Appendix A. Literature overview

The development of the discrete choice questionnaire was preceded by a review of all existing literature that quantified patient preferences with regards to DMTs. A search of the Pubmed database was performed with search terms [("multiple sclerosis") AND ("discrete choice" OR "dce" OR "conjoint" OR "part-worth utilities" OR "functional measurement" OR "paired comparisons" OR "pairwise choices" OR "stated preference")]. This was followed by an inspection of each paper's references. This process resulted in the identification of 15 studies published between 2009 and 2017.[9-23]

The studies' characteristics are presented in table A1. Eleven studies were discrete choice experiments,[9-19] two used best-worst scaling,[20,23] and two used a conjoint approach (based on a ranking[21] or a 0-100 rating scale[22]). Seven studies were conducted in the USA,[9,12,14-15,18-19,22] two in Germany,[11,13] two in the UK[10,17], two in Spain[16,21], one in Canada[20] and one in the Netherlands[23].

Almost all studies attempted to estimate the trade-off between potential treatment efficacy and risk - in terms of a lower rate (or risk) of disease progression and/or fewer relapses versus moderate or even potentially lethal side effects. Five papers concluded that at least some severe side effects were more important to MS patients than projected differences in disease progression.[12,15-16,21-22] In contrast, Johnson et al., Bottomley et al., and Mansfield et al. found that the preference for improved efficacy outweighed concerns about severe adverse events[9,17,19]. In the study by Lynd et al, adverse events and efficacy were equally important[20] and Poulos et al. only looked at milder side effects[13,14].

The efficacy of DMTs was presented in terms of slowing down disease progression and preventing relapses. Severe side effects were presented in choice sets of only eight studies[9,12,15,17,19-22]. Studies made very diverse choices in how milder side effects were included in the DCE.

Eight studies included the type of administration in their questionnaires[11,15-17,19-22]. However, in most studies these attributes combined the type of administration with its frequency, which makes it impossible to separate the effects of each on respondents' choices. Utz et al. and Arroyo did make the separation,[11,21] although Utz et al. only included the levels 'oral' and 'injection' in their type of medication attribute. Furthermore, the only other attributes in their DCE were the frequency of administration and the frequency of flu-like side effects. In this limited setting, they found that respondents had a preference for pills over injections, but that the frequency of administration could have a stronger impact.[11] Arroyo et al. found that patients had a strong preference for oral administration over injections and especially infusion, but also found that frequent administration could be an important burden.[21] The other studies focused on one particular type of administration[10,12-14], or did not mention this aspect[9].

One studied deviated from the other twelve with regards to its objective. Shingler et al. did not ask respondents to weigh benefits of treatment against the risks of side effects. Instead, they used detailed descriptions of injection devices in order to estimate respondents' preferences for their size, the visibility of needles and other practical characteristics of the administration of medication through injectables.[10] These were weighed against each other and against the speed of disease progression without taking relapses and side effects into account.

The attributes from all studies are presented in tables D2-D4. They are presented in five coherent categories. The number of attributes per study varied from three[11] to twenty-seven[23].

Finally, Kremer and al. asked respondents what attributes they considered the most important, but did not include attribute levels. They showed, for instance, that their respondents considered the mode of administration relatively unimportant, but not which mode they preferred.[23]

In summary, several categories of attributes were used in previous studies: type of administration; frequency of administration; efficacy with regards to progression and relapses; severe and non-severe side effects. However, none of the available studies used a sufficiently compressive set of attributes to cover all important aspects.

Table A1. Summary of earlier preference studies for DMTs

Study	Medication type	Sample size	Sponsor	Patient source	Data collection	Methods used to select attributes and levels	Preference elicitation method	Preference estimation method
Johnson 2009	Not specified	651	Elan	US patients (18+), members of online platforms and trial participants	Online	Literature, consultation with clinical experts, interviews with MS patients	DCE	mixed logit (Bayesian)
Shingler 2013	Injections	100	Merck Serono	UK patients (18+) currently on self-injecting medication	Online	Characteristics of existing devices and literature review	DCE	mixed logit
Utz, 2014	Injections, Orals	156	Biogen Idec	German patients (18+) from neurology department	Paper-based	Literature, discussion with neurologists	DCE	mixed logit (Bayesian)
Wicks 2015	Orals	319	Novartis	US patients (18+), oral-naïve members of online patient platform	Online	Trial literature and consultation with expert	DCE	mixed logit (Bayesian)
Wilson 2015	Injections, Orals, Infusions	50	Novartis	US patients (18+) from MS clinic	Paper-based	Review of clinical literature	DCE	mixed logit
Poulos 2016a	Injections	205	Biogen	US patients (18+) recruited by All Global	Online	Existing injectables, review of clinical studies, consultation with experts	DCE	mixed logit
Poulos 2016b	Injections	202	Biogen	German patients (18+)	Online	Existing injectables, review of clinical studies, consultation with experts	DCE	mixed logit
Lynd 2016	Injections, Orals, Infusions	193	Genzyme	Canadian RRMS and progressive MS patients (19+), members of panel	Online	Focus groups and interviews with patients	Best-worst scaling	mixed & latent class conditional logit

Garcia-Dominguez 2016	Injections, Orals	125	Merck Serono	Spanish patients (18+) contacted through patient associations	Online	Literature review and interviews with two MS specialists and three patients	DCE	mixed logit
Bottomley 2017	Injections, Orals, Infusions	350	Novartis	UK patients (18+) mild-moderate RRMS, on DMT	Online	Literature review and interviews with patients	DCE	mixed logit
Mansfield 2017	Injections, Orals, Infusions	301	Genentech	US patients (18+) recruited by All Global	Online	Characteristics of existing treatments and consultation with experts	DCE	mixed logit
Arroyo 2017	Injections, Orals, Infusions	221	Roche	Spanish RRMS patients (18+) in 17 MS units	Not reported	Literature review and clinical expertise	Conjoint (ranking)	OLS regression
Hincapie 2017	Injections, Orals, Infusions	129	n/a.	US patients (18+) who used DMT	Online	Literature review	Conjoint (0-100 rating scale)	random effects linear regression
Carlin 2017	Injections, Orals, Infusions	537	TEVA Pharmaceuticals	MS patients drawn from the enrollment files of a regional health plan in the US Midwest	Paper-based	Literature review and experts in field	DCE	multinomial probit
Kremer 2017	Not specified	185	n/a.	Dutch RRMS and CIS patients (18+) with experience with DMT choice	Online	Literature, interviews with professionals, focus groups	Best-worst scaling	mixed logit (Bayesian)

Table A2. Attributes used in previous preference studies of DMTs.

First author	**Johnson**	**Shingler**	**Utz**	**Wicks**	**Wilson**	**Poulos (USA)**	**Poulos (DE)**	**Lynd**	**Garcia-Doming.**	**Bottomley**	**Mansfield**	**Hincapie**	**Arroyo**	**Carlin**
Year of publication	**2009**	**2013**	**2014**	**2015**	**2015**	**2016**	**2016**	**2016**	**2016**	**2017**	**2017**	**2017**	**2017**	**2017**
Administration														
Route of administration			x										x	
Frequency of administration			x	x		x	x						x	
Route and frequency of administration					x			x	x	x	x	x		
Injection duration						x	x							

First dose monitoring				x										
Long-term benefits														
Reduction of risk of progression				x						x	x	x		
Postponement of progression	x				x	x	x	x	x				x	
Speed of progression		x												
Reduction of risk of changes in MRI				x										
Postponement of changes in MRI					x									
Improvement of symptoms					x			x						
Principal improvement (physical Feeling/function, mental/emotional)														x
Relapse risk														
Reduction of relapse risk				x						x		x		
Postponement of relapse					x			X	x		x		x	
Number of relapses	x					x	x							
Severity of relapses														x

Table A2. Attributes used in all previous DCE studies (continued)

