements to make diagnosis (MS)
Attacks (relapses)	Objective clinical lesions	
2 or more	2 or more	None, clinical evidence alone will suffice (additional evidence desirable but must be consistent with MS)
2 or more	1	<i>DIS, demonstrated by:</i> <ul style="list-style-type: none"> <input type="checkbox"/> ≥ 1 T2 lesion in at least 2 of 4 MS-typical regions of the CNS (periventricular, juxtacortical, infratentorial, or spinal cord) or <input type="checkbox"/> Further clinical attack implicating a different CNS site
1	2 or more	<i>DIT, demonstrated by:</i> <ul style="list-style-type: none"> <input type="checkbox"/> Simultaneous presence of asymptomatic gadolinium-enhancing and nonenhancing lesions at any time or <input type="checkbox"/> A new T2 and/or gadolinium-enhancing lesion(s) on follow-up MRI, irrespective of its timing with reference to a baseline scan or <input type="checkbox"/> Second clinical attack
1	1 (CIS: clinically isolated syndrome)	<i>DIS, demonstrated by:</i> <ul style="list-style-type: none"> <input type="checkbox"/> ≥ 1 T2 lesion in at least 2 of 4 MS-typical regions of the CNS (periventricular, juxtacortical, infratentorial, or spinal cord) or <input type="checkbox"/> Second clinical attack implicating a different CNS site <i>AND DIT, demonstrated by:</i> <ul style="list-style-type: none"> <input type="checkbox"/> Simultaneous presence of asymptomatic gadolinium-enhancing and nonenhancing lesions at any time or <input type="checkbox"/> A new T2 and/or gadolinium-enhancing lesion(s) on follow-up MRI, irrespective of its timing with reference to a baseline scan or <input type="checkbox"/> Second clinical attack
0 Insidious neurological progression suggestive of MS (PPMS: primary progressive MS)	0	<i>DIT:</i> One year of disease progression (retrospectively or prospectively determined) <i>AND 2 or 3 of the following criteria:</i> <ul style="list-style-type: none"> <input type="checkbox"/> Evidence for DIS in the brain based on ≥ 1 T2 lesions in the MS-characteristic (periventricular, juxtacortical, or infratentorial) regions or <input type="checkbox"/> Evidence for DIS in the spinal cord based on ≥ 2 T2 lesions in the cord or <input type="checkbox"/> Positive CSF (evidence of oligoclonal bands and/or elevated IgG index)

Paraclinical evidence in MS diagnosis

2010 McDonald MRI criteria for demonstration of DIS (Swanton criteria)

≥ 1 T2 lesion in at least 2 of 4 areas of the CNS:

- periventricular
- juxtacortical
- infratentorial
- spinal cord

(Gadolinium enhancement of lesions is not required for DIS)

2005 McDonald MRI criteria for demonstration of DIS (Barkhof criteria)

3 out of 4 of the following:

- 1 Gd-enhancing lesion, or 9 T2 hyperintense lesions if no Gd-enhancing lesion
- 1 or more infratentorial lesion(s)
- 1 or more juxtacortical lesion(s)
- 3 or more periventricular lesions

Note: 1 cord lesion can substitute for 1 brain lesion.

2010 McDonald MRI criteria for demonstration of DIT

One of the following:

- A new T2 and/or gadolinium-enhancing lesion(s) on follow-up MRI, with reference to a baseline scan, irrespective of the timing of the baseline MRI
- Simultaneous presence of asymptomatic gadolinium-enhancing and nonenhancing lesions at any time

2010 McDonald criteria for diagnosis of MS in disease with progression from onset

PPMS may be diagnosed in subjects with:

- One year of disease progression (retrospectively or prospectively determined)
- Plus 2 of the 3 following criteria:
 - Evidence for DIS in the brain based on ≥ 1 T2 lesions in at least 1 area characteristic for MS (periventricular, juxtacortical, or infratentorial)
 - Evidence for DIS in the spinal cord based on ≥ 2 T2 lesions in the cord
 - Positive CSF (IEF evidence of oligoclonal bands and/or elevated IgG index)