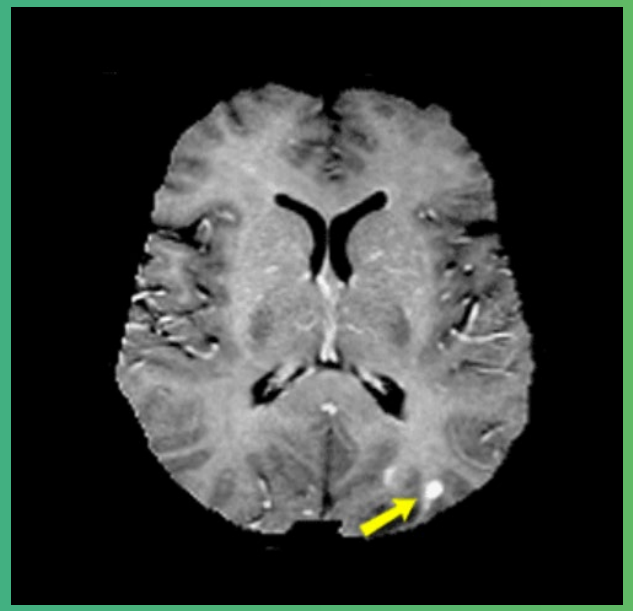
Multiple Sclerosis
Diagnosis and medical treatment



Initiative Selbsthilfe Multiple Sklerose Kranker e.V.

Prevalence of Multiple Sclerosis (2013 vs 2020)

Table 1.

Prevalence of multiple sclerosis per 100,000 population by world region in 2013 and 2020.

	Number of countries included[a]	2013 prevalence per 100,000 population [95% CI]	2020 prevalence per 100,000 population [95% CI]	Increase; absolute (%)
Global	81	29.26 [29.21, 29.30]	43.95 [43.90, 44.01]	14.69 (50%)
African	6	5.52 [5.41, 5.62]	8.76 [8.64, 8.89]	3.24 (59%)
Americas	15	62.89 [62.72, 63.05]	117.49 [117.27, 117.71]	54.6 (87%)
E. Mediterranean	14	23.91 [23.77, 24.04]	33.00 [32.85, 33.15]	9.09 (38%)
European	35	108.25 [108.01, 108.49]	142.81 [142.53, 143.08]	34.56 (32%)
South East Asia	4	5.44 [5.41, 5.48]	8.62 [8.58, 8.66]	3.18 (58%)
Western Pacific	7	3.64 [3.61, 3.67]	4.79 [4.75, 4.82]	1.15 (32%)

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CI: confidence intervals, E. Mediterranean: Eastern Mediterranean.

[a]Only countries providing data for 2013 and 2020 editions of the Atlas of MS are included in the analysis.Global and WHO regional totals reported. Reported MS prevalence increased in every WHO region between the 2013 and 2020 versions of the Atlas of MS.

- Increase across all world regions
- Highest increase in regions with already high prevalence

Schumacher Criteria (1970‘s)

Summary [edit]

To get a diagnosis of CDMS a patient must show the following:[7]

1. Clinical signs of a problem in the CNS
2. Dissemination in space, shown by clinical evidence of damage in two or more areas of CNS.
3. Evidence of white matter involvement
4. Dissemination in time shown by one of these: Two or more relapses (each lasting ≥ 24 hr and separated by at least 1 month) or disability progression (slow or stepwise)
5. Patient should be between 10 and 50 yr old at time of examination
6. No better explanation for patient’s symptoms and signs should exist

McDonald Criteria (since 2017)

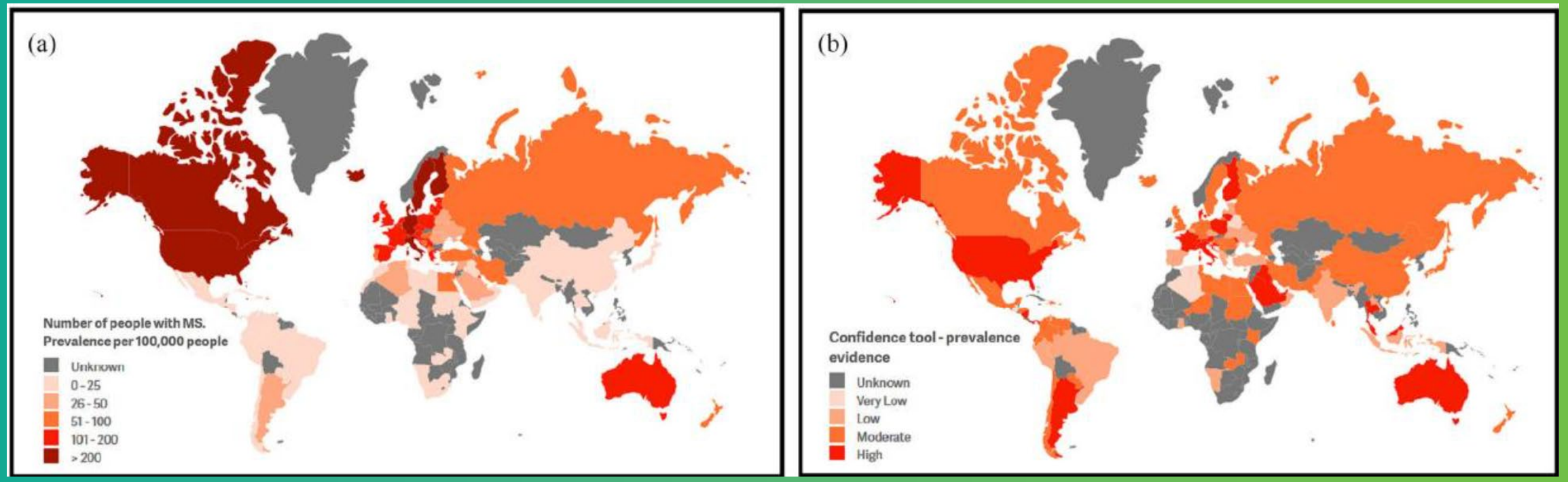
Clinical Presentation	Additional Data Needed
* 2 or more attacks (relapses) * 2 or more objective clinical lesions	None; clinical evidence will suffice (additional evidence desirable but must be consistent with MS)
* 2 or more attacks * 1 objective clinical lesion (as well as clear-cut historical evidence of a previous attack involving a lesion in a distinct anatomical location)	None.
* 2 or more attacks * 1 objective clinical lesion	Dissemination in space, demonstrated by an additional clinical attack implication a different CNS site or by MRI.
* 1 attack * 2 or more objective clinical lesions	Dissemination in time, demonstrated by an additional clinical attack or by MRI **OR** Demonstration of CSF-specific oligoclonal bands
* 1 attack * 1 objective clinical lesion (monosymptomatic presentation)	Dissemination in space demonstrated by an additional clinical attack implicating a different CNS site or by MRI. **AND** Dissemination in time demonstrated by an additional clinical attack or by MRI, OR Demonstration of CSF-specific oligoclonal bands
Insidious neurological progression suggestive of MS (primary progressive MS)	One year of disease progression (retrospectively or prospectively determined) and Two of the following: • One or more T2-hyperintense lesions characteristic of multiple sclerosis in one or more of the following brain regions: periventricular, cortical or juxtacortical, or infratentorial • Two or more T2-hyperintense lesions in the spinal cord • Presence of CSF-specific oligoclonal bands