First author	Johnson	Shingler	Utz	Wicks	Wilson	Poulos (USA)	Poulos (DE)	Lynd	Garcia-Doming.	Bottomley	Mansfield	Hincapie	Arroyo	Carlin
Year of publication	**2009**	**2013**	**2014**	**2015**	**2015**	**2016**	**2016**	**2016**	**2016**	**2017**	**2017**	**2017**	**2017**	**2017**
Side effects														
Side effects (mild/moderate/serious)									x				x	
Common side effects (head-/backache, diarrhea hair thinning/nausea)				x										
Most common type of side effects (none, cardiopulmonary, skin, flu, neurologic)														x
Severity of nausea, diarrhea, vomiting											x			
Flu symptoms, frequency			x											
Flu symptoms, frequency and duration						x	x				x			
Injection-site reactions						x	x				x			
Risk of serious infection										x	x			
Any discomfort									x					
Respiratory tract infection												x		
Minor side effects								x						
Common side effects (head-/muscle/ joint ache, mood/vision, lipoatrophy)					x									
Tolerability (patients quitting)				x										
Risk of serious fatigue										x				
Any risk of liver toxicity				x										
Risk of dying of liver failure	x													
Risk of kidney disorder														
Risk of hospitalization/severe disability				x								x		
Risk of dying or severe disability					x									
Risk of dying of PML	x									x				
Risk of (dying of) leukemia	x													
Serious adverse events								x						

Table A2. Attributes in all previous DCE studies (continued)

First author	Johnson	Shingler	Utz	Wicks	Wilson	Poulos (USA)	Poulos (DE)	Lynd	Garcia-Doming.	Bottomley	Mansfield	Hincapie	Arroyo	Carlin
Year of publication	**2009**	**2013**	**2014**	**2015**	**2015**	**2016**	**2016**	**2016**	**2016**	**2017**	**2017**	**2017**	**2017**	**2017**
Pregnancy														
Any risk of birth defects				x										
Other														
Frequency of treatment follow-up						x			x					
Ease of use (assembly)		x												
Comfort of use		x												
Reminders		x												
Needle visibility		x												
Size of device		x												
Time on market					x									
Out-off pocket costs													x	

Appendix B. Overview of the competitive landscape

Table B1 contains an overview of all included attributes and levels, including a detailed specification of all DMTs in terms of the selection made. When assigning the levels to different DMTs, several additional considerations (i.e. beyond those described in the main text) were taken into account. First, because none of the physicians that were interviewed differentiated between the various injections based on their efficacy, all injections were classified as being base-line "effective". Furthermore, even though a few physicians classified Dimethyl Fumarate (Tecfidera®) as being equally effective as injections, the majority of physicians communicated to their patients that Dimethyl Fumarate was more effective than injections in reducing the number of relapses. Since the latter was considered consistent with the available information from clinical trials (i.e. DEFINE and CONFIRM), it was incorporated in the competitive landscape accordingly.

Physicians also confirmed that infusions should be classified as being more effective than injections and oral medications in terms of disability progression, with the potential exception of Fingolimod (Gilenya®), which some physicians thought might be classified in an intermediate category. Based on the available clinical trials (FREEDOM 1, FREEDOM 2, and TRANSFORMS), however, there was no indication that Fingolimod was more effective at reducing disability progression (i.e. in contrast to the reduction in the number of relapses). Accordingly, all injections and oral medications were classified as being base-line "effective" at reducing disability progression whereas infusions were classified as being "quite effective".

With respect to pregnancy-related considerations, all interviewed physicians confirmed that individual risk-benefit trade-offs were required in order to decide whether to stop, switch, or temporarily lower the dosage of current treatments. This information was also conveyed to participating respondents in the survey. However, whereas some treatments should clearly not be used shortly before or during pregnancy (e.g. Aubagio®, Gilenya®, Novantrone®, and Lemtrada®), for others (e.g. Tecfidera® and Tysabri®), physicians appeared to be more heterogeneous in their advice to patients. Regardless, the official pregnancy label of each treatment was adhered to in the competitive landscape, with an "often recommended" waiting time for Tecfidera and Tysabri of 2 months (after discontinuing usage) to reflect that several physicians considered the official label to be too strict, particularly for patients with a more severe and/or active MS history.

Additionally, several related treatment characteristics were linked together, effectively resulting in a single attribute level. For example, the need to attend a vision exam after 3-4 months was linked to the risk of developing macular edema, the need to monitor for a low heart rate/heart failure was linked to the risk of heart failure, and all irreversible side effects associated with Novantrone® and Lemtrada® infusions were also linked (and included as mutually exclusive side effects in the DCE, meaning that a medication that had the Novantrone side effects could not simultaneously have the Lemtrada side effects as well). All of these constraints not only improved the efficiency of the DCE design but also the realism of the choice options because these levels are also intrinsically linked in real-life DMTs.

With respect to progressive multifocal leukoencephalopathy (PML) risk stratification, all DMTs associated with risk of PML had one single risk level, except for Natalizumab, which was represented with two PML risk levels: one that is relevant for a negative anti-John Cunningham virus (JCV) antibody status and one that relevant for a positive JCV status. More detailed risk stratification (e.g. based on previous immunosuppressant use and/or treatment duration) was briefly considered, but JCV antibody status was considered the main differential factor and a more refined stratification would substantially increase the complexity of the survey for participating patients. Moreover, the same survey had to be applicable for all patients, i.e. those with and without previous immunosuppressant use and those currently on Natalizumab and those who are not), which precluded a personalized risk stratification.The implemented risk probabilities were based on those published in the New England Journal of Medicine: 0.09 cases or per 1000 (translated into 1:10,000 for patients) versus 3.87 per 10.000 (translated into 1:250 for patients), see Bloomgren et al. (2012). As with all other incidence discriptions, this ensured that patients could place the included adverse events in the correct perspective.

The final step in completing the competitive landscape was the inclusion of Cladribine tablets, which were recently approved by the EMA. Based on the available clinical trials (CLARITY and CLARITY EXTENSION), all important side effects and defining characteristics were included. This initial selection was then verified by physicians from EMD Serono to provide an accurate and complete description of the treatment profile. In addition, based on the confirmatory interviews, an extra level was included that reflected the perceived c.q. potential uncertainty about the long-term side effects of Cladribine tablets, a concern which was raised by several of the physicians in the confirmatory sessions.

Table B1. Competitive landscape in terms of included attributes and levels

	Attributes and levels	Glatiramer acetate * (Copaxone® 20 mg/ml)	Glatiramer acetate (Copaxone® 40 mg/ml)	Interferon beta-1a (Rebif®)	Interferon beta-1a (Avonex ® self-mixed)	Interferon beta-1a (Avonex® pre-mixed)	Interferon beta-1b (Betaferon®)	Peginterferon beta-1a (Plegridy®)	Dimethyl fumarate (Tecfidera®)	Teriflunomide (Aubagio®)	Fingolimod (Gilenya®)	Cladribine (Mavenclad®)	Natalizumab (Tysabri®)	Mitoxantrone (Novantrone®)	Alemtuzumab (Lemtrada®)
1. Administration	**1. Mode of administration**														
	injection	x	x	x	x	x	x	x					x	x	x
	oral								x	x	x	x			
	infusion														
	2. Frequency of administration														
	twice per day								x						
	once per day	x								x	x				
	three/four times per week **		x	x			x								
	once per week				x	x									
	once per 2 weeks							x							
	once per month												x		
	once per 3 months													x	
	twenty days per 4 years ***											x			
	eight days per 4 years ****														x
	3. Place of administration														
	in the hospital												x	x	x
	In your own clinic *****												x		
	4. First dosage														
	first dosage requires 6 hours monitoring in your clinic *(monitoring for heart problems/low heart rate)*										x				
	5. Type of injection														
	subcutaneous	x	x	x			x	x							
	intramuscular				x	x									

6. Preparation of injection														
pre-mixed (ready to use)	x	x	x		x		x							
self-mixed				x		x								
7. Storage at room temperature														
up to 1 week					x		x							
up to 1 month	x	x	x											
up to 2 years				x		x								

Table B1. Competitive landscape *(continued)*

	Attributes and levels	Glatiramer acetate * (Copaxone® 20 mg/ml)	Glatiramer acetate (Copaxone® 40 mg/ml)	Interferon beta-1a (Rebif®)	Interferon beta-1a (Avonex ® self-mixed)	Interferon beta-1a (Avonex® pre-mixed)	Interferon beta-1b (Betaferon®)	Peginterferon beta-1a (Plegridy®)	Dimethyl fumarate (Tecfidera®)	Teriflunomide (Aubagio®)	Fingolimod (Gilenya®)	Cladribine (Mavenclad®)	Natalizumab (Tysabri®)	Mitoxantrone (Novantrone®)	Alemtuzumab (Lemtrada®)
2. Efficacy	**8. Number of relapses**														
	<u>effective</u> at reducing the number of relapses *(approx.<u>33%</u> fewer relapses compared to taking no MS medication)*	x	x	x	x	x	x	x		x					
	<u>quite effective</u> at reducing the number of relapses *(approx.<u>44%</u> fewer relapses compared to taking no MS medication)*								x						
	<u>very effective</u> at reducing the number of relapses *(approx.<u>55%</u> fewer relapses compared to taking no MS medication)*										x	x			
	<u>highly effective</u> at reducing the number of relapses *(approx.<u>66%</u> fewer relapses compared to taking no MS medication)*												x	x	x
	9. Disease progression														
	<u>effective</u> at reducing disability progression *(approx.<u>33%</u> less disability risk compared to taking no MS medication)*	x	x	x	x	x	x	x	x	x	x	x			
	<u>quite effective</u> at reducing disability progression *(approx.<u>44%</u> less disability risk compared to taking no MS medication)*												x	x	x

