

[Supplementary online-only material for Pöttgen J, Lau S, Penner I, Heesen C, Moritz S:  
 Managing neuropsychological impairment in multiple sclerosis: pilot study on a standardized  
 metacognitive intervention. *Int J MS Care*. 2015;17(3):130–137.]

**Supplementary Table 1. Contents of the training modules**

<b>Module</b>	<b>Target domain</b>	<b>Description</b>
Stress	Interpretation of stressful life events and their link to disease-related factors	Starts with educational information about stress and stressful life events and its mental and physical effects. Impact factors in relation to MS are collected in the group. Many exercises show typical dysfunctional cognitive patterns in dealing with stress. By reflection about necessary resources to manage stressful events and stress traps patients are invited to develop new coping approaches. Exercises are provided.
Attention	Attention impairments in MS/acceptance and compensation	Background information about attention and its domains is given. Challenging exercises for selective, divided, and sustained attention are given to the group. The key is to realize that attention impairment is a common problem in MS and that improving performance is more likely due to compensation strategies than exercises. Group members introduce own strategies and discuss pros and cons. Compensation strategies are given.
Mood and self-esteem	Depressive attribution style	Depressive symptoms are collected and presented. Treatment options are

		<p>introduced. The potential causes of depression are explained and their relevance to MS. Typical cognitive patterns (ie, all-or-nothing thinking, disqualifying the positive) in relation to common everyday life events are displayed and the group is asked to generate more constructive thoughts. Strategies to improve mood and to change negative self-scheme are provided.</p>
Memory	Memory impairment/interpretation and compensation	<p>Module starts and ends with a memory game. Memory and its different domains are explained briefly. Strategies to improve memory are discussed, and examples are presented. Complex scenes (eg, car, beach) are displayed and the group is asked to memorize details. Common false memories are presented. The group collects items in a recognition trial which have been learned before. Strategies to improve memory are displayed based on examples (maps stories).</p>
Empathy	Theory of mind and social cognition in MS	<p>Facial and behavioral expressions are displayed and discussed for their validity to social reasoning. Wrong interpretations and their relevance for social contacts (family, job, medical system) are discussed. Pictures of human faces are presented in exercises. The group is asked to guess what the displayed person feels. The importance to use more information (mimic, gesture, environment) is explained. Examples show</p>

		human faces first and the same face in different contexts afterward. Participants are invited to guess the person's feeling at the first and second picture. Examples show the need to consider multiple cues.
Fatigue	Do everything or nothing—management strategies for fatigue	Fatigue, its symptoms, and mitigating factors are defined. The impact and consequences for social and professional life are discussed. Factors eliciting or influencing fatigue are displayed and the link to depression is explained. Exercises show typical destructive cognitive patterns in coping with fatigue and give examples to transform usual thinking and behavior. Patients get additional tips to manage fatigue symptoms (sports, avoid heat, diary for daily load).

Abbreviation: MS, multiple sclerosis.