McDonald criteria used since 2017

Before: Schumacher, Poser criteria

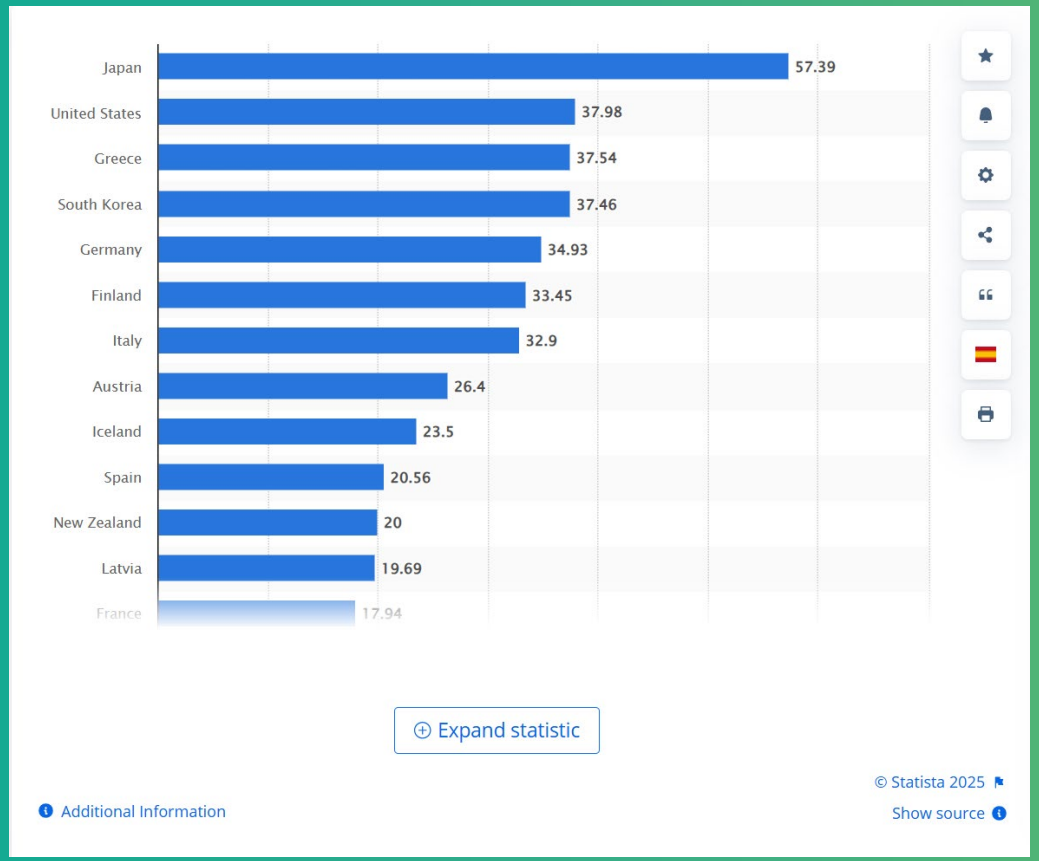
- diagnosis methods and criteria have changed over time, e.g. with new technologies (MRI)
- Earlier diagnosis with McDonald criteria compared to Schumacher criteria

Global MS Prevalence



MS Risk is reduced as closer to the equator ?
Or is this a data topic?

Number of magnetic resonance imaging (MRI) units in selected countries as of 2023(per million population)



No correlation between # of MRI machines per 1 Mio. population vs. MS prevalence

Summary

- Criteria for Diagnosis have changed over time, comparison difficult (maybe not a „real“ increase but earlier diagnosis, longer life expectation,..)
- No correlation between # of MRI vs. Prevalence (Russia vs. US, Japan vs. South Europe and US)

There is no evidence for a single cause, it is rather an overlapping or a combination from different effects