3. Side effects	**10. immediate side effects**													
	<u>seldom</u> flu-like symptoms *(less than <u>1</u> out of 100 patients)*	**x**	**x**											
	<u>high probability</u> of flu-like symptoms, with symptoms typically lasting 1 day *(approx. <u>50</u> out of 100 patients)*			**x**	**x**	**x**	**x**							
	<u>high probability</u> of flu-like symptoms, with symptoms typically lasting 2 days *(approx. <u>50</u> out of 100 patients)*							**x**						
	<u>sometimes</u> flushes or a burning sensation *(approx. <u>10</u> out of 100 patients - lasting a few minutes)*	**x**	**x**											
	<u>sometimes</u> gastrointestinal upset *(diarrhea, abdominal pain, nausea - approx. <u>10</u> out of 100 patients)*											**x**		
	<u>often</u> some gastrointestinal upset *(diarrhea, abdominal pain, nausea - approx. <u>20</u> out of 100 patients)*										**x**			
	<u>high probability</u> of gastrointestinal upset *(diarrhea, abdominal pain, nausea, vomiting - approx. <u>50</u> out of 100 patients)*									**x**				
	<u>seldom</u> heart rate/ heart problems *(less than <u>1</u> out of 100 patients)*											**x**		

Table B1. Competitive landscape *(continued)*

	Attributes and levels	Glatiramer acetate * (Copaxone® 20 mg/ml)	Glatiramer acetate (Copaxone® 40 mg/ml)	Interferon beta-1a (Rebif®)	Interferon beta-1a (Avonex ® self-mixed)	Interferon beta-1a (Avonex® pre-mixed)	Interferon beta-1b (Betaferon®)	Peginterferon beta-1a (Plegridy®)		Dimethyl fumarate (Tecfidera®)	Teriflunomide (Aubagio®)	Fingolimod (Gilenya®)	Cladribine (Mavenclad®)		Natalizumab (Tysabri®)	Mitoxantrone (Novantrone®)	Alemtuzumab (Lemtrada®)
3. Side effects	**10. Immediate side effects *(continued)***																
	sometimes a skin rash or shingles (approx. 10 out of 100 patients)												x				
	sometimes infusion side effects (headache, skin rash, nausea, fever, etc. - approx. 10 out of 100 patients)														x		
	often infusion side effects (headache, skin rash, nausea, fever, etc. - approx. 20 out of 100 patients)															x	
	high probability of infusion side effects (headache, skin rash, nausea, fever, etc. - approx. 50 out of 100 patients))																x
	11. Reversible side effects																
	sometimes an increase in feeling down or depressed (approx. 10 out of 100 patients - mostly patients with a prior history)			x	x	x	x	x									
	seldom skin problems (less than 1 out of 100 patients)				x	x											
	often skin problems (approx. 20 out of 100 patients)			x			x										
	high probability of skin problems (approx. 50 out of 100 patients)	x	x					x									
	increased risk of serious infections *(as long as medication is taken)*											x			x	x	
	increased risk of serious infections *(mainly within the first 4 months)*												x				x
	high probability of flushes (approx. 50 out of 100 patients)									x							
	sometimes some hair loss/thinning (approx. 10 out of 100 patients)												x				
	often some hair loss/thinning (approx. 20 out of 100 patients)										x					x	
	seldom vision problems (macular edema) (less than 1 out of 100 patients)											x					

	12. Irreversible side effects														
	<u>sometimes</u> indentations in the skin (lipoatrophy) *(approx. <u>10</u> out of 100 patients)*	**x**	**x**												
	no indication of an increased risk of PML *(risk of death: 1 out of 200,000 patients)*									**x**		**x**			

Table B1. Competitive landscape *(continued)*

	Attributes and levels	Glatiramer acetate * (Copaxone® 20 mg/ml)	Glatiramer acetate (Copaxone® 40 mg/ml)	Interferon beta-1a (Rebif®)	Interferon beta-1a (Avonex ® self-mixed)	Interferon beta-1a (Avonex® pre-mixed)	Interferon beta-1b (Betaferon®)	Peginterferon beta-1a (Plegridy®)	Dimethyl fumarate (Tecfidera®)	Teriflunomide (Aubagio®)	Fingolimod (Gilenya®)	Cladribine (Mavenclad®)	Natalizumab (Tysabri®)	Mitoxantrone (Novantrone®)	Alemtuzumab (Lemtrada®)
3. Side effects	**12. Irreversible side effects *(continued)***														
	<u>very small</u> probability of dying from brain infection (PML) *(risk of death: 1 out of 30,000 patients)*								**x**		**x**				
	<u>small</u> probability of dying from brain infection (PML) *(risk of death: 1 out of 10,000 patients)*												**x**		
	<u>high probability</u> of dying from brain infection (PML) ****** *(risk of death: 1 out of 250 patients)*												**(x)**		
	<u>severe</u> heart problems *(infusion only usable for a few years, probability of serious heart problems: 1 out of 200 patients)*													**x**	
	<u>high probability</u> of leukemia *(approx: 1 out of 250 patients)*													**x**	
	<u>increased risk</u> of several other types of cancer													**x**	
	<u>high probability</u> of an overactive or underactive thyroid *(approx. 33 out of 100 patients)*														**x**
	<u>seldom</u> severe thyroid disorders *(less than <u>1</u> out of 100 patients)*														**x**

<u>seldom</u> blood clothing disorder *(less than <u>1</u> out of 100 patients)*																**x**
<u>seldom</u> kidney problems *(less than <u>1</u> out of 100 patients)*																**x**
13. Monitoring for severe side effects ***(such as liver failure, kidney failure, thyroid problems, and low white blood cell counts)***																
once a vision exam after 3-4 months (eye test), and …											**x**					
first 6 months: once every 2 weeks (blood test), and then …										**x**						
first 6 months: once every 2 months (blood test), and then … *									**x**							
once every 6 months (blood test)	**x**	**x**														
once every 3 months (blood test)			**x**	**x**	**x**	**x**	**x**		**x**	**x**	**x**	**x**		**x**	**x**	
once every month (blood test) for at least 4 years																**x**
twice every year heart exam - (ultrasound)															**x**	
still some uncertainty about long-term side effects ******												**(x)**				

Table B1. Competitive landscape *(continued)*

	Attributes and levels	Glatiramer acetate * (Copaxone® 20 mg/ml)	Glatiramer acetate (Copaxone® 40 mg/ml)	Interferon beta-1a (Rebif®)	Interferon beta-1a (Avonex ® self-mixed)	Interferon beta-1a (Avonex® pre-mixed)	Interferon beta-1b (Betaferon®)	Peginterferon beta-1a (Plegridy®)		Dimethyl fumarate (Tecfidera®)	Teriflunomide (Aubagio®)	Fingolimod (Gilenya®)	Cladribine (Mavenclad®)		Natalizumab (Tysabri®)	Mitoxantrone (Novantrone®)	Alemtuzumab (Lemtrada®)
4. Pregnancy	**14. Birth defects**																
	safe to use before and relatively safe during pregnancy	x	x														
	safe to use before but uncertain during pregnancy *(when pregnant, discuss medication usage with your physician)*			x	x	x	x	x									
	relatively safe before but not safe during pregnancy									x					x		
	not safe before or during pregnancy										x	x	x			x	x
	15. Washout																
	washout required (11 days charcoal pills)										x						
	16. Waiting time before pregnancy																
	no waiting time after last medication use	x	x	x	x	x	x	x									
	2 months waiting time after last dosage (often recommended)									x					x		
	3 months waiting time after last dosage										x	x					
	6 months waiting time after last dosage															x	
	6 months waiting time after 2nd course												x				x

** Note: after pilot testing and confirmatory sessions not included in the DCE*
*** the levels "once every other day" and "three times per week" were compressed into one level "three/four times per week"*
**** generally consisting of four courses, two 5 day-courses one month apart in years 1 and 2, and none in years 3 and 4*
***** generally consisting of two courses, one 5-day course in year 1, one 3-day course in year 2, and none in years 3 and 4*
******only in Germany ****** only optionally included in sensitivity analyses; PML risk based on Bloomgren et al,. N Engl J Med (2012)*

DCE, discrete choice experiment; MS, multiple sclerosis; PML, progressive multifocal leukoencephalopathy

Table B2. EU regulatory approval (years)

	EME year of approval
Glatiramer acetate (Copaxone®)	2002
Interferon beta-1a (Rebif®)	1998
Interferon beta-1a (Avonex®)	1997
Interferon beta-1b (Betaferon®)	1995
Peginterferon beta-1a (Plegridy®)	2014
Dimethyl fumarate (Tecfidera®)	2014
Teriflunomide (Aubagio®)	2013
[illegible] (Gilenya®)	2011
Cladribine (Mavenclad®)	2017
Natalizumab (Tysabri®)	2006
Mitoxantrone * (Novantrone®)	1998
Alemtuzumab (Lemtrada®)	2013
Ocrelizumab (Ocrevus®)	2018

** Note: generic since 2006*

Appendix C. Example DCE questions

Figure C1. Example DCE question in section 1 (i.e. injections)

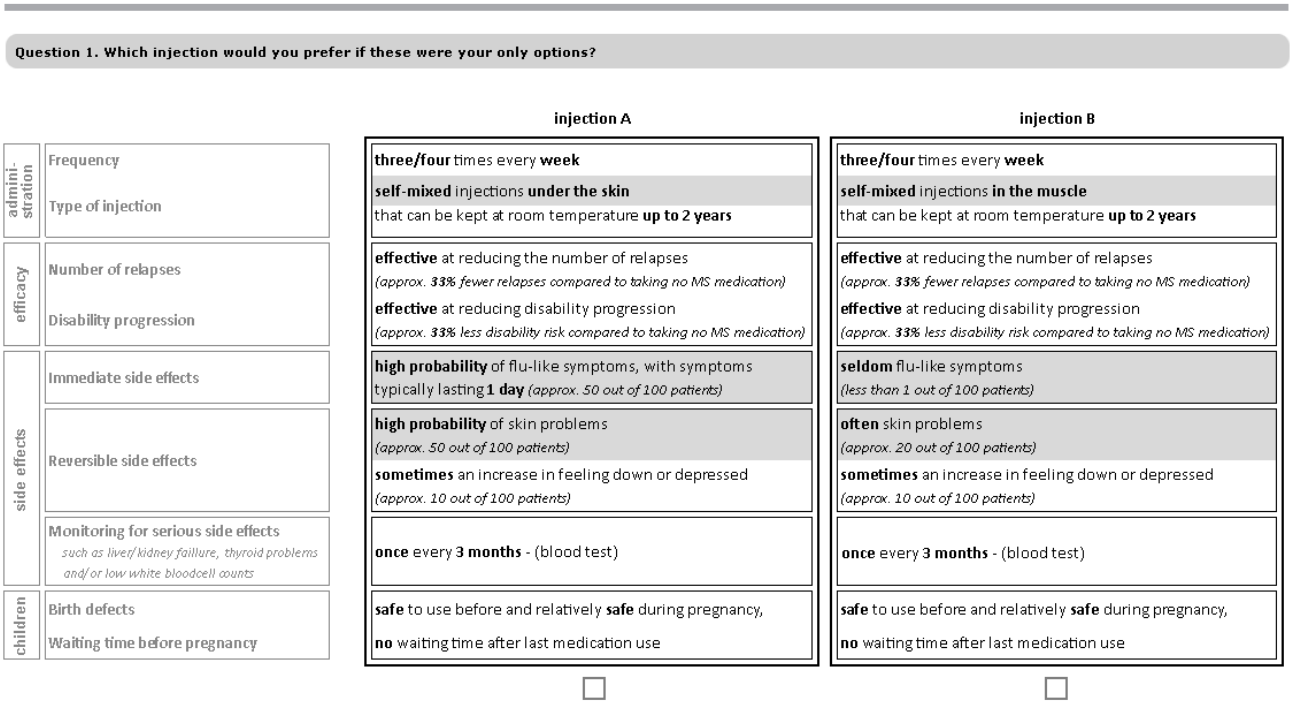


Figure C2. Example DCE question in section 2 (i.e. infusions)

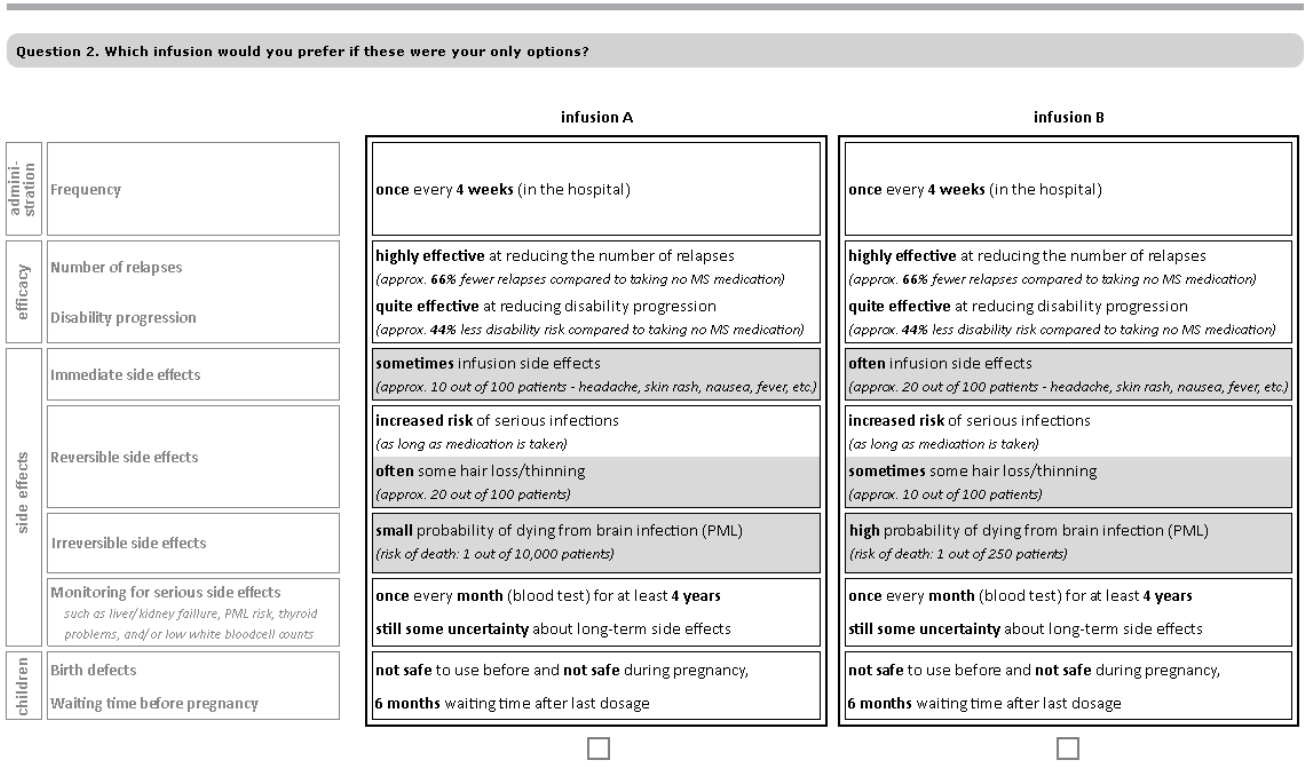


Figure C3. Example DCE question in section 3 (i.e. orals)

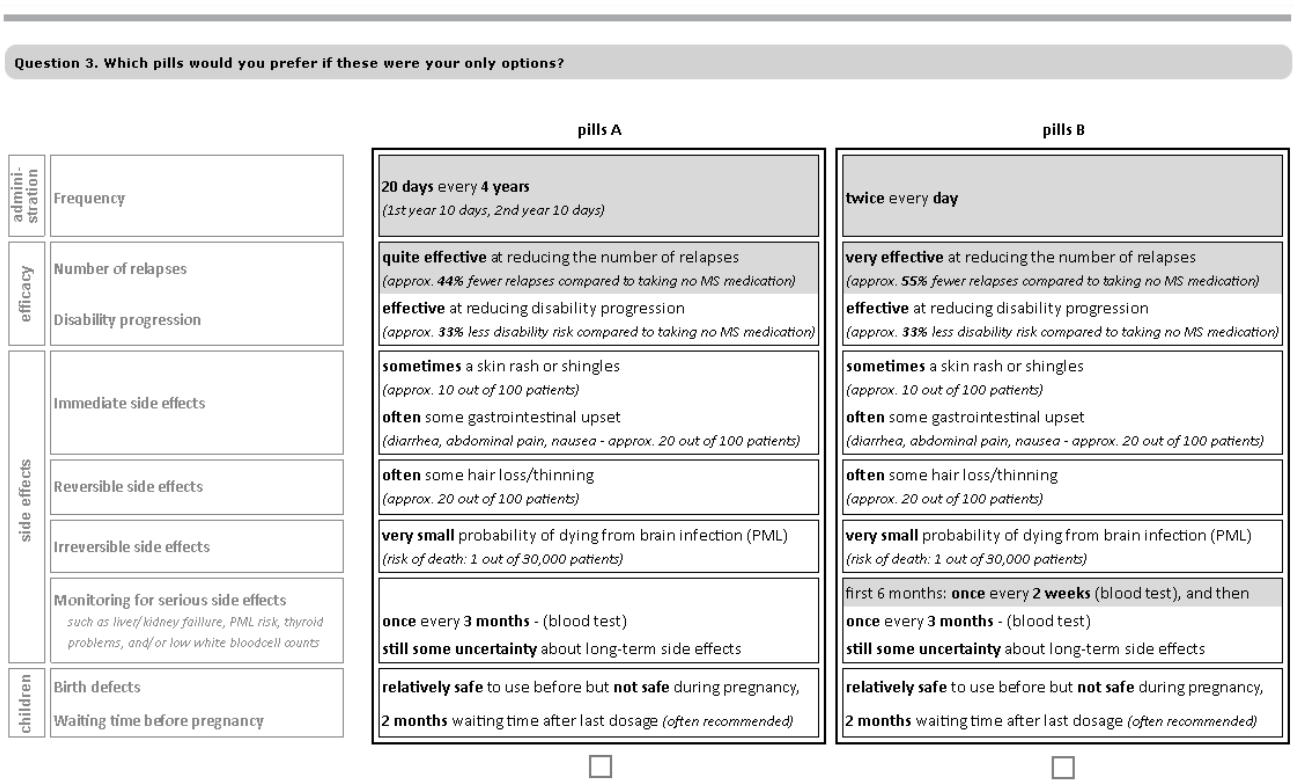


Figure C4. Example DCE question in section 4 (i.e. all medication types combined)

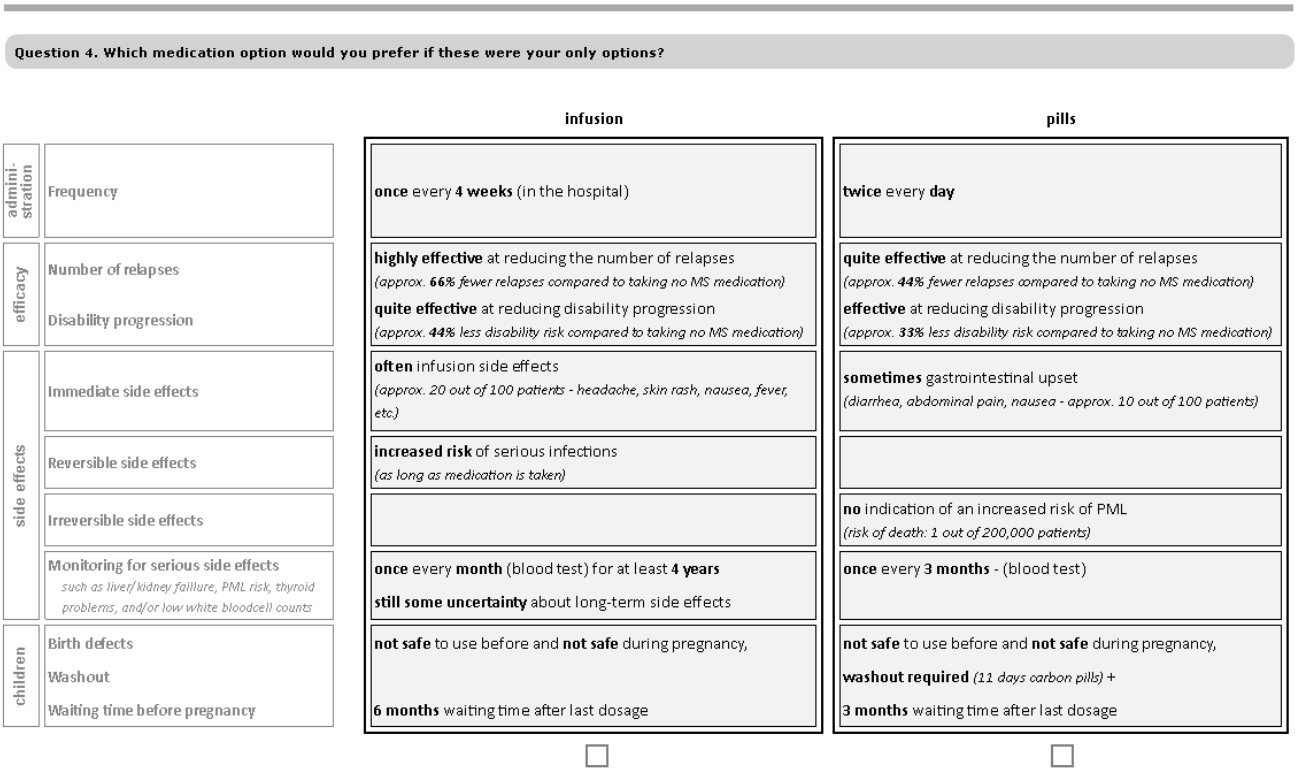
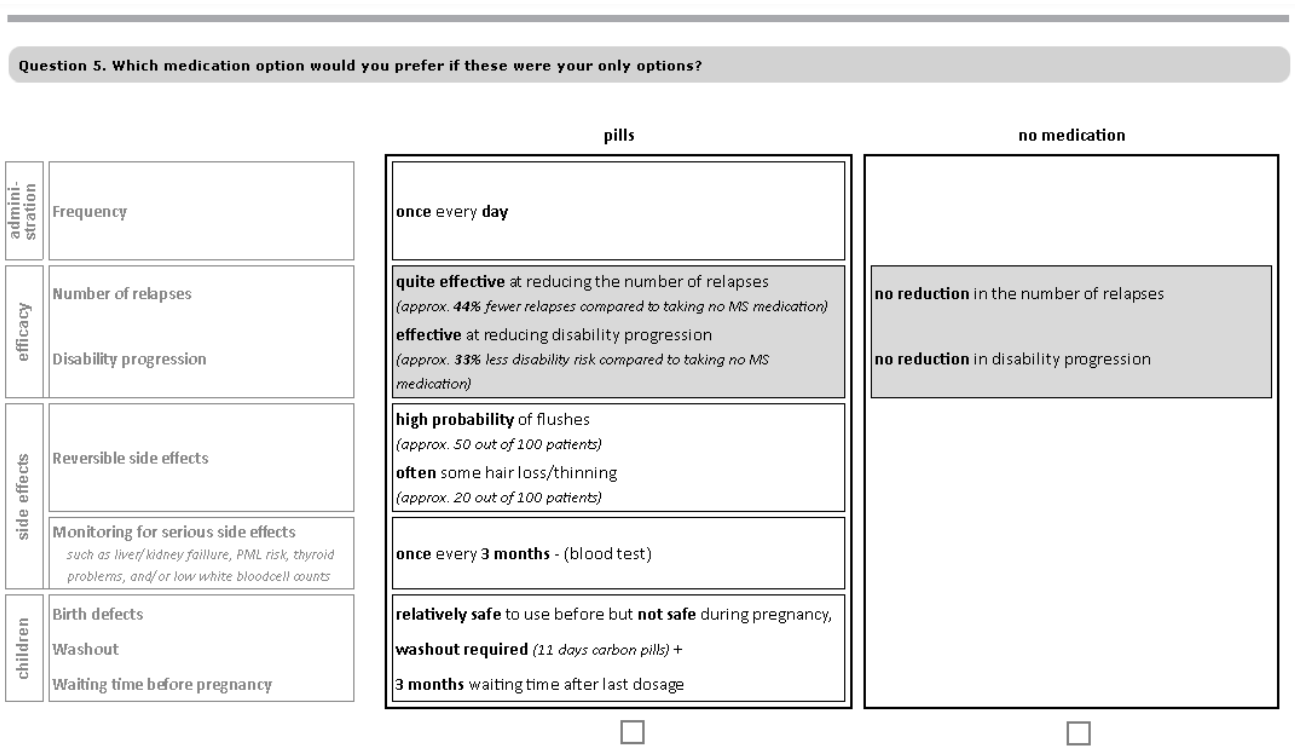


Figure C5. Example DCE question in section 4 (i.e. all medication types combined, including "no medication" option)



Appendix D. MIXL model estimations (including OpenBUGS code)

In a standard MIXL model, the overall utility (U_{ijt}) that respondent i obtains from alternative j in choice task t is derived from a linear additive utility function

$$U_{ijt} = \sum_{k=1}^{K} \beta_{ik}.X_{ijtk} + \varepsilon_{ijt}\,, \quad i = 1,..,I; j = 1,..,J; t = 1,..,T \tag{1}$$

with X_{ijtk} denoting the explanatory variables (i.e. in our case the dummy-coded DMT characteristics), β_{ik} denoting the preference parameters to be estimated, and ε_{ijt} referring to the independently and identically (IDD) Extreme Value I distributed error term.

Conform random utility theory, each respondent is presumed to choose the alternative j that provides the highest utility. Accordingly, the probability $P_{ijt}$of respondent i choosing alternative j in choice task t is calculated using a standard softmax function:

$$P_{ijt} = \frac{\varphi_{ikt}}{\sum_{k=1}^{J} \varphi_{ikt}} \tag{2}$$

with

$$\varphi_{ijt} = \exp\left(\sum_{k=1}^{K} \beta_{ik} * X_{ijtk}\right). \tag{3}$$

The observed choices are represented by the response vector

$$Y_{it} \in \{1,..,J\}. \tag{4}$$

Hence the log-likelihood (LL) of respondent i in choice task k is:

$$LL = \log\left(P_{i(Y_{it})t}\right) \tag{5}$$

Following standard MIXL assumptions, the joint distribution of the respondents' β-coefficients is assumed multivariate normal with mean vector μ and precision (i.e. inverse covariance) matrix T, i.e.

$$\beta_i \sim MVN(\mu, T). \tag{6}$$

The model coefficients in our paper were fitted using Bayesian Markov chain Monte Carlo (MCMC) methods, which entails the selection of prior distributions for the unknown model parameters and updating these via the likelihood of the observed data. Uninformative multivariate normal priors were used for the mean population preference parameters:

$$\mu \sim MVN(0, I/100) \tag{7}$$

with I denoting an identity matrix of size K, and a Wishart prior with an identity scale matrix and with K degrees of freedom (i.e. to obtain a proper Wishart prior) was used for the precision matrix:

$$T \sim Wishart\,(I, K). \tag{8}$$

Standard Gibbs update steps were used to update μ and Σ, and Metropolis-within-Gibbs update steps were used to update the β parameters. All estimations used 200,000 MCMC draws to let two chains converge from divergent starting points, with the initial 100,000 discarded as burn-in iterations. Convergence was evaluated based on a visual inspection of the chains and the diagnostics as implemented in the OpenBUGS software, which

was used for the model estimations. To improve numerical stability and reduce the runtime of the models, a custom softmax function was implemented, which is available upon request from the first author.

OpenBUGS code

```
model {

  # i = 1,.., N respondents
  # t = 1,.., T choice tasks
  # a = 1,.., A alternatives per choice task
  # k = 1,.., K beta parameters

# Likelihood
for (i in 1:N){
 for (t in 1:T){
  # requires X to be sorted so that option 1 was chosen
  Y[i,t] <- 1
  Y[i,t] ~ dcat(prob[i, t,1:A])
}}

# Probability calculations (using custom-implemented softmax function)
for (i in 1:N){
 for (t in 1:T){
  prob[i,t,1:A] <- softmax(X[i,1,t,], X[i,2,t,],beta[i,])
}}

# Priors
for (i in 1:N){ beta[i,1:K] ~ dmnorm(mu_beta[], tau_beta[,]) }
mu_beta[1:K]  ~ dmnorm(zeros[], precision[,])
tau_beta[1:K,1:K]  ~ dwish( identityScale[,], K)

# Hyperpriors
for (k in 1:K){
 zeros[k] <- 0
 for (kk in 1:K){
   precision[k,kk] <- equals(k,kk)/100
   identityScale[k,kk] <- equals(k,kk)
}}}

# Monitor population SD
covar[1:K,1:K] <- inverse(tau_beta[,])
for (k in 1:K){ SD[k] <- sqrt(covar[k,k]) }

# R-squared
LL_random <- T*log(0.5)
for (i in 1:N){
   # requires X to be sorted so that option 1 was chosen
   for (t in 1:T){ LL[i,t] <- log( prob[n,t,1]) }
   LL_resp[i] <- sum(LL[i,1:T])
   Rsq[i] <- (LL_resp[i] - LL_random)/-LL_random
}}
```

Appendix E. MIXL estimates for the United Kingdom and Germany *

Table E1. MIXL estimates – injections

	United Kingdom				Germany			
	Population mean		**Population SD**		**Population mean**		**Population SD**	
INJECTION LEVELS	Est.	95% CI	Est.	95% CI	Est.	95% CI	Est.	95% CI
1. administration								
no medication *(base-case)*								
Injection	3.44	[2.86 – 4.00]	2.03	[1.60 - 2.67]	2.61	[2.2 - 3.03]	0.89	[0.53 - 1.34]
3 to 4 times per week *(base-case)*								
once per week	0.71	[0.57 - 0.84]	0.68	[0.51 - 0.9]	0.70	[0.51 - 0.90]	0.60	[0.40 - 0.82]
once per 2 weeks	1.01	[0.84 - 1.17]	0.91	[0.71 - 1.15]	1.03	[0.80 - 1.25]	0.74	[0.49 - 1.01]
pre-mixed *(base-case)*								
self-mixed	-0.39	[-0.52 - -0.26]	0.53	[0.40 - 0.69]	-0.27	[-0.45 - -0.08]	0.52	[0.35 - 0.72]
under the skin *(base-case)*								
into the musscle	-0.55	[-0.70 - -0.39]	0.93	[0.74 - 1.11]	-0.74	[-0.93 - -0.55]	0.76	[0.55 – 1.00]
store at room temp - 1 week *(base-case)*								
store at room temp - 1 month	0.08	[-0.03 - 0.20]	0.48	[0.35 - 0.62]	0.01	[-0.17 - 0.17]	0.48	[0.33 - 0.64]
store at room temp - 2 years *(linked to self-mixed)*								
2. efficacy								
33% relapse reduction *(base-case)*								
33% progression reduction *(base-case)*								
3. side effects								
seldom flu *(base-case)*								
high flu	-1.23	[-1.42 - -1.03]	1.12	[0.87 - 1.33]	-1.61	[-1.85 - -1.35]	0.65	[0.43 - 0.91]
high severe flu	-1.58	[-1.78 - -1.38]	1.33	[1.08 - 1.59]	-1.46	[-1.71 - -1.20]	0.77	[0.53 - 1.03]
no flush/burning *(base-case)*								
flush/burning	-0.61	[-0.74 - -0.46]	0.53	[0.39 - 0.69]	-0.75	[-0.92 - -0.58]	0.44	[0.31 - 0.61]
seldom skin problems *(base case)*								
often skin problems	-0.93	[-1.11 - -0.73]	0.51	[0.36 - 0.67]	-0.99	[-1.21 - -0.78]	0.55	[0.38 - 0.76]
high probability of skin problems	-1.88	[-2.10 - -1.64]	1.18	[0.90 - 1.42]	-1.22	[-1.42 - -1.00]	0.66	[0.45 - 0.89]
no increased risk of depression *(base case)*								
increased risk of depression	-1.33	[-1.50 - -1.15]	1.05	[0.83 - 1.27]	-1.17	[-1.36 - -0.98]	0.57	[0.38 - 0.78]
no lipoatrophy *(base-case)*								
sometimes lipoatrophy	-0.71	[-0.94 - -0.47]	1.72	[1.41 – 2.00]	-0.79	[-1.06 - -0.51]	1.18	[0.89 - 1.52]
once every 6 months – blood test *(linked to relatively safe during*								
once every 3 months – blood test *(linked to uncertain during pregnancy)*								
4. pregnancy considerations								
save before & relatively safe during *(base*								
safe before & uncertain during	-0.36	[-0.50 - -0.22]	0.43	[0.31 - 0.58]	-0.48	[-0.71 - -0.27]	0.50	[0.33 - 0.73]
no waiting time after last dose *(base-case)*								

Table E2. MIXL estimates – orals

	United Kingdom				Germany			
	Population mean		**Population SD**		**Population mean**		**Population SD**	
ORAL LEVELS	Est.	95% CI	Est.	95% CI	Est.	95% CI	Est.	95% CI
1. administration								
no medication *(base-case)*								
oral	5.31	[4.60 - 5.93]	1.94	[1.35 - 2.61]	3.94	[3.50 - 4.45]	0.83	[0.49 - 1.29]
twice every day *(base-case)*								
once every day	-0.09	[-0.21 - 0.02]	0.40	[0.30 - 0.52]	0.11	[-0.05 - 0.28]	0.47	[0.33 - 0.63]
20 days per 4 years	0.28	[0.13 - 0.42]	0.78	[0.60 - 0.98]	0.37	[0.15 - 0.59]	1.02	[0.78 - 1.28]
no monitoring during first dosage								
six hours monitoring *(linked to heart problems)*								
2. efficacy								
33% relapse reduction *(base-case)*								
44% relapse reduction	0.47	[0.36 - 0.59]	0.60	[0.47 - 0.74]	0.51	[0.32 - 0.70]	0.52	[0.35 - 0.73]
55% relapse reduction	1.40	[1.23 - 1.58]	1.05	[0.86 - 1.28]	0.89	[0.64 - 1.13]	0.91	[0.68 - 1.17]
33% progression reduction *(base-case)*								
3. side effects								
no rash/shingles *(base-case)*								
rash/shingles	-0.55	[-0.68 - -0.42]	0.48	[0.34 - 0.66]	-0.59	[-0.78 - -0.38]	0.45	[0.30 - 0.63]
no gastrointestinal upset *(base-case)*								
sometimes gastrointestinal upset	-0.38	[-0.53 - -0.23]	0.66	[0.48 - 0.83]	-0.50	[-0.72 - -0.3]	0.47	[0.31 - 0.67]
often gastrointestinal upset	-0.89	[-1.10 - -0.70]	0.86	[0.67 - 1.08]	-1.26	[-1.53 - -0.98]	0.51	[0.32 - 0.74]
high gastrointestinal upset	-1.96	[-2.21 - -1.73]	1.60	[1.37 - 1.88]	-1.34	[-1.60 - -1.09]	0.67	[0.45 - 0.9]
no heart problems *(base-case)*								
heart problems	-0.59	[-0.72 - -0.47]	0.58	[0.43 - 0.73]	-0.73	[-0.91 - -0.55]	0.60	[0.41 - 0.8]
no increased risk serious infections *(base-*								
increased risk infections - as long as taken	-1.16	[-1.35 - -0.98]	0.94	[0.71 - 1.15]	-1.08	[-1.36 - -0.83]	0.73	[0.52 - 0.94]
increased risk infections - mainly first 4	-1.43	[-1.64 - -1.25]	1.01	[0.78 - 1.23]	-1.16	[-1.45 - -0.91]	0.70	[0.5 - 0.96]
no flushes (base-case)								
high probability of flushes	-0.50	[-0.63 - -0.36]	0.69	[0.56 - 0.83]	-0.53	[-0.69 - -0.37]	0.61	[0.44 - 0.81]
no hair thinning/loss *(base-case)*								
sometimes some hair thinning/loss	-0.45	[-0.57 - -0.33]	0.50	[0.38 - 0.64]	-0.19	[-0.35 - -0.03]	0.41	[0.29 - 0.55]
often some hair thinning/loss	-0.69	[-0.82 - -0.55]	0.54	[0.40 - 0.68]	-0.68	[-0.86 - -0.49]	0.50	[0.35 - 0.67]
no vision problems *(base-case)*								
seldom macular edema	-0.76	[-0.89 - -0.63]	0.77	[0.62 - 0.96]	-0.92	[-1.10 - -0.72]	0.46	[0.30 - 0.65]
no indication of PML risk *(base-case)*								
very small probability of PML	-1.51	[-1.72 - -1.32]	1.38	[1.17 - 1.60]	-1.55	[-1.80 - -1.31]	0.78	[0.56 - 1.01]
no additional monitoring needed (base-								
once a vision exam after 3-4 months (linked to macular edema)								
initially once every 2 weeks monitoring	-0.24	[-0.36 - -0.13]	0.37	[0.27 - 0.48]	-0.19	[-0.34 - -0.02]	0.42	[0.29 - 0.57]
no uncertainty about long-term side effects								
still some uncertainty	-0.67	[-0.79 - -0.56]	0.45	[0.33 - 0.58]	-0.52	[-0.70 - -0.32]	0.45	[0.31 - 0.62]
4. pregnancy considerations								
once every 3 months – blood test *(base*								
relatively safe before & not during *(base-*	-0.51	[-0.68 - -0.33]	0.48	[0.34 - 0.64]	-0.53	[-0.80 - -0.29]	0.55	[0.35 - 0.77]
not safe before or during	-0.75	[-0.95 - -0.54]	0.63	[0.46 - 0.83]	-0.82	[-1.12 - -0.55]	0.67	[0.45 - 0.91]
no washout required *(base-case)*								
Washout required	-0.14	[-0.27 - 0.01]	0.56	[0.42 - 0.70]	-0.15	[-0.36 - 0.07]	0.63	[0.44 - 0.84]
2 month waiting time *(linked to relatively safe during pregnancy)*								
3 months waiting time *(base-case not safe before or during*								
6 months waiting time after last dosage	-0.02	[-0.12 - 0.07]	0.41	[0.31 - 0.52]	0.00	[-0.15 - 0.16]	0.42	[0.30 - 0.57]

Table E3. MIXL estimates – infusions

	United Kingdom				Germany			
	Population mean		Population SD		Population mean		Population SD	
ORAL LEVELS	Est.	95% CI	Est.	95% CI	Est.	95% CI	Est.	95% CI
1. administration								
no medication *(base-case)*								
infusion	6.84	[6.01 - 7.55]	3.25	[2.39 - 4.15]	4.86	[4.34 - 5.51]	1.69	[1.18 - 2.22]
once per 4 weeks *(base-case)*								
once per 12 weeks	0.51	[0.39 - 0.62]	0.40	[0.29 - 0.54]	0.44	[0.26 - 0.61]	0.49	[0.34 - 0.65]
8 days per 4 years	0.99	[0.86 - 1.13]	0.79	[0.63 - 0.97]	0.60	[0.40 - 0.80]	0.83	[0.61 - 1.07]
in your own clinic *(base-case)*								
in the hospital					-0.38	[-0.53 - -0.22]	0.51	[0.34 - 0.69]
2. efficacy								
66% relapse reduction *(base-case)*								
44% progression reduction *(base-case)*								
3. side effects								
sometimes infusion side effects *(base-case)*								
often infusion side effects	-0.31	[-0.42 - -0.20]	0.33	[0.25 - 0.43]	0.02	[-0.14 - 0.18]	0.42	[0.29 - 0.58]
high probability of infusion side effects	-0.64	[-0.76 - -0.51]	0.51	[0.37 - 0.65]	-0.54	[-0.72 - -0.35]	0.43	[0.29 - 0.59]
no increased risk of serious infections								
increased risk infections – mainly first 4	-1.43	[-1.64 - -1.25]	1.01	[0.78 - 1.23]	-1.16	[-1.45 - -0.91]	0.70	[0.50 - 0.96]
no hair thinning/loss *(base-case)*								
often some hair thinning/loss	-0.69	[-0.82 - -0.55]	0.54	[0.40 - 0.68]	-0.68	[-0.86 - -0.49]	0.50	[0.35 - 0.67]
no PML risk *(base-case)*								
small probability of PML	-1.30	[-1.47 - -1.14]	1.16	[0.95 - 1.38]	-0.78	[-1.00 - -0.56]	0.72	[0.51 - 0.95]
high probability of PML	-4.20	[-4.53 - -3.87]	1.94	[1.57 - 2.32]	-3.99	[-4.39 - -3.47]	0.74	[0.47 - 1.06]
no other side effects *(base-case)*								
Lemtrada profile	-1.90	[-2.10 - -1.71]	0.89	[0.67 - 1.15]	-1.59	[-1.87 - -1.28]	0.54	[0.35 - 0.77]
Novantrone profile	-3.87	[-4.22 - -3.53]	2.10	[1.60 - 2.62]	-4.25	[-4.69 - -3.72]	1.07	[0.68 - 1.44]
once every 3 months – blood test *(base*								
once every month – blood test	0.00	[-0.11 - 0.11]	0.39	[0.29 - 0.51]	-0.27	[-0.43 - -0.12]	0.37	[0.27 - 0.5]
no uncertainty about long-term side effects								
still some uncertainty about long-term side effects	-0.67	[-0.79 - -0.56]	0.45	[0.33 - 0.58]	-0.52	[-0.70 - -0.32]	0.45	[0.31 - 0.62]
4. pregnancy considerations								
rel. safe before & not during *(base-case)*	-0.51	[-0.68 - -0.33]	0.48	[0.34 - 0.64]	-0.53	[-0.80 - -0.29]	0.55	[0.35 - 0.77]
not safe before or during	-0.75	[-0.95 - -0.54]	0.63	[0.46 - 0.83]	-0.82	[-1.12 - -0.55]	0.67	[0.45 - 0.91]
2 month waiting time *(linked to relatively safe before pregnancy*								
6 months waiting time after last dosage *(linked to not safe before or during*	-0.02	[-0.12 - 0.07]	0.41	[0.31 - 0.52]	0.00	[-0.15 - 0.16]	0.42	[0.30 - 0.57]

** Mean posterior estimates with 95% credible intervals in parenthesis. N=799 UK respondents N=363 German respondents. Note that the UK and German results are on a different latent scale; only the signs and relative magnitude of the estimates can be directly compared.*

Table E4. Principal components & orthogonally rotated component loadings *

		1. Preference for the most effective DMTs	2. Tolerance for the more effective DMT's side effects	3. Tolerance for risk of dying from PML	4. Preference for lower efficacy orals and injections	5. Preference for lowest frequency administration	6. Tolerance for flu-like symptoms and lipoatrophy	7. Preferences for intramuscular injections (fewer skin problems)	8. Preferences for pregnancy-related considerations
β1	injection	0.14	0.00	0.11	**0.28**	-0.09	**0.28**	**-0.18**	**-0.41**
β2	oral	0.07	0.05	0.00	**0.69**	0.00	0.01	-0.02	-0.01
β3	infusion	**0.90**	0.01	-0.01	0.02	0.01	0.00	0.02	-0.01
β4	administration once every day	0.02	0.02	-0.08	-0.04	0.01	0.05	0.02	0.11
β5	administration once per week	0.04	-0.01	0.02	0.11	**0.18**	**-0.18**	-0.10	0.02
β6	administration once per 2 weeks	0.02	0.04	-0.03	**0.19**	**0.25**	**-0.27**	-0.07	0.03
β7	administration once per 12 weeks	-0.01	-0.01	0.01	0.02	**0.18**	0.02	-0.04	0.06
β8	administration 8 days per 4 years	0.00	-0.07	0.09	0.06	**0.56**	0.01	0.09	-0.02
β9	administration 20 days per 4 years	0.08	0.15	-0.03	**-0.16**	**0.56**	0.01	-0.01	0.00
β10	administration in the hospital	0.12	-0.07	**0.15**	**-0.24**	0.07	-0.01	-0.05	-0.09
β11	self-mixed injections	0.03	0.09	-0.02	-0.12	0.04	0.00	0.02	0.08
β12	injections into the muscle	0.05	-0.03	-0.03	-0.07	-0.02	0.00	**0.78**	-0.10
β13	injections stored at room temperature (1 month)	0.03	-0.06	0.01	0.01	-0.07	0.02	**0.15**	0.14
β14	efficacy: 44% relapse reduction	0.09	-0.02	0.02	0.04	0.07	-0.03	0.07	0.04
β15	efficacy: 55% relapse reduction	**0.25**	-0.01	0.07	-0.01	0.01	-0.10	0.02	0.08
β16	injections: probability of flu-like symptoms	0.00	-0.03	-0.11	-0.07	0.01	**-0.35**	-0.04	0.00
β17	injections: probability of severe flu-like symptoms	0.00	-0.04	-0.10	-0.07	0.04	**-0.45**	-0.05	-0.14
β18	injections: probability of flush/burning sensation	-0.02	-0.08	0.00	0.04	0.06	-0.03	-0.06	-0.04
β19	orals: probability of rash/shingles	-0.01	-0.01	0.00	-0.01	-0.02	0.04	-0.03	0.00
β20	orals: sometimes gastrointestinal problems	-0.05	-0.12	-0.14	**0.18**	0.08	0.03	0.12	0.08
β21	orals: often gastrointestinal problems	-0.05	**-0.21**	-0.06	**0.18**	0.02	-0.12	0.06	-0.10
β22	orals: high gastrointestinal problems	-0.07	**-0.25**	-0.11	0.11	0.04	**-0.19**	0.07	**-0.50**
β23	orals: heart problems	0.02	-0.13	-0.10	0.06	0.06	0.04	0.06	0.09
β24	often infusion-related side effects	0.01	0.05	0.02	-0.04	0.07	-0.02	0.00	-0.08
β25	high probability of infusion-related side effects	0.03	-0.10	0.11	-0.07	0.03	-0.06	0.00	-0.09
β26	increased risk of serious infections	0.10	**-0.18**	-0.14	0.02	-0.10	0.02	-0.02	0.05
β27	increased risk of serious infections - mainly first 4 months	0.13	-0.11	**-0.20**	-0.08	-0.11	0.04	-0.06	0.07
β28	injections: often some skin problems	0.02	-0.09	-0.06	0.00	-0.08	-0.02	-0.07	0.04

β29	injections: high probability of of skin problems	0.01	-0.05	-0.08	-0.12	-0.02	0.00	**-0.45**	-0.13
β30	injections: increased risk of depression	-0.06	**-0.16**	-0.12	0.00	**0.24**	-0.02	-0.03	0.10
β31	orals: high probability of flushes	-0.01	**-0.24**	0.04	0.14	0.02	-0.10	-0.04	-0.02
β32	sometimes some hair loss	0.07	-0.04	-0.01	-0.09	-0.03	0.04	-0.09	0.07
β33	often some hair loss	0.03	-0.09	-0.03	-0.02	0.00	0.03	-0.07	0.10
β34	seldom vision problems	0.01	-0.15	-0.06	-0.05	0.05	0.08	0.02	-0.01
β35	injections: sometimes lipoatrophy	-0.03	-0.10	**-0.21**	-0.02	**0.25**	**0.61**	-0.04	-0.02
β36	very small prob. of PML	0.08	-0.09	**-0.42**	0.09	-0.10	-0.02	0.01	0.03
β37	small prob. of PML	-0.01	**0.22**	**-0.54**	0.05	0.00	0.00	0.08	0.00
β38	high prob. of PML (JCV positive)	0.00	0.00	**-0.48**	**-0.16**	0.04	-0.02	-0.09	-0.13
β39	Lemtrada irreversible side effects	-0.04	**-0.26**	0.10	0.02	0.09	0.03	-0.04	-0.03
β40	Novantrone irreversible side effects	0.02	**-0.66**	0.02	**-0.17**	-0.05	0.05	0.04	0.02
β41	monitoring first 6 months once every 2 weeks	0.02	-0.01	-0.01	-0.04	-0.02	-0.01	-0.06	0.03
β42	monitoring every month	0.01	-0.09	0.09	0.03	-0.08	0.00	0.06	0.02
β43	still some uncertainty about side effects	0.07	-0.08	0.10	-0.10	0.05	-0.01	-0.03	0.01
β44	pregnancy: safe before & uncertain during usage	0.02	0.05	-0.01	-0.04	-0.03	-0.12	-0.07	0.05
β45	pregnancy: relatively safe before & not during	0.02	-0.06	-0.01	0.01	-0.07	-0.07	-0.03	**0.26**
β46	pregnancy: not safe before or during	-0.01	-0.13	0.00	0.08	0.01	-0.07	-0.07	**0.42**
β47	pregnancy: washout required	-0.03	-0.10	-0.01	**0.20**	0.06	0.01	-0.01	**0.31**
β48	pregnancy: 6 months waiting time after last dosage	-0.03	-0.03	0.00	0.09	-0.03	-0.02	-0.03	**0.17**

** Note: The extracted principal components together account for 99% of the between-respondent variation in individual-level preferences. To facilitate interpretation, component loadings with absolute values greater than 0.15 are in bold and greater than 0.20 highlighted (i.e. in green for positive and red for negative associations).*

DMT, disease modifying treatment; JCV, John Cunningham virus; PML, progressive multifocal leukoencephalopath